



GEOLOGIST'S REPORT

OPERATOR **MURFIN DRILLING COMPANY, INC.**

LEASE **MOORE "A" # 1-21**

LOCATION **1160 FSL & 1620 FEL**

SEC. **21** TWS **1S** RGE **29W**

COUNTY **DECATUR** STATE **KANSAS**

FIELD **WILDCAT**

CONTRACTOR Murfin Drilling Company RIG NO. 8

COMMENCED 22 Feb. 2011 COMPLETED 1 March 2011

MUD DISPLACED 2877 MUD TYPE Chemical

DRILLING TIME KEPT FROM 3000 TO 3965

SAMPLES SAVED FROM 3000 TO 3965

SAMPLES EXAMINED FROM 3000 TO 3965

GEOLOGICAL SUPERVISION FROM 3065 TO 3965

GEOLOGIST ON WELL Paul Gunzelman

ELEVATIONS

KB **2732 Ft.**

GL **2727 Ft.**

ALL MEASUREMENTS
FROM K.B.

CASING RECORD

Conductor None

Surface 8 5/8" @ 263'

Production None

ELECTRICAL SURVEYS:

Log-Tech, Inc.

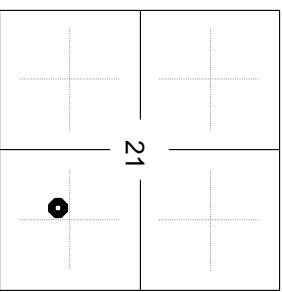
Comp. Neutron Density

Dual Induction

Micro-resistivity

Comp. Sonic

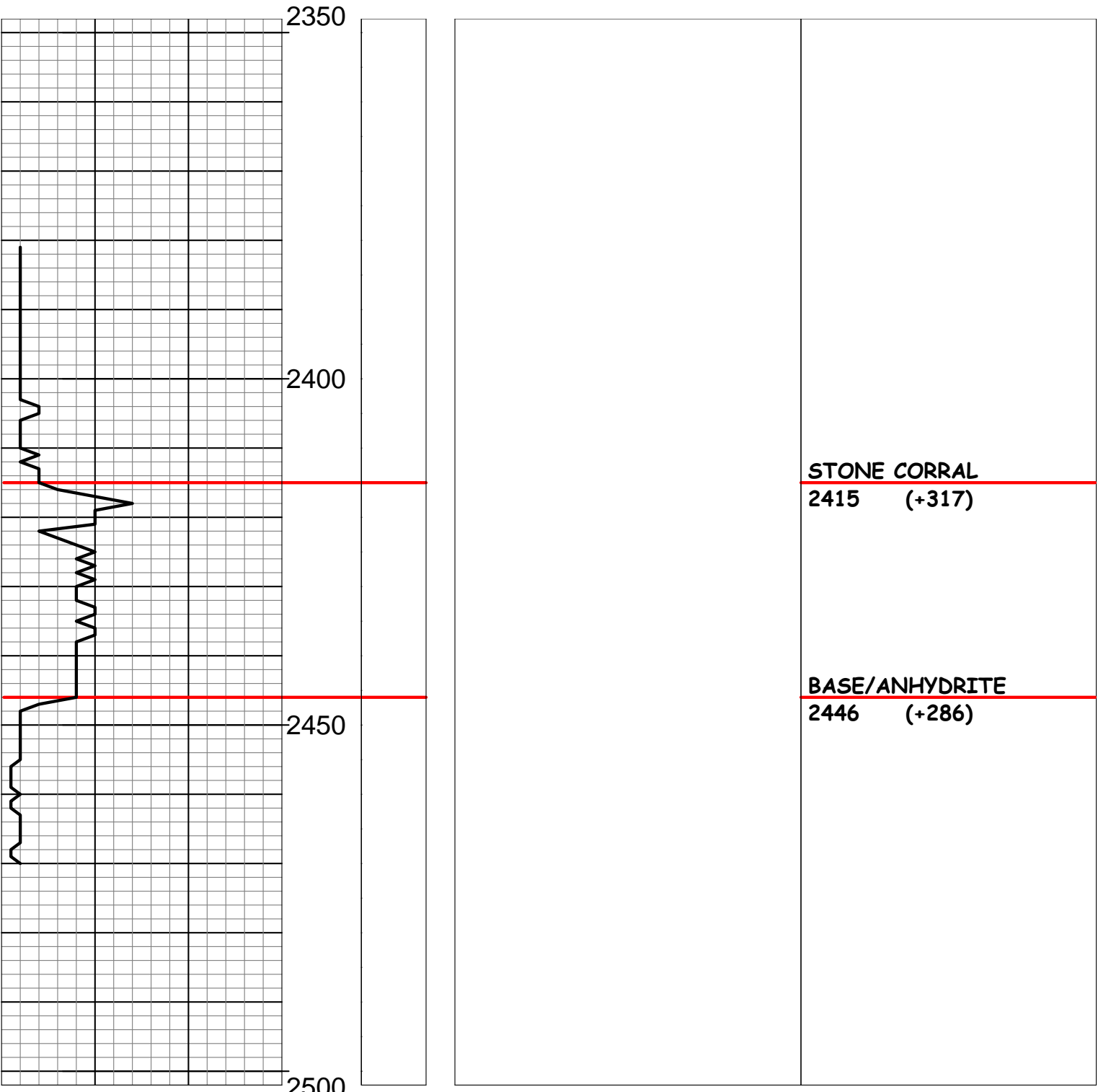
FORMATION NAME	LOG TOP DATUM	SAMPLE TOP DATUM
Stone Corral	2416 +316	2415 +317
Base/Anhydrite	2447 +285	2446 +286
Neva	3082 -350	3080 -348
Foraker	3204 -472	3200 -468
Topoka	3466 -734	3470 -738
Heebner Shale	3624 -892	3622 -890
Lansing	3667 -935	3665 -933
Stark Shale	3840 -1108	3838 -1106
Base/Kansas City	3892 -1160	3889 -1157
Total Depth	3966 -1234	3965 -1233

