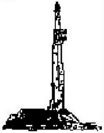
GOOLSBY BROTHERS
and associates, inc.

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

Geological Wellsite
Supervision

PETCOM

www.goolsbybrothers.com



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

Well Name: HOWARD 30C-28HZ
Location: Section 28, T1N, R67W, Weld County, CO.
License Number: API: 05-123-3768100 **Region:** Wattenberg
Spud Date: 23 August 2013 **Drilling Completed:** 02 Septmeber 2013
Surface Coordinates: 290' FSL 1264' FWL SWSW
LAT: 40.015625 LONG: -104.900356
Bottom Hole Coordinates: 625' FNL X 50' FWL SWSW (Proj)
LAT: 40.145534 LONG: -104.54172764
Ground Elevation (ft): 5008' **K.B. Elevation (ft):** 5024'
Logged Interval (ft): 7300 **To:** 12858' **Total Depth (ft):** 12858'
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 & Robin Brackman
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

MWD GR 7320' - 12816'
MWD Res 8282' - 12780'

Casing

9 5/8" Surface Casing set @ 1035'
7" Intermediate Casing set @ 8275' MD, set on 30 August, 2013 run 4 1/2" Production Liner & Packer on 03 Sep, 2013.

Comments

1) Drilling Contractor: Xtreme Drilling, Rig # 23
2) Directional Drilling: Weather ford Drilling Services
MWD/LWD: John Jackson
3) Gas Equipment: Mudlogging Systems Inc.
by Terra Services Redbox # ML-TGC 326 & 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
- B Bent
- ⧅ Bit
- □ Brecfrag
- ⊥ Calc
- ▣ Carb
- ▲ Chtdk
- △ Chtlt
- □ Dol
- ⊞ Feldspar
- ● Ferrpel
- □ Ferr
- ∼ Glau
- ▨ Gyp
- □ Hvymin
- K Kaol
- ㄒ Marl
- ✳ Minxl
- ⊚ Nodule
- •• Phos
- P Pyr
- ⊞ Salt
- ⊡ Sandy
- ⋯ Silt
- ^ Sil
- S Sulphur
- ⋁ Tuff

FOSSIL

- □ Algae
- □ Amph
- □ Belm
- ⌒ Bioclst
- □ Brach
- □ Bryozoa
- □ Cephal
- □ Coral
- ⊙ Crin
- □ Echin
- ∝ Fish
- □ Foram
- F Fossil
- □ Gastro
- □ Oolite
- □ Ostra
- ▽ Pelec
- □ Pellet
- □ Pisolite
- ⌀ Plant
- □ Strom

STRINGER

- 🟦 Chlkstg
- 🟧 Anhy
- ▭ Arg
- ▭ Bent
- ▬ Coal
- 🟪 Dol
- 🟧 Gyp
- 🟦 Ls
- ▭ Mrst
- 🟧 Sltstrg
- 🟨 Ssstrg

TEXTURE

- BS Boundst
- C Chalky
- CX Cryxln
- e Earthy
- FX Finexln
- GS Grainst
- L Lithogr
- MX Microxln
- MS Mudst
- PS Packst
- WS Wackest

OTHER SYMBOLS

OIL SHOWS

- ● Even
- ◑ Spotted
- ○ Ques
- D Dead
- ◔ Vspotty
- ◕ near even

POROSITY TYPE

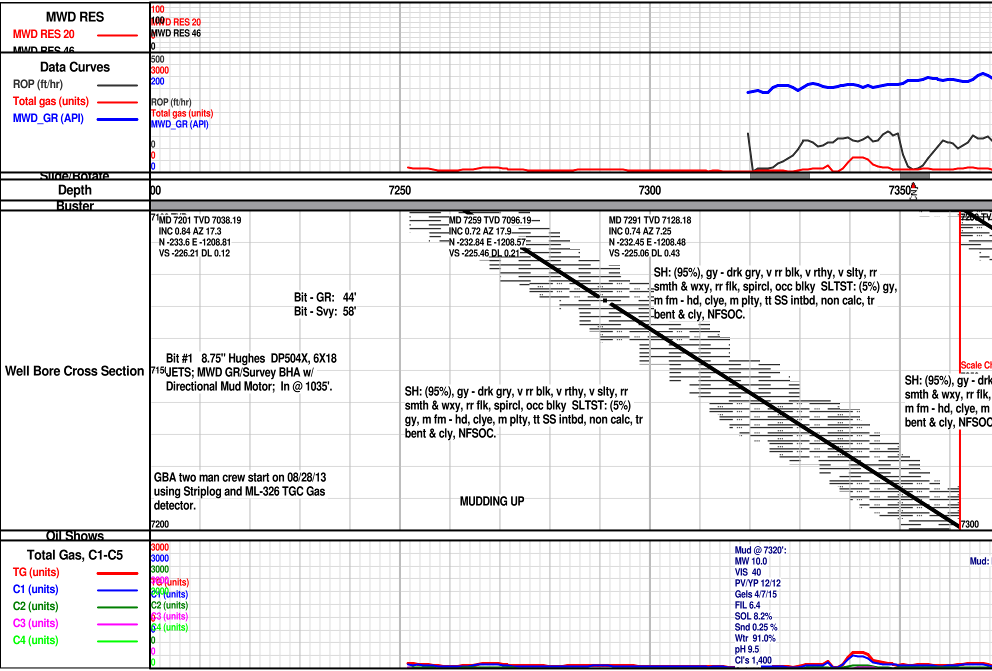
- E Earthy
- ⊡ Fenest
- F Fracture
- ☒ Inter
- ⌀ Moldic
- ○ Organic
- P Pinpoint
- V Vuggy

ROUNDING

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

SORTING

- W Well
- M Moderate
- P Poor



MD 7201 TVD 7038.19
INC 0.84 AZ 17.3
N -233.6 E -1208.81
VS -226.21 DL 0.12

MD 7259 TVD 7096.19
INC 0.72 AZ 17.9
N -232.84 E -1208.57
VS -225.46 DL 0.21

MD 7291 TVD 7128.18
INC 0.74 AZ 7.25
N -232.45 E -1208.48
VS -225.06 DL 0.43

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

SH: (95%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, spircl, occ blky SLTST: (5%) gy, m fm - hd, clye, m plty, tt SS intbd, non calc, tr bent & cly, NFSOC.

Bit #1 8.75" Hughes DP504X, 6X18 JETS; MWD GR/Survey BHA w/ Directional Mud Motor; In @ 1035'.

SH: (95%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, spircl, occ blky SLTST: (5%) gy, m fm - hd, clye, m plty, tt SS intbd, non calc, tr bent & cly, NFSOC.

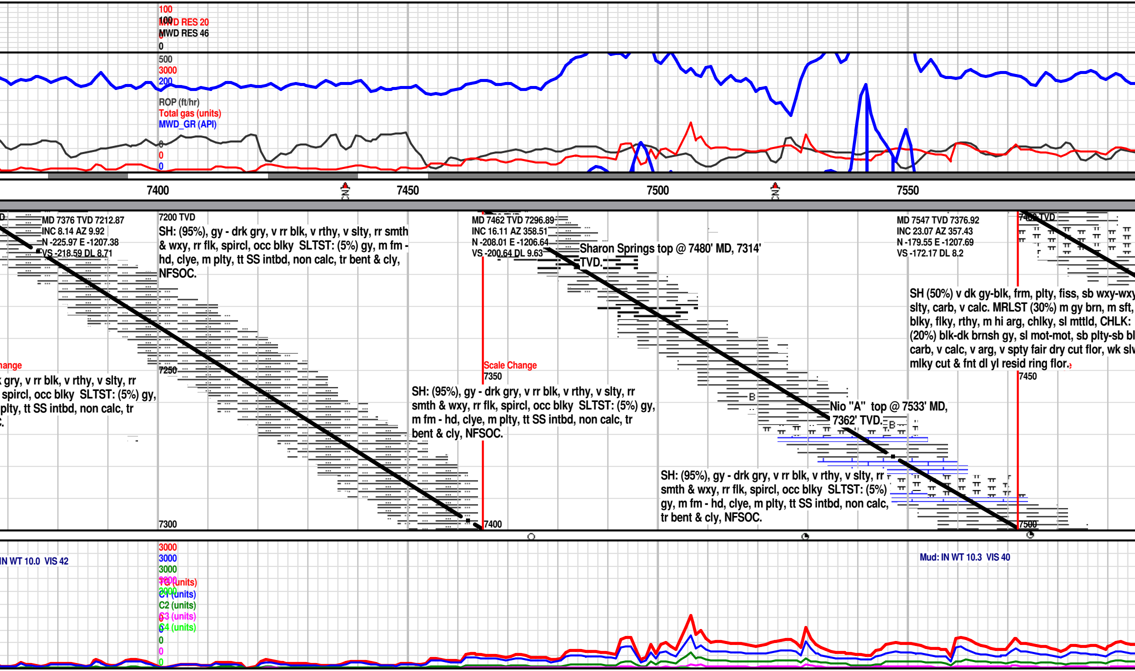
SH: (95%), gy - drk
smth & wxy, rr flk,
m fm - hd, clye, m
bent & cly, NFSOC

GBA two man crew start on 08/28/13 using Striplog and ML-326 TGC Gas detector.

MUDDING UP

Mud @ 7320':
MW 10.0
VIS 40
PV/YP 12/12
Gels 4/7/15
FIL 6.4
SOL 8.2%
Snd 0.25 %
Wtr 91.0%
pH 9.5
Cl's 1,400

Mud:



SH: (95%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, spircl, occ blky SLTST: (5%) gy, m fm - hd, clye, m plty, tt SS intbd, non calc, tr bent & cly, NFSOC.

k gry, v rr blk, v rthy, v slty, rr
spircl, occ blky SLTST: (5%) gy,
plty, tt SS intbd, non calc, tr
C.

