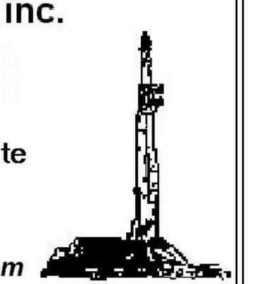
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office

PETCOM

Geological Wellsite
Supervision

www.goolsbybrothers.com



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

Well Name: CANNON 14C-10HZ
Location: Section 10, T2N, R66W, Weld County, CO.
License Number: API: 05-123-36696 **Region:** Wattenberg
Spud Date: 21 June 2013 **Drilling Completed:** 28 June 2013
Surface Coordinates: 444' FNL X 1322' FWL NWNW (irr. Sec)
LAT: 40.158633 LONG: -104.768138
Bottom Hole Coordinates: 460' FSL X 2150' FWL SESW (Proj)
Ground Elevation (ft): 4952' **K.B. Elevation (ft):** 4969'
Logged Interval (ft): 6600' **To:** 12035' **Total Depth (ft):** 12035'
Formation: Codell
Type of Drilling Fluid: Polymer-Gel

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP
Address: Granite Tower - 1099 18th St, Ste 1800
Denver, CO 80202
CO Geologist, Tom Birmingham

GEOLOGIST

Name: Tekabe Gedamu,John Adams
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

MWD GR 7045' - TD'
MWD RES 7900' - TD'

Casing

9 5/8" Surface Casing set @ 967'
7" Intermediate Casing set @ 7885' MD, set on June 25, 2013
run 4 1/2" Production Liner run on June 29, 2013 set at 12030'.

Comments

1) Drilling Contractor: Xtreme Drilling, Rig # 23
2) Directional Drilling: Weatherford Drilling Services
MWD: Corey Jacobs & Denny Palmer
3) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-360 & Ratcliff Agitator

ROCK TYPES

- 🟧 Anhy
- ▨ Bent
- ▨ Brec
- ▨ Cht
- ▨ Clyst
- ⬛ Coal
- ▨ Oil sat.
- 🟨 Congl
- 🟪 Dol
- 🟧 Gyp
- 🟥 Igne
- 🟦 Lmst
- ▨ Meta
- ▨ Mrlst
- 🟩 Salt
- ▨ Shale
- ▨ Shcol
- ▨ Shgy
- 🟨 Ss
- ▨ Sltst
- 🟨 Ss
- 🟦 Chalk
- ▨ Carb sh
- ▨ Slty sh

ACCESSORIES

MINERAL
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

FOSSIL
- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

STRINGER
- Chlkstg
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE
- Boundst
- Chalky
- CryxIn
- Earthy
- FinexIn
- Grainst
- Lithogr
- MicroxIn
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

OIL SHOWS
- ● Even
- ◐ Spotted
- ○ Ques
- D Dead
- ◔ Vspotty
- ◕ near even

POROSITY TYPE
- E Earthy
- ▫ Fenest
- F Fracture
- ☒ Inter
- ⌀ Moldic
- o Organic
- P Pinpoint
- V Vuggy

ROUNDING
- R Rounded
- r Subrnd
- a Subang
- A Angular

SORTING
- W Well
- M Moderate
- P Poor

6400 TVD

MD 6512 TVD 6377.01
INC 0.98 AZ 304.14
N 407.44 E 821.02
VS -402.55 DL 0.23

GBA two man crew start Log @ 6550' on 06/23/13 using Striplog and TGC detector.

Bit - GR: 44'
Bit - Svy: 58'

Bit # 1 8¾" SMITH SDI611, MWD GR/Survey BHA w/ Directional Mud Motor; In @ 967'.

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

MD 6683 TVD 6547.96
INC 1.19 AZ 307.92
N 409.35 E 818.41
VS -404.48 DL 0.13

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

6600 TVD

MD 6853 TVD 6717.94
INC 1.16 AZ 326.86
N 411.87 E 816.08
VS -407.02 DL 0.23

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

SH: aa (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

SH: aa (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

MD 6939 TVD 6803.93
INC 1.14 AZ 324.55
N 413.3 E 815.1
VS -408.46 DL 0.06

KOP @ 6960' MD

SH: aa (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

6800 TVD

MD 7024 TVD 6888.65
INC 8.14 AZ 208.25
N 408.68 E 811.76
VS -403.85 DL 10.24

SH: aa (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, tr bent, occ SS stngr, NFSOC.

SH: (100%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, SLTST intbd, non calc, tr pyr, occ SS stngr, NFSOC.

MD 7110 TVD 6972.66
INC 15.32 AZ 189.96
N 391.38 E 806.78
VS -386.59 DL 10.41

SH: dk gy-blk, occ gysh bn, sb plty-plty, rr carb, rr marly, sl calc (dolic), slty, mica-rthy, m frm-m hd, tr bent, sptty fair dry cut fluor, slw weak ylwsh gld fluor, no res rng.

Sharon Springs Top @ 7176' MD, 7035' TVD.

MUD VIS 37, WT 9.95

MD 7196 TVD 7051.7
INC 26.49 AZ 185.57
N 360.67 E 802.86
VS -355.9 DL 12.1

SH: dk gy-blk, occ gysh bn, sb plty-plty, rr carb, rr marly, sl calc (dolic), slty, mica-rthy, m frm-m hd, tr bent, sptty fair dry cut fluor, slw weak ylwsh gld fluor, no res rng.

MUD VIS 37, WT 10

Niobrara "A" Top @ 7267' MD, 7117' TVD.

MD 7281 TVD 7125.86
INC 34.19 AZ 183.91
N 317.4 E 799.35
VS -312.66 DL 9.01

MRLST: (70%) gybn-m drk grysh bn, v rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (30%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, CHALKY, sptty dry cut fluor, m fst strmg ylwsh gldn fluor, ylsh bn res rng.

MRLST: (80%), gybn-m drk grysh bn, occ blk, rthy, occ smth, carb thru, sbblky-sbplty, sft- frm-m hd, v calc, CHLK: (20%) gy-dk gy wi blk lam & frag, mot, carb, v calc, sft-frm, tr bent, tr pyr, gd mlky cut, v lt res rng.

Niobrara "B" Top @ 7342' MD, 7173' TVD.

CHLK: (60%) gy-dk gy wi blk lam & frag, mot, carb, v calc, sft-frm, tr bent, tr pyr, MRLST: (20%), gybn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, v lt res rng, SH intbd.

