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:	CANNON 34C-10HZ		
Location:	Section 10, T2N, R66W, Weld County, CO.		
License Number:	API: 05-123-36695	Region:	Wattenberg
Spud Date:	22 Mar 2013	Drilling Completed:	01 May 2013
Surface Coordinates:	349' FNL X 1170' FWL NWNW LAT: 40.158889 LONG: -104.768689		
Bottom Hole Coordinates:	460' FSL X 50' FWL SWSW(Proj) Sec 10, T2N, R66W Lat: 40.146638 LONG: -104.772588		
Ground Elevation (ft):	4949'	K.B. Elevation (ft):	4965'
Logged Interval (ft):	6950' To: 12001'	Total Depth (ft):	12001'
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 & RES 6950' - 12001'

Casing

9 5/8" Surface Casing set @ 950'
7" Intermediate Casing set @ 7780' MD, set on April 26, 2013
run 4 1/2" Production Liner to run on May 03, 2013.

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
Cryxln
Earthy
Finexln
Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

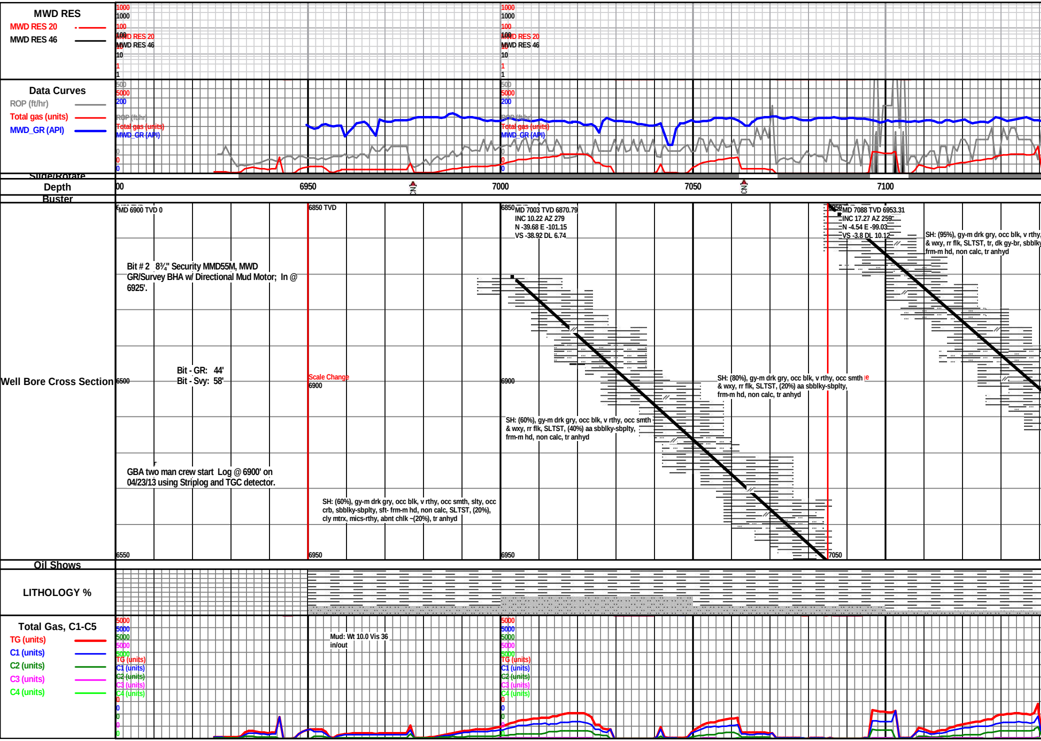
OTHER SYMBOLS

OIL SHOWS
Even
Spotted
Ques
Dead
Vspotty
near even

POROSITY TYPE
Earthy
Fenest
Fracture
Inter
Moldic
Organic
Pinpoint
Vuggy

ROUNDING
Rounded
Subrnd
Subang
Angular

SORTING
Well
Moderate
Poor



Bit # 2 8¾" Security MMD55M, MWD GR/Survey BHA w/ Directional Mud Motor; In @ 6925'.

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

GBA two man crew start Log @ 6900' on 04/23/13 using Striplog and TGC detector.

SH: (60%), gy-m drk gry, occ blk, v rthy, occ smth, slty, occ crb, sbblky-sbplty, sft- frm-m hd, non calc, SLTST, (20%), cly mtrx, mics-rthy, abnt chlk ~(20%), tr anhyd

MD 7003 TVD 6870.79
INC 10.22 AZ 279
N -39.68 E -101.15
VS -38.92 DL 6.74

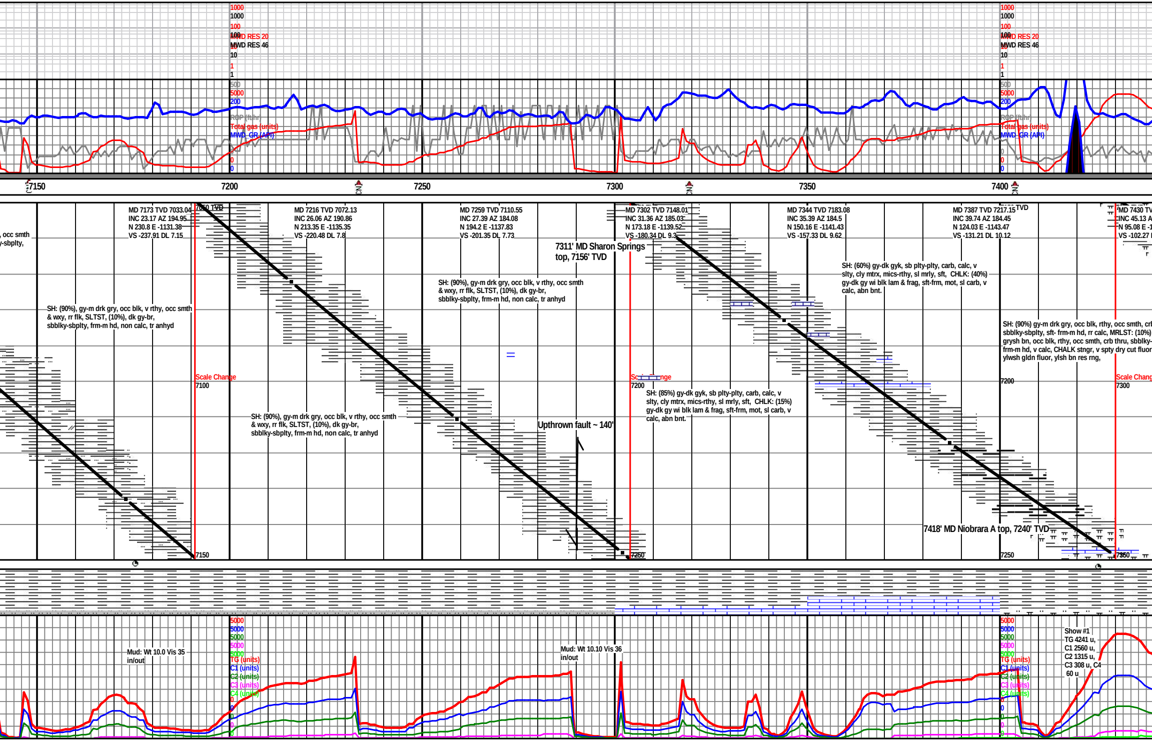
SH: (60%), gy-m drk gry, occ blk, v rthy, occ smth & wxy, rr flk, SLTST, (40%) aa sbblky-sbplty, frm-m hd, non calc, tr anhyd

SH: (80%), gy-m drk gry, occ blk, v rthy, occ smth & wxy, rr flk, SLTST, (20%) aa sbblky-sbplty, frm-m hd, non calc, tr anhyd

MD 7088 TVD 6953.31
INC 17.27 AZ 259
N -4.54 E -99.03
VS -3.8 DL 10.12

SH: (95%), gy-m drk gry, occ blk, v rthy, & wxy, rr flk, SLTST, tr, dk gy-br, sbblky
frm-m hd, non calc, tr anhyd

Mud: Wt 10.0 Vis 36
in/out



, occ smth
-sbplty,

MD 7173 TVD 7033.04
INC 23.17 AZ 194.95
N 230.8 E -1131.38
VS -237.91 DL 7.15

MD 7216 TVD 7072.13
INC 26.06 AZ 190.86
N 213.35 E -1135.35
VS -220.48 DL 7.8

MD 7259 TVD 7110.55
INC 27.39 AZ 184.08
N 194.2 E -1137.83
VS -201.35 DL 7.73

MD 7302 TVD 7148.01
INC 31.36 AZ 185.03
N 173.18 E -1139.52
VS -180.34 DL 9.3

MD 7344 TVD 7183.08
INC 35.39 AZ 184.5
N 150.16 E -1141.43
VS -157.33 DL 9.62

MD 7387 TVD 7217.15
INC 39.74 AZ 184.45
N 124.03 E -1143.47
VS -131.21 DL 10.12

MD 7430 TV
INC 45.13 A
N 95.08 E -
VS -102.27

7311' MD Sharon Springs top, 7156' TVD

SH: (60%) gy-dk gyk, sb plty-plty, carb, calc, v slty, cly mtrx, mics-rthy, sl mrly, sft, CHLK: (40%) gy-dk gy wi blk lam & frag, sft-frm, mot, sl carb, v calc, abn bnt.

