



GEOLOGIST'S REPORT

OPERATOR **MURFIN DRILLING COMPANY, INC.**

LEASE **STEELE 'A' # 1-20**

LOCATION **1760 FNL & 1450 FEL**

SEC. **20** TWSP **10S** RGE **34W**

COUNTY **THOMAS** STATE **KANSAS**

FIELD **WILDCAT**

CONTRACTOR **Murfin Drilling Company** RIG NO. **8**

COMMENCED **4 April 2011** COMPLETED **17 April 2011**

MUD DISPLACED **3333** MUD TYPE **Chemical**

DRILLING TIME KEPT FROM **3800** TO **4845**

SAMPLES SAVED FROM **3800** TO **4845**

SAMPLES EXAMINED FROM **3800** TO **4845**

GEOLOGICAL SUPERVISION FROM **3699** TO **4845**

GEOLOGIST ON WELL **Paul Gunzelman**

FORMATION NAME	LOG		SAMPLE	
	TOP DATUM		TOP DATUM	
Stone Corral	2734	+504	2735	+503
Base/Anhydrite	2762	+464	2768	+470
Topoka	3896	-658	3894	-656
Heebner Shale	4112	-874	4113	-875
Lansing	4152	-914	4153	-915
Stark Shale	4382	-1144	4377	-1139
Marmaton	4466	-1228	4464	-1226
Cherokee	4651	-1413	4651	-1413
Mississippian	4768	-1530	4770	-1532
Total Depth	4845	-1607	4845	-1607

ELEVATIONS

KB **3238 Ft.**

GL **3233 Ft.**

ALL MEASUREMENTS FROM K.B.

CASING RECORD

Conductor **None**

Surface **8 5/8" @ 246'**

Production **5 1/2" @ 4834'**

ELECTRICAL SURVEYS:

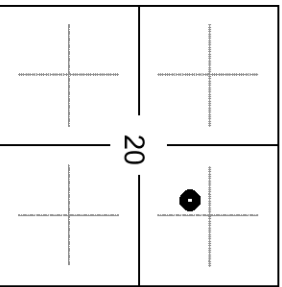
Log-Tech, Inc.

Comp. Neutron Density

Dual Induction

Micro-resistivity

Comp. Sonic



REMARKS

API 15-193-20792-00-00

Drilling Fluids: Morgan Mud, Inc. (David Lines, engineer)

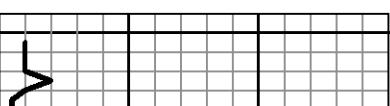
Drill Stem Testing: Trilobite Testing, Inc. (Shane McBride, tester)

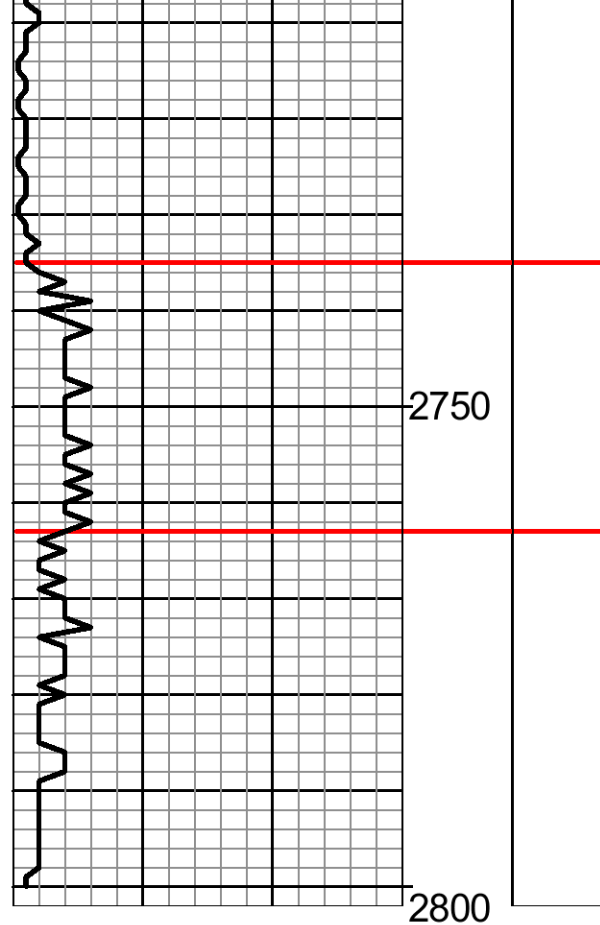
Gas Trailer: No Gas Trailer

Reserve Pit Chlorides: 62,000 PPM

DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	SHOWS	SAMPLE DESCRIPTIONS	REMARKS