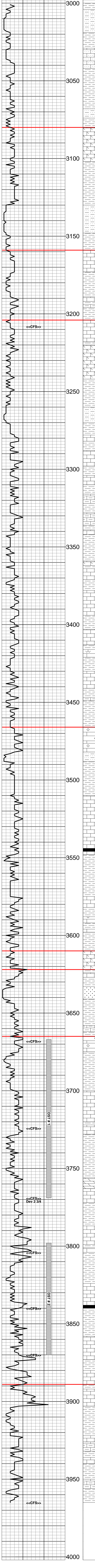


REMARKS

API 15-039-21125-00-00
 Drilling Fluids: Morgan Mud, Inc. (David Lines, engineer)
 Drill Stem Testing: Trilobite Testing, Inc. (James Winder, tester)
 Gas Trailer: No Gas Trailer
 Reserve Pit Chlorides:

REMARKS	SAMPLE DESCRIPTIONS	SHOWS	LITHOLOGY	DEPTH	DRILL TIME (MIN/FT)
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Sh: Lt rd-brn, v.sft & gum.
Stst: Rd-brn & crm, arg-shly, some sdy, cons intbd lt rd-brn gum sh.
Sh: Lt rd-brn, v.gum, some dk rd-brn shly Ls, tr slty.
Ls: Crm, gran, chky, v.sily, cons crm lmy sltst, some mott w/rd-brn sh, gd intgran por, n/s.
Sh: Rd-brn & lt rd-brn, tr rd-or, blkly gum, some sily, tr v.arg Ls, n/s.
Sh: Lt rd-brn, v.sft & gum, some lt gy-gn sli arg sltst.
Sh: Lt rd-brn, v.gum, some slty.
Ls: Wh-crm, gran-frag, ool, v.chky, bcm fxln & dns, n/s.
Ls: Crm, tr crm-tn, gran, dol, some spr calc, fr-gd intgran por, n/s.
Ls: Trn-lt brn, fxln, tr ool, bcm lt gy-brn, tr yel, fxln-gran, arg, some slty, intbd gy fis-biky calc sli pyr sh, n.v.p.
Sh: Rd-brn & lt rd-brn, blkly, gum some slty.
Stst: Lt gy, v.glauc, some sdy, bcm lt gy & lt yel vgt sli calc sltst, occ rd-brn v.arg sdy sltst, much rd-brn & lt rd-brn v.gum sh.
Sh: Lt rd-brn tr lt gy & gn-gy, v.gum tr slty.
Ls: Crm, gran-med gran, v.chky, tr amor calc, n/s.
Ls: Crm-gy, fxln-gran, mott w/dk gy sh inc, tr silic, r.bm op foss cht, bcm gy fxln arg shly dns Ls, n/s.
Sh: Lt gy, blkly, gum occ slty, tr mica, cons carb mat.
Sh: Lt gy tr crm & gy-gn, v.gum, occ slty, intbd wh & lt gn slty arg v.chky Ls, n/s.
Ls: Crm-tn mott w/dk gy sh, fxln, cons lt gn & blu-gn v.gum sh.
Ls: Crm, gran-frag, v.chky & gum, sli dol, tr amor calc, fr intgran por, n/s.
Ls: Crm-tn, fxln, smwt dol, tr spr calc, bcm crm & dk gy mott frag, sli loss (Fus) cons dk gy sh inc, some gy & dk gy intbd sh.
Ls: Gy, fxln-gran, arg, cons chk, some org rem, much dk gy sh, tr lt gy op frs cht, n/s.
Ls: Crm & crm-tn, vfnly gran, dol, some mott w/gy sh, fr intgran por, n/s.
Sh: Gy, fis, calc, sli mica, cons carb mat, some slty, bcm v.lt rd-brn & gum.
Sh: Rd-brn & lt rd-brn, blkly, sty, occ sdy, much gum, tr calc-lmy.
Sh: Lt gy-gn & v.lt gn, gum, sli, intbd crm gran-frag ool sbchky Ls, n.v.p.
Ls: Gy, tr crm-gy, v.fnly gran, slty, arg-shly, tr mica, bcm crm gran v.chky, intbd gy & lt gy fis sh, n/s.
Ls: Crm, frag, ool, chky, some lt gy-gy & yel arg gran Ls, much rd-or & lt rd-brn gum sh, n/s.
