



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

Well Name: # 1 J. KOLLMAN
Location: 70' N. & 5' W. E2 - NW - SE of SEC. 24 - 17 S. - 35 W.
License Number: A.P.I. 15-203- 20,189-00-00
Spud Date: 10/05/2012
Surface Coordinates: SPOT: 2000' FSL & 1655' FEL

Region: Wichita Co., KS.
Drilling Completed: 10/20/2012

**Bottom Hole
Coordinates:**
Ground Elevation (ft): 3164' **K.B. Elevation (ft):** 3172'
Logged Interval (ft): 0' **To:** **Total Depth (ft):** 5060'
Formation: MISSISSIPPIAN
Type of Drilling Fluid: CHEMICAL/ POLYMER/ GEL

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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

Ran 6 jts new 24# 8-5/8" surface casing. Tally at 240', set at 251'. Cemented with 160 sacks common, 3% cc, 2% gel. Cement did circulate. Plug down at 7:00 P.M. on 10/05/12.

Deviation Survey's Taken: @ 251' = 1/2 degree; @ 1344' = 3/4 degree; @ 2286' = 3/4 degree; @ 3326' = 1 degree; @ 4055' = 1/2 degree; @ 4350' = 1/2 degree; @ 4524' = 1/4 degree; @ 4934' = 3/4 degree; @ 5060' = 3/4 degree.

DSTs

DST #1 4017'-4055'. Times: 30"-45"-45"-60". Blow: IF= Weak low Build / 3"; FF= Weak Blow Sli. Build / 2". Recovery: 62' MCW (90% M & 10% WTR.). Pressures: IH = 2042#; FH = 1946#; IF = 16-27#; FF= 29-44#; ISIP = 1064#; FSIP = 1034#; Temp = 103 degrees F.; RW =.52 @ 62 degrees F.

DST #2 4056'-4086'. Times: 30"-30"-30"-30". Blow: IF= Weak low Build / 1/4"; FF= Weak Blow/ 1/4". Recovery: 15' M (100% M). Pressures: IH = 2044#; FH = 1948#; IF = 16-19#; FF=20-23#; ISIP = 1078#; FSIP= 1017#; Temp = 101 degrees F.

DST #3 4091'-4112'. Times: 30"-45"-45"-60". Blow: IF= Weak Build / 2.5"; FF=Weak / 2 ". Recovery: 92'GOCWM: 30' GOCM (20% G, 20% O, & 60% M) & 62' OCWM: (5% O, 5% Wtr & 90% M). Pressures: IH = 2051#; FH = 1976#; IF = 18-29#; FF= 34-49#; ISIP =1069#; FSIP=1042#; Temp = 104 degrees F.

DST #4 4120'-4196'. Times: 30"-45"-45"-60". Blow: IF=BOB/ 14"; FF=BOB/ 10". Recovery: 526' TF: 92' GOCWM (30% G, 20% O, 10% Wtr,40% M); 248' GOCWM: (10% G, 20% O, & 20% Wtr & 50% M); 124' OCWM (20% O, 60% Wtr & 20% M); & 62' OCMW (10% O, 70% Wtr & 20% M). Pressures: IH = 2056#; FH=1969#; IF=30-144#; FF=152-273#; ISIP= 1095#; FSIP=1057#; Temp=108 degrees F.; Chl.=30,000 Ppm; RW=.27 @ 60 degrees F.

DST # 5 4263'-4312'. Times: 30"-45"-45"-60". Blow: IF=Weak Build/ 3.5"; FF=Weak Build/ 4.5". Recovery: 82' TF: 20' MCO (75 % O, 25 % M); 62' OCM (20% O. 80% M). Pressures: IH = 2184#; FH = 2068#; IF=16-29#; FF=34-50#; ISIP = 1179#; FSIP= 1149#; Temp= 107 degrees F.

DST # 6 4322'-4350'. Times: 30"-45"-30"-60". Blow: IF=Weak Build/ BOB/5"; FF=BOB/7". Recovery: 1240' TF: 310' WCM w/Show O (40% Wtr, 60% M); 248' MCW (90% Wtr, 10% M); 682' Wtr (100% Wtr). Pressures: IH = 2174#; FH = 2113#; IF=33-306#; FF=313-521#; ISIP=1205; FSIP = 1206#; Temp = 114 degrees F.; Chl.=27000 Ppm; RW =.26 @ 67 degrees F.

DST # 7 4356'-4396'. Times: 30"-45"-45"-60". Blow: IF=Weak Build/7"; FF=BOB/41". Recovery: 258' TF: 134'MCGO (10% G, 60% O, 30% M); 62' OCWM (10% O, 20% Wtr 70% M); 62' MW w/Tr. O (50% Wtr, 50% M)). Pressures: IH=2163#; FH=2098#; IF = 18-54#; FF = 60-112#; ISIP=1204#; FSIP=1188#; Temp=109 degrees F; Chl.= 23000 Ppm; RW = .45 @ 48 degrees F.

DST # 8

4481'-4524'. Times: 30"-45"-45"-60". Blow: IF = Weak Build/8"; FF=BOB/37". Recovery: 186' GIP; 124' TF: 62' GO (5% G, 95% O); 62' GOCM (5% G, 15% O, 80% M). Pressures: IH =2241#; FH =2177#; IF=17-39#; FF=40-64#; ISIP = 1224#; FSIP=1192#; Temp= 110 degrees F.; API Grv.= 31 degrees.

DST # 9 4526'-4550'. Times: 30"-45"-45"-60". Blow: IF = Weak Build/3.5"; FF=Weak Build/6". Recovery: 124' GIP; 62' TF: 31' GO (10% G, 90% O); 31' OCM (50% O, 50% M). Pressures: IH = 2296#; FH = 2193#; IF = 15-20#; FF = 23-33#; ISIP = 1283#; FSIP = 1285#; Temp = 110 degrees F; API Grv. = 30 degrees.

DST # 10 4896'-4934'. Times: 30"-45"-30"-60". Blow: IF = Weak Build to BOB/ 8"; FF=BOB/9". Recovery: TF=682': 3' O (100% Oil); 184' OCWM (5% Oil, 5% Wtr, 90% M); 186' OCWM (10% Oil, 30% Wtr; 60% M); 310' MCW (90% Wtr, 10% M). Pressures: IH = 2489#; FH = 2356#; IF=41-189#; FF=197-323#; ISIP= 1153#; FSIP= 1137#; Temp =121 degrees F; Chl.= 24000 Ppm; RW = .41 @ 49 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

