

## HEADER

### WellSight Systems

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

Well Name: #1 BROOKS 32C  
Location: sec 32 - twp 12S - rge 28W GOVE COUNTY  
License Number: API #15-063-22,128 Region: KANSAS  
Spud Date: 19 AUG 2013 Drilling Completed: 29 AUG 2013  
Surface Coordinates: 1,020 FSL & 1,635 FWL  
30' N & 15' W of NW - SE - SW  
Bottom Hole DEVIATION SURVEYS: 0.75 degree @ 232 ---- 1.0 degree @ 3,906 ---- no impression  
Coordinates: @ 4,534 TD  
Ground Elevation (ft): 2,631 K.B. Elevation (ft): 2,639  
Logged Interval (ft): 3,300 To: 4,534 Total Depth (ft): 4,534  
Formation: ADMIRE to MISSISSIPPIAN  
Type of Drilling Fluid: chemical - displace @ 3,283  
Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

## OPERATOR

Company: Ritchie Exploration, Inc.  
Address: P.O. Box 783188  
Wichita, Kansas 67278-3188

## GEOLOGIST

Name: Ted Jochems, Jr.  
Company: Consulting Geologist  
Address: 212 North Market ste 517  
Wichita, Kansas 67202

## COMMENTS

CONTRACTOR: Discovery Drilling rig #1  
Cliff Mayfield, toolpusher  
MUD: Andy's Mud (Ken Rupp)  
DRILL STEM TESTS: Superior Testers (Jared Scheck)  
ELECTRIC LOGS: Nabors (Jeff Groneweg)  
CDL/CNL, DIL  
SURFACE CASING: 8.625" @ 232  
hole plugged and abandoned on 29 AUG 2013

DAILY PENETRATION



DATE	DEPTH		SPUD
19 AUG 2013			
20 AUG	704	0700 hrs	
21 AUG	2,376	" "	
22 AUG	3,290	" "	
23 AUG	3,850	" "	
24 AUG	3,942	" "	
25 AUG	4,012	" "	DST #2
26 AUG	4,121	" "	
27 AUG	4,285	" "	DST #4
28 AUG	4,364	" "	DST #5
29 AUG	4,534	" "	TD

#### DRILL STEM TEST #1

3,878 - 3,906      30 - 45 - 30 - 30      LKC E & F zones  
 COMMENT: tool slid 2'  
 IFP: very weak blow built to 1"  
 ISIP: no blowback  
 FFP: no blow - flushed tool (no help)  
 ISIP: no blowback  
 COMMENT: tester reports slight odor when breaking open tool  
 REC: 30' DM (100% M)  
       30' total fluid  
 FP: 90 - 86# / 84 - 87#  
 SIP: 985 - 796#  
 HP: 1,969 - 1,902#  
 BHT: 120 degrees F  
 COMMENT: shut-in curves indicate poor permeability

#### DRILL STEM TEST #2

3,954 - 4,012      30 - 45 - 30 - 30      LKC H & I zones  
 COMMENT: tool slid 8'  
 IFP: weak blow built to 4.5"  
 ISIP: no blowback  
 FFP: no blow: flushed tool (no help)  
 FSIP: no blowback  
 REC: 45' DM (100% M)  
       45' total fluid  
 FP: 123 - 99# / 114 - 98#  
 SIP: 1,077 - 846#  
 HP: 2,050 - 1,969#  
 BHT: 121 degrees F  
 COMMENT: shut-in curves indicate poor permeability

#### DRILL STEM TEST #3

4,019 - 4,095      30 - 45 - 30 - 30      LKC J - K - L zones  
 IFP: very weak surface blow built to 0.25"  
 ISIP: no blowback  
 FFP: no blow; flushed tool (no help)  
 FSIP: no blowback  
 REC: 10' DM (100% M)  
       10' total fluid

10' total fluid

FP: 111 - 104# / 108 - 99#

SIP: 1,032 - 747#

HP: 2,117 - 2,020#

BHT: 120 degrees F

COMMENT: shut-in curves indicate very poor permeability

DRILL STEM TEST #4

4,204 - 4,285

30 - 45 - 30 - 30

PAWNEE and MYRICK STATION

IFP: weak blow built to 0.75"

ISIP: no blowback

FFP: no blow; flushed tool (no help)

ISIP: no blowback

REC: 15' DM (100% M)

15' total fluid

FP: 127 - 107# / 110 - 107#

SIP: 123 - 108#

HP: 2,246 - 2,119#

BHT: 121 degrees F

COMMENT: shut-in curves indicate no permeability

DRILL STEM TEST #5

4,275 - 4,354

30 - 45 - 30 - 30

FORT SCOTT and upper CHEROKEE LIMES

IFP: weak blow built to 0.25"

ISIP: no blowback

FFP: no blow; flushed tool (no help)

FSIP: no blowback

REC : 3' DM (100% M)

