HEADER

WellSight Systems

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

Well Name: #1 NOONAN
Location: sec 24 - twp 17S - rge 35W WICHITA COUNTY
License Number: API #15-203-20,176 Region: KANSAS
Spud Date: 30 MAR 2012 Drilling Completed: 12 APR 2012
Surface Coordinates: 2,250 FSL & 1,020 FWL
60' south & 30' east of NE - NW - SW
Bottom Hole Coordinates: DEVIATION SURVEYS: 0.75 degree @ 254,
0.75 degree @ 4,186, 1 degree @ 5,019
Ground Elevation (ft): 3,174 K.B. Elevation (ft): 3,184
Logged Interval (ft): 3,500 To: 5,019 Total Depth (ft): 5,019
Formation: COUNCIL GROVE to MISSISSIPPIAN
Type of Drilling Fluid: CHEMICAL - displace @ 3,405

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: Val Drilling, rig #7
(Jimmy Shultz, toolpusher)
MUD: Mud-Co (Tony Maestas)
DRILL STEM TESTS: Trilobite Testing
(Chuck Kreutzer (#1 - #5), Jace McKinney (#6 - #8))
ELECTRIC LOGS: Superior Well Services (Mitch Rupp)
DIL, CDL/CNL
SURFACE CASING: 8.625" @ 240
hole plugged and abandoned on 13 APR 2012

DRILL STEM TEST #1

4,097 - 4,186 30 - 45 - 30 - 45 LKC C - D - E zones
IFP: weak blow built to 0.5" / 25 min
ISIP: no blowback
FFP: no blow
FSIP: no blowback
REC: 30' DM (100% M)
total fluids 30'
FP: 50 - 59# / 61 - 69#
SIP: 1,143 - 1,125#
HP: 2,142 - 2,136#
BHT: 108 degrees F
COMMENT: shut in curves indicate fair permeability

DRILL STEM TEST #2

++++++++++++INVALID TEST++++++++++++++++++++++++++++
4,260 - 4,324 30 - 30 - 30 - 30 LKC H & I zones
IFP: weak surface blow died / 2 min
ISIP: no blowback
FFP: no blow - flushed tool; no help
FSIP: no blowback. turned tool five times, tool backlashed and turned five more times.
REC: 7' DM (100% M)
7' total fluids
FP: 1,106 - 1,279# / 1,749 - 1,493#
SIP: 1,253 - 1,954#
HP: 2,192 - 2,058#
BHT: 107 degrees F
COMMENT: tool likely was out of rotation at first open.

DRILL STEM TEST #3

4,259 - 4,355 30 - 45 - 45 - 60 LKC H - I - J zones
IFP: fair blow built to BOB / 14 min
ISIP: no blowback
FFP: fair blow built to BOB / 16 min
FSIP: no blowback
REC: 310' DM (100% M)
372' WCM (10% W, 90% M)
372' WCM (20% W, 80%M)
1,054' total fluids
Rw: 0.59 ohms @ 60 degrees F
CHLORIDES: 10,000 ppm recovery (5,000 ppm system)
FP: 34 - 151# / 154 - 285#
SIP: 1,193 - 1,193#
HP: 2,315 - 2,088#
BHT: 112 degrees F
COMMENT: shut-in curves indicate excellent permeability
COMMENT: test mostly represents oolicastic zone in LKC J

DRILL STEM TEST #4

4,369 - 4,435 30 - 30 - 30 - 30 LKC K and L zones
IFP: weak 0.25" blow died / 6 min
ISIP: no blowback
FFP: no blow. flushed tool; no help
FSIP: no blowback
REC: 10' DM (100% M)
10' total fluid
FP: 17 - 19# / 20 - 20#
SIP: 581 - 632#
HP: 2,184 - 2,204#
BHT: 108 degrees F
COMMENT: shut-in curves suggest very poor permeability

DRILL STEM TEST #5

4,457 - 4,532 30 - 30 - 30 - 30
PLEASANTON - MARMATON (LENAPAH) - ALTAMONT
IFP: weak surface blow. drill string backlashed slightly on opening.
ISIP: no blowback
FFP: weak surface blow, did not die.
FSIP: no blowback
REC: 30' DM with oil specs (100% M)
30' total fluid
FP: 21 - 42# / 44 - 62#
SIP: 1,175 - 1,160#
HP: 2,332 - 2,080#
BHT: 110 degrees F
COMMENT: shut-in curves indicate fair to good permeability

DRILL STEM TEST #6

4,536 - 4,565 30 - 45 - 30 - 45
lwr ALTAMONT & ALTAMONT B1 zone
IFP: surface blow built to 0.25"
ISIP: no blowback
FFP: weak surface blow
FSIP: no blowback
REC: 10' DM with few oil spots (100% M)
10' total fluid
FP: 16 - 17# / 18 - 18#
SIP: 700 - 616#
HP: 2,200 - 2,143#
BHT: 106 degrees F
COMMENT: shut-in curves indicate poor permeability

DRILL STEM TEST #7

4,569 - 4,588 30 - 30 - 30 - 30 ALTAMONT C zone
IFP: weak surface blow died / 15 min
ISIP: no blowback
FFP: no blow. flushed tool / 5 min; no help.
FSIP: no blowback
REC: 30' DM (100% M)
30' total fluids
FP: 23 - 26# / 26 - 29#
SIP: 60 - 55#
HP: 2,249 - 2,206#
BHT: 107 degrees F
COMMENT: shut-in curves indicate no permeability.