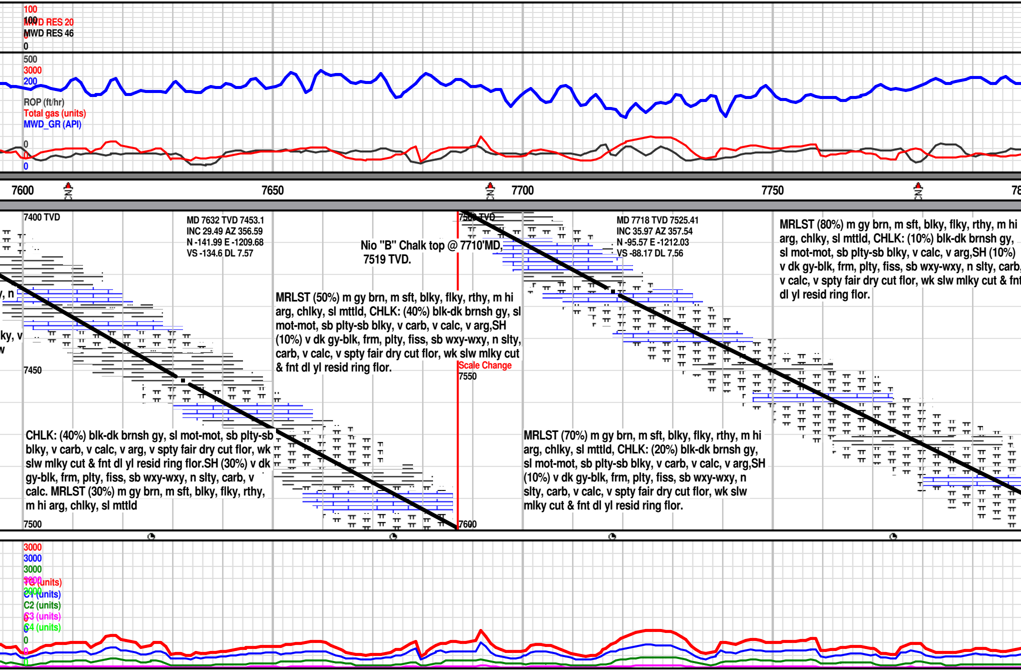
SH: (95%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, spircl, occ blky SLTST: (5%) gy, m fm - hd, clye, m plty, tt SS intbd, non calc, tr bent & cly, NFSOC.

Sharon Springs top @ 7480' MD, 7314' TVD.

Nio "A" top @ 7533' MD, 7362' TVD.

SH: (95%), gy - drk gry, v rr blk, v rthy, v slty, rr smth & wxy, rr flk, spircl, occ blky SLTST: (5%) gy, m fm - hd, clye, m plty, tt SS intbd, non calc, tr bent & cly, NFSOC.

SH (50%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy
slty, carb, v calc. MRLST (30%) m gy brn, m sft,
blky, flky, rthy, m hi arg, chlky, sl mttld, CHLK:
(20%) blk-dk brnsh gy, sl mot-mot, sb plty-sb bl
carb, v calc, v arg, v spty fair dry cut flor, wk slw
mlky cut & fnt dl yl resid ring flor.



MD 7632 TVD 7453.1
INC 29.49 AZ 356.59
N -141.99 E -1209.68
VS -134.6 DL 7.57

Nio "B" Chalk top @ 7710'MD, 7519 TVD.

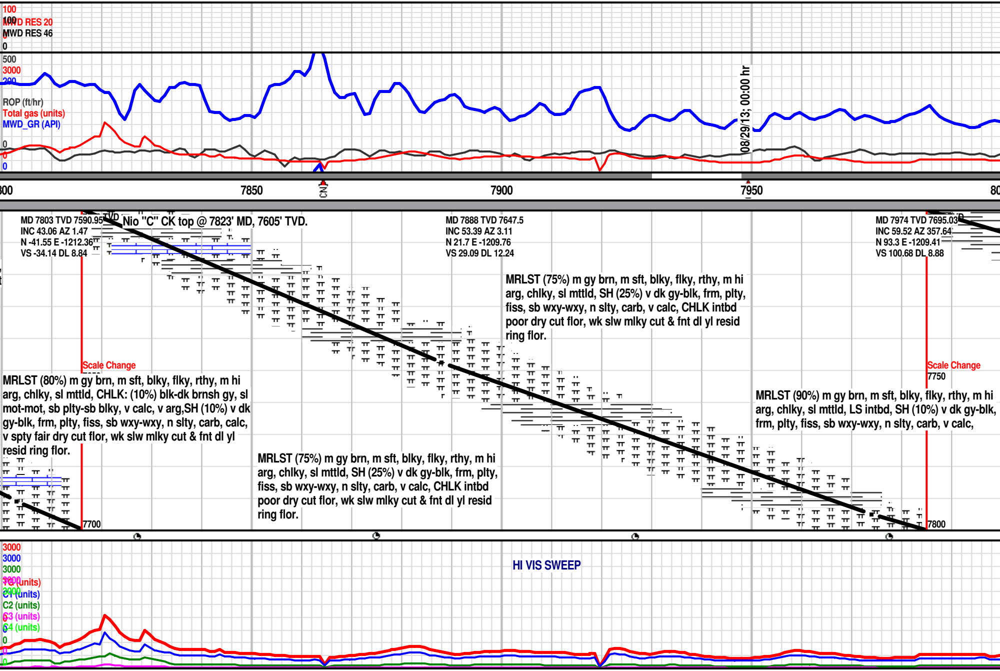
MD 7718 TVD 7525.41
INC 35.97 AZ 357.54
N -95.57 E -1212.03
VS -88.17 DL 7.56

MRLST (80%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, CHLK: (10%) blk-dk brnsh gy, sl mot-mot, sb plty-sb blky, v calc, v arg,SH (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc, v spty fair dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

MRLST (50%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, CHLK: (40%) blk-dk brnsh gy, sl mot-mot, sb plty-sb blky, v carb, v calc, v arg,SH (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc, v spty fair dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

CHLK: (40%) blk-dk brnsh gy, sl mot-mot, sb plty-sb blky, v carb, v calc, v arg, v spty fair dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.SH (30%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc. MRLST (30%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld

MRLST (70%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, CHLK: (20%) blk-dk brnsh gy, sl mot-mot, sb plty-sb blky, v carb, v calc, v arg,SH (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc, v spty fair dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

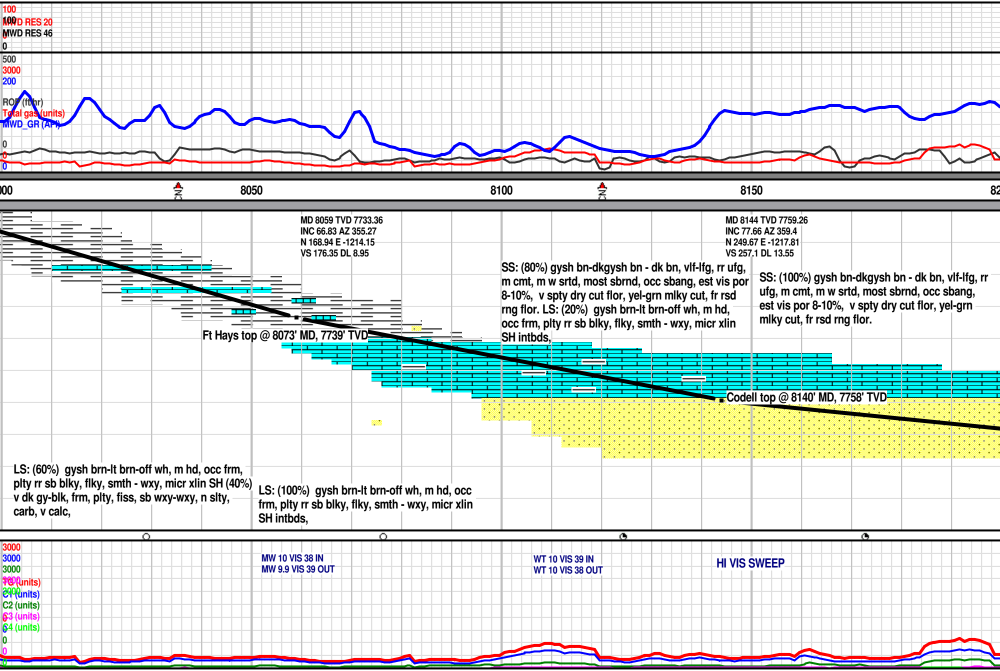


MRLST (80%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, CHLK: (10%) blk-dk brnsh gy, sl mot-mot, sb plty-sb blky, v calc, v arg,SH (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, calc, v spty fair dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

MRLST (75%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, SH (25%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc, CHLK intbd poor dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

MRLST (75%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, SH (25%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc, CHLK intbd poor dry cut flor, wk slw mlky cut & fnt dl yl resid ring flor.

