



Company : Beach Petroleum Ltd

Well : Fermat-1

Interval : 67.00 - 3439.20 meters

Created : 06/Jan/2009 5:12:19 AM

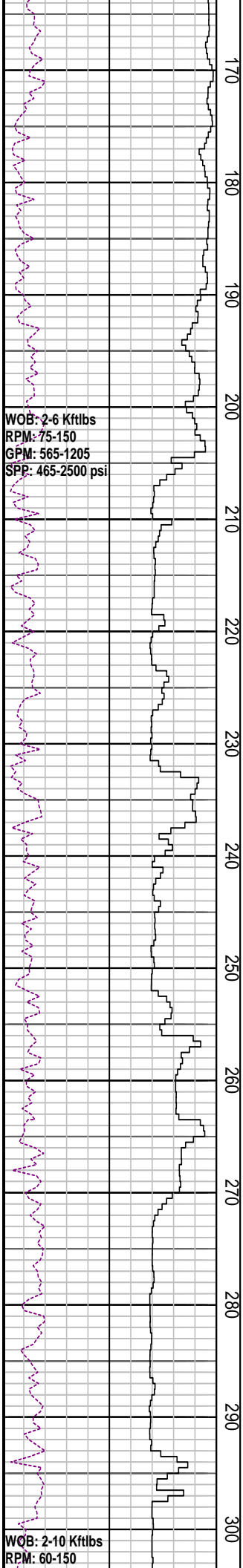


INTEQ

### FORMATION EVALUATION LOG

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

|  |  |     |  |  |  |  |  |  |   |
|--|--|-----|--|--|--|--|--|--|---|
| <p>RR1: 660 mm(26") X<br/>914mm(36") H/Opener<br/>Make: Reed<br/>Type: Tricone/Y11c<br/>Jets: 3 x 22, 1x16<br/>Depth In: 76.7 m<br/>Depth Out: 119.0 m<br/>Drilled 42.3m in 3.2 hrs<br/>Grade: 1-1-NO-A-E-I-NO</p> |  | 70  |  |  |  |  |  |  | Spud Fermat-1 @ 00:00 hrs on 14-Dec-2008  |
| <p>WOB: 4-6 Kftlbs<br/>RPM: 19-100<br/>GPM: 335-1000<br/>SPP: 100-900 psi</p>  |  | 80  |  |  |  |  |  |  | RT-MSL: 38.0 mMDRT<br>Water Depth: 38.7 mMDRT<br>RT-Sea Bed 76.7 mMDRT                  |
| <p>Set 30"x20" Casing at 116.0 m</p>   |  | 90  |  |  |  |  |  |  | Drill 914mm (36") hole with SW and Hi-Vis Sweeps<br>Returns to seabed                   |
| <p>14/12/2008</p>  |  | 100 |  |  |  |  |  |  |   |
| <p>NB2: 444 mm(17-1/5")<br/>Make: Hughes<br/>Type: Milltooth/MXL-T00<br/>Jets: 3 x 20<br/>Depth In: 119.0 m<br/>Depth Out: 999.0 m<br/>Drilled 880m in 21.2 hrs<br/>Grade: 2-2-LT-G-E-I-LN-1D</p>                  |  | 110 |  |  |  |  |  |  | Drill 444mm (17-1/2") hole with SW and Hi-Vis Sweep<br>Returns to seabed from 119m-999m |
|  |  | 120 |  |  |  |  |  |  |   |
|  |  | 130 |  |  |  |  |  |  |   |
|  |  | 140 |  |  |  |  |  |  |   |
|  |  | 150 |  |  |  |  |  |  |   |
|  |  | 160 |  |  |  |  |  |  |   |



WOB: 2-6 Kftlbs  
RPM: 75-150  
GPM: 565-1205  
SPP: 465-2500 psi

WOB: 2-10 Kftlbs  
RPM: 60-150

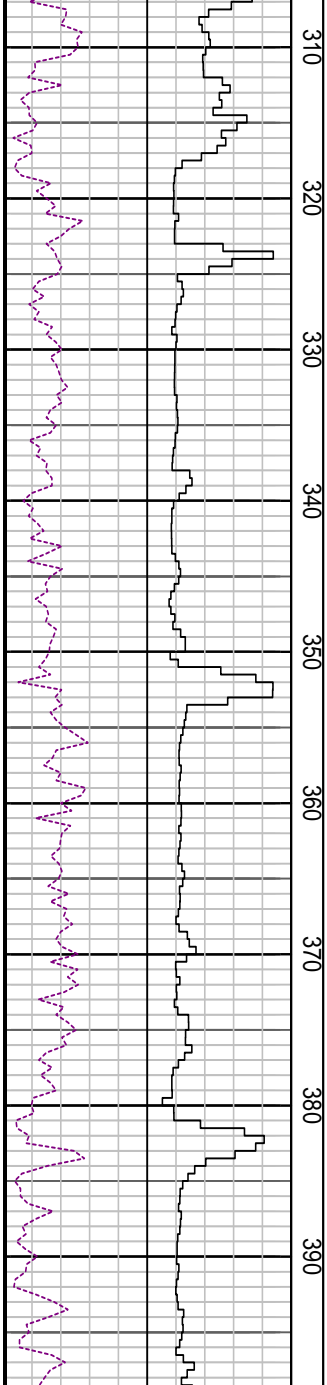
MD: 167.75m Inc: 1.24°  
TVD: 167.74m Azi: 1.78°