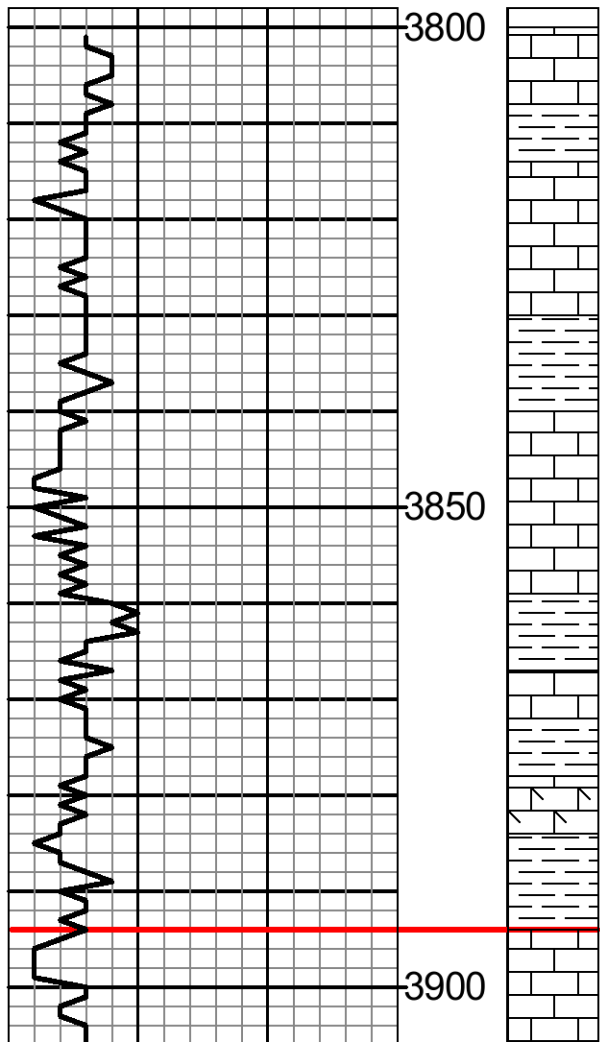
2700





STONE CORRAL
2735 (+503)

BASE/ANHYDRITE
2763 (+475)



12:47 AM, 8 April 2011

Sh: Dk gy, fis, tr mica.

Ls: Tn, fn-vfxln, tr org rem, dns, n/s.

Ls: Crm-gy, fxln, tr org rem, sli chky, tr glauc & dk gy sh inc, n/s.

Sh: Rd-brn, thk fis, ea.

Ls: Crm, fxln, chky, tr org rem, occ crm-tn vfnly gran & dol, fr intgran por, n/s.

Sh: Dk gy, some gy-gn, fis.

Ls: Crm, tr lt gy, fxln, sbchky, some org rem, pr pp por, n/s.

Sh: Gy-gn & dk gy, fis, occ slty, tr mica.

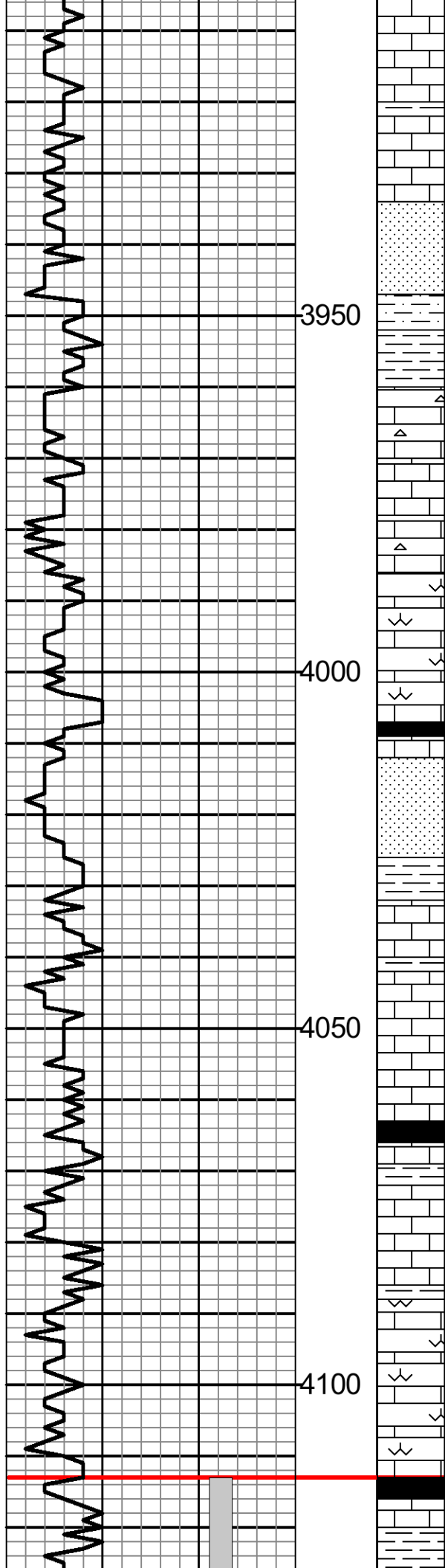
Ls: Crm, fnly gran dol, sbchky, fr-gd intgran por, n/s.

Sh: Lt rd-brn some tn & lt brn, gum.

