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DRILLING TIME AND SAMPLE LOG

OPERATOR: **Murfin Drilling Co., Inc.**
 LEASE: **Pollnow** WELL NO.: **L14**
 FIELD: **Wildcat**
 LOCATION: **1150'ESL, 2070FWL (NW/4SE/4SW)**
 SEC.: **14** TWP: **2S** RANGE: **29W**
 COUNTY: **Decatur** STATE: **KS**
 API NO.: **15-039-21170-00-00**

ELEVATIONS

KB **2710'**
 GL **2705'**

Measurements are all
 from KB

CASING RECORD

SURFACE: **8 5/8" @**
220' w/ 1955x.

PRODUCTION: **None-R/A.**

CONTRACTOR: **Murfin Drilling Co., Rig #8**

COMPLETED: **3pm, April 19, 2013** COMPLETED: **4/26/13**

ROTARY TOTAL DEPTH: **3990'** LOG TOTAL DEPTH: **3986'**

GEOLOGICAL SUPERVISION FROM: **3,000'** to: **T.D.**

LOG-UP DEPTH: **2916'** LOG TYPE: **Chemical/Polymer**

FORMATION	SURFACE		LOG		STRUCTURAL TEMPERATURE
	TOP	SEGA	TOP	SEGA	
Stone Coral Anhy.	2433 (+227)	2434 (+216)	+24'		
Base of Anhydrite	2466 (+245)	2466 (+245)	+22'		
Near L.S.	3114 (-404)	3115 (-405)	+14'		
Foraker L.S.	3236 (-526)	3234 (-524)	+12'		
Stotlar L.S.	3387 (-677)	3387 (-677)	+16'		
Topeka Fm.	3502 (-792)	3502 (-792)	+11'		
Orad L.S.	3649 (-939)	3649 (-939)	+15'		
Haebner Shale	3665 (-955)	3665 (-955)	+10'		
Lansing Group	3710 (-1000)	3710 (-1000)	+12'		
Stark Shale	3870 (-1160)	3870 (-1160)	+17'		
Base Ks. Gp.	3922 (-1212)	3923 (-1213)	+16'		
Total Depth	3990'	3986'			

VIRIELINE SURVEYS

PRODUCER ENERGY SERVICES: Dual Comp. Porosity, Dual Induction, BHL Sonic and Micro-resistivity logs were run.

LOCATION MAP

Murfin
Pollnow A-14

Reference Well for Structural Comparison: **Murfin Emma #1-15 SENWESSE Sec.5**
 Comments and Recommendations: **Recommended well be plugged and abandoned**

DST # **1** ZONE: **Lansing A' Zone**

INTERVAL: **3664'-3720'**

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		1755 psi	72' Oil spotted Mud
2. Initial Flow: Start	0	18 psi	(100% Mud)
3. Initial Flow: End	30	81 psi	186' Muddy Water
4. Initial Shut-in: End	60	1233 psi	(30% Mud)
5. Final Flow: Start	0	86 psi	Blow Desc.
6. Final Flow: End	60	136 psi	I.F. - Built to 5 3/4"
7. Final Shut-in: End	90	1204 psi	I.S.I. - No blow
8. Final Hydrostatic		1734 psi	F.F. - Built to 9" F.S.I. - No blow