SH: (90%), gy-m drk gry, occ blk, v rthy, occ smth & wxy, rr flk, SLTST, (10%), dk gy-br, sbblky-sbplty, frm-m hd, non calc, tr anhyd

SH: (90%), gy-m drk gry, occ blk, v rthy, occ smth & wxy, rr flk, SLTST, (10%), dk gy-br, sbblky-sbplty, frm-m hd, non calc, tr anhyd

SH: (90%) gy-m drk gry, occ blk, rthy, occ smth, crb sbblky-sbplty, sft- frm-m hd, rr calc, MRLST: (10%) grysh bn, occ blk, rthy, occ smth, crb thru, sbblky- frm-m hd, v calc, CHALK stngr, v spty dry cut fluor ylwsh gldn fluor, ylsh bn res rng,

SH: (90%), gy-m drk gry, occ blk, v rthy, occ smth & wxy, rr flk, SLTST, (10%), dk gy-br, sbblky-sbplty, frm-m hd, non calc, tr anhyd

SH: (85%) gy-dk gyk, sb plty-plty, carb, calc, v slty, cly mtrx, mics-rthy, sl mrly, sft, CHLK: (15%) gy-dk gy wi blk lam & frag, sft-frm, mot, sl carb, v calc, abn bnt.

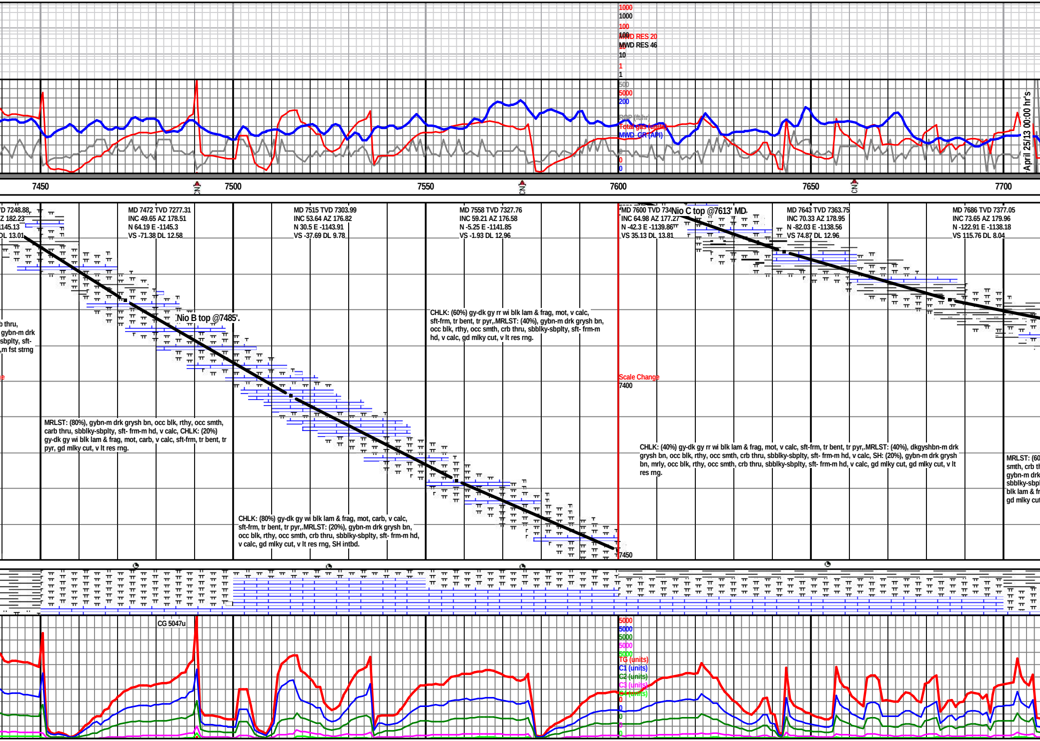
Upthrown fault ~ 140'

7418' MD Niobrara A top, 7240' TVD

Mud: Wt 10.0 Vis 35
in/out

Mud: Wt 10.10 Vis 36
in/out

Show #1
TG 4241 u,
C1 2560 u,
C2 1315 u,
C3 308 u, C4
60 u



D 7248.88
Z 182.23
145.13
DL 13.01

MD 7472 TVD 7277.31
INC 49.65 AZ 178.51
N 64.19 E -1145.3
VS -71.38 DL 12.58

MD 7515 TVD 7303.99
INC 53.64 AZ 176.82
N 30.5 E -1143.91
VS -37.69 DL 9.78

MD 7558 TVD 7327.76
INC 59.21 AZ 176.58
N -5.25 E -1141.85
VS -1.93 DL 12.96

MD 7600 TVD 734
INC 64.98 AZ 177.27
N -42.3 E -1139.86
VS 35.13 DL 13.81

MD 7643 TVD 7363.75
INC 70.33 AZ 178.95
N -82.03 E -1138.56
VS 74.87 DL 12.96

MD 7686 TVD 7377.05
INC 73.65 AZ 179.96
N -122.91 E -1138.18
VS 115.76 DL 8.04

b thru,
gybn-m drk
sbplty, sft-
,m fst strng

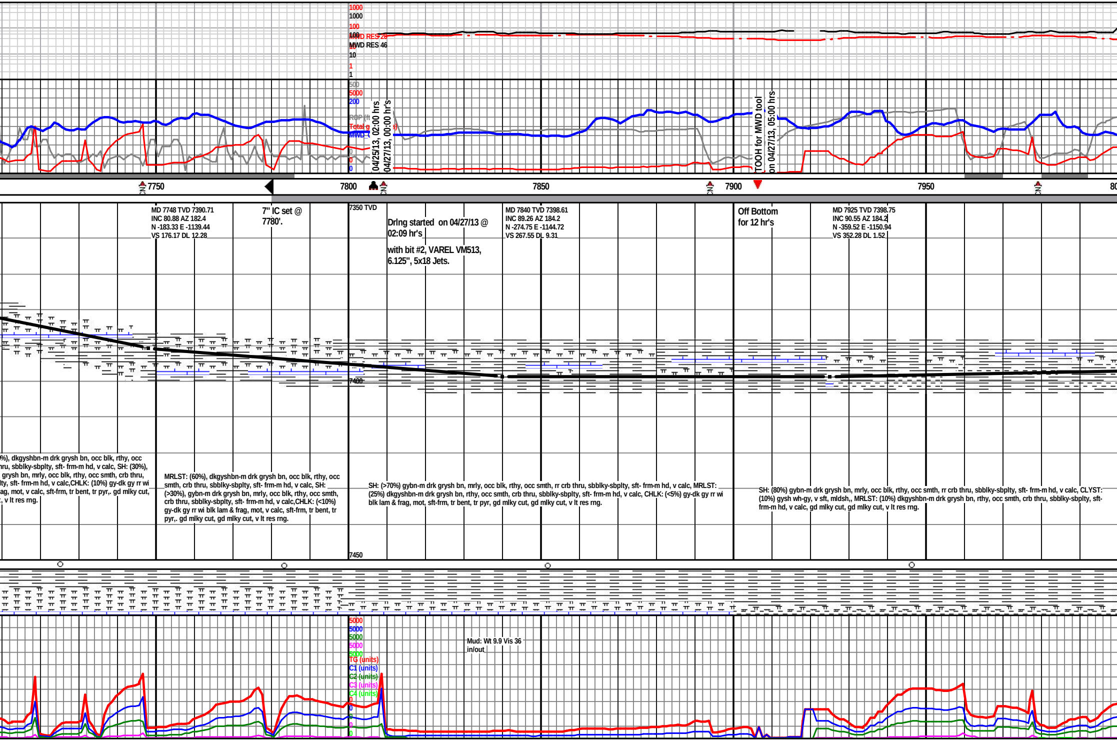
MRLST: (80%), gybn-m drk grysh bn, occ blk, rthy, occ smth, carb thru, sbblky-sbplty, sft- frm-m hd, v calc, CHLK: (20%) gy-dk gy wi blk lam & frag, mot, carb, v calc, sft-frm, tr bent, tr pyr, gd mlky cut, v lt res rng.