Ls: Crm, fxln, sbchky, some amor calc, fr pp por, n/s.

Ls: Crm, some lt av, fxln, sbchky, occ fnlv

TOPEKA
3894 (-656)



Ls: Crm, tr lt gy, fxln, sbchky, tr org rem, occ arg, intbd lt gn fis slty sh, n/s.

Ls: Crm, fxln-gran, tr org rem, much dol, tr amor calc, n/s.

Ls: Crm, fxln, sbchky, occ spr calc, fr pp por, intbd gy-gn & lt gn fis occ slty sh, n/s.

Stst: Lt gy & crm, some calc-lmy, occ sdy, tr arg, gd intgran por, n/s.

Sh: Rd-or & rd-brn, blk, some v.slty, tr lt gy-gn fis sh.

Ls: Crm, tr crm-tn, fxln-gran, sbchky, sli ool, tr org rem, wh op frs cht, fr pp & intgran por, n/s.

Ls: Crm & wh-crm, fxln, sbchky, tr ool & org rem, some spr calc, n/s.

Ls: Crm, fxln, sbchky, tr org rem, wh op frs cht, fr por, n/s.

Ls: Crm, tr lt gy, fxln, sbchky, tr spr calc, pr pp por, n/s.

Ls: Lt gy, fxln, tr foss (Brach) sli chky, some arg, n/s.

Sh: Blk, thn fis, carb.

Ls: Dk mott gy-brn, fxln, cons org rem & dk gy sh inc, n.v.p.

Sd: Lt gy, lt olv gn & gy-gn, vvf, sbang-sbrnd, arg, sbfri clus, occ slty, much arg, some pyr & mica, n/s.

Ls: Crm, fxln, tr medxln, ool, cons spr calc, tr sbchky, n/s.

Ls: Rd-brn, tr brn, fxln, arg-shly, intbd rd-brn ea occ slty sh.

Ls: Crm, fxln, sbchky, sli foss (Fus) some spr calc, occ lt gy-gn & arg, n.v.p, n/s.

Sh: Blk & v.dk brn, thn fis, carb, some brn v.fxln dns Ls.

Sh: Lt gn & gy-gn, fis, pyr, occ slty.

Ls: Crm-tn, some tn-gy, fxln, sbchky, tr org rem, occ arg, tr pyr, n/s.

Ls: Tn-brn, fn-vfxln, dns, some arg, n/s.

Ls: Crm, some crm-gy, fxln, chky, sli foss (Fus) tr pyr, pr-fr por, n/s.

Ls: Crm-lt gy, fxln, chky, some arg, occ org rem, n.v.p, n/s.

Ls: Brn, fxln, foss (Brach, Fus) dns.

Sh: Blk, thn fis, carb, w/tn vfxln dns Ls.

Sh: Gy gy-gn & v.dk gy, fis, occ calc-lmy, some slty.

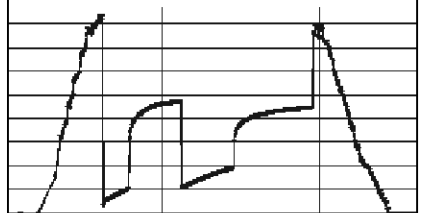
Morgan Mud check @ 3988'
 Vis: 68, Wt: 9.1, WL: 7.2
 Chlor: 5,100 ppm, LCM: 1#

DST # 1 4113 - 4170
 30"-60"-60"-90"

IF: Gd blow, BOB in 9 min.
 FF: Gd blow, BOB in 12 min.

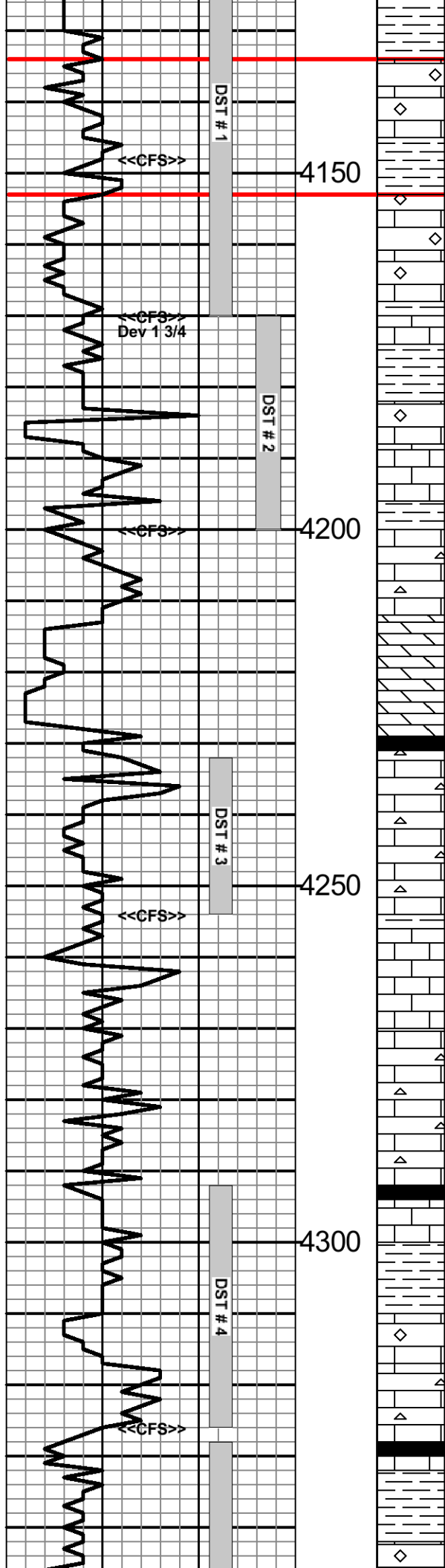
RECOVERY:
 185 Ft. Sli. Oil Cut Muddy Wtr.
 (3%Oil, 40%Mud, 57%Wtr)
 360 Ft. Muddy Water w/oil show
 (10%Mud, 90%Wtr, Gd show)
 420 Ft. Water w/oil show
 (Chlor 42,000 ppm)