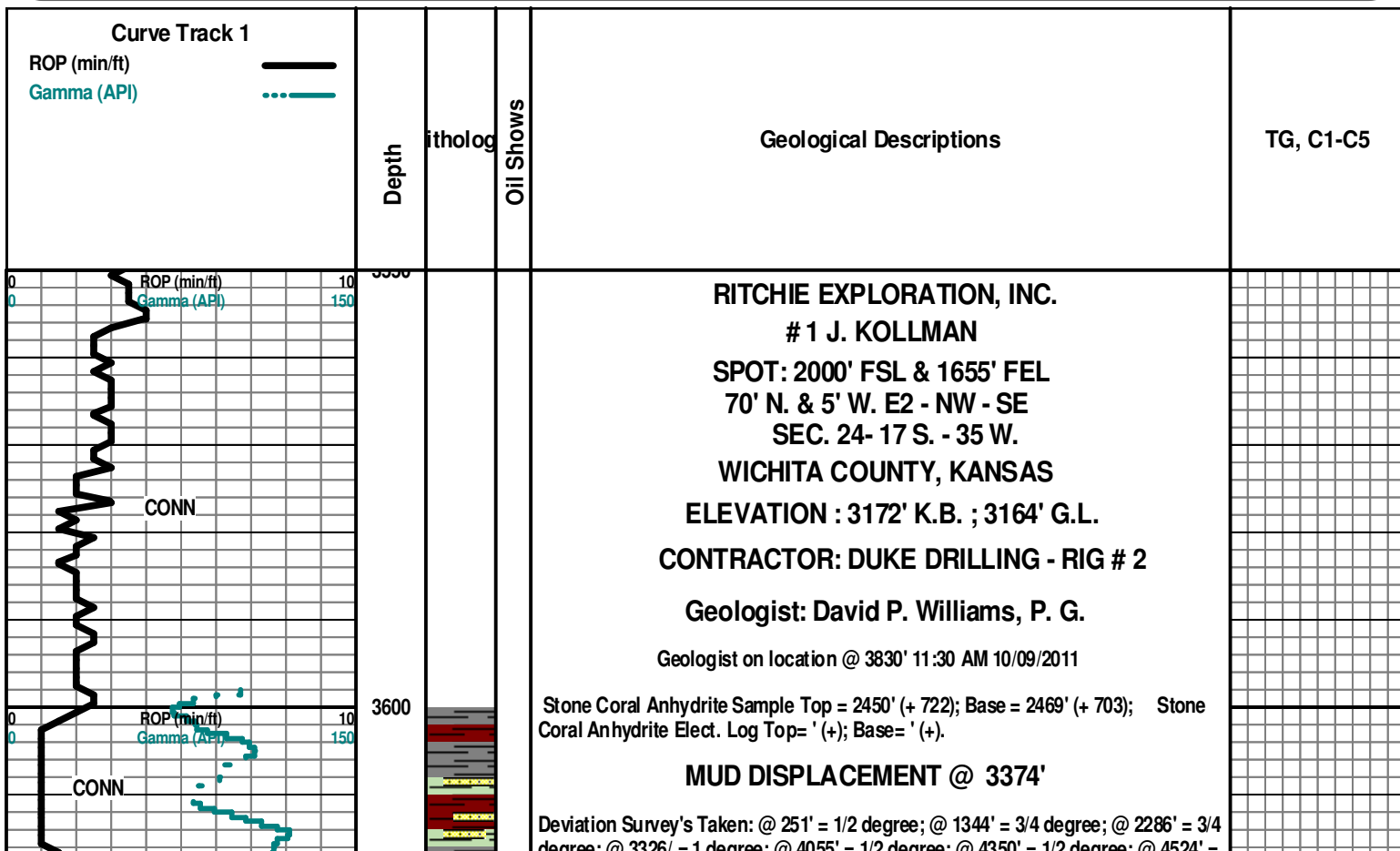
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	Bent		Coal		Gyp		Red shale		Shgy
	Brec		Congl		Igne		Salt		Sltst
	Carb sh		Dol		Lmst		Sandylms		Ss
	Cht		Grn sh		Meta		Shale		Till

ACCESSORIES

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

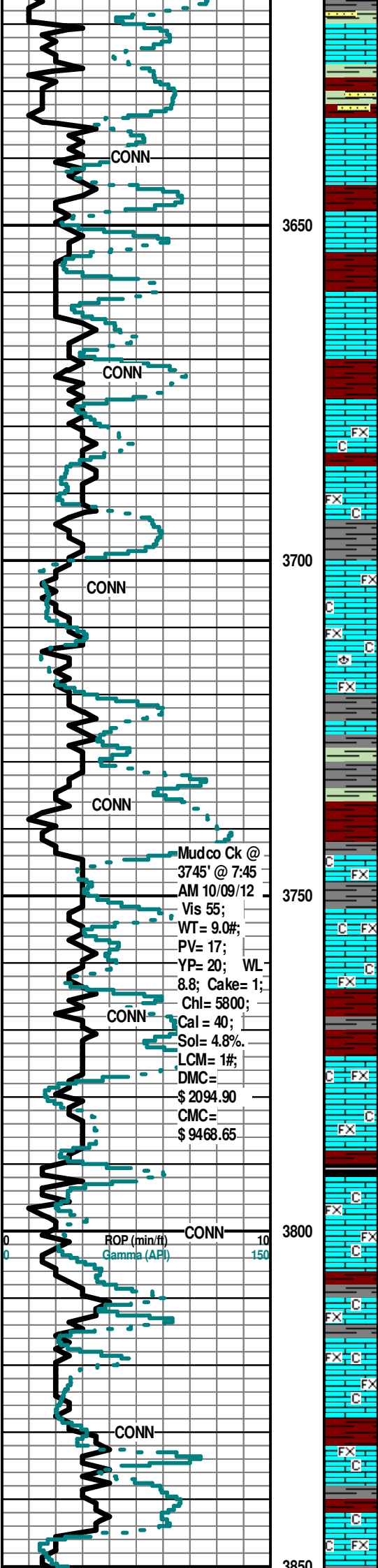
OTHER SYMBOLS

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



degree; @ 5520' = 1 degree; @ 4650 = 1/2 degree; @ 4550 = 1/2 degree; @ 4524 = 1/4 degree; @ 4934' = 3/4 degree;

STOTLER 3635' (-463)



Mudco Ck @
3745' @ 7:45
AM 10/09/12
Vis 55;
WT= 9.0#;
PV= 17;
YP= 20; WL
8.8; Cake= 1;
Chl= 5800;
Cal= 40;
Sol= 4.8%
LCM= 1#;
DMC=
\$ 2094.90
CMC=
\$ 9468.65

BEGIN 10 SAMPLE DESCRIPTIONS @ 3700'

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

Ls Wht-Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft Sh
Char-Gry- Red Fissil-Soft No Odor No Stn No Flor NS

Ls Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft Sh
Char-Gry -Tr Maroon Dec Fissil-Soft No Odor No Stn No Flor NS

Ls Gry-Crm FxIn Poor IxIn Pin-Pt Por Grad Micritic Grad Pool Granular OOL Por
(w/OOL in pl) Tr Vug Leaching Barren Chalk Wht Soft Sh Char-Gry-Maroon
Fissil-Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Fos (Brach) Chalk
Wht Soft Sh Char-Gry -Red Fissil-Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft Sh
Char-Gry - Red Fissil-Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Pin-Pt Por Gran Por Grad Micritic Barren Chalk
Wht Soft Sh Char-Gry -Aqua-Red Fissil-Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor IxIn Pin-Pt Por Gran Por Grad Micritic Barren Chalk
Wht Soft Sh Char-Gry -Aqua-Red Fissil-Soft No Odor No Stn No Flor NS

Ls Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft Sh
Char-Drk Gry-Red-Maroon Fissil-Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry-Tr Blk Carb Fissil-Soft Ls
Crm-Gry FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor
No Stn No Flor NS

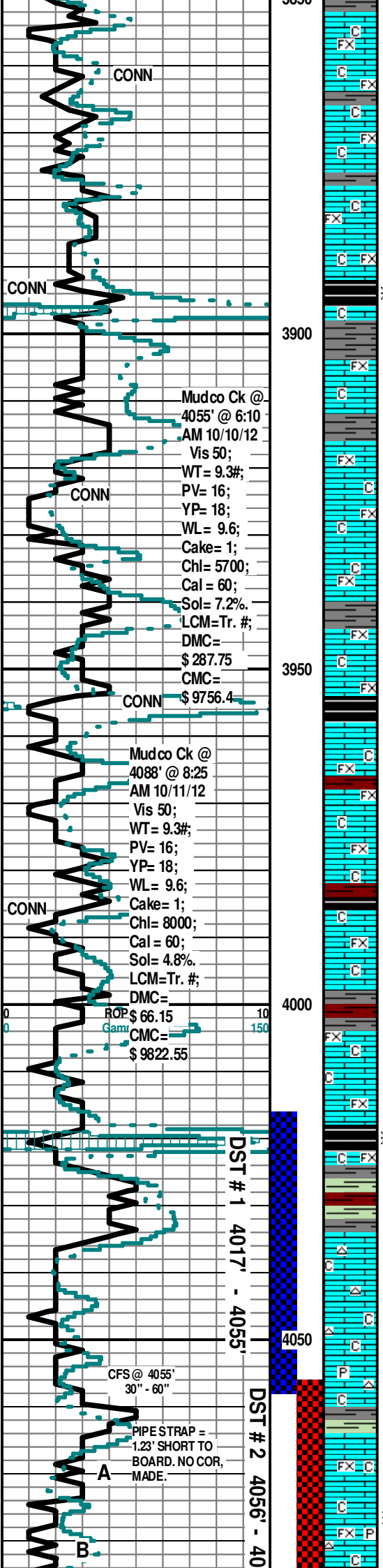
Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry FxIn Poor
IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry
FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No
Flor NS

(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry
FxIn Poor IxIn Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No
Flor NS



(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry Fxln Poor Ixln Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry Fxln Poor Ixln Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry Fxln Poor Ixln Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