BHT: **111°F**

Rv: **.4 @ 55°F**

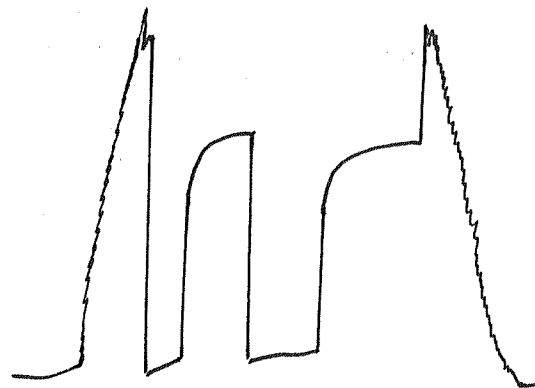
chl. **22,000 ppm**

DST # **1**

Interval: **3664'-3720'**

6799 Chart

Depth: **3665'**



DST # **2** ZONE: **Lansing D'+G' Zones**

INTERVAL: **3720'-3815'**

DST # **2**

Interval: **3720'-3815'**

6799 Chart

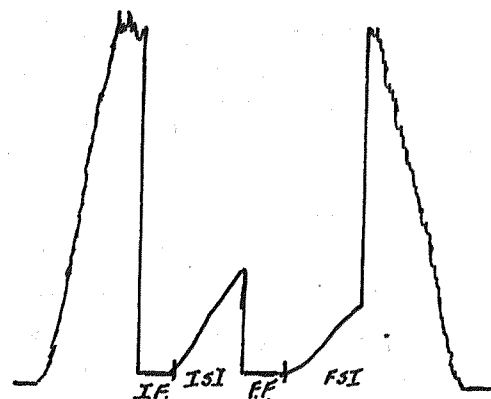
Depth: **3721'**

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		1829 psi	70' Oil spotted Mud
2. Initial Flow: Start	0	47 psi	(100% Mud)
3. Initial Flow: End	30	51 psi	
4. Initial Shut-in: End	60	583 psi	Blow Desc:
5. Final Flow: Start	0	51 psi	I.F.-built to 1"
6. Final Flow: End	30	52 psi	I.S.I.-No blow
7. Final Shut-in: End	60	426 psi	F.F.-No blow
8. Final Hydrostatic		1847 psi	F.S.I.-No blow

BHT: 109°F

Rv: _____

Note: Tool slid 7' to bottom



DST # 3 ZONE: LKC 'H' + 'J' Zones

INTERVAL: 3806'-3880'

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		1824 psi	65' Oil spotted mud
2. Initial Flow: Start	0	17 psi	(100% Mud)
3. Initial Flow: End	30	30 psi	
4. Initial Shut-in: End	60	1013 psi	Blow Desc:
5. Final Flow: Start	0	33 psi	I.F.-built to 2"
6. Final Flow: End	60	50 psi	I.S.I.-No blow
7. Final Shut-in: End	90	931 psi	F.F.-built to 1/2"
8. Final Hydrostatic		1845 psi	F.S.I.-No blow

BHT: 108°F

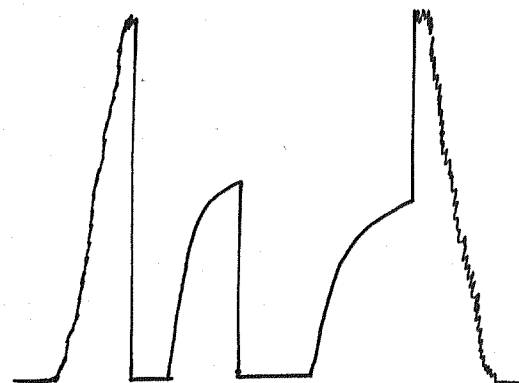
Rv: _____

DST # 3

6799 Chart

Interval: 3806-80'

Depth: N.A.



DST # 4 ZONE: Kansas City 'K' zone

INTERVAL: 3867'-3910'

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		1903 psi	10' Oil spotted Mud
2. Initial Flow: Start	0	18 psi	(100% Mud -
3. Initial Flow: End	30	20 psi	Trace oil in tool)
4. Initial Shut-in: End	60	151 psi	Blow Desc:
5. Final Flow: Start	0	20 psi	I.F.-built to 1"
6. Final Flow: End	60	21 psi	I.S.I.-No blow
7. Final Shut-in: End	90	87 psi	F.F.-Surface blow throughout
8. Final Hydrostatic		1863 psi	F.S.I.-Weak surface blow

BHT: 108°F

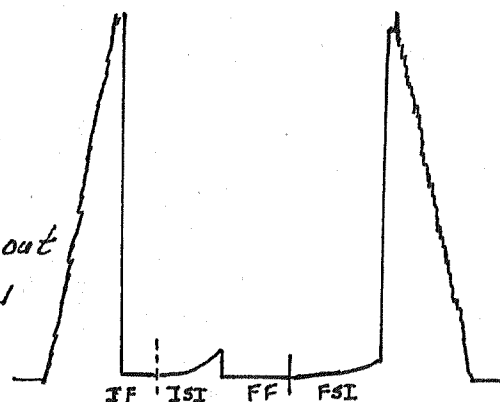
Rv: _____

DST # 4

6799 Chart

Interval: 3867-3910'

Depth: 3868



ABBREVIATIONS USED

ROCK TYPES:

FABRIC:

MODIFIERS:

Ls - Limestone
 Sh - Shale
 Sd - Sandstone
 Slt - Siltstone
 Co - Conglomerate
 Ch - Chert
 Qtz - Quartzite
 Gren - Granite
 Dol - Dolomite
 Chk - Chalky

COLOR:

Wh - White
 Crm - Cream
 Clr - Clear
 Rd - Red
 Grn - Green
 Gry - Gray
 Blk - Black
 Mot - Mottled

HARDNESS:

Sft - Soft
 M.Sft - Moderately soft
 Hrd - Hard
 V.Hrd - Very hard

Fin.grn - Finegrained
 VFG - Very fine grained
 Med - Medium
 Co - Coarse
 Det - Detrital
 Foss - Fossiliferous
 Xln - Crystalline
 Mxn - Microcrystalline
 Ool - Oolitic
 Oom - Oomitic
 Mat - Matrix