MRLST (90%) m gy brn, m sft, blky, flky, rthy, m hi arg, chlky, sl mttld, LS intbd, SH (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc,



MD 8059 TVD 7733.36
INC 66.83 AZ 355.27
N 168.94 E -1214.15
VS 176.35 DL 8.95

MD 8144 TVD 7759.26
INC 77.66 AZ 359.4
N 249.67 E -1217.81
VS 257.1 DL 13.55

SS: (80%) gysh bn-dkgysh bn - dk bn, vlf-lfg, rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor. LS: (20%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin SH intbds,

SS: (100%) gysh bn-dkgysh bn - dk bn, vlf-lfg, rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

Ft Hays top @ 8073' MD, 7739' TVD

Codell top @ 8140' MD, 7758' TVD

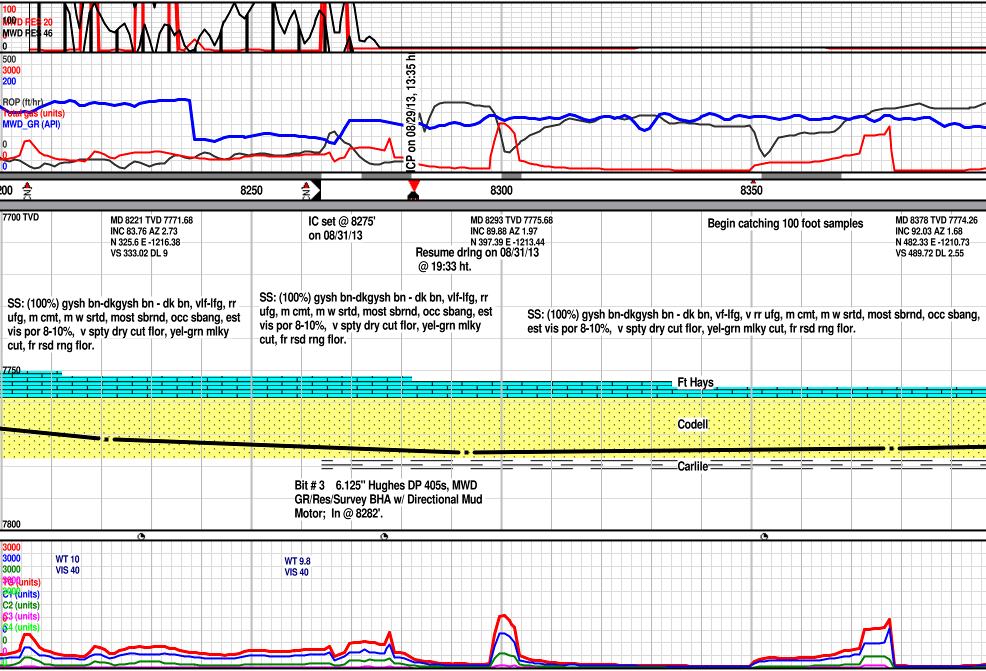
LS: (60%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin SH (40%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, carb, v calc,

LS: (100%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin SH intbds,

MW 10 VIS 38 IN
MW 9.9 VIS 39 OUT

WT 10 VIS 39 IN
WT 10 VIS 38 OUT

HI VIS SWEEP



MD 8221 TVD 7771.68
INC 83.76 AZ 2.73
N 325.6 E -1216.38
VS 333.02 DL 9

IC set @ 8275'
on 08/31/13

MD 8293 TVD 7775.68
INC 89.88 AZ 1.97
N 397.39 E -1213.44

Resume drlng on 08/31/13
@ 19:33 ht.

Begin catching 100 foot samples

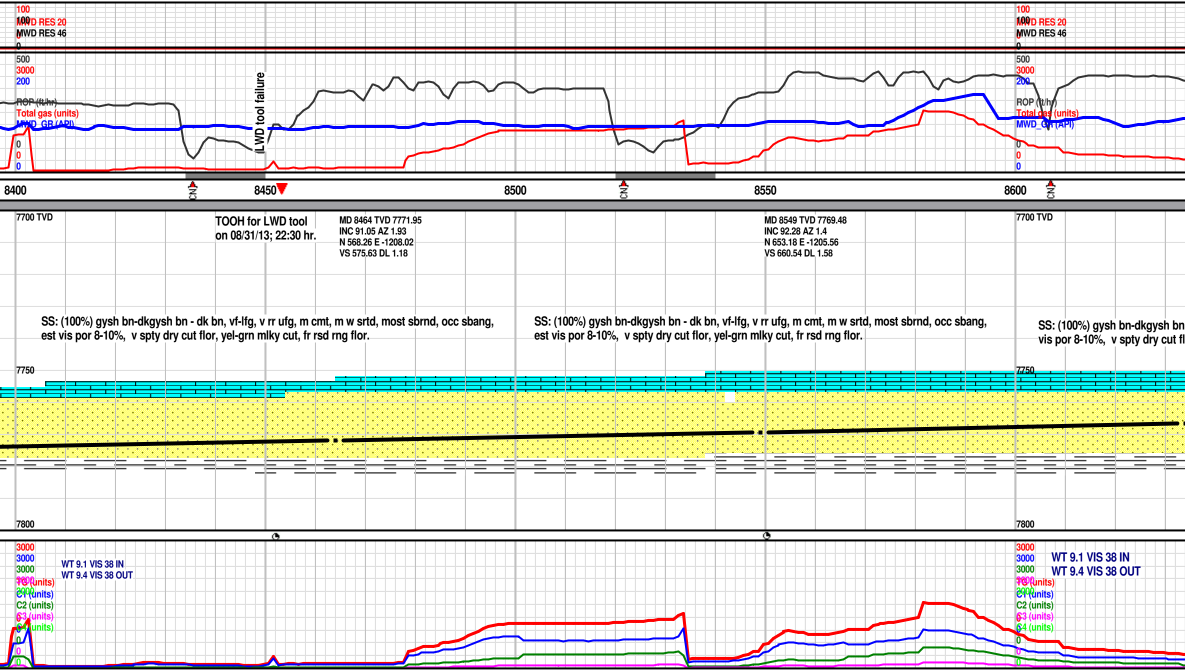
MD 8378 TVD 7774.26
INC 92.03 AZ 1.68
N 482.33 E -1210.73
VS 489.72 DL 2.55

SS: (100%) gysh bn-dkgysh bn - dk bn, vlf-lfg, rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vlf-lfg, rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

Bit # 3 6.125" Hughes DP 405s, MWD GR/Res/Survey BHA w/ Directional Mud Motor; In @ 8282'.



TOOH for LWD tool
on 08/31/13; 22:30 hr.

MD 8464 TVD 7771.95
INC 91.05 AZ 1.93
N 568.26 E -1208.02
VS 575.63 DL 1.18

MD 8549 TVD 7769.48
INC 92.28 AZ 1.4
N 653.18 E -1205.56
VS 660.54 DL 1.58

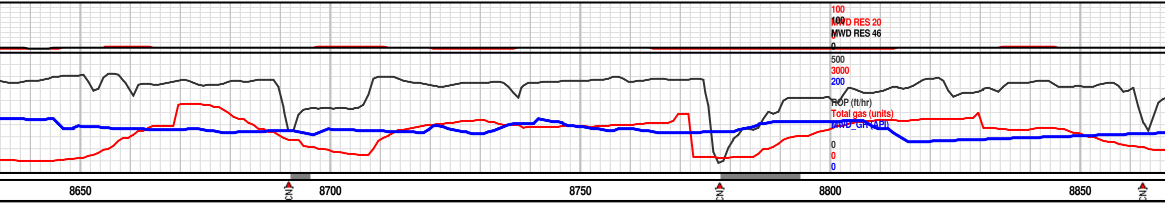
SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn
vis por 8-10%, v spty dry cut fl

WT 9.1 VIS 38 IN
WT 9.4 VIS 38 OUT

WT 9.1 VIS 38 IN
WT 9.4 VIS 38 OUT



MD 8634 TVD 7766.6
INC 91.6 AZ 0.92
N 738.12 E -1203.84
VS 745.46 DL 0.98

MD 8720 TVD 7765.21
INC 90.25 AZ 359.18
N 824.1 E -1203.76
VS 831.44 DL 2.56

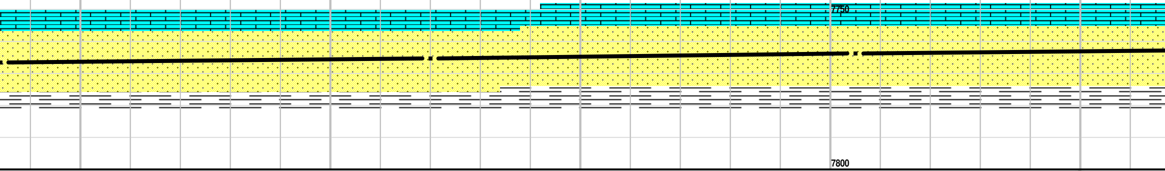
7700 TVD

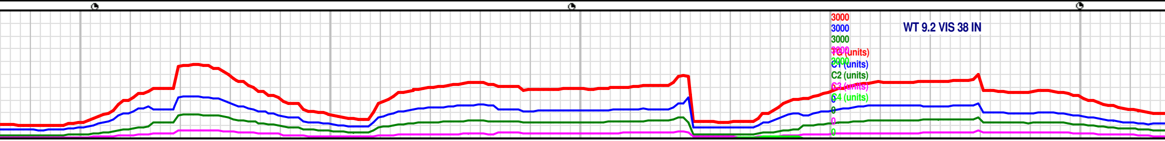
MD 8805 TVD 7763.84
INC 91.6 AZ 0.3
N 909.08 E -1204.15
VS 916.42 DL 2.06

- dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est
or, yel-grn mlky cut, fr rsd rng flor.