CHLK: (80%) 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.

CHLK: (60%) gy-dk gy rr wi blk lam & frag, mot, 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.

CHLK: (40%) gy-dk gy rr wi blk lam & frag, mot, v calc, sft-frm, tr bent, tr pyr,.MRLST: (40%), dkgyshbn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (20%), gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

MRLST: (60
smth, crb th
gybn-m drk
sbblky-sbpl
blk lam & fr
gd mlky cut



04/25/13, 02:00 hrs

04/27/13, 00:00 hr's

TOOH for MWD tool on 04/27/13, 05:00 hrs

MD 7748 TVD 7390.71
INC 80.88 AZ 182.4
N -183.33 E -1139.44
VS 176.17 DL 12.28

7" IC set @ 7780'.

Drlng started on 04/27/13 @ 02:09 hr's

with bit #2, VAREL VM513, 6.125", 5x18 Jets.

MD 7840 TVD 7398.61
INC 89.26 AZ 184.2
N -274.75 E -1144.72
VS 267.55 DL 9.31

Off Bottom for 12 hr's

MD 7925 TVD 7398.75
INC 90.55 AZ 184.2
N -359.52 E -1150.94
VS 352.28 DL 1.52

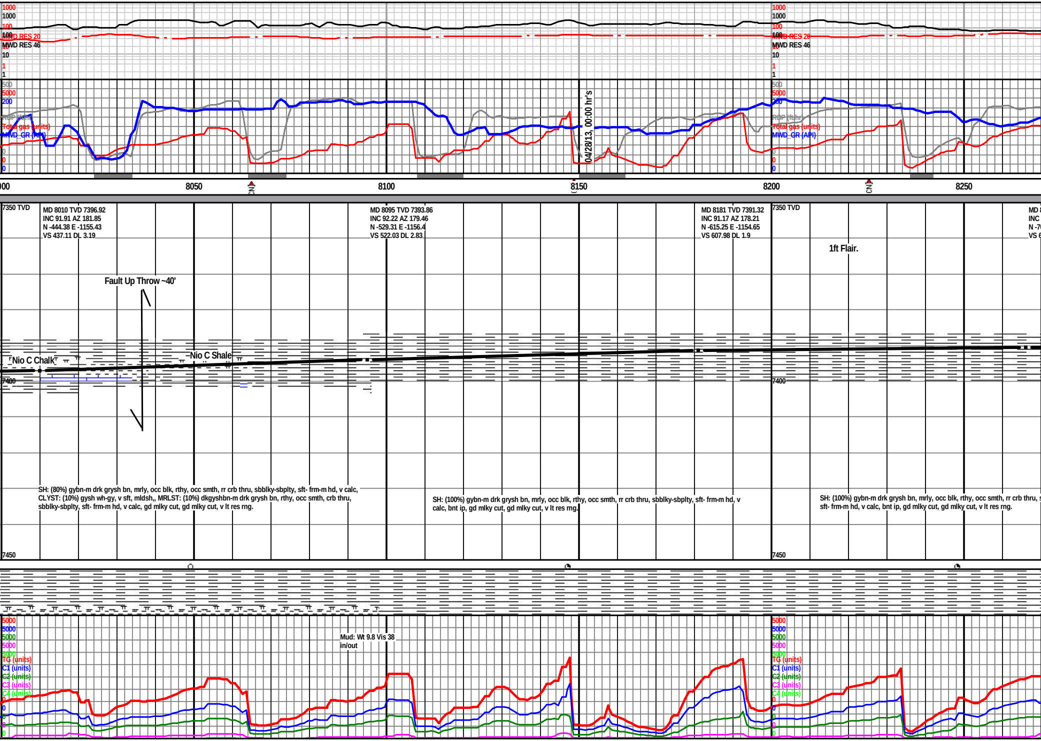
%), dkgyshbn-m drk grysh bn, occ blk, rthy, occ
hru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (30%),
grysh bn, mrly, occ blk, rthy, occ smth, crb thru,
lty, sft- frm-m hd, v calc,CHLK: (10%) gy-dk gy rr wi
ag, mot, v calc, sft-frm, tr bent, tr pyr,. gd mlky cut,
, v lt res rng.

MRLST: (60%), dkgyshbn-m drk grysh bn, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, SH: (>30%), gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc,CHLK: (<10%) gy-dk gy rr wi blk lam & frag, mot, v calc, sft-frm, tr bent, tr pyr,. gd mlky cut, gd mlky cut, v lt res rng.

SH: (>70%) gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, MRLST: (25%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, CHLK: (<5%) gy-dk gy rr wi blk lam & frag, mot, sft-frm, tr bent, tr pyr, gd mlky cut, gd mlky cut, v lt res rng.

SH: (80%) gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, CLYST: (10%) gysh wh-gy, v sft, mldsh,, MRLST: (10%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft-frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

Mud: Wt 9.9 Vis 36 in/out



MD 8010 TVD 7396.92
INC 91.91 AZ 181.85
N -444.38 E -1155.43
VS 437.11 DL 3.19

MD 8095 TVD 7393.86
INC 92.22 AZ 179.46
N -529.31 E -1156.4
VS 522.03 DL 2.83

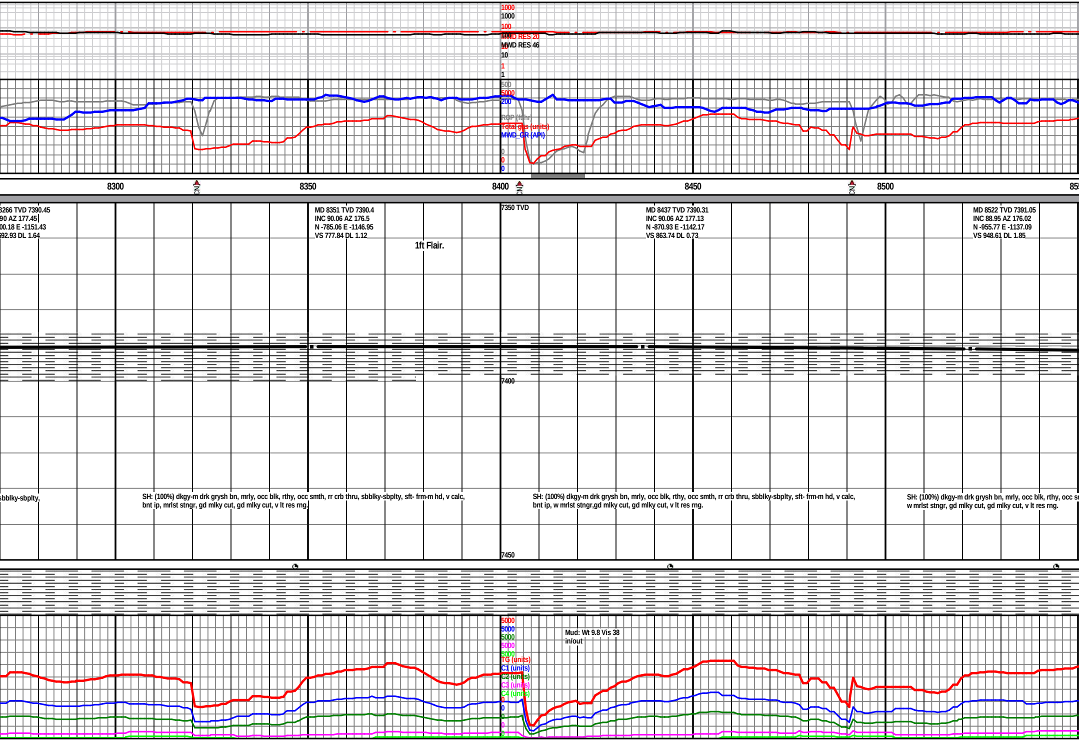
MD 8181 TVD 7391.32
INC 91.17 AZ 178.21
N -615.25 E -1154.65
VS 607.98 DL 1.9

SH: (80%) gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, CLYST: (10%) gysh wh-gy, v sft, mldsh,, MRLST: (10%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

SH: (100%) gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, gd mlky cut, gd mlky cut, v lt res rng.