DRILL STEM TEST #8

4,592 - 4,650 30 - 45 - 30 - 30
PAWNEE - MYRICK STATION - FORT SCOTT
IFP: surface blow built to 0.75"
ISIP: no blowback
FFP: very weak surface blow died / 8 min.
flushed tool; no help
FSIP: no blowback
REC: 25' DM w/ oil scum (100% M)
1' FO (100% O)
26' total fluid
COMMENT: gravity measurement not possible
FP: 17 - 19# / 22 - 25#
SIP: 156 - 77#
HP: 2,220 - 2,158#
BHT: 107 degrees F
COMMENT: shut-in curves indicate extremely poor
permeablity

DAILY PENETRATION

DATE	DEPTH		
30 MAR 2012			SPUD
31 MAR	254	0700 hours	WOC
01 APR	1,787	" "	
02 APR	3,155	" "	
03 APR	3,735	" "	
04 APR	4,144	" "	
05 APR	4,186	" "	DST #1
06 APR	4,324	" "	DST #2
07 APR	4,356	" "	
08 APR	4,493	" "	
09 APR	4,565	" "	DST #6
10 APR	4,588	" "	DST #7
11 APR	4,696	" "	
12 APR	4,962	" "	TD @ 5,019

MUD RDEPORT

mud up @ 3,405

CHK	DEPTH	WT	VIS	FIL	pH	PV	YP	GELS	CHLOR	SOLIDS	BTMS UP
2	1,969	9.4	32	-	7.0	4	8	3/18	80,000	3.1%	17 min
3	3,070	9.5	30	-	7.0	_	-	-	39,000	6.2%	26 min
4	3,791	8.9	45	8.0	10.0	15	17	13/31	3,500	4.1%	33 min
5	4,170	9.1	57	8.0	10.0	17	21	15/42	4,000	5.4%	36 min
6	4,186	9.2	56	9.6	9.0	17	21	15/40	6,500	6.0%	36 min
7	4,342	9.3	50	8.0	10.0	16	19	13/35	5,000	6.9%	_
8	4,387	9.0	47	8.8	9.5	15	17	13/33	6,000	4.6%	37 min
9	4,508	8.9	56	8.0	10.0	17	21	15/41	6,700	3.8%	38 min
10	4,565	9.0	65	8.8	10.0	18	23	15/45	8,000	4.6%	39 min
11	4,625	9.1	70	9.6	9.0	19	24	16/48	9,600	5.8%	39 min
12	4,702	9.1	56	9.6	10.0	17	21	15/41	9,800	4.9%	40 min
13	4,986	9.3	53	9.6	9.5	17	20	14/39	9,600	6.4%	42 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

D Dead
⋏ Gas

INTERVAL
■ Core
⁝ Dst

EVENT
⊟ Conn
▷ Rft
▶ Sidewall

Curve Track 1
ROP (min/ft)

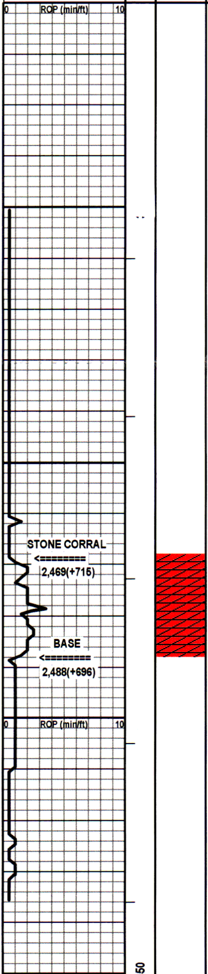
Depth

Lithology

Oil Shows

Geological Descriptions

REMARKS



DEPTH 2,400

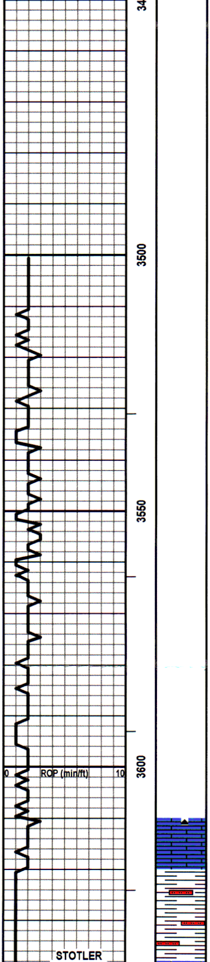
DEPTH 2,450

STONE CORRAL (e-log): 2,466 (+718)

anhydrite top and base picked from drill time; no samples collected.

BASE (e-log): 2,484 (+700)

DEPTH 2,500



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.

drilling with 18 drill collars (555'). no drill collars used in drill string on drill stem tests.

LS: gry, microxtln, loc sl cal floodd, loc pelletal, loc fossl, loc silcfd to cht (off wht, fossl). v poor por. NS

+ wht, microxtln, chalky, loc sl rextlzd. poor vis por. NS

SH: grn & gry, argil, loc intbdd SLTST (grn, silt-vfgr, micac, loc pyr, v poor por, NS)

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

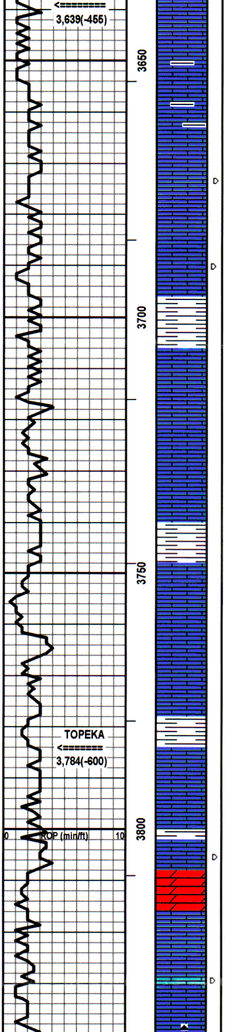
"cal overgrths" includes calcite crusts, druzy calcite, calcite veinlets and local recrystallization of larger fossils or clasts.