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

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

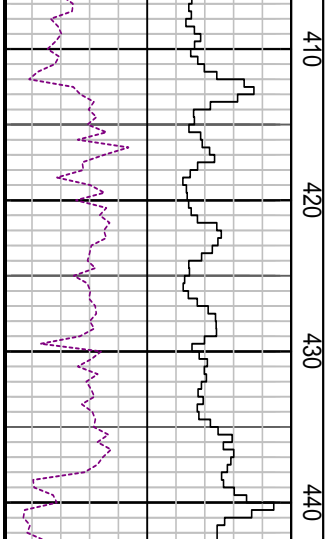
MD: 286.11m Inc: 2.77°  
TVD: 286.08m Azi: 188.85°

GPM: 415-1200  
SPP: 2480-2500 psi



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

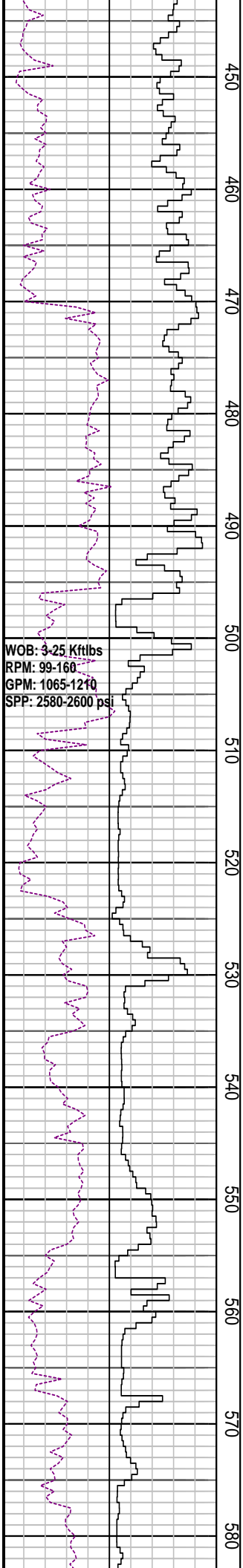
WOB: 2.14 Kftlbs  
RPM: 122-140  
GPM: 1111-1205  
SPP: 2530-2560 psi



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

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

|              |             |
|--------------|-------------|
| 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

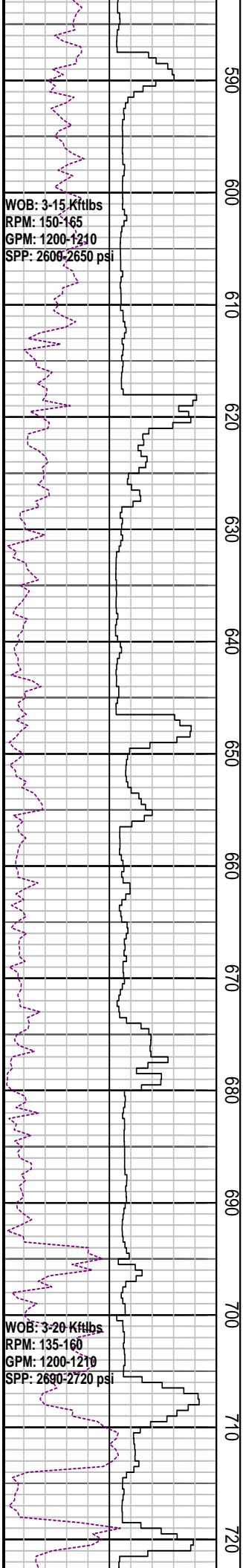
MD: 463.95m Inc: 0.32°  
TVD: 463.88m Azi: 269.03°

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°  
TVD: 582.35m Azi: 29.68°



