



Company : Beach Petroleum Ltd

Well : Fermat-1

Interval : 68.00 - 3593.02 meters

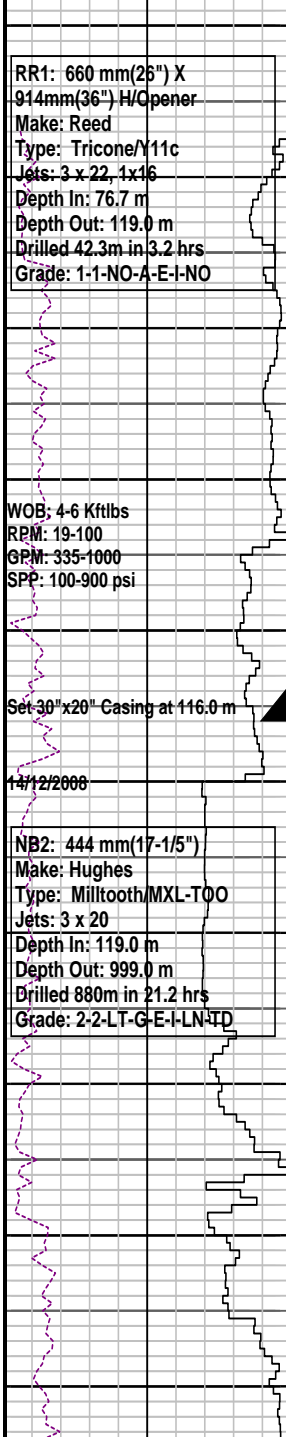
Created : 06/Jan/2009 8:29:28 PM



INTEQ

### FORMATION EVALUATION LOG

DRILLING PARAM		MD meters	Oil Show	LITHOLOGY %	CORE	TOTAL GAS	CHROMATOGRAPH	Calcmetry	Lithology Description
ROP (m/hr)						Total Gas (unit)	Methane ppm		
200	160	1:500	P F G			50   100   150   200   250	100000		
WEIGHT ON BIT (klbf)						1	Ethane ppm		
10	20						1		
	30						1		
	40						1		
	50						1		
							1		
							1		
							1		
							1		



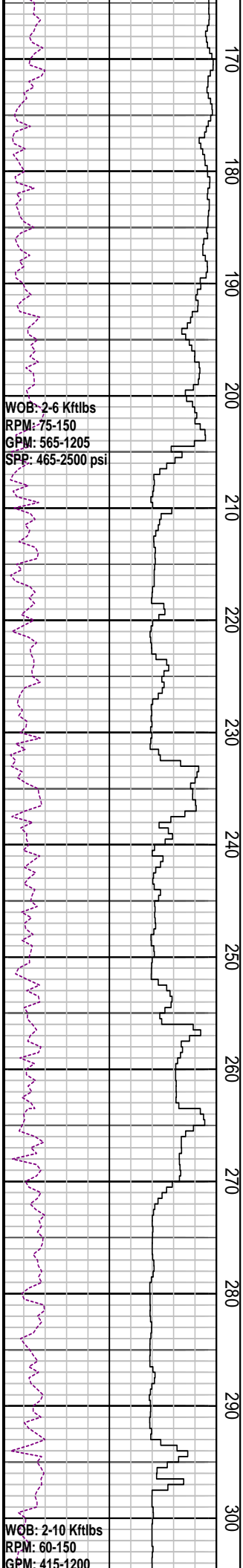
70									
80									
90									
100									
110									
120									
130									
140									
150									
160									

Spud Fermat-1 @ 00:00 hrs on 14-Dec-2008

RT-MSL: 38.0 mMDRT  
 Water Depth: 38.7 mMDRT  
 RT-Sea Bed 76.7 mMDRT

Drill 914mm (36") hole with SW and Hi-Vis Sweeps  
 Returns to seabed

Drill 444mm (17-1/2") hole with SW and Hi-Vis Sweep  
 Returns to seabed from 119m-999m



170  
180  
190  
200  
210  
220  
230  
240  
250  
260  
270  
280  
290  
300

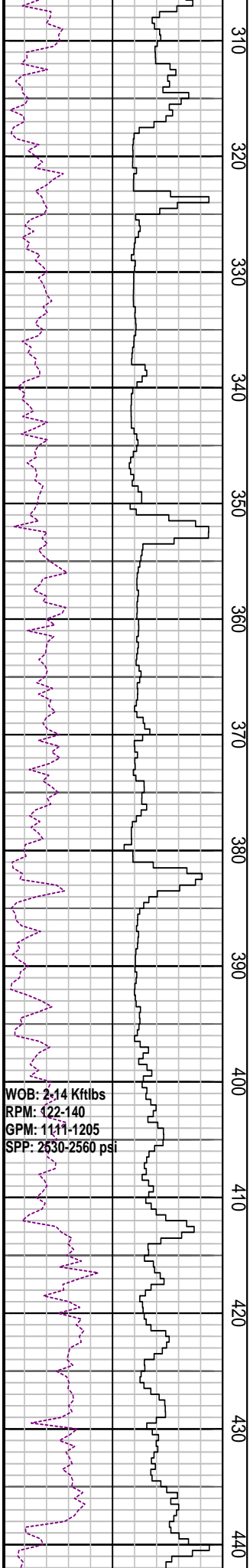
MD: 167.75m      Inc: 1.24°  
TVD: 167.74m      Azi: 1.78°

MD: 197.16m      Inc: 0.28°  
TVD: 197.14m      Azi: 58.77°

MD: 256.53m      Inc: 0.60°  
TVD: 256.51m      Azi: 153.58°

MD: 286.11m      Inc: 2.77°  
TVD: 286.08m      Azi: 188.85°

SPP: 2480-2500 psi



310  
320  
330  
340  
350  
360  
370  
380  
390  
400  
410  
420  
430  
440

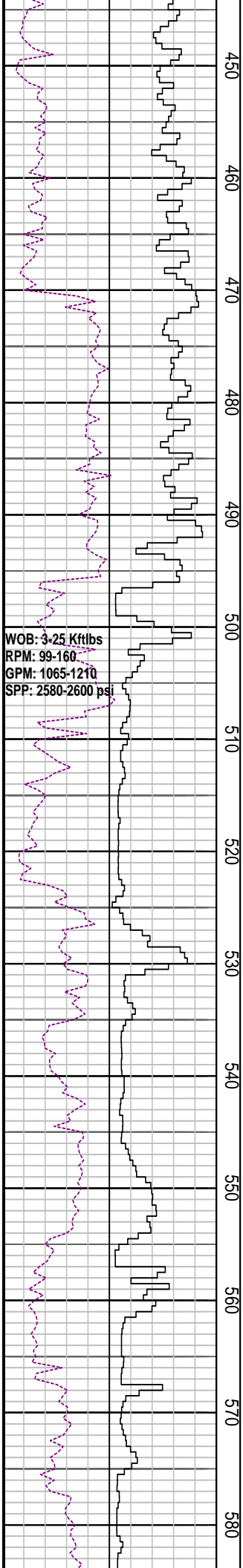
MD: 315.55m    Inc: 1.66°  
TVD: 315.5m    Azi: 227.88°

MD: 345.27m    Inc: 0.27°  
TVD: 345.21m    Azi: 15.5°

MD: 374.62m    Inc: 0.25°  
TVD: 374.56m    Azi: 25.51°

WOB: 2.14 Kftlbs  
RPM: 122-140  
GPM: 1111-1205  
SPP: 2530-2560 psi

MD: 404.16m    Inc: 1.88°  
TVD: 404.10m    Azi: 211.9°



450  
460  
470  
480  
490  
500  
510  
520  
530  
540  
550  
560  
570  
580

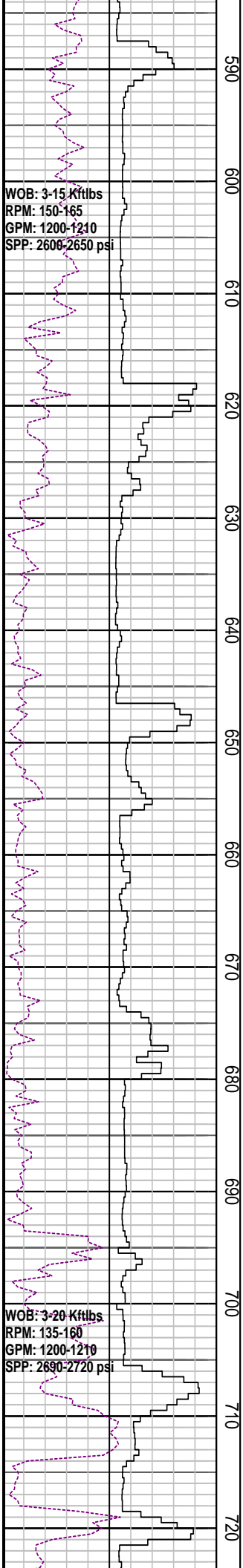
MD: 463.95m Inc: 0.32°  
 TVD: 463.88m Azi: 269.03°

MD: 493.39m Inc: 0.43°  
 TVD: 493.32m Azi: 249.6°

MD: 523.07m Inc: 0.44°  
 TVD: 523.00m Azi: 347.74°

MD: 552.74m Inc: 0.22°  
 TVD: 552.67m Azi: 270.06°

MD: 582.42m Inc: 0.09°



WOB: 3-15 Kftlbs  
RPM: 150-165  
GPM: 1200-1210  
SPP: 2600-2650 psi

WOB: 3-20 Kftlbs  
RPM: 135-160  
GPM: 1200-1210  
SPP: 2690-2720 psi

590  
600  
610  
620  
630  
640  
650  
660  
670  
680  
690  
700  
710  
720

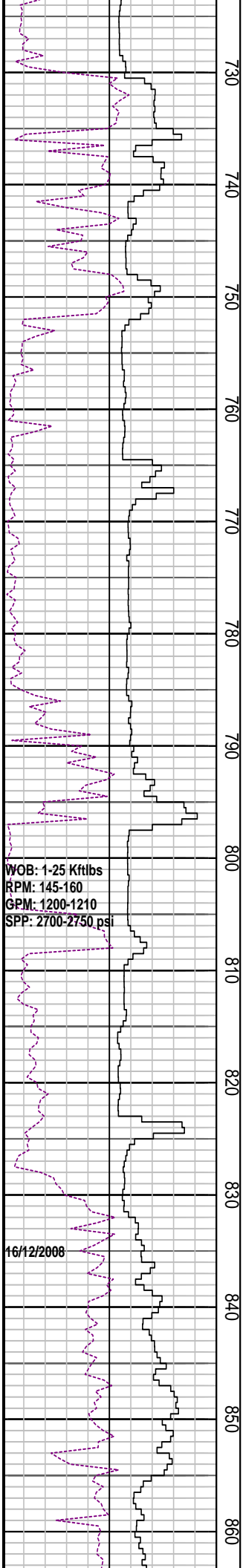
TVD: 582.35m Azi: 29.68°

MD: 611.99m Inc: 0.51°  
TVD: 611.92m Azi: 339.54°

MD: 641.4m Inc: 0.19°  
TVD: 641.32m Azi: 327.69°

MD: 670.88m Inc: 0.49°  
TVD: 670.80m Azi: 288.55°

MD: 700.49m Inc: 0.33°  
TVD: 700.41m Azi: 247.33°



WOB: 1-25 Kftlbs  
 RPM: 145-160  
 GPM: 1200-1210  
 SPP: 2700-2750 psi

16/12/2008

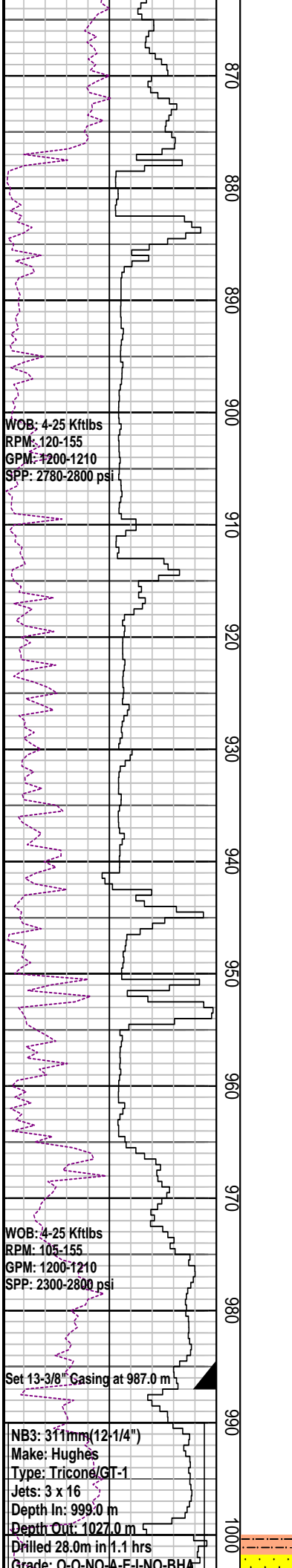
MD: 729.55m	Inc: 0.46°
TVD: 729.47m	Azi: 275.90°

