GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2950 Office

Geological Wellsite
Supervision

www.goolsbybrothers.com

PETCOM

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

Well Name: XCEL 12N-22HZ
Location: Section 27, T1N, R67W, Weld County, CO.
License Number: API: 05-123-38390-00
Spud Date: 9 JAN 2014
Surface Coordinates: 496' FSL X 403' FWL SWSW
LAT: 40.016186 LONG: -104.884610
Bottom Hole Coordinates: 1159' FSL X 670' FWL SWSW Sec. 22

Ground Elevation (ft): 5026'
Logged Interval (ft): 6907' To: 14685'
Formation: Niobrara B Target
Type of Drilling Fluid: Polymer-Gel

Region: Wattenberg
Drilling Completed: 19 JAN 2014

K.B. Elevation (ft): 5042'
Total Depth (ft): 14685'

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: LARRY GOOLSBY / BLAKE STACEY
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

MWD GR 6900' - 14640'

Casing

9 5/8" Surface Casing set @ 1070'
IC set @ 7989' MD, on 13 JAN 2014,
Liner run on 20-21 JAN 2014 to 14670'.

Comments

1) Drilling Contractor: Xtreme Drilling, Rig # 23
2) Directional Drilling: DRILLTECH LLC
MWD/LWD: DRILLTECH LLC
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, 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

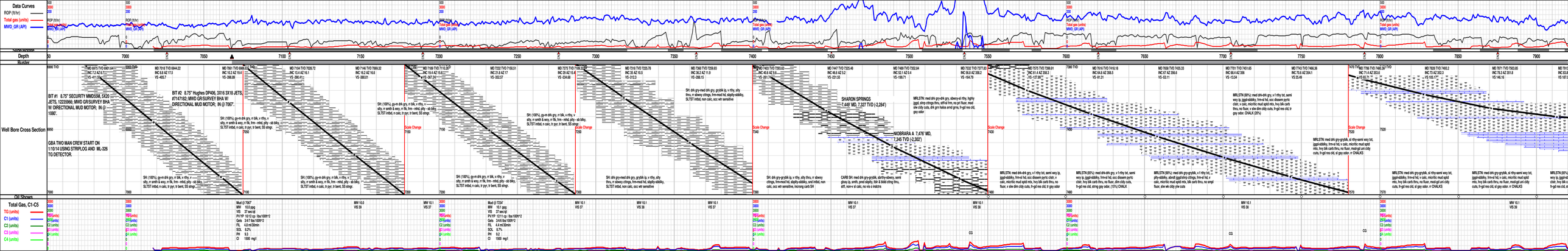
OTHER SYMBOLS

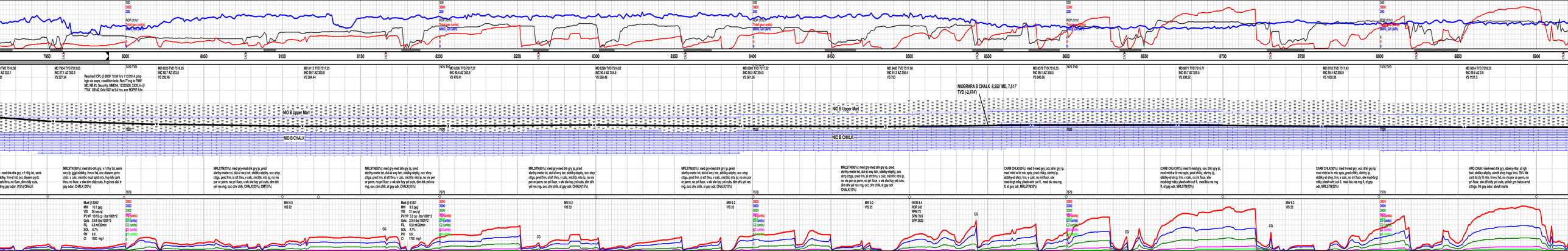
OIL SHOWS: Even, Spotted, Ques, Dead, Vspotty, near even

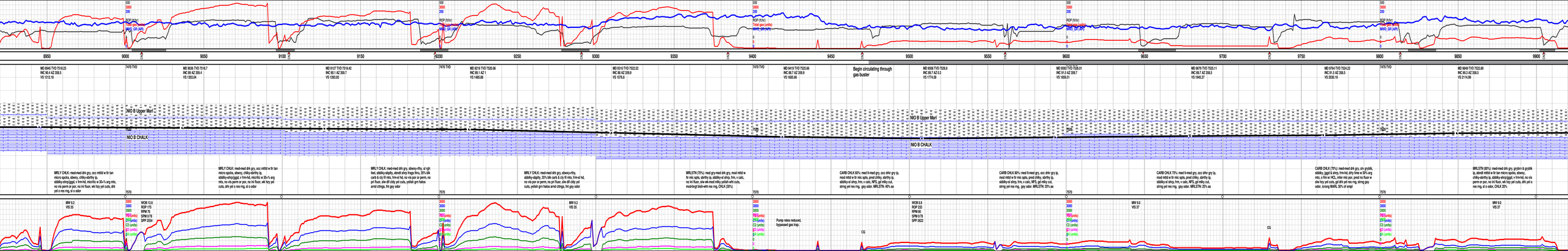
POROSITY TYPE: Earthy, Fenest, Fracture, Inter, Moldic, Organic, Pinpoint, Vuggy

