



INTEQ

Company : Apache
Well : Speke South-1
Interval : 91.00 - 3011.08 meters
Created : 18/Apr/2008 6:58:04 AM

FORMATION EVALUATION LOG

Drilling Rate		MD meters 1:500	TVDRT meters	Cuttings Lithology	Visual Inferred Porosity PFG	Oil Show PFG	Gas Data		Chromatograph Data		Calciemetry CaCO3 % MgCO3 %	Interpreted Lithology	Lithology Description
ROP (m/hr)	ROP (m/hr)						Gas Hydrocarbon Avg %	Methane ppm	Ethane ppm	Propane ppm			
200	200	0					0.01 0.1 1 10	1	100000	100000			RT - AHD: 37.0 mMDRT Water Depth: 54.1 mMDRT RT - Seabed: 91.1 mMDRT
180	200	0					0.1	1	100000	100000			Spud Speke South-1 at 1930 hrs on 07/04/2008
160	200	0					Ohm.m	1	100000	100000			Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m
140	200	0					Resistivity Deep	1	100000	100000			
120	200	0					Ohm.m	1	100000	100000			
100	200	0						1	100000	100000			
80	200	0						1	100000	100000			
60	200	0						1	100000	100000			
40	200	0						1	100000	100000			
20	200	0						1	100000	100000			
100	200	0						1	100000	100000			
110	200	0						1	100000	100000			
120	200	0						1	100000	100000			
130	200	0						1	100000	100000			
140	200	0						1	100000	100000			
150	200	0						1	100000	100000			
160	200	0						1	100000	100000			
170	200	0						1	100000	100000			
180	200	0						1	100000	100000			
190	200	0						1	100000	100000			
200	200	0						1	100000	100000			
210	200	0						1	100000	100000			
220	200	0						1	100000	100000			
230	200	0						1	100000	100000			
240	200	0						1	100000	100000			
250	200	0						1	100000	100000			
260	200	0						1	100000	100000			

1RR 660 mm (26")
Smith MZ17f6
Type: Rock
Jets: 4x18
Depth in: 91.1 m
Depth Out: 185.0 m
Drilled 94.0 m in 2.5 hrs
Grade: 0-0- -A-E-I-NO-TD

WOB: 2-10 klb
RPM: 42-82
GPM: 480-1050
SPP: 290-2300 psi

07/04/2008

NB2 406 mm (16")
Hughes GXCIV
Type: Mill Tooth
Jets: 4x20
Depth in: 185.0 m
Depth Out: 903.0 m
Drilled 718.0 m in 22 hrs
Grade: 1-1-WT-A-0-1-NO-TD

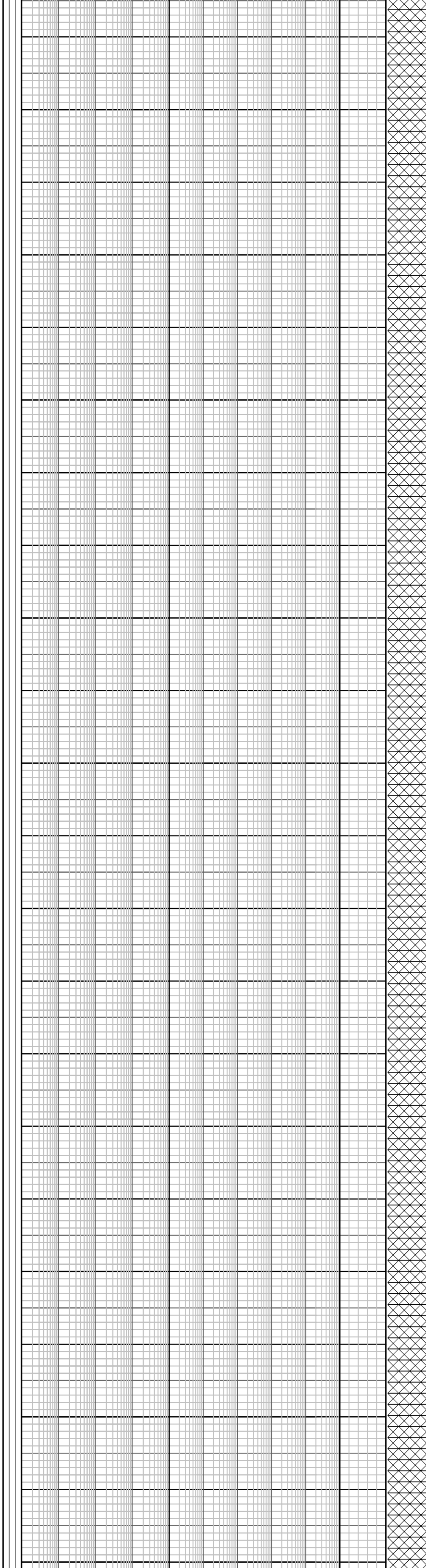
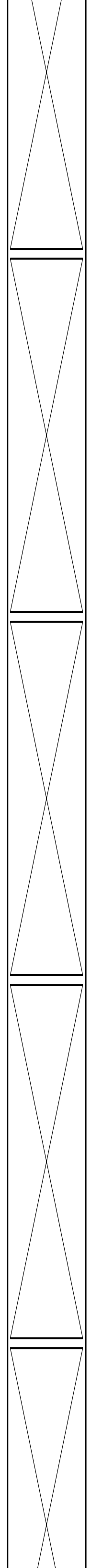
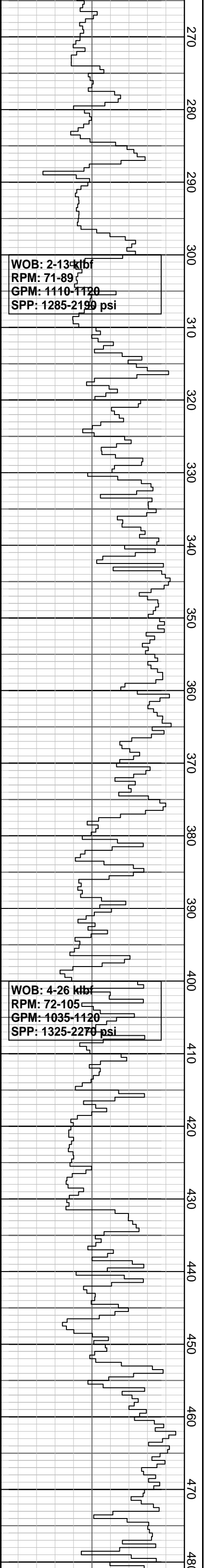
RT - AHD: 37.0 mMDRT
Water Depth: 54.1 mMDRT
RT - Seabed: 91.1 mMDRT

Spud Speke South-1 at 1930 hrs on 07/04/2008

Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m

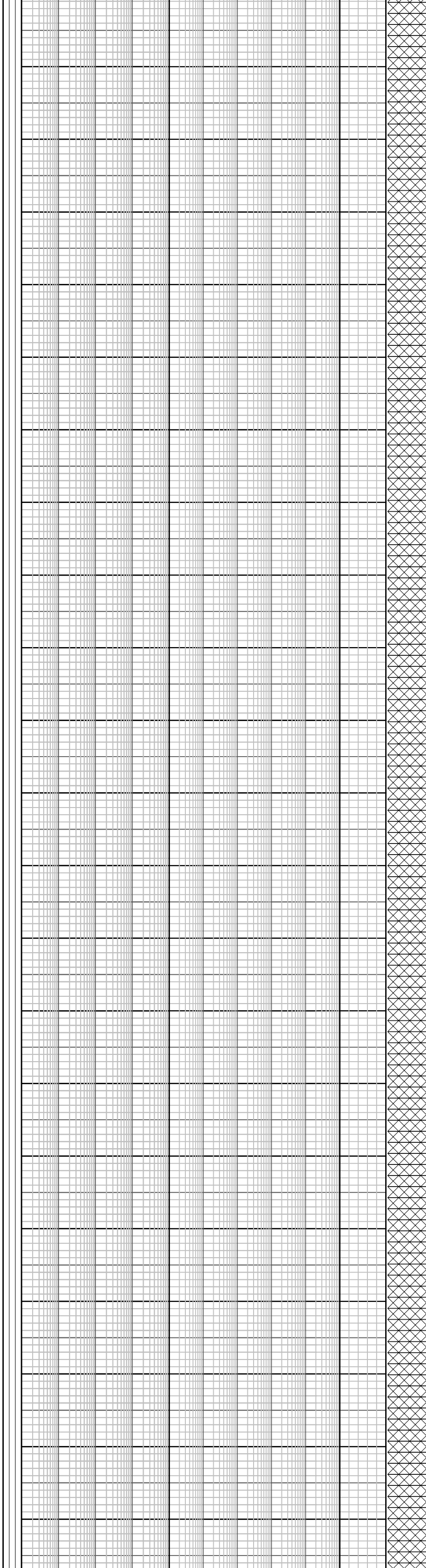
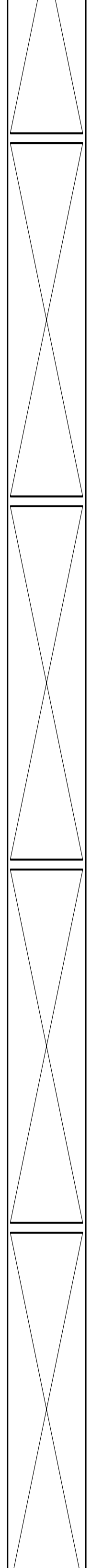
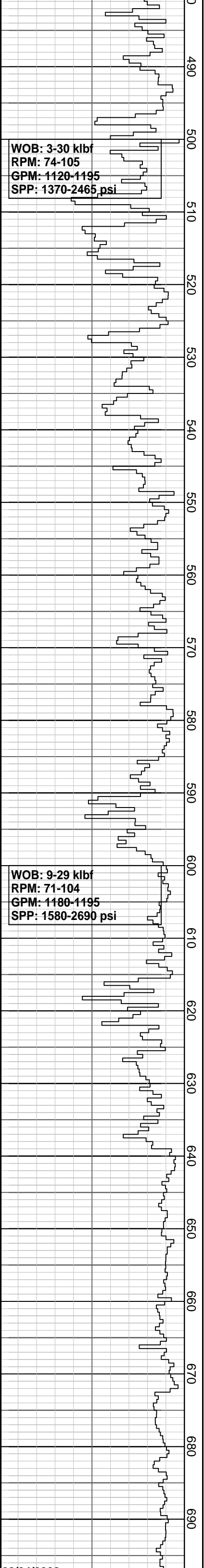
Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m