MD 7366 TVD 7193.37
INC 40.61 AZ 179.09
N 265.85 E 798.55
VS -261.11 DL 8.31

Niobrara "C" Top @ 7427' MD, 7238' TVD.

MUD VIS 40, WT 10

MRLST: (60%), gybn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, CHLK: (40%) gy-dk gy wi blk lam & frag, mot, carb, v calc, sft-frm, tr bent, tr pyr, gd mlky cut, v lt res rng.

7200 TVD

MD 7452 TVD 7254.61
INC 48.49 AZ 177.94
N 205.59 E 799.8
VS -200.84 DL 9.21

CHLK: (60%) gy-dk gy wi blk lam & frag, mot, carb, v calc, sft-frm, tr bent, tr pyr, MRLST: (40%), gybn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, v lt res rng.

MRLST: (70%) gybn-m drk grysh bn, v rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (30%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk,

MD 7537 TVD 7305.89
INC 57.22 AZ 179.0
N 137.93 E 801.57
VS -133.17 DL 10.32

MUD VIS 40, WT 10

MRLST: (60%) gybn-m drk grysh bn, v rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (40%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk,

7300 TVD

MD 7623 TVD 7347.39
INC 65.02 AZ 178.42
N 62.7 E 803.65
VS -57.93 DL 9.09

MRLST: (80%), dkgyshbn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, LS: (20%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, tr pyr.

Gas chromatograph calibration

MRLST: (80%), dkgyshbn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, LS: (20%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, tr pyr.

Ft Hays Top @ 7712' MD, 7381' TVD

MUD VIS 41, WT 10.1

MD 7708 TVD 7379.67
INC 70.32 AZ 178.74
N -15.87 E 805.22
VS 20.65 DL 6.25

LS: (90%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, NFSOC MRLST: (10%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, v lt res rng, CLYST intbd.

LS: (60%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin. SS: (40%) gysh bn-dkgysh bn, vf-fg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 8-10%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

7250 TVD

Codell Top @ 7788' MD, 7402' TVD

MD 7794 TVD 7403.12
INC 78.01 AZ 178.23
N -98.52 E 807.41
VS 103.31 DL 8.96

MD 7825 TVD 7408.48
INC 82.07 AZ 178.44
N -129.03 E 808.3
VS 133.82 DL 13.1

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 8-10%, w SH inbd, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

ICP @ 7885' MD, 7412' TVD 90.3 deg on June 24, 23:20 hr.

Resumed drilling 17:30
26 June 2013

Bit #2 6.125" Varel VM513 Dlong, MWD GR/Survey BHA w/ Directional Mud Motor; In @ 7885'.

MUD VIS 37, WT 9.7

MD 7949 TVD 7418.45
INC 88.7 AZ 178.88
N -252.53 E 811.19
VS 257.33 DL 5.36

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 8-10%, w SH inbd, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

7350 TVD

MD 8035 TVD 7419.99
INC 89.26 AZ 178.09
N -338.48 E 813.46
VS 343.3 DL 1.13

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 8-10%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor, SH & CLY intbd.

MD 8120 TVD 7419.58
INC 91.29 AZ 178.67
N -423.44 E 815.86
VS 428.27 DL 2.48

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor, SH intbd.

7350 TVD

MD 8206 TVD 7416.76
INC 92.47 AZ 179.31
N -509.38 E 817.38
VS 514.22 DL 1.56

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MD 8291 TVD 7415.15
INC 89.69 AZ 178.59
N -594.34 E 818.94
VS 599.19 DL 3.38

MUD VIS 39, WT 9.9

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MD 8377 TVD 7414.97
INC 90.55 AZ 177.5
N -680.29 E 821.87
VS 685.15 DL 1.61

7350 TVD

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MD 8462 TVD 7414.2
INC 90.49 AZ 177.45
N -765.2 E 825.61
VS 770.09 DL 0.1

MUD VIS 38, WT 9.8

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

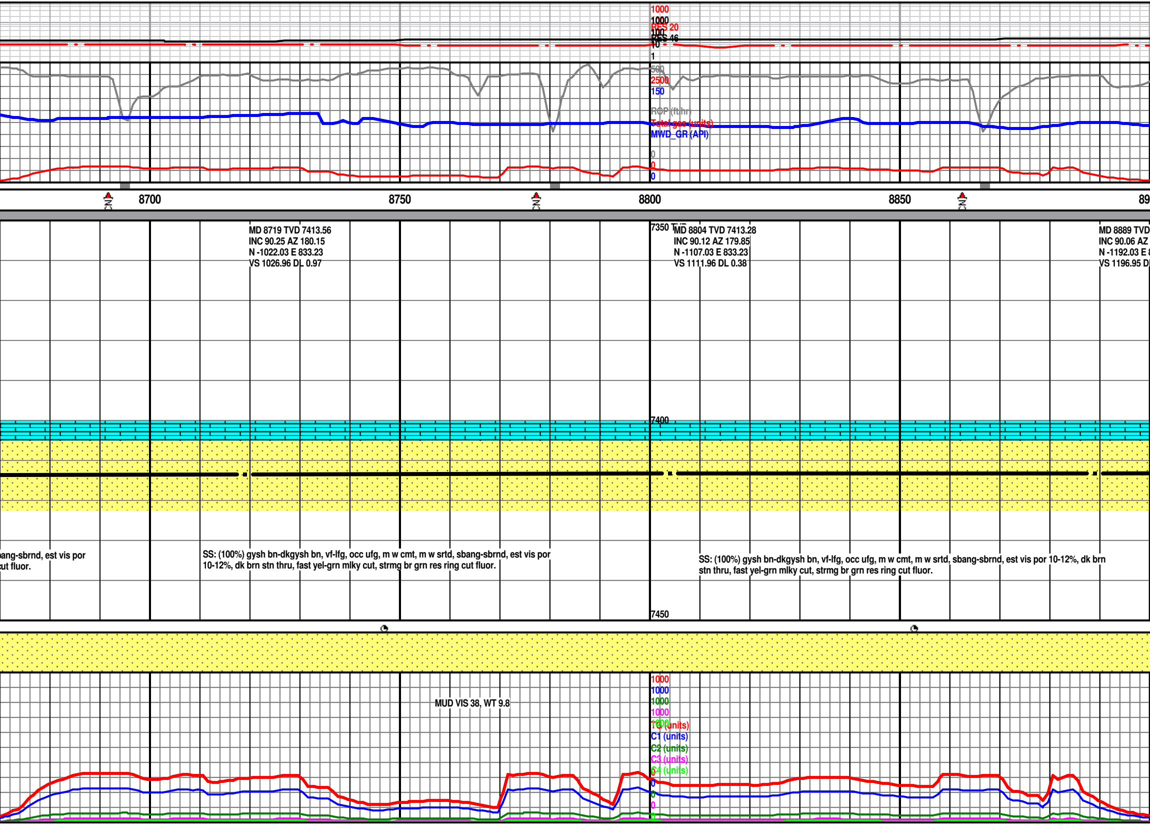
MD 8548 TVD 7413.74
INC 90.12 AZ 176.72
N -851.09 E 829.99
VS 856 DL 0.95