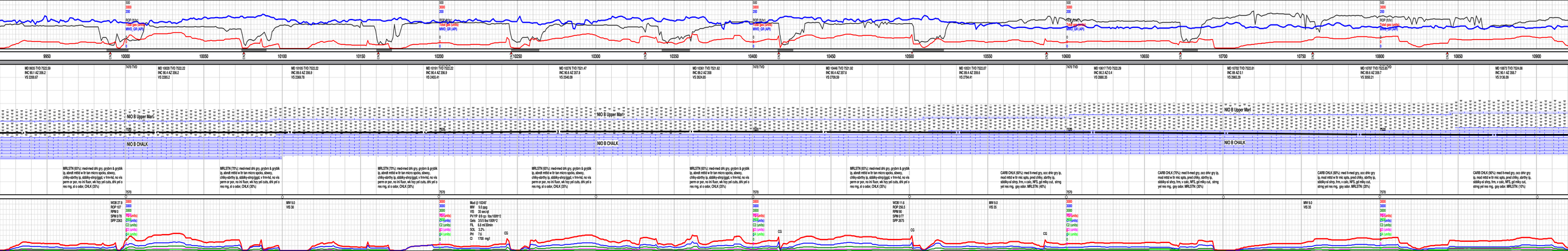
ROUNDING: Rounded, Subrnd, Subang, Angular

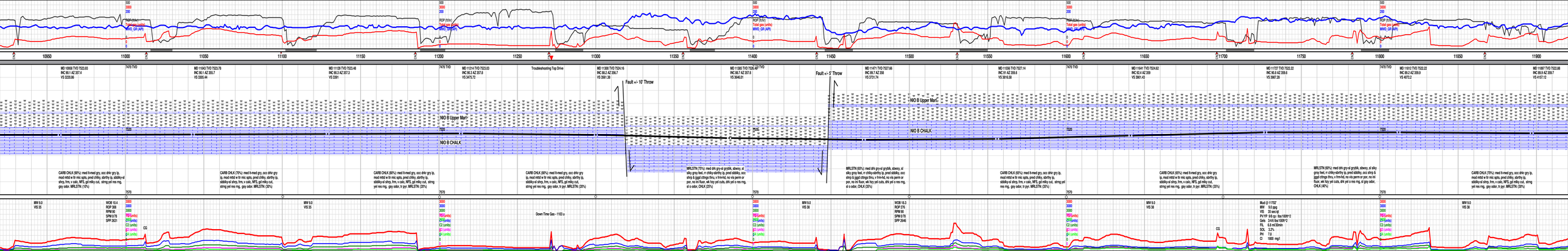
SORTING: Well, Moderate, Poor

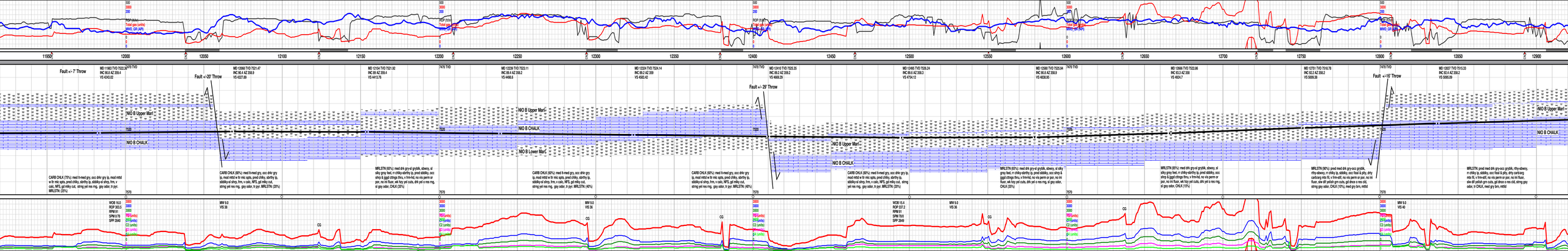

Data Curves
ROP (ft/hr)
Total gas (units)
MWD_GR (API)
Depth
Driller
Well Bore Cross Section
BIT #1 8.75" SECURITY MMD55M, 5X20 JETS, 12235966; MWD GR SURVEY BHA W/ DIRECTIONAL MUD MOTOR; IN @ 7067'.
BIT #2 8.75" Hughes DP406, 3X16 3X18 JETS, #7147182; MWD GR SURVEY BHA W/ DIRECTIONAL MUD MOTOR; IN @ 7067'.
GBA TWO MAN CREW START ON 1/10/14 USING STRIPLOG AND ML-326 TG DETECTOR.
SHARON SPRINGS 7,449' MD, 7,327 TVD (-2,284')
MIOBRARA A 7,476' MD, 7,345 TVD (-2,302')
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)
Mud @ 7067'
MW 10.0 ppg
VIS 37 sec/qt
PV/YP 10/12 cp / lbs/100ft^2
Gels 3/4/7 lbs/100ft^2
FL 4.8 ml/30min
SOL 6.2%
PH 9.2
Cl 1500 mg/l
Mud @ 7724'
MW 10.1 ppg
VIS 37 sec/qt
PV/YP 12/11 cp / lbs/100ft^2
Gels 3/4/6 lbs/100ft^2
FL 4.4 ml/30min
SOL 6.7%
PH 9.2
Cl 1500 mg/l