660 mm (26") Section TD @ 185.0 mMDRT on 07/04/2008



Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m

Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m



Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m

08/04/2008

WOB: 9-30 kbf
RPM: 76-149
GPM: 1190-1195
SPP: 1715-2725 psi

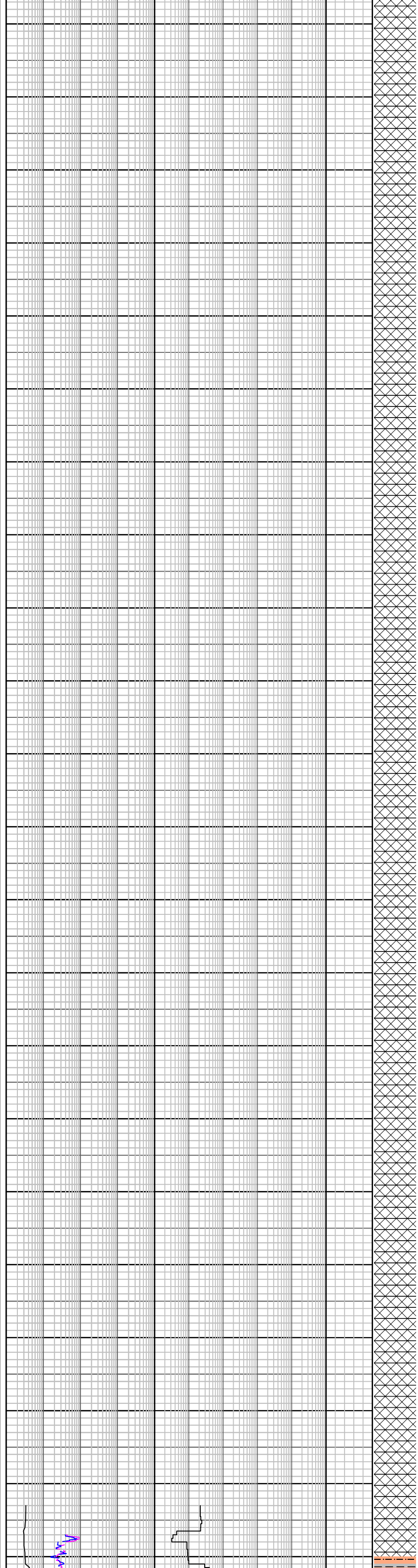
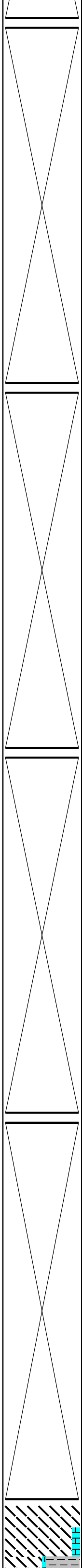
WOB: 1-35 kbf
RPM: 96-137
GPM: 1060-1194
SPP: 1838-2580 psi

Set 20" x 13-3/8" Csg @
896.3 mMDRT

NB3 311 mm (12 1/4")
Smith
Type: XP-GPS
Jets: No Jets
Depth in: 903.0 m
Depth Out: 906.0 m
Drilled 3.0 m in 0.6 hrs
Grade: 1-1-D-L-B-G-02-R

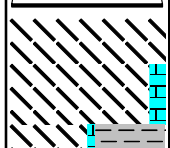
NB4 216 mm (8 1/2")

700
710
720
730
740
750
760
770
780
790
800
810
820
830
840
850
860
870
880
890
900
910

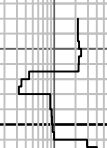


Drill with sea water and hi-vis pills, returns to seabed. 91.1 m to 903.0 m

406 mm (16") Section TD @
903.0 mMDRT on 09/04/2008
FIT @ 906.0 m, with 1.12 sg mud, 620 psi, EMW:1.6 sg



Handwritten notes in purple and blue ink.

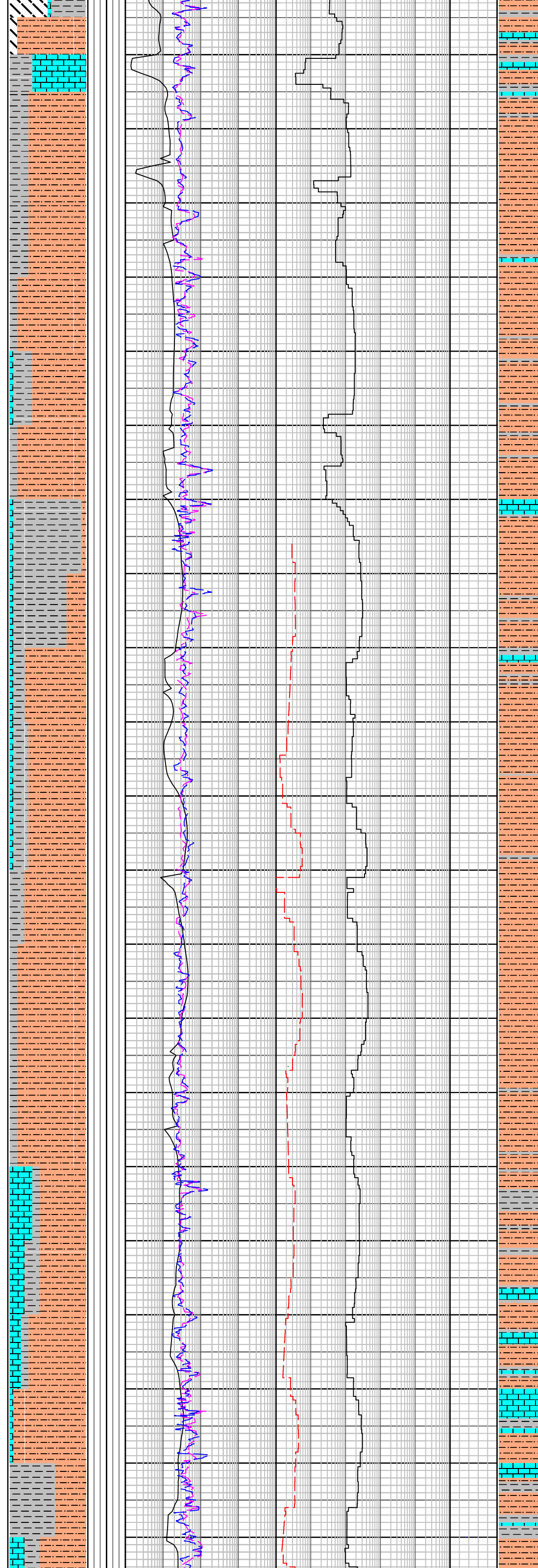


Hughes
 Type: HC6052
 Jets: 2x16 3x15
 Depth in: 906.0 m
 Depth Out: 2940.0 m
 Drilled 2034 m in 38.1 hrs
 Grade: 8-8-RO-A-X-I-CT-PR

WOB: 8-20 klb
 RPM: 58-177
 GPM: 570-885
 SPP: 1170-2525 psi

WOB: 11-22 klb
 RPM: 132-177
 GPM: 611-796
 SPP: 1500-3037 psi

920
930
940
950
960
970
980
990
1000
1010
1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120