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

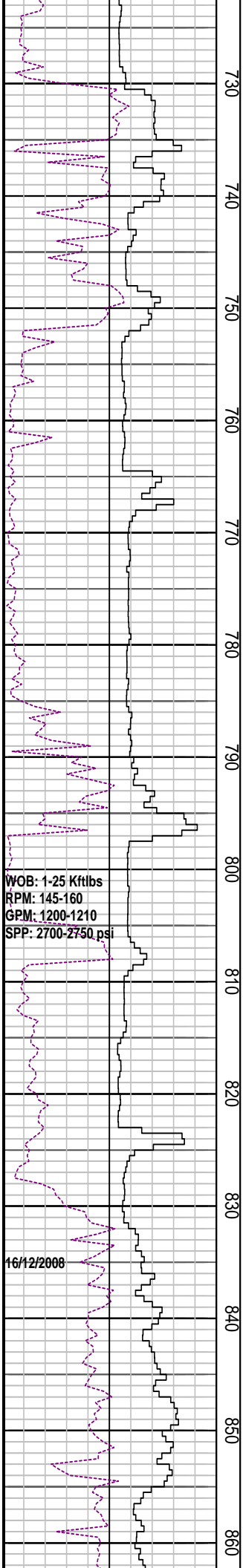
MD: 611.99m Inc: 0.51°  
TVD: 611.92m Azi: 339.54°

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

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

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

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



730  
740  
750  
760  
770  
780  
790  
800  
810  
820  
830  
840  
850  
860

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

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

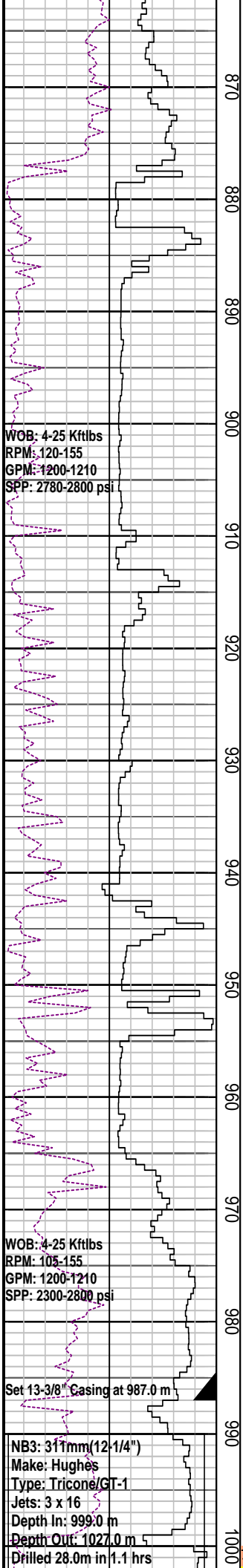
MD: 788.76m Inc: 0.65°  
TVD: 788.68m Azi: 163.00°

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

16/12/2008



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

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

BIT @ 987.0 m with 0.2 ppg

Grade: O-O-NO-A-E-I-NO-BHA

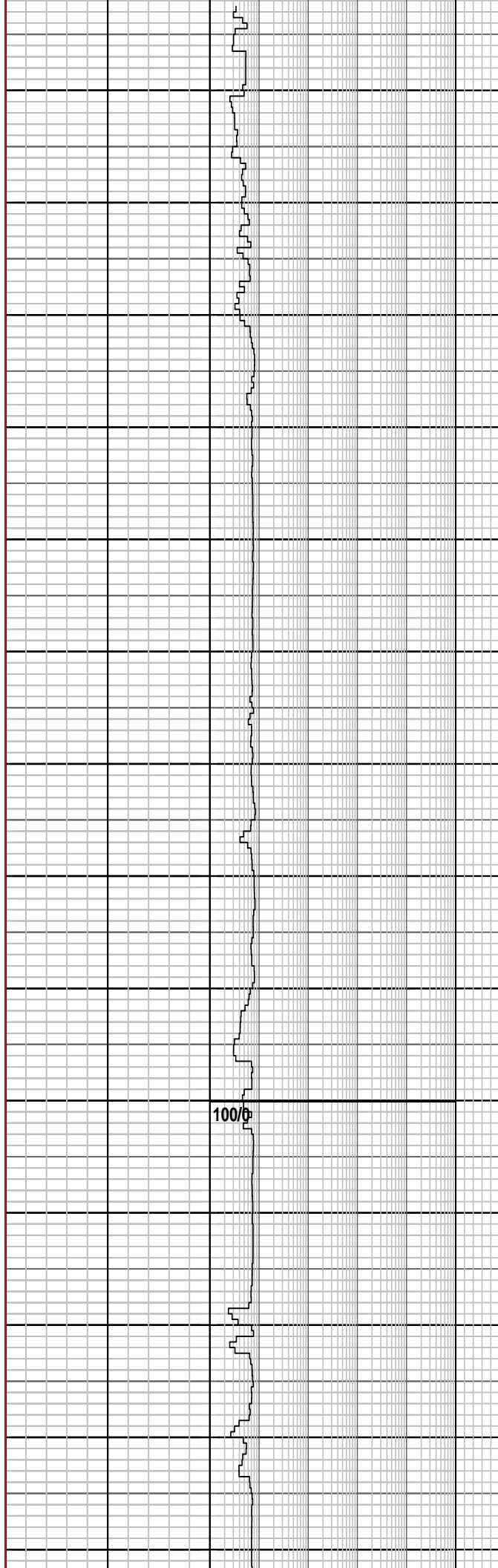
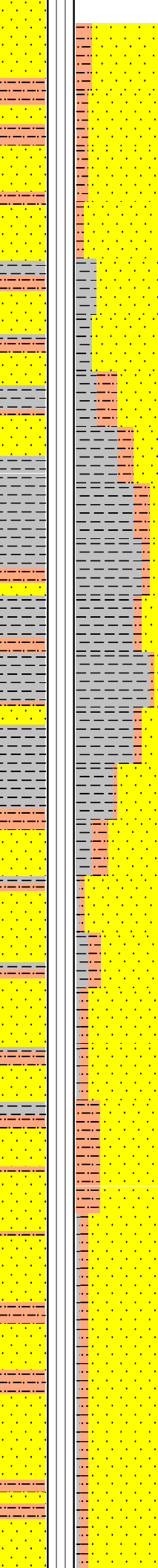
19/12/2008