3' total fluid

FP: 119 - 102# / 103 - 100#

SIP: 112 - 99#

HP: 2,275 - 2,063#

BHT: 124 degrees F

COMMENT: shut-in curves indicate no permeability

MUD RECORD


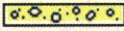



displace @ 3,283

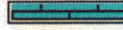

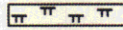

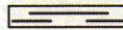
RPT	DEPTH	WT	VIS	FIL	pH	PV	YP	GELS	CHLOR	SOLIDS	BTMS UP
3	3,310	8.6	72	8.0	11.0	24	20	18/34	400	2.0%	32 min
4	3,876	8.9	53	7.6	10.0	21	13	18/34	800	4.3%	37 min
5	3,973	9.2	50	8.8	8.5	19	11	16/32	1,500	6.3%	38 min
6	4,040	9.3	59	8.0	9.0	20	14	18/39	2,000	6.8%	38 min
7	4,194	9.3	76	8.8	9.0	24	18	21/38	1,500	7.2%	39 min
8	4,285	9.3	60	8.8	9.0	22	14	20/39	1,500	7.2%	40 min
9	4,354	9.4	59	8.8	9.0	22	14	20/39	1,500	7.4%	41 min

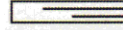
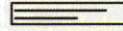