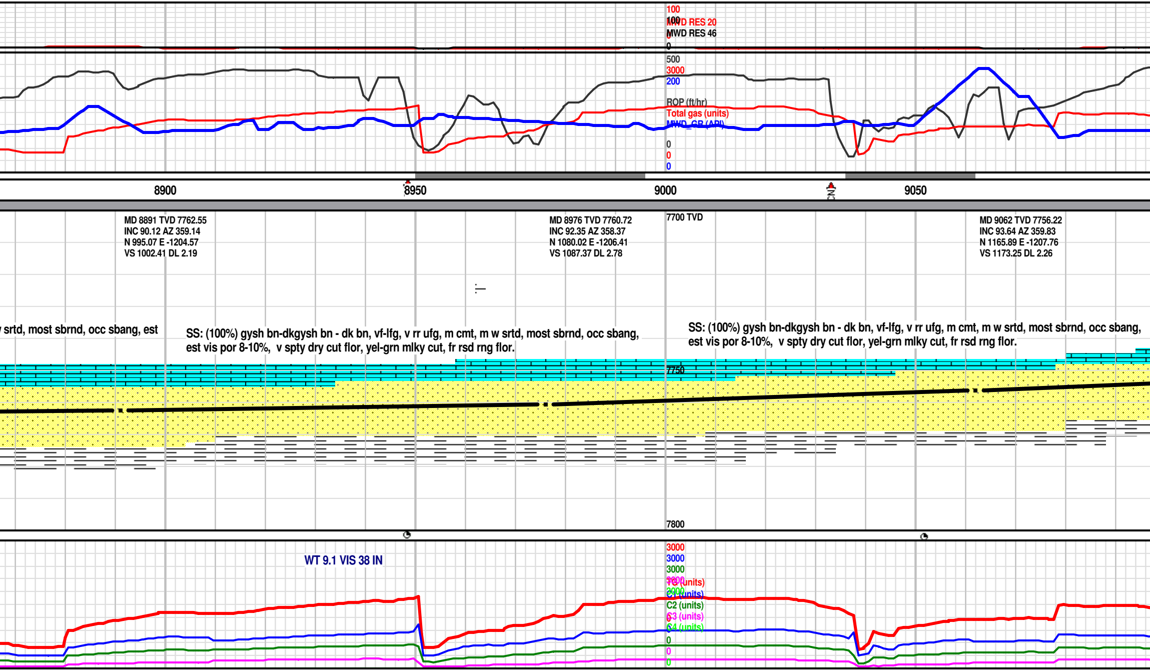
SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w
vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.





WT 9.2 VIS 38 IN



MD 8891 TVD 7762.55
INC 90.12 AZ 359.14
N 995.07 E -1204.57
VS 1002.41 DL 2.19

MD 8976 TVD 7760.72
INC 92.35 AZ 358.37
N 1080.02 E -1206.41
VS 1087.37 DL 2.78

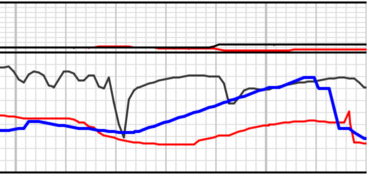
MD 9062 TVD 7756.22
INC 93.64 AZ 359.83
N 1165.89 E -1207.76
VS 1173.25 DL 2.26

v srtd, most sbrnd, occ sbang, est

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

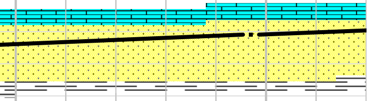
WT 9.1 VIS 38 IN

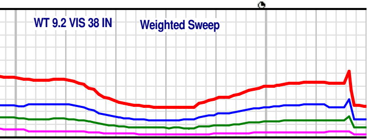


9100 9150

MD 9147 TVD 7750.92
INC 93.52 AZ 359.93
N 1250.73 E -1207.94
VS 1258.08 DL 0.18

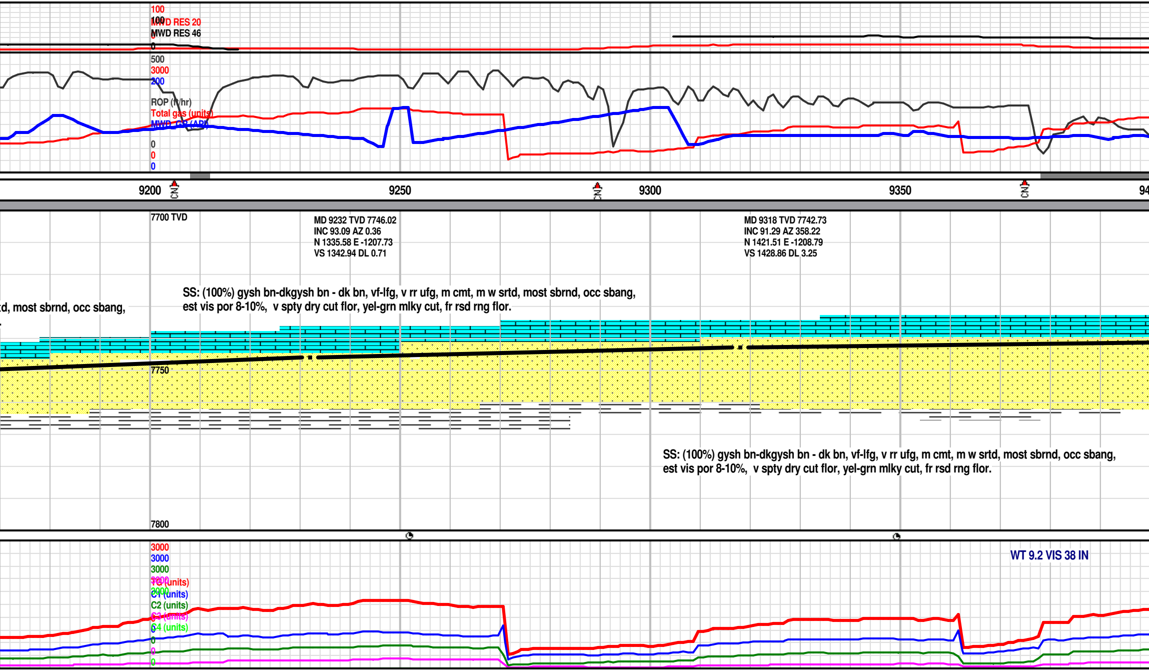
SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srt
est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.





WT 9.2 VIS 38 IN

Weighted Sweep



MD 9232 TVD 7746.02
INC 93.09 AZ 0.36
N 1335.58 E -1207.73
VS 1342.94 DL 0.71

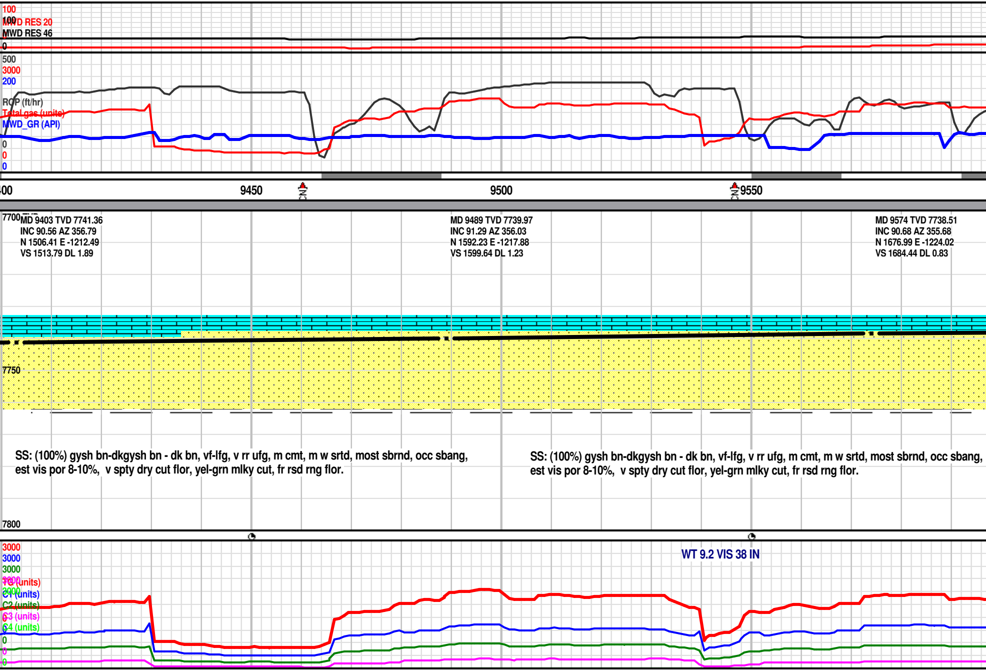
MD 9318 TVD 7742.73
INC 91.29 AZ 358.22
N 1421.51 E -1208.79
VS 1428.86 DL 3.25

td, most sbrnd, occ sbang,

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

WT 9.2 VIS 38 IN



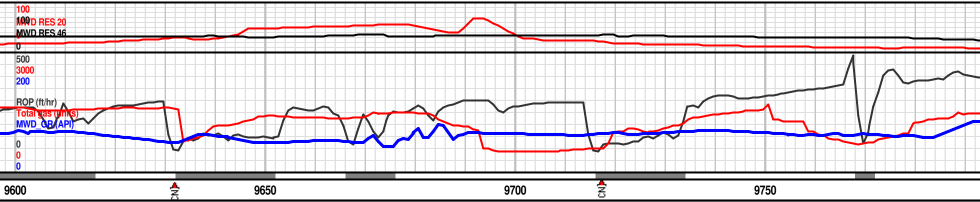
MD 9403 TVD 7741.36
INC 90.56 AZ 356.79
N 1506.41 E -1212.49
VS 1513.79 DL 1.89

MD 9489 TVD 7739.97
INC 91.29 AZ 356.03
N 1592.23 E -1217.88
VS 1599.64 DL 1.23

MD 9574 TVD 7738.51
INC 90.68 AZ 355.68
N 1676.99 E -1224.02
VS 1684.44 DL 0.83

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.

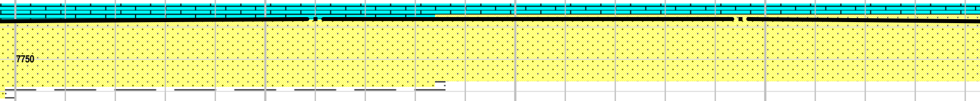
SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.