SH: (100%) gybn-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sft- frm-m hd, v calc, bnt ip, gd mlky cut, gd mlky cut, v lt res rng.

Mud: Wt 9.8 Vis 38
in/out



3266 TVD 7390.45
90 AZ 177.45
00.18 E -1151.43
592.93 DL 1.64

MD 8351 TVD 7390.4
INC 90.06 AZ 176.5
N -785.06 E -1146.95
VS 777.84 DL 1.12

MD 8437 TVD 7390.31
INC 90.06 AZ 177.13
N -870.93 E -1142.17
VS 863.74 DL 0.73

MD 8522 TVD 7391.05
INC 88.95 AZ 176.02
N -955.77 E -1137.09
VS 948.61 DL 1.85

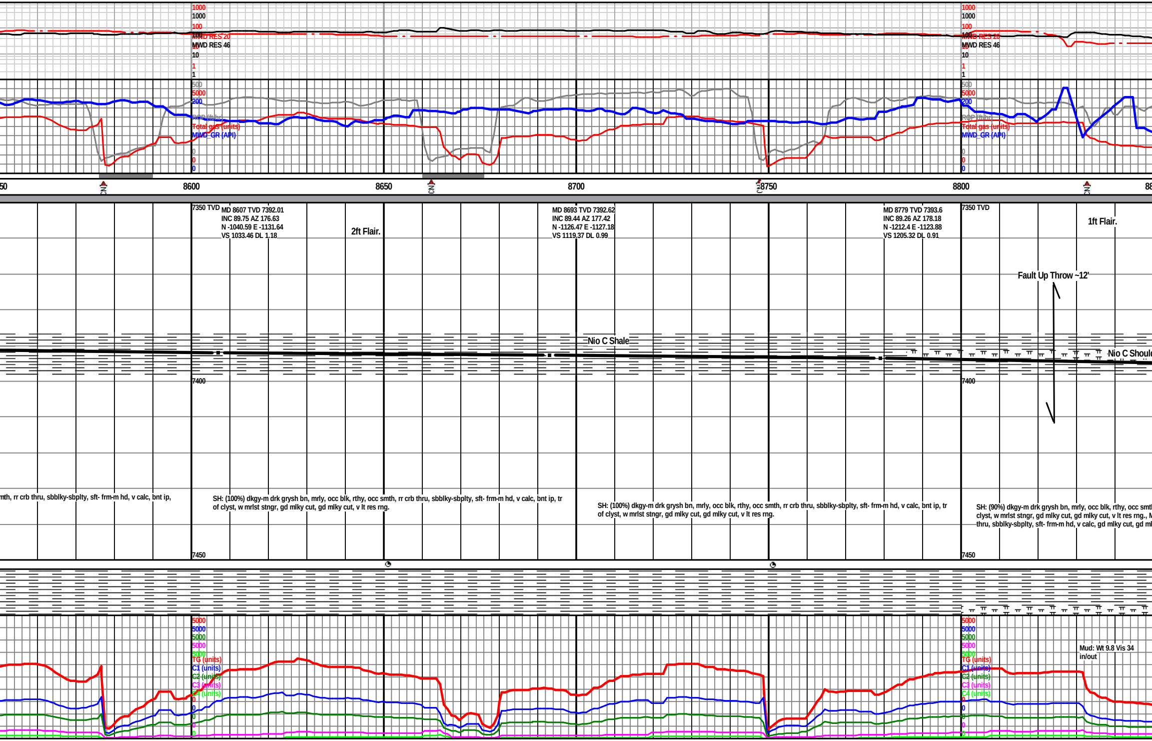
sbblky-sbplty,

SH: (100%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng.

SH: (100%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, w mrlst stngr,gd mlky cut, gd mlky cut, v lt res rng.

SH: (100%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ sı
w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng.

Mud: Wt 9.8 Vis 38
in/out



MD 8607 TVD 7392.01
INC 89.75 AZ 176.63
N -1040.59 E -1131.64
VS 1033.46 DL 1.18

MD 8693 TVD 7392.62
INC 89.44 AZ 177.42
N -1126.47 E -1127.18
VS 1119.37 DL 0.99

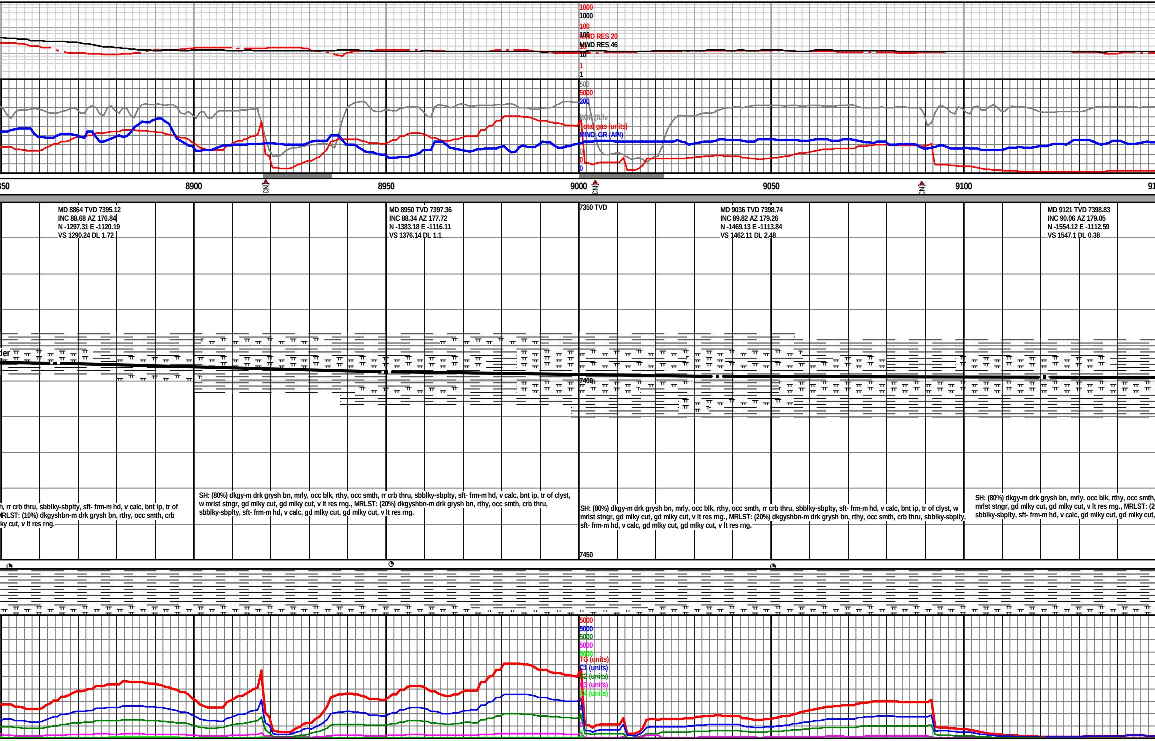
MD 8779 TVD 7393.6
INC 89.26 AZ 178.18
N -1212.4 E -1123.88
VS 1205.32 DL 0.91

mth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip,

SH: (100%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng.

SH: (100%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng.