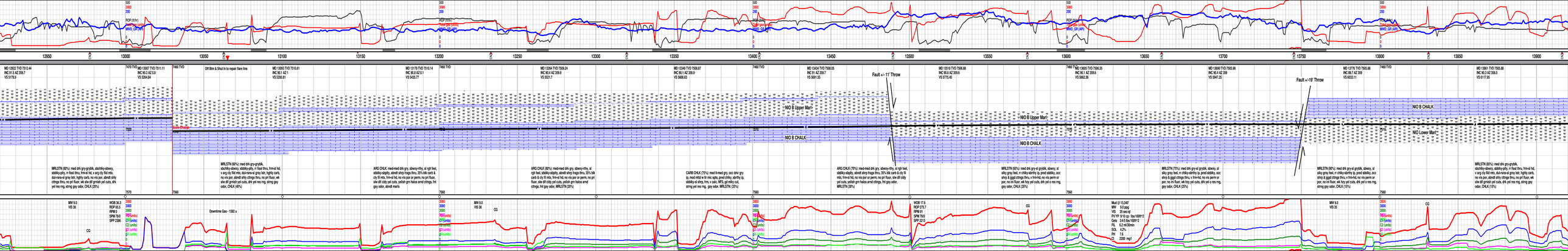

ROP (ft/hr)
Total gas (units)
MWD_GR (API)
NIO B Upper Marl
NIO B CHALK
NIOBRARA B CHALK 8,550' MD, 7,517' TVD (-2,474)
MD 7664 TVD 7519.83
INC 87.1 AZ 202.3
VS 227.34
Reached ICPL @ 8000' 19:04 hrs 1/13/2014, prep high vis seps, condition holds, Run 7" csg to 7999' MD, MB #5, Security, IMM304, 12200538, 5X20, in @ 7154', OB #2, 2nd 9327 in 6.8 hrs, ave ROP97 ft/hr.
MD 8020 TVD 7516.05
INC 88.7 AZ 203.8
VS 292.46
MD 8113 TVD 7517.35
INC 89.7 AZ 203.8
VS 384.44
MD 8206 TVD 7517.27
INC 90.4 AZ 203.6
VS 476.41
MD 8300 TVD 7516.82
INC 90.6 AZ 204.8
VS 568.49
MD 8393 TVD 7517.32
INC 89.5 AZ 204.5
VS 661.66
MD 8485 TVD 7517.68
INC 91.3 AZ 206.4
VS 753
MD 8578 TVD 7516.55
INC 90.1 AZ 205.5
VS 845.66
MD 8671 TVD 7516.71
INC 89.7 AZ 205.6
VS 938.62
MD 8763 TVD 7517.43
INC 89.3 AZ 208.9
VS 1030.39
MD 8854 TVD 7518.23
INC 89.8 AZ 210.6
VS 1121.3
MRLSTN (90%): med dk-dk gry, v f rftly tst, semi wxy ip, jgsb-sbdky, frm-sl hd, occ dissem pyritic clstr o calc, mic/rbt mud sptd mtx, hrs bk carb thru, no fluor, v slw dim cldy cuts, fr-gd res cld, fr grey odor, CHALK (30%)
MRLSTN (80%): med dk-dk gry, v f rftly tst, semi wxy ip, jgsb-sbdky, frm-sl hd, occ dissem pyritic clstr o calc, mic/rbt mud sptd mtx, hrs bk carb thru, no fluor, v slw dim cldy cuts, fr-gd res cld, fr grey odor, CHALK (30%)
MRLSTN(75%): med gry-med drk gry ip, pred sbrthy-matte tst, dul-sl wxy tstr, sbbkly-sbplty, occ shrp clngs, pred frm, sl sft thru, v calc, mic/bio mtx ip, no vis por or perm, no pri fluor, v wk slw hzy yel cuts, dim drk yel res mg, occ ctm chlk, CHALK(20%), CMT(5%)
MRLSTN(85%): med gry-med drk gry ip, pred sbrthy-matte tst, dul-sl wxy tstr, sbbkly-sbplty, occ shrp clngs, pred frm, sl sft thru, v calc, mic/bio mtx ip, no vis por or perm, no pri fluor, v wk slw hzy yel cuts, dim drk yel res mg, occ ctm chlk, sl gray odr, CHALK(15%)
MRLSTN(85%): med gry-med drk gry ip, pred sbrthy-matte tst, dul-sl wxy tstr, sbbkly-sbplty, occ shrp clngs, pred frm, sl sft thru, v calc, mic/bio mtx ip, no vis por or perm, no pri fluor, v wk slw hzy yel cuts, dim drk yel res mg, occ ctm chlk, sl gray odr, CHALK(15%)
MRLSTN(90%): med gry-med drk gry ip, pred sbrthy-matte tst, dul-sl wxy tstr, sbbkly-sbplty, occ shrp clngs, pred frm, sl sft thru, v calc, mic/bio mtx ip, no vis por or perm, no pri fluor, v wk slw hzy yel cuts, dim drk yel res mg, occ ctm chlk, sl gray odr CHALK(10%)
CARB CHLK(80%): med fr-med gry, occ dnkr gry ip, mod mtrl w tr mic spts, pred chlky, sbrthy ip, sbbky-sl shrp, frm, v calc, no bl fluor, slw mod-lo/gr milky yleish-wht cut fl, mod blu res mg fl, sl gray odr, MRLSTN(30%)
CARB CHLK(90%): med fr-med gry, occ dnkr gry ip, mod mtrl w tr mic spts, pred chlky, sbrthy ip, sbbky-sl shrp, frm, v calc, no bl fluor, slw mod-lo/gr milky yleish-wht cut fl, mod blu res mg fl, sl gray odr, MRLSTN(10%)
CARB CHLK(80%): med fr-med gry, occ dnkr gry ip, mod mtrl w tr mic spts, pred chlky, sbrthy ip, sbbky-sl shrp, frm, v calc, no bl fluor, slw mod-lo/gr milky yleish-wht cut fl, mod blu res mg fl, sl gray odr, MRLSTN(20%)
ARG CHLK; med-med drk gry, slowey-rthy, sl rgh feel, sbbky-sbplty, abndt shrp frags thru, 30% blk shale & dy frm mtx, frm-hd, no vis por or perm, no pri fluor, slw dll cldy yel cuts, yellish grn halos arnd ctings, frst gry odor, abndt marls
Mud @ 8000'
MW 10.1 ppg
VIS 39 sec/qt
PV/YP 13/10 cp / lbs/100ft^2
Gels 3/4-8 lbs/100ft^2
FIL 4.8 ml/30min
SOL 8.7%
PH 9.0
Cl 1500 mg/l
MW 9.3
VIS 32
Mud @ 8183'
MW 9.3 ppg
VIS 31 sec/qt
PV/YP 5.0 cp / lbs/100ft^2
Gels 2/3-8 lbs/100ft^2
FIL 10.0 ml/30min
SOL 4.7%
PH 9.6
Cl 1700 mg/l
MW 9.2
VIS 33
MW 9.2
VIS 35
WOB 8-4
ROP 242
RPM 75
SPM 78/0
SPP 2600
MW 9.2
VIS 35