MD: 759.18m	Inc: 0.36°
TVD: 759.10m	Azi: 241.87°

MD: 788.76m	Inc: 0.65°
TVD: 788.68m	Azi: 163.00°

MD: 818.32m	Inc: 0.12°
TVD: 818.24m	Azi: 122.27°

MD: 848.13m	Inc: 0.24°
TVD: 848.05m	Azi: 67.63°



WOB: 4-25 Kftlbs  
 RPM: 120-155  
 GPM: 1200-1210  
 SPP: 2780-2800 psi

WOB: 4-25 Kftlbs  
 RPM: 105-155  
 GPM: 1200-1210  
 SPP: 2300-2800 psi

Set 13-3/8" Casing at 987.0 m

NB3: 311mm(12-1/4")  
 Make: Hughes  
 Type: Tricone/GT-1  
 Jets: 3 x 16  
 Depth In: 999.0 m  
 Depth Out: 1027.0 m  
 Drilled 28.0m in 1.1 hrs  
 Grade: O-O-NO-A-F-I-NO-RHA

870  
880  
890  
900  
910  
920  
930  
940  
950  
960  
970  
980  
990  
1000

MD: 877.69m Inc: 0.5°  
 TVD: 877.61m Azi: 112.18°

MD: 906.92m Inc: 0.33°  
 TVD: 906.84m Azi: 214.11

MD: 936.44m Inc: 1.52°  
 TVD: 936.35m Azi: 212.28°

MD: 966.55m Inc: 2.74°  
 TVD: 966.44m Azi: 216.55°

MW: 9.3 ppg FV: 180  
 PV: 17 Gel: 11/14/16  
 YP: 26 pH: 10.5

MD: 990.90m Inc: 2.28°  
 TVD: 990.8m Azi: 226.38°

Drill 311m (12 1/2") hole with KCL  
 Polymer mud systems

FIT @ 987.0 m with 9.3 ppg

EMW: 15.0 ppg @ 960 psi

SANDSTONE: clr-trnsl, lt smky gy, fros, w/ mnr yel-wh mky qtz & mnr musc, f-gran, sbang-sbrndd, p srt (bimodal), nod & dissem pyr, disagg, n fluor

SILTSTONE: ol gy, brn-gy, mod calc, com pyr, com lit frag, frm-hd, blkysbfnis

MW: 9.5 ppg FV: 153  
PV: 30 Gel: 10/15/17  
YP: 42 pH: 9.5

MD: 1023.76m Inc: 2.63°  
TVD: 1023.6m Azi: 224.84°

SILTSTONE: ol gy-brn -lt gy, mod calc, com pyr, com lit frag, sft-v hd, blkysbfnis

CLAYSTONE: ol gy-mod ol brn, mod calc, sli slty, tr wh calc spar incl, tr carb mat, sft, mass-amor

MD: 1053.62m Inc: 2.63°  
TVD: 1053.4m Azi: 224.67°

SANDSTONE: clr-transl, lt smky gy, fros, w/ mod abd fspr, f-v crs, sbang-sbrndd, p srt (binodal), nod & dissem pyr, tr musc, disagg w/ mnr pyr cmt f-m sd agg, n fluor

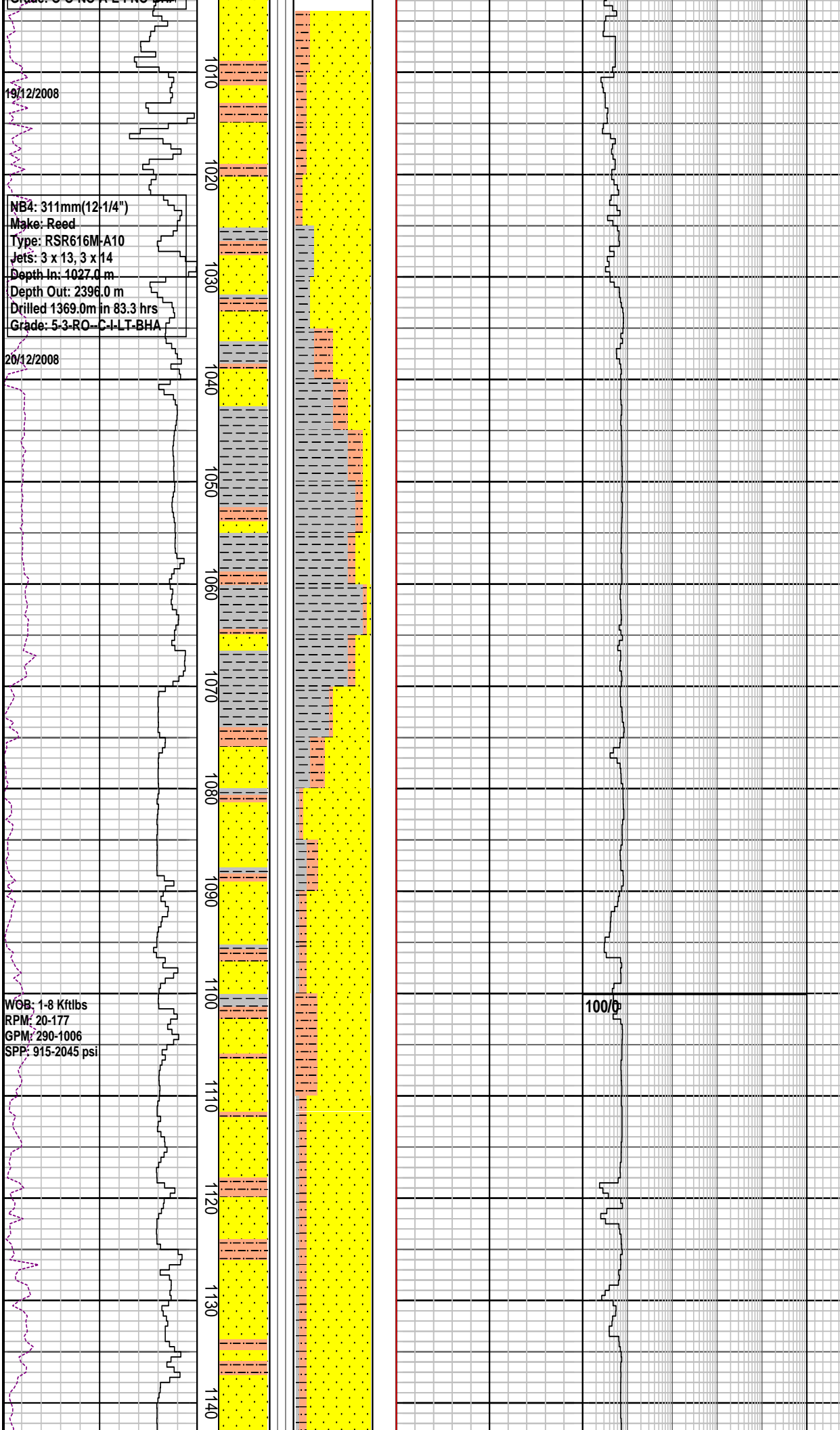
MD: 1083.09m Inc: 2.60°  
TVD: 1082.9m Azi: 225.86°

SANDSTONE: clr-transl, lt smky gy, fros, w/ mod abd fspr, f-v crs, sbang-sbrndd, p srt (binodal), nod & dissem pyr, tr musc, disagg w/ mnr pyr cmt, f-m sd agg, n fluor

SILTSTONE: dk gy-ol gy, sli calc I.P. loc v arg grd slty Cist I.P. sli aren, micr mic, tr carb spks, tr lit frag

MD: 1112.27m Inc: 2.75°  
TVD: 1112.0m Azi: 224.69°

MD: 1141.27m Inc: 2.61°



NB4: 311mm(12-1/4")  
Make: Reed  
Type: RSR616M-A10  
Jets: 3 x 13, 3 x 14  
Depth In: 1027.0 m  
Depth Out: 2396.0 m  
Drilled 1369.0m in 83.3 hrs  
Grade: 5-3-RO-C-I-LT-BHA

19/12/2008

20/12/2008

WOB: 1-8 Kftlbs  
RPM: 20-177  
GPM: 290-1006  
SPP: 915-2045 psi

100/0



TVD: 1141.4m Azi: 223.95°

CLAYSTONE: dk gy-brn blk, mod slty, sli calc I.P. com carb/c frag, micr mic, tr musc, sft-plas, mass-blky I.P.

MD: 1171.39m Inc: 2.66°  
TVD: 1171.1m Azi: 223.80°

SANDSTONE: clr-trnsl, fros, smky gy, f-m gr, mnr crs, tr v crs, sbang-sbrndd, p-mod srt, arg mtrx I.P. disse & nod pyr, mnr carb mat, tr Fe stn qtz, fri-pred disagg, p-f por

MD: 1200.78m Inc: 2.64°  
TVD: 1200.4m Azi: 223.80°

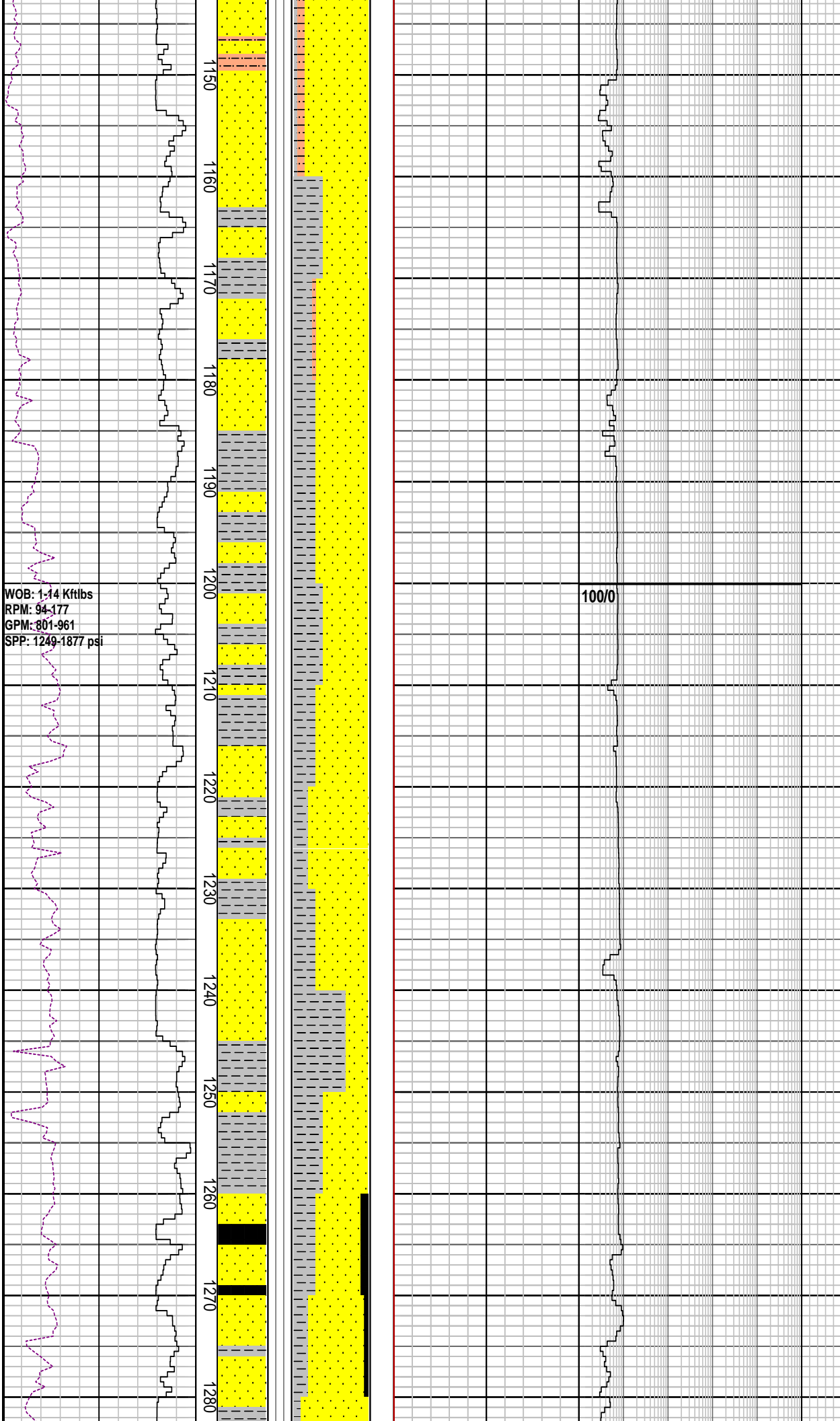
CLAYSTONE: m-dk gy, mod slty, sli calc I.P. com pyr, mnr carb spks, sft-plas, mass-blky I.P.