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

20/12/2008

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

1010  
1020  
1030  
1040  
1050  
1060  
1070  
1080  
1090  
1100  
1110  
1120  
1130  
1140



100/0

F11 @ 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, blkly-sbfis

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, blkly-sbfis

CLAYSTONE: ol gy-mod ol brn, mod calc, sli stly, 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 stly Clst 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°  
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-sbrnnd, p-mod srt, arg mtrx I.P. dissem & nod pyr, mnr carb mat, tr Fe stn qtz, fri-pred disagg, p-f por

WOB: 1.14 Kftlbs  
RPM: 94-177  
GPM: 801-961  
SPP: 1249-1877 psi

100/0

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-sbrnnd, p-mod srt, arg mtrx I.P. dissem & nod pyr, mnr carb mat, tr Fe stn qtz, f por, n fluor

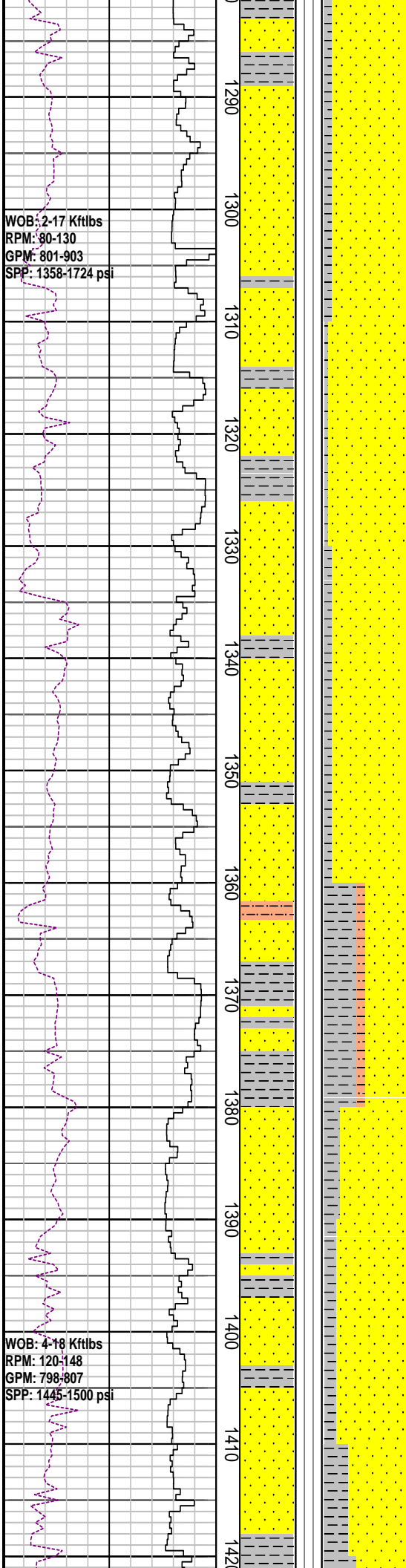
MW: 9.65 ppg FV: 74  
PV: 23 Gel: 9/14/15  
YP: 27 pH: 8.5

COAL: blk, sbbit, dll-sbvit lstr, plty fract, brit, blk-plty 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 calc  
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-sbrnnd, mod srt, arg  
mtrx I.P, dissem 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-sbrnnd, rmd I.P. mod  
srt, slty arg mtrx I.P. dissem 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-sbrnnd, rmd 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-brn gy, mod :

Carbide Run @ 1421.0 m  
 Actual: 4825 strks  
 Theoretical: 4811 strks  
 Avg Hole Diameter : 12.29"  
 Carbide Gas : 18 units