7350 TVD

MD 8633 TVD 7413.7
INC 89.94 AZ 179.39
N -936.03 E 832.88
VS 940.96 DL 3.14

MUD VIS 39, WT 9.7

SS: (100%) gysh bn-dkgysh bn, vf-ffg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.



MD 8719 TVD 7413.56
INC 90.25 AZ 180.15
N -1022.03 E 833.23
VS 1026.96 DL 0.97

MD 8804 TVD 7413.28
INC 90.12 AZ 179.85
N -1107.03 E 833.23
VS 1111.96 DL 0.38

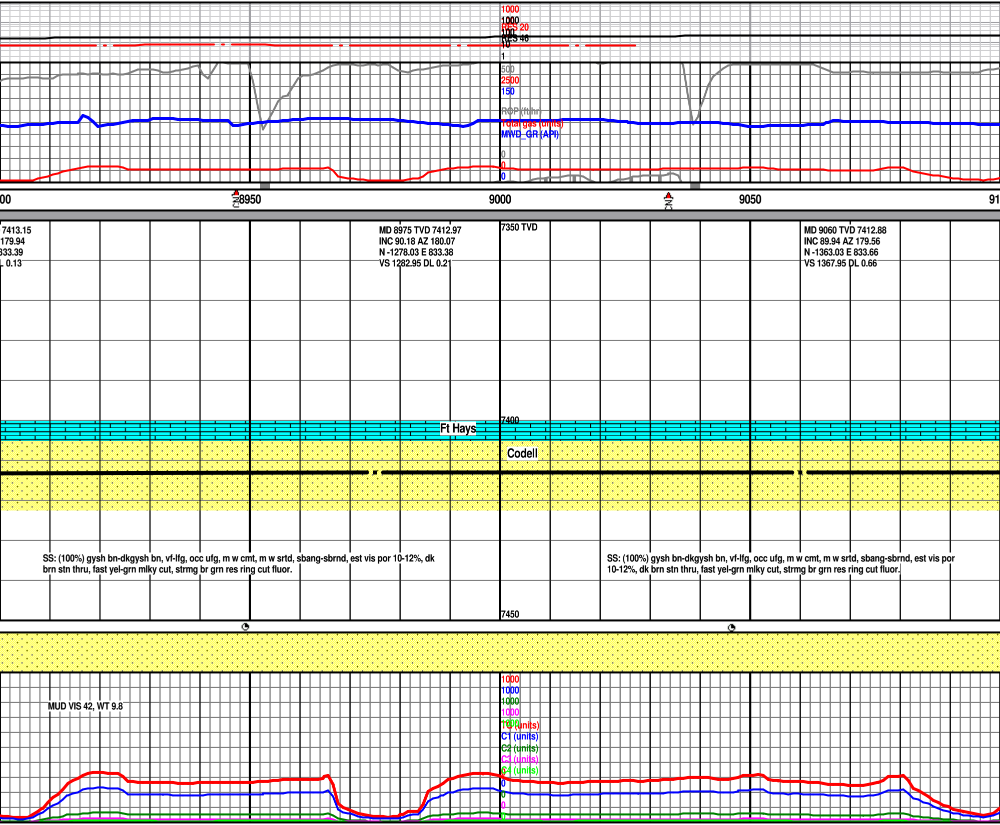
MD 8889 TVD
INC 90.06 AZ
N -1192.03 E 8
VS 1196.95 D

bang-sbrnd, est vis por
cut fluor.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MUD VIS 38, WT 9.8



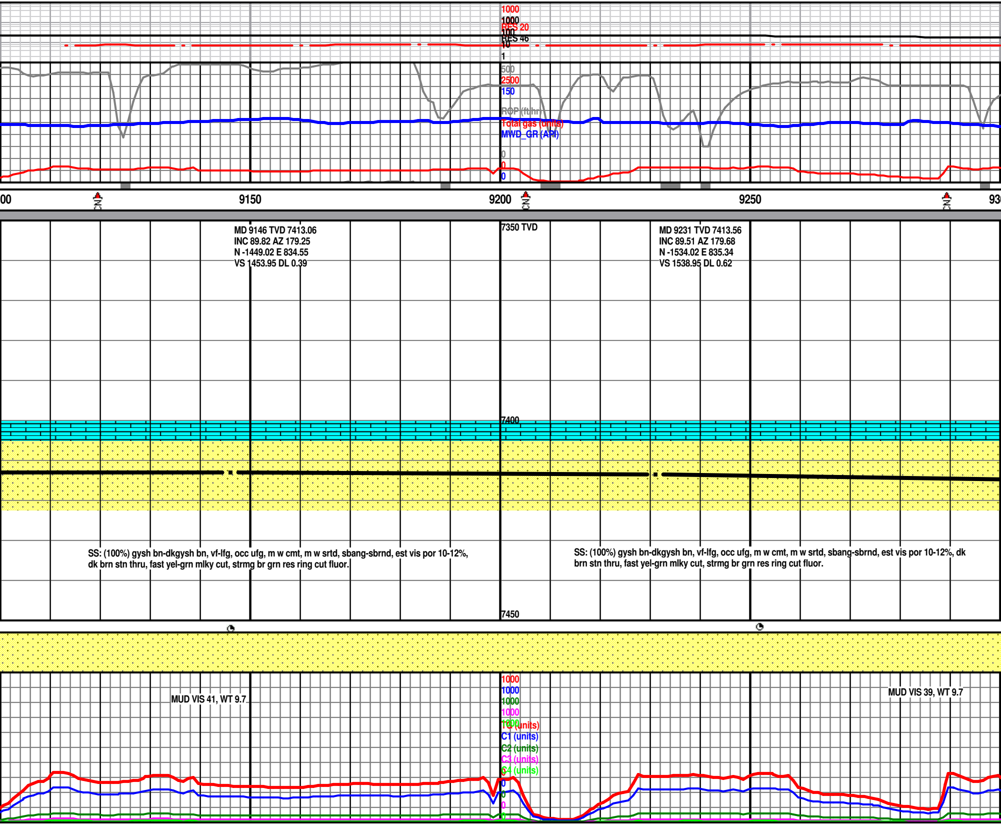
MD 8975 TVD 7412.97
INC 90.18 AZ 180.07
N -1278.03 E 833.38
VS 1282.95 DL 0.21