### ROCK TYPES




-  Anhy
-  Bent
-  Brec
-  Cht
-  Clyst



-  Coal
-  Congl
-  Dol
-  Gyp
-  Igne

-  Lmst
-  Meta
-  Mrlst
-  Salt
-  Shale




-  Shcol
-  Shgy
-  Sltst
-  Ss
-  Till

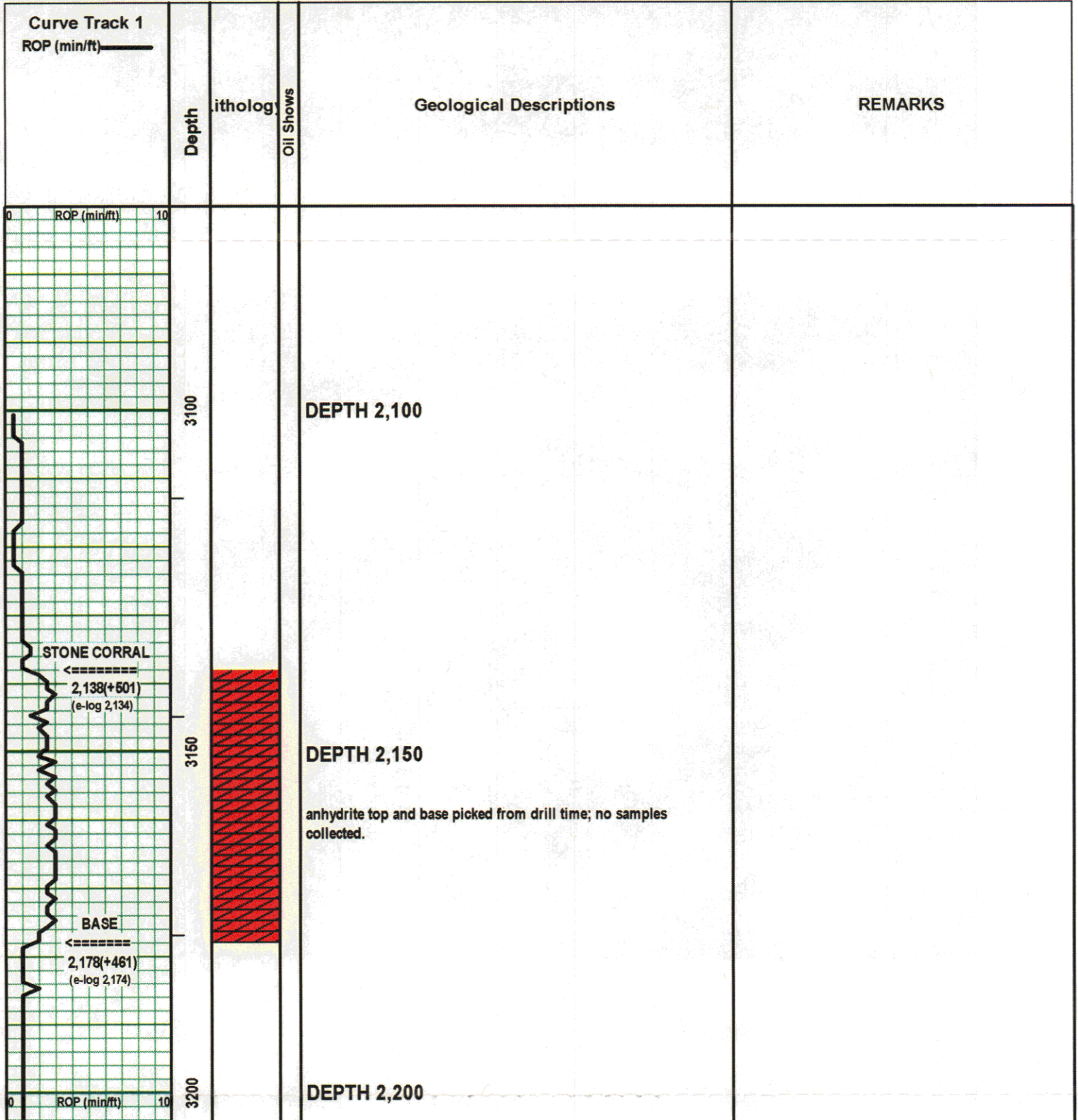
### OTHER SYMBOLS

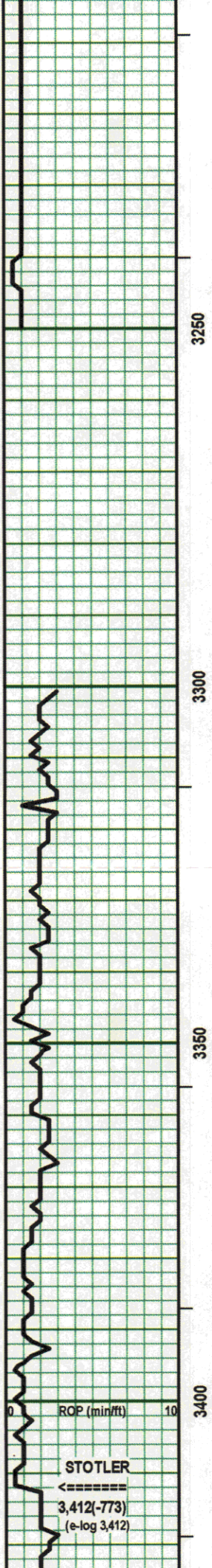
- #### OIL SHOW
-  Even
  -  Spotted
  -  Ques

-  Dead
-  Gas

- #### INTERVAL
-  Core
  -  Dst

- #### EVENT
-  Conn
  -  Rft
  -  Sidewall





3250

DEPTH 2,250

examine samples wet for color, shows & description; dry for porosity & dry stain. descriptions are lagged up to true depth using mud engineer's calculation for bottoms up.

3300

drilling with 17 drill collars (516')

3350

"cal floodd" is synonymous with "lithographic" or "dense." this is pervasive replacement by calcite.

"cal overgrths" includes calcite crusts (calcite analogue to tripolitic chert), druzy calcite, calcite veinlets and local recrystallization of larger fossils or clasts.

"rextlzd" = recrystallized.

"sil" = siliceous: introduction of moderate to abundant silica - original color and texture preserved.

"cht" describes very heavy silicification - original color and texture altered.

3400

displace @ 3,283

ROP (min/ft) 10

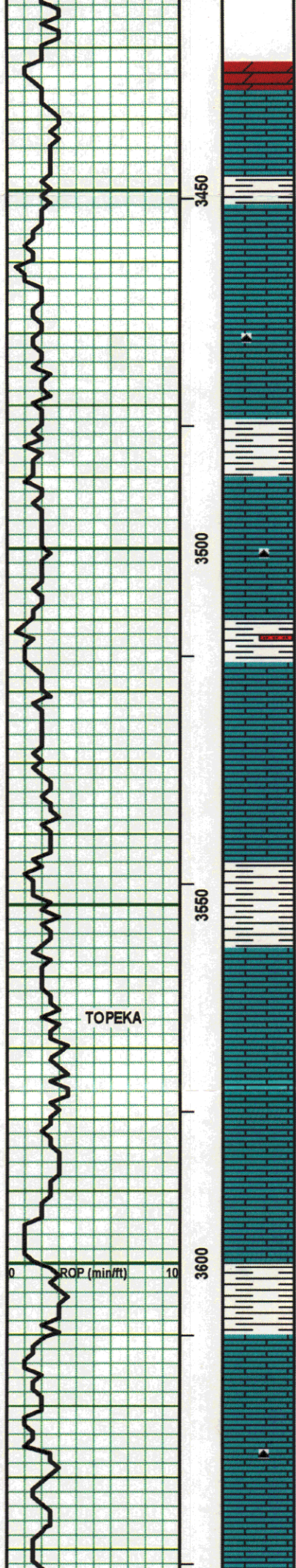
STOTLER

3,412(-773)

(e-log 3,412)

Stotler top picked from drill time: no samples collected.





DOL: off wht, vfgr xtn, sl sucr. v poor por. NS

LS: tan, microxtln, fossl, sl rextlzd, loc off wht & chalky. poor por. NS

SH: grn, gry & blk, argil, pyr, loc sdy, tr plant fragments.

LS: lt gry, microxtln, rextlzd, fossl, pelletal. poor por. tr minute brn stns (no odor), NSO

LS: crypt-microxtln, sl rextlzd, chalky (loc mushy). poor vis por. NS

LS: off wht to crm, microxtln, sl cal floodd, loc fossl, rare cht (wht, cryptxtln). v poor por. NS

LS: gry, microxtln, sl earthy, fossl (forams, bivalves, spines). v poor por. tr minute brn stns (no odor), NSO

SH: gry to grn, silty, argil, calc, sl fossl.

LS: off wht to crm, micro-vfgr xtn, loc cal floodd, fossl, loc sil. v poor por. NS

LS: gry, microxtln, wkly cal floodd, pelletal, fossl (forams & fusulinids). v poor por. NS

SH: grn, gry & red-brn, argil, gry stst stringers, earthy hematite.

LS: gry to brn, microxtln, wkly cal floodd, fossl, rare cht (crm, cryptxtln, fossl). v poor por. tr brn stns (no odor, no cut), NSO

LS: gry, microxtln, wkly cal floodd, cal crusts, fossl (forams & phylloid algae), loc earthy, v poor por. NS

SH: gry to blk, grn & red-brn, argil, loc v silty.