CLAYSTONE: dk gy-brn gy, mod calc, loc arg mtrx, gd to Slst I.P. mnr carb 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 slty Clst I.P, micr mic, tr carb spks, tr lit frag, sft, blk

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

CLAYSTONE: dk gy- brn gy, mod calc, slty 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, slty 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°

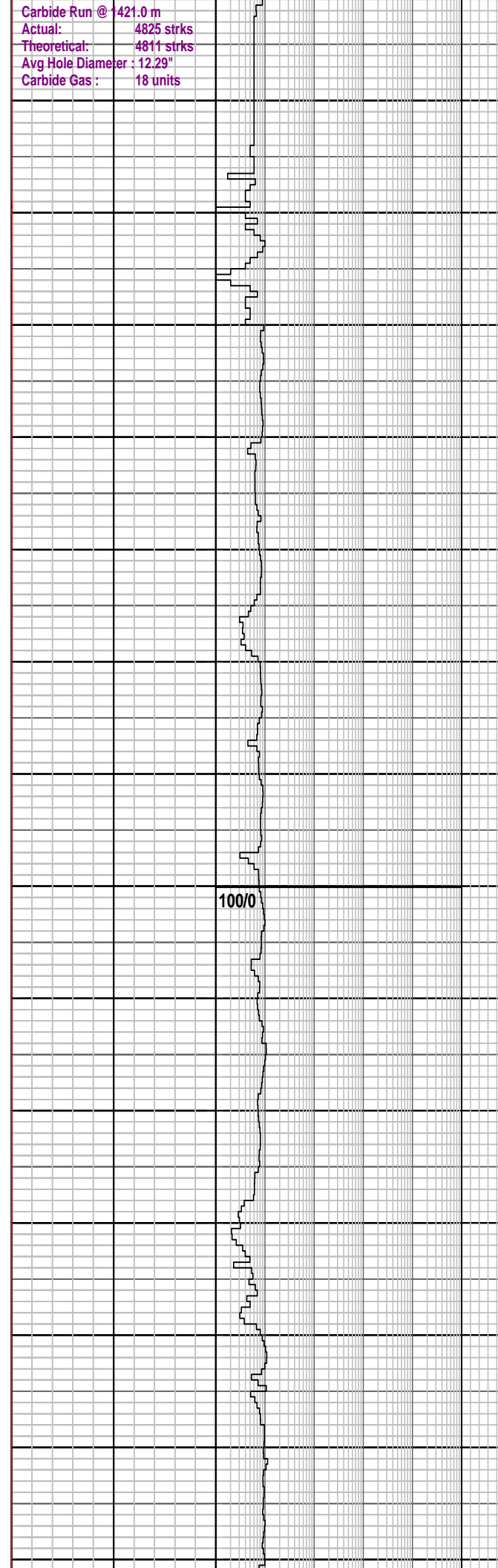
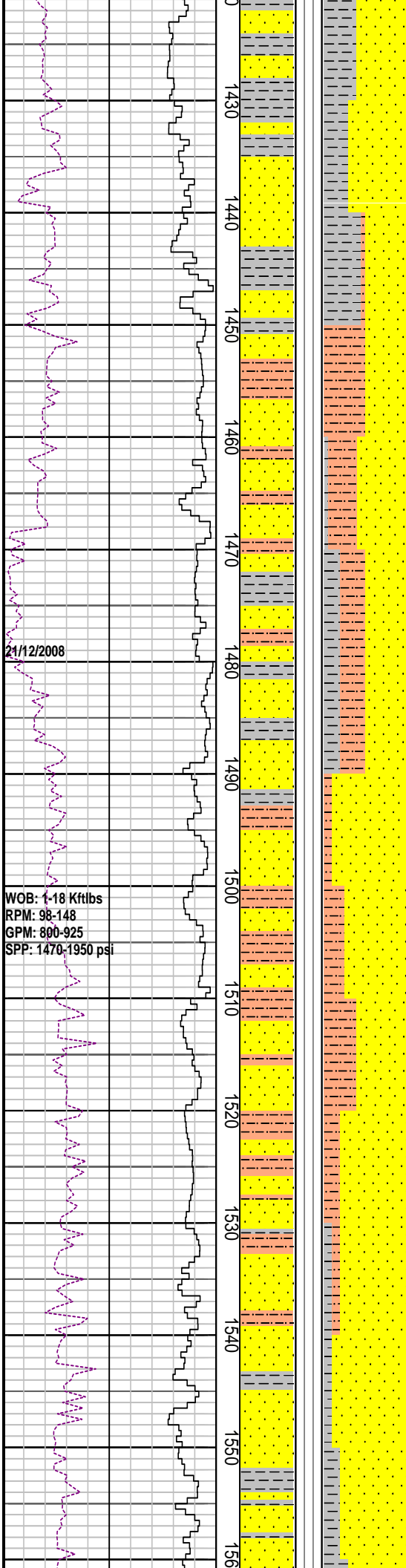
SILTSTONE: dk gy- lt brn gy, mod calc, loc arg mtrx, micr mic, tr carb spks, tr lit frag, sft, blk