MD 9060 TVD 7412.88
INC 89.94 AZ 179.56
N -1363.03 E 833.66
VS 1367.95 DL 0.66

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MUD VIS 42, WT 9.8



MD 9146 TVD 7413.06
INC 89.82 AZ 179.25
N -1449.02 E 834.55
VS 1453.95 DL 0.39

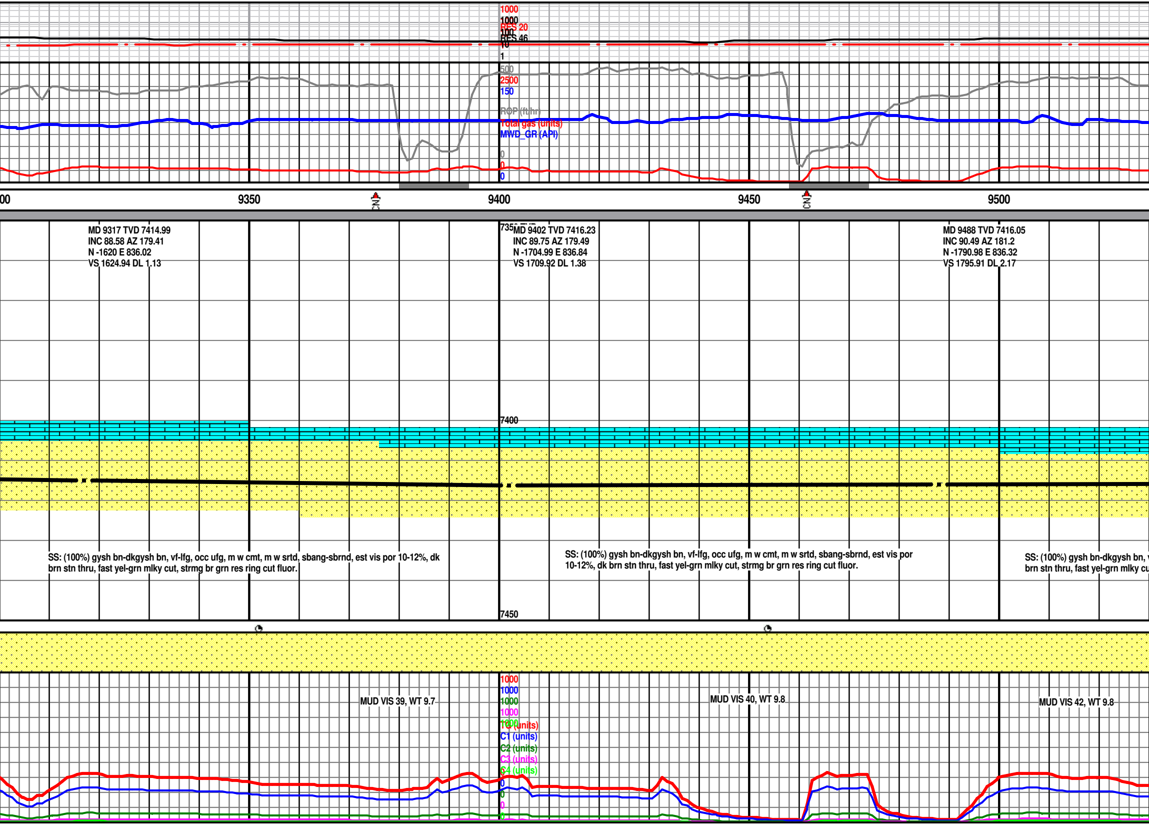
MD 9231 TVD 7413.56
INC 89.51 AZ 179.68
N -1534.02 E 835.34
VS 1538.95 DL 0.62

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MUD VIS 41, WT 9.7

MUD VIS 39, WT 9.7



MD 9317 TVD 7414.99
INC 88.58 AZ 179.41
N -1620 E 836.02
VS 1624.94 DL 1.13

MD 9402 TVD 7416.23
INC 89.75 AZ 179.49
N -1704.99 E 836.84
VS 1709.92 DL 1.38

MD 9488 TVD 7416.05
INC 90.49 AZ 181.2
N -1790.98 E 836.32
VS 1795.91 DL 2.17

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

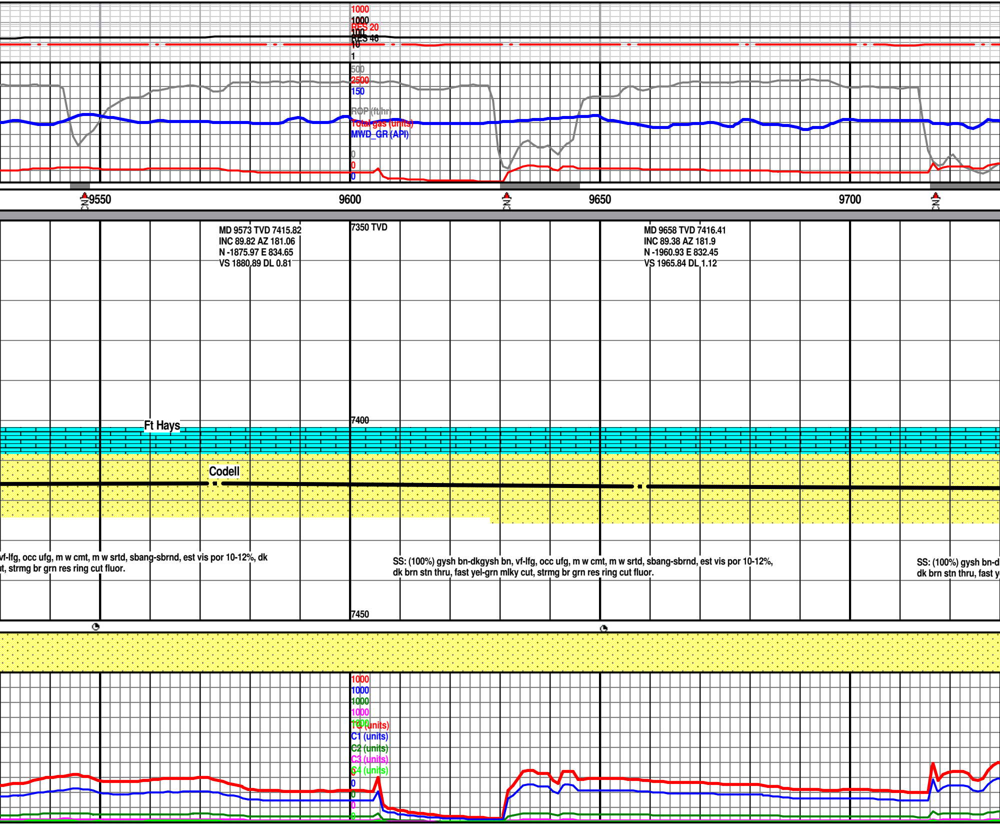
SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, v
brn stn thru, fast yel-grn mlky cu