MW: 1.12 sg FV: 71
 PV: 18 YP: 26
 Gels: 11/13 pH: 9.1

CALCARENITE: v lt gy, sft-v hd, sb blk, v arg i/p, qtz gr i/p, calc gr i/p

CALCILUTITE: dk yelsh or, v lt gy, v arg, v f glauc spk, occ v f qtz, tr lith, tr foram spines, grd-Arg Clct, hd-tr v hd, sbbkly-blky

CALCAREOUS SILTSTONE: lt-m gy, v arg, v f glauc spk, occ v f qtz gr, tr lith, tr foram, grd-Calc Clyst, hd-tr v hd, sbbkly-blky

CALCILUTITE: yelsh gy, v lt gy, crpxln, hd-sbbkly

CALCAREOUS SILTSTONE: m lt gy, v arg, v f glauc spk, occ v f qtz gr, tr lith, tr foram, grd-Calc Clyst, calc spks, v sft-hd, sbbkly-blky

CALCAREOUS CLAYSTONE: m dk gy, sft-frm, slty, sbbkly-blky

CALCILUTITE: yelsh gy, v lt gy, crpxln, foram, hd-sbbkly

CALCAREOUS SILTSTONE: m lt gy, v arg, v f glauc spk, occ v f qtz gr, tr lith, tr foram, grd-Calc Clyst, calc spks, v sft-hd, sbbkly-blky

CALCILUTITE: yelsh gy, v lt gy, crpxln, foram, hd-sbbkly

CALCAREOUS CLAYSTONE: m-lt gy, spkled w kaolinitic cly, tr v f glauc, calc spks, sft-frm, slty, sbbkly-blky

CALCAREOUS SILTSTONE: m lt gy, v arg, v f glauc spk, occ v f qtz gr, tr lith, tr foram, grd-Calc Clyst, calc spks, v sft-hd, sbbkly-blky

CALCAREOUS CLAYSTONE: m-lt gy, spkled w kaolinitic cly, tr v f glauc, calc spks, sft-frm, slty, sbbkly-blky

CALCAREOUS SILTSTONE: m gy, v arg, v f glauc spk, occ v f qtz gr, tr lith, tr foram, grd-Calc Clyst, calc spks, v sft-hd, sbbkly-blky

CALCAREOUS CLAYSTONE: m gy, tr glauc spks, frm, sbbkly

CALCAREOUS SILTSTONE: m gy-m dk gy, grd-Calc Clyst, occ foss frag, com glauc spks, frm-tr hd, sbbkly

CALCILUTITE: lt gy, tr brn m gy, com foss frag, mod arg, crpxln, hd, sbbkly

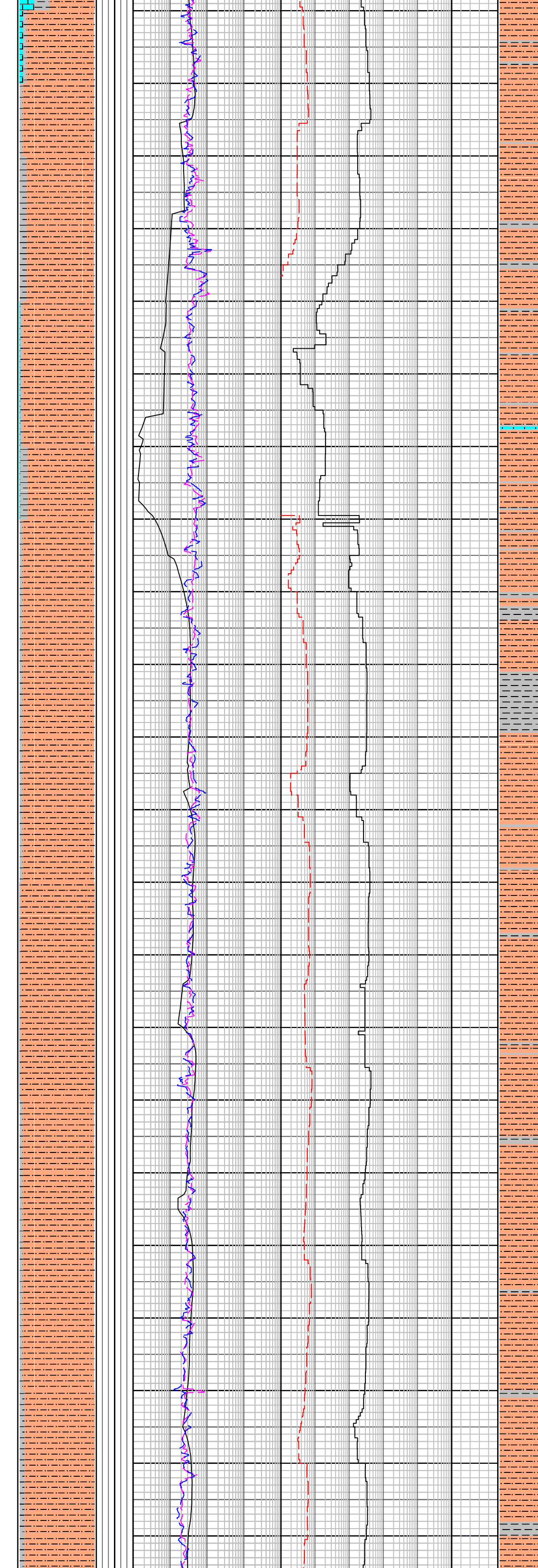
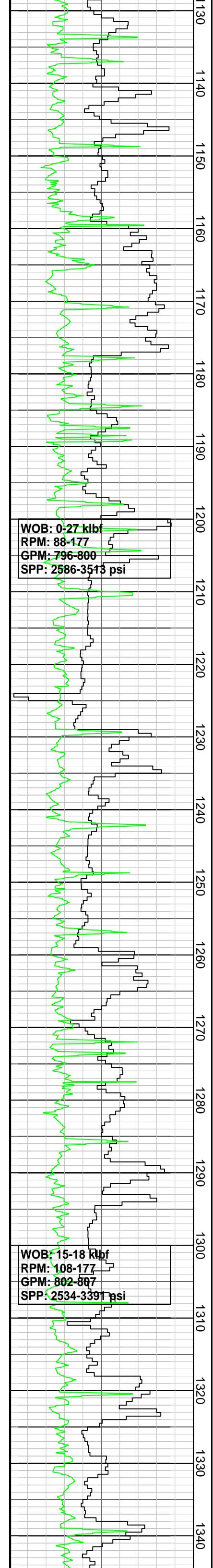
CALCAREOUS CLAYSTONE: m gy, tr glauc spks, frm, sbbkly

CALCILUTITE: lt gy, tr brnsh m gy, com foss frags, mod arg, crpxln, hd, sbbkly

CALCAREOUS SILTSTONE: lt gy-m dk gy, wh kaolinitic cly i/p, v arg, v f glauc, occ v f qtz, frm-mod hd i/p, sbbkly-blky

CALCAREOUS SILTSTONE: lt gy-m dk gy, wh kaolinitic cly i/p, v arg, v f glauc, occ v f qtz, frm-mod hd i/p, sbbkly-blky

CALCILUTITE: lt gy, com foss frags, mod arg, crpxln, hd, sbbkly



CALCAREOUS CLAYSTONE:
 lt gy-m lt gy, slty, foss frags,
 sft-mod hd, sbbiky

CALCAREOUS CLAYSTONE:
 m lt gy, lt brnsh gy, v arg,
 com glauc spks, sft-frm,
 sbbiky

CALCAREOUS CLAYSTONE:
 m lt gy-m dk gy, slty, com
 foss frags, sft-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 m gy, v arg, com glauc spks,
 tr blk carb spks, tr v f qtz,
 sft-frm, sbbiky

CALCAREOUS CLAYSTONE:
 m dk gy, slty, frm-mod hd,
 sbbiky
CALCISILTITE: lt yelsh gy,
 wh, hd, fri i/p, sbang

CALCAREOUS SILTSTONE:
 m lt gy-m dk gy, lt brnsh gy, v
 arg, com glauc spks, tr
 foram, sdy i/p grd-Slty Sst,
 frm-mod hd, sbbiky-blky

MW: 1.13 sg FV: 73
PV: 21 YP: 37
Gels: 14/16/18 pH: 9.0

CALCAREOUS CLAYSTONE:
 m dk gy, slty, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 lt brnsh olv gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS CLAYSTONE:
 m dk gy, slty, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 m gy-m dk gy, occ lt brnsh
 gy, arg, com glauc, com v f-f
 qtz, frm-tr mod hd,
 sbang-sbbiky

CALCAREOUS SILTSTONE:
 lt brnsh olv gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