IHP: 2101 psi. FHP: 2048 psi.
 IFP: 58-254 psi. ISIP: 1183 psi.
 FFP: 264-479 psi. FSIP: 1121 psi.
 BHT: 122 deg. F.



Morgan Mud check @ 4170'
 Vis: 64, Wt: 9.4, WL: 6.8
 Chlor: 5,100 ppm, LCM: 3#

HEEBNER SHALE
4113 (-875)



- Sh: Oliv gn olv gy, thk fis-blky, calc-lmy, pyr.
- Ls: Wh-frm, fn-frag, ool, sli chky, some lt gy-wh op cht, pr-fr intool por, fr odor, fr shw dk brn FO, spty dk stn, tr sat stn.
- Sh: Gy gy-gn, slty, pyr.
- Ls: Crm, fxln, ool, chky, cons sec calc, tr pyr & wh op frs cht, pr-fr pp por, n/s.
- Ls: Crm, fxln-gran, chky, tr org rem, sli pyr, some wh-frm op cht, n/s.
- Ls: Crm, fxln-gran, pyr, tr crm gy & tn op mott cht, n/s.
- Sh: Rd-brn, some rd-or & gn, blky, slty, bcm lt gn & gy-gn fis pyr.
- Ls: Tn, vfxln, ool, fr vug por, bcm crm & lt gy frag ool, some org rem & spr calc, fr-gd intool por, gd odor, fr shw FO, gsy lstr, scat dk stn-sat.
- Ls: Crm, vfxln, tr org rem, wh crm & lt gy op cht, tr sbchky, n.v.p, n/s.
- Sh: Gn & gy-gn, fis, sli pyr.
- Ls: Crm, fxln, some sbchky, tr foss (Fus) gy & crm-gy op-trnsl cht, pr pp por, tr fr vug por, fr odor, sli shw FO, spty med brn stn-sbsat.
- Dol: Crm, tr crm-tn, gran, tr fxln, some lmy, occ spr calc, gd intgran por, tr fr vug por, n/s.
- Sh: V.dk gy-blk, fis, some carb.
- Ls: Crm-tn, fn-vfxln, sli ool, tr org rem, some sbchky, wh op frs cht, fr pp & vug por, tr fr oom por, fr odor, gd shw dk brn FO, dk sbsat stn.
- Ls: Crm, some crm-tn, fxln, tr sbchky, tr pyr, lt gy & tn op-trnsl vit cht, pr pp por, n/s.
- Ls: Crm, fxln, tr gy op cht, r.pyr, n/s.
- Sh: Dk gy & dk olv gn, fis.
- Ls: Wh-frm, fxln, some vfxln, cons sbchky, tr wh coxln dol.
- Ls: Crm, some lt gy, fxln, tr gran, much sbchky, occ foss (Fus) tr pyr & lt gy op cht.
- Ls: Crm-lt gy, fxln, tr medxln, sbchky, r.org rem, some lt gy op vit cht, occ arg, n.v.p.
- Sh: Blk, some v.dk gy-brn, thn fis, carb.
- Ls: Brn & mott gy-brn, fn-vfxln, arg, dk gy-brn op vit cht, pr intxn por, gd odor, v.sli shw FO, lt stn.
- Sh: Gn olv gn & dk gy, fis, sli pyr.
- Ls: Crm-lt gy, frag, ool, sli foss (Fus), fr intrfrag por, strong odor, gd shw lt brn FO, med brn sat stn.
- Ls: Crm, vfxln-microxln, sbchky, some wh & lt gy op-trnsl vit cht, dns, n/s.
- Sh: Blk & v.dk gy, fis, some carb.
- Ls: Tn, tr brn, fn-vfxln, sli pyr, tr ool, gen dns, n/s.
- Sh: Gy-gn & olv gn, fis, sli pyr.
- Ls: Crm-v.lt gy, fxln, some frag, ool, occ spr calc, pr pp & intool por, gd odor, fr shw