"rextlzd" = recrystallized.

displace @ 3,405.

vis 44 wt 8.8 lcm 2#

vis 44 wt 8.9 lcm 2#



LS: lt gry to off wht, microxtln, fossl, pelletal. v poor por. NS

LS: lt tan, microxtln, cal floodd, v fossl, intbdd gry sh (argil). v poor por. NS

STOTLER (e-log): 3,654 (-470)

LS: gry & off wht, microxtln, wkly cal floodd, fossl, loc chalky, intbdd gry & grn SH (argil, micac. v poor vis por. NS

LS: gry, microxtln, loc cal floodd, fossl, scarce blk carb scum (no odor, looks like blk sh). no vis por. NS

LS: off wht, microxtln, chalky, fossl. poor vis por. rare red-brn stns (no odor), NSO

LS: gry, microxtln, cal floodd, fossl, cal overgrths, sl pyr. no vis por. NS

LS: off wht, microxtln, wkly rextlzd, chalky, fossl. v poor vis por. minor red-brn flecks & stns (no odor, no cut), NSO

SH: gry, argil, silty, micac, rare py.

LS: wht to off wht, microxtln, cal floodd, loc chalky, abt forams (?ool?). v poor vis por. NS

LS: off wht & lt gry, microxtln, wkly cal floodd, variably chalky, loc abt forams, minor pellets. poor vis por. NS

LS: wht to off wht, microxtln, cal floodd, chalk partings, relict fossls, loc microxtln py. v poor vis por. NS

SH: gry & grn, argil, loc marly, minor oxidation to red-brn, loc grn, v silty & micac.

LS: off wht, microxtln, chalky, loc cal floodd. poor vis intxtln por, rare wk - fair vug por. NS

LS: gry, micro-vfgr xtln, wkly cal floodd, cal crusts. v poor por. NS

vis 45 wt 8.9 lcm 3#

LS: gry, microxtln, cal floodd, relict fossls, cal crusts. loc off wht & chalky (relict bivalves). no vis por. NS

SH: grn & red-brn, argil, silty, earthy hematite, rare py.

LS: tan & off wht, micro-vfgr xtln, cal floodd, loc relict forams. v poor por. rare small red-brn stns (no odor), NSO

SH: gry, argil, silty, lepidodendrens.

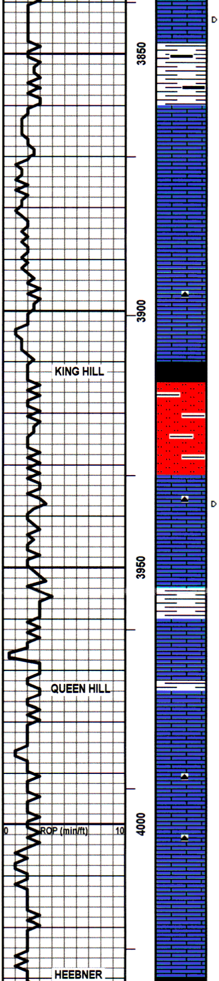
LS: off wht, tan & gry, microxltn, relict fossls (incl fusulinids). poor por. rare blk scum (no odor, no cut), NSO

DOL: crm, vfgr xtln, sucr. no vis por. NS

vis 45 wt 8.9 lcm 2#

LS: off wht to crm, microxtln, cal floodd, chalk partings, relict fossls, rare vfgr py. no intxtln poor, scarce wk vug por. NS

LS: crm, wht, off wht & tan, microxtln, sl rextlzd, chalky (loc mushy), loc cal floodd, relict fossls. poor vis por. scarce minute re-brn flecks & stns (no odor, no cut), VSSG on brk, NSO



LS: tan & gry, microxtln, cal floodd, fossl, loc silcfd to cht (gry & crm, microxtln, fossl). v poor por. scarce minute brn flecks (no odor), NSO

SH: gry, grn & blk, argil, loc carb.

LS: crm & tan, microxtln, rextlzd, chalky, relict fossls (incl bivalves). poor vis por. NS

LS: crm, microxtln, cal floodd, relict fossls. NVP NS

LS: crm, microxtln, rextlzd, chalky (loc mushy), relict forams. overall poor vis por, scarce fair-good ppt por. NS

LS: crm, microxtln, rextlzd, chalky, loc cal floodd, relict fossls. poor vis por. NS

LS: lt gry, tan & crm, microxtln, cal floodd, chalky partings, fossl, loc silcfd to cht (tan, cryptxtln, fossl), rare py. v poor vis por. NS

LS: off wht, microxtln, chalky. poor vis por. minor minute dk brn flecks & stns (no odor, no cut), NSO

vis 50 wt 9.1 lcm 2#

SH: blk, carb, micac, soft, vfgr nodules of ?phosphate?

SLTST: pale grn > red-brn, silt-vfgr, friable, ~2% hvy mins, glauc, earthy hematite, minor py. poor vis por. NS

LS: crm to tan, microxtln, chalky, relict fossls, loc silcfd to cht (crm, microxtln, fusulinids). poor vis por. brn stns (no odor, no cut), VSSG on brk, NSO

LS: crm, microxtln, cal floodd, chalky partings, relict forams & spicules. no / poor vis por. NS

SH: gry, brn & red-brn, argil, loc v micac, loc v silty, cal inclusions.

LS: crm, microxtln, cal floodd. v chalky (mushy) @ drill break. no / poor vis por. NS

SH: gry & red-brn, argil (mushy), earthy hematite. poss loc carb.