Sh: Rd-brn mar & purp, blkly, slty, some purp & dk rd-brn shly ool Ls.
Ls: Crm-tn, some lt gy-gn & yel, fn-vfxln, tr chk, occ arg-shly, gen dns, n/s.
Ls: Yel tn & gn-gy, frag, ool, arg, intbd gy-gn & lt gy fis sh.
Sh: Rd-brn & lt rd-or, blkly, slty, some gum, intbd rd-brn & yel v.arg Ls.
Ls: Trn-lt gy, v.fn gran, dol, tr org rem, sli chky, pr intgran por, n/s.
Ls: Gy, fxln, cons org rem, arg, dns, n/s.
Sh: Gy & gn-gy, fis, some gum, bcm rd-brn gum, tr calc-lmy.
Ls: Crm-lt gy, tr yel, fxln, chky, glauc, some org rem, occ arg, n.v.p.
Sh: Lt gy, some lt rd-brn, v.gum.
Ls: Crm-lt gy, fxln, glauc, tr org rem, sbchky, some arg, n/s.
Ls: Crm, fxln, sbchky, foss (Fus) intbd lt gn & gy-gn fis sh, n/s.
Sh: Lt rd-brn sft, v.gum.
Ls: Wh-crm, fxln, chky, tr org rem, occ amor calc, fr pp por, n/s.
Sh: Lt rd-brn & rd-brn, blkly, occ lmy, much gum intbd crm yel & rd-brn mott xln-frag Ls, n/s.
Sh: Rd-brn, blkly, some slty, cons lt rd-brn & lt gy v.gum sh.
Ls: Crm, fxln, ool, cons sec calc, occ mott w/rd-brn sh, n.v.p, n/s.
Ls: Crm, fxln-frag, ool, sbchky, tr glauc, n/s.
Stst: Crm, calc-lmy, occ sdy some sbchky, bcm pnk lt rd-brn & rd-brn arg-shly sltst.
Sh: Lt rd-brn v.gum, tr blu-gn thk fis sh.
Sh: Lt rd-brn, v.gum, tr slty.
Ls: Crm, fn-vfxln, tr spr calc, r.org rem, some sbchky, n.v.p.
Ls: Wh-crm, fn-vfxln, sbchky, tr org rem, some spr calc, n.v.p, n/s.
Ls: Crm, tr crm-tn, fn-vfxln, tr org rem, cons spr calc, some sbchky, n/s.
Ls: Crm-tn, fxln, sbchky, cons spr calc, tr org rem, bcm tn-lt brn fn-vfxln smwt arg & dns, n/s.
Sh: Dk gy-brn & dk gy, fis, some carb, bcm v.lt rd-brn & lt gy v.gum, w/brn gran arg Ls, n/s.
Sh: Lt rd-brn, sft, v.gum, some rd-brn blkly sily sh & gy-gn fis sli calc.
Ls: Crm-lt gy, fxln, tr ool & org rem, some spr calc, occ sbchky, bcm arg, n.v.p.
Sh: Lt rd-brn, v.gum.
Ls: Wh, fxln-frag, ool, v.chky, some sec calc, pr intool por, n/s.
Sh: Rd-brn, gum, occ dk rd-brn v.arg sltst.
Ls: Crm-lt gy, fxln, cons chky, sli ool, bcm wh-crm fxln-gran dol, sli pyr, occ amor calc, fr pp & intgran por, n/s.
Sh: V.dk gy, fis, much carb mat, bcm dk gy fis sli pyr & rd-brn blkly ea occ gum.
Sd: Lt gy, vfn-fn ang-sbrnd wl-cmt clus, some gy sh inc, pr intgran por, n/s.
Sh: Lt rd-brn v.gum rd-brn silky ea occ slty & gy-gn fis pyr sh.
Ls: Crm, fn-vfxln, tr org rem & spr calc, occ sbchky, some v.lt gn & pnk arg Ls, n.v.p, n/s.
Ls: Crm, v.fxln dns, tr ool, bcm v.lt gy & slty, some arg, n/s.
Sh: V.lt gy, fn-vfxln, ool, sbchky, occ spr calc, tr pyr, pr intool por, no odor, no FO, spty dk brn stn, tr blk tar O.