7700 TVD

MD 9660 TVD 7737.35
INC 90.86 AZ 356.56
N 1762.79 E -1229.84
VS 1770.27 DL 1.04

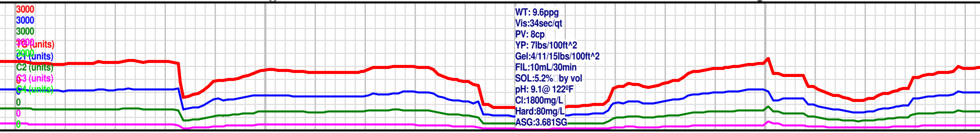
MD 9745 TVD 7737.54
INC 88.89 AZ 356.88
N 1847.65 E -1234.7
VS 1855.15 DL 2.35



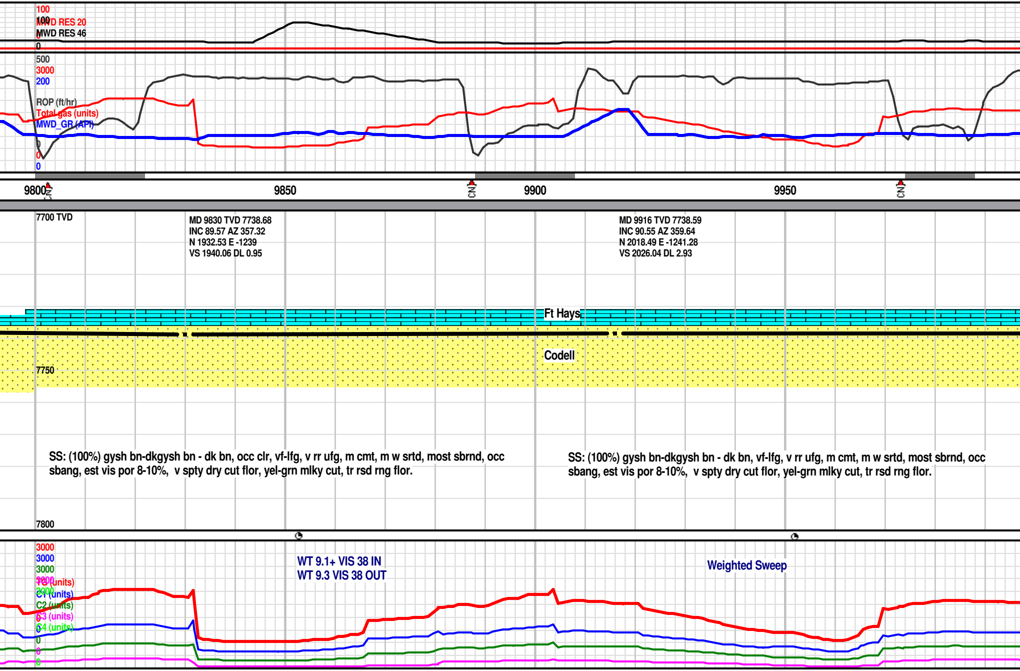
SS: (70%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, fr rsd rng flor.LS: (30%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin SH intbds,

SS: (100%) gysh bn-dkgysh bn - dk bn, rr clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, calc, sm LS, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

7800



WT: 9.6ppg
Vis:34sec/qt
PV: 8cp
YP: 7lbs/100ft^2
Gel:4/11/15lbs/100ft^2
FIL:10mL/30min
SOL:5.2% by vol
pH: 9.1@ 122ºF
Cl:1800mg/L
Hard:80mg/L
ASG:3.681SG



MD 9830 TVD 7738.68
INC 89.57 AZ 357.32
N 1932.53 E -1239
VS 1940.06 DL 0.95

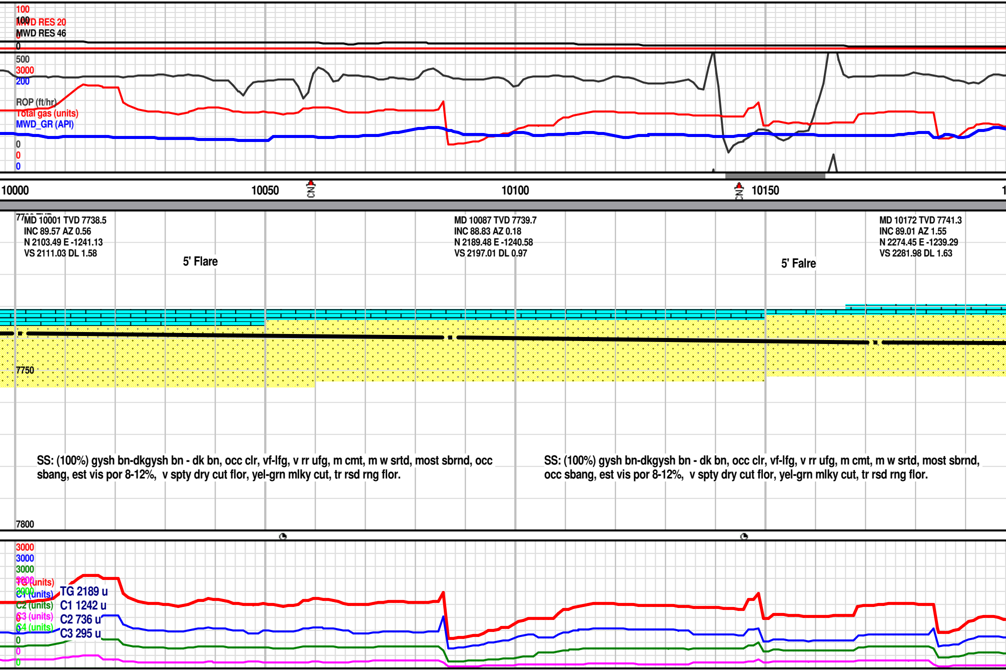
MD 9916 TVD 7738.59
INC 90.55 AZ 359.64
N 2018.49 E -1241.28
VS 2026.04 DL 2.93

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

WT 9.1+ VIS 38 IN
WT 9.3 VIS 38 OUT

Weighted Sweep



MD 10001 TVD 7738.5
INC 89.57 AZ 0.56
N 2103.49 E -1241.13
VS 2111.03 DL 1.58

5' Flare

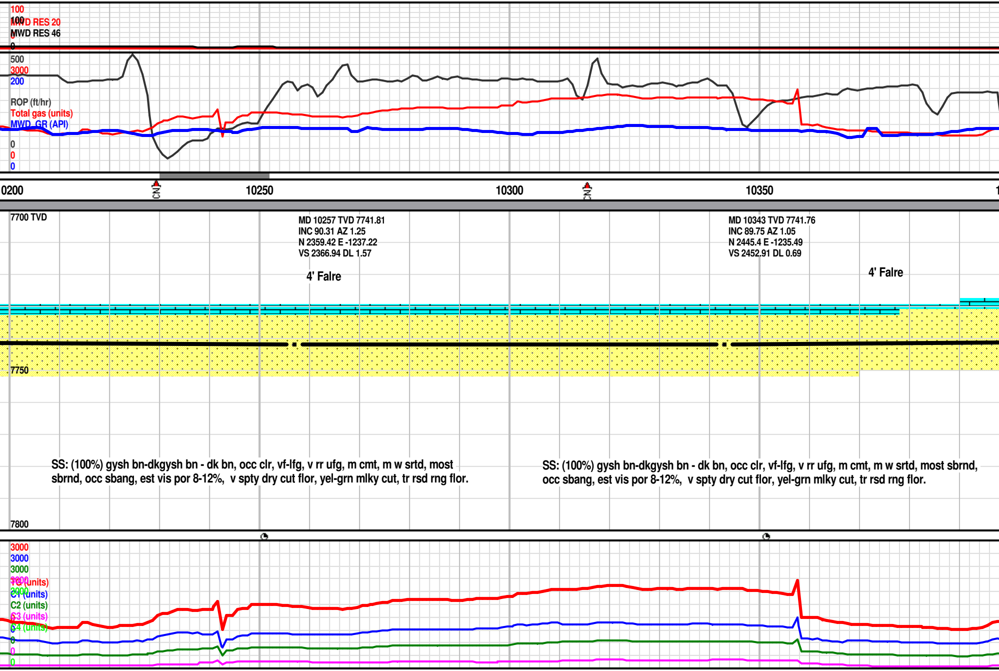
MD 10087 TVD 7739.7
INC 88.83 AZ 0.18
N 2189.48 E -1240.58
VS 2197.01 DL 0.97

5' Falre

MD 10172 TVD 7741.3
INC 89.01 AZ 1.55
N 2274.45 E -1239.29
VS 2281.98 DL 1.63

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.