MUD VIS 39, WT 9.7

MUD VIS 40, WT 9.8

MUD VIS 42, WT 9.8



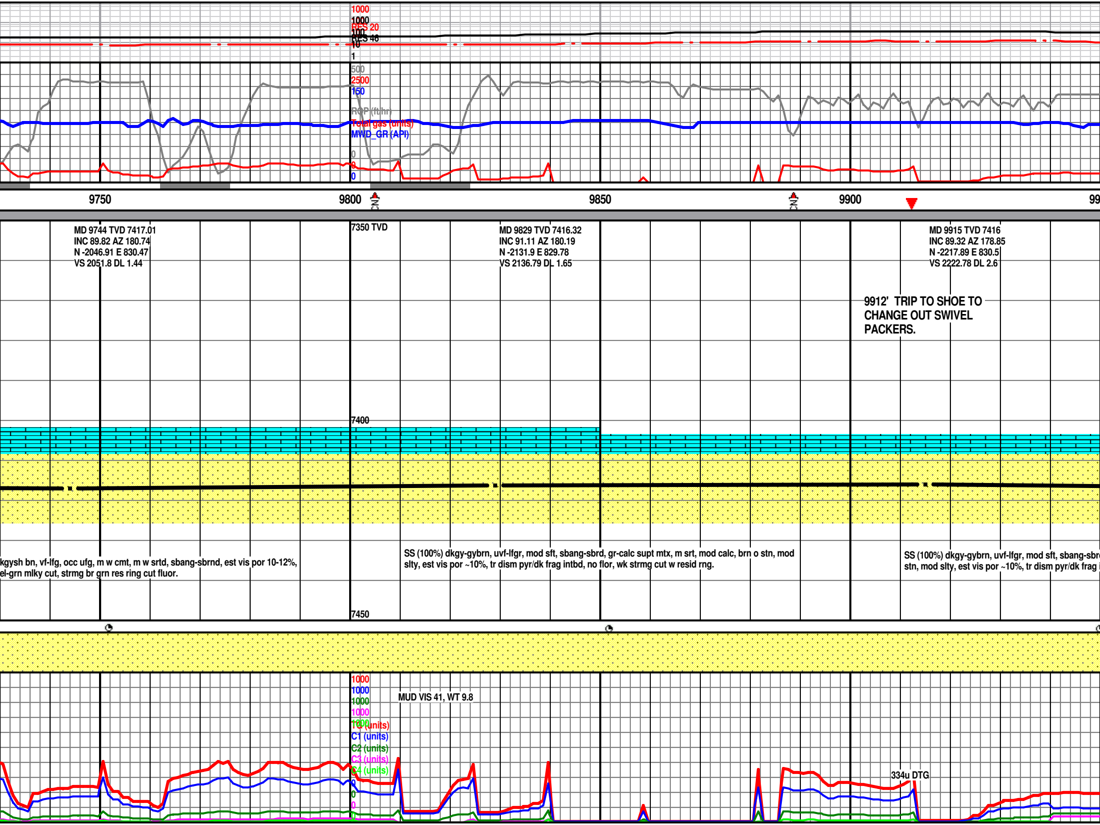
MD 9573 TVD 7415.82
INC 89.82 AZ 181.06
N -1875.97 E 834.65
VS 1880.89 DL 0.81

MD 9658 TVD 7416.41
INC 89.38 AZ 181.9
N -1960.93 E 832.45
VS 1965.84 DL 1.12

vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk
t, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-d
dk brn stn thru, fast y



MD 9744 TVD 7417.01
INC 89.82 AZ 180.74
N -2046.91 E 830.47
VS 2051.8 DL 1.44

MD 9829 TVD 7416.32
INC 91.11 AZ 180.19
N -2131.9 E 829.78
VS 2136.79 DL 1.65

MD 9915 TVD 7416
INC 89.32 AZ 178.85
N -2217.89 E 830.5
VS 2222.78 DL 2.6

9912' TRIP TO SHOE TO CHANGE OUT SWIVEL PACKERS.

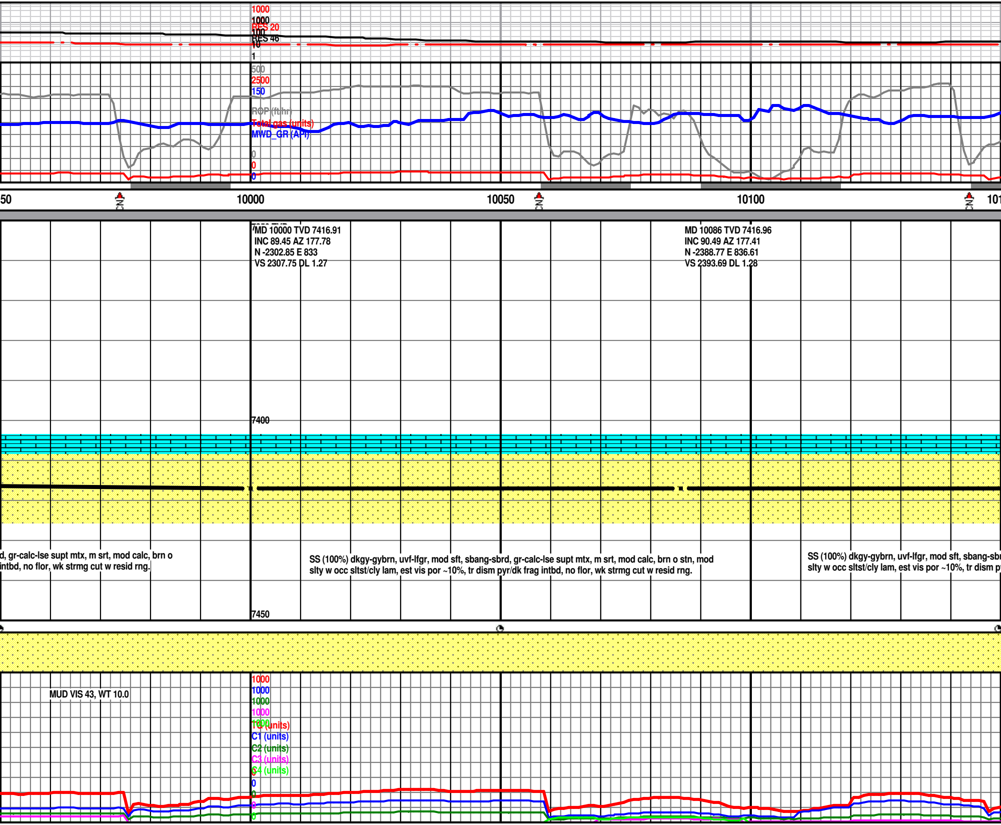
kgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%,
el-grn mlky cut, strmg br grn res ring cut fluor.