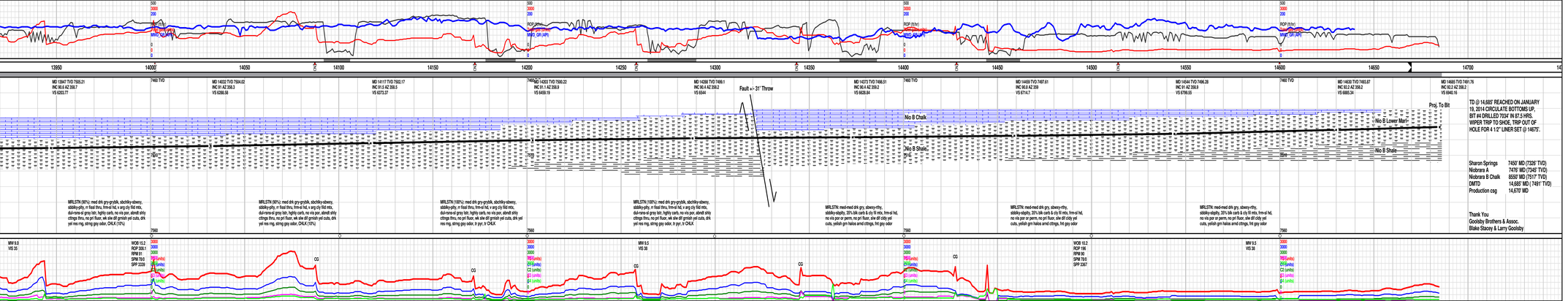

ROP (ft/hr)
Total Gas (units)
WMD_GR (API)
8950
9000
9050
9100
9150
9200
9250
9300
9350
9400
9450
9500
9550
9600
9650
9700
9750
9800
9850
9900
MD 8949 TVD 7516.23
INC 90.4 AZ 358.5
VS 1212.19
MD 9039 TVD 7519.7
INC 89 AZ 359.4
VS 1303.04
MD 9137 TVD 7519.42
INC 90.1 AZ 359.7
VS 1393.93
MD 9219 TVD 7520.06
INC 89.1 AZ 0
VS 1485.88
MD 9310 TVD 7522.02
INC 88 AZ 359.9
VS 1576.9
MD 9410 TVD 7525.66
INC 88.7 AZ 359.9
VS 1685.66
Begin circulating through gas buster
MD 9508 TVD 7526.9
INC 89.7 AZ 0.3
VS 1774.99
MD 9599 TVD 7526.61
INC 91.5 AZ 359.7
VS 1869.51
MD 9679 TVD 7525.11
INC 91.5 AZ 359.5
VS 1948.37
MD 9764 TVD 7524.22
INC 91.5 AZ 359.5
VS 2030.19
MD 9850 TVD 7522.88
INC 90.0 AZ 358.5
VS 2114.99
7470 TVD
NIO B Upper Marl
NIO B CHALK
MRLY CHALK: med-med drk gry, occ mttld w ltr tan micro spcks, sbwxy, chlky-sbrthy lp, sbbly-shrgpgd, v trm-fxl, micrlrc w 30-% arg mtx, no vis perm or por, no int fluor, wk hcy yel cuts, drk yel o nss mg, sl o odor
MRLY CHALK: med-med drk gry, occ mttld w ltr tan micro spcks, sbwxy, chlky-sbrthy lp, sbbly-shrgpgd, v trm-fxl, micrlrc w 30-% arg mtx, no vis perm or por, no int fluor, wk hcy yel cuts, drk yel o nss mg, sl o odor
MRLY CHALK: med-med drk gry, sbwxy-rthy, sl rgh feel, sbbly-shphy, abndt shrp frags thru, 35% blk sd & dly fll mtx, trm-xl fxl, no vis por or perm, no pri fluor, slw dif cldy yel cuts, yellsh grn halos arnd ctrngs, frt gsy odor
MRLY CHALK: med-med drk gry, sbwxy-rthy, sbbly-shphy, abndt shrp frags thru, 35% blk sd & dly fll mtx, trm-xl fxl, no vis por or perm, no pri fluor, slw dif cldy yel cuts, yellsh grn halos arnd ctrngs, frt gsy odor
MRLSTN (70%): med gry-med drk gry, mod mttld w ltr micr spcks, sbrthy lp, sbbly-sl shrp, trm, v calc, no vis fluor, slw wk-mod milky yellsh wht cuts, mod-bcgr blsh-wht nss mg, CHLK (30%)
CARB CHLK 60%: med lt-med gry, occ drkr gry lp, mod mttld w ltr micr spcks, pred chlky, sbrthy lp, sbbly-sl shrp, trm, v calc, NFS, gd milky cut, strng yel nss mg, gsy odor. MRLSTN: 40% aa
CARB CHLK 80%: med lt-med gry, occ drkr gry lp, mod mttld w ltr micr spcks, pred chlky, sbrthy lp, sbbly-sl shrp, trm, v calc, NFS, gd milky cut, strng yel nss mg, gsy odor. MRLSTN: 20% aa
CARB CHLK 75%: med lt-med gry, occ drkr gry lp, mod mttld w ltr micr spcks, pred chlky, sbrthy lp, sbbly-sl shrp, trm, v calc, NFS, gd milky cut, strng yel nss mg, gsy odor. MRLSTN: 25% aa
CARB CHLK (70%): med-med drk gry, olv gryblk, sbblky, ggyd & shrp, trm-fxl, dnty lime w 30% arg mtx, v flm w HCL, infer mic por, pred no fluor w sl-sle hcy yel cuts, gd drk yel nss mg, strng gsy odor, lcrsng MARL 30% of smpl