LS: off wht, microxtln, cal floodd, fossl (forams), loc chalky, rare glauc. v poor por. rare minute brn flecks (no odor, no cut), NSO

LS: crm, tan & lt gry, micro-vfgr xtn, cal floodd, loc chalky, fossl. v poor por. NS

LS: gry to brn, microxtln, cal floodd, minor cal crusts. no vis por. rare brn stns (no odor, no cut), NSO

LS: off wht to tan, microxtln, chalky, fossl. poor vis por. NS

SH: gry & grn > red-brn, argil, silty, tr py.

LS: crm to wht, microxtln, v chalky (loc mushy), abt forams, minor spines. poor vis por. NS

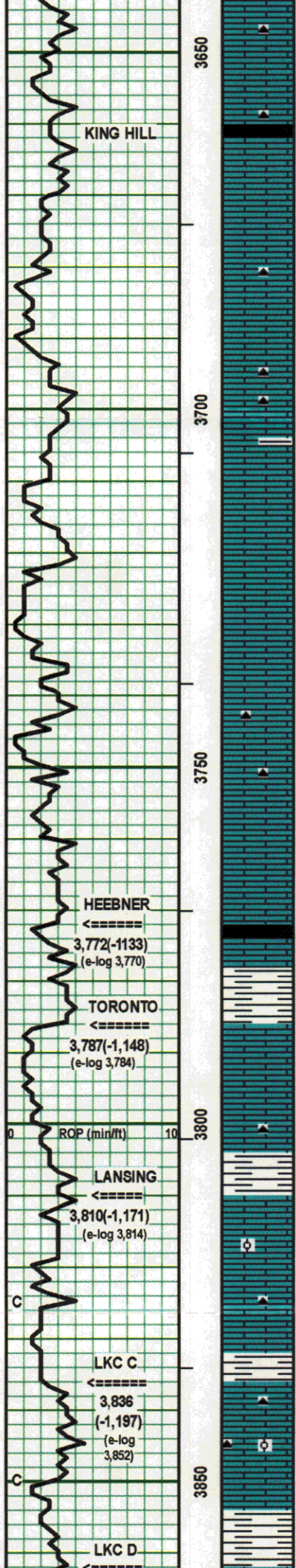
LS: crm & pale gry, microxtln, cal floodd, loc chalky, fossl, loc silcfd to cht (crm & orange, cryptxtln). poor por. NS

LS: crm & lt gry, microxtln, cal floodd, relict fossls, cal overarths

TOPEKA

ROP (min/ft)





LS: crm & lt gry, microxtln, cal floodd, relict fossls, cal overgrths, loc sil. no vis por. rare brn stns (no odor, no cut), NSO

LS: off wht to tan, micro-vfgr xtln, rextlzd, chalky, fossl, loc silcfd to cht (tan). poor vis por. NS

SH: dk gry, carb, earthy, cal incusions.

LS: crm, tan & lt gry, micro-vfgr xtln, rextlzd, chalky, relict fossls. poor vis por. NS

LS: crm, tan, brn & pale gry, micro-vfgr xtln, variably rextlzd and cal floodd, loc chalky. poor por. NS

abt sh cavings.

LS: crm, gry & brn, micro-vfgr xtln, rextlzd, chalky, loc silcfd to cht (brn, microxtln). poor vis por. NS

abt sh cavings.

vis 53 wt 9.3

LS crm to tan, microxtln, cal floodd, relict fossls, loc silcfd to cht (tan, cryptxtln). no vis por. NS

abt sh cavings.

LS: off wht to pale gry, microxtln, rextlzd, chalky, loc cal floodd, sh stringers (gry & blk, rarely carb). poor por. NS

LS: pale gry, microxtln, cal floodd, minor mgr cal overgrths. no vis por. NS

LS: crm & lt gry, microxtln, wkly cal floodd, widely chalky, relict forams, cal overgrths. no/poor vis por. NS

LS: crm, micro-vfgr xtln, rextlzd, chalky, relict forams. poor vis por. NS

abt sh cavings; tight connections.

LS: pale gry, microxtln, wkly cal floodd, blk & gry microxtln specular hematite. v poor por. NS

LS: crm to pale gry, microxtln, cal floodd, relict fossls, loc silcfd to cht (pale gry & wht, crypt-vfgr xtln, spicules). no vis por. NS

LS: crm to pale gry, micro-vfgr xtln, cal floodd, cal vnlt & overgrths, loc chalky, loc silcfd to cht (brn & wht, cryptxtln). poor por. NS

finely ground sample w/ drill steel shavings.

LS: pale gry & tan, microxtln, cal floodd, relict fossls. no vis por. NS

vis 55+ wt 9.3

work on pump.

SH: blk, carb, micac, cal inclusions.

LS: gry-brn, microxtln, cal floodd, cal crusts. no intxtln por, v poor ppt por. NS

SH: grn, gry & maroon, argil, loc silty, earthy hematite.

LS: wht, cryptxtln, v chalky (mushy), relict bivalves. poor vis por. NS

LS: crm, microxtln, wkly cal floodd, loc silcfd to cht (wht, cryptxtln, fossl). no vis por. NS

SH: dove gry, maroon & grn, argil, earthy hematite.