SS (100%) dkgy-gybrn, uvf-lfgr, mod sft, sbang-sbrd, gr-calc supt mtx, m srt, mod calc, brn o stn, mod slty, est vis por ~10%, tr dism pyr/dk frag intbd, no flor, wk strmg cut w resid rng.

SS (100%) dkgy-gybrn, uvf-lfgr, mod sft, sbang-sbr
stn, mod slty, est vis por ~10%, tr dism pyr/dk frag i

MUD VIS 41, WT 9.8

334u DTG



MD 10000 TVD 7416.91
INC 89.45 AZ 177.78
N -2302.85 E 833
VS 2307.75 DL 1.27

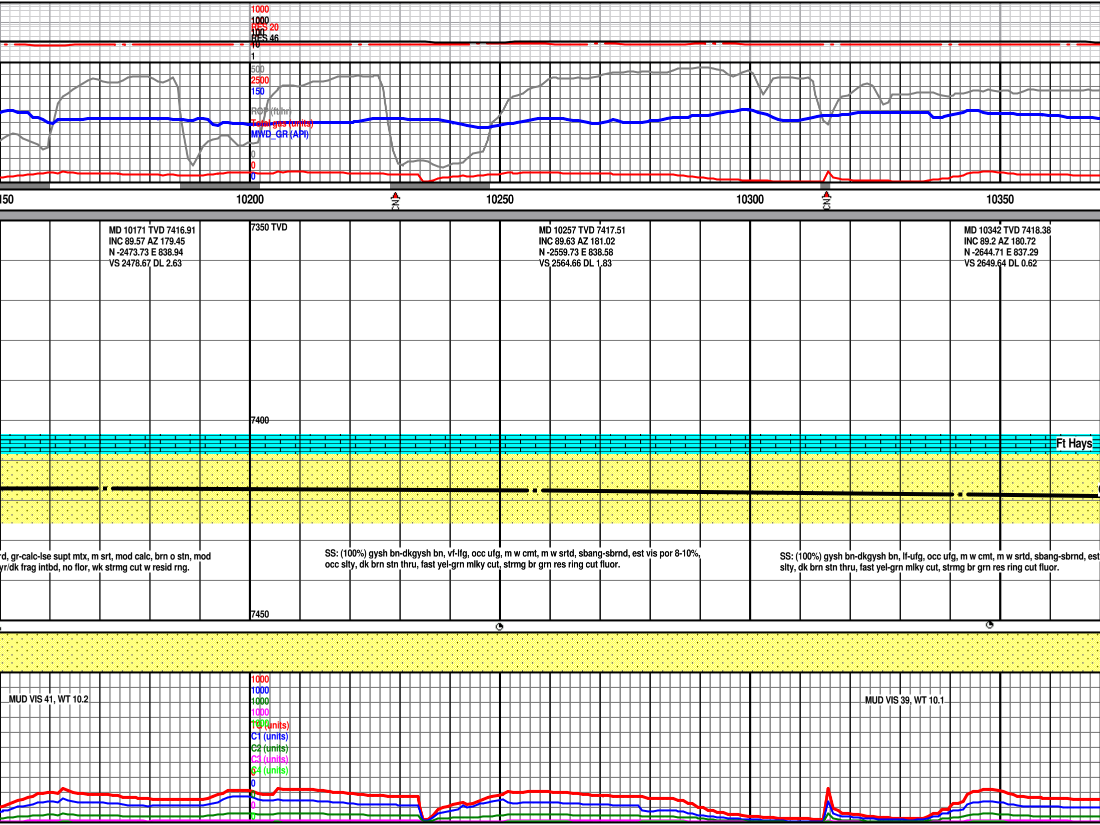
MD 10086 TVD 7416.96
INC 90.49 AZ 177.41
N -2388.77 E 836.61
VS 2393.69 DL 1.28

d, gr-calc-lse supt mtx, m srt, mod calc, brn o
intbd, no flor, wk strmg cut w resid rng.

SS (100%) dkgy-gybrn, uvf-lfgr, mod sft, sbang-sbrd, gr-calc-lse supt mtx, m srt, mod calc, brn o stn, mod
slty w occ sltst/cly lam, est vis por ~10%, tr dism pyr/dk frag intbd, no flor, wk strmg cut w resid rng.