LS: crm to tan, microxtln, cal floodd, chalky partings. no/poor vis por. NS

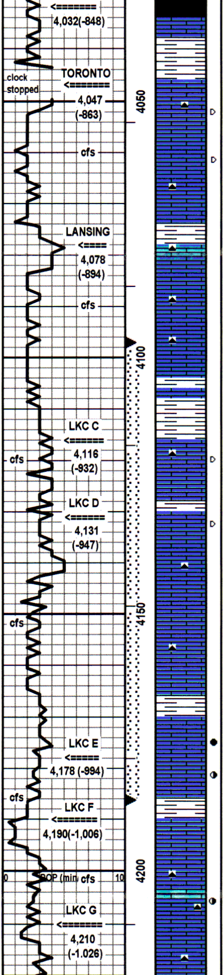
LS: crm to tan, microxtln, cal floodd, loc silcfd to cht (crm, cryptxtln, fossl), rare fusulinids. no vis por. NS

LS: crm to tan, microxtln, cal floodd, chalky partings, loc silcfd to cht (pale gry, cryptxtln, relict fossls (incl spicules)). no/poor vis por. NS

vis 50 wt 9.1 lcm 2#

LS : crm, microxtln, chalky, loc cal floodd. poor vis por. NS

LS: crm to tan, microxtln, chalky, relict fossls. poor vis por. minor brn stns (no odor), NSO



SH: blk, carb, micac, calc. few pcs.

LS: gry-brn, microxtln, hvyly cal floodd. NVP. minor brn stns (no odor), NSO

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

LS: tan to brn, microxtln, rextlzd, sl chalky, relict fossls, loc silcfd to cht (gry & wht, cryptxtln). v poor intxtln por, loc wk ppt por. brn flakes & stns (no odor, no cut), NSO

LS: tan to lt brn, microxtln, cal floodd, v chalky @ 4,069. v poor por. minor brn stns (no odor), NSO

LS: crm, microxtln, cal floodd, loc silcfd to cht (crm & wht, crypt-microxtln). no vis por. NS

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

LS: crm, microxtln, cal floodd, chalk partings, loc silcfd to cht (crm & wht, crypt-microxtln, loc fossl). NVP. NS

LS: crm, microxtln, chalky. poor vis por. scarce brn stn (no odor, no cut), NSO

LS: gry, microxtln, cal floodd, pyr, loc cht. NVP. NS

LS: wht to crm, microxtln, rextlzd, chalky, loc silcfd to cht (wht, microxtln). no / poor vis por. NS

SH: grn & red-brn, argil, earthy hematite. intbdd LS: wht to crm, microxtln, chalky. poor vis por. NS

LS: crm, brn & gry, microxtln, cal floodd, cal vnlts & overgrths, loc silcfd to cht (brn, cryptxtln). no vis por. minor brn stns (no odor, no cut), NSO

SH: grn & red-brn, argil, py, earthy hematite, loc silty.

LS: wht & crm, microxtln, cal floodd, cal overgrths (mgr - cgr), minor py, relict fusulinids. no / poor vis por. scarce wk brn stns (no odor), NSO

LS: crm, microxtln, cal floodd, cal overgrths (cgr), loc silcfd to cht (tan, cryptxtln + brn, microxtln). NVP. NS

LS: crm, microxtln, rextlzd, chalky (often mushy), loc py (microxtln). poor vis por. NS

LS: crm, microxtln, cal floodd, loc rextlzd & chalky, loc silcfd (tan, brn & smoky, cryptxtln, scarce bndd & botryoidal). v poor vis por. rare wk brn stn (no odor), NSO

SH: grn, gry & red-brn, argil, micac, py, earthy hmt, loc bndd, pebbles.

LS: pale gry, microxtln, cal floodd, cal druse & overgrths (fgr - cgr). no intxtln por. 1 pc w/ GSFO in druzy cal por (dk brn, gassy, poss v fnt odor, strong dk brn dry stn).

LS: crm, microxtln, cal floodd, chalk partings, druzy cal (vfgr-fgr). v poor intxtln por, scarce fair fossl cast & ppt por. scarce dk brn stn (no odor, slow wk cut, fnt lt brn dry stn), NSFO

SH: grn, gry, red-brn & maroon, argil, silty, earthy hmt.

LS: lt gry > lt brn & brn, microxtln, cal floodd, loc pyr, altered to mushy chalk @ drill brk, loc silcfd to cht (smoky gry, cryptxtln, opaq, scarce tripolitic crusts). no / poor vis por. VSSG (no odor), NSO

LS: lt brn, microxtln, cal floodd, minor cal crusts, fossl (incl forams), loc silcfd to cht (brn & gry, cryptxtln). no vis por. 1 pc w/ v wk blk flecks in cal vnlt gave slow wk cut (no odor), NSFO

LS: wht, microxtln, v chalky (mushy), relict fossls, poor vis por. NS

LS: lt gry, microxtln, cal floodd, cal crusts, chalk partings, relict forams, loc silcfd to cht (gry, cryptxtln). no / poor vis por. NS

HEEBNER (e-log): 4,036 (-852)

geolograph clock stopped @ 4,044 - 4,049: drilled 5' in 8 minutes.

TORONTO (e-log): 4,053 (-869)

some Heebner pcs in cfs spls.