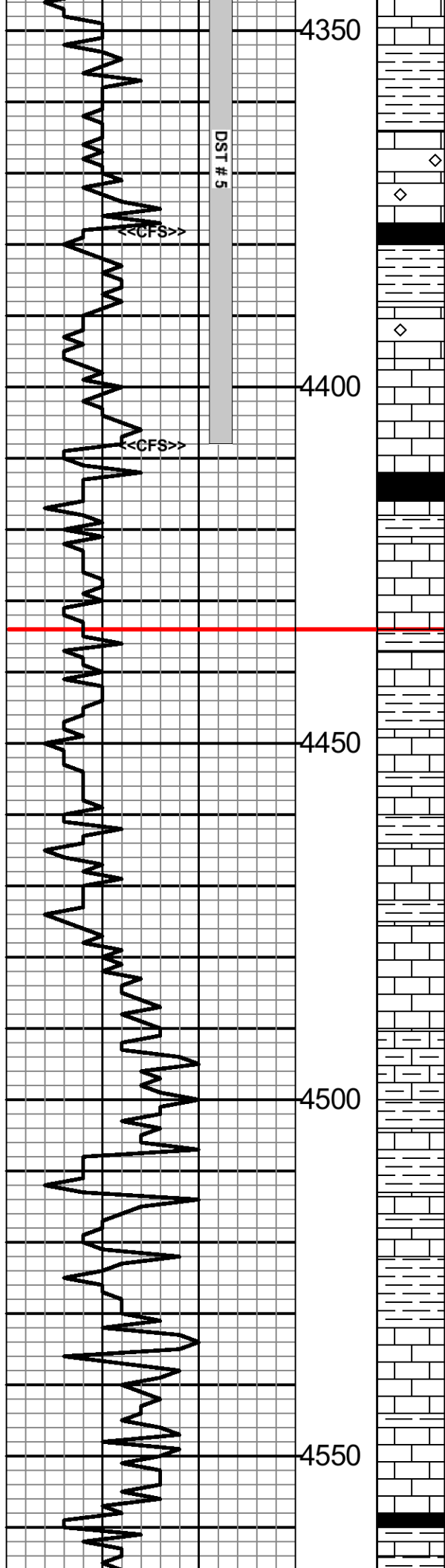
TORONTO
4134 (-896)

LANSING
4153 (-915)

DST # 2 4170 - 4200
 30"-60"-60"-90"
 IF: Gd blow, BOB in 12 min.
 FF: Fair blow, BOB in 25 min.
RECOVERY:
 90 Ft. Sli. Oil Cut Muddy Water (5%Oil, 30%Mud)
 180 Ft. V. Sli. Oil Cut Muddy Water (2%Oil, 25%Mud)
 180 Ft. Muddy Water, tr Oil
 240 Ft. Water w/Oil spots (Chlor 38,000 ppm)
 IHP: 2103 psi. FHP: 2063 psi.
 IFP: 32-188 psi. ISIP: 1115 psi.
 FFP: 191-342 psi. FSIP: 1081 psi.
 BHT: 124 deg. F.

DST # 3 4232 - 4254
 30"-60"-60"-90"
 IF: Fair blow, 8 1/2 inches
 FF: Fair blow, BOB in 52 min.
RECOVERY:
 90 Ft. Muddy Water w/oil spots
 60 Ft. Sli. Muddy Water w/oil spots
 240 Ft. Water (Chlor. 57,500 ppm)
 IHP: 2120 psi. FHP: 2097 psi.
 IFP: 18-112 psi. ISIP: 1246 psi.
 FFP: 135-221 psi. FSIP: 1233 psi.
 BHT: 124 deg. F.

DST # 4 4292 - 4326
 30"-60"-60"-90"
 IF: Fair blow to 5 1/2 inches.
 FF: Weak blow to 4 1/2 inches (Severe plugging during FF)
RECOVERY:
 15 Ft. Clean Oil (20 grav. API)
 230 Ft. Sli. Gas W/tn and Oil Cut Mud



calc, pr pp & intool por, gd odor, tr shw FO, lt brn sat & sb sat stn.

Sh: Gn lt gn gy-gn, some brn & gn mott, fishk fis, pyr, occ calc-lmy, bcm rd-brn & brn blkly some gum, tr rd-brn v. arg Ls.

Ls: V.lt gy, frag, ool, some sbchky, tr org rem, cons spr calc, pr intool por, tr fr por, fr odor, sli shw med brn FO, sat stn, tr spty stn.

Ls: Crm-tn, fxln, tr vfxln, r.ool & foss (Fus) dns, n/s.

Sh: V.dk gy-blk, thn fis, some carb, bcm gn & gy-gn fis tr pyr, occ calc.

Ls: Lt gy, fxln-frag, ool, tr spr calc & sli chky, some arg, pr-fr intool & pp por, strng odor, v.sli shw FO, lt brn spty stn-sb sat.

Ls: Crm, fn-vfxln, sli ool, some sbchky, tr arg, n.v.p, n/s.