MD: 1230.79m Inc: 2.72°  
TVD: 1230.4m Azi: 225.15°

SANDSTONE: clr-trnsl, fros, smky gy, f-m gr, mnr crs, tr v crs, sbang-sbrndd, p-mod srt, arg mtrx I.P. disse & nod pyr, mnr carb mat, tr Fe stn qtz, f por, n fluor

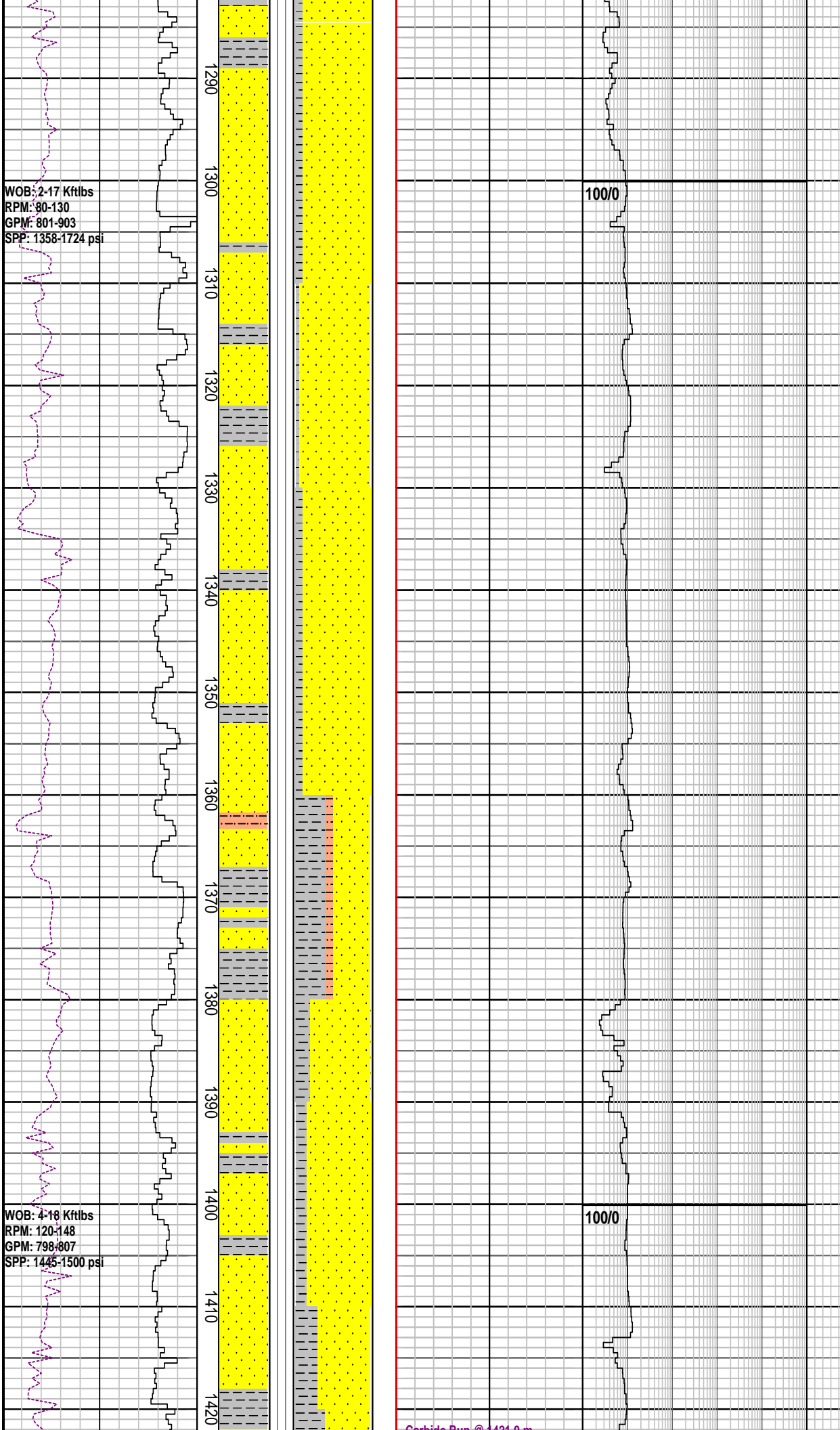
MW: 9.65 ppg FV: 74  
PV: 23 Gel: 9/14/15  
YP: 27 pH: 8.5

COAL: blk, sbbit, dll-sbvit lstr, plty fract, brit, blk-pty I.P.



WOB: 2-17 Kftlbs  
RPM: 80-130  
GPM: 801-903  
SPP: 1358-1724 psi

WOB: 4-18 Kftlbs  
RPM: 120-148  
GPM: 798-807  
SPP: 1445-1500 psi



CLAYSTONE: m-dk gy, mod slty, sli cal  
I.P. com pyr, mnr carb spks, sft-plas,  
mass-blky I.P.

MD: 1288.88m	Inc: 2.77°
TVD: 1288.4m	Azi: 225.56°

SANDSTONE: clr-trnsl, fros, smky gy,  
m-crs gr, sbang-sbrnidd, mod srt, arg  
mtrx I.P, disse pyr cmt & nod pyr, com  
carb mat, micr mic, tr Fe stn qtz, p por, n  
flour

MD: 1318.86m	Inc: 2.69°
TVD: 1318.4m	Azi: 226.89°

CLAYSTONE: dk gy-brn blk, mod slty  
grd to arg Slst I.P. mnr carb mat & carb  
micr lam, sft-plas, mass-amor

SANDSTONE: qtz, clr-trnsl, fros, smky  
gy, m-crs gr, ang-sbrnidd, ridd I.P. mod  
srt, slty arg mtrx I.P. disse pyr cmt &  
nod pyr, tr carb mat, micr mic, tr fspr, p  
por, n flour

CLAYSTONE: dk gy-brn blk, sli slty, mnr  
carb mat & carb micr lam, sft-plas,  
mass-amor

SILTSTONE: dk gy-brn gy, mod calc, loc  
v arg grd slty Clst I.P. micr mic, tr carb  
spks, tr lit frag, sft, blk

SANDSTONE: qtz, clr-trnsl, fros, smky  
gy, m-crs gr, sbang-sbrnidd, ridd I.P.  
mod srt, slty arg mtrx I.P. tr nod pyr, tr  
musc, tr carb mat, micr mic, tr fspr, p  
por, n flour

CLAYSTONE: dk gy-brn gy, sli slty, gd to  
Slst, mnr carb mat & carb micr lam,  
sft-plas, mass-amor

MD: 1407.48m	Inc: 2.91°
TVD: 1406.9m	Azi: 229.04°

CLAYSTONE: dk gy-dk brn gy, mod-v

Carbide Run @ 421.0 m  
 Actual: 4825 strks  
 Theoretical: 4811 strks  
 Avg Hole Diameter : 12.29"  
 Carbide Gas : 18 units

silty arg mtrx, gd to Slst I.P. mnr carl  
 mat & carb micr lam, sft-plas,  
 mass-amor

MD: 1436.37m Inc: 2.94°  
 TVD: 1435.7m Azi: 228.54°

MW: 9.6 ppg FV: 76  
 PV: 12 Gel: 9/14/17  
 YP: 49 pH: 9.5

**SILTSTONE:** dk gy-brn gy, mod calc, loc  
 arg mtrx, grd slyt Clst I.P, micr mic, tr  
 carb spks, tr lit frag, sft, blkly

MD: 1465.90m Inc: 3.02°  
 TVD: 1465.2m Azi: 227.97°

**CLAYSTONE:** dk gy- brn gy, mod calc,  
 sily arg mtrx, gd to Slst I.P. mnr carb  
 mat & carb micr lam, sft-plas,  
 mass-amor

**SANDSTONE:** qtz, clr-trnsl, smky gy,  
 f-crs gr, ang-sbrnnd, rndd I.P. mod srt,  
 sily arg mtrx I.P. tr musc, tr carb mat,  
 micr mic, p por, n fluor

MD: 1495.44m Inc: 3.02°  
 TVD: 1494.2m Azi: 227.27°

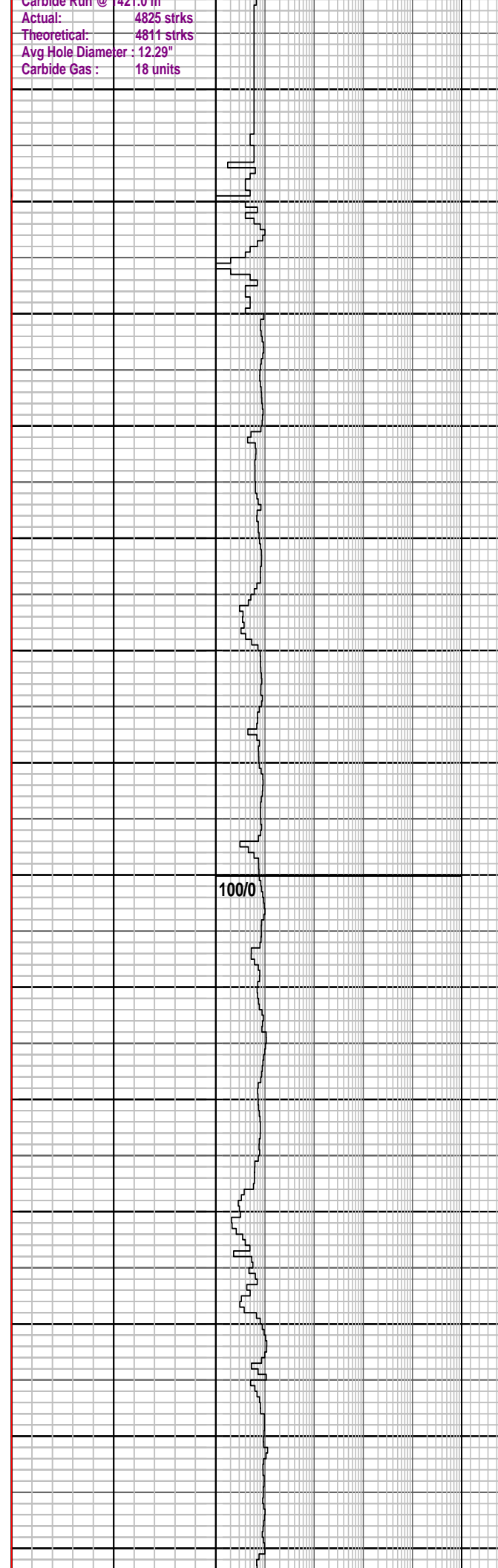
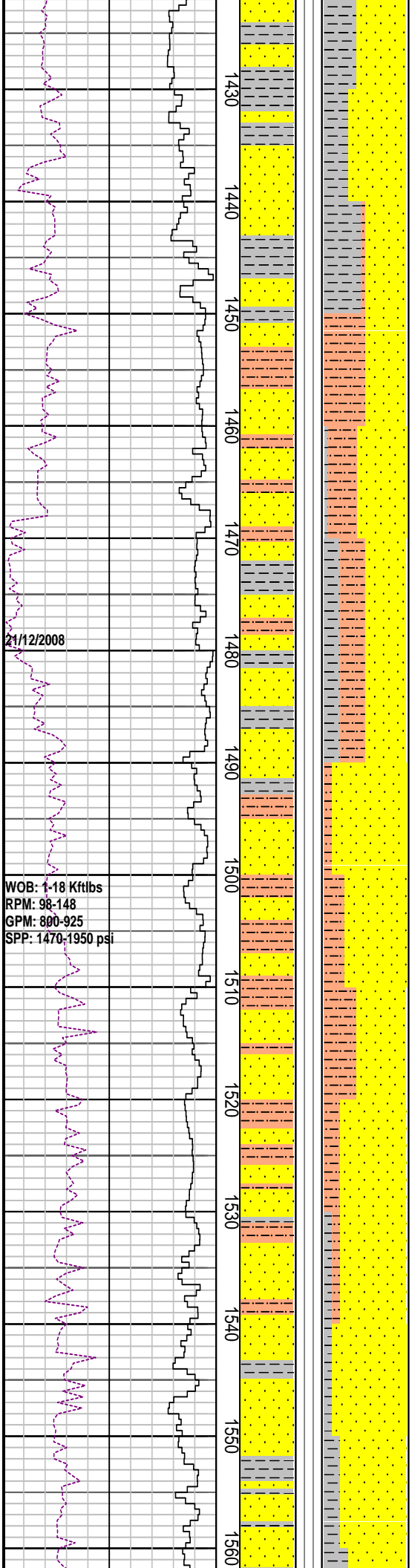
**SILTSTONE:** dk gy- lt brn gy, mod calc,  
 loc arg mtrx, micr mic, tr carb spks, tr lit  
 frag, sft, blkly

**SANDSTONE:** qtz, clr-trnsl, lt gy, v f-f gr,  
 ang-sbrnnd, mod srt, sily arg mtrx I.P. tr  
 carb mat, micr mic, p por, n fluor

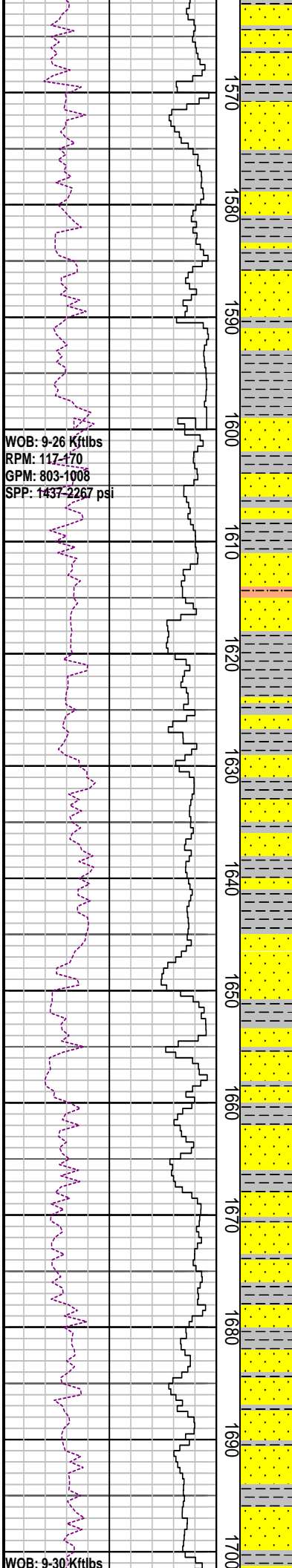
MD: 1525.13m Inc: 3.06°  
 TVD: 1524.4m Azi: 228.31°