LS: crm, microxtln, cal floodd, loc ool, loc silcfd to cht (tan, cryptxtln, fossl). poor-fair intool por. rare brn stns (no odor), NSO

LS: wht, cryptxtln, v chalky (mushy), relict bivalves, loc silcfd to cht (wht, microxtln, fossl). no / poor vis por. NS

LS: wht, crypt-micro xtln, v chalky (mushy), relict bivalves. poor vis por. VSSG on brk (no odor), NSO

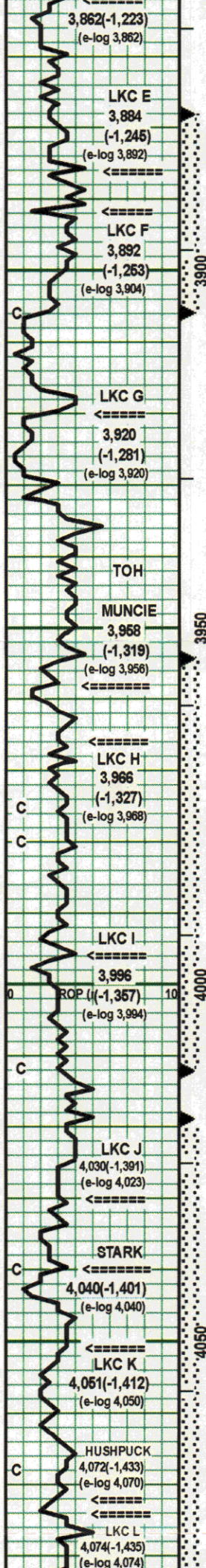
SH: red-brn > grn, micac, abt earthy hematite.

LS: crm & gry-brn, micro-vfgr xtln, cal floodd, cal over-grths, rare bivalves, loc silcfd (crm & orange, cryptxtln). no vis por. rare brn stns (no odor), NSO  
siliceous & oolitic.

LS: crm to wht, crypt-micro xtln, rextlzd, v chalky. poor vis por. NS

SH: red-brn & grn, silty, earthy hematite, minor cal inclusions.





LS: wht to crm, crypt-microxtln, rextlzd, v chalky. poor vis por. NS

LS: off wht to pale gry, microxtln, cal floodd, cal crusts & overgrths, relict fossls. loc fair intxtln & ppt por. rare brn stns (no odor, no cut), NS

SH: gry, grn & red-brn, argil, silty, earthy hematite.  
LS: pale gry, microxtln, cal floodd, cal crusts & overgrths, rarely sil. v poor por. NS

SH: gry, grn & red-brn.  
LS: lt gry & lt brn, microxtln, cal floodd, cal crusts & over-grths, loc silofd to cht (lt brn, cryptxtln). v poor por. NS

LS: lt gry, vfgr-fgr xtn, druzi cal, cal crusts & overgrths, tr py. poor vis por. fair SO (tiny dk brn drplts, fair flash cut, no odor, patchy to satd dk brn dry stn)

LS: wht, crypt-microxtln, rextlzd, v chalky (often mushy), loc pyr. poor vis por. 1 show pc looks like secondary cal tested above. no stn, no odor, NS

SH: grn & red-brn.  
LS: wht, crypt-microxtln, rextlzd, v chalky. poor vis por. no stn, no odor, NS. cal overgrths @ 3,930 w/ 2 pcs SSO (wk cut, no odor); poss cavings fm LKC F.

LS: pale gry, microxtln, hvly cal floodd, wk cal crusts, minor py & hematite. no vis por. NS

LS: pale gry to gry, microxtln, hvly cal floodd, minor cal crusts & druzi cal, rare vfgr py. no vis por. NS

LS: pale gry to gry, microxtln, hvly cal floodd, minor cal crusts, minor py, chalky @ base of unit. no vis por. NS

SH: blk, carb, micae, cal inclusions.  
LS: brn, microxtln, hvly cal floodd, cal crusts. no vis por. minor brn stns (no odor), NSO

SH: gry, grn & red-brn, silty, earthy hematite.  
LS: gry & brn, microxtln, cal floodd, loc rextlzd & chalky, cal crusts, minor secondary cal, loc cht (tan & gry, cryptxtln). no/poor vis por. minor brn stns (1 pc fair cut), no odor.

LS: pale to lt gry, microxtln, cal floodd, pelletal, loc rextlzd & chalky w/ cal overgrths. no/poor vis por. no odor, NS

LS: lt gry to gry & off wht, microxtln, cal floodd, cal crusts & overgrths, druzi cal, chalky partings, minor py. no vis por. no odor, NS

SH: gry, argil, sl micae. stringer of SS (gry, vfgr-fgr, friable, calc, NS)  
DOL: crm to tan, vfgr, suc, druzi dol. v poor intxtln por, some vug/ppt por. fair SO (brn, wk flash cut, no odor, FO in tray, patchy to satd brn dry stn)

LS: crm, microxtln, cal floodd, relict fossls. no vis por. no odor, NS  
LS: crm to pale gry, microxtln, cal floodd, cal crusts, loc silofd to cht (crm, orange & wht, cryptxtln, relict fossls, blk & brn hematite). no vis por. NS

LS: brn-gry, microxtln, cal floodd, cal crusts, loc silofd to cht (orange, cryptxtln, relict fossls). no vis por. 1 pc w/ minute blk flecks (questionable cut, no odor), NSO

SH: gry, argil, micae, minor py, cal inclusions.  
LS: off wht to tan, microxtln, cal floodd, loc cht (wht, cryptxtln, relict fossls). no intxtln por, rare vugs. 2 pcs w/ VSSO (v wk cut, no odor, patchy brn dry stn)

LS: wht, v chalky. poor vis por. NS  
LS: lt gry to tan, microxtln, cal floodd, cal crusts, druzi cal, loc cht (gry, pyr). poor por, minor vugs. SSO (wk cut, wk odor, patchy brn dry stn).