Sh: Blk, thn fis, carb, bcm med gy slty & rd-brn blkly sh.

Ls: Lt gy, fxln, some arg, tr org rem, occ silic, tr wh-gy mott vit cht, n.v.p.

Ls: Crm, some crm-gy, fn-vfxln, occ arg, tr org rem, some spr calc, n.v.p.

Ls: Tn & brn, fxln, mott w/dk gy sh, tr org rem, dns, intbd gy dk gy & gy-gn fis sh, n/s.

Ls: Crm, fn-vfxln, sbchky, tr wh op frs cht, some arg, tr frac, n.v.p.

Sh: Gy-gn & dk gy, fis, some gy-tn fxln sli arg Ls.

Ls: Crm & wh-crm, vfxln, some withd-sbchky, tr arg, n.v.p, n/s.

Sh: Gy-brn & olv gn, fis, pyr, some carb mat, occ calc, intbd brn vfxln pyr arg Ls, n.v.p.

Ls: Crm, fxln, tr foss (Fus) sli chky, some crm-lt gy & arg, n.v.p, n/s.

Ls: Crm-gy, fxln, tr gran, some arg-shly, tr org rem & lt gy trnsl cht, occ pyr, n.v.p, n/s.

Sh: Gy & gn-gy, fis, slty, some calc-lmy, tr dk gy fis gum sh.

Ls: Crm, fn-vfxln, sli ool, sbchky, some spr calc, n.v.p.

Sh: Gy-gn & med gy, fis, some slty, occ gy-gn & yel calc-lmy sh.

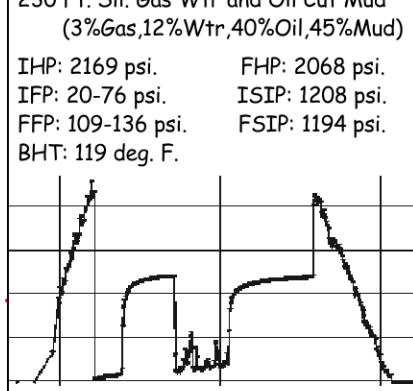
Ls: Crm, fxln, tr vfxln-microxln, sbchky, some amor calc, occ lt gy & arg, n.v.p.

Ls: Crm-tn, fxln, occ silic, some arg, rexlzd, tr tn op-trnsl vit cht, some lt or amor calc, n.v.p.

Sh: Gy-gn & yel slty pyr.

Ls: Crm-tn, tr lt brn, fxln, occ arg, r.foss (Fus) n.v.p.

Sh: Blk, thn fis, carb, some tn vfxln dns Ls, bcm gy & lt rd-brn blkly v.slty sh.



Morgan Mud check @ 4326'
 Vis: 59, Wt: 9.2, WL: 6.8
 Chlor: 7,500 ppm, LCM: 2#

Morgan Mud check # 4408'
 Vis: 50, Wt: 9.2, WL: 7.6
 Chlor: 7,900 ppm, LCM: 1.5 #

BASE/KANSAS CITY
4434 (-1196)

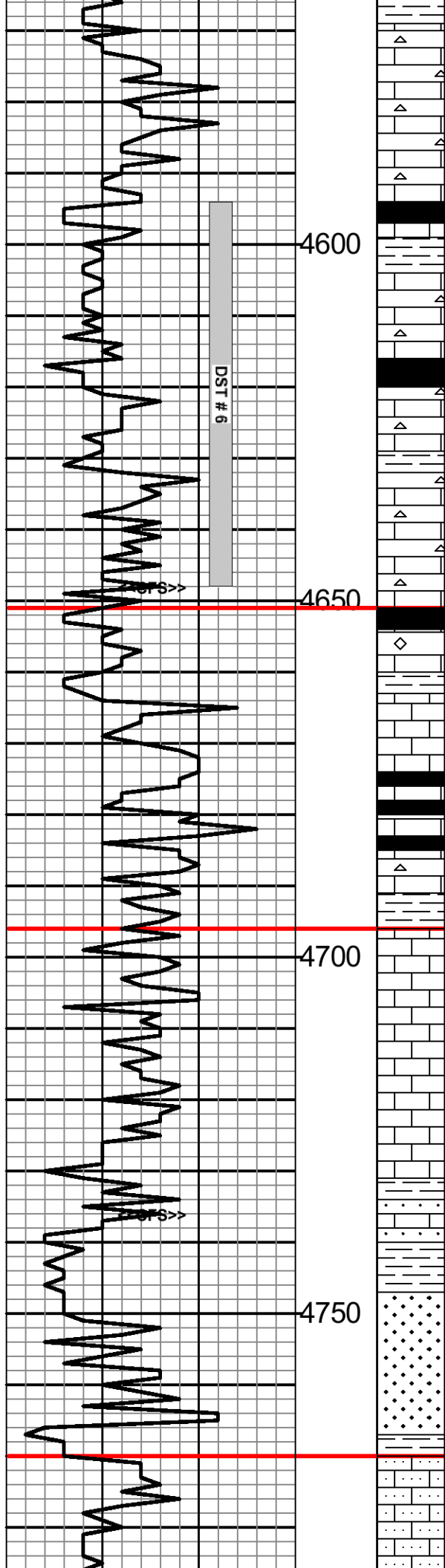
DST # 5 4328 - 4408
 30"-60"-60"-90"
 IF: Strong blow BOB in 15 min.
 FF: Strong blow BOB in 22 min.