**SANDSTONE:** qtz, clr-trnsl, fros, f-m gr,  
 mnr v crs, sbang-sbrnnd, mod srt, wk  
 calc cmt I.P. tr nod pyr, tr glau, com  
 carb/c frag, occ crs mlky flt, occ rd lit  
 frag, disagg, f por

MD: 1554.71m Inc: 3.12°  
 TVD: 1553.9m Azi: 227.55°



1430  
1440  
1450  
1460  
1470  
1480  
1490  
1500  
1510  
1520  
1530  
1540  
1550  
1560



WOB: 9-26 Kftlbs  
 RPM: 117-170  
 GPM: 803-1008  
 SPP: 1437-2267 psi

WOB: 9-30 Kftlbs

1570  
1580  
1590  
1600  
1610  
1620  
1630  
1640  
1650  
1660  
1670  
1680  
1690  
1700

100/0

100/0

**CLAYSTONE:** brnsh gy-olv gry, yel gy I.P. loc v sity grd to arg Siltst I.P. sli aren I.P. tr lit frag, com carb mat, micr mic, sft-plas, mass-blky

MD: 1584.40m	Inc: 3.16°
TVD: 1583.6m	Azi: 227.33°

**SANDSTONE:** qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc mod stg dolcalc cmt, tr nod pyr, com carb mat, tr crs mlky flt, tr lit frag, disagg, fr por, n fluor

**SILTSTONE:** pl yel brn, mod sil, mod arg, tr carb frag, tr lit frag, tr musc, sli chlor, hd, blk

MD: 1614.18m	Inc: 3.15°
TVD: 1613.3m	Azi: 227.26°

**CLAYSTONE:** m dk gy-dk gy, v slty grd to arg Siltst I.P. sli aren I.P. tr lit frag, mnr carb mat, micr mic, sft-plas, mass-blky

MD: 1643.45m	Inc: 3.22°
TVD: 1642.5m	Azi: 227.15°

**SANDSTONE:** qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc stg dol/sil cmt, tr nod pyr, com carb mat, mnr crs mlky flt, mod hd agg, disagg, v p-f por, n fluor

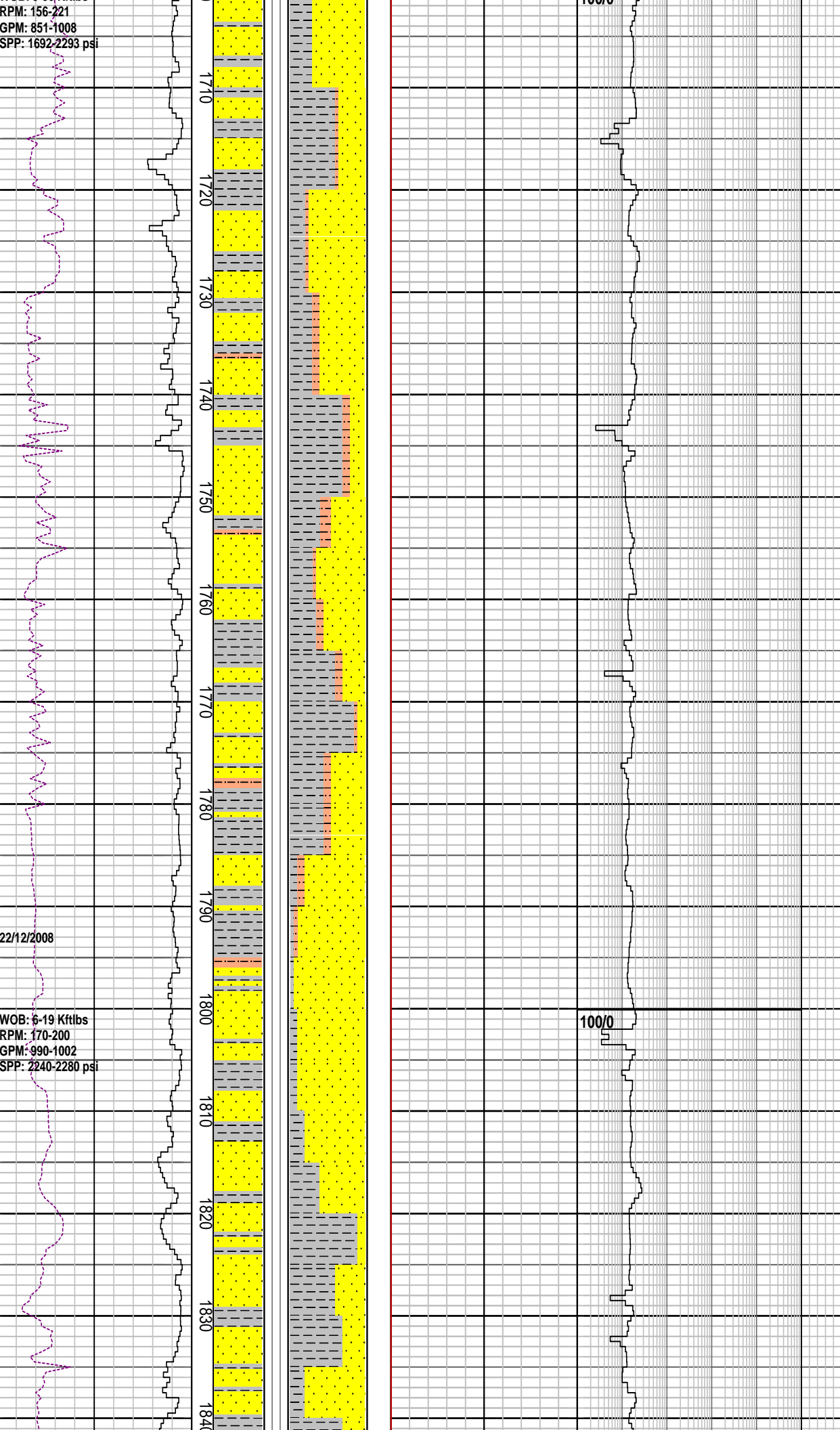
**CLAYSTONE:** m dk gy-dk gy, slty, sli aren I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

RPM: 156-221  
GPM: 851-1008  
SPP: 1692-2293 psi

22/12/2008

WOB: 6-19 Kftlbs  
RPM: 170-200  
GPM: 990-1002  
SPP: 2240-2280 psi

1710  
1720  
1730  
1740  
1750  
1760  
1770  
1780  
1790  
1800  
1810  
1820  
1830  
1840



MW: 9.6 ppg      FV: 69  
PV: 21            Gel: 10/14/16  
YP: 35            pH: 9.0

SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc stg dolcalc cmt, tr nod pyr, com carb mat, mnr crs mlky flt, tr lit frag, disagg, f por, n fluor

MD: 1732.53m      Inc: 3.23°  
TVD: 1731.5m      Azi: 229.06°

MW: 9.65 ppg      FV: 76  
PV: 21            Gel: 10/14/17  
YP: 34            pH: 9.0

SANDSTONE: qtz, clr-trnsl, fros, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc cmt, occ pyr cmt, tr m nod pyr, tr m mlky qtz fit, mnr hd dol cmt f agg, v p-f por, n fluor

MD: 1761.71m      Inc: 3.31°  
TVD: 1760.6m      Azi: 229.32°

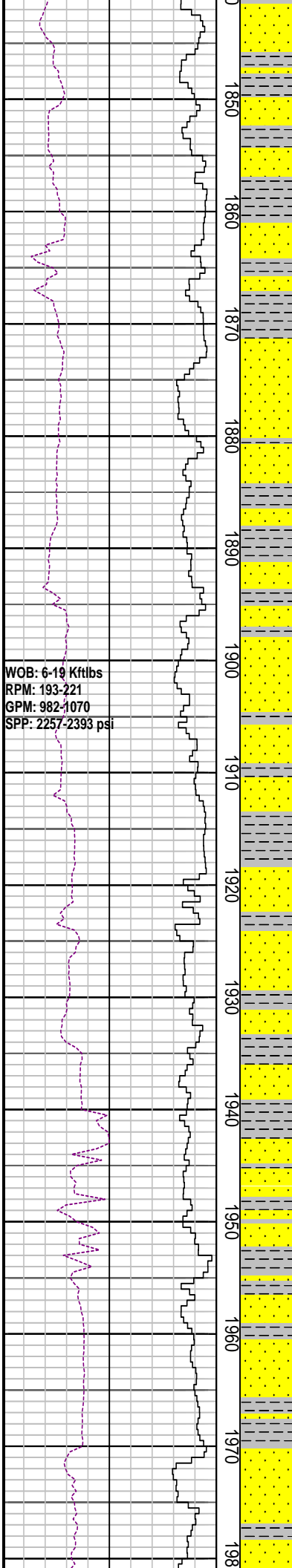
CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

MD: 1791.33m      Inc: 3.27°  
TVD: 1790.2m      Azi: 229.40

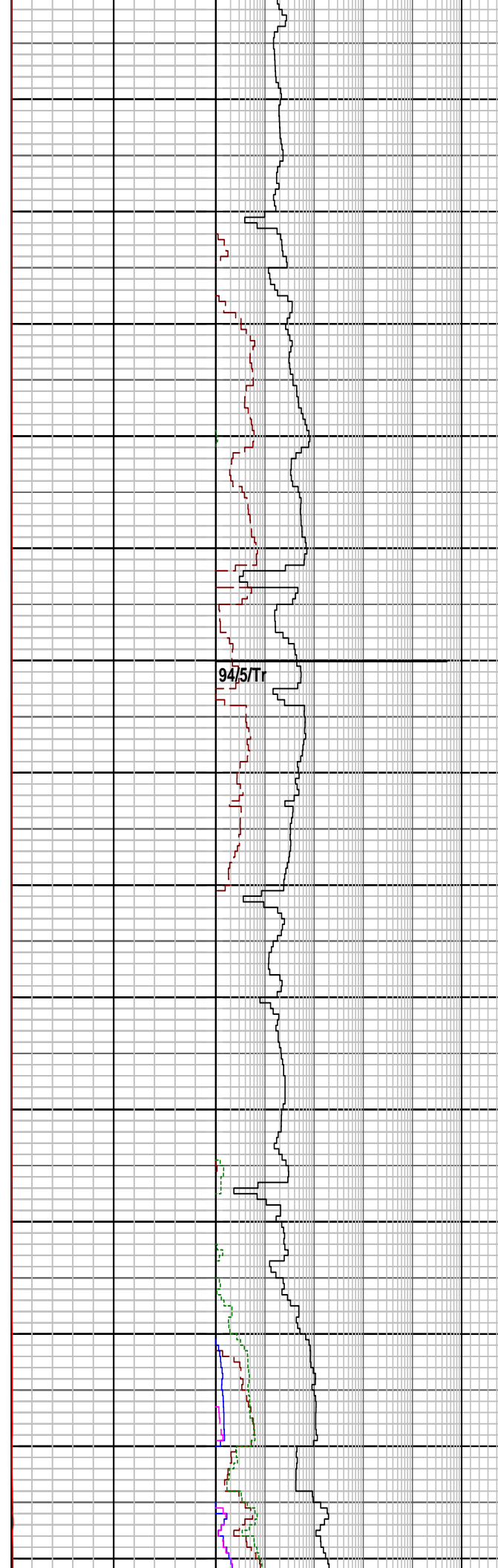
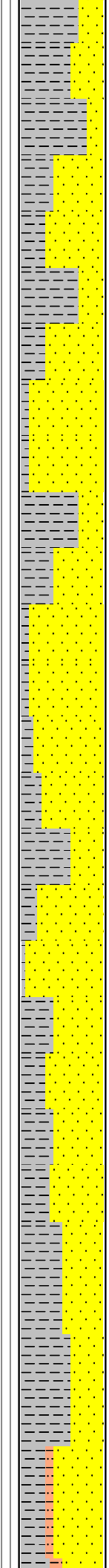
SANDSTONE: qtz, clr-trnsl, fros, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc cmt, occ pyr cmt, tr m nod pyr, tr m mlky qtz fit, mnr hd dol cmt f agg, v p-f por, n fluor

MD: 1820.98m      Inc: 3.35°  
TVD: 1819.8m      Azi: 229.44°

CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky



WOB: 6-19 Kftlbs  
 RPM: 193-221  
 GPM: 982-1070  
 SPP: 2257-2393 psi



CLAYSTONE: m dk gy-olv blk, slty grd to Arg Sltst I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, f-m gr, sbrndd-rnnd, wl srt, loc dolcalc cmt, tr nod pyr, mnr kao, tr m mlky qtz flt, disagg p-f por, n fluor

MD: 1880.19m	Inc: 3.46°
TVD: 1878.9m	Azi: 227.97°

CLAYSTONE: m dk gy-ol blk, slty grd to arg Sltst I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-f gr, com m gr, sbang-sbrndd, wl srt, loc dolcalc cmt, tr sil cmt, tr nod pyr, tr carb mat, tr Fe stn, tr f mlky qtz flt, disagg, p por, n fluor