OTHER TERMS:

fl - Fluorescence (of oil)
 min fl - mineral fluorescence
 pyr - pyritic
 sil - siliceous
 carb - carbonaceous
 stn - stain (of oil)
 cut - oil cut
 AA - as above
 G - gravity
 NSFOC - no stain, fluorescence,
 odor, or cut (of oil)
 empl - sample
 perm - permeability
 F.O. - Free oil
 vug - vugular
 tr - trace
 w/ - with

gd - good
 fr - fair
 pr - Poor
 ex - excellent
 v - very
 w - well
 tr - trace
 occ - occasional
 vis - visible
 N - no
 gran - granular
 intergran - intergranular
 pp - pinpoint
 dd - dead
 gey - geyser

OIL SHOWS

- Weak Oil Show
 Fair Oil Show
 Good Oil Show
 Excellent Oil Show

TEXTURE:

Dns - Dense
 Cln - Clayey
 Fri - Friable
 Earth - Earthy
 Heck - Heckly
 Fiss - Fissile
 Vit - Vitreous
 Vug - Vugular
 Mic - Micritic

Rate of Penetration
(Minutes per foot)

2400

1/2 1 2 3 4 5 6 7 8 9 10

2450

2500

Stone Corral
Anhydrite
(+277')

Base of
Anhydrite
(+244')

Displace Native
Mud System
at 2916'

Mud Check @ 2927'
M.w. 8.6 lbs./gal.
Vis. 90 sec./qt.

W.L. 6.8cc./30min.
chl. 1,000ppm.
Solids 2.2%
L.C.M. 3.0 lbs./bbl.

3000

sh. rd., sft., clay-earthy, occ. sandy-
sh. ly. ss, rd., hrd., dns., med. sh.
gr. d. NΦ NSFDC
tr. ls. erm., sft., chky., NΦ NSFDC
sh. rd., sft., clayey-earthy, sandy-
v. sandy.

3050

sh. A.A., sft.-v. sft., sandy, clayey.
tr. ss, erm., hrd., dns., sh. - vfg, w.
cmtd. mod. - w. sh. d. NΦ NSFDC

sh. rd. brn., v. sft., clayey, sandy.
tr. sh. blu-grn. ym. sft., dns.,
tr. sandy, hackly-cavings?

ls. erm., hrd., dns., mxln., occ.
sandy, rare foss., occ. v. rd.
NΦ NSFDC.
tr. sh. rd. brn. A.A.
ls. A.A. NΦ NSFDC

sh. rd. brn.-gry., v. sft., earthy-
clayey, tr. sandy

sh. A.A.
occ. ls. erm., hrd., dns., vfg-mxln.
sandy - v. sandy - calc. ss. vfg.
NΦ NSFDC

sh. rd. brn., v. sft., clayey, tr.
sandy.
tr. ls. A.A. NΦ NSFDC

3100

sh. rd. brn., v. sft., earthy-clayey

sh. A.A.
ls. erm., hrd., dns., vfg-mxln.,
sandy, rare foss. NΦ NSFDC

ls. erm.-dk. gry., sft. & chky. - hrd.,
dns., vfg-mxln., occ. ch. abun.
blk. sh. stnd., rare foss.
NΦ NSFDC

ls. A.A.
w/ ls. gry., hrd., dns., vfg-mxln.
v. sandy - calc. ss. gry., hrd.
dns., vfg, w. cmtd. NΦ NSFDC
ls. calc. ss. A.A. NΦ NSFDC
sh. rd. brn., sft., clayey, occ. v.
sandy, earthy

3150

sh. rd. brn., sft., clayey-earthy,
sandy

Nava ls.
(-404')

sh: A.A.
occ. ss: rd, m. hrd, idns, fn - VEG.
pr. srt d, w. cm td, ANG.
NØ NSFOC

sh: A.A.
ss: A.A.
Ls: crm, hrd - sft, + chiky, occ. foss.
w/ fr. int. part. Ø NSFOC
Ls: crm, sft + chiky - hrd, idns,
VEG xln, sndy - v. sndy.
NØ NSFOC

tr. Ls: A.A.
w/ Ls: gry - dk. gry, hrd, idns,
VEG, xln, tr. sldy, ABUN.
sh: srt. NØ NSFOC
Ls: A.A., sndy - v. sndy - calc. ss.
gry, hrd, idns, VEG, w. cm td.
pr. srt d. NØ NSFOC
sh: gry, sft, sly, earthy - clayey