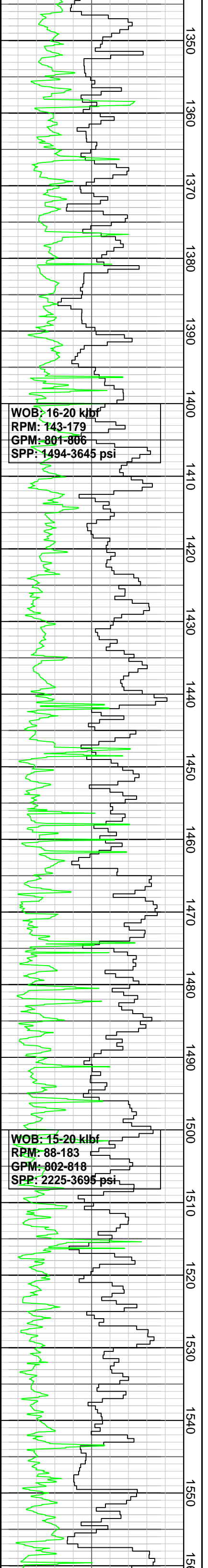
CALCAREOUS CLAYSTONE:
 m dk gy, slty, tr glauc spks,
 frm-mod hd, sbbiky

CALCAREOUS SILTSTONE:
 lt brnsh olv gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS CLAYSTONE:
 m dk gy, slty, tr glauc spks,
 frm-mod hd, sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky



CALCAREOUS CLAYSTONE:
 m dk gy, slty, tr glauc spks,
 frm-mod hd, sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS CLAYSTONE:
 m dk gy, slty, tr glauc spks,
 frm-mod hd, sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

CALCAREOUS CLAYSTONE:
 gnsh gy-m lt gy, wh i/p, slty
 i/p, tr glauc spks, sft
 amor-frm

MARL: wh, tr blk carb
 streaks, tr loc m gn rndd
 glauc pel, tr v f sbrndd sd, r
 grd-Clear i/p, sft-mod hd

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

MARL: wh, tr blk carb
 streaks, tr locm gn rndd
 glauc pel, tr loc v f sbrndd
 sd, r grd-Clear i/p, sft-mod hd

CALCARENITE: wh-yelsh gy
 i/p, com blk spks, tr loc m
 gn rndd glauc pel, mod
 hd-hd

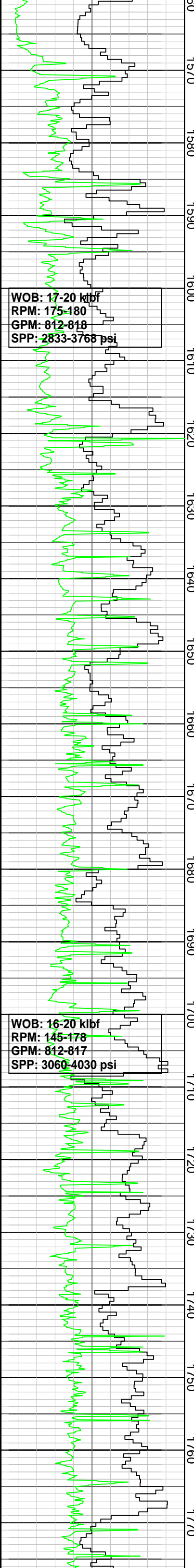
MARL: wh, tr blk carb
 streaks, tr loc m gn rndd
 glauc pel, tr loc v f sbrndd
 sd, r grd-Clear i/p, sft-mod hd

CALCAREOUS SILTSTONE:
 lt olv gy-gnsh gy, m lt gy i/p,
 arg, com glauc, com v f-f qtz,
 loc grd-Slty Sst, frm-mod hd,
 sbbiky

MARL: wh, tr blk carb
 streaks, tr loc m gn rndd
 glauc pel, tr loc v f sbrndd
 sd, r grd-Clear i/p, sft-mod hd

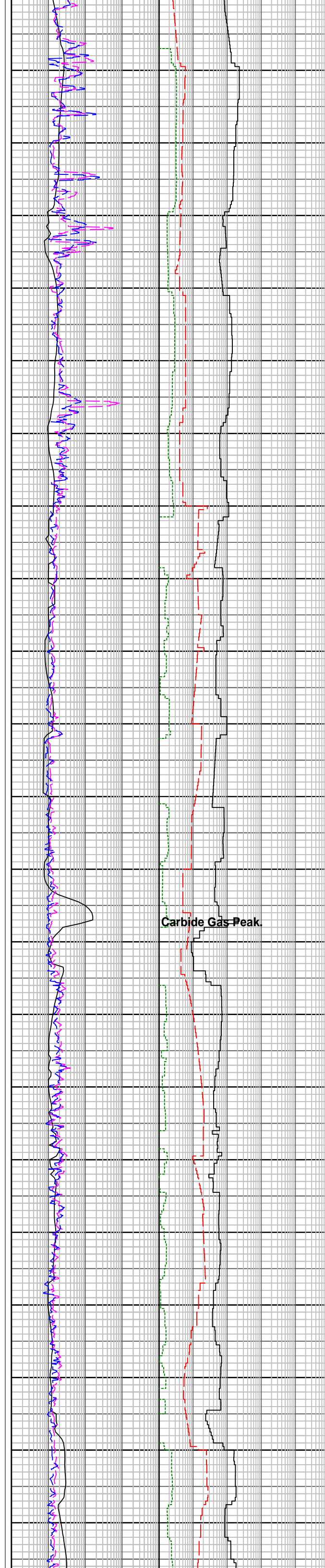
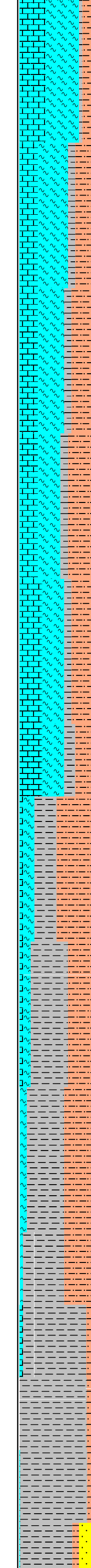
CALCARENITE: wh-yelsh gy,
 com-abd blk spks, tr loc v f m
 gn rndd glauc pel, tr v f sd,
 mod hd-hd

MARL: wh, abd blk carb
 strks, tr loc m gn rndd glauc
 pel, tr loc v f sbrndd sd,
 sft-mod hd

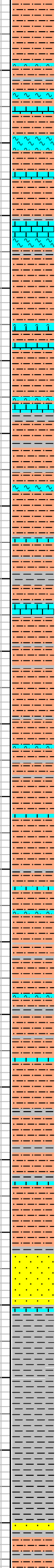


WOB: 17-20 klbf
 RPM: 175-180
 GPM: 812-818
 SPP: 2833-3768 psi

WOB: 16-20 klbf
 RPM: 145-178
 GPM: 812-817
 SPP: 3060-4030 psi



Carbide Gas Peak



SILTSTONE: olv gy, r sdy, r foram, mod hd-hd, sbblky-fiss, v calc

CLAYSTONE: m gy, amor-sft, frm i/p

MARL: wh, abd blk carb strks, tr loc m gn rndd glauc pel, tr loc v f sbrndd sd, sft-mod hd

CALCAREOUS SILTSTONE: olv gy, r sdy Sltst i/p, r foram, mod hd-hd, sbblky-fiss, v calc

CALCARENITE: wh-yelsh gy, com-abd blk spks, tr loc v f m gn rndd glauc pel, tr v f sd, mod hd-hd

CALCAREOUS CLAYSTONE: m gy, hom-slty i/p, amor-sft, frm i/p

MARL: wh, abd blk carb strks, tr loc m gn rndd glauc pel, tr loc v f sbrndd sd, sft-mod hd

CALCARENITE: wh, yelsh gy i/p, com-abd blk spks, tr loc v f m gn rndd glauc pel, tr v f sd, mod hd - hd