MRLSTN (80%): med-med drk gry, grybrn & gryblk lp, abndt mttld w ltr brn micro spcks, sbwxy, chlky-sbrthy lp, sbbly-shrgpgd, v trm-fxl, no vis perm or por, no int fluor, wk hcy yel cuts, drk yel o nss mg, sl o odor. CHLK 20%
7570
MW 9.2
VS 35
WOB 13.6
ROP 175
RPM 78
SPM 678
SPP 2554
WOB 8.9
ROP 253
RPM 84
SPM 678
SPP 2622
Pump rates reduced, bypassed gas trap.
MW 9.2
VS 37
CG
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)


ROP (m/hr)
MWD_GR (API)
9950
10000
10050
10100
10150
10200
10250
10300
10350
10400
10450
10500
10550
10600
10650
10700
10750
10800
10850
10900
MD 9935 TVD 7522.59
INC 90.1 AZ 356.2
VS 2200.67
MD 10000 TVD 7522.22
INC 90.4 AZ 356.0
VS 2265.2
MD 10100 TVD 7520.22
INC 89.6 AZ 357.2
VS 2365.78
MD 10200 TVD 7522.22
INC 90.6 AZ 356.9
VS 2465.41
MD 10276 TVD 7521.47
INC 90.6 AZ 357.2
VS 2540.09
MD 10351 TVD 7521.82
INC 89.2 AZ 358
VS 2614.85
MD 10426 TVD 7521.82
INC 90.4 AZ 357.8
VS 2689.59
MD 10501 TVD 7522.07
INC 89.6 AZ 358.6
VS 2764.41
MD 10576 TVD 7520.29
INC 90.3 AZ 0.4
VS 2838.35
MD 10652 TVD 7522.61
INC 89 AZ 0.1
VS 2915.29
MD 10727 TVD 7523.83
INC 88.6 AZ 359.7
VS 3000.21
MD 10803 TVD 7524.08
INC 90.1 AZ 358.7
VS 3136.09
NIO B Upper Marl
NIO B CHALK
MRLSTN (65%): med-med drk gry, grybrn & gryblk lp, abndt mttld w ltr tan micro spcks, slowly, chlky-shrthy lp, sbblky-shrp/jggd, v frm-hd, no vis perm or por, no inf fluor, wk hzy yel cuts, drk yel o res ring, sl o odor, CHLK (35%)
MRLSTN (70%): med-med drk gry, grybrn & gryblk lp, abndt mttld w ltr tan micro spcks, slowly, chlky-shrthy lp, sbblky-shrp/jggd, v frm-hd, no vis perm or por, no inf fluor, wk hzy yel cuts, drk yel o res ring, sl o odor, CHLK (30%)
CARB CHLK (60%): med-h-med gry, occ drkr gry lp, mod mttld w ltr mic spts, pred chlky, shrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res ring, gray odor, MRLSTN (40%)
CARB CHLK (70%): med-h-med gry, occ drkr gry lp, mod mttld w ltr mic spts, pred chlky, shrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res ring, gray odor, MRLSTN (30%)
CARB CHLK (80%): med-h-med gry, occ drkr gry lp, mod mttld w ltr mic spts, pred chlky, shrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res ring, gray odor, MRLSTN (20%)
CARB CHLK (90%): med-h-med gry, occ drkr gry lp, mod mttld w ltr mic spts, pred chlky, shrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res ring, gray odor, MRLSTN (10%)
WOB 27.9
ROP 157
RPM 0
SPM 0/78
SPP 2363
MW 9.0
VIS 38
Mud @ 10245'
MW 9.0 ppg
VIS 35 sec/qt
PV/YP 8/8 cp / lbs/100ft^2
Gels 3/5/5 lbs/100ft^2
FL 6.8 ml/30min
SOL 3.2%
PH 7.6
Cl 1700 mg/l
CG
WOB 11.6
ROP 255.5
RPM 80
SPM 0/77
SPP 3070
MW 9.0
VIS 35