(Poor Spl) Sh Red-Maroon (V Abd) (Wash Red) Char-Drk Gry Fissil-Soft Ls Crm-Gry Fxln Poor Ixln Pin-Pt Por Grad Micritic Barren Chalk Wht Soft No Odor No Stn No Flor NS

KING HILL SHALE 3892' (-720)

Sh Blk Carb Fissil w/FSG (w/broken in Wtr under Heat)-Char-Gry-Red Ls Crm-Wht AA Chalk AA No Odor No Flor SG in Blk Sh

Ls Crm-Wht AA Chalky Sh Blk Carb Fissil No Odor No Flor NS

Ls Crm-Wht AA Chalky Sh Blk Carb-Char-Gry-Red Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red Fissil No Odor No Flor NS

QUEEN HILL SHALE 3954' (-782)

Sh Blk Carb Fissil w/FSG (w/broken in Wtr under Heat) Ls Crm-Wht AA Chalk AA No Odor No Flor SG in Blk Sh

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red-Tr Blk Carb Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red-Tr Blk Carb Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red-Aqua-Tr Blk Carb Fissil No Odor No Flor NS

Ls Wht Abd Fxln Micrite Chalk Abd Sh Char-Gry-Red-Aqua-Tr Blk Carb Fissil No Odor No Flor NS

HEEBNER 4019' (-847)

Sh Blk Carb w/FSG (w/broken in Wtr under Heat)-Aqua-Red-Maroon-Gry-Grn Soft-Fissil Ls Wht-Crm Fxln Dns Grad Pin-Pt Fxln Por Barren Chalky No Odor No Flor SG in Blk Sh

Sh Blk Carb-Aqua-Red-Maroon-Gry-Grn-Olive Soft-Fissil Ls Wht-Crm Fxln Dns Grad Pin-Pt Fxln Por Barren Chalky No Odor No Flor NS

TORONTO 4035' (-863)

30" CFS @ 4055' (Poor Spl) Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por (w/SSG & SSO Under Heat in Wtr) Cht Wht Abd Translu-Op Chalky Sh Varicolored AA No Odor Sli Blk-Drk Brn Stn (Few Pcs) Fair-Good Flor (Gas/Oil Does Not Flor) SSG & SSO

60" CFS @ 4055' Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por (w/SSG & SSO Under Heat in Wtr) Cht Wht Abd Translu-Op Pyr Mass Chalky Sh Varicolored AA No Odor Sli Blk-Drk Brn Stn (Few Pcs) Fair-Good Flor (Gas/Oil Does Not Flor) SSG & SSO

LANSING 4064' (-892)

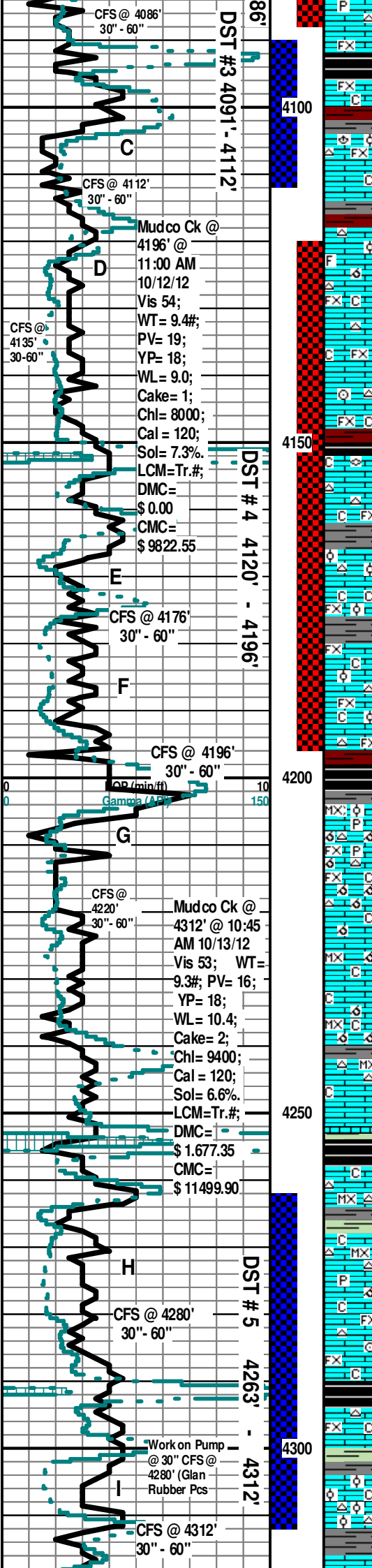
30" CFS @ 4086' Ls Wht Fxln Poor-Fair-Med Pin-Pt Ixln Vugs (Med) Friable Por (w/SG & SO Under Heat in Wtr) F-M SFO in Spl Tray Pyr Mass Chalky Sh Varicolored AA No Odor Fair-Med Blk Gillsontic "Dead Oil" Residue (Few Pcs w/Drk Brn Stn (5-10% w/SG/SO of Spl) Fair-Med (Dull Wht) Flor (Gas/Oil Does Not Flor) F-MSG & F-MSO

60" CFS @ 4086' Ls Wht Fxln Poor-Fair Pin-Pt Ixln Tr w/Small Vugs Friable Por (w/SG & SO Under Heat in Wtr) FSFO in Spl Tray Cht Wht Translu Op Shp Vit Pyr Mass Chalky Sh Varicolored AA No Odor Fair Gillsontic "Dead Oil" Residue (Few Pcs w/Drk Brn Stn (2% w/SG/SO of Spl) Fair (Dull Wht) Flor (Gas/Oil Does Not Flor) F-MSG & F-MSO

DST #1 4017'-4055'.
 Times: 30"-45"-45"-60".
 Blow: IF= Weak low Build / 3"; FF= Weak Blow Sli. Build / 2".
 Recovery: 62' MCW (90% M & 10% WTR.).
 Pressures: IH = 2042#; FH = 1946#; IF = 16-27#; FF= 29-44#; ISIP = 1064#; FSIP= 1034#; Temp = 103 degrees F. RW = .52 @ 62 degrees F.

DST #2 4056'-4086'.
 Times: 30"-30"-30"-30".
 Blow: IF= Weak low Build / 1/4"; FF= Weak Blow / 1/4".
 Recovery: 15' M (100% M).
 Pressures: IH = 2044#; FH = 1948#; IF = 16-19#; FF= 20-23#; ISIP = 1078#; FSIP= 1017#; Temp = 101 degrees F.

DST #3 4091'-4112'.
 Times: 30"-45"-45"-60".
 Blow: IF= Weak Build / 2.5"; FF=Weak / 2".
 Recovery: 92'GOCWM: 30' GOCM (20% G, 20% O, & 60% M) & 62' OCWM: (5% O, 5% Wtr & 90% M).
 Pressures: IH = 2051#; FH = 1976#; IF = 18-29#; FF= 34-49#; ISIP = 1069#; FSIP= 1042#; Temp = 104 degrees F.



30" CFS @ 4112' Ls Wht-Crm Fxln Med-Good lxn Vug Leached Friable Fos (Brach) "Salt & Pepper" lxn Por Grad Tr Poor-Fair OOL Por (w/OOL in pl) Poor-Fair Dissolu w/ M-G SG & SO (Drk Brn Gillsonitic Stn) (w/SFO in Spl Tray) Good-Strong Odor Sli Flor (Dull Wht-Scat Faint Lt Grn) G & O Do Not Flor Cht Wht-Tan (w/OOL in pl) Translu-Op Shp Vit Chalky Sh Varicolored AA M-G SG & SO Good Drk Stn Med SG & SO

60" CFS @ 4112' Ls Wht-Crm Fxln Med-Good lxn Vug Leached Friable Fos (Brach) "Salt & Pepper" lxn Por Grad Tr Med-Good OOL Por (w/OOL in pl) Med-Good Dissolu w/ GSG & SO (Drk Brn Gillsonitic Stn) (G/SFO in Spl Tray) Strong Odor Sli Flor (Dull Wht-Scat Faint Lt Grn) G & O Do Not Flor Cht Wht-Tan (w/OOL in pl) Translu Op Shp Vit Chalky Sh Varicolored AA G SG & SO Good Drk Stn SG & SO