Carbide Run @ 1677.0mMDRT
Theo: 4503 Stk
Actual: 4583 Stk
Hole Washout = 2%

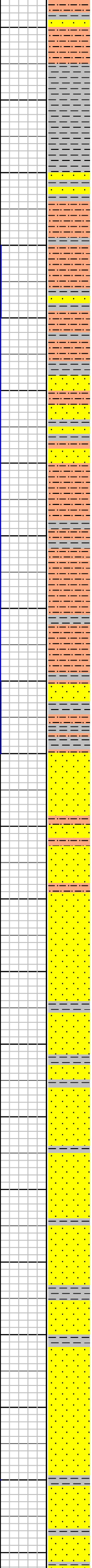
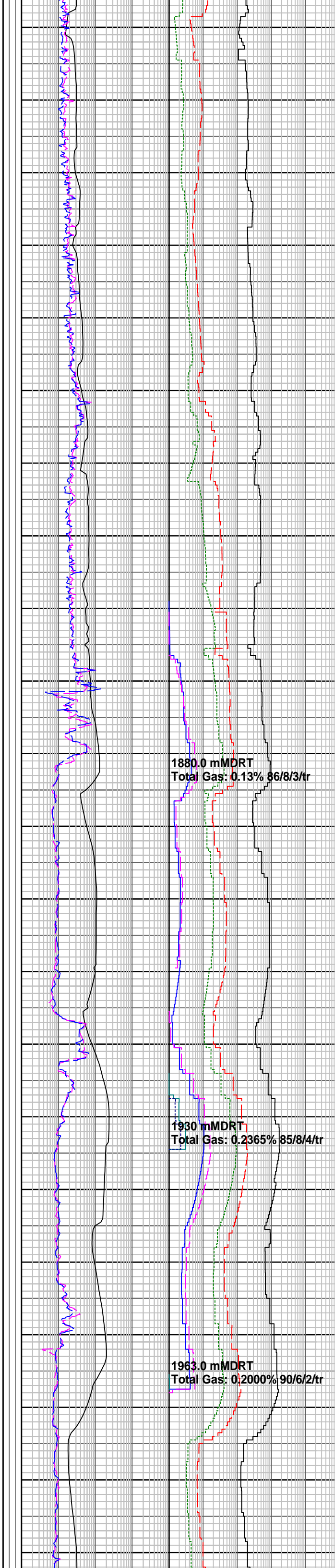
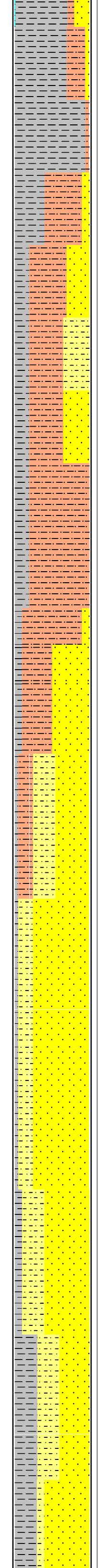
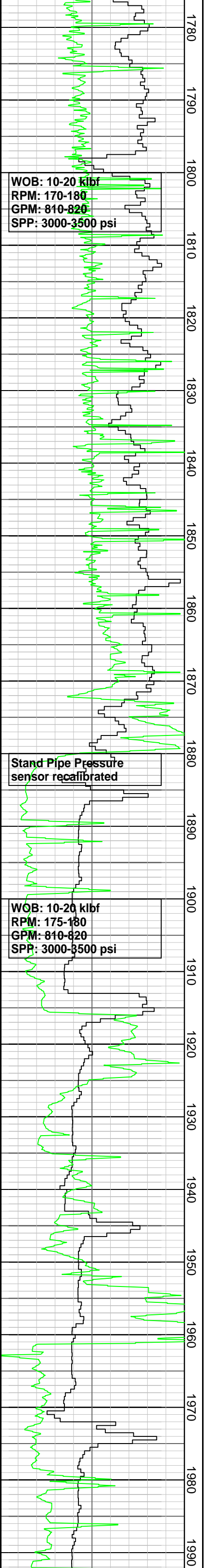
CALCAREOUS SILTSTONE: olv gy, r sdy Sltst i/p, r foram, mod hd-hd, sbblky-fiss, v calc, hd, sbfiss sh

CALCAREOUS CLAYSTONE: m gy, hom-slty i/p, sft, amor-frm i/p

CALCAREOUS SILTSTONE: gnsh gy-m gy, tr lse foram & tub, calc vn embd, r trnsp, sbang qtz, mod hd-hd, sbblky-sbfis, r sh, brnsh blk-blk, tr fis, brit

CALCAREOUS CLAYSTONE: olv gy-lt gy, m lt-m dk gy, occ lt brnsh gy, occ f glauc gr, tr lse foram, tr qtz, mod hd-hd, sbblky-sbfis

SANDSTONE: trnsp, trnol



SANDSTONE: trnsp, trnsi, varicol qtz, f gr, v wl srt, sbang-rnd, sph-sb elong, poss arg mtrx, cl washed out, lse, comm glauc pel, occ nod pyr, tr jasp, tr foss, p-fr inf por, no sh

CALCAREOUS SILTSTONE: grd from Calc Clyst, olv gy-gnsh gy, lt brnsh gy, occ dissem f glauc, sbbkly-sbfiss

MW: 1.16 sg	FV: 60
PV: 19	YP: 39
Gels: 15/19/21	pH: 9.1

SILTSTONE: olv gy-brnsh gy, com-abd diss f-m glauc, com-abd v f-f qtz, grd-Slty Sst i/p, arg, calc, sft frm, amor-sbbkly

SILTY SANDSTONE: trnsp, trnsl, or & yel qtz, f, tr m, v wl srt, sbang-rndd, sph-sb elong, slty olv gy mtrx-washed out, lse, abd glauc pel, tr nod pyr, tr foram, calc, pr inf por, n

SILTSTONE: olv gy-brnsh gy, com-abd diss f-m glauc, com-abd v f-f qtz, grd-Slty Sst i/p, arg, calc, sft frm, amor-sbbkly

CLAYSTONE: m lt gy-m gy, occ olv gy-gnsh gy, sft-hd, sbbkly-sbfiss, tr fiss

GLAUCONITIC SANDSTONE: olv gy, trnsp, trnsl, op, yel or, vf-f gr, v wl srt, sbang-rndd, sph-sb elong, calc slty mtrx, pred lse, abd f-m glauc pel, occ lith, tr pyr, p vis por, no s

SILTSTONE: olv gy-brnsh gy, com-abd diss, f-m glauc, com-abd v f-f qtz, grd-Slty Sst i/p, arg, calc, sft frm, amor-sbbkly

SANDSTONE: lt gy, trnsp, trnsl, varic qtz, f-crs, sbang-rndd, sph-sb elong, lse, vf-f glauc, r nod pyr, tr jasp, tr foss, p-fr inf por, no shw

CLAYSTONE: m lt gy, mod calc, tr slt, tr dis pyr, frm, sbbkly, sbfiss-fiss

SILTY SANDSTONE: olv gy, brnsh gy, trnsp, trnsl or qtz, v f-m, wl srt, sph-sb elong, calc, slty mtrx, grd-Slty, frm-mod hd, comm glauc, p-fr vis por, no shw

MW: 1.14 sg	FV: 70
PV: 21	YP: 44
Gels: 17/19/21	pH: 9.0

SANDSTONE: v lt gy, trnsl, trnsp, mlky qtz, m-v crs, ang, pr srt, lse, rexizd qtz i/p, inter gran & lse nod pyr, pr-fr inf por, no shw

SANDSTONE: lt gy, trnsl mlky qtz, f-v crs qtz, ang-sbrndd, sph-sb elong, pr srt, pred lse, r agg w silic mtrx, occ qtz ovgrth, r-com inter gran pyr, vf-f glauc,