SH: (90%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smt
clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., M
thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd ml



MD 8864 TVD 7395.12
INC 88.68 AZ 176.84
N -1297.31 E -1120.19
VS 1290.24 DL 1.72

MD 8950 TVD 7397.36
INC 88.34 AZ 177.72
N -1383.18 E -1116.11
VS 1376.14 DL 1.1

MD 9036 TVD 7398.74
INC 89.82 AZ 179.26
N -1469.13 E -1113.84
VS 1462.11 DL 2.48

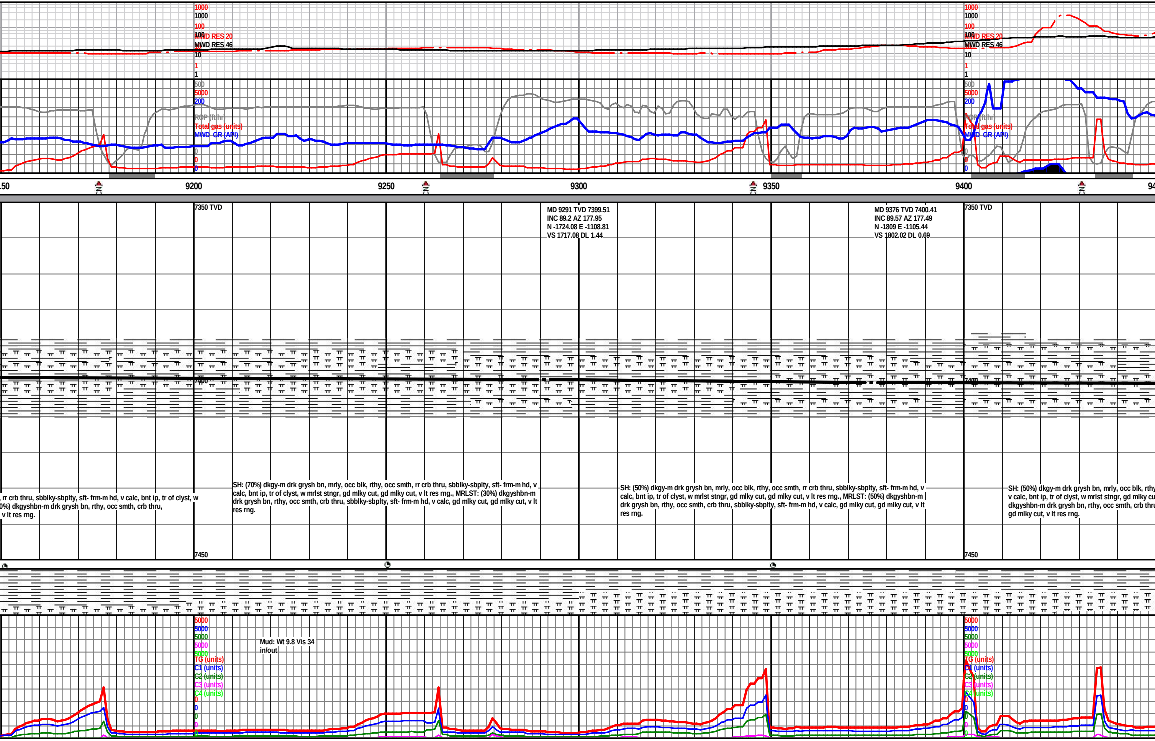
MD 9121 TVD 7398.83
INC 90.06 AZ 179.05
N -1554.12 E -1112.59
VS 1547.1 DL 0.38

h, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of
MRLST: (10%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb
lky cut, v lt res rng.

SH: (80%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (20%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

SH: (80%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (20%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

SH: (80%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth,
mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (2
sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut,



MD 9291 TVD 7399.51
INC 89.2 AZ 177.95
N -1724.08 E -1108.81
VS 1717.08 DL 1.44

MD 9376 TVD 7400.41
INC 89.57 AZ 177.49
N -1809 E -1105.44
VS 1802.02 DL 0.69

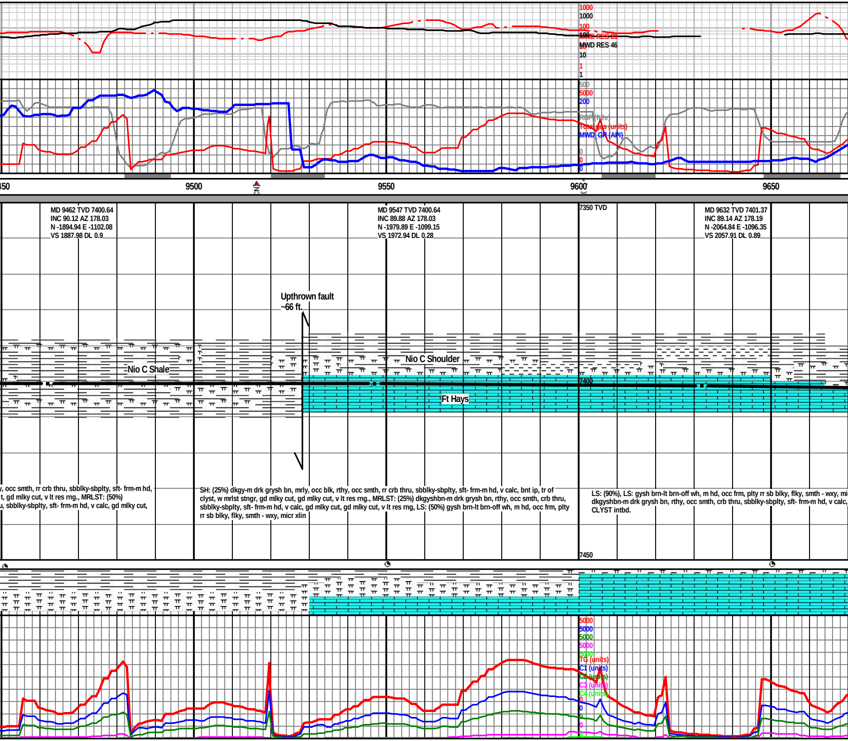
, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w
0%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru,
, v lt res rng.

SH: (70%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (30%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

SH: (50%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (50%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng.

SH: (50%) dkgy-m drk grysh bn, mrly, occ blk, rthy
v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cu
dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru
gd mlky cut, v lt res rng.

Mud: Wt 9.8 Vis 34
in/out



MD 9462 TVD 7400.64
INC 90.12 AZ 178.03
N -1894.94 E -1102.08
VS 1887.98 DL 0.9

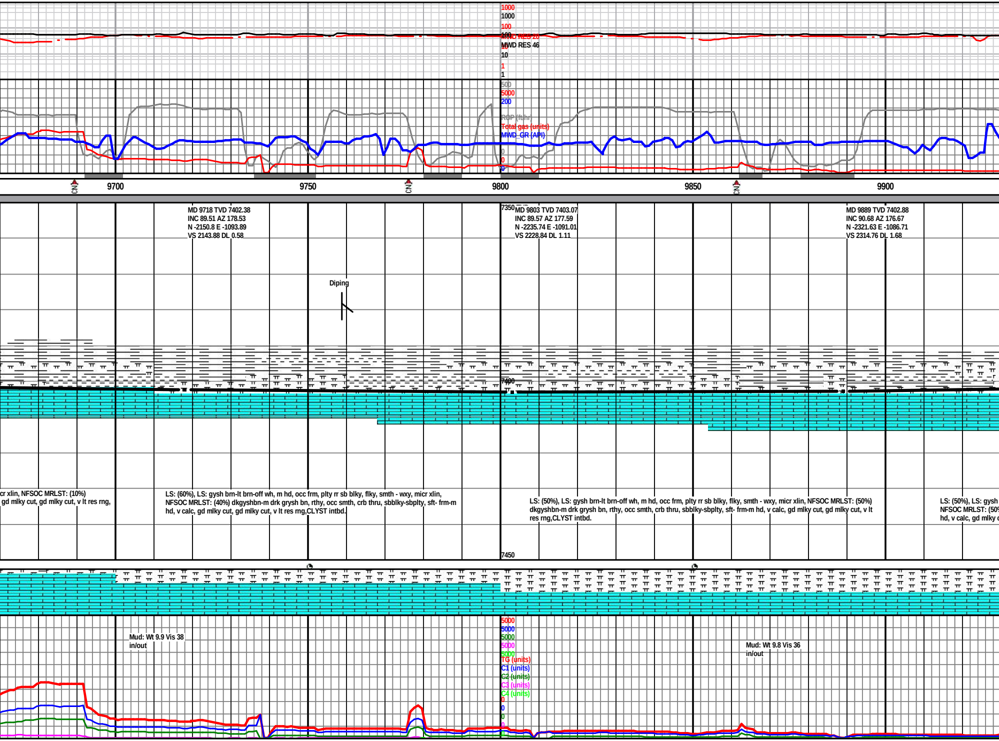
MD 9547 TVD 7400.64
INC 89.88 AZ 178.03
N -1979.89 E -1099.15
VS 1972.94 DL 0.28

MD 9632 TVD 7401.37
INC 89.14 AZ 178.19
N -2064.84 E -1096.35
VS 2057.91 DL 0.89

y, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd,
t, gd mlky cut, v lt res rng., MRLST: (50%)
u, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut,

SH: (25%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, w mrlst stngr, gd mlky cut, gd mlky cut, v lt res rng., MRLST: (25%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng, LS: (50%) gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin

LS: (90%), LS: gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, mi
dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc,
CLYST intbd.