Red Eagle Ls.
(-481')

sh: rd. brn., v. sft., clayey, occ.
sny. tr. rd. ss: m. hrd, idns,
pr. srt d, w. cm td. NØ NSFOC

sh: rd. brn. - gry, sft., clayey -
m. sft., earthy, occ. sny

Ls: crm - gry, sft + chiky - hrd,
dns, VEG - mxln, sndy - v. sndy.
occ. sh: srt. NØ NSFOC

Foraker Ls.
(-526')

Ls: lt - dk. gry, m. sft - sft., dns, foss -
blk. foss. gns, tr. sft + chiky.
NØ NSFOC

Ls: crm - dk. gry, sft + chiky - m. hrd.
dns, VEG xln, foss, w/ dk. gry - foss, +
pellets, sh: srt d, tr. chz.
NØ NSFOC

Ls: crm - dk. gry, sft - hrd, VEG, xly.
occ. chiky, occ. foss, sh: srt d,
tr. sndy. NØ NSFOC
tr. sh: dk. gry, m. sft., earthy
Ls: gry, hrd, dns, VEG xln, sh: srt d, foss.
tr. chiky, occ. sh: A.A. NØ NSFOC
Ls: A.A. dk. gry, foss, tr. sh: gry - dk.
gry, sft - m. hrd, earthy - hackly

sh: rd. brn., sft., clayey, occ. sly - sny
tr. Ls: gry, hrd, idns, VEG - mxln, occ.
foss. NØ NSFOC

sh: rd. brn., sft., clayey - earthy,
sny - sly, ss: rd. tr. m. sft -
m. hrd, idns, VEG. NØ NSFOC

Ls: crm, hrd, dns, VEG - mxln, occ.
foss, tr. sldy. NØ NSFOC
tr. sh: srt d, A.A.

Ls: crm - lt. gry, hrd, dns, VEG - mxln,
mic, tr. ent, occ. sny - v. sny.
tr. foss. NØ NSFOC

Ls: A.A. tr. sh: srt d, NØ NSFOC
sh: rd. brn., sft - v. sft + clayey
earthy, occ. sny

sh: A.A., less earthy.
Ls: gry - crm - ylw, hrd, idns, VEG -
mxln, mic, occ. foss - v. foss.
NØ NSFOC

sh: - sft, rd. brn., sft., clayey -
m. hrd, dns, sny - sly, ss.
NØ NSFOC

Ls: A.A.
Ls: gry - lt. gry, sft + chiky - hrd, dns,
VEG - mxln, occ. foss - v. foss.
tr. sh: srt d. NØ NSFOC

tr. sh: A.A. tr. dk. gry, sh:
Ls: A.A. tr. chiky. NØ NSFOC
sh: lt - dk. gry, sft + clayey - m.
hrd, idns, earthy

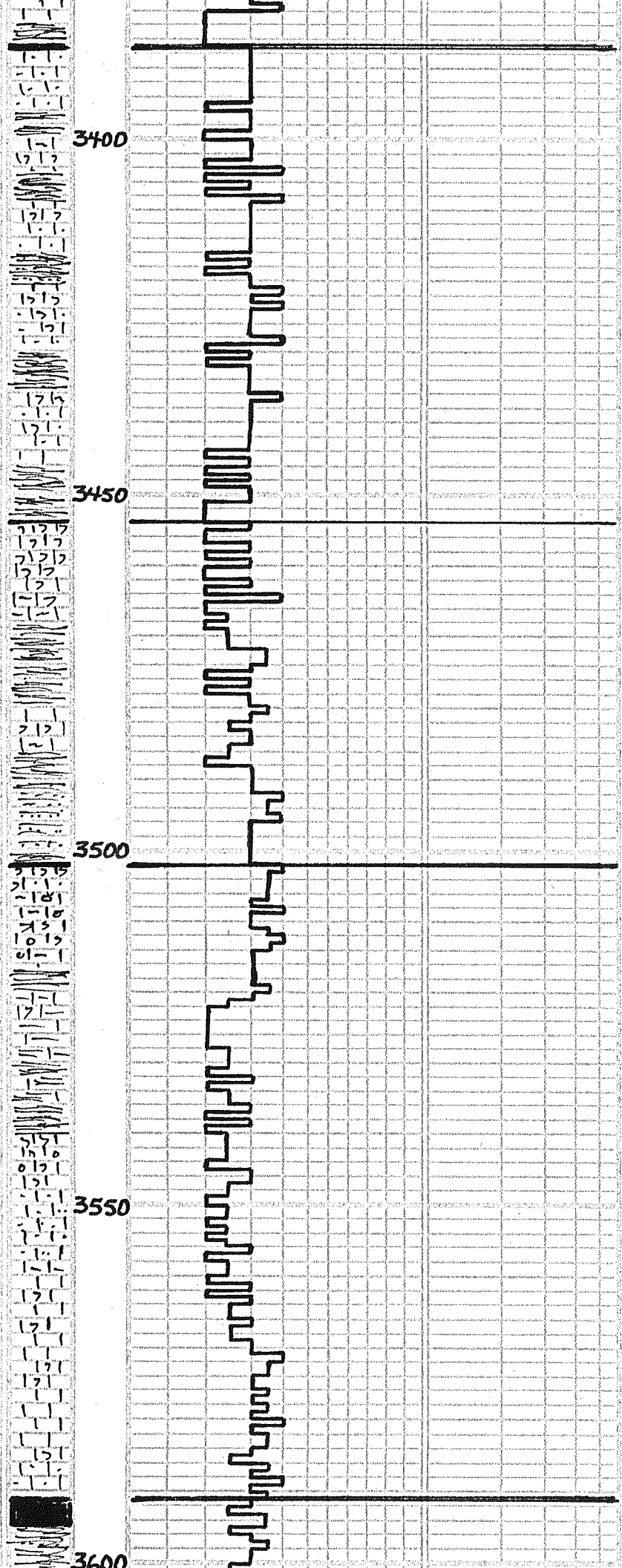
sh: A.A. w/ sh: rd. brn., sft + clayey -
m. sft., earthy, occ. sny.
occ. Ls: crm, hrd, idns, VEG - mxln,
mic. NØ NSFOC