SH: blk, carb, micae, cal inclusions + gry grn & maroon, argil.  
LS: dk brn-gry, microxtln, hvly cal floodd, cal crusts, forams. NVP NS

LS: tan, micro-vfgr xtn, rextlzd, loc chalky, loc cal floodd, cal crusts, druzi cal, abt relict fossls. poor intxtln por, minor vug/ppt por. SSO (brn, wk-fair odor, wk-fair cut, patchy to satd lt brn dry stn)

LS: gry, microxtln, cal floodd, pelletal, loc cht (gry, cryptxtln, fossil). no vis por. NS

SH: blk, carb, micae.  
LS: dk brn, microxtln, hvly cal floodd, ool, cal crusts, loc cht (smoky, cryptxtln). no vis por. NS

SH: gry, grn & maroon, argil, earthy hematite.

25 stand short trip before test. pulled tight on TOH, cleaned hole & CTCH again.

DST #1  
3,878 - 3,906  
REC 30' DM  
SIP 985 - 796#  
details above

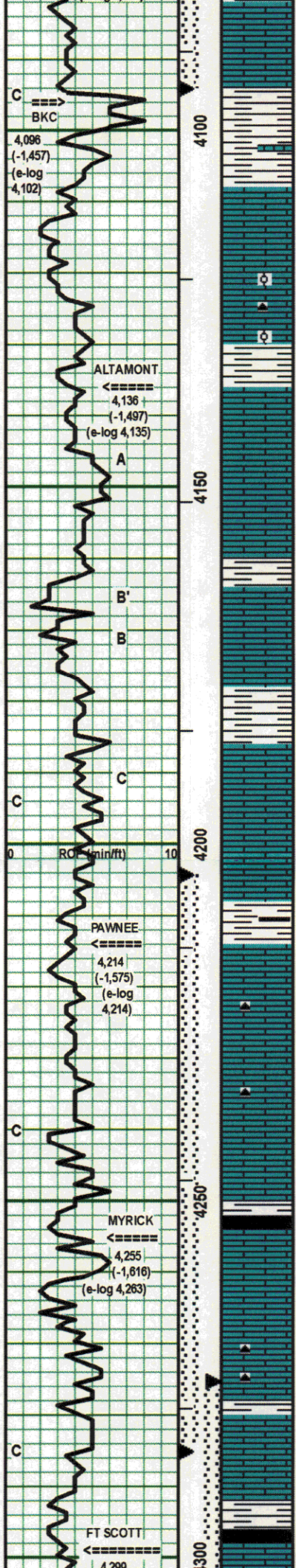
strap @ 3,906  
strap 3,929.98  
board 3,929.81  
strap long 0.17'

TOH @ 3,942 to count stands due to suspected problem with TIH after DST. count agreed w/ board: drill breaks are real.

DST #2  
3,954 - 4,012  
REC 45' DM  
SIP 1,077 - 846#  
details above

DST #3  
4,019 - 4,095  
REC 10' DM  
SIP 1,032 - 747#  
details above





LS: crm to tan, micro-vfgr xtl, cal floodd, cal crusts, relict forams. 1 show pc is caving fm LKC K. no odor, NS

LS: gry, microxtln, cal floodd, cal crusts, crinoids, loc sl rextlzd. no vis por. 1 show pc in 60 min spl believed to be caving. NSO

SH: gry, grn & maroon, argil (often mushy), silty, pyr, loc sdy, plant fragments, earthy hematite.

stringer(s) of LS: maroon & off wht, microxtln, hematitic. no vis por. NS

LS: lt gry, micro-vfgr xtl, cal floodd, sandd, loc chalky, abt specular hematite inclusions & vnits, cal crusts & druzy cal. poor vis por. NS

LS: crm to tan & brn, microxtln, cal floodd, loc chalky, loc abt forams (?ool?), druzy cal & cal inclusions. no / poor vis por. NS

SH: grn, gry & maroon, argil (often mushy), silty, pyr, rock pebbles.

LS: brn, microxtln, cal floodd, cal crusts, minor relict fossis, chalky partings. no / poor vis por. NS

LS: gry & brn, microxtln, cal floodd, cal crusts & overgrths, abt earthy hematite vnits. no vis por. NS

LS: gry > brn, microxtln, cal floodd, cal crusts, chalky partings, minor earthy hematite, tr py, tr limonite stn. no / poor vis por. NS

SH: gry, v argil (mushy) & red-brn, earthy hematite.