MD 9718 TVD 7402.38
INC 89.51 AZ 178.53
N -2150.8 E -1093.89
VS 2143.88 DL 0.58

MD 9803 TVD 7403.07
INC 89.57 AZ 177.59
N -2235.74 E -1091.01
VS 2228.84 DL 1.11

MD 9889 TVD 7402.88
INC 90.68 AZ 176.67
N -2321.63 E -1086.71
VS 2314.76 DL 1.68

cr xlin, NFSOC MRLST: (10%)
gd mlky cut, gd mlky cut, v lt res rng,

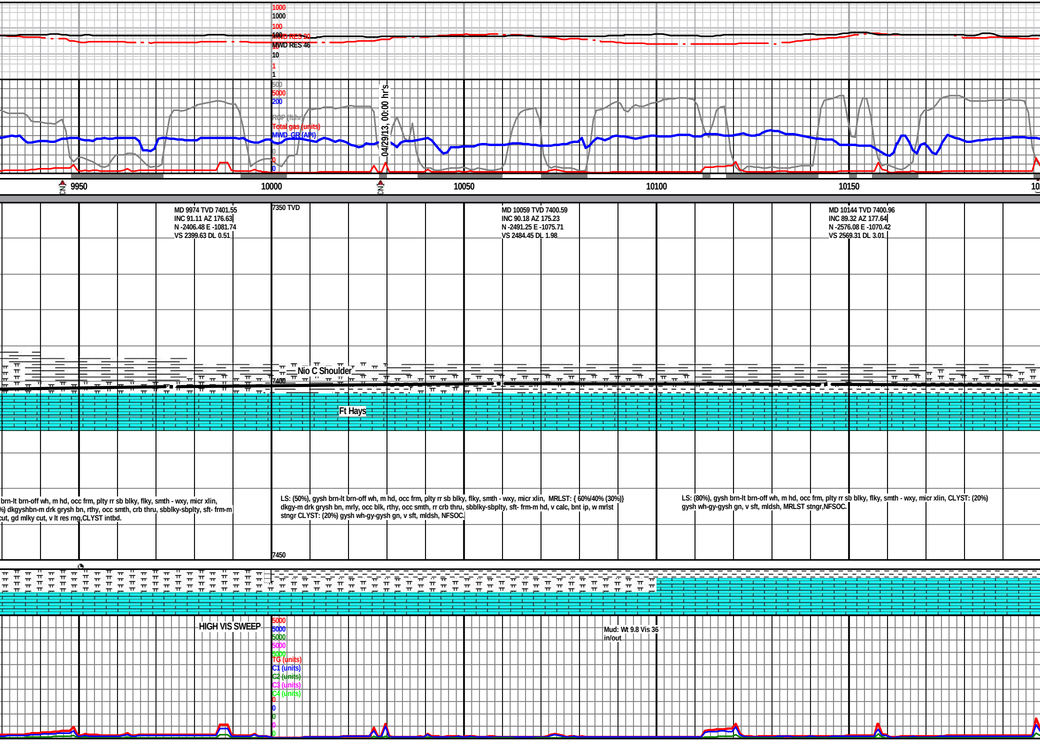
LS: (60%), LS: gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, NFSOC MRLST: (40%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng,CLYST intbd.

LS: (50%), LS: gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, NFSOC MRLST: (50%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- frm-m hd, v calc, gd mlky cut, gd mlky cut, v lt res rng,CLYST intbd.

LS: (50%), LS: gysh
NFSOC MRLST: (50
hd, v calc, gd mlky c

Mud: Wt 9.9 Vis 38
in/out

Mud: Wt 9.8 Vis 36
in/out



MD 9974 TVD 7401.55
INC 91.11 AZ 176.63
N -2406.48 E -1081.74
VS 2399.63 DL 0.51

MD 10059 TVD 7400.59
INC 90.18 AZ 175.23
N -2491.25 E -1075.71
VS 2484.45 DL 1.98

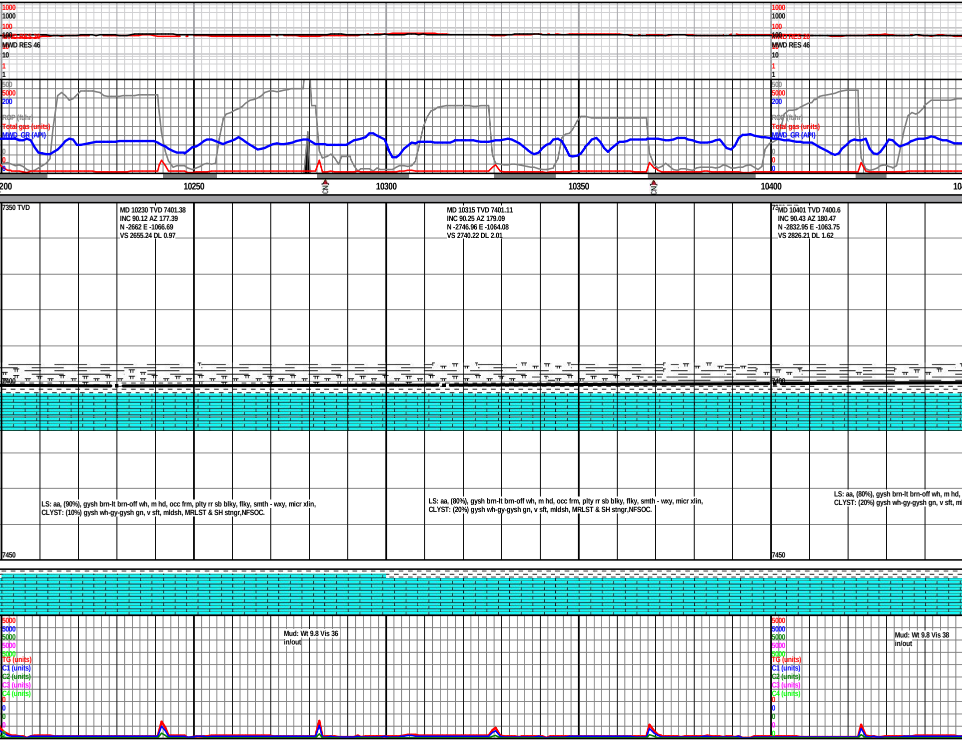
MD 10144 TVD 7400.96
INC 89.32 AZ 177.64
N -2576.08 E -1070.42
VS 2569.31 DL 3.01

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

LS: (50%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, MRLST: { 60%/40% (30%)} dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, w mrlst stngr CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, NFSOC.

LS: (80%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST stngr,NFSOC.