ROP (ft/hr)
Total gas (units)
MWD, GR (API)
10950
11000
11050
11100
11150
11200
11250
11300
11350
11400
11450
11500
11550
11600
11650
11700
11750
11800
11850
11900
MD 10918 TVD 7523.83
INC 90.1 AZ 207.4
VS 3220.66
MD 11043 TVD 7523.78
INC 90.1 AZ 205.7
VS 3305.44
MD 11139 TVD 7522.48
INC 90.3 AZ 207.3
VS 3391
MD 11214 TVD 7523.03
INC 90.3 AZ 207.0
VS 3475.72
Troubleshooting Top Drive
MD 11300 TVD 7524.16
INC 90.2 AZ 206.7
VS 3561.38
Fault +/- 10' Throw
MD 11385 TVD 7524.49
INC 88.7 AZ 207.1
VS 3646.01
Fault +/- 5' Throw
MD 11471 TVD 7527.66
INC 89.7 AZ 208
VS 3731.74
MD 11558 TVD 7527.14
INC 91.1 AZ 205.6
VS 3816.58
MD 11644 TVD 7524.62
INC 92.4 AZ 209
VS 3901.43
MD 11727 TVD 7522.22
INC 90.8 AZ 208.6
VS 3987.28
MD 11813 TVD 7522.22
INC 89.8 AZ 209.7
VS 4072.2
MD 11897 TVD 7523.48
INC 89.9 AZ 209.7
VS 4157.12
7470 TVD
7520
7570
NIO B Upper Marl
NIO B CHALK
CARB CHLK (80%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, MRLSTN (10%)
CARB CHLK (70%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, MRLSTN (30%)
CARB CHLK (80%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, tr pyr, MRLSTN (20%)
CARB CHLK (80%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, tr pyr, MRLSTN (20%)
MRLSTN (70%): med drk gry-sl grybk, sbwxy, sl silky gray feel, rr chlky-sbrthy lp, pred sbblky, occ shrp & jggd cttngs frm, v frm-fnl, no vis perm or por, no inl fluor, wk bzy yel cuts, drk yel o res mg, sl o odor, CHLK (25%)
MRLSTN (60%): med drk gry-sl grybk, sbwxy, sl silky gray feel, rr chlky-sbrthy lp, pred sbblky, occ shrp & jggd cttngs frm, v frm-fnl, no vis perm or por, no inl fluor, wk bzy yel cuts, drk yel o res mg, sl o odor, CHLK (35%)
CARB CHLK (65%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, tr pyr, MRLSTN (35%)
CARB CHLK (65%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, tr pyr, MRLSTN (35%)
MRLSTN (60%): med drk gry-sl grybk, sbwxy, sl silky gray feel, rr chlky-sbrthy lp, pred sbblky, occ shrp & jggd cttngs frm, v frm-fnl, no vis perm or por, no inl fluor, wk bzy yel cuts, drk yel o res mg, sl gray odor, CHLK (40%)
CARB CHLK (70%): med fr-med gry, occ drk/ gry lp, mod mtdd w fr mic spts, pred chlky, sbrthy lp, sbblky-sl shrp, frm, v calc, NFS, gd mtly cut, strng yel res mg, gry odor, tr pyr, MRLSTN (30%)
MW 9.0
VIS 35
WOB 15.4
ROP 308
RPM 90
SPM 0/78
SPP 2631
Down Time Gas - 1103 u
WOB 15.3
ROP 275
RPM 90
SPM 0/78
SPP 2646
Mud @ 11700'
MW 9.0 ppg
VIS 35 sec/qt
PV/YP 5/6 cp / lbs 100ft^2
Gels 3/4/8 lbs/100ft^2
FL 6.4 ml/30min
SOL 3.2%
PH 7.6
Cl 1500 mg/l
CG
C1 (units)
C2 (units)
C3 (units)
C4 (units)