LS: gry, wht & maroon, crypt-microxtln, v chalky, loc cal floodd, abt earthy hematite. poor vis por. NS

LS: gry & brn, microxtln, cal floodd, cal crusts, druzy cal, abt earthy hematite vnits & patches, chalky partings. no/poor vis por. NS

SH: red-brn & grn, argil (mushy), abt earthy hematite, loc sdy.

LS: crm to tan & gry, microxtln, cal floodd, loc chalky, cal crusts, abt earthy hematite. no/poor vis por. NS

LS: gry & crm, microxtln, cal floodd, cal crusts. NVP. 1 pc w/ poss vvwk cut (no odor), NSO

LS: crm, tan and gry, microxtln, cal floodd, cal crusts & overgrths, tr cht (wht & brn, cryptxtln), tr amts of hmt, py & limonite. no vis por. NS

LS: crm, brn & gry, microxtln, cal floodd, cal crusts, chalky partings. no / poor vis por. NS

SH: gry, grn & red-brn, argil, silty, loc blk, carb, micac.

LS: crm, microxtln, cal floodd. secondary cal. poor intxtln, fair vug por. VSSO (minute blk & brn flecks, no odor, good cut, patchy brn dry stn, 3 - 4 show pcs)

LS: gry-brn, microxtln, cal floodd, minor cal crusts, loc silcfd to cht (smoky, wht & orange, cryptxtln). NVP NS

LS: gry-brn, microxtln, cal floodd, tr py, loc silcfd to cht (smoky, crypt-microxtln). no vis por NS

LS: gry-brn & off wht, microxtln, cal floodd, minor cal crusts. no vis por. NS

LS: off wht, microxtln, chalky sandd (vfgr), poor vis por. NS

LS: off wht & gry-brn, microxtln, cal floodd. poor por. 1 show pc (prob caving) ?NSO?

flood of shales: all colors & textures.

SH: blk, carb, micac.

LS: dk brn, microxtln, hvly cal floodd, cal crusts & overgrths, relict fossis. no vis por. NS

LS: crm, microxtln, rextlzd, chalky, secondary cal. poor vis por. 2 pcs w/ SSO (brn, fnt odor, fair cut, patchy to satd brn dry stn)

LS: crm, microxtln, cal floodd, cal overgrths, loc cht (wht & brn, cryptxtln, fossil). no vis por. NS

LS: crm & gry, microxtln, cal floodd, loc cht (smoky & brn, cryptxtln, relict fossis). no vis por. NS

SH: gry & blk, argil, carb, micac.

LS: crm, gry & off wht, microxtln, cal floodd. no vis por. NS

flood of shales

LS: off wht & gry, microxtln, cal floodd, minor secondary cal, minor hematite. no vis por. NS flood of shales.

SH: variegated. flood of shales in spl (mostly blk sh).

SH: blk, carb, micac, nodules.

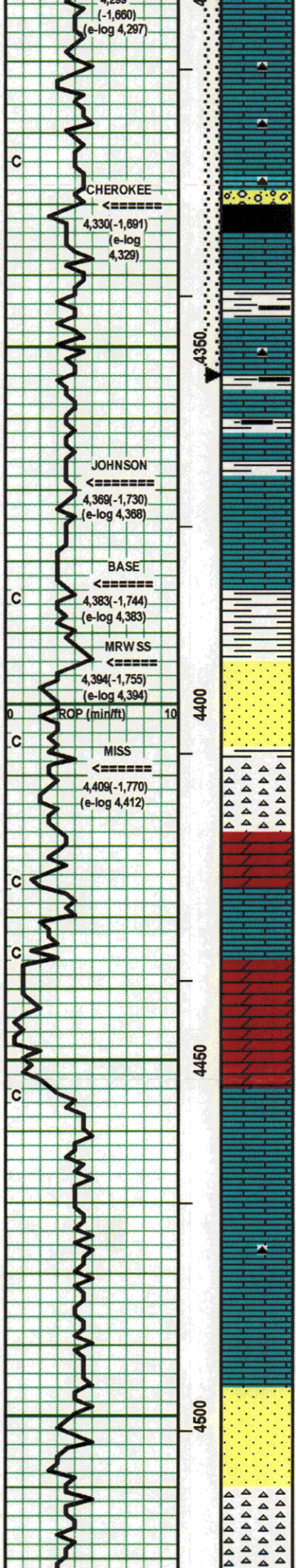
LS: brn & tan, microxtln, cal floodd, cal crusts, druzy cal. tr py, loc

lost packer on TOH -prob drlg rubber for a few feet.

DST #  
4,204 - 4,285  
REC 16' DM  
SIP 123 - 108#  
details above

10 stand short trip before DST #4





silcfd to cht (brn & tan, cryptxtln, bryozoans). no intxtln por, loc wk vug por. 1 pc VSSO ( minute brn drppts, fnt odor, wk cut, patchy lt brn dry stn)

LS: brn, microxtln, cal floodd, cal crusts, druzi cal, loc chalky. no / poor vis por. 4 wk show pcs a/a (?cavings?), NSO

LS: tan to gry, microxtln, cal floodd, loc chalky, loc cht (gry & brn, cryptxtln, fossi, hematitic). no / poor vis por. NS

LS: lt brn, microxtln, cal floodd, cal crusts, druzi cal, loc silcfd to cht (brn, cryptxtln). no vis por. NS

**CONG: grn & gry, shaley, abt rock pebbles.**

**SH: blk, carb, micac, cal inclusions (wht & pink).**

LS: gry & tan, microxtln, cal floodd, druzi cal, cal crusts, tr glauc. no intxtln por, loc fair vug por. 2-3 pcs VSSO (minute brn drppts, wk cut, poss fnt odor, patchy lt brn dry stns).