3200

3250

3300

3350



Ls: lt. gry., v. sft. chik. - clayey.
- m. sft., dns., vfg. mxln. NΦNSFOC
sh: lt. dk. gry., sft. clayey.
- m. sft. earthy
Ls: crm.-lt. gry., hrd. dns., vfg. mxln.,
occ. sndy - l. sndy. - calc. ss;
gry., vfg., mod. sft. v. w. cmfd
occ. sh. A.A. NΦNSFOC
Ls: A.A., less. sndy., occ. foss.
+ sh. std. NΦNSFOC
sh: rd. brn., sft., clayey., tr. sndy.

Steeple Ls.
(-677')

Ls: crm.-lt. gry., ylw., hrd., dns., vfg.
- mxln., occ. foss., occ. sndy. tr.
glauc. std. NΦNSFOC

Ls: A.A., occ. sft. chik. NΦNSFOC
sh: rd. brn. - gry., m. hrd. - v. sft. v.
clayey., earthy. tr. sly

Ls: crm.-gry., sft. chik. - hrd., dns.,
vfg. mxln., occ. foss., tr. sndy.,
tr. sh. std. NΦNSFOC
tr. sh. A.A.

Ls: crm., v. sft. chik. - clayey.,
hrd., dns., vfg. mxln., mic.,
tr. foss. NΦNSFOC

Ls: A.A., more chik. NΦNSFOC

sh: rd. brn., v. sft., clayey. - dk. gry.
m. hrd., dns., earthy

Bern Ls.
(-754')

Ls: crm., hrd., dns., vfg. mxln., foss.
- v. foss. - gristln., tr. pr. vfg. pp.
vug. φ, tr. sh. std. NSFOC

Ls: crm., hrd. - sft. chik., vfg. mxln.,
v. foss., occ. gd. moldic. vug. φ,
occ. fn. pp. φ NSFOC

Ls: crm.-lt. gry., hrd., dns., vfg. mxln.,
vfg. mxln., mic., occ. foss. tr. r. l.
sh. std. NΦNSFOC
tr. rd. sh.

Ls: A.A., tr. ool. NΦNSFOC
sh: rd. brn. - mar., sft. - m. sft., dns.
sndy., sly., clayey - earthy

tr. sh. A.A.
Ls: crm., hrd., dns., vfg. mxln., mic.
occ. foss., Abund. rd. sh. std.
occ. pebb. suet. NΦNSFOC

Ls: crm.-lt. gry., hrd., dns., vfg.
- mxln., mic., tr. chik., occ. foss.
+ ool., Abund. rd. sh. std.
NΦNSFOC

Ls: A.A., tr. pp. vug. φ NSFOC

sh: rd. brn., sft., sly., earthy

Ls: wh.-crm., sft. chik. - hrd., dns.
mic., vfg. mxln., occ. foss.,
tr. sh. std. NΦNSFOC
tr. rd. sh. A.A.

sh: rd. brn., m. sft. - sft., earthy
Ls: wh.-crm., v. sft. chik. - hrd., dns.,
vfg. mxln., occ. ool. + foss. w/l
tr. fr. - pr. moldic φ NSFOC