Mud: Wt 9.8 Vis 36
in/out



MD 10230 TVD 7401.38
INC 90.12 AZ 177.39
N -2662 E -1066.69
VS 2655.24 DL 0.97

MD 10315 TVD 7401.11
INC 90.25 AZ 179.09
N -2746.96 E -1064.08
VS 2740.22 DL 2.01

MD 10401 TVD 7400.6
INC 90.43 AZ 180.47
N -2832.95 E -1063.75
VS 2826.21 DL 1.62

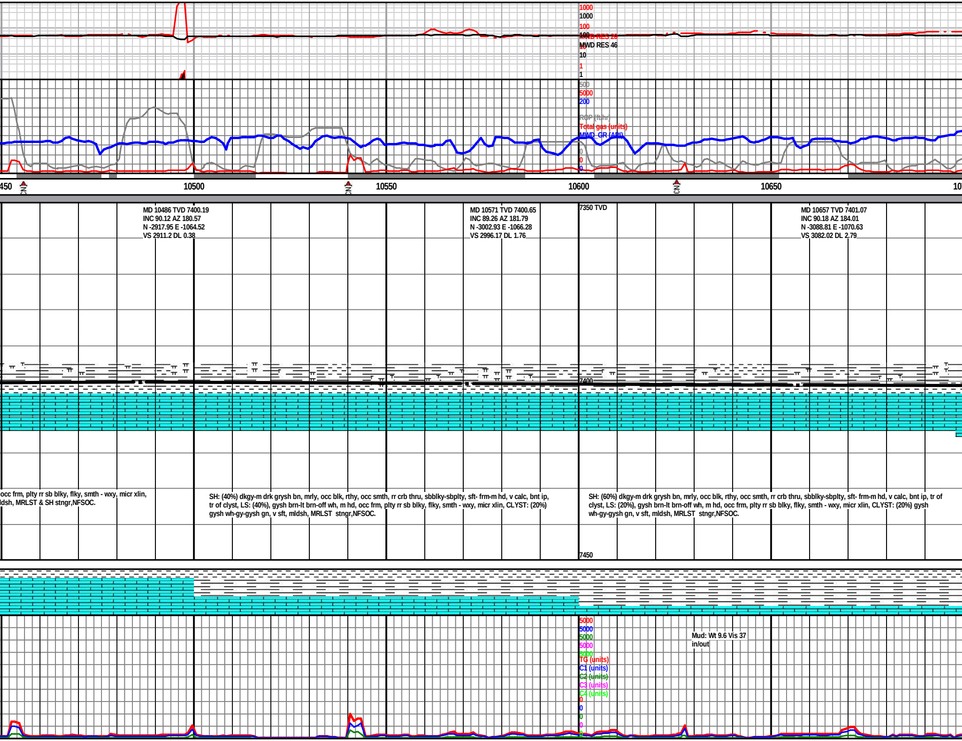
LS: aa, (90%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin,
CLYST: (10%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST & SH stngr,NFSOC.

LS: aa, (80%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin,
CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST & SH stngr,NFSOC.

LS: aa, (80%), gysh brn-lt brn-off wh, m hd,
CLYST: (20%) gysh wh-gy-gysh gn, v sft, ml

Mud: Wt 9.8 Vis 36
in/out

Mud: Wt 9.8 Vis 38
in/out



MD 10486 TVD 7400.19
INC 90.12 AZ 180.57
N -2917.95 E -1064.52
VS 2911.2 DL 0.38

MD 10571 TVD 7400.65
INC 89.26 AZ 181.79
N -3002.93 E -1066.28
VS 2996.17 DL 1.76

MD 10657 TVD 7401.07
INC 90.18 AZ 184.01
N -3088.81 E -1070.63
VS 3082.02 DL 2.79

occ frm, plty rr sb blky, flky, smth - wxy, micr xlin,
ldsh, MRLST & SH stngr,NFSOC.

SH: (40%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, LS: (40%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST stngr,NFSOC.

SH: (60%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, LS: (20%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST stngr,NFSOC.

Mud: Wt 9.6 Vis 37
in/out

MD 10742 TVD 7401.21
INC 89.63 AZ 184.69
N -3173.56 E -1077.07
VS 3166.73 DL 1.03

MD 10828 TVD 7401.63
INC 89.81 AZ 183.16
N -3259.36 E -1082.96
VS 3252.49 DL 1.79

MD 10913 TVD 7402.23
INC 89.38 AZ 181.59
N -3344.28 E -1086.48
VS 3337.39 DL 1.92

MD 10998 TVD 7403.56
INC 88.83 AZ 179.88
N -3429.26 E -1087.57
VS 3422.36 DL 2.11

SH:aa, (60%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, LS: (20%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, CLYST: (20%) gysh wh-gy-gysh gn, v sft, mldsh, MRLST stngr,NFSOC.

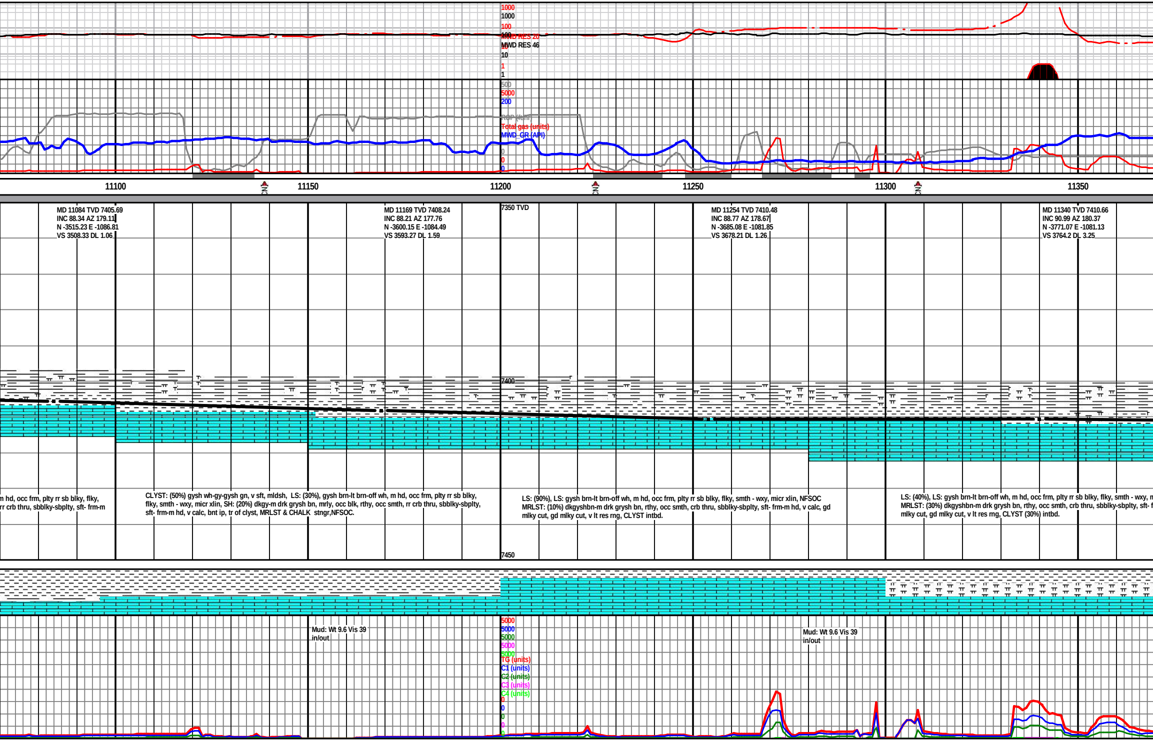
CLYST: (60%) gysh wh-gy-gysh gn, v sft, mldsh, LS: (20%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, SH: (20%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, MRLST & CHALK stngr,NFSOC.

CLYST: (60%) gysh wh-gy-gysh gn, v sft, mldsh, LS: (20%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, SH: (20%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft-frm-m hd, v calc, bnt ip, tr of clyst, MRLST & CHALK stngr,NFSOC.

CLYST: (60%) gysh wh-gy-gysh gn, v sft, mldsh, LS: (30%), gysh brn-lt brn-off wh,
smth - wxy, micr xlin, SH: (10%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth,
hd, v calc, bnt ip, tr of clyst, MRLST & CHALK stngr,NFSOC.