MD 10257 TVD 7741.81
INC 90.31 AZ 1.25
N 2359.42 E -1237.22
VS 2366.94 DL 1.57

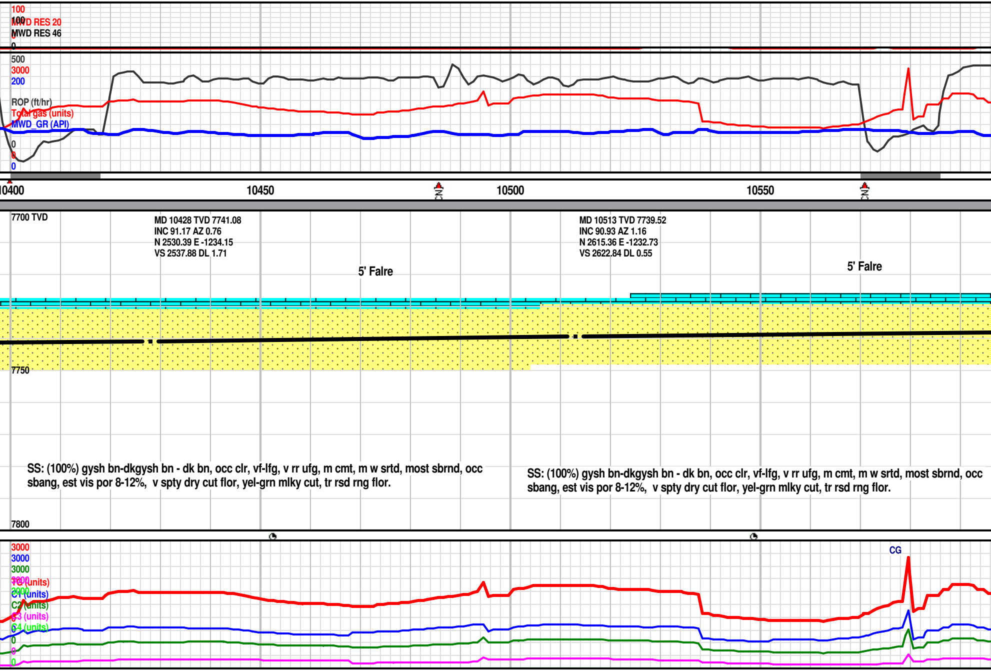
4' Falre

MD 10343 TVD 7741.76
INC 89.75 AZ 1.05
N 2445.4 E -1235.49
VS 2452.91 DL 0.69

4' Falre

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

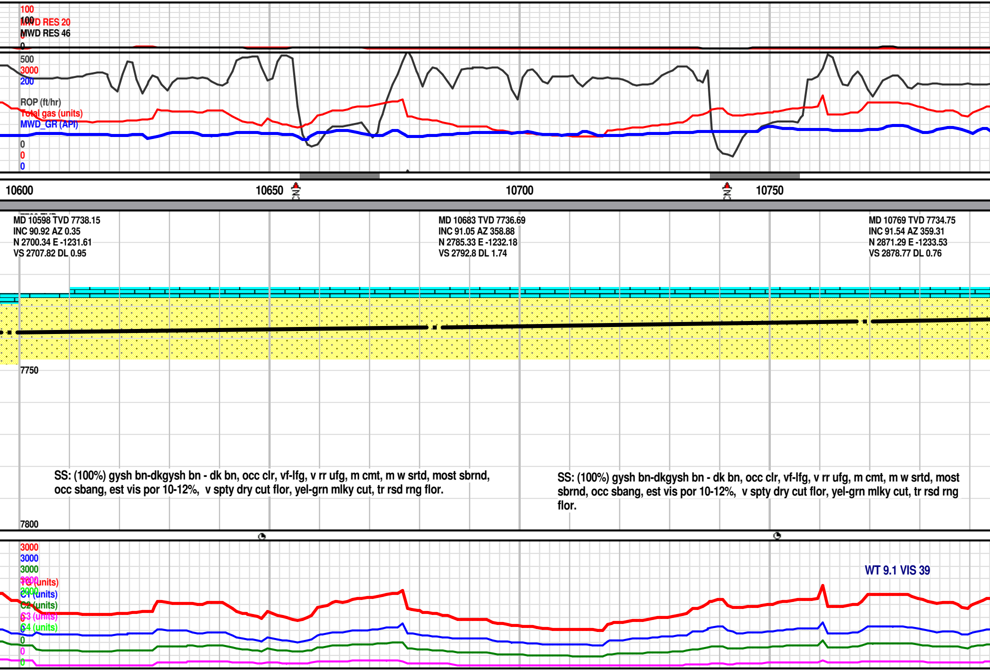


MD 10428 TVD 7741.08
INC 91.17 AZ 0.76
N 2530.39 E -1234.15
VS 2537.88 DL 1.71

MD 10513 TVD 7739.52
INC 90.93 AZ 1.16
N 2615.36 E -1232.73
VS 2622.84 DL 0.55

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.



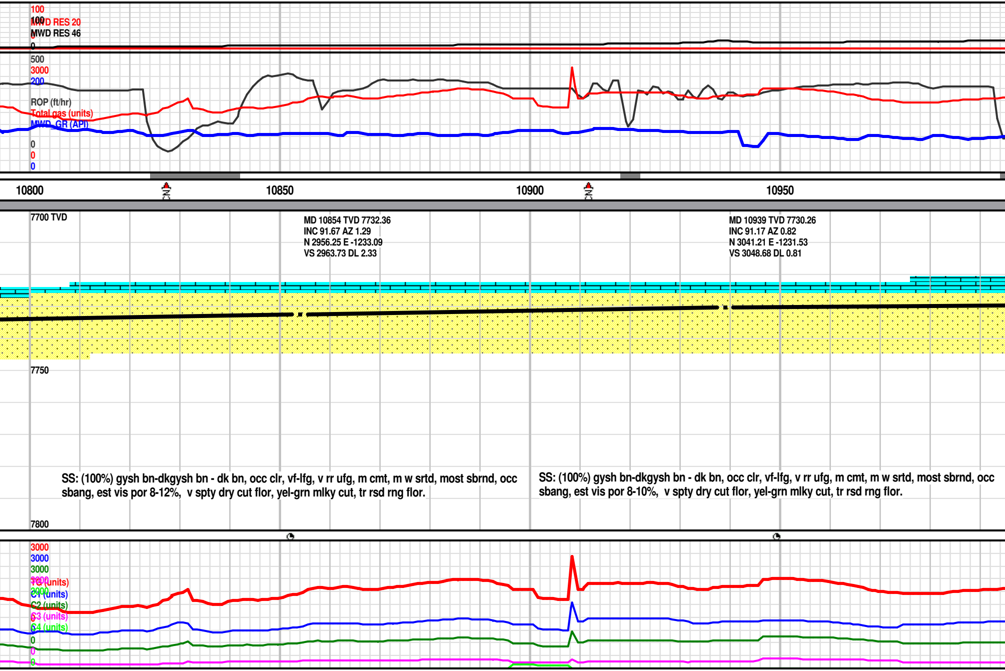
MD 10598 TVD 7738.15
INC 90.92 AZ 0.35
N 2700.34 E -1231.61
VS 2707.82 DL 0.95

MD 10683 TVD 7736.69
INC 91.05 AZ 358.88
N 2785.33 E -1232.18
VS 2792.8 DL 1.74

MD 10769 TVD 7734.75
INC 91.54 AZ 359.31
N 2871.29 E -1233.53
VS 2878.77 DL 0.76

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 10-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 10-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

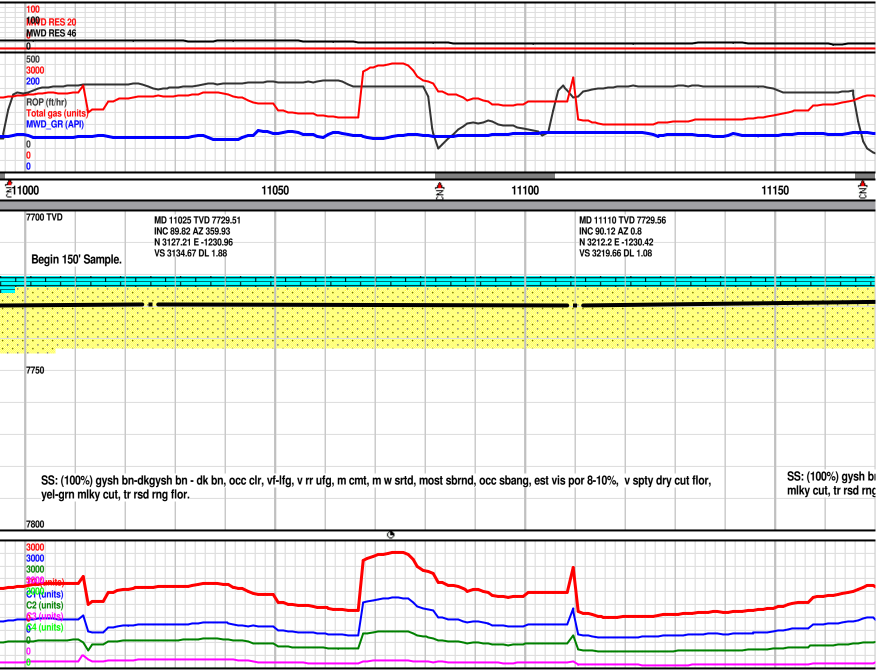


MD 10854 TVD 7732.36
INC 91.67 AZ 1.29
N 2956.25 E -1233.09
VS 2963.73 DL 2.33

MD 10939 TVD 7730.26
INC 91.17 AZ 0.82
N 3041.21 E -1231.53
VS 3048.68 DL 0.81

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-12%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.



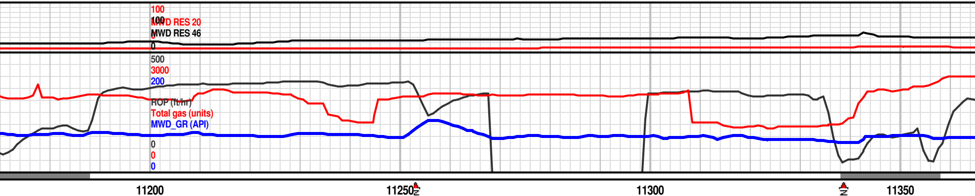
MD 11025 TVD 7729.51
INC 89.82 AZ 359.93
N 3127.21 E -1230.96
VS 3134.67 DL 1.88

Begin 150' Sample.

MD 11110 TVD 7729.56
INC 90.12 AZ 0.8
N 3212.2 E -1230.42
VS 3219.66 DL 1.08

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

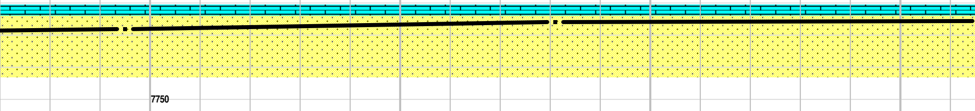
SS: (100%) gysh b
mlky cut, tr rsd rng



MD 11195 TVD 7728.14
INC 91.79 AZ 0.27
N 3297.18 E -1229.63
VS 3304.63 DL 2.06

4' Flare

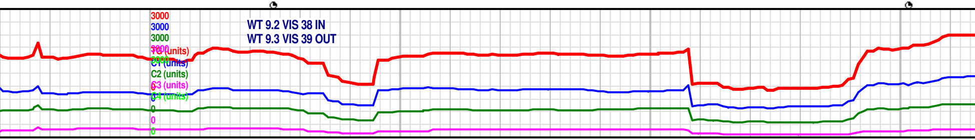
MD 11281 TVD 7726.06
INC 90.99 AZ 359.57
N 3383.16 E -1229.75
VS 3390.61 DL 1.24



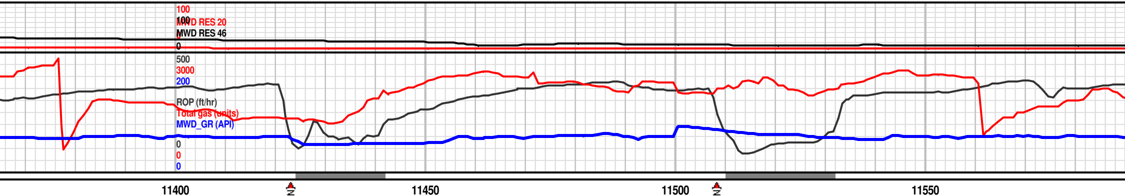
n-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn g flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, mlky cut, tr rsd rng flor.