Ls: A.A., tr. moldic φ A.A. NSFOC
tr. ss: gry., m. hrd., dns., rd. gnd.,
w. cmfd., w. hrd., No v. s. φ NSFOC

sh: gry. grn. - rd. brn., earthy., sly

Ls: crm., sft. chik. - hrd., dns., mxln.
- mxln., tr. mic., occ. rexld., occ.
foss. NΦNSFOC

Ls: crm., hrd., dns., sly. mxln. - mxln.,
mic., occ. rexld., tr. foss.
NΦNSFOC

Ls: crm., hrd., dns., sly. mxln. - mxln.,
tr. chik., para foss., tr. sndy.
NΦNSFOC

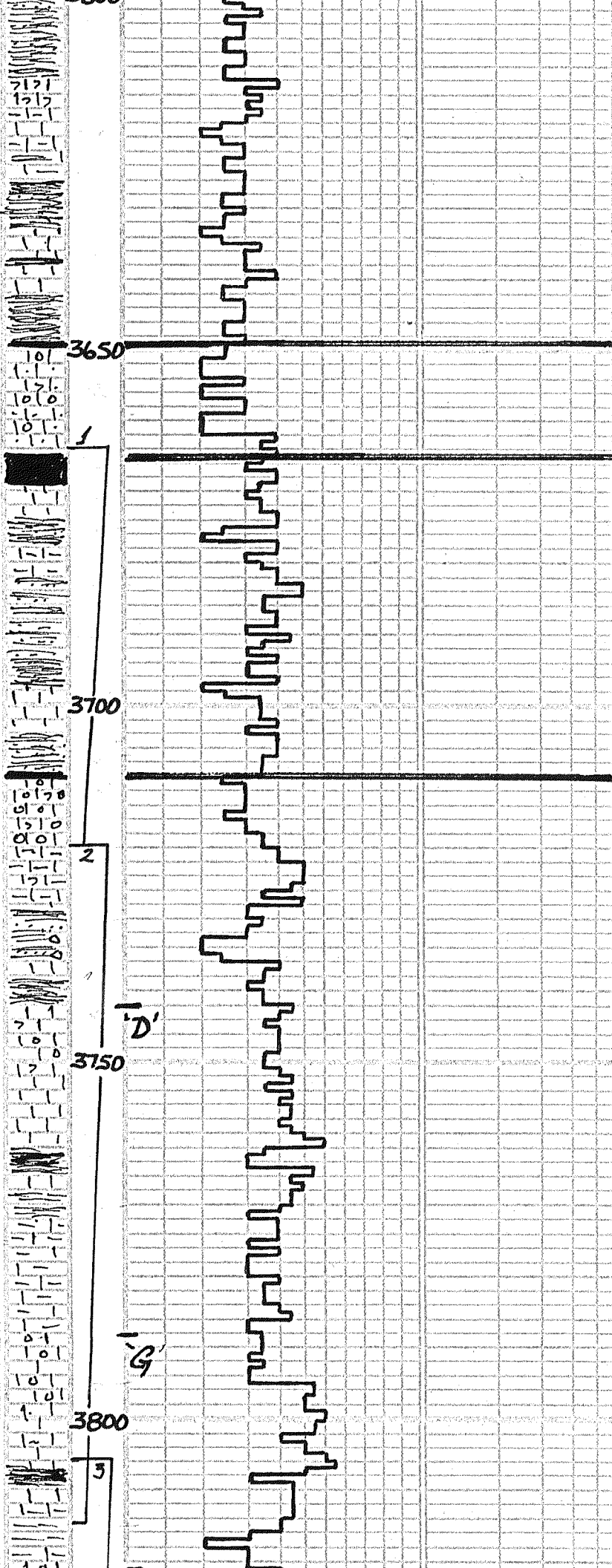
Ls: A.A., more foss., tr. sndy.
NΦNSFOC
sh: gry. - grn. - dk. gry., m. sft. - m. hrd.
occ. sndy. sly., earthy

King Hill Sh.
(-881')

Mud Check @ 3507'

M.W. 8.9
Vis. 52
wh. 6.4

chl. 1.700
Solids 4.3%
LCM. 4.0 lbs.