SS (100%) dkgy-gybrn, uvf-lfgr, mod sft, sbang-sb
slty w occ sltst/cly lam, est vis por ~10%, tr dism p

MUD VIS 43, WT 10.0



MD 10171 TVD 7416.91
INC 89.57 AZ 179.45
N -2473.73 E 838.94
VS 2478.67 DL 2.63

MD 10257 TVD 7417.51
INC 89.63 AZ 181.02
N -2559.73 E 838.58
VS 2564.66 DL 1.83

MD 10342 TVD 7418.38
INC 89.2 AZ 180.72
N -2644.71 E 837.29
VS 2649.64 DL 0.62

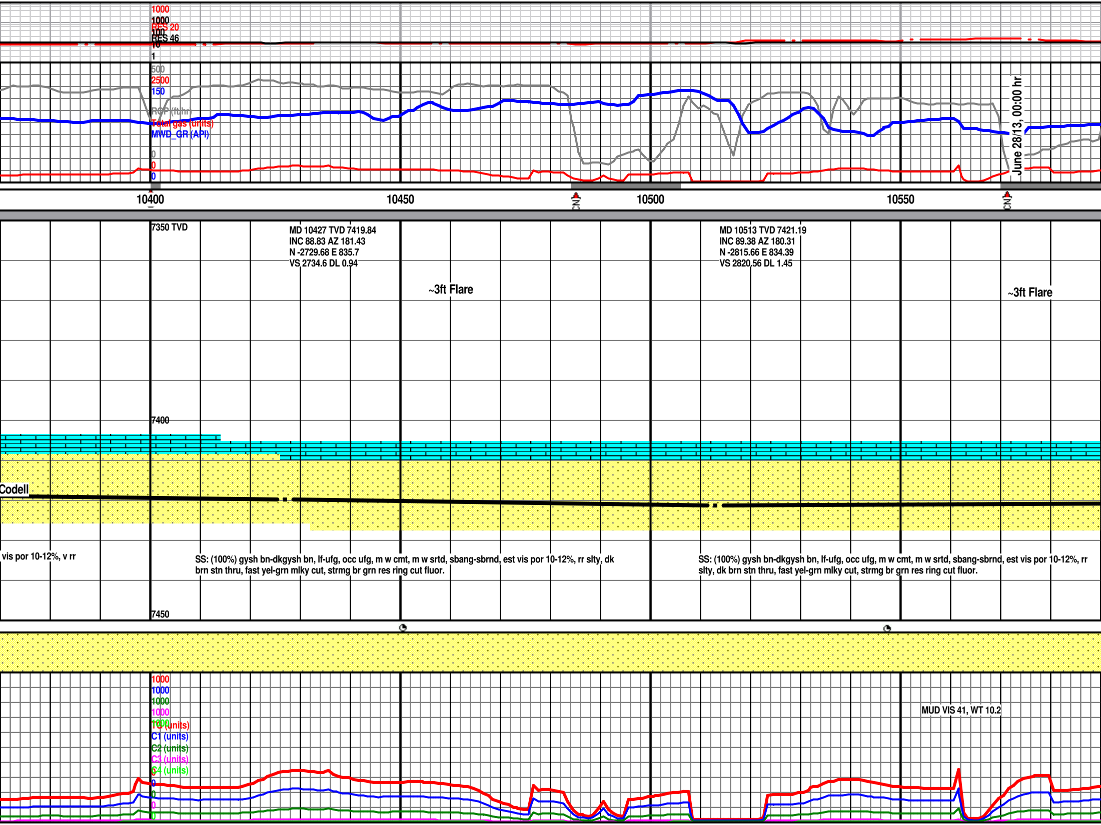
rd, gr-calc-lse supt mtx, m srt, mod calc, brn o stn, mod
yr/dk frag intbd, no flor, wk strmg cut w resid rng.

SS: (100%) gysh bn-dkgysh bn, vf-lfg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 8-10%,
occ slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est
slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MUD VIS 41, WT 10.2

MUD VIS 39, WT 10.1



MD 10427 TVD 7419.84
INC 88.83 AZ 181.43
N -2729.68 E 835.7
VS 2734.6 DL 0.94

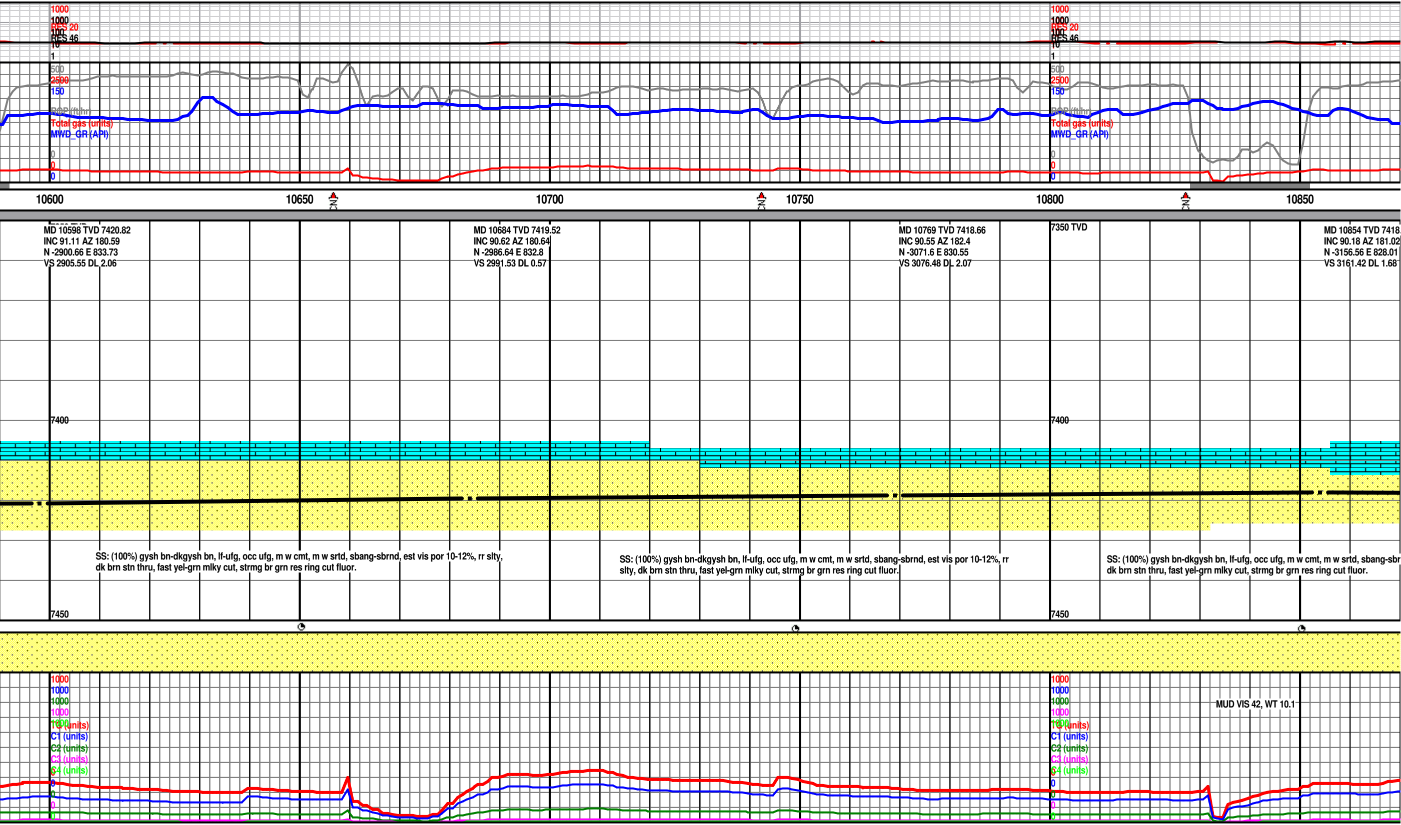
MD 10513 TVD 7421.19
INC 89.38 AZ 180.31
N -2815.66 E 834.39
VS 2820.56 DL 1.45