SANDSTONE: qtz, clr-trnsl, lt gy, v f-f gr, ang-sbrnnd, mod srt, slty 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°



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

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

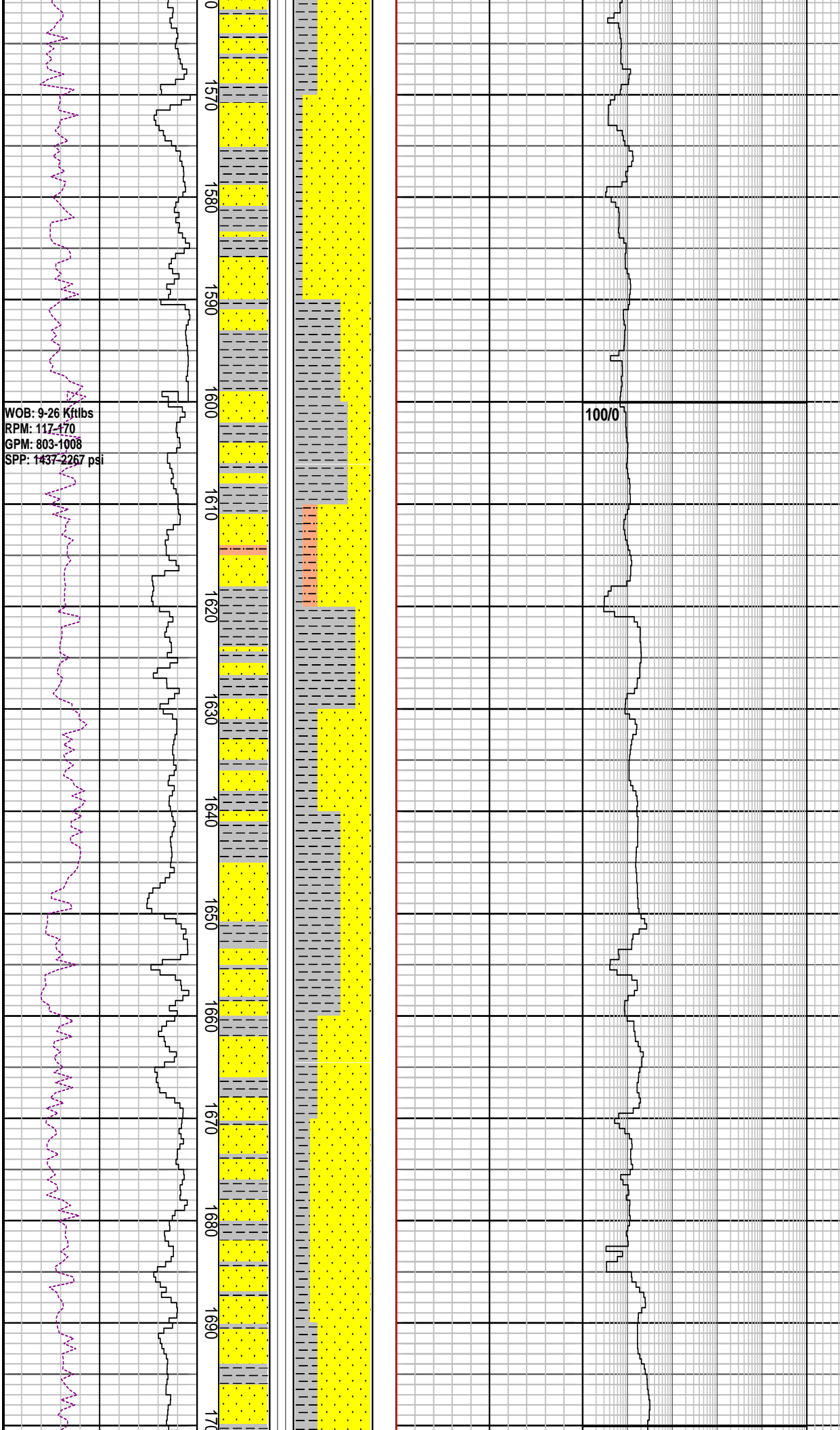
CLAYSTONE: dk gy- brn gy, mod calc, slty arg mtrx, gd to Slst I.P. mnr carb mat & carb micr lam, sft-plas, mass-amor

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

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

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

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



CLAYSTONE: brnsh gy-olv gry, yel gy I.P. loc v slty grd to arg Sltst 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 Sltst 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° |