Sh. rd. brn., sft., clayey, tr. sandy
 Ls. crm.-gry., hrd., dns., fvxln-mxln, foss., v. foss., w/ tr. fr. pr. vug. NΦ NSFOC
 occ. pebb. surt. NΦ NSFOC
 Sh. rd., tr. dk. gry., sft., earthy
 Ls. A.A. NΦ NSFOC
 Sh. rd. brn.-gry. grn.-dk. gry., sft., clayey-earthy, occ. sft. sandy.
 Sh. A.A.
 Ls. crm., hrd., dns., vfgxln., occ. ool. & foss. NΦ NSFOC
 Sh. rd. brn., v. sft., clayey.-cavings?
 Sh. gry. gr. n.-dk. gry. m. hrd., earthy
 Ls. crm., hrd., dns., vfg-mxln., fr. mic. NΦ NSFOC
 Ls. wh.-crm., m. hrd., dns., fvxln., sandy-v. sandy, tr. foss., tr. pr. vug. r.p. φ, occ. chiky. NSFOC
 Ls. crm.-gry., hrd., dns., fr-mxln., occ. foss. w/ tr. fr. pr. vug. moldic φ, occ. sandy. A.A. NSFOC
 tr. Sh. gry. gr. n., m. sft., earthy-hackly
 Sh. dk. gry.-blk. m. hrd., dns., fvxln.
 Sh. rd. brn.-gry., sft., clayey-earthy
 tr. Ls. crm., hrd., dns., vfg-mxln., mic. NΦ NSFOC
 Sh. rd. brn., tr. gry., v. sft., clayey-earthy, occ. sandy.
 tr. Ls. crm., hrd., dns., vfg-mxln., mic. poss. pebb. surt. NΦ NSFOC
 Sh. rd. brn., sft.-v. sft., earthy-clayey
 Sh. A.A.
 Ls. wh.-crm., hrd., vfgxln., foss. ool. go-fr., fr-vfg. vug. & int. part. φ dk. brn. stn., qd.-ex. cut. sft., tr. sho. f.o. wk. odor, poss. perm.
 Ls. crm.-wh., hrd.-sft. & chiky, vfg-mxln., occ. foss. NΦ NSFOC
 Sh. rd. brn., sft. & clayey.-m. sft., sandy, earthy. w/ sh. gry. grn.-dk. gry., m. sft., earthy-hackly, occ. ls. pebb.-hrd. dns. mic.
 Sh. rd. brn., sft. & clayey.-m. sft., sandy, earthy, w/ tr. sh. gry. grn.-dk. gry., m. sft., hack.-earthy, tr. ls. pebb.
 Ls. wh.-crm., hrd., dns., vfg-mxln., occ. foss. ool. w/ tr. fr. pr. vug. moldic φ & pp. int. part. φ, wk. cut. sft., r.p. bldg. oil, No odor, No F.O.
 Ls. wh.-crm., hrd., dns., vfg-mxln., mic. tr. chiky, 1-2 pc. w/ pr. vug. moldic φ-vfg. tr. oil stn., wk. cut. sft., No odor, No F.O. v.v. weak show
 Ls. crm.-tan.-gry., hrd., dns., vfg-mxln., mic. rare foss. NΦ NSFOC
 tr. Sh. rd. brn., sft., earthy
 Sh. rd. brn.-gry. grn.-dk. gry., sft. & clayey-m. hrd. dns., earthy-hack. tr. sandy.
 Occ. Ls. A.A. NΦ NSFOC
 Ls. crm.-gry., hrd., dns., vfgxln., occ. foss. tr. ool. 2-4 pc. w/ pr. vug. moldic φ-ool. & vfg. pp. vug. φ, tr. brn. stn., tr. cut. sft., No odor, No F.O. v.v. wk. show
 Ls. crm.-lt. gry., hrd., dns., vfg-mxln., mic. occ. sft. & chiky, rare foss. ool., 2 pc. w/ ool. φ & dk. stn., qd. cut. sft., No odor, No F.O. v.v. wk. show
 Ls. crm.-gry., hrd., dns., vfg-mxln., mic., tr. sft. & chiky., occ. sh. sft. NΦ NSFOC
 tr. rd. brn.-gry. sh.
 Ls. A.A. NΦ NSFOC
 Sh. rd.-gry., sft., earthy
 Sh. rd.-rd. brn., sft., clayey.-m. hrd. dns., earthy, tr. dk. gry.

Orcad Ls.
(-939')

Haabner Sh.
(-955')

DST #1 3664-3720
Rec. 72' 05M
186' M.W.

Deviation 1°
No strap-wind & snow

Good Show
Lansing Gp.
(-1000')

Mud Check @ 3720'
M.W. 9.0
Vis. 5.6
W.L. 6.4
Chl. 2.500
Solids 5.9%
LCM 3 lb.