7800



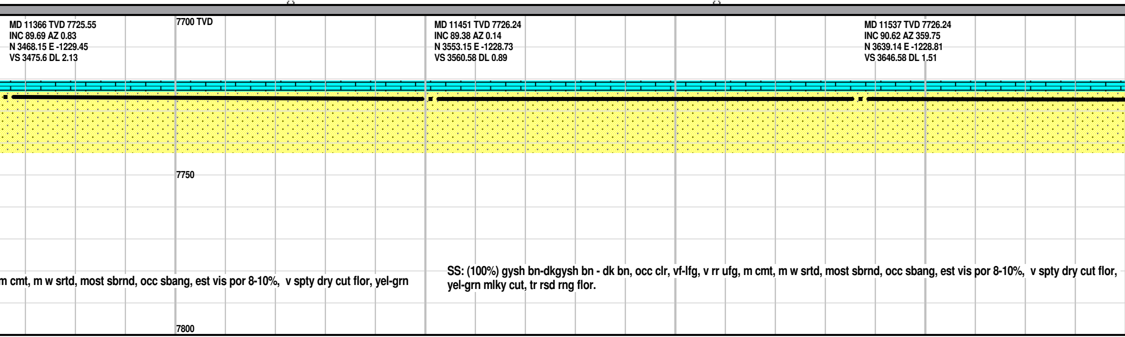
WT 9.2 VIS 38 IN
WT 9.3 VIS 39 OUT



MD 11366 TVD 7725.55
INC 89.69 AZ 0.83
N 3468.15 E -1229.45
VS 3475.6 DL 2.13

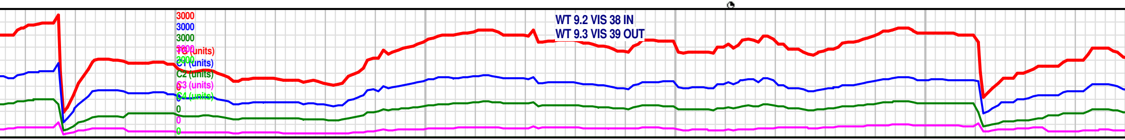
MD 11451 TVD 7726.24
INC 89.38 AZ 0.14
N 3553.15 E -1228.73
VS 3560.58 DL 0.89

MD 11537 TVD 7726.24
INC 90.62 AZ 359.75
N 3639.14 E -1228.81
VS 3646.58 DL 1.51

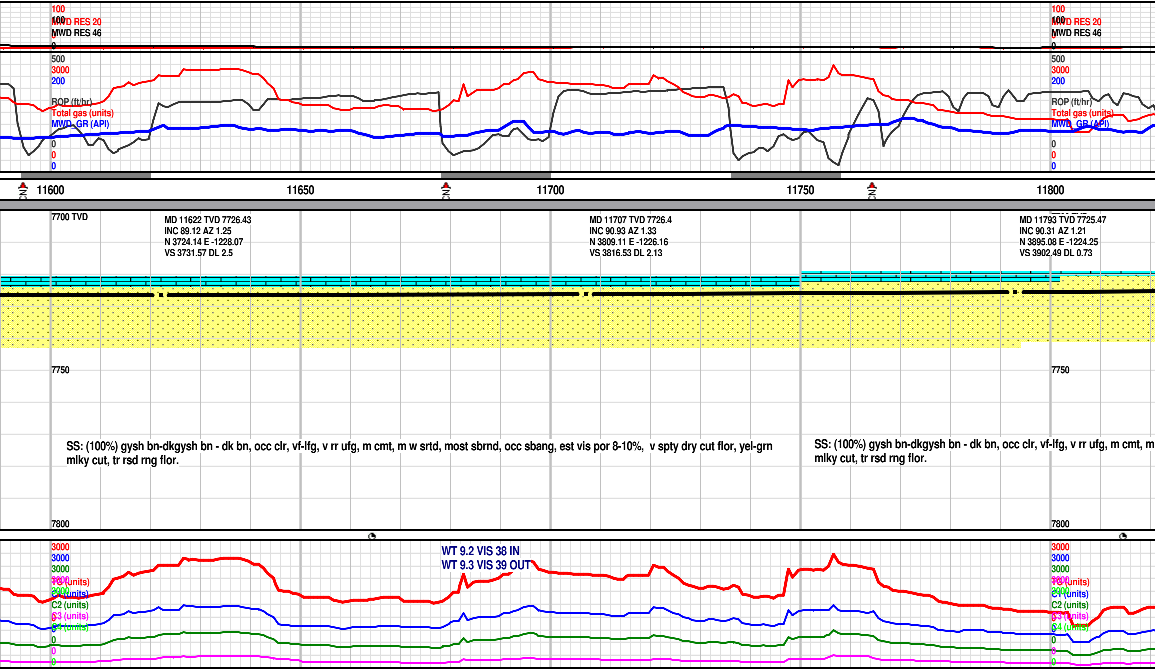


m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.



WT 9.2 VIS 38 IN
WT 9.3 VIS 39 OUT



MD 11622 TVD 7726.43
INC 89.12 AZ 1.25
N 3724.14 E -1228.07
VS 3731.57 DL 2.5

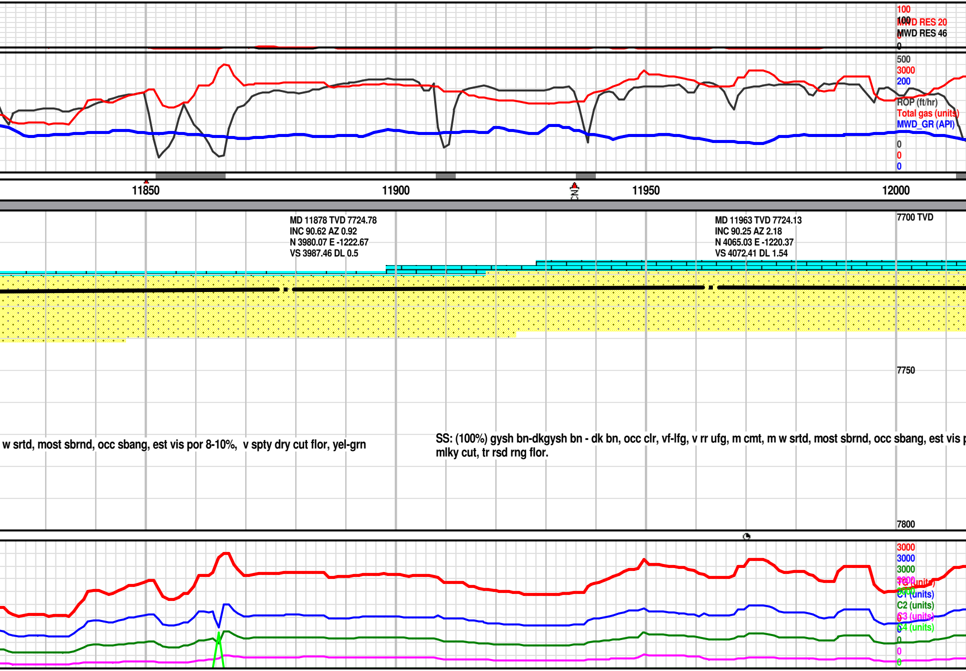
MD 11707 TVD 7726.4
INC 90.93 AZ 1.33
N 3809.11 E -1226.16
VS 3816.53 DL 2.13

MD 11793 TVD 7725.47
INC 90.31 AZ 1.21
N 3895.08 E -1224.25
VS 3902.49 DL 0.73

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m mlky cut, tr rsd rng flor.

WT 9.2 VIS 38 IN
WT 9.3 VIS 39 OUT

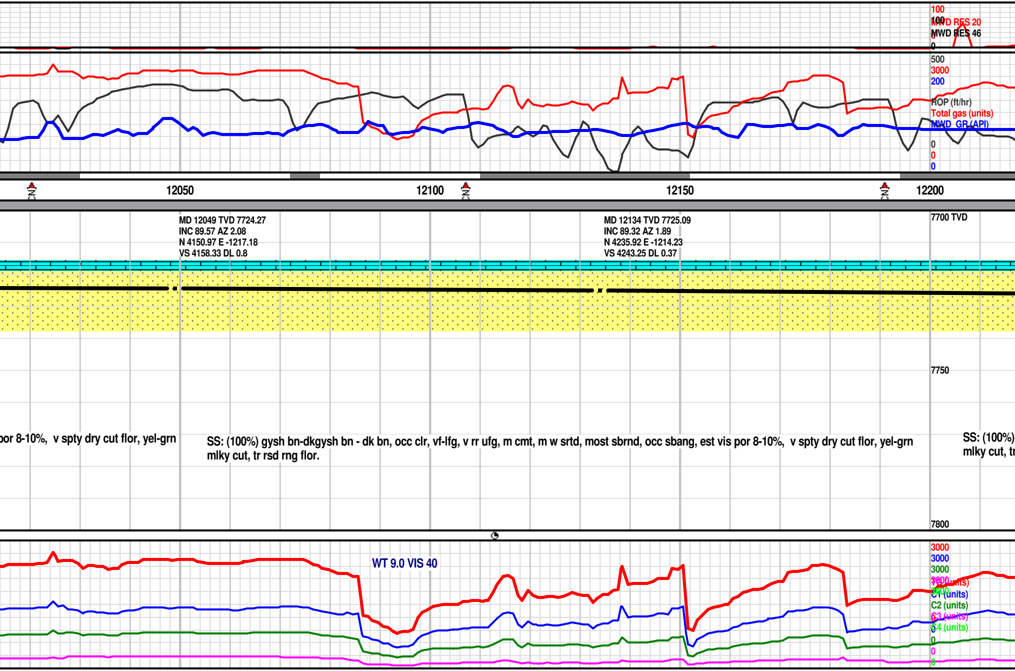


MD 11878 TVD 7724.78
INC 90.62 AZ 0.92
N 3980.07 E -1222.67
VS 3987.46 DL 0.5

MD 11963 TVD 7724.13
INC 90.25 AZ 2.18
N 4065.03 E -1220.37
VS 4072.41 DL 1.54

w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis p
mlky cut, tr rsd rng flor.