Sh: Rd-brn, blkly ea, some gum, cons gy-gn crm yel & rd-brn mott arg-shly frac Ls.
Sh: Rd-brn, thk fis, ea, some lt rd-brn gum, tr v.dk gy thn fis carb sh.
Ls: Crm-lt gy, fn-vfxln, occ sbchky, pr pp por, no odor, no FO, lt brn absat stn, some gy-gn arg & dns.
Ls: V.lt gy, fxln-frag, sli ool, no FO, spr calc, pr intool & pp por, v.sil odor, no FO, spty lt stn, bcm v.fxln dns.
Sh: Gn & gy-gy, fis, pyr, occ calc.
Ls: Crm & lt gy-gn, fn-vfxln, dns, some sbchky, n/s.
Sh: V.dk gy-blk, thn fis, carb.
Sh: Rd-brn, lt brn & rd-or, blkly, ea, some slty, much gum.
Sh: Rd-brn, blkly, slty, w/lt rd-or v.gum sh.
Dol: Crm & lt gy, mott w/rd-brn sh, gran, tr spr calc & pyr, fr intgran por, n/s.
Ls: Lt gy & gn-gy, some crm-gy, vfxln, sbchky, occ arg, tr pyr, dns, n/s.
Ls: Crm, tr v.lt gy, fxln, sbchky, r.spr calc, n.v.p.
Sh: Rd-brn, thk fis-blk, ea, some slty, occ tn & rd-brn Ls pel, cons lt rd-or gum sh.
Ls: Crm, fn-vfxln, some sbchky, tr org rem & glauc, occ lt gy & lt gy-gn fxln arg Ls, n.v.p.
Ls: Crm, fxln, occ vfxln, some sbchky, sli foss (Fus) tr pyr, gy-gn & lt gn intbd sh, n.v.p.
Sh: Lt gy-gn, fis, calc-lmy, tr org rem, r.pyr.
Sh: Rd-brn, thk fis, ea, some gy-gn fis sh.
Ls: Lt gy & gy-gn, vfxln sli arg, tr foss (Brach) dns, bcm crm fn-vfxln sbchky, tr pyr, pr pp por, v.faint odor, no FO, v.lt spty stn & edge stn, tr blk asph res.
Crm, vfxln, dns, tr sbchky, occ spr calc, r.org rem, n/s.
Sh: Dk gy, fis, cons carb mat.
Sh: Rd-brn, blkly some rd-brn arg sltst & lt rd-brn dns arg Ls, intbd lt glm & gy-gn fis sh.
Ls: V.lt gy, some yel & lt gn, fn-vfxln, much mott w/rd-brn sh, frac, tr pyr, dns n/s.
Ls: Wh-crm, vfxln, tr microxln, sbchky, r.org rem, dns, tr pr pp por, v.sil odor (crush) no FO, tr spty stn.
Sh: Lt rd-brn & lt brn, v.gum.
Ls: Crm, fn-vfxln, ool, wl-cmt, sbchky-chky, r.pyr, some lt gn fis calc sh, n.v.p, n/s.
Sh: Dk gy, thn fis, cons carb mat, bcm rd-brn ea, some v.glauc sltst & crm vfxln dns Ls.
Sh: Rd-brn, some rd-or & brn thk fis, ea, occ sdy, tr crm yel & rd-brn arg Ls.
Sh: Rd-brn, some brn mar & purp, occ slty, tr gum.
Ls: Crm & yel mott, fxln-frag, ool, tr org rem, some spr calc, bcm lt gy gran slty, occ v.arg, tr pyr, n.v.p, n/s.
Sh: Rd-brn, tr rd-or & purp, occ slty, tr org rem, intbd gy-gn & gn fis occ slty sli pyr sh, some yel & crm mott Ls.
Ls: Crm lt gy yel some gn, gran, slty, occ mott w/rd-brn sh, some crm fxln dns Ls, cons rd-brn blkly sh, some gum.