WOB: 10-20 kbf
RPM: 170-180
GPM: 810-820
SPP: 3000-3500 psi

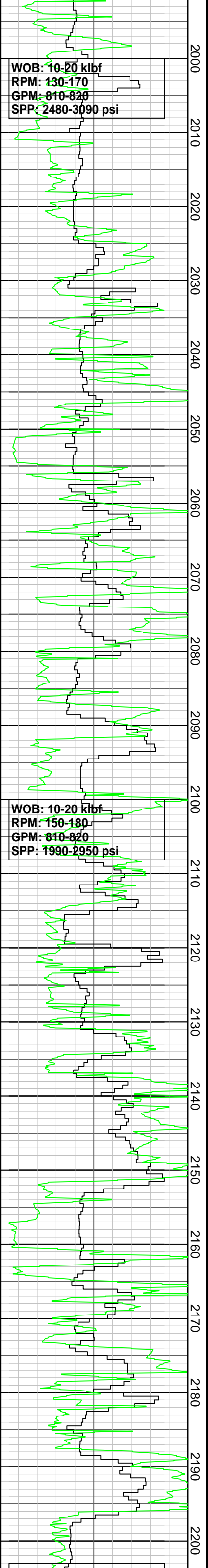
Stand Pipe Pressure sensor recalibrated

WOB: 10-20 kbf
RPM: 175-180
GPM: 810-820
SPP: 3000-3500 psi

1880.0 mMDRT
Total Gas: 0.13% 86/8/3/tr

1930 mMDRT
Total Gas: 0.2365% 85/8/4/tr

1963.0 mMDRT
Total Gas: 0.2000% 90/6/2/tr

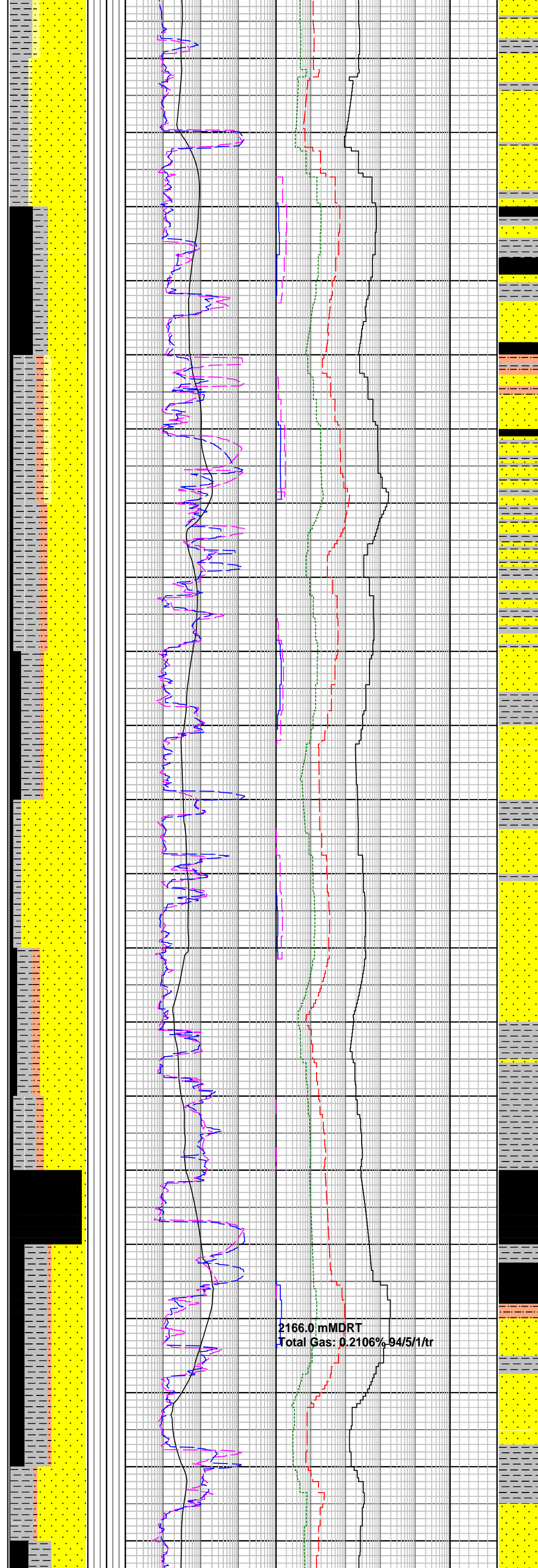


WOB: 10-20 klbf
 RPM: 130-170
 GPM: 810-820
 SPP: 2480-3090 psi

WOB: 10-20 klbf
 RPM: 150-180
 GPM: 810-820
 SPP: 1990-2950 psi

WOB: 10-22 klbf
 RPM: 95-175
 GPM: 810-820

2000
2010
2020
2030
2040
2050
2060
2070
2080
2090
2100
2110
2120
2130
2140
2150
2160
2170
2180
2190
2200



pr-occ frac Qtz, v

CLAYSTONE: m lt gy-dk gy, olv gy, non-mod calc, tr diss pyr, frm-hd, sbblky, sbfiss-fiss, carb spk i/p

COAL: blk, sbvitr-vitr, anthr, sbchonc-conch frac, blk

SANDSTONE: lt gy, trns l mlky Qtz, m-v crs, ang-sbrndd, sbsph, mod-pr srt, pred lse, r sil mtrx, occ Qtz ovgh, r inter gran & lse pyr, occ frac gr, pr-fr inf por, no shw

SILTSTONE: olv gy, brn gy-brnsh blk, carb spks & lam, tr v f Qtz i/p, mod arg i/p, non-v wk calc, frm-mod hd

SANDSTONE: lt gy, trns l mlky Qtz, m-v crs Qtz, ang-sbrndd, sbsph, mod-pr srt, pred lse, r sil mtrx, occ Qtz ovgh, r inter gran & lse pyr, occ frac gr, pr-fr inf por, no shw

CLAYSTONE: m lt gy-dk gy, olv gy, olv blk, non-wk calc, carb spk i/p, slty i/p, frm, tr v hd, sbblky, sbfiss-fiss

SANDSTONE: v lt gy, trns l, trns p, mky Qtz, m-v crs, pred crs-v crs Qtz, ang-sbrndd, sbsph, mod wl srt, lse, occ Qtz

SANDSTONE: v lt gy, trns l mlky Qtz, m-v crs Qtz, ang-sbrndd, sbsph, mod-prly srt, pred lse, r sil mtrx, occ Qtz ovgh, r inter gran & lse pyr, occ frac gr, pr-fr inf por, no shw

COAL: blk, sbvit-tr vit, sbanthr, sbconch frac, sbblky

CLAYSTONE: m lt gy-dk gy, olv gy, olv blk, non-wkly calc, carb spk i/p, slty i/p, frm, tr v hd, sbblky, sbfiss-fiss

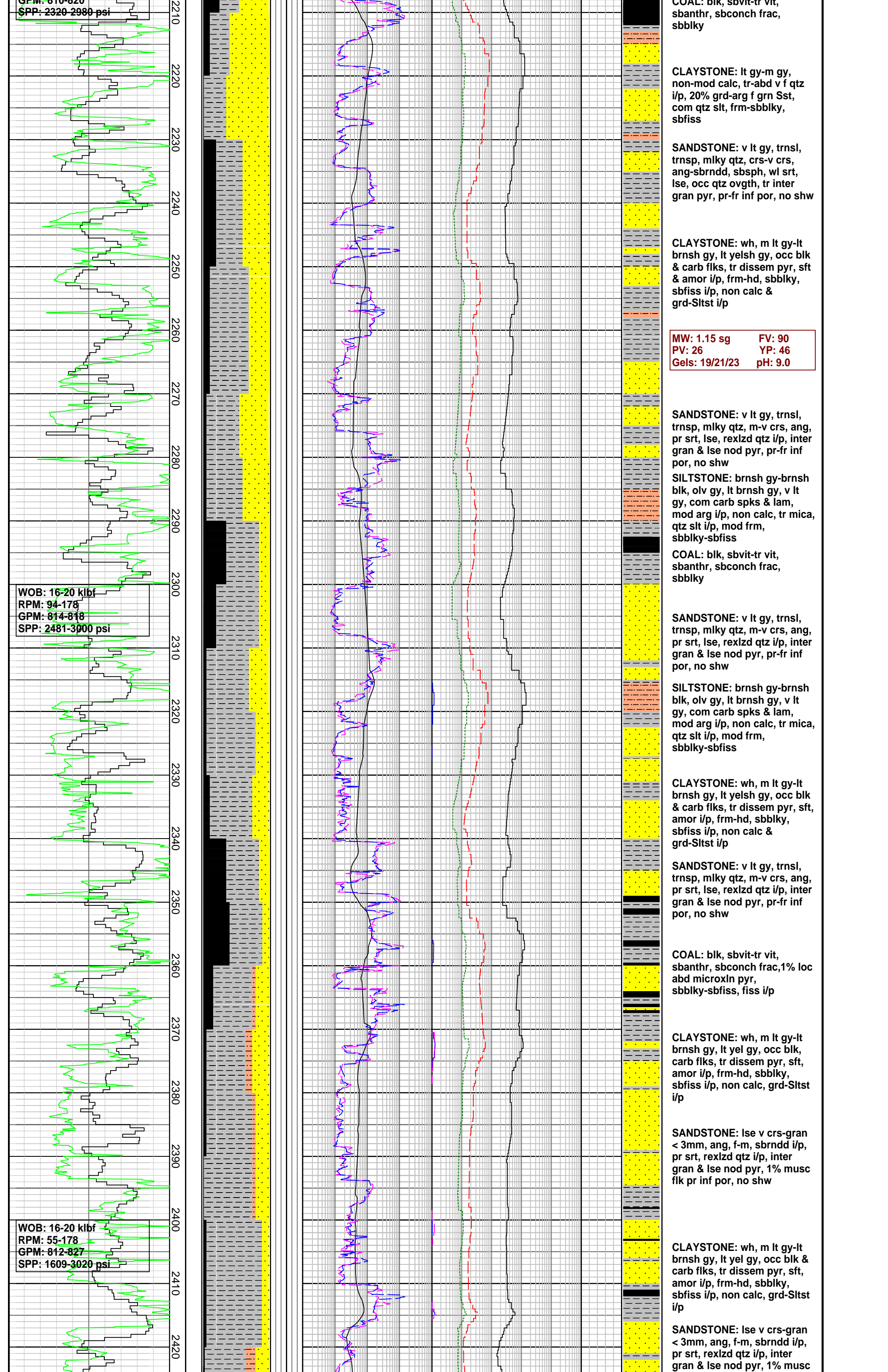
COAL: blk, sbvit-tr vit, sbanthr, sbconch frac, sbblky

SILTSTONE: brnsh gy-brnsh blk, olv gy, lt brnsh gy, v lt gy, com carb spks & lam, mod arg i/p, non calc, tr mica, Qtz slt i/p, mod frm, sbblky-sbfiss

SANDSTONE: v lt gy, trns l, trns p, mlky Qtz, crs-v crs, ang-sbrnd, sbsph, wl srt, lse, occ Qtz ovgh, tr inter gran pyr, pr-fr inf por, no shw