30" CFS @ 4135' Ls Wht-Crm Fxln Poor-Med lxn Por Tr/Vug Leaching Friable Fos Frag "Salt & Pepper" lxn Por Grad Tr Poor OOL/OOM Por (w/OOL in pl) Poor Dissolu w/ Med SG & SO (Drk Brn Gillsonitic Stn) (w/SFO in Spl Tray) G & O Do Not Flor Fair Odor Ex ? Min Flor (Lt Grn) G & O Do Not Flor Cht Wht-Tan-Gry Fos (Brach Includ) Translu- Op Shp Vit Abd Chalky Sh Varicolored AA Med Drk Stn MSG & MSO

60" CFS @ 4135' Ls Wht-Crm Fxln Poor lxn Por Tr/Vug Leaching Tr "Salt & Pepper" lxn Por Grad SSG & SSO (Drk Brn Gillsonitic Stn) (NSFO in Spl Tray) G & O Do Not Flor Fair Dec Odor Ex ? Min Flor (Lt Grn) G & O Do Not Flor Cht Wht-Tan-Gry Fos (Brach Includ) Translu- Op Shp Vit Abd Chalky Sh Varicolored Char-Gry-Aqua-Red Sli Scat Drk Stn VSSG & VSSO

Ls Wht-Crm-Tan Fxln Poor Pin-Pt lxn Por w/Tr SSG/SSO (4 Pcs) Tr/Poor Vug Leaching Poor Develop Fos (Crin) Scatt Brn Stn Good Even ? Min Flor (Throughout Spl) V Faint Odor AA Dec Cht Wht-Gry Op Shp Vit Chalky Sh Aqua-Red Soft AA Faint Odor Dec Tr/VSSG & VSSO

Ls Wht-Crm-Tan Fxln Poor Pin-Pt lxn Por w/Tr SSG/SSO (2 Pcs) Tr/Poor Vug Leaching Poor Develop Grad Micrite Scatt Brn Stn Good Even ? Min Flor (Throughout Spl) V Faint Odor AA Dec Cht Wht-Gry (w Fos (Fuss) Includ) Op Shp Vit Chalky Sh Blk Carb-Aqua-Grn-Red Fissil-Soft ? Faint Odor Dec Tr/VSSG & VSSO AA

30" CFS @ 4176' Ls Wht-Crm Fxln Micrite Grad Poor-Fair lxn Por Tr/Vug Leaching Friable "Salt & Pepper" lxn Por Grad Tr Poor OOL/OOM Por (w/OOL in pl) Fair Dissolu (Med-Ooids w/Leached Cntrs) w/SG & SO (Drk Brn Gillsonitic Stn) (w/SFO in Spl Tray) G & O Do Not Flor Faint Odor Ex ? Min Flor (Lt Grn) G & O Do Not Flor Cht Wht-Tan-Gry Translu- Op Shp Vit Chalky Sh Variocolored AA Drk Brn-Blk Stn FSG & FSO

60" CFS @ 4176' Ls Wht-Crm-Tan Fxln Poor-Pin-Pt lxn Vug Leached Por w/ SSG & SSO AA Chalky AA Cht AA Faint Odor Good ? Min (Lt Grn) Flor Fair Drk Brn Stn Sli-Fair SG & SO

30" CFS @ 4196' Ls Wht-Crm-Tan Fxln Poor-Pin-Pt lxn Tr/Vug Leached Por w/ SSG & SSO AA Tr Poor OOL/OOM Por (w/OOL in pl) Poor Dissolu Poor Leaching Por Chalky AA Cht AA Faint Odor Good ? Min (Lt Grn) Flor Fair Drk Brn Stn Sli-Fair SG & SO

60" CFS @ 4196' Ls Wht-Crm-Tan Fxln Poor-Fair-Pin-Pt lxn Tr/Fair Vug Leached Por w/SSG & SSO AA Tr Poor-Fair OOL/OOM Por (w/OOL in pl) (Small Ooids) Poor Dissolu Poor-Fair Leaching Por Chalky AA Cht AA Fair Odor Good ? Min (Lt Grn) Flor G & O Do Not Flor Fair Drk Brn Stn Poor-Fair SG & SO

30" CFS @ 4220' Ls Wht-Crm Microxln-Fxln Poor-Fair-Med OOL Por (w/OOL in pl) w/ GSG & GSO (3 Pcs in Spl) ? Sluff ? Grad Fair-Poor OOM Por w/Tr Sli Scat Brn Stn (Few Pcs) Grad Barren Poor Leaching Poor Develop Grad Micritic Cht Wht Op Shp Vit Pyr Mass Chalky AA Sh Char-Gry-Aqua-Maroon-Red Soft-Fissil No Odor Good ? Min Flor Abd ? SSG & SSO Most Barren

60" CFS @ 4220' Ls Wht-Crm Microxln-Fxln Micritic AA Grad Poor-Fair-Med OOM Por w/Tr SG & SO (2 Pcs in Spl) ? Sluff ? (w/Tr Sli Scat Brn Stn 4 Pcs) Grad Barren Poor-Fair Leaching Poor Develop Cht Wht Op Shp Vit Pyr Mass Chalky AA Sh Char-Gry-Aqua-Maroon-Red Soft-Fissil No Odor Good ? Min Flor Abd ? VSSG & VSSO Barren

Ls Wht Microxln Dns Micrite Grad Crm-Tan No Vis Por Tr Poor OOM Por AA Barren Chalk V Abd Sh Red-Gry-Grn-Maroon Soft No Odor Good ? Min Flor No Stn NS

Ls Wht Microxln Dns Micrite Grad Crm-Tan No Vis Por Tr Poor OOM Por AA Barren Chalk V Abd Sh Red-Gry-Grn-Maroon Soft No Odor Good ? Min Flor No Stn NS

Ls Wht Microxln Dns Micrite Grad Crm-Tan No Vis Por Barren Cht Gry Op Shp Vit Chalky Sh Red-Gry-Grn-Maroon Soft No Odor Good ? Min Flor No Stn NS

MUNCIE CREEK 4254' (- 1082)

Sh Blk Carb Fissil Ls Wht-Crm-Tan Microxln Dns Micrite Cht Gry Translu-Op Shp Vit Good ? Min Flor Faint Odor No Stn NS

Ls Wht-Crm-Tan Microxln Dns Micrite Cht Gry Translu-Op Shp Vit Sh Blk Carb Fissil Good ? Min Flor Faint Odor No Stn NS

KANSAS CITY DRUM "H" 4267' (- 1095)

30" CFS @ 4280' Ls Wht-Crm-Tan Microxln Dns Micrite Barren Grad Tr Poor Pin-Pt lxn Por (w/ VSSG & VSSO - 3 Pcs (w/VSSFO in Wtr Under Heat-Med Brn No Flor) Cht Gry-Wht Translu-Op Shp Vit (w/Pyr Includ) Abd Sh Carb-Aqua-Maroon-Blk Carb Fissil Good ? Min Flor Faint Odor Sli Tr (Chalky Ls w/Lt Brn Stn) VSSG & VSSO

60" CFS @ 4280' Ls AA Microxln Dns Micrite Grad Poor OOM Por Barren Poor Develop Poor-No Leaching Cht AA Chalk AA Sh AA Good ? Min Flor V Faint Odor No Stn NS

Ls Wht Fxln Micrite Grad Chalky Ls Poor lxn Por Tr Scat Lt Brn Stn Sli Flor Grad ? Min Flor tr Pin-Pt lxn Por (w/Tr VSSG & VSSO AA) Cht Gry-Wht Amber Translu-Op Shp Vit Fos (Crin) Sh Blk Carb-Aqua-Red-Maroon Soft-Fissil Faint Odor Good ? Min Flor

Sh Blk Carb-Aqua-Red-Maroon Soft-Fissil Ls Wht Fxln Micrite Grad Chalky Ls Poor lxn Por Tr Scat Lt Brn Stn Sli Flor Grad ? Min Flor tr Pin-Pt lxn Por (w/Tr VSSG & VSSO AA) Cht Gry-Wht Amber Translu-Op Shp Vit Faint Odor Good ? Min Flor

KANSAS CITY BLOCK "I" 4304' (- 1132)