SH: gry, grn & red-brn, argil, pyr, loc carb, loc micac, earthy hmt.

LS: lt brn & lt gry, microxtln, cal floodd, cal crusts, druzi cal, loc fossi, loc cht (brn & gry, cryptxtln). no vis por. 1 pc w/ poss wk brn dry stn, no odor, NSO

SH: gry, grn & red-brn, argil, loc silty & micac, tr py, earthy hmt. loc blk & carb.

LS: wht to off wht, microxtln, cal floodd, wk cal crusts. NVP. NS

SH: gry, blk, grn & red-brn, loc carb.

LS: off wht to lt gry, microxtln, cal floodd, minor cal crusts, tr blk hematite. no vis por. NS

**LS: off wht, gry & lt brn, microxtln, cal floodd, wk cal crusts, chalky partings, minor druzi cal. no / poor vis por. tr minute brn stns (no odor, no cut), NSO**

**LS: crm to wht, microxtln, cal floodd, minor cal crusts, chalky partings (relict bivalves). no / poor vis por. minor minute brn stns (no odor, no cut, no dry stn), NSO**

**SH: red-brn, maroon, yel, gry & grn, v silty, loc v argil (mushy), earthy & specular hematite, rock pebbles, minor limonite stn.**

**SS: wht, vfgr gran, rndd, clay matrix, sl friable, loc sil cmt (sl quartzitic), minor earthy hematite & limonite, tr hvy mineral grns, 1 bivalve cast. v poor por. no odor, NS**

**poorer sort (vfgr-fgr-mgr) & glauc @ base of unit.**

SH: gry, grn, red-brn, maroon & yel, argil, rock pebbles, abt earthy & specular hmt.

**CHT: crm & pale yel, microxtln, loc fossi, original texture preserved, loc clr w/ druzi qtz. no vis por, no odor, NS**

**DOL: dk tan, micro-vfgr xtln, suor, druzi dol, fgr-mgr rhombs. good vug por, no odor, no cut, NS**

LS: crm to tan, microxtln, cal floodd, loc chalky, mgr grains. no / poor vis por. rare brn stns, (no odor, no cut), NSO

LS: crm to tan, microxtln, chalky, loc cal floodd, mgr grains, loc dol. no / poor vis por. no odor, NS

**DOL: brn, vfgr xtln, suor, mgr rhombs, loc fgr-cgr clr druzi qtz, bryozoan & crinoid casts, bright yel min fluor, loc pyr. good to excellent vug por. poss stringer(s) of SS (wht, vfgr, rndd, no por, NS). no stns, no odor, no cut, no dry stn, NS**

LS: crm, microxtln, wkly cal floodd, grainstn (fossis & clasts), loc chalky, minor druzi cal. poor vis por. rare brn stns (no odor, no cut), NS

LS: wht & blk, micro-fgr xtln, cal floodd + rextlzd + chalky pelletal, grainstn txt, relict fossis (incl bivalves), loc pyr. no/poor por. NS

LS: wht & blk, micro-fgr xtln, cal floodd + rextlzd + chalky grainstn (fossis, pellets & rock clasts), bivalve casts, loc silcfd to cht (wht & blk, cryptxtln, v fossi). v poor vis por. rare blk stns (no odor, no cut), NSO

LS: crm to peach, microxtln, cal floodd, abt relict fossis, minor glauc. no vis por. NS

LS: wht & blk, microxtln, rextlzd, loc chalky, loc earthy, abt relict fossis (forams, bivalve casts). v poor vis por. NS

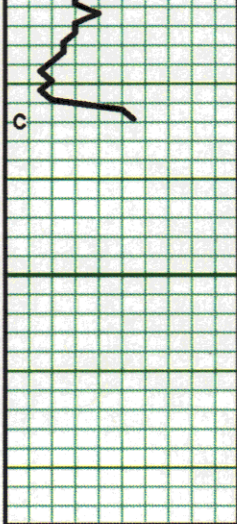
**SS: gry, vfgr gran, sbrndd, sil cmt, 1% hvy mins. v poor por. NS**

**SS: gry, vfgr gran, rndd, cal cmt, sil vnits. v poor por. NS**

**CHT: lt blue to wht, crypt-vfgr xtln, partly silcfd SS a/a, partly silcfd spicular & fossi ls. no vis por. minor brn stns (no odor, no cut, ?hematite?), NSO**

DST #5  
4,275 - 4,364  
REC 3' DM  
SIP 112 - 99#  
details above





4550



CHT a/a: tripolitic crusts, bndd cht, py, wht sil vnlt. NS

increase tripolitic cht @ drill brk; prob fractured. NS

flood of blk carb sh in spl presumed to be cavings.

**RTD 4,534**

**LTD 4,535**

vis 40 wt 9.3

15 stand short trip before TOH for logs.