Fault +/- 7' Throw
Fault +/-20' Throw
Fault +/-29' Throw
Fault +/-18' Throw
NIO B Upper Marl
NIO B CHALK
NIO B Lower Marl
7470 TVD
7570
7520
CARB CHLK (75%): med fi-fmed gry, occ drkr gry ip, mod mtbd w fir mic spts, pred chlky, sbrthy ip, sbbldy-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res mg, grey odor, tr pyr. MRLSTN: (25%)
CARB CHLK (80%): med fi-fmed gry, occ drkr gry ip, mod mtbd w fir mic spts, pred chlky, sbrthy ip, sbbldy-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res mg, grey odor, tr pyr. MRLSTN: (20%)
MRLSTN (80%): med drk gry-sl grybrk, sdwxy, sl silky grsy feel, rr chlky-sbrthy ip, pred sbbldy, occ shrp & ggsl cttngs fmy, v frm-fnd, no vis perm or por, no vis fluor, wk hzy yel cuts, drk yel o res mg, sl gry odor, CHLK (30%)
CARB CHLK (80%): med fi-fmed gry, occ drkr gry ip, mod mtbd w fir mic spts, pred chlky, sbrthy ip, sbbldy-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res mg, grey odor, tr pyr. MRLSTN: (40%)
CARB CHLK (80%): med fi-fmed gry, occ drkr gry ip, mod mtbd w fir mic spts, pred chlky, sbrthy ip, sbbldy-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res mg, grey odor, tr pyr. MRLSTN: (40%)
CARB CHLK (80%): med fi-fmed gry, occ drkr gry ip, mod mtbd w fir mic spts, pred chlky, sbrthy ip, sbbldy-sl shrp, frm, v calc, NFS, gd mlky cut, strng yel res mg, grey odor, tr pyr. MRLSTN: (20%)
MRLSTN (80%): med drk gry-sl grybrk, sdwxy, sl silky grsy feel, rr chlky-sbrthy ip, pred sbbldy, occ shrp & ggsl cttngs fmy, v frm-fnd, no vis perm or por, no vis fluor, wk hzy yel cuts, drk yel o res mg, sl gry odor, CHLK (35%)
MRLSTN (85%): med drk gry-sl grybrk, sdwxy, sl silky grsy feel, rr chlky-sbrthy ip, pred sbbldy, occ shrp & ggsl cttngs fmy, v frm-fnd, no vis perm or por, no vis fluor, wk hzy yel cuts, drk yel o res mg, sl gry odor, CHLK (15%)
MRLSTN (90%): pred med drk gry-occ grybrk, rthy-sdwxy, rr chlky ip, sbbldy, occ fissl & plty, dmy carb/anhy ints fl, v frm-fnd, no vis perm or por, no vis fluor, slw dif yellsh grn cuts, gd dnce o res cld, strng gry odor, CHLK (10%), med gry brn, mttld
MRLSTN: pred med drk gry-occ grybrk, rthy-sdwxy, rr chlky ip, sbbldy, occ fissl & plty, dmy carb/anhy ints fl, v frm-fnd, no vis perm or por, no vis fluor, slw dif yellsh grn cuts, gd dnce o res cld, strng gry odor, tr CHLK, med gry brn, mttld
WOB 15.6
ROP 303.5
RPM 91
SPM 675
SPP 3040
MW 9.0
VIS 38
WOB 15.4
ROP 337.2
RPM 91
SPM 780
SPP 3040
MW 9.0
VIS 36
MW 9.0
VIS 40
CG
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)