30" CFS @ 4312' Ls Wht Good OOL Por (Med-Lg Ooids w/Free Ooids in Spl) w/GSG & GSO (Lt Brn w/SFO in Spl (GSG & GSO under Wtr with Heat) Friable (G & O Do Not Flor) (40% of Spl w/Good OOL Por) Cht Wht AA Chalky AA Sh Char-Aqua-Grn-Red-Maroon Soft-Fissil Med-Good Scat (Lt Brn) Stn (On Edge of Ooids) Good Inc Odor Good Dull Wht-Lt Grn Flor (Good Lt Grn Stn in Dry Spls) GSG & GSO

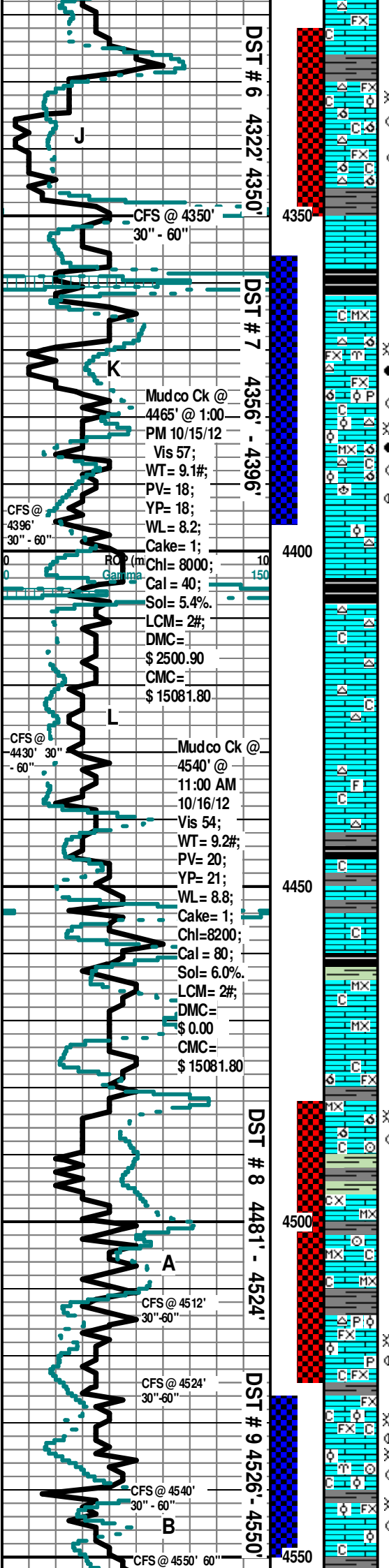
60" CFS @ 4312' Ls Wht Good OOL Por (Small-Med-Lg Ooids) w/GSG & GSO (Lt Brn SFO in Spl (w/Abd GSG & GSO under Wtr with Heat) Friable (G & O Do Not Flor) (30% of Spl is Good OOL Por

Times: 30"-45"-45"-60"
 Blow: IF=BOB/ 14"; FF=BOB/ 10".
 Recovery: 526' TF: 92' GOCWM (30% G, 20% O, 10% Wtr, 40% M); 248' GOCWM: (10% G, 20% O, & 20% Wtr & 50% M); 124' OCWM (20% O, 60% Wtr & 20% M); & 62' OCMW (10% O, 70% Wtr & 20% M).
 Pressures: IH = 2056#; FH = 1969#; IF = 30-144#; FF = 152-273#; ISIP = 1095#; FSIP = 1057#;
 Temp = 108 degrees F.
 Chl. = 30,000 Ppm; RW = 27 @ 60 degrees F.

Mudco Ck @ 4350' @ 10:20 AM 10/14/12
 Vis 51; WT = 9.3#; PV = 15; YP = 18; WL = 8.8; Cake = 1; Chl = 10000; Cal = 60; Sol = 6.5%; LCM = Tr.#; DMC = \$ 1021.00; CMC = \$ 12520.90

DST # 5 4263'-4312'. Times: 30"-45"-45"-60".
 Blow: IF=Weak Build/ 3.5"; FF=Weak Build/ 4.5".
 Recovery: 82' TF: 20' MCO (75 % O, 25 % M); 62' OCM (20% O, 80% M).
 Pressures: IH = 2184#; FH = 2068#; IF = 16-29#; FF = 34-50#; ISIP = 1179#; FSIP = 1149#;
 Temp = 107 degrees F.

DST # 6 4322'-4350'. Times: 30"-45"-30"-60".
 Blow: IF=Weak Build/ BOB/5"; FF=BOB/7".
 Recovery: 1240' TF: 310' WCM w/Show O (40% Wtr, 60% M); 248' MCO (20% O, 80% M).



Cht Hnt AA Chalky AA Sh Char-Aqua-Grn-Maroon-Red Soft-Fissil Med-Good Scat Lt Brn Stn on Edge of Ooids Good-Strong Odor Good Dull Wht-Lt Grn Flor (Good Lt Grn Stn Flor in Dry Spl) GSG & GSO

KANSAS CITY DENNIS "J" 4329' (- 1157)

30" CFS @ 4350' Ls Wht-Crm Fxln Micritic Grad Med-Good OOM Por (w/Med-Lg Ooids on pl) Med-Good Dissolu Med-Good Leaching Med-Good Develop Grad Fair Pin-Pt Fxln Por "Salt & Pepper: Scat SSG & SSO (10% of Spl) Faint Odor Scat ? (Dull Wht-Lt Grn) Min Flor Cht Wht AA Chalky Sh Char-Gry Fissil SSG & SSO Mostly Barren

60" CFS @ 4350' Ls Wht-Crm Fxln Micritic Grad Med-Good OOM Por (w/Med-Lg Ooids on pl) Med-Good Dissolu Med-Good Leaching Med-Good Develop Grad Fair Pin-Pt Fxln Por "Salt & Pepper: Scat SSG & SSO (3% of Spl) Faint Odor Scat ? (Dull Wht-Lt Grn) Min Flor Cht Wht AA Chalky Sh Char-Gry Fissil SSG & SSO

STARK SHALE 4358' (- 1186)

KANSAS CITY SWOPE "K" 4363' (- 1191)

Ls Wht Good Microxln-Fxln Por Good Pin-Pt Ixln "Salt & Pepper" Vug Leached Por w/GSG & GSO (Lt Brn w/Abd SG & SFO in Spl (GSG & GSFO under Wtr with Heat) V Friable (G & O Do Not Flor) (50% of Spl w/Good Ixln Por) Fos (Bry) Grad Good OOM Por Good Dissolu-Good Leaching w/ SO AA Cht Wht-Gry Translu-Op Shp Vit Chalky Dec Sh Blk Carb-Char-Aqua-Grn-Maroon Soft-Fissil Med-Good Scat (Drk Brn/Blk) Gillsontic Stn GoodStrong Odor Good Dull Wht-Lt Grn Flor GSG & GSFO

30" CFS @ 4396' Ls Wht Fxln Good Pin-Pt xln "Salt & Pepper" Vug Leached Por V Abd w Good SG & SFO Grad OOL/OOM Por (w/Lg-Med-Small Ooids (Gas & Oil Do Not Flor) GSG& GSFO Dec Grad Micritic Dns Barren GS AA

60" CFS @ 4396' Ls Wht-Crm Fxln Micrite Tr Ls Wht Fxln Good Pin-Pt xln "Salt & Pepper" Vug Leached Por Dec (w Good SG & SFO) Grad OOL/OOM Por AA Cht Wht-Gru AA Fos (Brach) Fair-Med Odor Dec.SG & SO

Ls Wht-Crm-Tan-Gry Microxln Micrite Cht-Wht-Gry Op Shp Vit Chalky Fos (?) Dull Wht ? Min Flor Tr/Odor AA No Stn NS

HUSHPUCKNEY 4405' (- 1233)

KANSAS CITY HERTHA "L" 4407 (-1235)

Sh Blk Carb-Char-Gry-Red Soft-Fissil Ls Wht-Crm-Tan Microxln Micrite Cht-Wht-Gry Op Shp Vit Chalky Dull Wht ? Min Flor Tr/Odor AA No Stn NS

30" CFS @ 4430' Ls Wht-Crm-Tan-Gry Microxln Micrite Cht-Wht-Gry Op Shp Vit Chalky Fos (?) Dull Wht ? Min Flor Tr/Odor AA No Stn NS