LANSING (e-log): 4,082 (-898)

DST #1
4,097 - 4,286
REC 30' DM
SIP 1,143 - 1,125#
details above

LKC C (e-log):
4,125 (-941)

LKC D (e-log): 4,141 (-957)

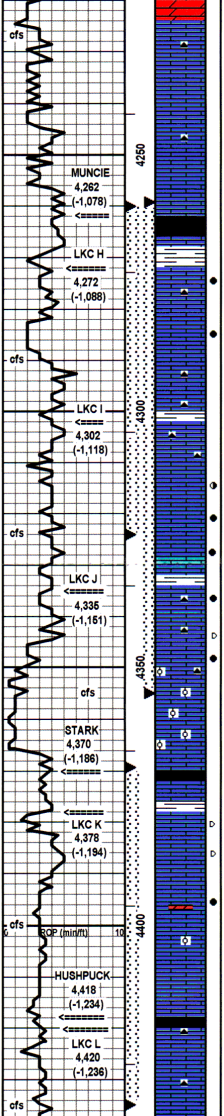
strap @ 4,186
board 4,210.42
strap 4,209.32
board long 1.10'

LKC E (e-log): 4,188 (-1,004)

LKC F (e-log): 4,202 (-1,018)

some sh in spls.

vis 56 wt 9.2 lcm 3#



DOL: tan, vfgr, sucr. poor-fair intxtln por. NS

LS: wht, microxtln, v chalky, loc relict fossls. poor vis por. NS

LS: wht, off wht & pale gry, microxtln, cal floodd, wht chalk partings, loc silcfd to cht (wht, cryptxtln, fusulinids). no/poor vis por. NS

LS: wht, microxtln, rextlzd, v chalky. poor vis por. NS

LS: crm & pale gry, microxtln, cal floodd, cal overgrths, loc silcfd to cht (wht, cryptxtln). no vis por. NS

LS: wht & crm, microxtln, cal floodd, cal overgrths, wht chalk partings. no/poor vis por. NS

LS: lt gry, microxtln, hvyly cal floodd, dns, cal crusts, no vis por. NS

SH: blk, carb, micac, competent, cal inclusions.

LS: gry, microxtln, hvyly cal floodd, dns, cal overgrths. NVP NS

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

LS: lt brn & gry, microxtln, cal floodd, cal crusts, loc fossl, loc silcfd to cht (dk gry & smoky gry). no intxtln por, scarce isolated vugs in crusts (1 lined w/ dk brn FO (no odor, patchy brn dry stn).

LS: crm, micro-vfgr xtln, rextlzd, some cal crusts, scarce py (partially oxidized). poor-fair intxtln por. 1 pc w/ dk brn FO on edge (no odor, strong dk brn dry stn).

LS: crm, lt gry & wht, microxtln, cal floodd, crm & wht chalk partings, loc silcfd to cht (smoky & gry, cryptxtln, py, scarce fossls, scarce druzy qtz). no/poor por. NS

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

LS: crm & lt gry, microxtln, cal floodd, chalk partings, cal crusts, scarce py, abt silcfcn to cht (smoky & wht, cryptxtln, scarce py, scarce fossls). no/poor por. NS

LS: brn & gry, microxtln, hvyly cal floodd, abt cal crusts, minor druzy cal. no intxtln por, loc good por in crusts. minute brn stns & flecks (no odor, 1 pc w/ good cut, some wk brn dry stn) NSFO

LS: crm & brn, microxtln, cal floodd, abt cal crusts, loc chalky, scarce glauc. loc fair por in crusts. abt dd oil flakes, SSO (dk brn, wk odor, slow fair cut, patchy brn dry stn, VSSG on brk)

LS: lt gry, microxtln, cal floodd, cal crusts & druzy cal, loc silcfd to cht (smoky gry, cryptxtln). no vis por. 2 pcs w/ VSSO (brn, no odor, wk cut, patchy brn dry stn)

SH: grn, maroon & red-brn, micac, silty, earthy hematite, rare py.

LS: tan, microxtln, cal floodd, abt cal crusts & druzy cal, loc fossl, loc cht (brn & wht). fair por in crusts. SSO (brn & blk, v fnt odor, good flash cut, patchy brn dry stn)

LS: gry, microxtln, cal floodd, cal crusts, loc silcfd to cht (wht & smoky gry). poor vis por. scarce brn dd oil flakes (no odor, no cut)

LS: crm & gry, microxtln, rextlzd & cal floodd, ool, abt cal crusts & druzy cal, rare cht (brn, ool), rare py. fair-good ooc por, fair crust por. few pcs w/ fair SSO (blk, v fnt odor, str patchy dk brn dry stn, SO mostly in crusts, v little in ooc pcs)

LS: gry & tan, microxtln, ool, v good ooc por. NS

LS: off wht - gry, microxtln, rextlzd, loc cal floodd, cal crusts, v pelletal, fossl, loc chalky. no/poor por. NS

SH: blk, carb, micac, competent, cal vnlts, marcasitized ?spicules?.

LS: gry, microxtln, cal floodd, loc cht (gry, rock frags). NVP. NS

SH: grn & red-brn, argil, silty, earthy hematite, pebbles & granules.

LS: off wht, microxtln, rextlzd, chalky. poor vis por. scarce brn & blk stns (v fnt odor, no cut), NSFO

LS: gry to brn, microxtln, hvyly cal floodd, pelletal, loc forams (?ool?), cal crusts, rare py. no vis por. rare brn & blk stns (v fnt odor, no cut), NSFO

LS: off wht to crm, microxtln, rextlzd, loc chalky, loc cal floodd, minor druzy cal, dol stringer(s) (crm, vfgr sucr). poor por. scarce brn & blk stns (no odor, no cut), 1 pc w/ wk SO in druzy cal, 1 oil coated vug(dk brn, no odor)

LS: crm to gry-brn, microxtln, cal floodd, loc ool, cal crusts. no vis por. NS

LS: crm, microxtln, cal floodd, loc rextlzd / chalky, loc druzy cal, loc fossl. no intxtln por, loc fair ppt por. NS

LS: wht, chalky (often mushy). v poor vis por. NS

SH: blk, carb, micac, cal strks along bdgg, ?forams?.