COAL: blk, sbvit-tr vit

2166.0 mMDRT
 Total Gas: 0.2106% 94/5/1/tr



GPM: 810-820
SPP: 2320-2980 psi

WOB: 16-20 klb
RPM: 94-178
GPM: 814-818
SPP: 2481-3000 psi

WOB: 16-20 klb
RPM: 55-178
GPM: 812-827
SPP: 1609-3020 psi

COAL: blk, sbvit-tr vit, sbanthr, sbconch frac, sbblky

CLAYSTONE: lt gy-m gy, non-mod calc, tr-abd v f qtz i/p, 20% grd-arg f grn Sst, com qtz slit, frm-sbblky, sbfiss

SANDSTONE: v lt gy, trnsl, trnsp, mlky qtz, crs-v crs, ang-sbrnnd, sbsph, wl srt, lse, occ qtz ovgt, tr inter gran pyr, pr-fr inf por, no shw

CLAYSTONE: wh, m lt gy-lt brnsh gy, lt yelsh gy, occ blk & carb flks, tr disse pyr, sft & amor i/p, frm-hd, sbblky, sbfiss i/p, non calc & grd-Sltst i/p

MW: 1.15 sg FV: 90
PV: 26 YP: 46
Gels: 19/21/23 pH: 9.0

SANDSTONE: v lt gy, trnsl, trnsp, mlky qtz, m-v crs, ang, pr srt, lse, rexldz qtz i/p, inter gran & lse nod pyr, pr-fr inf por, no shw

SILTSTONE: brnsh gy-brnsh blk, olv gy, lt brnsh gy, v lt gy, com carb spks & lam, mod arg i/p, non calc, tr mica, qtz slit i/p, mod frm, sbblky-sbfiss

COAL: blk, sbvit-tr vit, sbanthr, sbconch frac, sbblky

SANDSTONE: v lt gy, trnsl, trnsp, mlky qtz, m-v crs, ang, pr srt, lse, rexldz qtz i/p, inter gran & lse nod pyr, pr-fr inf por, no shw

SILTSTONE: brnsh gy-brnsh blk, olv gy, lt brnsh gy, v lt gy, com carb spks & lam, mod arg i/p, non calc, tr mica, qtz slit i/p, mod frm, sbblky-sbfiss

CLAYSTONE: wh, m lt gy-lt brnsh gy, lt yelsh gy, occ blk & carb flks, tr disse pyr, sft, amor i/p, frm-hd, sbblky, sbfiss i/p, non calc & grd-Sltst i/p

SANDSTONE: v lt gy, trnsl, trnsp, mlky qtz, m-v crs, ang, pr srt, lse, rexldz qtz i/p, inter gran & lse nod pyr, pr-fr inf por, no shw

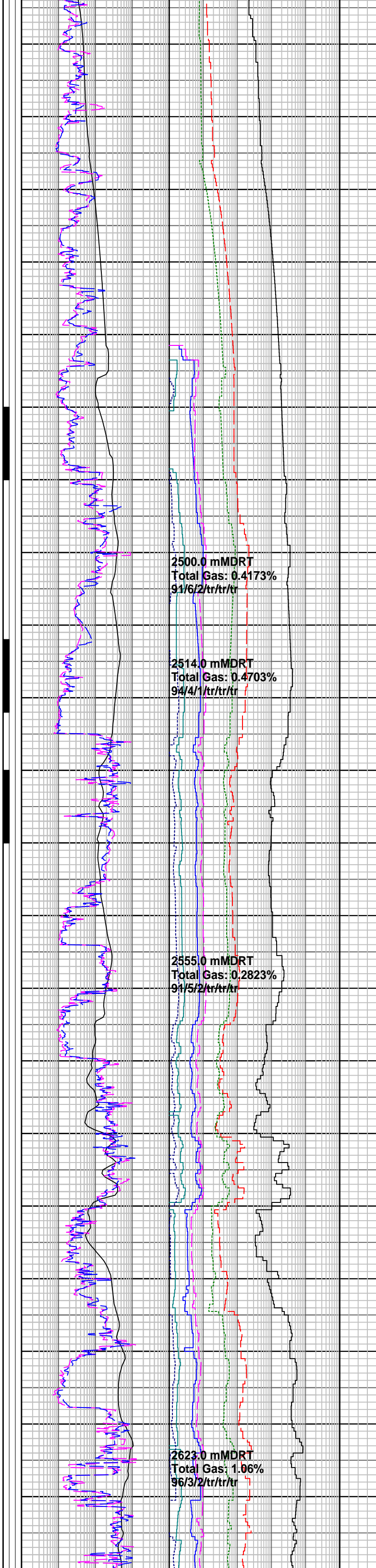
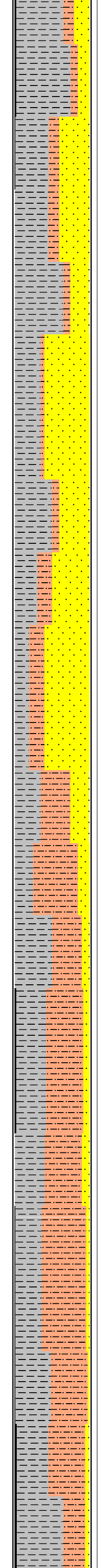
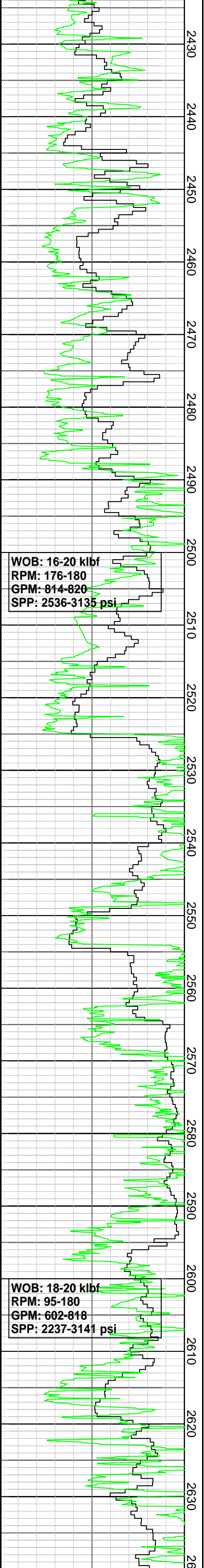
COAL: blk, sbvit-tr vit, sbanthr, sbconch frac, 1% loc abd microxn pyr, sbblky-sbfiss, fiss i/p

CLAYSTONE: wh, m lt gy-lt brnsh gy, lt yel gy, occ blk, carb flks, tr disse pyr, sft, amor i/p, frm-hd, sbblky, sbfiss i/p, non calc, grd-Sltst i/p

SANDSTONE: lse v crs-gran < 3mm, ang, f-m, sbrnnd i/p, pr srt, rexldz qtz i/p, inter gran & lse nod pyr, 1% musc flk pr inf por, no shw

CLAYSTONE: wh, m lt gy-lt brnsh gy, lt yel gy, occ blk & carb flks, tr disse pyr, sft, amor i/p, frm-hd, sbblky, sbfiss i/p, non calc, grd-Sltst i/p

SANDSTONE: lse v crs-gran < 3mm, ang, f-m, sbrnnd i/p, pr srt, rexldz qtz i/p, inter gran & lse nod pyr, 1% musc



flk pr inf por, no shw

SILTSTONE: pl yelsh brn, mod hd, v f trnsp qtz, v f mic, sbbly-sbfiss i/p

CLAYSTONE: wh, m lt gy-lt brnsh gy, lt yel gy, occ blk & carb flk, tr dissem pyr, sft & amor i/p, frm-hd, sbbly, sbfiss i/p, non calc, grd-Sltst i/p

SILTSTONE: pl yelsh brn, mod hd, v f trnsp qtz, v f mic, sbbly-sbfiss i/p

SANDSTONE: lse v crs-gran < 3mm, ang-sbang i/p, v f-f, sbrndd-rndd i/p, v pr srt, 1% inter gran & lse nod pyrite, por inf por

FLUORESCENCE:(Tr) pl yel mineral fluor, no cut.

COAL: blk, sbvit-tr vit, sbanthr, sbconch frac,1% loc w/ abd microxln pyr, sbbly-sbfiss & fiss i/p

SANDSTONE: lse v crs gran < 3mm, ang-sbang i/p, v f-f, sbrndd-rndd i/p, v pr srt, 1% inter gran & lse nod pyrite, por inf por

FLUORESCENCE:(Tr) pl yel mineral fluor, no cut.

SANDSTONE: lse v crs-gran < 3mm, ang-sbang i/p, v f-f, sbrndd-rndd i/p, v pr srt, 1% inter gran & lse nod pyrite, por inf por

FLUORESCENCE:(Tr) pl yel mineral fluor, no cut.