60" CFS @ 4430' Ls Wht-Crm-Tan-Gry Microxln Micrite Cht-Wht-Gry Op Shp Vit Chalky Fos (?) Dull Wht ? Min Flor Tr/Odor AA No Stn NS

Ls Wht-Crm-Tan-Gry Microxln Micrite Tr OOM Por AA w/Tr Scat SO ?Stuff? Cht-Wht-Gry Op Shp Vit Chalky Fos (?) Dull Wht ? Min Flor Tr/Odor AA No Stn NS

Ls Wht-Crm-Tan-Gry Microxln Micrite Tr OOM Por AA w/Tr Scat SO ?Stuff? Cht-Wht-Gry Op Shp Vit Chalky Fos (?) Dull Wht ? Min Flor Tr/Odor AA No Stn NS

BASE KANSAS CITY 4442' (- 1270)

PLEASANTON 4446' (- 1274)

Sh Blk Carb-Char-Gry-Grn-Aqua-Maroon-Red Soft-Fissil Ls AA Wht-Crm - Tan Microxln Micritic Chalky No Odor No Stn No Flor NS

Ls AA Crm-Tan Micritic Sh Char-Gry-Maroon-Red Soft-Fissil No Odor No Stn No Flor NS

MARMATON 4464' (- 1292)

Ls AA Crm-Tan Micritic Sh -Blk Carb Char- Gry- Grn- Maroon -Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln-Microxln Dns Micrite AA Chalky Sh Aqua-Blu-Grn Char Fissil No Flor No Odor NS

Ls Wht-Crm-Tan Fxln-Microxln Dns Micrite AA Grad Tr. Poor OOM Por Poor InterOOM Por (w/VSSG & VSSO - 2 Pcs) Poor Develop Poor Leaching Tr/Lt Brn Stn No Flor No Odor Chalky Sh Aqua-Blu-Grn Char Fissil ? Tr VSSG ? VSSO

ALTAMONT "A" 4496' (- 1324)

30" CFS @ 4512' Sh Char-Gry-Grn-Aqua-Maroon-Red Soft-Fissil Ls AA Wht-Crm-Tan Microxln Micritic Fos (Crin) Chalky No Odor No Stn No Flor NS

60" CFS @ 4512' Ls Wht-Crm-Tan Fxln-Microxln Dns Micrite AA Chalky Sh Aqua- Blu - Grn- Char- Purpl Fissil No Flor No Odor NS

30" CFS @ 4524' Ls Wht-Crm Fxln-Microxln Dns Micrite Poor Ixln Por Barren Grad Poor Pin-Pt Ixln Por (w/"Salt & Pepper" Por Grad Tr OOL Por (w/OOL in pl) Small Ooids < 5% of Spl) Poor-Fair InterOOL Por w/Scatt Stn (Drk Brn -10 Pcsw/ Poor-Fair Vug Leaching Chalk Wht Soft Pyr Mass Sh Blk Carb-Char-Gry-Aqua Fissil ? V Faint Odor ? Flor (Lt Wht) VSSG & VSSO (Tr SG & SFO in Wtr Under Heat) SSG & SSO

60" CFS @ 4524' Ls Wht-Crm Fxln-Microxln AA Grad Poor Pin-Pt Ixln Por (w/"Salt & Pepper" Por AA Grad OOL Por AA (< 5% of Spl) Poor-Fair InterOOL Por (w/Scatt Stn Drk Brn (5 Pcs) w/Poor-Fair Vug Leaching Chalk AA Pyr AA Sh AA V Faint Odor ? Flor (Lt Wht) VSSG & VSSO (Tr SG & SFO in Wtr Under Heat) SSG & SSO

30" CFS @ 4540' Ls AA Tr OOL Por w/Scat SG & SFO AA Chalky V Abd Sh AA Trip Debris (?) Faint Odor SSG & SSO

ALTAMONT "B" 4535' (- 1364)

60" CFS @ 4540' Ls AA Grad Poor-Fair OOL Por (w/Small-Med OOL in pl) W/ Scatt Stn AA & SG/SO Faint Odor Chalky (V Abd) Fos (Bry,Crin) Sh AA ? Min Flor AA SSG & SSO

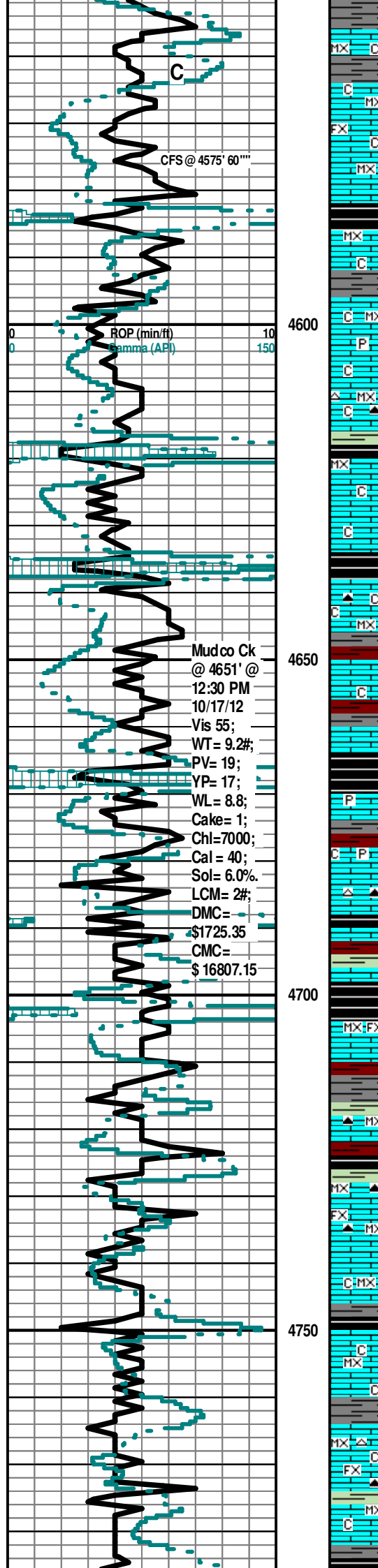
60" CFS @ 4550' Ls Fxln Fair Pin-Pt Ixln Por Grad Fair OOL Por (w/Med OOL in pl) w/ Scatt Stn & SG/SFO Fair Inc Odor Chalky AA Sh AA Good Flor (Lt Grn) Gas & Oil Do Not Flor SG & SO

MCV @ 90% Wtr (10% M); 682 Wtr (100% Wtr).
 Pressures:
 IH = 2174#;
 FH = 2113#;
 IF = 33-306#;
 FF = 313-521#;
 ISIP = 1205;
 FSIP = 1206#;
 Temp = 114 degrees F.;
 Chl.=27000 Ppm;
 RW =.26 @ 67 degrees F.

DST # 7
 4356'-4396'.
 Times:
 30"-45"-45"-60".
 Blow: IF = Weak
 Build to 7";
 FF=BOB/7";
 Recovery: 258'
 TF: 134' MCGO
 (10% G, 60% O, 30% M); 62'
 OCWM (10% O, 20% W, 70% M);
 62' MW w/Tr. O (50% Wtr, 50% M).
 Pressures:
 IH = 2163#;
 FH = 2098#;
 IF = 18-54#;
 FF = 60-112#;
 ISIP = 1204#;
 FSIP = 1188#;
 Temp = 109 degrees F.;
 Chl. = 23000 Ppm;
 RW = .45 @ 48 degrees F.

DST # 8
 4481'-4524'. Times:
 30"-45"-45"-60".
 Blow: IF = Weak
 Build/8";
 FF=BOB/37".
 Recovery: 186' GIP;
 124' TF: 62' GO (5% G, 95% O); 62'
 GOCM (5% G, 15% O, 80% M).
 Pressures:
 IH = 2241#;
 FH = 2177#;
 IF = 17-39#;
 FF = 40-64#;
 ISIP = 1224#; FSIP = 1192#;
 Temp = 110 degrees F.;
 API Grv. = 31 degrees.