RECOVERY:
 60 Ft. Clean Gassy Oil (34 grav. API)
 435 Ft. Sli. Oil Cut Muddy Water (5%Oil, 30%Mud, 65%Wtr)

IHP: 2222 psi. FHP: 2130 psi.
 IFP: 46-80 psi. ISIP: 1243 psi.
 FFP: 177-273 psi. FSIP: 1226 psi.
 BHT: 121 deg. F.

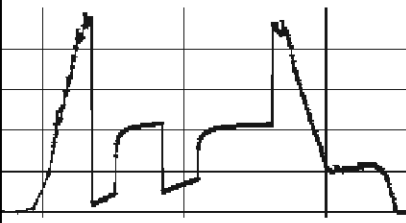


Morgan Mud check @ 4580'
 Vis: 57, Wt: 9.1, WL: 6.8
 Chlor: 8,000 ppm, LCM: 3#



- Ls: Crm-tn, fn-vfxln, tr sbchky, some org rem, lt gy op-trnsl vit cht, r.pyr, occ v.lt gy & arg, n.v.p, n/s.
- Ls: Crm-tn, vfxln-microxln, tr org rem & pyr, occ silic, lt gy & tn vit cht, n.v.p.
- Ls: Tn-brn, vfxln, tr microxln, gy tn & v.dk gy-brn vit cht, n.v.p.
- Sh: Blk thn fis, carb, some brn vfxln pyr dns Ls.
- Sh: Lt gn & gy-gn, tr yel, thk fis, some calc.
- Ls: Crm-tn, fxln, foss, tr dk gy inc, wh & lt gy op-trnsl frs cht, pr pp por, tr fr-gd vug por, v.sli odor, no FO, v.lt stn & edge stn.
- Ls: Crm-gy, fxln, sli arg, v.dk gy-blk op cht, pr pp por, tr fr vug por, sli odor, sli shw FO, v.lt spty stn.
- Sh: Blk, carb, some v.dk gy-brn fis calc, sh.
- Ls: Crm-tn, fn-vfxln, tr org rem, some pyr & lt gy-crm trnsl vit cht, n.v.p, n/s.
- Ls: Crm-tn, fxln, dns, cons crm tn & gy op-trnsl cht, tr v.dk gy-brn arg ool Ls, intbd dk gy sh, pr pp por, sli odor, no FO, v.lt scat stn.
- Ls: Tn, vfxln-microxln, foss, occ tn op vit cht, some sli arg, dns, n/s.
- Sh: Blk, thn fis, carb.
- Ls: Crm-tn, fxln-frag, dk gy & tn ool. cons spr calc, some sbchky, n/s.
- Sh: Dk gy-blk, thn fis, some carb.
- Ls: Crm-tn, fxln, tr vfxln, occ spr calc, some arg, gen dns, n/s.
- Ls: Crm, fxln, tr org rem, r.v.lt gy op cht, some spr calc, n.v.p, n/s.
- Ls: Tn, vfxln, sli pyr, cons tn op vit cht, some spr calc & occ arg, intbd blk carb sh, n/s.
- Ls: Crm-gy, fn-vfxln, tr foss & tn-gy op cht, occ sbchky, intbd gy-gn & lt gn sh, n/s.
- Ls: Tn-brn, fn-vfxln, some tn & gy op cht, pr pp por, fr-gd vug por, sli odor, fr shw FO, sli shw G, dk brn sb sat stn.
- Ls: Crm-tn, fn-vfxln, occ tn & gy op vit cht, tr spr calc, tr pr edge por & stn.
- Ls: Tn, fn-vfxln, some tn & gy arg Ls, gen dns, tr sbchky, tr pr pp por, v.sli shw FO, spty dk stn.
- Ls: Tn-gy, vfxln, aren, tr org rem & glauc, cons sec calc, n.v.p.
- Sh: Gy-gn & olv gn, fis, sli pyr, intbd wh vfn-vfn sbang sbfri pyr sd, fr intgran por, n/s.
- Sh: Gy-gn, lt gn olv gn & yel, fis, tr slty, occ pyr, some sdy.
- Sd: Wh, vfn-fn, sbang-sbrnd, wl cmt-sbfri, tr gy & brn sh inc, some lt gy fn-med calc sbfri sd, n/s.
- Sd: Wh & v.lt gn, vfn-fn, ang-sbrnd, sli calc, fri-sbfri, tr arg-shly, fr-gd intgran por, n/s.
- Sh: Gn gy-gn lt gy yel, tr purp & v.dk gy, occ mott, some sdy, intbd tn-lt gy vfxln dns Ls, n/s.
- Ls: Crm, fxln, tr gran, sli ool, sbchky, aren, n.v.p, n/s.
- Ls: Crm-gy, fxln-gran, aren, tr ool & org rem, some arg, n.v.p, n/s.