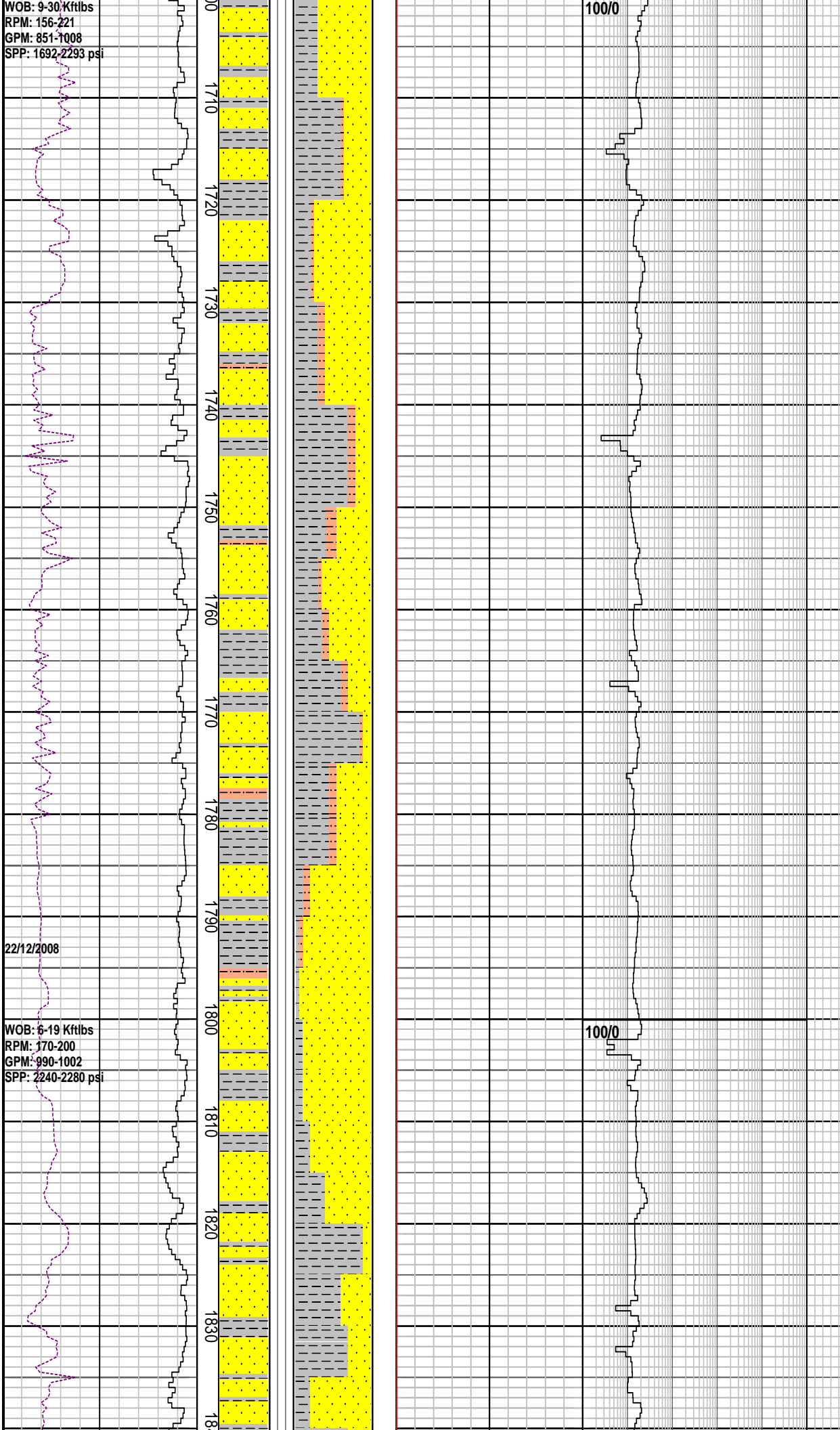
SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc stg dol/sil cmt, tr nod pyr, com carb mat, mnr crs mlky flt, mod hd agg, disagg, v p-f por, n fluor

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

WOB: 9-30 Kftlbs  
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



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 flt, mnr hd dol cmt f agg, v p-f por, n fluor