MW: 9.7 ppg	FV: 52
PV: 15	Gel: 11/16/19
YP: 34	pH: 8.8

MD: 1939.47m	Inc: 3.51°
TVD: 1938.0m	Azi: 227.37°

CLAYSTONE: m dk gy-ol blk, slty grd to arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-m gr, mnr crs gr, sbang-sbrndd, wl srt, loc dolcalc cmt, tr stg sil cmt, tr nod & dissem pyr, com carb mat, tr Fe stn, tr f mlky qtz flt, disagg, tr f mlky qtz flt, disagg, f-g por, n fluor

WOB: 11-31 Kftlbs  
 RPM: 218-321  
 GPM: 1002-1261  
 SPP: 1618-2591 psi

WOB: 9-26 Kftlbs  
 RPM: 220-235  
 GPM: 1005-1020  
 SPP: 2200-2305 psi

23/12/2008

0  
1990  
2000  
2010  
2020  
2030  
2040  
2050  
2060  
2070  
2080  
2090  
2100  
2110  
2120

Carbide Run @ 982.0 m  
 Actual: 6500 strks  
 Theoretical: 6445 strks  
 Avg Hole Diameter : 12.35"  
 Carbide Gas : 30 units

Peak Gas: 10.2 units

90/4/4/1/1

88/7/3/2/Tr

85/8/4/1/Tr/Tr/Tr

CLAYSTONE: m dk gy- brn gy, slty grd to arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-m, ang-sbrndd f gr, mod-wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissem pyr, com carb mat, occ hd aggr, pred disagg, p-f por, n fluor

MD: 2028.16m	Inc: 3.39°
TVD: 2026.6m	Azi: 229.51°

CLAYSTONE: m dk gy- brn gy, slty grd to arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

MD: 2057.35m	Inc: 3.37°
TVD: 2055.7m	Azi: 231.70°

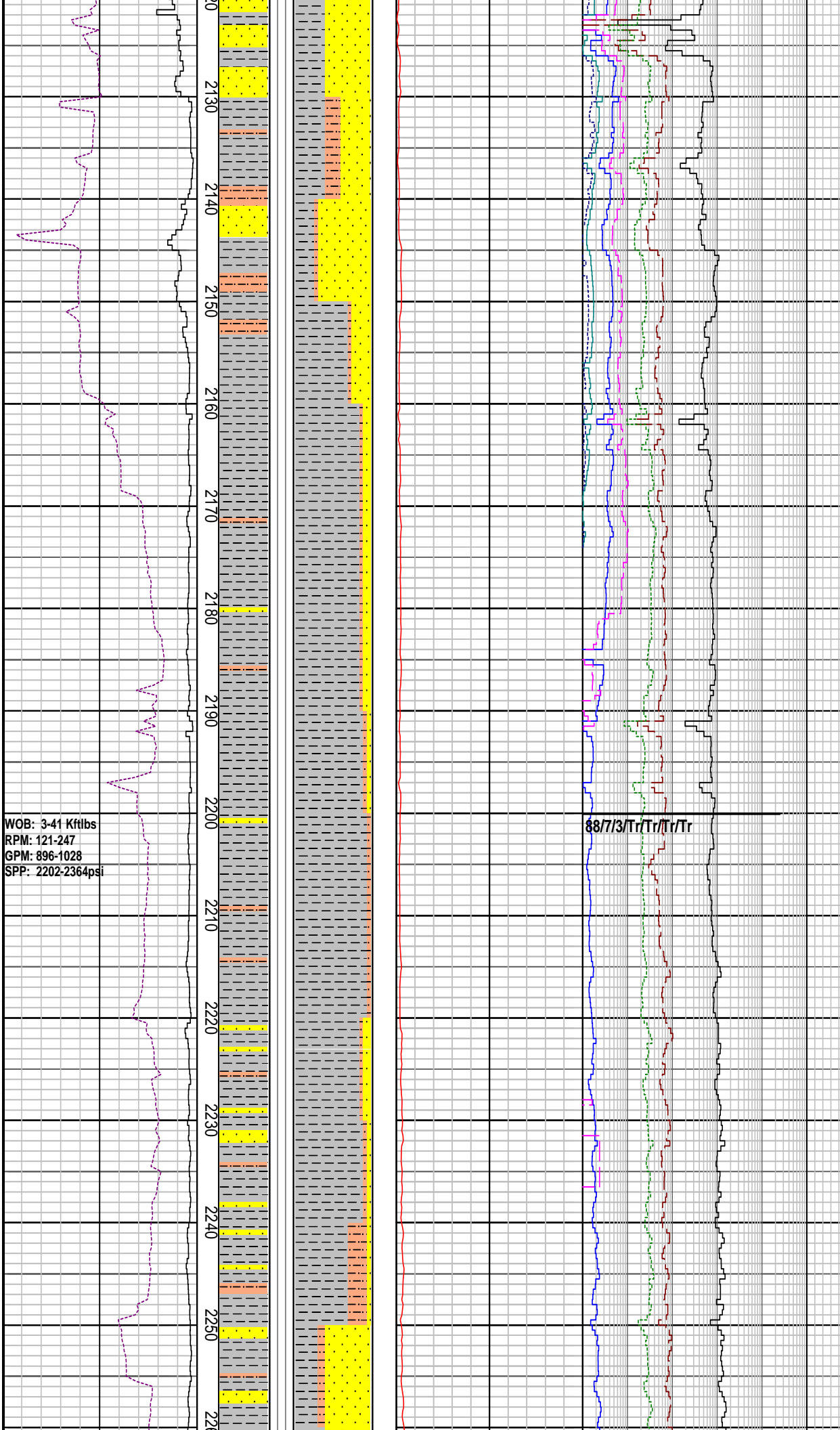
SANDSTONE: qtz, clr-trnsl, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissem pyr, com carb mat, tr Fe stn, occ hd aggr, pred disaggr, p-f por, n fluor

MD: 2086.92m	Inc: 3.34°
TVD: 2085.2m	Azi: 227.82°

MW: 9.7 ppg	FV: 53
PV: 13	Gel: 11/17/20
YP: 38	pH: 9.0

SANDSTONE: qtz, dull gy-lt yel brn, clr-trnsl, f-m crs, sbang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissem pyr, tr Fe stn, occ hd aggr, pred disaggr, p-f por, n fluor

MD: 2116.75m	Inc: 3.44°
TVD: 2115.0m	Azi: 227.04°



**SANDSTONE:** qtz, trnsp-trnsl, v f-m, sbang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr nod & dissep pyr, com carb mat, tr Fe stn, occ hd aggr, pred disaggr, p-f por, n fluor

MD: 2146.4m Inc: 3.29°  
 TVD: 2144.6m Azi: 227.47°

**SILTSTONE:** dk gy-blk, v hd, sbbkly-blky, splin, occ elong, fis I.P.

MD: 2175.52m Inc: 3.42°  
 TVD: 2173.2m Azi: 228.06°

**CLAYSTONE:** m dk gy-lt gy, slty grd to Arg Slst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

**SILTSTONE:** dk gy-blk, v hd, sbbkly-blky, splin, occ elong, fis I.P.

MW: 9.7 ppg FV: 49  
 PV: 14 Gel: 12/10/21  
 YP: 31 pH: 9.0

MD: 2235.0m Inc: 3.46°  
 TVD: 2233.0m Azi: 227.38°

**CLAYSTONE:** dk gy- m dk gy, sft- m hd, slty grd to arg Slst, sli calc, mnr carb spk, micr mic, mass-blky

MW: 9.7 ppg FV: 49  
 PV: 14 Gel: 11/17/20  
 YP: 34 pH: 9.0

**SANDSTONE:** smky qtz, trnsp-trnsl, v f gr, ang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr nod & dissep pyr, com carb mat



24/12/2008

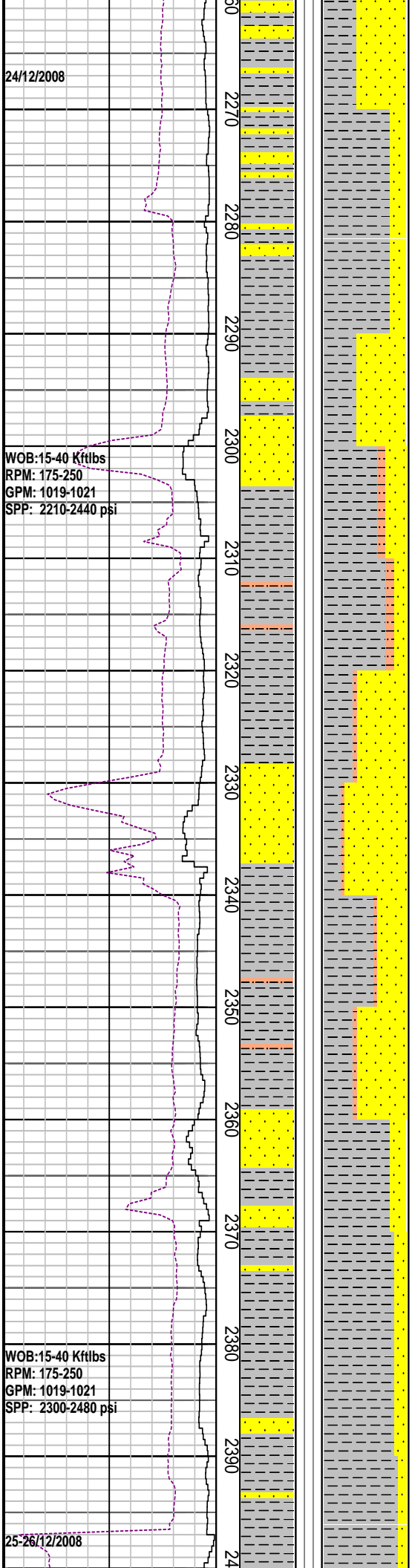
WOB:15-40 Kftlbs  
RPM: 175-250  
GPM: 1019-1021  
SPP: 2210-2440 psi

25-26/12/2008

WOB:15-40 Kftlbs  
RPM: 175-250  
GPM: 1019-1021  
SPP: 2300-2480 psi

2270  
2280  
2290  
2300  
2310  
2320  
2330  
2340  
2350  
2360  
2370  
2380  
2390

24



Peak Gas:11.7 units

92 / 5 / 2 / Tr / Tr / Tr / Tr

Peak Gas:13.8 units

91 / 6 / 2 / Tr / Tr

Peak Gas:31.5 units

95 / 3 / 1 / Tr / Tr

Peak Gas:22.0 units

95 / 3 / 1 / Tr / Tr / Tr / Tr

Peak Gas:22.5 units

92 / 4 / 2 / 1 / Tr

Peak Gas:11.7 units

91 / 5 / 2 / 1 / Tr / Tr / Tr / Tr

mod hd aggr, pred disaggr, p-f por, n fluor

MD: 2264.44m Inc: 3.46°  
TVD: 2262.0m Azi: 227.56°

SANDSTONE: smky qtz, trnsp-trnsl, v f gr, sbang-sbrnnd, p-wl srt, loc dolcalc/sil cmt, tr nod & disse pyr, com carb spks, mod hd aggr, pred disaggr, p-f por, n fluor

SILTSTONE: dk gy-blk, hd-v hd, sbbly-blky, splin, occ elong, fis (Shale), non calc

MD: 2323.6m Inc: 3.26°  
TVD: 2321.5m Azi: 226.76°

SANDSTONE: smky qtz, trnsp-trnsl, v f gr, occ m-crs gr, sbang-sbrnnd, mod-wl srt, loc dolcalc/sil cmt, occ arg, tr nod & disse pyr, com carb spks, mod hd aggr, pred disaggr, p-f por, n fluor

CLAYSTONE: pred m dk gy, occ m gy, sft- frm, m hd i.p., blkly-sbbly, v slty, grd to arg Slstst I.P. sli calc, mnr carb spk, micr mic

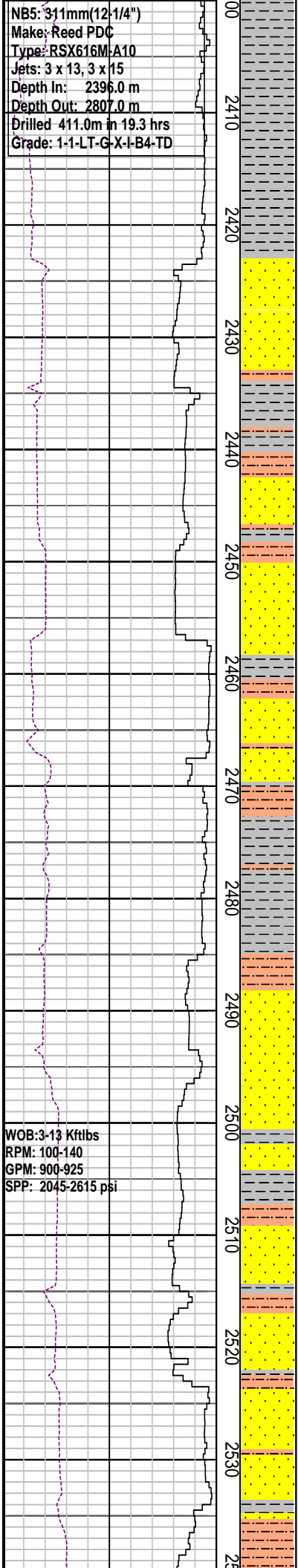
SANDSTONE: qtz, trnsp-trnsl, occ med gy, v f gr, occ m-crs gr, sbang-sbrnnd, mod srt, v slty, loc dolcalc/sil cmt, occ arg, tr nod & disse pyr, com carb spks, com hd aggr, pred dis

MD: 2382.7m Inc: 3.36°  
TVD: 2380.5m Azi: 228.47°

Trip for BHA @2396.0m  
Made up mud motor to correct angle.