ROP (ft/hr)
WHID GR (API)
12950
13000
13050
13100
13150
13200
13250
13300
13350
13400
13450
13500
13550
13600
13650
13700
13750
13800
13850
13900
MD 12603 TVD 7512.44
INC 91.5 AZ 359.7
VS 5173.9
7470 TVD
MD 12607 TVD 7511.11
INC 90.3 AZ 0.8
VS 5264.84
7460 TVD
Off Bim & Shut in to repair flare line
MD 12693 TVD 7510.81
INC 90.1 AZ 1
VS 5350.81
MD 12778 TVD 7510.14
INC 90.8 AZ 0.1
VS 5435.77
7460 TVD
MD 12849 TVD 7509.87
INC 90.8 AZ 359.9
VS 5506.63
7460 TVD
MD 12934 TVD 7509.24
INC 90.4 AZ 359.9
VS 5521.7
MD 13020 TVD 7508.85
INC 91 AZ 359.7
VS 5691.55
Fault +/- 11' Throw
MD 13018 TVD 7506.88
INC 90.6 AZ 359.6
VS 5775.45
7460 TVD
MD 13105 TVD 7506.35
INC 90.1 AZ 359.6
VS 5862.36
MD 13190 TVD 7505.88
INC 90.4 AZ 359
VS 5947.25
Fault +/-19' Throw
MD 13276 TVD 7505.88
INC 89.7 AZ 359
VS 6033.11
7460 TVD
MD 13361 TVD 7505.88
INC 90.3 AZ 359.5
VS 6117.85
NIO B Upper Marl
NIO B CHALK
NIO B Upper Marl
NIO B CHALK
NIO B CHALK
NIO Lower Marl
7570
7580
7590
7600
7610
7620
7630
7640
7650
MRLSTN (80%): med drk gry-grybik, sbchlky-sbwxy, sbbltky-pbfy, n fissl thru, frm-sl hd, v arg cly fild mtx, dul-rsns-sl grey bitr, highly carb, no vis por, abnd silty cttngs thru, no pcl fluor, wk slw dll grnish yel cuts, drk yel res mg, string gay odor, CHLK (20%)
MRLSTN (60%): med drk gry-grybik, sbchlky-sbwxy, sbbltky-pbfy, n fissl thru, frm-sl hd, v arg cly fild mtx, dul-rsns-sl grey bitr, highly carb, no vis por, abnd silty cttngs thru, no pcl fluor, wk slw dll grnish yel cuts, drk yel res mg, string gey odor, CHLK (40%)
ARG CHLK: med-med drk gry, sbwxy-rthy, sl rgh feel, sbbltky-sbpfy, abndt shrp frags thru, 35% blk carb & cly fil mtx, frm-sl hd, no vis por or perm, no pcl fluor, slw dll cldy yel cuts, yellsh grn halos amd ctngs, frt gay odor, abndt marls
ARG CHLK (80%): med-med drk gry, sbwxy-rthy, sl rgh feel, sbbltky-sbpfy, abndt shrp frags thru, 35% blk carb & cly fil mtx, frm-sl hd, no vis por or perm, no pcl fluor, slw dll cldy yel cuts, yellsh grn halos amd ctngs, frt gay odor, MRLSTN (20%)
CARB CHLK (70%): med fi-med gry, occ dkr gry mod mtlcl in mtx spots, pred chlky, sbrty, sbrthy, sbbltky-sl shrp, frm, v calc, NFS, gd mdy cut, strng yel res mg, gay odor, MRLSTN (20%)
ARG CHLK (70%): med-med drk gry, sbwxy-rthy, sl rgh feel, sbbltky-sbpfy, abndt shrp frags thru, 35% blk carb & cly fil mtx, frm-sl hd, no vis por or perm, no pcl fluor, slw dll cldy yel cuts, yellsh grn halos amd ctngs, frt gay odor, MRLSTN (30%)
MRLSTN (65%): med drk gry-vd grybik, sbwxy, sl slky gray feel, n chlky-sbrthy-bj, pred sbbltky, occ shrp & jgjd ctngs thru, v frm-hd, no vis perm or por, no inl fluor, wk hzy yel cuts, drk yel o res mg, gry odor, CHLK (35%)
MRLSTN (75%): med drk gry-vd grybik, sbwxy, sl slky gray feel, n chlky-sbrthy-bj, pred sbbltky, occ shrp & jgjd ctngs thru, v frm-hd, no vis perm or por, no inl fluor, wk hzy yel cuts, drk yel o res mg, gry odor, CHLK (25%)
MRLSTN (80%): med drk gry-vd grybik, sbwxy, sl slky gray feel, n chlky-sbrthy-bj, pred sbbltky, occ shrp & jgjd ctngs thru, v frm-hd, no vis perm or por, no inl fluor, wk hzy yel cuts, drk yel o res mg, string gay odor, CHLK (15%)
MRLSTN (80%): med drk gry-grybik, sbchlky-sbwxy, sbbltky-pbfy, n fissl thru, frm-sl hd, v arg cly fild mtx, dul-rsns-sl grey bitr, highly carb, no vis por, abndt silty cttngs thru, no pcl fluor, wk slw dll grnish yel cuts, drk yel res mg, string gay odor, CHLK (15%)
MW 9.0
VIS 36
WOB 36.3
ROP 85.5
RPM 0
SPM 780
SPP 2300
Downtime Gas - 1592 u
MW 9.0
VIS 36
CG
WOB 17.6
ROP 275.7
RPM 91
SPM 780
SPP 2513
CG
Mud @ 13,340'
MW 9.0 ppg
VIS 35 sec/qt
PV/YP 9/10 cp - lbs/100ft^2
Gels 3/10 lbs/100ft^2
FL 6.2 ml/30min
SOL 4.2%
PH 7.6
Cl 2200 mg/L
MW 9.0
VIS 35
CG
C1 (units)
C2 (units)
C3 (units)
C4 (units)



TD @ 14,685' REACHED ON JANUARY 19, 2014 CIRCULATE BOTTOMS UP, BIT #4 DRILLED 7094' IN 87.5 HRS. WIPER TRIP TO SHOE, TRIP OUT OF HOLE FOR 4 1/2" LINER SET @ 14675'.

Sharon Springs	7450' MD (7326' TVD)
Niobrara A	7476' MD (7345' TVD)
Niobrara B Chalk	8550' MD (7517' TVD)
DMTD	14,685' MD (7491' TVD)
Production csg	14,670' MD

Thank You
Goolsby Brothers & Assoc.
Blake Stacey & Larry Goolsby