Mud: Wt 9.6 Vis 39
in/out

Mud: Wt 9.6 Vis 39
in/out

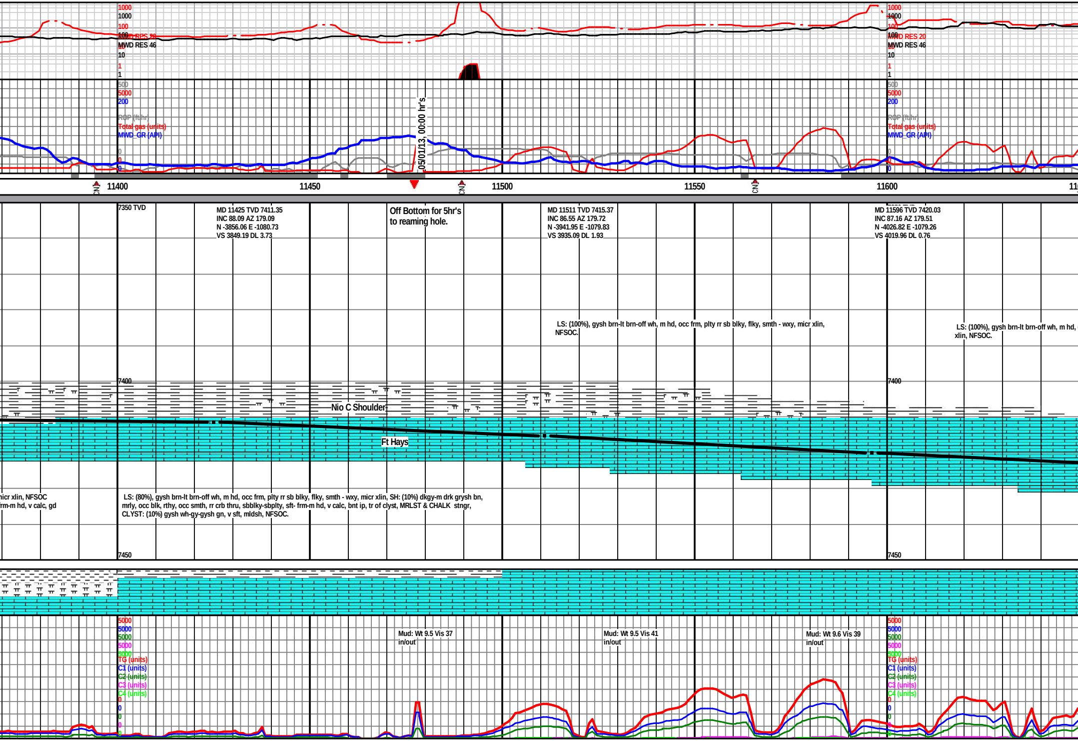


m hd, occ frm, plty rr sb blky, flky,
rr crb thru, sbblky-sbplty, sft- frm-m

CLYST: (50%) gysh wh-gy-gysh gn, v sft, mldsh, LS: (30%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, SH: (20%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, MRLST & CHALK stngr,NFSOC.

LS: (90%), LS: 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, gd mlky cut, v lt res rng, CLYST intbd.

LS: (40%), LS: gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, m
MRLST: (30%) dkgyshbn-m drk grysh bn, rthy, occ smth, crb thru, sbblky-sbplty, sft- f
mlky cut, gd mlky cut, v lt res rng, CLYST (30%) intbd.



MD 11425 TVD 7411.35
INC 88.09 AZ 179.09
N -3856.06 E -1080.73
VS 3849.19 DL 3.73

Off Bottom for 5hr's
to reaming hole.

MD 11511 TVD 7415.37
INC 86.55 AZ 179.72
N -3941.95 E -1079.83
VS 3935.09 DL 1.93

MD 11596 TVD 7420.03
INC 87.16 AZ 179.51
N -4026.82 E -1079.26
VS 4019.96 DL 0.76

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

LS: (100%), gysh brn-lt brn-off wh, m hd,
xlin, NFSOC.

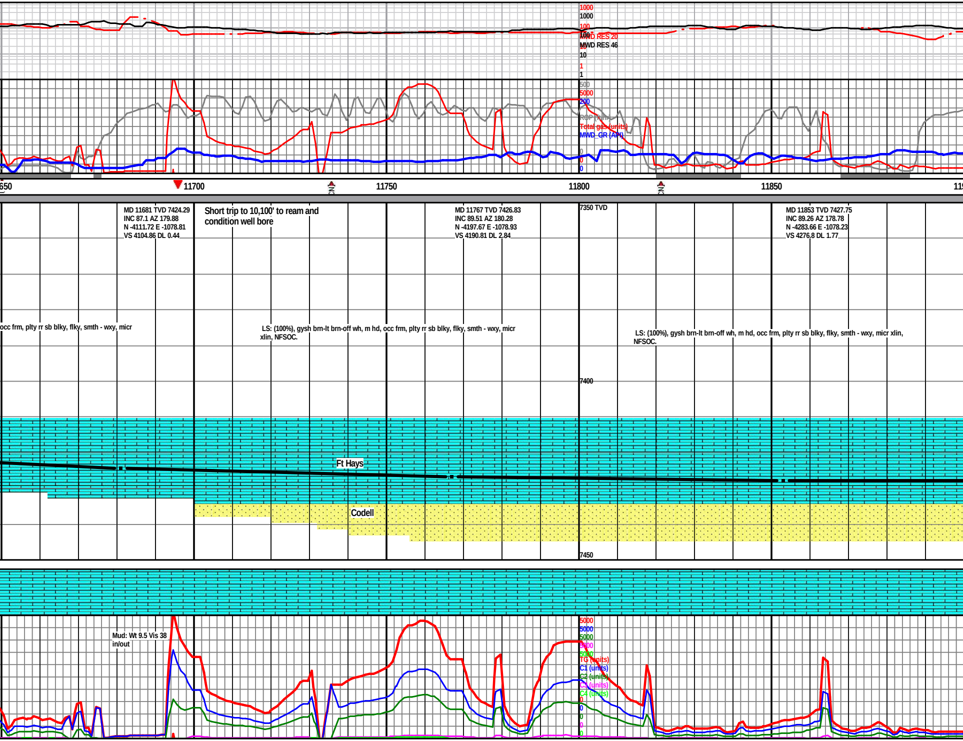
micr xlin, NFSOC
frm-m hd, v calc, gd

LS: (80%), gysh brn-lt brn-off wh, m hd, occ frm, plty rr sb blky, flky, smth - wxy, micr xlin, SH: (10%) dkgy-m drk grysh bn, mrly, occ blk, rthy, occ smth, rr crb thru, sbblky-sbplty, sft- frm-m hd, v calc, bnt ip, tr of clyst, MRLST & CHALK stngr, CLYST: (10%) gysh wh-gy-gysh gn, v sft, mldsh, NFSOC.

Mud: Wt 9.5 Vis 37
in/out

Mud: Wt 9.5 Vis 41
in/out

Mud: Wt 9.6 Vis 39
in/out



MD 11681 TVD 7424.29
INC 87.1 AZ 179.88
N -4111.72 E -1078.81
VS 4104.86 DL 0.44

Short trip to 10,100' to ream and condition well bore

MD 11767 TVD 7426.83
INC 89.51 AZ 180.28
N -4197.67 E -1078.93
VS 4190.81 DL 2.84

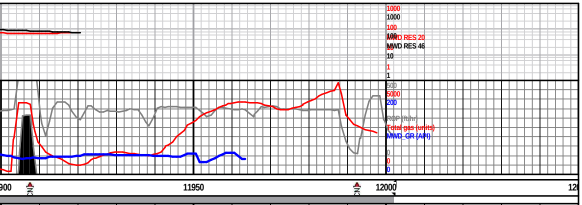
MD 11853 TVD 7427.75
INC 89.26 AZ 178.78
N -4283.66 E -1078.23
VS 4276.8 DL 1.77

occ frm, plty rr sb blky, flky, smth - wxy, micr

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

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

Mud: Wt 9.5 Vis 38
in/out



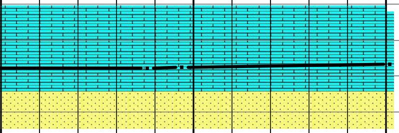
MD 11938 TMD 11947 TVD 7427.57
INC 90.8 AZINC 90.99 AZ 179.77
N -4368.65 EN -4377.65 E -1077.11
VS 4361.8 DVS 4370.8 DL 2.11

MD 12001 TVD 7426.64
INC 90.99 AZ 179.77
N -4431.64 E -1076.89
VS 4424.79 DL 0

Formations top's (ft)

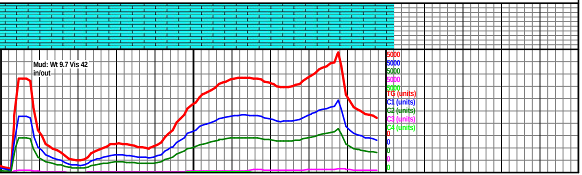
Formation	Sub S	TVD	MD
Sharon Springs	-2191	7156	7311
Niobrara A	-2275	7240	7418
Niobrara B	-2321	7286	7485
Niobrara C	-2367	7332	7613
TL Heel	-2431	7396	7808
TL Toe	-2462	7426	12001

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



TD @ 12001'on 05/01/2013
@ 20:20 hr's

Thank You
Tekabe Gedamu & Robin Brackman
Goolsby Brothers & Assoc. Inc
05/02/2013



Mud: Wt 9.7 Vis 42
in/out