DST # 6 4594 - 4648
 30"-60"-45"-90"
 IF: Strong blow BOB in 2 1/2 min.
 ISI: Could not bleed off
 FF: Strong blow BOB in 2 1/2 min.
 FSI: GTS in 10 min, couldn't bleed off
RECOVERY:
 900 Ft. Clean Gassy Oil (33 grav. API)
 120 Ft. Gas & Mud Cut Oil (30%Gas, 30%Mud, 40%Oil)
 IHP: 2386 psi. FHP: 2302 psi.
 IFP: 86-211 psi. ISIP: 1078 psi.
 FFP: 250-394 psi. FSIP: 1073 psi.
 BHT: 131 deg. F.



CHEROKEE
4651 (-1413)

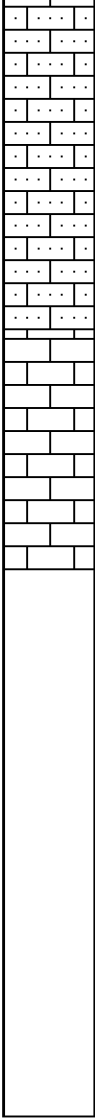
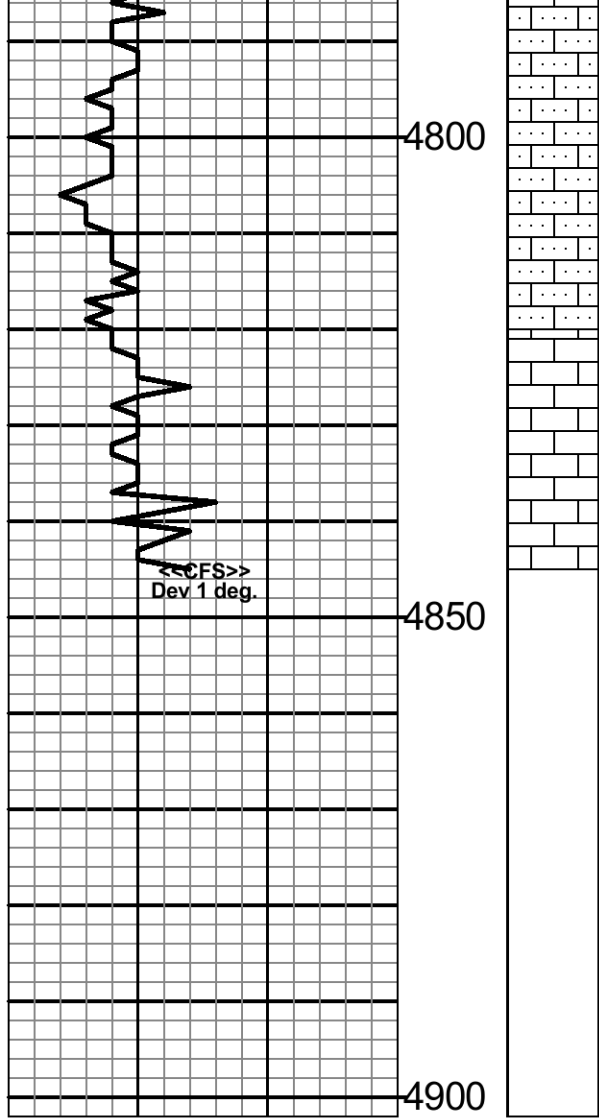
Morgan Mud check @ 4673'
 Vis: 72, Wt: 9.2, WL: 7.2
 Chlor: 7,800 ppm, LCM: 2#

JOHNSON ZONE
4696 (-1458)

Morgan Mud check @ 4736'
 Vis: 50, Wt: 9.0, WL: 6.8
 Chlor: 8,000 ppm, LCM: 3#

Samples very shaley to TD

MISSISSIPPIAN
4770 (-1532)



some arg, n.v.p, n/s.

Ls: Crm, fxln, some crm-tn fxln-gran, aren, sli
foss, tr pyr, occ sbchky, n/s.

Ls: Crm, microIn-crpxln, dns, n/s.

Ls: Crm-tn, some tn-gy, fxln, aren, arg, ndns,
n.v.p.

Ls: Crm-tn-gy, fn-vfxln, tr org rem, occ
sbchky, some arg & pyr, n.v.p.

Ls: Crm-gy, vfxln, r.org rem, some arg, gen
dns, n/s.

TOTAL DEPTH
4845 (-1607)
 2:30 AM, 16 April 2011

Operator: MURFIN DRILLING COMPANY, INC.

Lease: STEELE 'A' # 1-20

Location: 1760 FNL & 1450 FEL SEC. 20 TWSP 10S RGE 34W

County: THOMAS State: KANSAS