NEVA

3080 (-348)

Morgan Mud check @ 3120'
Vis: 74, Wt: 8.8, WL: 6.4
Chlor: 800 ppm, LCM: 8#

RED EAGLE

3159 (-427)

FORAKER

3204 (-472)

TOPEKA

3466 (-734)

OREAD

3610 (-878)

HEEBNER SHALE

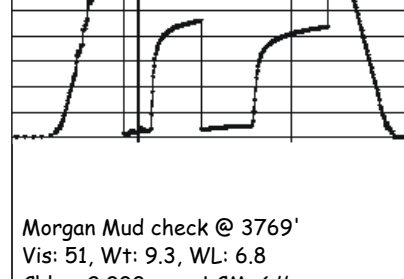
3622 (-890)

Morgan Mud check @ 3664'
Vis: 69, Wt: 9.1, WL: 6.4
Chlor: 1,400 ppm, LCM: 6#

LANSING

3665 (-933)

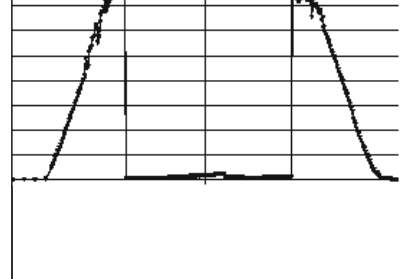
DST # 1 3667 - 3769
30"-60"-60"-90"
IF: Fair blow incr. to 5 inches
FF: Fair blow incr. to 5 1/2 inches
RECOVERY:
24 Ft. Sil. Oil & Wtr Cut Mud
(2%Oil, 46%Wtr)
176 Ft. Muddy Water w/tr Oil
(Chlor: 50,000 ppm.)
IHP: 1812 psi. FHP: 1795 psi.
IFP: 26-67 psi. ISIP: 1147 psi.
FFP: 72-11 psi. FSIIP: 1089 psi.
BHT: 99 deg. F.



Morgan Mud check @ 3769'
Vis: 51, Wt: 9.3, WL: 6.8
Chlor: 2,000 ppm, LCM: 6#

DST # 2

3798 - 3870
30"-60"-30"-30"
IF: Weak 1/2" blow
FF: No blow
RECOVERY
4 Ft. Mud
IHP: 1855 psi. FHP: 1836 psi.
IFP: 18-19 psi. ISIP: 61 psi.
FFP: 25-22 psi. FSIIP: 32 psi.
BHT: 95 deg. F.



Morgan Mud check @ 3870'
Vis: 50, Wt: 9.2, WL: 6.4
Chlor: 2,000 ppm, LCM: 6#

BASE/KANSAS CITY

3889 (-1157)

Trip @ 3903' to replace bit nozzles.

TOTAL DEPTH

3965 (-1233)

6:40 PM, 28 February 2011

Operator: MURFIN DRILLING COMPANY, INC.
Lease: MOORE "A" # 1-21
Location: 1160 FSL & 1620 FEL SEC. 21 TWSP 1S RGE 29W
County: DECATUR State: KANSAS