SILTSTONE: pl yelsh brn, mod hd, v f trnsp qtz, v f mic, sbbly-sbfiss i/p

SANDSTONE: lse sd; trnsp-trnsl, v f-m & v crs i/p, sbrndd-rndd, ang i/p, mod-pr srt, 1% lse musc flk, pr-fr inf por

FLUORESCENCE:(Tr) pl yel mineral fluor, no cut.

CLAYSTONE: m lt gy-m gy, dk gy i/p, yel gy- wh i/p, occ blk & carb flk thru, tr dissem pyr, sft & amorp-frm, non calc, loc v f sd, grd-Sltst i/p

COAL: blk, sb vit, sb anthr, sb conch frac, 1% loc w abd microxln ply, sbbly-sbfiss

SANDSTONE: lse sd; trnsp-trnsl, v f-m & v crs i/p, sbrndd-rndd, ang i/p, mod-pr srt, 1% lse musc flk, 1% lse v crs-gran crpxln pyr, pr-fr inf por

FLUORESCENCE:(Tr) pl yel mineral fluor, no cut.

CLAYSTONE: wh, m ly gy-m gy, dk gy i/p, yel gy i/p, occ blk & carb flk thru, tr dissem pyr, sft & amorp-frm, non calc, loc w v f sd, grd-Sltst i/p

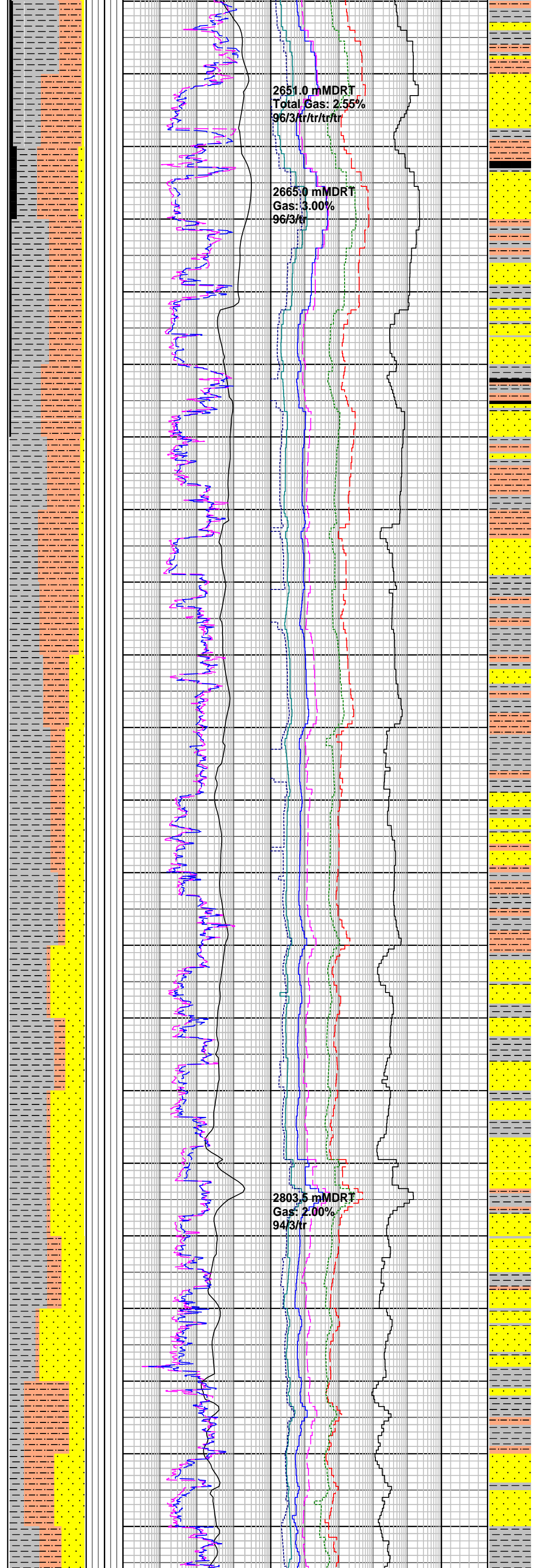
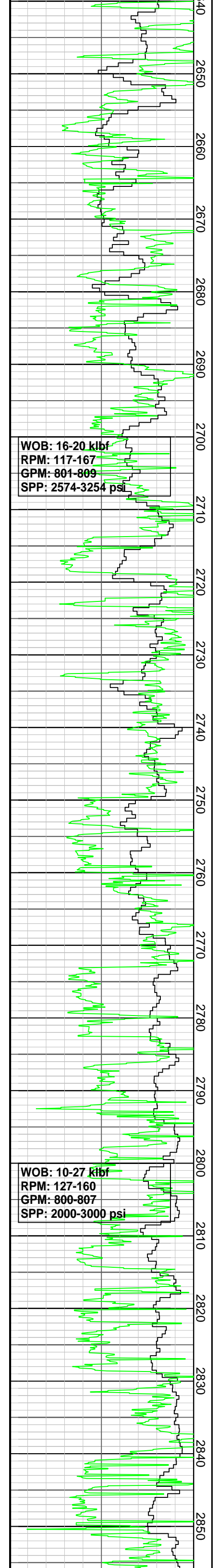
COAL: blk, sb vit, sb anthr, sb conch frac, 1% loc w abd microxln ply, sbbly-sbfiss

2500.0 mMDRT
Total Gas: 0.4173%
91/6/2/tr/tr/tr

2514.0 mMDRT
Total Gas: 0.4703%
94/4/1/tr/tr/tr

2555.0 mMDRT
Total Gas: 0.2823%
91/5/2/tr/tr/tr

2623.0 mMDRT
Total Gas: 1.06%
96/3/2/tr/tr/tr



- COAL: blk, sb vit, sb anthr, sb conch frac, 1% loc w abd microxln ply, sbblky-sbfiss
- SANDSTONE: lse sd as above, sd agg; wh-pl yelsh or, fri, f-m, sbang, mod srt, tr loc v f blk carb flk, arg mtrx, inf sil cmt i/p, pr-fr por
- COAL: blk, sb vit, sb anthr, sb conch frac, 1% loc abd microxln ply, sbblky-sbfiss
- SILTSTONE: dk yelsh brn-brnsh gy, m gy i/p, frm-hd, comm blk flk-thn strk, 1% m biot flk, 1% v f sd, sbblky-sbfiss i/p, grd-v f Sst i/p, occ wh-gy Sh, hd, brit
- COAL: blk, sb vit, sb anthr, sb conch frac, 1% loc w abd microxln ply, sbblky-sbfiss
- SANDSTONE: lse sd, trnsp-trnsl, vf-m & v crs i/p, sbrndd-rndd, ang i/p, mod - prly srt, 1% lse Musc flk, 1% lse v crs-gran crpxln pyr, pr-fr inf por; sd agg as above.
- CLAYSTONE: wh, m lt gy - m gy, dk gy i/p, yel gy i/p, occ blk & carb spks thru, tr dis pyr, sft & amor - fm, non calc, loc w v f sd, grd-Sltst i/p
- SANDSTONE: olv gy, v lt gy-yelsh gy agg, trnsp-trnsl, v f-m gr, wl rnd-sbang, mod wl srt, fri-com lse, olv gy slty mtx, grd to slty Sst, tr v crs rexldz qtz, pr-gd vis por, tr fl
- FLUORESCENCE: (1%) dull to mod bri yel nat fluor, slow, dull, grn wh crsh cut
- SANDSTONE: olv gy, v lt gy-yelsh gy agg, trnsp-trnsl, v f-m gr, wl rnd-sbang, mod wl srt, fri-com lse, olv gy slty mtx, grd to slty Sst, tr v crs rexldz qtz, pr-gd vis por, tr fl
- FLUORESCENCE: (1%) dull to mod bri yel nat fluor, slow, dull, grn wh crsh cut
- CLAYSTONE: m dk gy - gysh blk, brnsh blk, carb, com dissem pyr, slty i/p
- SANDSTONE: olv gy agg, trnsp, trnsl, qtz, com v f-f grn fri agg, rnd-sbang, mod wl srt, v f-m fri agg lse qtz, olv gy slty mtrx i/p, wh arg mtrx i/p, i/p, wk - hd sil cmt, carb i/p, tr pyr, no shw
- SILTSTONE: lt olv gy - olv gy, brnsh gy, carb mat i/p, sdy i/p, hd, r v hd, sbblky, sbfiss
- SANDSTONE: olv gy agg, trnsp, trnsl, qtz, com v f - f grn, rnd - sbang, mod wl srt, v f - m fri agg lse qtz i/p, olv gy slty mtrx i/p, wh arg mtrx i/p, wk - hd sil cmt, carb i/p, tr pyr, no shw
- CLAYSTONE: m dk gy - gysh blk, brnsh blk, gen more carb, com dissem pyr, slty i/p