NB5: 311mm(12-1/4")  
 Make: Reed PDC  
 Type: RSX616M-A10  
 Jets: 3 x 13, 3 x 15  
 Depth In: 2396.0 m  
 Depth Out: 2807.0 m  
 Drilled 411.0m in 19.3 hrs  
 Grade: 1-1-LT-G-X-I-B4-TD

WOB: 3-13 Kftlbs  
 RPM: 100-140  
 GPM: 900-925  
 SPP: 2045-2615 psi



Peak Gas: 48 units

MW: 9.8 ppg FV: 57  
 PV: 14 Gel: 11/17/23  
 YP: 32 pH: 8.5

MD: 2412.78m Inc: 2.64°  
 TVD: 2410.5m Azi: 231.04°

SANDSTONE: m gy-m dk gy, frm-hd, occ v hd, v f gr, sbang-sbrndd, mod srt, v slty, grdg to aren Sltst I.P., calc/sil cmt, arg com carb spks, tr mic, tr glauc, com hd agg, pred disag

MD: 24419m Inc: 1.53°  
 TVD: 2439.6m Azi: 213.64°

SILTSTONE: pred dk gy-blk, occ med gy, hd-v hd, sbbiky-blky, fis, grdg to Shale I.P., loc aren, com carb spks, calc, tr mic

SLIDE: 2455m-2465m

SLIDE: 2469m-2484m

MD: 2471.6m Inc: 0.59°  
 TVD: 2469.3m Azi: 128.12°

CLAYSTONE: dk gy-m dk gy, sft-frm, m hd I.P. blky-sbbiky, v slty mtrx, grdg to arg Sltst, sli calc, mnr carb spk, micr mic

MD: 2491.42m Inc: 1.38°  
 TVD: 2489.1m Azi: 68.51°

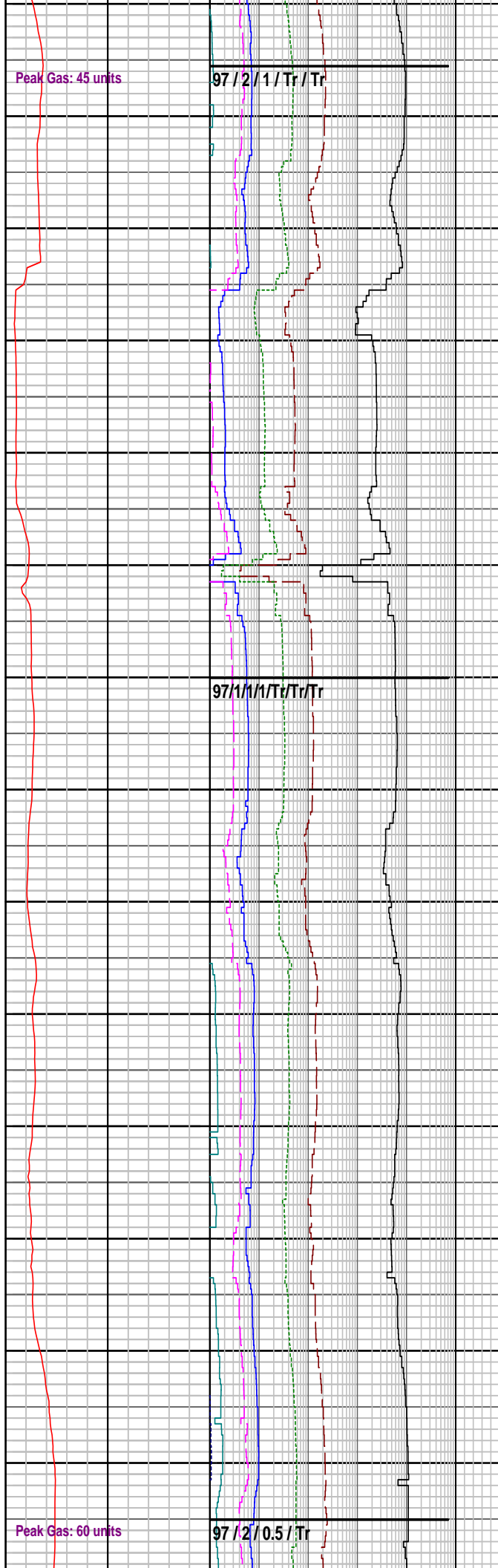
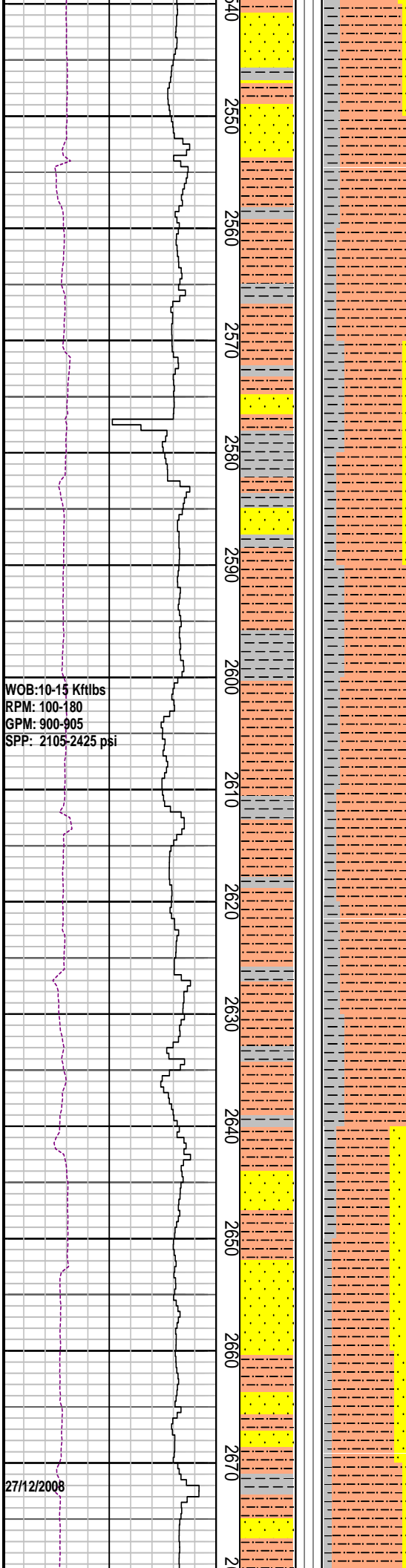
MD: 2500.84m Inc: 1.41°  
 TVD: 2498.6m Azi: 68.97°

SANDSTONE: m gy-m dk gy, frm-hd, v f gr, sbang-sbrndd, p-mod srt, v slty arg mtrx, grdg to aren Sltst I.P. calc/sil cmt, arg com carb spks, tr mic, tr glauc, com hd agg, pred disag

SLIDE: 2523m-2538m

MD: 2530.68m Inc: 2.33°  
 TVD: 2528.4m Azi: 71.51°

SILTSTONE: dk gy- lt gy, sft-frm, sbbiky-blky, fis, grdg to Shale I.P. loc



aren, com carb spks, calc, tr mic

SANDSTONE: m gy-m dk gy, v f gr, sbang-sbrndd, p-mod srt, v slty arg mtrx, grdg to aren Sltst I.P. arg com carb spks, tr mic, frm-hd, p por, n fluor

MD: 2589.92m Inc: 2.26°  
 TVD: 2587.6m Azi: 73.52

SILTSTONE: dk gy- blk, sft-frm, sbbkly-blky, fis, grdg to Shale I.P. loc aren, com carb spks, calc, tr mic

MW: 9.9 ppg FV: 48  
 PV: 16 Gel: 14/21/25  
 YP: 35 pH: 9.0

MD: 2648.85m Inc: 2.04°  
 TVD: 2646.5m Azi: 82.08°

SANDSTONE: m gy-m dk gy, v f gr, sbang-sbrndd, p-mod srt, v slty arg mtrx, grdg to aren Sltst I.P. arg com carb spks, tr mic, frm-hd, p por, n fluor

MD: 2678.97m Inc: 2.06°  
TVD: 2676.6m Azi: 86.66°

SLIDE: 2692m-2701m

SILTSTONE: dk gy- blk, hd-v hd, sbbly-bly, fis, grdg to Shale I.P. loc aren, tr carb spks, calc, tr mic

SLIDE: 2706m-2709m

MD: 2708.38m Inc: 2.64°  
TVD: 2706.0m Azi: 86.80°

SANDSTONE: m gy-m dk gy, v f gr, sbang-sbrndd, p-mod srt, v silty arg mtrx, loc dolcalc/sil cmt, grdg to aren Slst I.P. arg com carb spks, tr mic, frm-hd, p por, n fluor

MD: 2737.95m Inc: 2.76°  
TVD: 2735.5m Azi: 86.66°

SLIDE: 2740m-2748m

MD: 2767.46m Inc: 3.28°  
TVD: 2765m Azi: 73.78°

MD: 2783.95m Inc: 3.22°  
TVD: 2781.4m Azi: 72.75°

SILTSTONE: m dk gy- dk gy, blk, hd-v hd, sbbly-bly, fis, occ grdg to Shale, loc aren, tr carb spks, calc, tr mic