LS: crm to pale gry, microxtln, cal floodd, loc chalky, loc silcfd to cht (wht, fossl, rare hmt). no/poor vis por. NS

LS: crm to wht, microxtln, rextlzd, chalky. poor vis por. scarce brn & blk stns (no odor, no cut), NSFO

LS: pale gry, microxtln, cal floodd, pelletal, cal crusts, pyr, loc silcfd to cht (gry to wht, crypt-micro xtln, loc hmt). no vis por. NS

LKC G (e-log): 4,222 (-1,038)

vis 55 wt 9.1 lcm 3#

DST #2
4,260 - 4,324
REC 7' DM
test invalid
details above

MUNCIE CREEK (e-log): 4,270 (-1,086)

LKC H (e-log): 4,281 (-1,097)

abt cavings of blk, carb sh in 4,320 spl.

LKC I (e-log): 4,312
(-1,128)

DST #3
4,259 - 4,355
REC 310' DM, 744' WCM
SIP 1,193 - 1,193#
details above

vis 52 wt 9.1 lcm 4#

LKC J (e-log): 4,346 (-1,162)

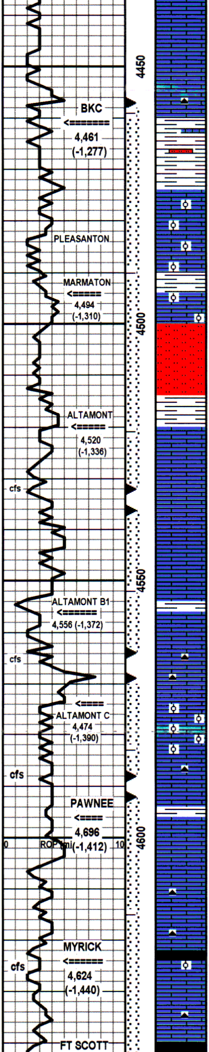
STARK (e-log):
4,370 (-1,195)

DST #4
4,369 - 4,435
REC 10' DM
SIP 581 - 632#
details above

LKC K (e-log): 4,390 (-1,206)

abt sh cavings in 4,400 spl.

HUSHPUCKNEY (e-log): 4,425 (-1,241)
LKC L (e-log): 4,427 (-1,243)



LS: wht, off wht & pale gry, microxtln, cal floodd, wht chalk partings, rare relict fossils, scarce py & hmt crusts. no / poor vis por. NS

LS: wht to pale gry, microxtln, cal floodd, chalk partings, scarce cal overgrths & vnlts, loc silcfd to cht (wht, cryptxtln, fossl, rare tripolitic crusts.). no / poor vis por. NS

SH: grn, gry & red-brn, argil, loc micac, earthy hematite. stringer(s) of LS (off wht to gry, microxtln, chalky, marly, poor vis por. NS). stringer(s) of SLTST (grn, micac, glauc, no vis por, NS)

● LS: off wht to crm, ool (mgr) w/ microxtln cmt, sl chalky, loc gry (microxtln, cal floodd), loc chalk partings. loc fair intool por. fair SO (dk brn to blk, fnt odor, good flash cut, patchy brn dry stn, scarce FO in tray)

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

● LS: gry, microxtln, cal floodd, loc ool (mgr), loc chalky. poor vis intxtln por, loc fair intool por. wk SO in intool por (dk brn to blk, v fnt odor, patchy dk brn dry stn).

SLTST: lt grn > lt gry & lt brn, argil, silt to vfgr qtz grns, calc, friable, loc micac, loc w/ ~ 5% hvy mins. tr rock granules & pebbles. poor por. NS

SH: grn, red-brn & yel, argil, silty, earthy hematite, minor limonite.

LS: brn & gry, microxtln, cal floodd, pelletal. NVP NS

● LS: crm to tan, microxtln, rextlzd, loc cal floodd, loc chalky, fossl, abt earthy & specular hmt in cal floodd ls @ 4,530. poor overall por, loc wk-fair infossl por. wk SO (dk brn, no odor, patchy dk brn dry stn, show pcs are finely ground.

◑ LS: off wht to pale grn, microxtln, cal floodd, chalk patings, minor cal crusts & druzy cal. poor vis por. 1 pc w/ wk brn flecks (no odor, wk cut, wk patchy dry stn).

● LS: off wht to wht, microxtln, cal floodd, loc ool, loc chalky, minor cal overgrths. no intxtln por, loc ppt/vug & intool por. wk SO (dk brn, no odor, patchy brn dry stn, VSSG)

LS: brn & gry, microxtln, cal floodd. NVP. NS

SH: grn, blk & red-brn, argil, earthy hmt, pyr, granules.

● LS: crm to tan & brn, microxtln, cal floodd, cal crusts, druzy cal, loc abt forams, minor cht (wht & orange). no matrix por, loc fair crust, vug & fossl cast por. wk SO (dk brn, fair flash cut, wk-fair odor, patchy brn dry stn, VSSG)

LS: pale gry, microxtln, cal floodd, vcgr grains, loc silcfd to cht (wht, cryptxtln, hmt vnlts). no vis por. NS

● LS: crm to pale gry, microxtln, cal floodd, ool, cal crusts, micro-vfgr druzy cal, cal vnlts, minor py. loc wk-fair intool por. fair SO (dk brn, scarce FO, fair odor, fair cut, fair SG, patchy to satd brn dry stn, abt show pcs)

LS: brn, microxtln, cal floodd, ool, scarce gry cht. NVP NS

● LS: brn, tan & pale gry, microxtln, cal floodd, cal crusts, fossl, pelletal. NVP. 1 pc w/ VSSO (brn, fnt odor (mostly fm cavings of overlying show zone), fair cut, patchy brn dry stn)

SH: grn, blk & red-brn, argil, micac, bdd, earthy hmt.