DST # 9
 4526'-4550'. Times:
 30"-45"-45"-60".
 Blow: IF = Weak
 Build/3.5";
 FF=Weak Build/6".
 Recovery: 124' GIP;
 62' TF: 31' GO (10% G, 90% O); 31'
 OCM (50% O, 50% M).
 Pressures:
 IH = 2206#;



ALTAMONT "C" 4556' (- 1384)

Ls Crm-Tan MicroIn-FxIn Dns Micrite Barren Cht Amber-Tan Translu-Op Shp Vit Chalk AA Dec Sh Char-Gry-Red Soft-Fissil No Odor Scat ? Min Flor (Dull Wht) No Stn NS

60" CFS @ 4575' Ls Crm-Tan MicroIn-FxIn Dns Micrite Barren Cht Amber-Tan Translu-Op Shp Vit Chalk AA Dec Sh Char-Gry-Red Soft-Fissil No Odor Scat ? Min Flor (Dull Wht) No Stn NS

Ls Crm-Wht FxIn-MicroxIn Micritic Sh Char-Gry-Grn Fissil No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

PAWNEE 4586' (- 1414)

Ls Crm-Wht FxIn-MicroxIn Micritic Chalk Wht Soft Sh Blk Carb- Char-Gry-Grn -Red Fissil No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

Sh Grn-Char-Gry-Red-Blk Carb Fissil Ls Crm-Wht FxIn-MicroxIn Micritic Pyr Mass Abd No Odor No Stn Tr Scatt ? Min Flor (Lt Grn) NS

Ls Wht-Crm MicroxIn Micrite Grad Tr Pin-Pt IxIn Por /tr Poor Vug Leach w/SSG/SSO (3 Pcs ? Sluff) Mostly (99% Barren) No Odor ? Scat Min Flor (Dull Wht) ? VSSG/VSSO

Sh Grn-Char-Gry-Red-Blk Carb Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic Cht Wht-Amber-Drk Brn Translu-Op Shp-Vit No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

MYRICK 4620' (- 1448)

Sh Blk Carb-Grn-Char-Gry-Red Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic Chalk No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

Sh Blk Carb-Grn-Char-Gry-Red Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

FORT SCOTT 4638' (- 1466)

Sh Blk Carb-Aqua-Grn-Char-Gry-Red Fissil Abd Ls Crm- Wht FxIn - MicroxIn Micritic Cht Gry Op Shp Vit No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

Sh Blk Carb- Aqua- Char- Gry-Grn -Red Fissil Ls Crm-Tan FxIn-MicroxIn Micritic Barren No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

CHEROKEE SHALE 4666' (- 1494)

Sh Blk Carb-Char-Gry-Aqua-Grn-Maroon-Red Soft-Fissil Abd Ls Wht -Crm - Gry MicroxIn Micrite Barren No Vis Por No Odor No Stn ? Sli Min Flor (Dull Wht) NS

Ls Wht-Crm MicrIn (Tr w/Pyr Includ) No Vis Por Grad V Poor OOL Por (w/OOL in pl) Chalk Tr No Dissolu No Leaching Barren Sh AA No Odor No Stn? Sli Min Flor (Dull Wht) NS

Ls Wht-Crm MicrIn Dns Barren Cht Amber Translu Shp Vit Sh AA V Abd Varicolored No Odor No Stn ?Sli Min Flor AA NS

Sh Blk Carb-Grn-Char-Aqua-Gry-Maroon-Red Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic No Odor No Stn Tr Scatt ? Min Flor AA NS

Sh Blk Carb-Grn-Char-Aqua-Gry-Maroon-Red Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

Sh AA V Abd Varicolored Ls Wht-Crm MicrIn Dns Barren Cht Amber Translu Shp Vit No Odor No Stn ?Sli Min Flor AA NS

Ls Wht-Crm MicrIn Dns Barren Cht Amber Translu Shp Vit Sh AA V Abd Varicolored No Odor No Stn ?Sli Min Flor AA NS

Sh Blk Carb-Grn-Char-Aqua-Gry-Maroon-Red Fissil Abd Ls Crm-Wht FxIn-MicroxIn Micritic No Odor No Stn Tr Scatt ? Min Flor (Dull Wht) NS

Sh Grn -Char- Aqua-Gry- Red- Blk Carb Fissil Ls Crm-Gry FxIn-MicroxIn Micritic Barren Chalky No Odor No Stn Scatt ? Min Flor (Dull Wht) NS

Sh Grn -Char- Aqua-Gry- Red- Blk Carb Fissil Ls Crm-Gry FxIn-MicroxIn Micritic Barren Chalky No Odor No Stn Scatt ? Min Flor (Dull Wht) NS

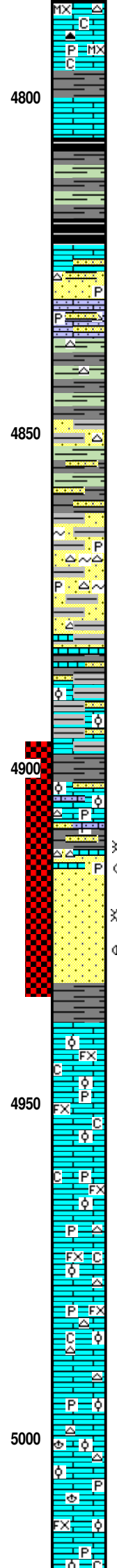
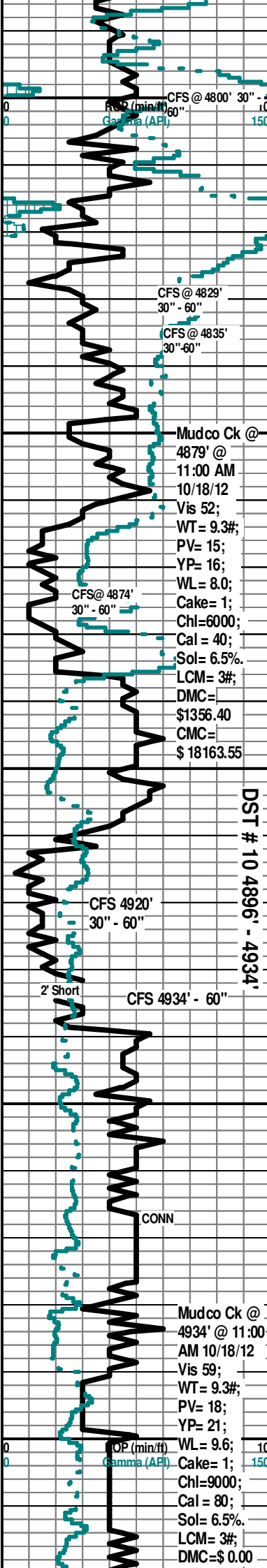
Ls Wht-Crm MicroIn-FxIn Micritic Dns Barren Grad Tr V Poor Pin-Pt IxIn Por (w/Sli Tr SG & SO (4 Pcs) Cht Wht-Amber Translu-Op Shp Vit Sh AA Varicolored V Abd No Odor No Stn (Except Tr/4 Pcs) Tr/Dull Wht Flor ? VSSG/VSSO (SFO W/Bkn Under Heat in Wtr) ? Sluff ? VSSG & VSSO ?

JOHNSON 4776' (- 1604)

Ls Crm-Gry MicroxIn Micritic Barren Chalky Sh Grn -Char- Aqua - Gry - Red - Blk Carb Fissil No Odor No Stn Scatt ? Min Flor (Dull Wht) NS

FH = 2193#;
 IF = 15-20#;
 FF = 23-33#;
 ISIP = 1283#; FSIP = 1285#;
 Temp = 110 degrees F;
 API Grv. = 30 degrees.