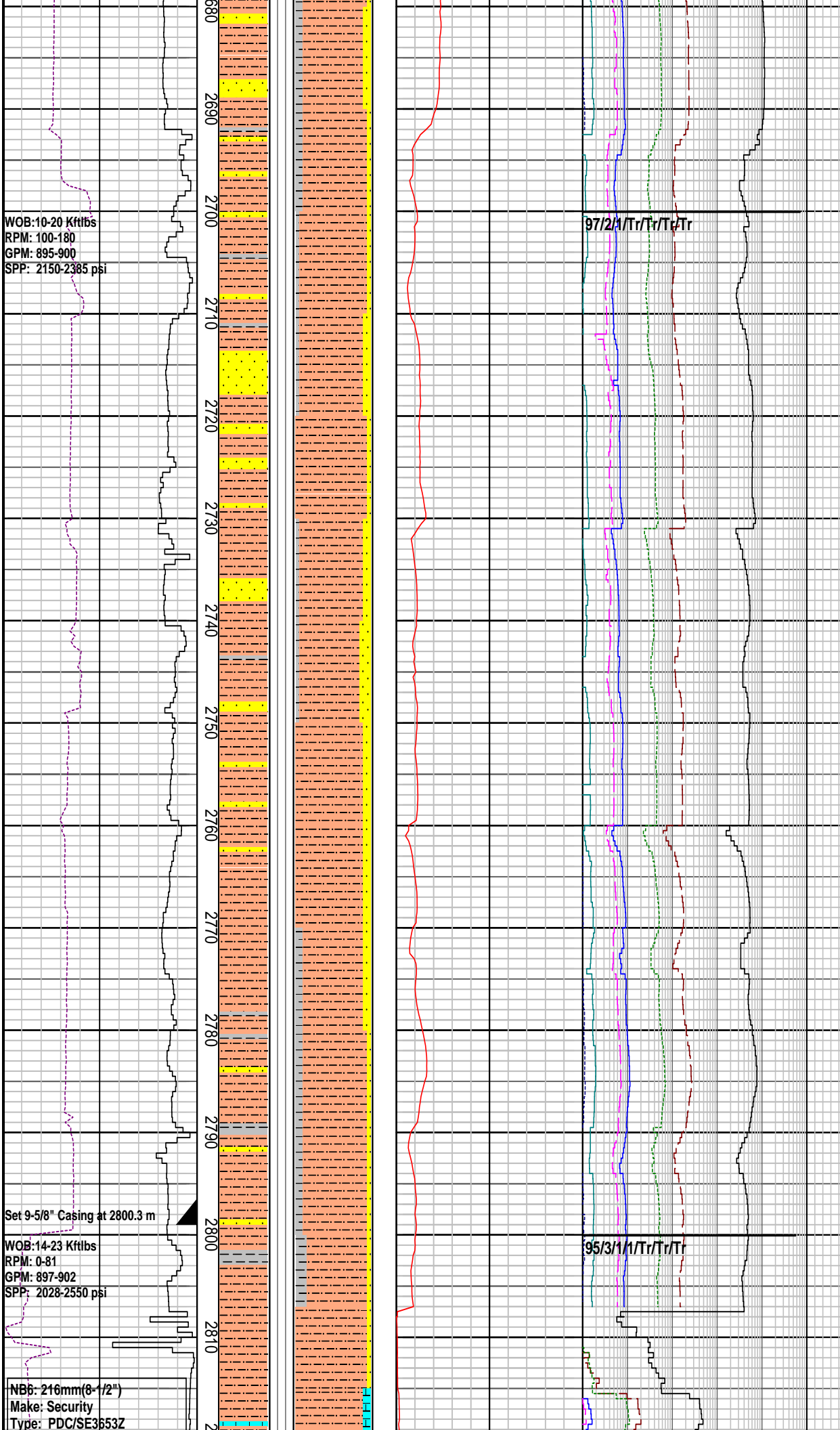
Increased mud weight to 10.3 ppg

FIT @ 2800.3 m with 10.3 ppg  
EMW: 16.0 ppg @ 2720 psi

Drill 216 mm (8-1/2") hole with KCL Polymer mud systems

MD: 2816.25m Inc: 3.18°  
TVD: 2813.7m Azi: 78.94°

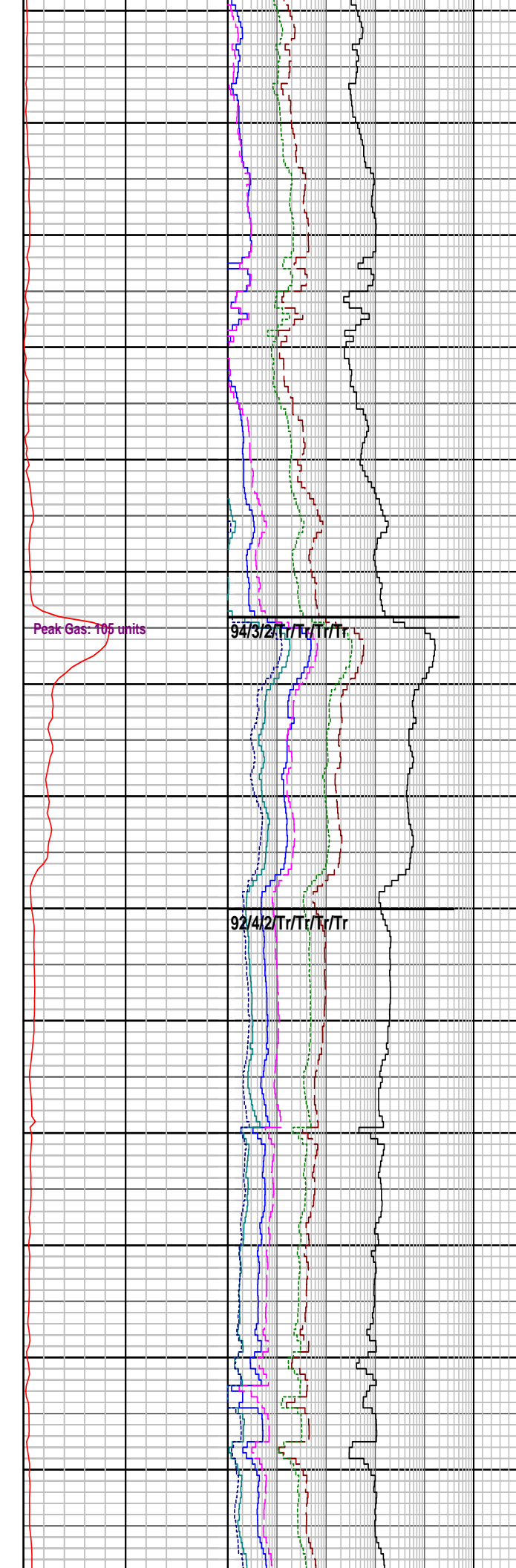
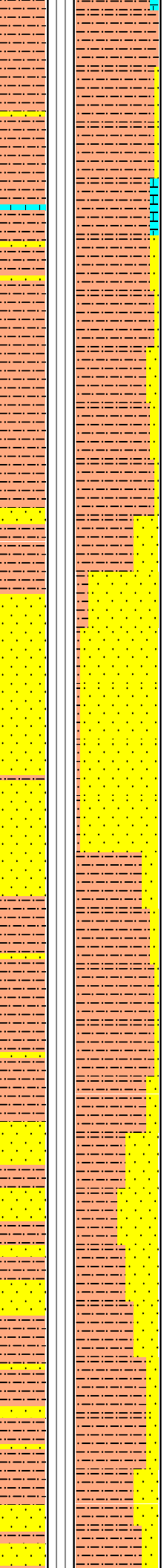
LIMESTONE: silt gy brn dolc...



Jets: 6 x 14  
 Depth In: 2807.0 m  
 Depth Out: 3585.0 m  
 Drilled: 778.0m in 42.4 hrs  
 Grade: xxxxxxxx

WOB: 1-14 Kftlbs  
 RPM: 15-139  
 GPM: 189-901  
 SPP: 700-2725ps

2820  
2830  
2840  
2850  
2860  
2870  
2880  
2890  
2900  
2910  
2920  
2930  
2940  
2950



LIMESTONE: cisl, gy brn-dusky brn micr, sli dol, mod arg, tr f calc sd, tr carb Styl, hd, brit I.P. blkly-plty, n por, n fluor

SANDSTONE: Lith Aren, dk yel brn-brn gy, v f-f gr, sbang, mod srt, mod strng calc cmt, sly, arg mtrx, carb spks, fri, disagg, v p por, n fluor

MD: 2845.87m	Inc: 3.21°
TVD: 2843.3m	Azi: 82.42°

SILTSTONE: m dk gy- dk gy, occ blk, hd-v hd, sbbkly-blky, fis, occ grdg to Shale, loc aren, com carb spks, calc, tr dol, tr mic

MD: 2875.23m	Inc: 3.12°
TVD: 2872.6m	Azi: 85.48°

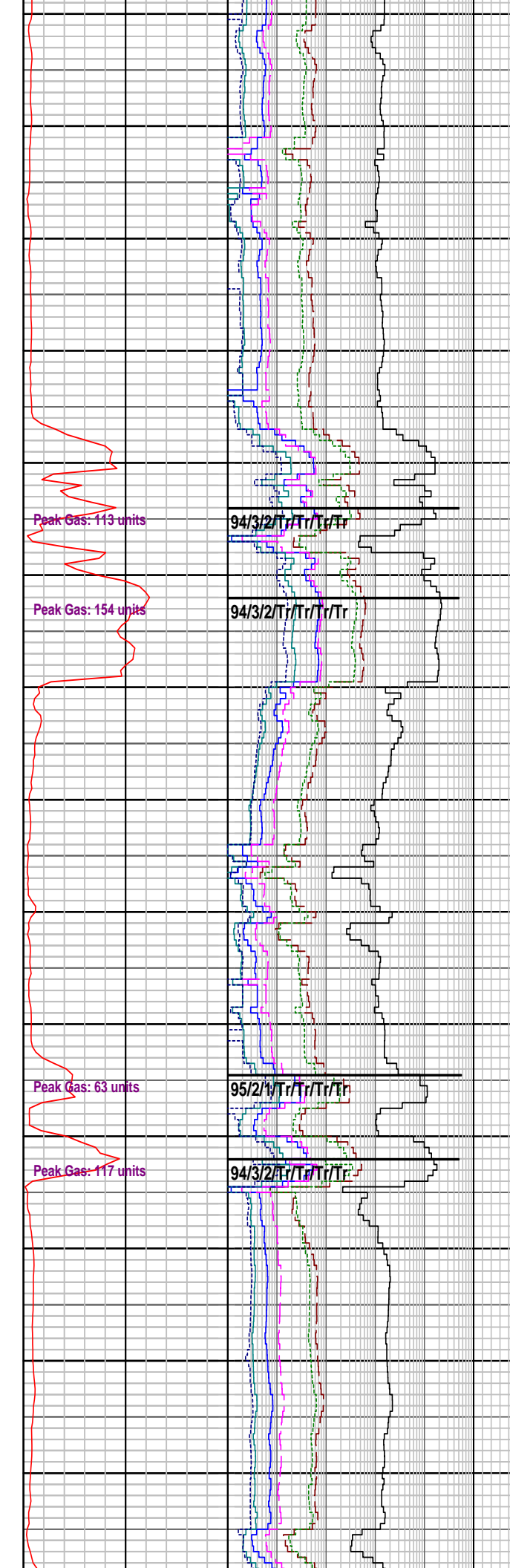
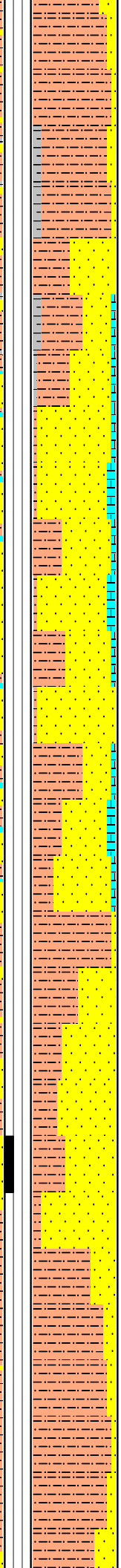
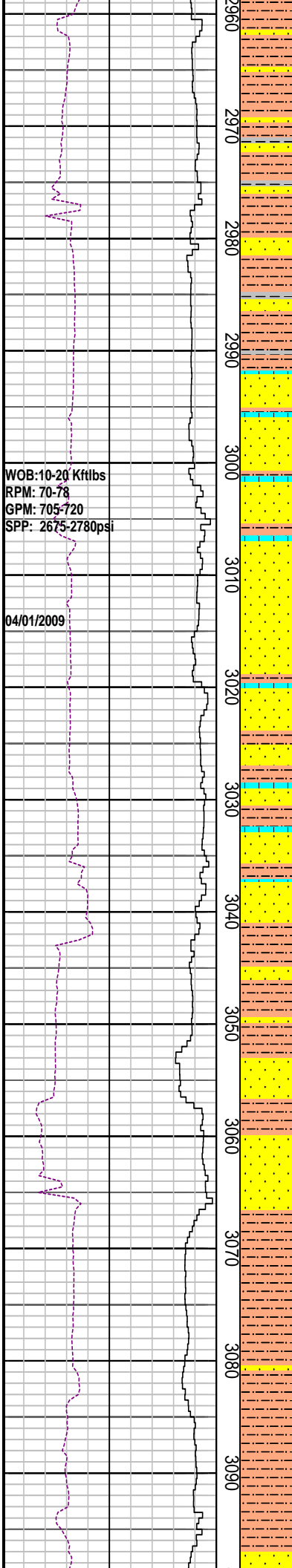
SANDSTONE: qtz, clr-trnsl, fros, f-pred m-crs, ang-sbrndd, mod srt, loc wk dolcalc cmt, tr carb frg, tr glau/chl, tr musc, occ lim stnd Qtz, fri-disagg, gd por, n fluor

MD: 2904.72m	Inc: 3.04°
TVD: 2902.0m	Azi: 88.56°

SILTSTONE: m dk gy- dk gy, occ blk, hd-v hd, sbbkly-blky, fis, occ grdg to Shale, loc aren, com carb spks, calc, tr mic

MD: 2934.24m	Inc: 2.89°
TVD: 2931.5m	Azi: 94.43°

SANDSTONE: qtz, clr-trnsl, fros, f-m crs, ang-sbrndd, mod srt, loc wk dolcalc cmt, tr carb frag, tr glau/chl, tr musc, occ lim stnd Qtz, fri-disagg, fr-gd por, n fluor



MD: 2963.69m Inc: 2.77°  
 TVD: 2960.9m Azi: 103.77°

MD: 2992.79m Inc: 2.65°  
 TVD: 2990.0m Azi: 116.56°

**LIMESTONE:** clcit, gy brn- brn blk, micr, sli dol, mod arg, tr f calc sd, tr carb Styl, tr clcar, hd, brit I.P. blkly-pty, n por, n fluor

**SANDSTONE:** qtz, clr-trnsl, fros, f- m crs, ang-sbrndd, mod-wl srt, loc wk dolcalc cmt, mod slt cmt, tr carb frag, tr glau/chl, tr musc, fri-disagg, fr-gd por, n fluor

Increased mud weight to 10.5 ppg

MD: 3022.28m Inc: 2.80°  
 TVD: 3019.4m Azi: 118.01°

**SILTSTONE:** m dk gy- dk gy, occ blk, sft-hd, sbblkly-blky, fis, occ grdg to Shale, loc aren, com carb spks, calc, tr mic

MD: 3051.99m Inc: 2.87°  
 TVD: 3049.1m Azi: 121.90°

**SANDSTONE:** qtz, gy brn, dk yel brn, v f-f, sbang-sbrndd, wl srt, strng dolcalc cmt, mod strng sil cmt I.P. tr carb mat, tr glau, mod hd, v p por

Fluorescence(3060m-3065m): tr dull yel grn ptchy fluor, v wk slow dfs mlky cut, no res

MD: 3081.57m Inc: 2.92°  
 TVD: 3078.6m Azi: 130.18°

**SILTSTONE:** olv blk-brn blk, v arg, grd to slty Clyst, micr mic, loc lt gy v f gr aren incl, tr lith frag, tr carb mat, mod hd, blkly

WOB: 8-21 Kftlbs  
RPM: 76-147  
GPM: 540-767  
SPP: 1890-3145psi

WOB: 11-22 Kftlbs  
RPM: 78-99  
GPM: 718-736  
SPP: 2550-2946psi

3100  
3110  
3120  
3130  
3140  
3150  
3160  
3170  
3180  
3190  
3200  
3210  
3220  
3230

92/3/3/Tr/Tr/Tr

MD: 3111.25m Inc: 3.1°  
TVD: 3108.3m Azi: 139.57°

SANDSTONE: qtz, m dk gy, lt olv gy, dk yel brn, v f-f, sbang-sbrndd, wl srt, strng dolcalc cmt, mod strng sil cmt I.P. tr carb mat, tr musc, mod hd, v p por, n fluor