LS: brn, gry, tan & off wht, microxtln, cal floodd, loc abt forams, loc chalky, cal crusts, scarce marly, minor silcfcn to cht (dk brn, fossl). no / poor vis por. NS

LS: crm to tan & brn, microxtln, cal floodd, cal crusts, fossl, py, loc silfcn to cht (gry, fusulinids). no intxtln por. scarce brn stns (fnt odor), NSO

SH: blk, carb, micac, nodules (?phosphate?).

● LS: crm to tan, microxtln, cal floodd, loc ool (fgr), cal crusts, minor druzy cal. no intxtln por, minor wk-fair intool por. SSO (dk brn, fnt odor, wk cut, patchy dk brn dry stn)

LS: gry, microxtln, cal floodd, loc chalky, cal crusts, fossl, pelletal, loc silcfd to cht (gry, cryptxtln, fossl (incl fusulinids). no / poor por. minor brn stns (no odor, no cut), NSO

SH: blk, carb, micac, cal inclusions.

BKC (e-log): 4,468
(-1,284)

DST #5
4,457 - 4,532
REC 30' DM w/ oil specks
SIP 1,175 - 1,160#
details above

vis 49 wt 9.1 lcm 2#

Lenapah ls member

MARMATON (e-log):
4,499 (-1,315)

ALTAMONT (e-log): 4,530 (-1,346)

DST # 6
4,536 - 4,565
REC10' DM w/ few oil spots
SIP 700 - 616#
details above

ALTAMONT B1 (e-log): 4,556 (-1,372)

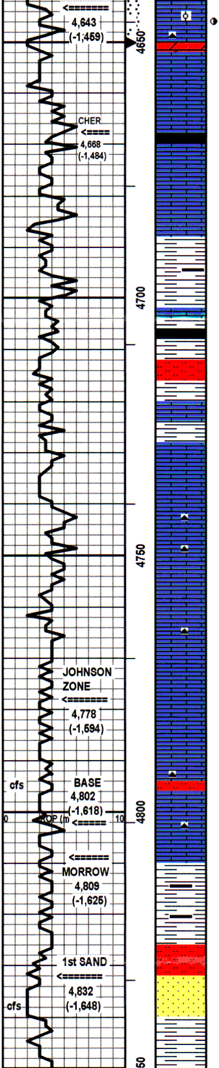
DST #7
4,569 - 4,588
REC 30' DM
SIP: 60 - 55#
details above

ALTAMONT C (e-log):
4,574 (-1,390)

abt cavings of ALT C show zone give fnt odor.

PAWNEE (e-log): 4,610 (-1,426)

DST #8
4,592 - 4,650
REC 25' DM w/ oil scum, 1' FO
SIP 156 - 77#
details above



LS: crm to tan, gry, microxtln, cal floodd, cal crusts & overgrths, loc ool (mgr), loc chalky, rare py, loc cht (pale gry & wht, cryptxtln, fossl). no intxtln por, minor wk vug & ooc por. minor brn stns (no odor, fair - good cut, wk patchy brn dry stn, SSG), NSFO

DOL: crm, microxtln, sucr. poor vis por. NS

LS: crm to tan, microxtln, wkly cal floodd, chalky partings, fossl, pelletal, rare specular hematite crusts. no/poor vis por. NS

LS: crm, tan, brn & gry, microxtln, cal floodd, cal crusts, hematite crusts, minor cht (brn, cryptxtln). NVP NS

SH: blk & dk brn, carb, micac, pyr, calc, nodules (?phosphate?).

LS: tan, gry & brn, microxtln, cal floodd, minor cal crusts, loc marly, loc fossl, rare py. no vis por. NS

LS: tan to gry, microxtln, cal floodd, cal crusts, loc fossl, loc silcfd to cht (gry, cryptxtln, loc fossl). no vis por. NS

SH: grn, gry, blk, brn & red-brn, argil, micac, loc silty, loc carb, earthy hematite, py, granules & pebbles.

LS: gry, microxtln, cal floodd, fossl, cht (smoky). NVP NS

SH: blk, carb, micac, cal inclusions, ?phosphate? nodules.

SH: grn & gry, argil, rock granules.

SLTST: lt gry, microxtln qtz grns, cal cmt, loc argil, 1% hvy mins, scarce glauc, pyr. v poor por. NS

SH: grn & gry, argil, micac, pebbles.

LS: gry to dk gry, microxtln, wkly cal floodd, sl marly. NVP NS

SH: grn, gry & red-brn, argil, sl silty, earthy hematite, pebbles.

LS: crm, gry & brn, microxtln, cal floodd, loc fossl, loc rextlzd & chalky, loc silcfd to cht (gry & clr, cryptxtln). no/poor vis por. NS

LS: brn & gry, micro-fgr xtln, hvyly cal floodd, minor cal crusts, loc silcfd to cht (dk brn & gry, cryptxtln, loc fossl). no vis por. NS

LS: dk gry, microxtln, hvyly cal floodd, dns, minor cal crusts. no vis por. NS

LS: crm, microxtln, rextlzd, loc chalky, loc cal floodd. poor vis por. NS

LS: brn, microxtln, hvyly cal floodd, cal crusts, scarce fusulinids & spicules, loc silcfd to cht (dk brn, cryptxtln, minor fossls). no vis por. NS

LS: gry, microxtln, cal floodd, cal crusts. no vis por. NS

LS: gry, microxtln, cal floodd, cal crusts, relict fossls, rare cht (gry, cryptxtln, fossl). no vis por. no odor, NS

LS: gry, brn & tan, microxtln, cal floodd, cal crusts, rare blk crust of hematite (metallic, no cut), loc silcfd to cht (brn, cryptxtln, fossl). no vis por. 1 pc w/ blk ?dd oil? scum (no odor, no cut - ?hmt?), NSO

SLTST: lt gry to wht, silt-vfgr qtz grns, cal cmt, 2 - 5% hvy mins, pyr. rock fragments (mgr-cgr), loc silcfd. v poor por. NS

LS: crm to tan, microxtln, cal floodd, chalky partings, relict fossls. no/poor vis por. NS

LS: gry to blk & tan, microxtln, cal floodd, loc chalky, fossl (loc abt forams), loc sl marly, minor cht (blk, cryptxtln, pyr, sil vnlts). no vis por. NS

SH: gry to blk, argil, micac, sl silty, pyr, loc carb w/ sphalerite (yellow, mgr).