vis por 10-12%, v rr

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MUD VIS 41, WT 10.2



MD 10598 TVD 7420.82
INC 91.11 AZ 180.59
N -2900.66 E 833.73
VS 2905.55 DL 2.06

MD 10684 TVD 7419.52
INC 90.62 AZ 180.64
N -2986.64 E 832.8
VS 2991.53 DL 0.57

MD 10769 TVD 7418.66
INC 90.55 AZ 182.4
N -3071.6 E 830.55
VS 3076.48 DL 2.07

MD 10854 TVD 7418
INC 90.18 AZ 181.02
N -3156.56 E 828.01
VS 3161.42 DL 1.68

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbr
dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

MD 10940 TVD 7418.4
INC 89.44 AZ 180.94
N -3242.55 E 826.54
VS 3247.4 DL 0.87

MD 11025 TVD 7418.59
INC 90.31 AZ 179.5
N -3327.54 E 826.22
VS 3332.39 DL 1.96

MD 11111 TVD 7418.77
INC 89.45 AZ 180.26
N -3413.54 E 826.4
VS 3418.39 DL 1.33

MD 11196 TVD 7419.26
INC 89.88 AZ 178.29
N -3498.53 E 827.47
VS 3503.38 DL 2.37

MD 11281 TVD 7419.86
INC 89.32 AZ 177.71
N -3583.48 E 830.44
VS 3588.34 DL 0.95

MD 11367 TVD 7420.64
INC 89.63 AZ 178.66
N -3669.43 E 833.16
VS 3674.31 DL 1.16

MD 11452 TVD 7419.46
INC 91.97 AZ 178.21
N -3754.38 E 835.48
VS 3759.27 DL 2.8

MD 11538 TVD 7417.24
INC 90.99 AZ 177.97
N -3840.3 E 838.35
VS 3845.21 DL 1.17

MD 11623 TVD 7416.82
INC 89.57 AZ 177.56
N -3925.24 E 841.66
VS 3930.16 DL 1.74

~20' UPTHROWN FAULT FROM FORT HAYS TO LOWER CODELL

MD 11708 TVD 7417.46
INC 89.57 AZ 178.58
N -4010.18 E 844.53
VS 4015.12 DL 1.2

PERIODIC 1'-5' FLARE

MD 11794 TVD 7417.14
INC 90.86 AZ 179.06
N -4096.16 E 846.33
VS 4101.11 DL 1.6

MD 11879 TVD 7415.32
INC 91.59 AZ 178.2
N -4181.12 E 848.36
VS 4186.08 DL 1.33

PERIODIC 1'-5' FLARE

~20' DOWNTHROWN FAULT FROM FORT HAYS TO LOWER CODELL

MD 11977 TVD 7413.21
INC 90.88 AZ 178.2
N -4279.05 E 851.41
VS 4284.02 DL 0.72

MD 12035 TVD 7412.32
INC 90.88 AZ 178.2
N -4337.01 E 853.23
VS 4342 DL 0

TD of 12,035' REACHED ON 6.28.13 @ 15:30. BIT #2 DRLD 4150' IN 23 HRS. SHORT WIPER TRIP 10 STANDS. TOH FOR 4 1/2" LINER.

nd, est vis por 10-12%, rr slty,

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, w SH intbd, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, w SH intbd, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS: (100%) gysh bn-dkgysh bn, lf-ufg, occ ufg, m w cmt, m w srtd, sbang-sbrnd, est vis por 10-12%, rr slty, w SH intbd, dk brn stn thru, fast yel-grn mlky cut, strmg br grn res ring cut fluor.

SS (100%) dkgy-gybrn, uvf-flgr, mod sft, sbang-sbrd, gr-calc supt mtx, m srt, mod calc, brn o stn, mod slty, est vis por ~10%, tr dism pyr/dk frag intbd, no flor, wk strmg cut w resid rng.

LS (80%) crmytn-ltbrn-offwh, frm, micxln, o stn, tr dism pyr intbd, no min flor, v wk strmg cut w dull resid rng. SS (20%) aa

SS (80%) gy-dkgy, mod sft, uvf-flgr, sbang-sbrd, slt supt mtx, p-mod srt, v slty, sl sh lam, occ wh foss frag intbd, tr dism pyr intbd, o stn ss, no flor, sl wk strmg cut w dull bl gn resid rng. LS (20%) crmytn-ltbrn-offwh, frm, micxln, o stn, tr dism pyr intbd, no min flor, v wk strmg cut w dull resid rng.

SS (100%) gy-dkgy, mod sft, uvf-flgr, sbang-sbrd, slt supt mtx, p-mod srt, v slty, sl sh lam, occ wh foss frag intbd, tr dism pyr intbd, o stn ss, no flor, sl wk strmg cut w dull bl gn resid rng.

SS (85%) gy-dkgy, mod sft, uvf-flgr, sbang-sbrd, slt supt mtx, p-mod srt, v slty, sl sh lam, occ wh foss frag intbd, tr dism pyr intbd, o stn ss, no flor, sl wk strmg cut w dull bl gn resid rng. LS (15%) crmytn-ltbrn-offwh, frm, micxln, o stn, tr dism pyr intbd, no min flor, v wk strmg cut w dull resid rng.

LS (85%) crmytn-ltbrn-offwh, frm, micxln, o stn, tr dism pyr intbd, no min flor, v wk strmg cut w dull resid rng.

MUD VIS 41, WT 10.1

MUD VIS 41, WT 10.1

MUD VIS 41, WT 10.1+

MUD VIS 39, WT 10.0

MUD VIS 39, WT 10.1

MUD VIS 39, WT 10.1