Weak Show

DST #2 3720-3815'
Rec. 70' 05M
Strap .41' short

- Weak show

- v. wk. show

Mud Check @ 3815'
M.W. 9.2
Vis. 5.2
W.L. 6.8
Chl. 2.500
Solids 6.4%
LCM 3#

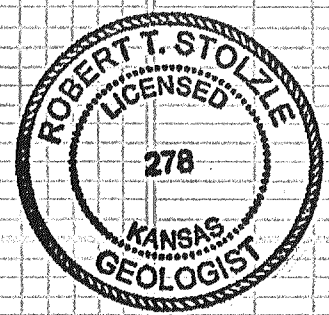


3850

3900

3950

4000



Ls: crm., hrd., stl., chiky, dns., vfg-
 mxln, mic., para. yug. moldic φ-
 th- vfg φ - brn- blk. stn. itr. pr. cut
 + fl., No F.O., No odor, 7 perm.
 Ls: crm.-gry., hrd., dns., vfg-mxln,
 mic., tr. chiky, para. foss. w/ 1-2
 pc. fr. moldic φ w/ dk. brn. stn. 1 qd
 cut + fl., No F.O., No odor, v. thin zone
 Ls: A.A. NΦ NSFDC
 Sh: rd. brn-gry., m. stl., dns., earthy
 Sh: rd. brn-dk. gry., stl., clayey-
 m. hrd., dns., earthy, sandy
 Ls: wh.-crm., hrd., dns., vfg-mxln,
 mic., occ. chiky, para. foss., tr. th-
 vfg. yug. moldic φ, poss. frac. φ,
 No odor, No F.O., itr. cut + fl., 7 perm.
 Ls: crm., hrd., dns., vfg-mxln, mic.,
 occ. stl. + chik., occ. foss., tr. fr. - pr.
 vfg. yug. φ, 1-2 pc. qd. yug. φ, poss. frac.
 No odor, No F.O., fr. qd. cut + fl.
 Ls: A.A. w/ tr. φ + stn. A.A., occ. pebb.
 surf.
 Sh: rd. brn-gry. grn., stl., clayey-m. stl.
 + earthy, occ. sandy, tr. dk. gry-blk.
 Sh: A.A.
 Ls: crm.-lt. gry., hrd., dns., vfg-mxln,
 mic., occ. pol. w/ tr. fr. - pr. int. ool.,
 + yug. moldic φ, dk. stn., No F.O., No odor
 Ls: A.A., occ. stl. + chiky, tr. pr. -
 qd. moldic yug. φ w/ occ. pc. lg. yug.
 φ, qd. cut + fl., No tr. wk. odor, No
 F.O., v. thin zone
 Ls: A.A. NΦ NSFDC
 Sh: rd. brn-gry., m. stl., dns.,
 earthy
 Ls: crm., hrd., dns., vfg-mxln, occ.
 foss., tr. sandy, sh. stn., NΦ NSFDC
 Sh: rd. brn-dk. gry., stl.-m. stl.,
 earthy-hackly
 Sh: varicolored, m. stl., occ. sandy,
 occ. Ls. pebbles, earthy-hackly
 Ss: wh. hrd., dns., fr. grnd., w/ no mod.
 stl., calc. cm. NΦ NSFDC
 Sh: A.A. w/ tr. Ss: A.A. NΦ NSFDC
 Ls: crm., hrd., dns., vfg-mxln, mic.,
 para. foss., occ. sh. stn.
 Sh: rd. brn., stl., clayey-earthly,
 sandy, occ. gry., m. stl., earthy,
 Abun. Ls. pebbles, tr. Ss: A.A.
 Ls: crm., hrd., dns., vfg-mxln, mic.,
 occ. sh. stn., pebbles? NΦ NSFDC
 Sh: rd. brn-dk. gry., mott., m. stl.,
 m. hrd., dns., earthy
 Sh: rd. brn., stl., clayey w/ sh. rd-
 gry., mott., m. stl., dns., sandy
 earthy
 tr. Ls: A.A. NΦ NSFDC
 Sh: A.A.
 occ. Ss: gry., hrd., dns., fr. vfg,
 mod. pr. stl., w. cm. rd. NΦ NSFDC
 Sh: rd. brn-dk. gry., mott., stl.,
 clayey-m. hrd., dns., earthy
 tr. Ls: crm., hrd., dns., vfg-mxln,
 mic. NΦ NSFDC

V. Weak Show

V. Weak Show

DST #3 3806-3880
 REC. 65' 05M

Weak Show

Weak-Fair Show
 Stark Shale
 (-1160')

Weak Show

Fair-Weak Show

DST #4 3867-3910'
 REC. 10' 05M

Base of
 Kansas City
 Group
 (-1212')

Mud Chk @ 3910'
 M.w. 9.1 1b. 19al,
 V.S. 63 sec. 19t.
 W.L. 6.4 ml. 130min.
 Solids 55.7%
 LCM 5#

D.T.D. 3990'
 L.T.D. 3986'

Deviation 1 1/2°

Robert Stolze
 4/26/13