Mudco Ck
 @ 4651' @
 12:30 PM
 10/17/12
 Vis 55;
 WT= 9.2#;
 YP= 19;
 WL= 8.8;
 Cake= 1;
 Chl=7000;
 Cal = 40;
 Sol= 6.0%.
 LCM= 2#;
 DMC=
 \$1725.35
 CMC=
 \$16807.15



30" CFS @ 4800' Ls Wht-Crm MicroIn Micritic Dns Barren Grad Cht Wht-Amber Translu-Op shp Vit Pyr Mass Sh AA Varicolored V Abd No Odor No Stn ? Sli Min
BASE JOHNSON 4796' (- 1624)

60" CFS @ 4800' Ls Wht-Crm MicroIn Micritic Dns Barren Grad Cht Wht-Amber Translu-Op shp Vit Pyr Mass Sh AA Varicolored V Abd No Odor No Stn ? Sli Min Flor (Dull Wht) NS

MORROW SHALE 4814' (- 1642)

30" CFS @ 4829' Sh Char-Gry- Grn -Aqua-Blk Carb Fissil Ls Crm-Tan Fxln-MicroIn Micritic Barren ChtTan Transl Shp Vit AA No Odor No Stn No Flor NS

1ST MORROW SAND 4824' (- 1652)

60" CFS @ 4829' Sh Char-Gry- Grn -Aqua-Blk Carb Fissil Ls Crm-Tan Fxln-MicroIn Micritic Barren ChtTan Transl Shp Vit AA No Odor No Stn No Flor NS

60" CFS @ 4935' Sh Char-Gry- Grn -Aqua-Blk Carb Fissil Ls Crm-Tan MicroIn Micritic Barren Cht Tan Transl Shp Vit AA Chalk Abd Pyr Mass Tr Qtz Ss Wht-Clear Individual Grains Tr Clusters Well Rd-Well Sort (w/ Glacu Inklus) No Odor No Stn No Flor NS

Sh Char-Gry Soft "Gummy" V Abd Tr Pyr Inklus Tr Qtz Ss AA Tr Cht Wht AA no odor No Stn No Flor NS

30" CFS @ 4974' Qtz Ss Wht FGm Well Sort Sub Rd Friable Tr Glacu Barren Tr Small-Med Gms AA Ls Wht Fxln MicroIn Micrite Poor Ixln Por Cht Wht Op Shp Vit Pyr Mass Sh Char Carb-Gry-Aqua-Grn (w/Pyr Incus) Abd No Odor No Str No Flor NS

2ND MORROW SAND 4864' (-1692)

60" CFS @ 4974' Qtz Ss Wht FGm Well Sort Sub Rd Friable Tr Glacu Barren Tr Med-Lg Grns AA Ls Wht Fxln MicroIn Micrite Poor Ixln Por Cht Wht Op Shp Vit Pyr Mass Sh Char Carb-Gry-Aqua-Grn (w/Pyr Incus) Abd No Odor No Str No Flor NS

Sh AA V Abd "Gummy" Soft Qtz Ss AA Wht Fair Igran Por Well Sort Well Rounded Glacu Med-Lg Grns Tr CaCO3 Matrix Grad ? Dolo Matrix Pyr Inklus No Odor No Stn No Flor NS

MISSISSIPPIAN 4886' (- 1714)

Ls Wht Fxln Poor Ixln Por Grad Poor OOL Por (w/OOL in pl) Med Ooids Barren Qtz Ss AA Wht Fair Igran Por Well Sort Well Rounded Glacu Small Grns Tr CaCO3 Matrix Grad ? Dolo Matrix Sh AA V Abd "Gummy" Soft Pyr Inklus No Odor No Stn No Flor NS

30" CFS @ 4920' Sh Varicolored V Abd "Gummy" Soft w/ Pyr Inklus Ls Wht Fxln Poor Ixln Por Grad Poor OOL Por (w/OOL in pl) Med Ooids Barren Qtz Ss AA Wht Fair Igran Por Well Sort Well Rounded Glacu Small Grns Tr CaCO3 Matrix Grad ? Dolo Matrix Cht Tan Op Pyr Mass Shp Vit No Odor No Stn No Flor NS

60" CFS @ 4920' Ls Wht Fxln Poor Ixln Por Grad Poor OOL Por (w/OOL in pl) "Sandy OOL" Por Tr CaCO3 Matrix ? Tr Lt Brn Stn Qtz Ss Wht-Crm Med-Good Igran Por Lg Grns Ang-Sub Ang Well Sorted Poor Rd V Friable (w/SSG & SSO) (FSG & FSFO In Wtr Under Heat) Lt Brn Stn (No Glacu Inklus) Tr ? Carb Inklus Faint Odor No Flor (Gas & Oil Do Not Flor) Abd Sh Varicolored V Abd AA ? VSSG & VSSO ? in Qtz Ss

60" CFS @ 4934' Qtz Ss Wht-Crm Med-Good Igran Por Lg Grns Ang-Sub Ang Well Sorted Poor Rd V Friable (w/SSG & SSO) (FSG & FSFO In Wtr Under Heat) Lt Brn Stn (No Glacu Inklus) Tr ? Carb Inklus Ls Wht Fxln Poor Ixln Por Grad Poor OOL Por (w/OOL in pl) "Sandy OOL" Por Tr CaCO3 Matrix ? Tr Lt Brn Stn Faint Odor No Flor (Gas & Oil Do Not Flor) Abd Sh Varicolored V Abd AA ? VSSG & VSSO ? in Qtz Ss

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Cht Amber Translu Shp Vit Chalky Pyr Mass Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Cht Tan-Gry Translu-Op Shp Vit Fos (Brach) Chalky Pyr Mass Sh Blk Carb-Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid) Grad Dns Micrite Barren Chalky Fos (Brach) Pyr Mass Sh Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

DST # 10
 4896'-4934'
 Times:
 30"-45"-30"-60".
 Blow: IF = Weak
 Build to BOB/ 8";
 FF=BOB/9".
 Recovery:
 TF=682': 3' O
 (100%); 184'
 OCWM (5% O, 5%
 Wtr, 90% M); 186'
 OCWM (10% O,
 30% Wtr; 60% M);
 310' MCW (90%
 Wtr, 10% M).
 Pressures:
 IH = 2489#;
 FH = 2356#;
 IF = 41-189#;
 FF = 197-323#;
 ISIP = 1153#;
 FSIP = 1137#;
 Temp = 121
 degrees F;
 Chl.= 24000 Ppm;
 RW = .41 @ 49
 degrees F.

Geograph Spring.
 Broke Due To
 High Wind @ 4910'

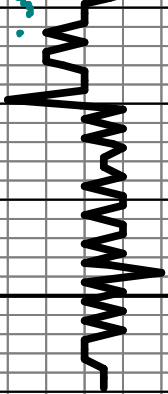
@ 4932' Kelly Was
 2' Short Correction
 Made to
 Geograph.

Mudco Ck @
 4879' @
 11:00 AM
 10/18/12
 Vis 52;
 WT= 9.3#;
 PV= 15;
 YP= 16;
 WL= 8.0;
 Cake= 1;
 Chl=6000;
 Cal= 40;
 Sol= 6.5%.
 LCM= 3#;
 DMC=
 \$1356.40
 CMC=
 \$ 18163.55

DST # 10 4896' - 4934'

Mudco Ck @
 4934' @ 11:00
 AM 10/18/12
 Vis 59;
 WT= 9.3#;
 PV= 18;
 YP= 21;
 WL= 9.6;
 Cake= 1;
 Chl=9000;
 Cal= 80;
 Sol= 6.5%.
 LCM= 3#;
 DMC=\$ 0.00

CMC=
\$ 18163.55



R.T.D. 5060' (-1888)
L.T.D. 5060' (-1888)

5050

5100

5150



Ls Wht-Crm FxIn Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid)
Grad Tan Dns Micrite Barren Cht Wht-Gry Translu-Op Shp Vit Chalky Pyr Mass Sh Blk Carb- Char
(w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

Ls Wht-Crm FxIn Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting (Small-Med Ooid)
Grad Tan Dns Micrite Barren Cht Wht-Org Op Shp Vit Fos (Bry) Chalky Pyr Mass Sh Blk Carb- Char
(w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? No Odor No Stn No Flor NS

30" CFS @ 5060' Ls Wht-Crm FxIn Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting
(Small-Med Ooid) Grad Tan Dns Micrite Barren Cht Wht-Org Op Shp Vit Fos (Bry) Chalky Pyr Mass Sh
Blk Carb- Char (w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff ? Dec No Odor No Stn
No Flor NS

60" CFS @ 5060' Ls Wht-Crm FxIn Poor OOL Por (w/OOL in pl) Small-Med Ooids w/Poor - Fair Sorting
(Small-Med Ooid) Grad Tan Dns Micrite Barren Cht Wht Op Shp Vit Chalky Pyr Mass Sh Blk Carb- Char
(w/Carb & Pyr Inklus)-Gry-Aqua-Red Soft-Fissil V ABD ? Sluff Dec ?No Odor No Stn No Flor NS

Electric Logs Run: By Superior Logging:
Dual Induction and Compensated Density-Neutron Logs.

Geologist Left Location at : 11 30 AM on 10/20/2012.