SH: grn, gry & blk, argil, micac, loc carb, loc silty, rare shell fragments (mother of pearl).

SLTST: grn & gry, silt-vfgr qtz grns, cal cmt/matrix, sl micac, sl pyr. v poor por. NS

SS: wht & gry, fgr (loc mgr), well srtd, subrndd, loc sil cmt, loc friable, 2-4% hvy mins & cht grns, blk & brn flakes & plant fragmnts (no cut), rare py, tr glauc. wk intgran por in clusters. no odor, NS

mgr - cgr @ base

SH: grn, argil, silty, micac, pyr, loc siliceous, loc waxy, minor granules & pebbles.

MYRICK STATION (e-log): 4,644 (-1,460)

v abt sh cavings in 4,670 spl.

FORT SCOTT (e-log): 4,660 (-1,476)

abt sh cavings in 4,680 spl.

abt sh cavings in 4,690 spl.

CHEROKEE SH (e-log): 4,686 (-1,502)

JOHNSON ZONE (e-log): 4,794 (-1,610)

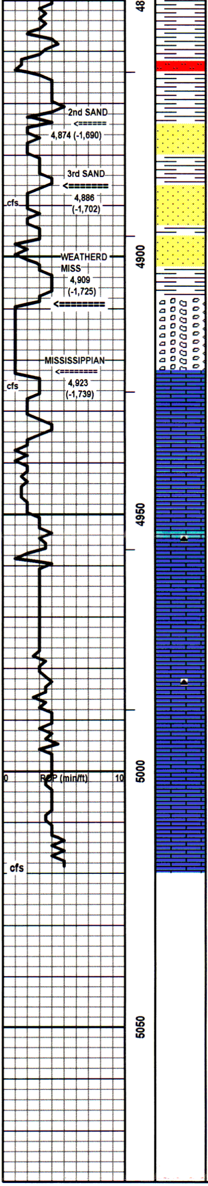
vis 52 wt 9.1

BASE (e-log): 4,818 (-1,634)

MORROW (e-log): 4,822 (1,638)

1st SAND (e-log): 4,832 (-1,648)

vis 52 wt 9.2 lcm 2#



SH: gry, grn & blk, argil, micac, granules & pebbles.	
SLTST: grn, argil, v soft. v poor por. NS	
SH: grn, gry & gry-maroon (waxy), argil, micac, loc abt fish scales & plant fragments, minor granules.	
SS: wht & gry, vfgr-fgr, subang - subrndd, well srtd, 2% hvy mins, loc hvyly silcfd, few clusters. poor intgran por. no odor, NS	2nd SAND (e-log): 4,874 (-1,690)
SH: grn & gry, micac, argil, plant fragmnts, marcasitizd lepidodendron, pyr.	
SS: gry & wht, vfgr-fgr, subang-subrndd, wk sil cmt, loc clay matrix, wkly calc, glauc, rare py, basal pebbles. v poor por. no odor, NS	3rd SAND (e-log): 4,886 (-1,702)
SH: dove gry, argil, plant fragmnts, py, sphalerite (ruby jack & blk).	
SS: grn & wht, vfgr-fgr, variably sil cmtd, subrndd, abt glauc, basal pebbles, minor ?clay? in matrix (no cut), minor py. v poor por. no odor, NS	
SH: gry, argil, micac, pyr.	
WEATHERED ZONE: brn, rock fragments & sd in an indurated ?clay? matrix, opal vnlts & vug fill (wht, gry & brn), scattered py, non-calc. no vis por. no odor, NS	
LS: crm & tan, micro-vfgr xtln, cal floodd, relict fossls, druzy cal. no intxtln por, rare fossl casts. no odor, NS	MISSISSIPPIAN (e-log): 4,922 (-1,738)
LS: brn, microxtln, cal floodd, dns. no vis por. NS	abt cavings
LS: wht, cryptxtln, v chalky, sandd, relict fossls. poor vis por. NS	abt cavings
LS: tan to brn, microxtln, cal floodd, relict fossls, loc silcfd to cht (off wht, orange & smoky gry, cryptxtln, fossl, pyr). no vis por. NS	abt cavings
wht chalk	
LS: tan to brn, microxtln, cal floodd, relict fossls. no vis por. NS	abt cavings
LS: lt brn & lt gry, microxtln, cal floodd, cal crusts. no vis por. NS	abt cavings
LS: brn, hvyly cal floodd, cal crusts, brn coatings of microxtln oxdzd py (no cut), loc silcfd to cht (dk brn, cryptxtln, xlscnt). no vis por. NS	abt cavings
LS: brn & gry, microxtln, cal floodd, cal crusts, chalky partings. no vis por. NS	mod - abt cavings
LS: wht, microxtln, cal floodd, loc chalky, relict fossls. no vis por. NS	
LS: wht, microxtln, cal floodd, loc chalky, somewhat sandd, relict fossls. no vis por. NS	

RTD 5,019

LTD 5,019

Ritchie Exploration, Inc.
#1 Noonan
2,250' FSL & 1,020' FWL
sec 24 - twp 17S - rge 35W
Wichita County, Kansas