MD 12049 TVD 7724.27
INC 89.57 AZ 2.08
N 4150.97 E -1217.18
VS 4158.33 DL 0.8

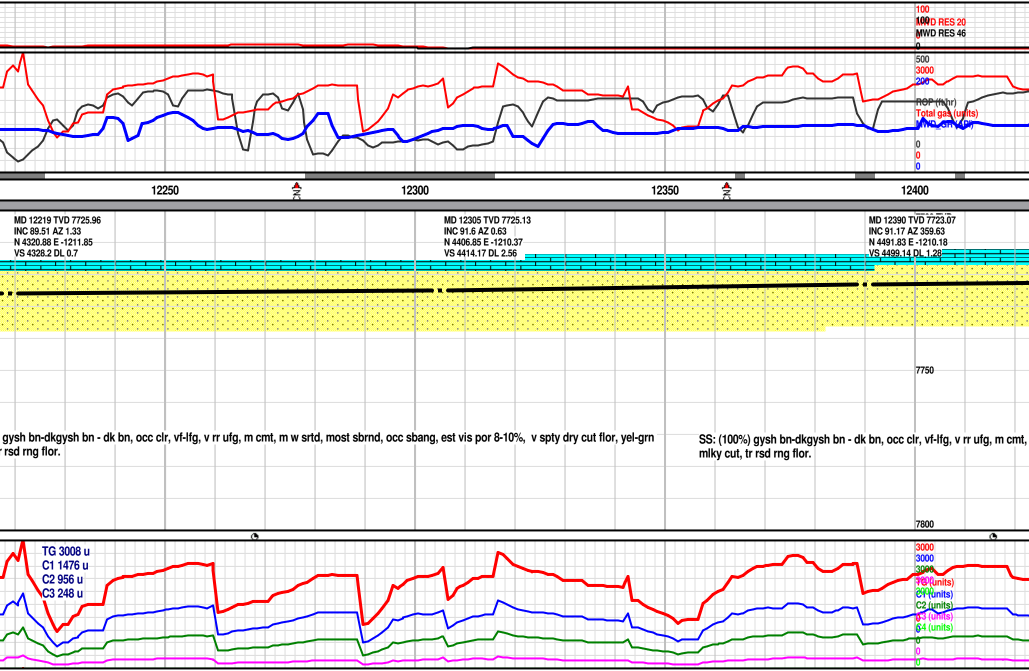
MD 12134 TVD 7725.09
INC 89.32 AZ 1.89
N 4235.92 E -1214.23
VS 4243.25 DL 0.37

por 8-10%, v spty dry cut flor, yel-grn

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%)
mlky cut, tr

WT 9.0 VIS 40



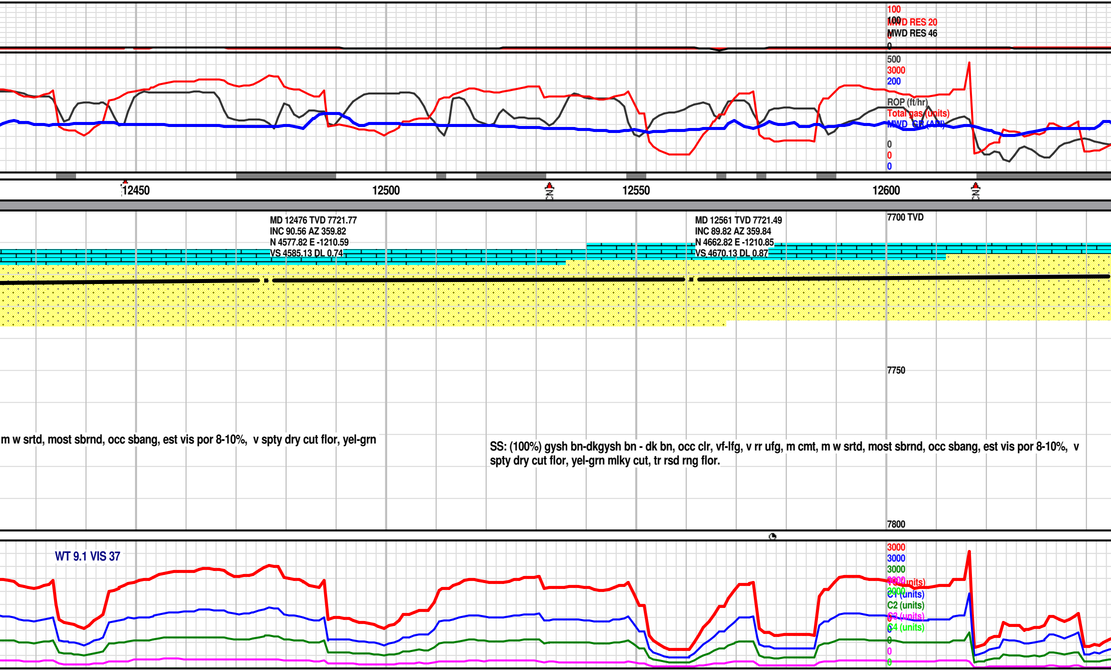
MD 12219 TVD 7725.96
INC 89.51 AZ 1.33
N 4320.88 E -1211.85
VS 4328.2 DL 0.7

MD 12305 TVD 7725.13
INC 91.6 AZ 0.63
N 4406.85 E -1210.37
VS 4414.17 DL 2.56

MD 12390 TVD 7723.07
INC 91.17 AZ 359.63
N 4491.83 E -1210.18
VS 4499.14 DL 1.28

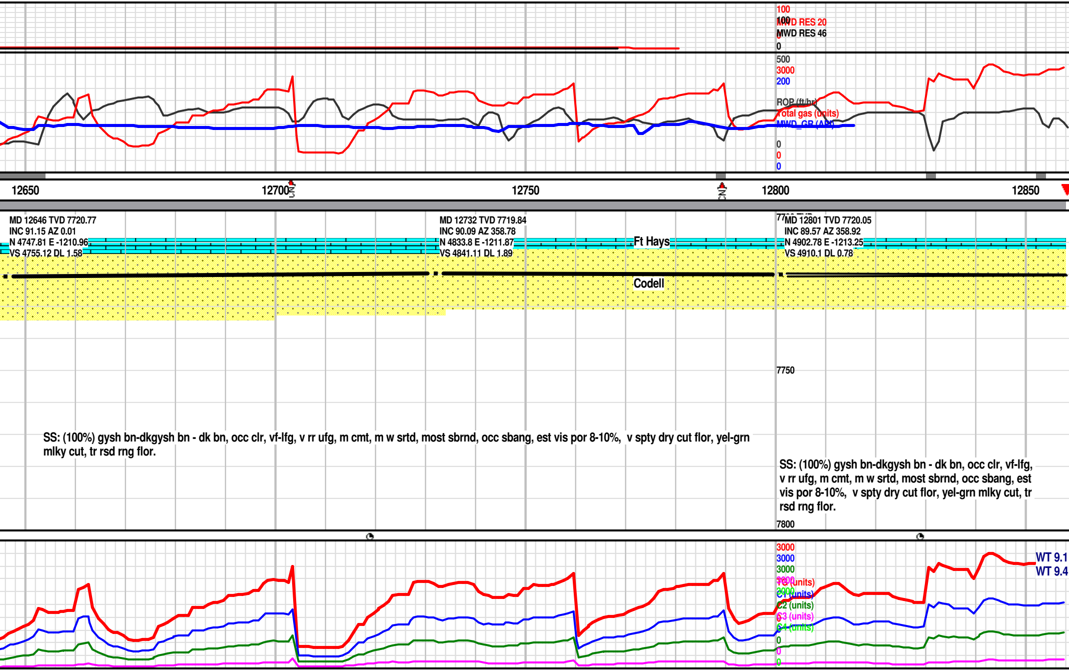
gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn
r rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt,
mlky cut, tr rsd rng flor.



m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.



SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

SS: (100%) gysh bn-dkgysh bn - dk bn, occ clr, vf-lfg, v rr ufg, m cmt, m w srtd, most sbrnd, occ sbang, est vis por 8-10%, v spty dry cut flor, yel-grn mlky cut, tr rsd rng flor.

12900

TD at 12858' on Sep 02 @ 22:00 hr.

	SSD	TVD	MD
Surface Casing	3989	1035	1035
KOP	-2176	7200	7240
Sharon Springs	-2290	7314	7480
Niobrara A Chalk	-2312	7336	7503
Niobrara B Chalk	-2495	7519	7710
Niobrara C Chalk	-2581	7605	7823
Fort Hays	-2715	7739	8073
Codell	-2734	7758	8140
Target Line (Heel)	-2749	7773	8282
Target Line (Toe)	-2696	7720	12858

Thank you
Goolsby Brothers & Assoc.
Robin Brackman & Tekabe G

VIS 36 IN
VIS 36 OUT