MD: 3140.79m Inc: 3.39°  
TVD: 3137.8m Azi: 147.97°

Gas trap agitator problem from 3151m to 3173m

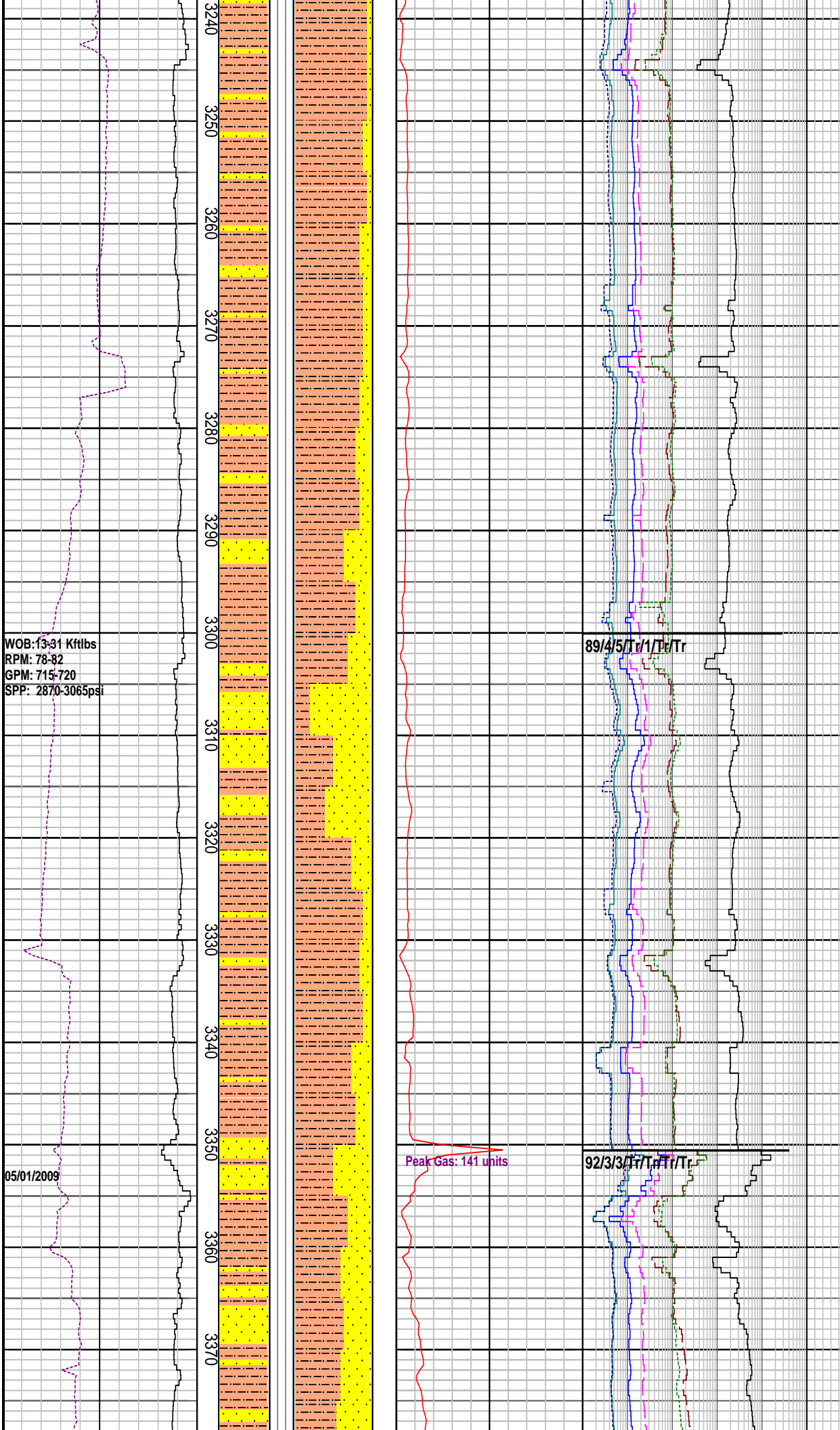
MD: 3170.28m Inc: 3.47°  
TVD: 3167.2m Azi: 152.03°

SILTSTONE: m dk gy-dk gy, v arg, grd to slty Clyst, com v f gr aren incl, tr carb mat, tr dis pyr, micr mic, tr chl, frm, mass-biky

MD: 3199.75m Inc: 3.55°  
TVD: 3196.6m Azi: 146.04°

SANDSTONE: Lith Aren, m gy, olv gy, occ lt grnsh gy, v f-f, slty I.P. sbang, wl srt, wk calc cmt, arg mtrx, tr carb mat, tr biot, fri-mod hd, v p por, n fluor

MD: 3229.40m Inc: 3.69°  
TVD: 3226.2m Azi: 146.49°



SILTSTONE: m dk gy-dk gy, loc arg mtrx, grd to Clyst, com v f gr aren incl, tr carb mat, tr dis pyr, micr mic, tr chl, frm, mass-blky

MD: 3259.28m Inc: 3.79°  
 TVD: 3256.0m Azi: 146.43°

MD: 3288.9m Inc: 3.91°  
 TVD: 3285.6m Azi: 148.34°

SANDSTONE: qtz, clr-trnsl, occ lt grnsh gy, v f-crs, slty I.P. sbang, wl srt, wk calc cmt, arg mtrx, tr dol, tr carb mat, tr biot, fri-mod hd, p por, n fluor

MD: 3318.10m Inc: 4.02°  
 TVD: 3314.7m Azi: 150.54°

SILTSTONE: m dk gy- ol blk, v arg, grd to slty Clyst, com v f gr aren incl, tr carb mat, tr c, micr mic, tr chl, frm, mass-blky

MD: 3347.40m Inc: 4.21°  
 TVD: 3343.9m Azi: 152.14°

SANDSTONE: qtz, clr-trnsl, occ lt gy, v f-crs, slty I.P. ang-rnnd, wl srt, wk calc cmt, arg mtrx, tr dol, tr carb mat, p por, n fluor

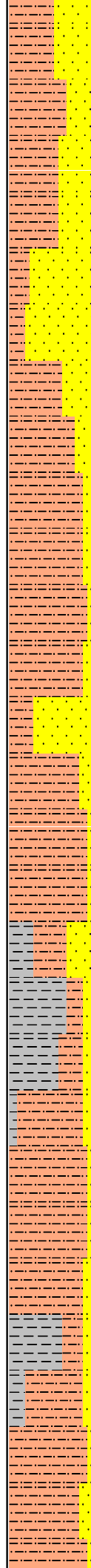
MD: 3376.07m Inc: 4.06°



WOB: 5-25 Kftlbs  
 RPM: 80-90  
 GPM: 715-730  
 SPP: 3025-3285psi

WOB: 7-37 Kftlbs  
 RPM: 90-100  
 GPM: 716-720  
 SPP: 3152-3268psi

3380  
3390  
3400  
3410  
3420  
3430  
3440  
3450  
3460  
3470  
3480  
3490  
3500  
3510



Peak Gas: 90 units  
 Peak Gas: 123 units

93/3/2/Tr/Tr/Tr/Tr

93/3/2/Tr/Tr/Tr/Tr

91/4/3/Tr/1/Tr/Tr

MD: 3376.97m Inc: 4.39°  
 TVD: 3373.4m Azi: 156.43°

SANDSTONE: qtz, lt gy-v lt gy, m-crs, slty I.P. sbang-sbrnrd, p-mod srt, v wk calc cmt, arg mtrx, tr dol, tr fspr, tr carb mat, p por, n fluor

MD: 3406.76m Inc: 4.66°  
 TVD: 3403.1m Azi: 160.95°

MD: 3436.14m Inc: 5.16°  
 TVD: 3432.4m Azi: 162.03°

SILTSTONE: dk gy- gysh blk, v arg, grd to slty Clyst, com v f gr aren incl, tr carb mat, micr mic, tr chl, frm, blk

MD: 3465.57m Inc: 5.58°  
 TVD: 3461.7m Azi: 159.59°

CLAYSTONE: dk gy-gy blk, slty I.P., micr mic, tr carb spks, slty/aren incl, mod hd, hd I.P., blk-pty

MD: 3495.57m Inc: 6.02°  
 TVD: 3491.6m Azi: 157.91°

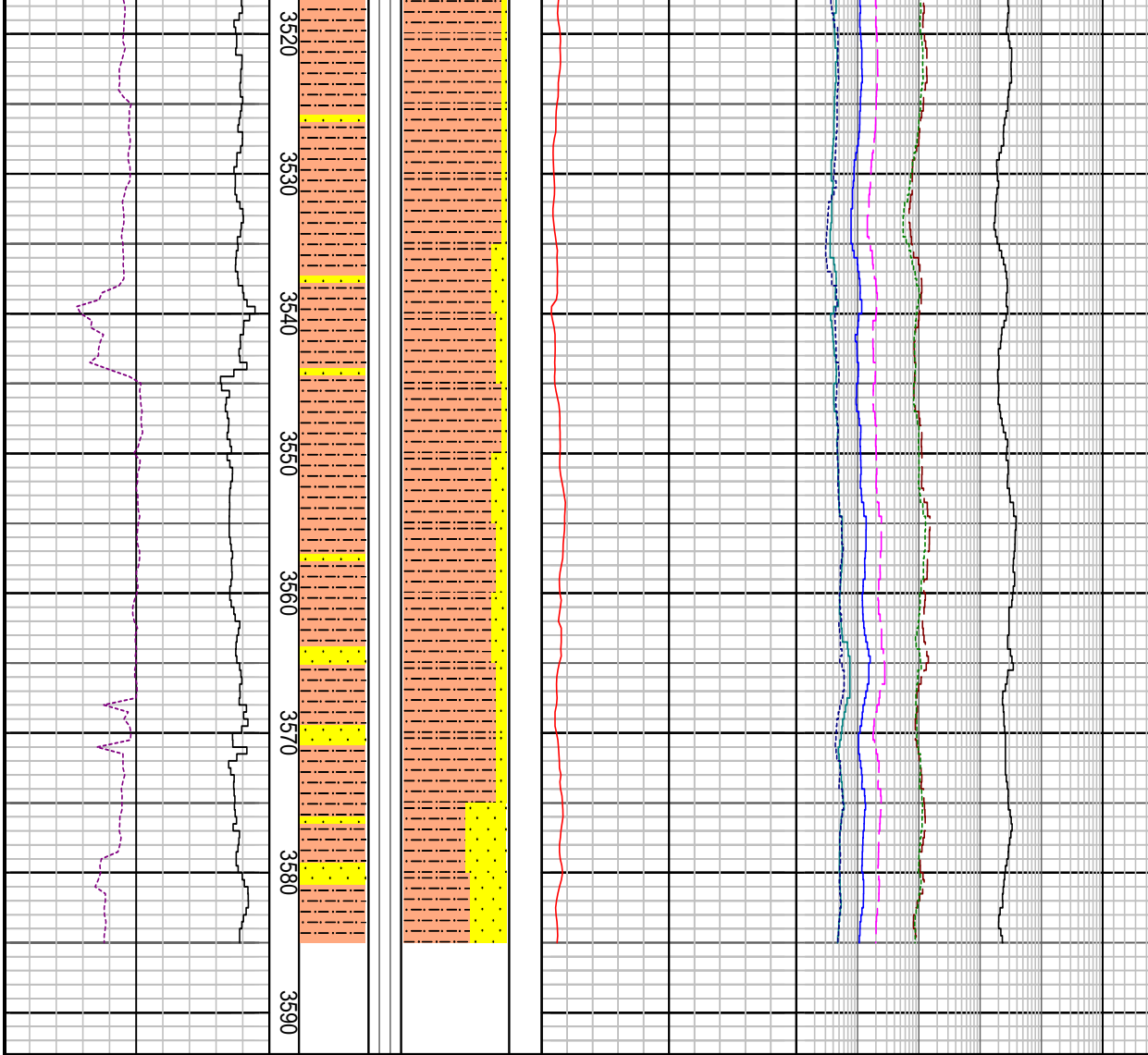
SANDSTONE: qtz, clr-trnsl, frstd, f-crs, sbang-sbrnrd, p srt, loc m-wk calc cmt, tr v crse mlky qtz flt, tr nod pyr, tr fri mat, fri-disag, p por, no fluor

MD: 3525.24m Inc: 6.42°  
 TVD: 3521.0m Azi: 158.39°

SILTSTONE: m dk gy- gysh blk, occ olv blk, v arg, grd to slty Clyst, com v f gr aren incl, tr carb mat, micr mic, tr chl, frm, blk

MD: 3555.17m Inc: 6.99°  
 TVD: 3550.8m Azi: 159.59°

SANDSTONE: qtz, clr-trnsl, lt gy, lt grnsh gy, v f-f, sbang-sbrnnd, mod srt, tr lith frag, loc m-wk calc cmt, tr nod pyr, pred disag, p por, no fluor,



### FORMATION EVALUATION LOG

DRILLING PARAM		MID meters 1:500	OIL SHOW P F G	LITHOLOGY %	CORE	TOTAL GAS	CHROMATOGRAPH	CALCIOMETRY	Lithology Description
ROP (m/hr)	WEIGHT ON BIT (klbf)					Total Gas (unit)	Methane ppm		
200	160	120	80	40		50   100   150   200   250	1 Methane ppm 100000		
	10	20	30	40			1 Ethane ppm 100000		
							1 Propane ppm 100000		
							1 iso-Butane ppm 100000		
							1 n-Butane ppm 100000		
							1 iso-Pentane ppm 100000		
							1 n-Pentane ppm 100000		