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

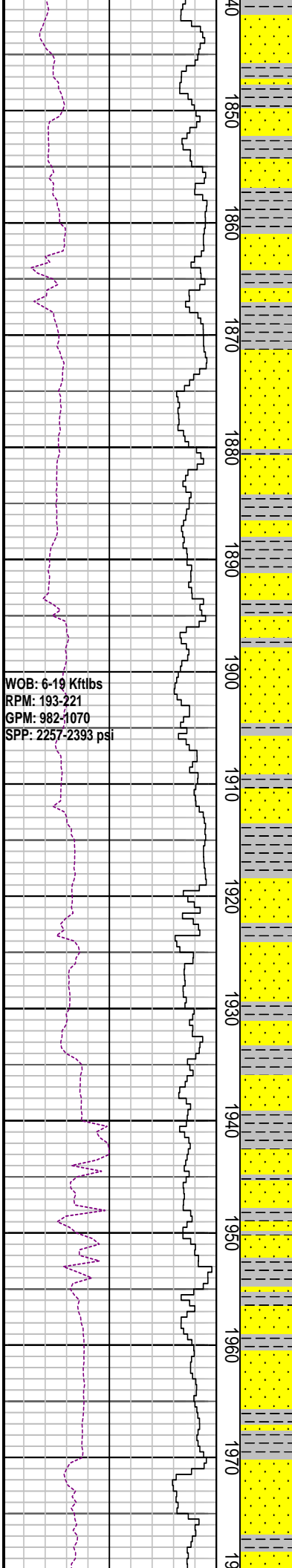
CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P. tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

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 flt, mnr hd dol cmt f agg, v p-f por, n fluor

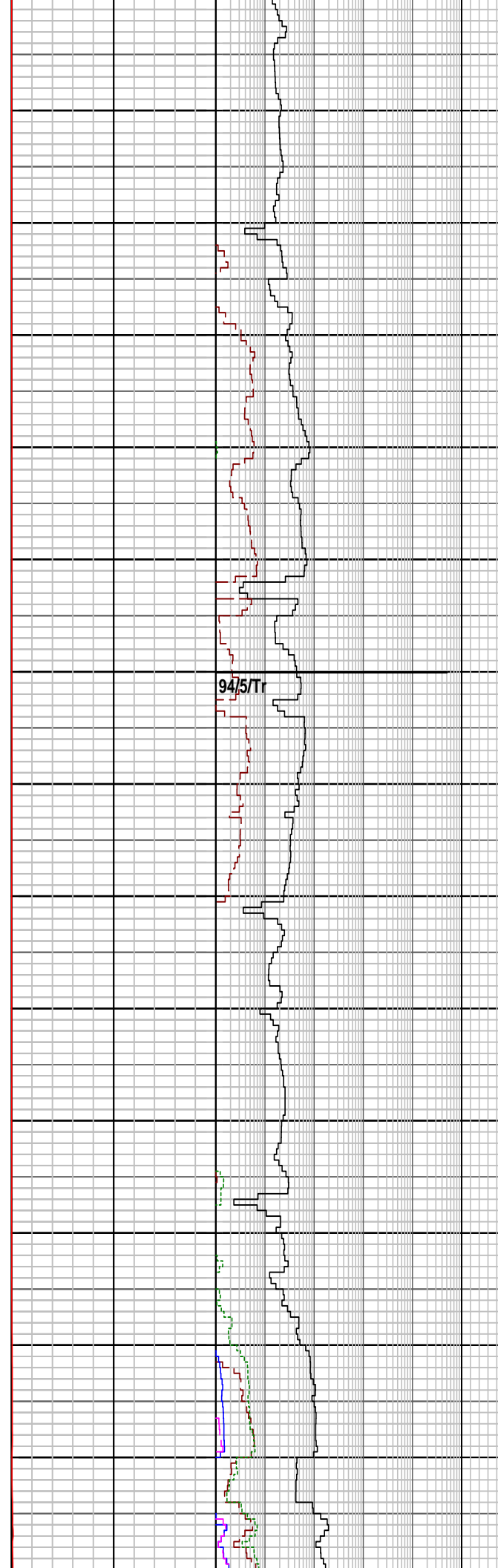
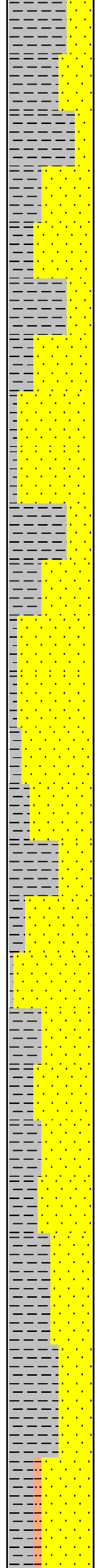
MD: 1820.98m      Inc: 3.35°  
TVD: 1819.8m      Azi: 229.44°

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

1840  
1850  
1860  
1870  
1880  
1890  
1900  
1910  
1920  
1930  
1940  
1950  
1960  
1970



94/5/Tt

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, sbrnnd-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-sbrnnd, 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-sbrnnd, 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

80  
1990  
2000  
2010  
2020  
2030  
2040  
2050  
2060  
2070  
2080  
2090  
2100  
2110  
2

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 & dissemin pyr, com carb mat, occ hd aggr, pred disaggr, 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° |

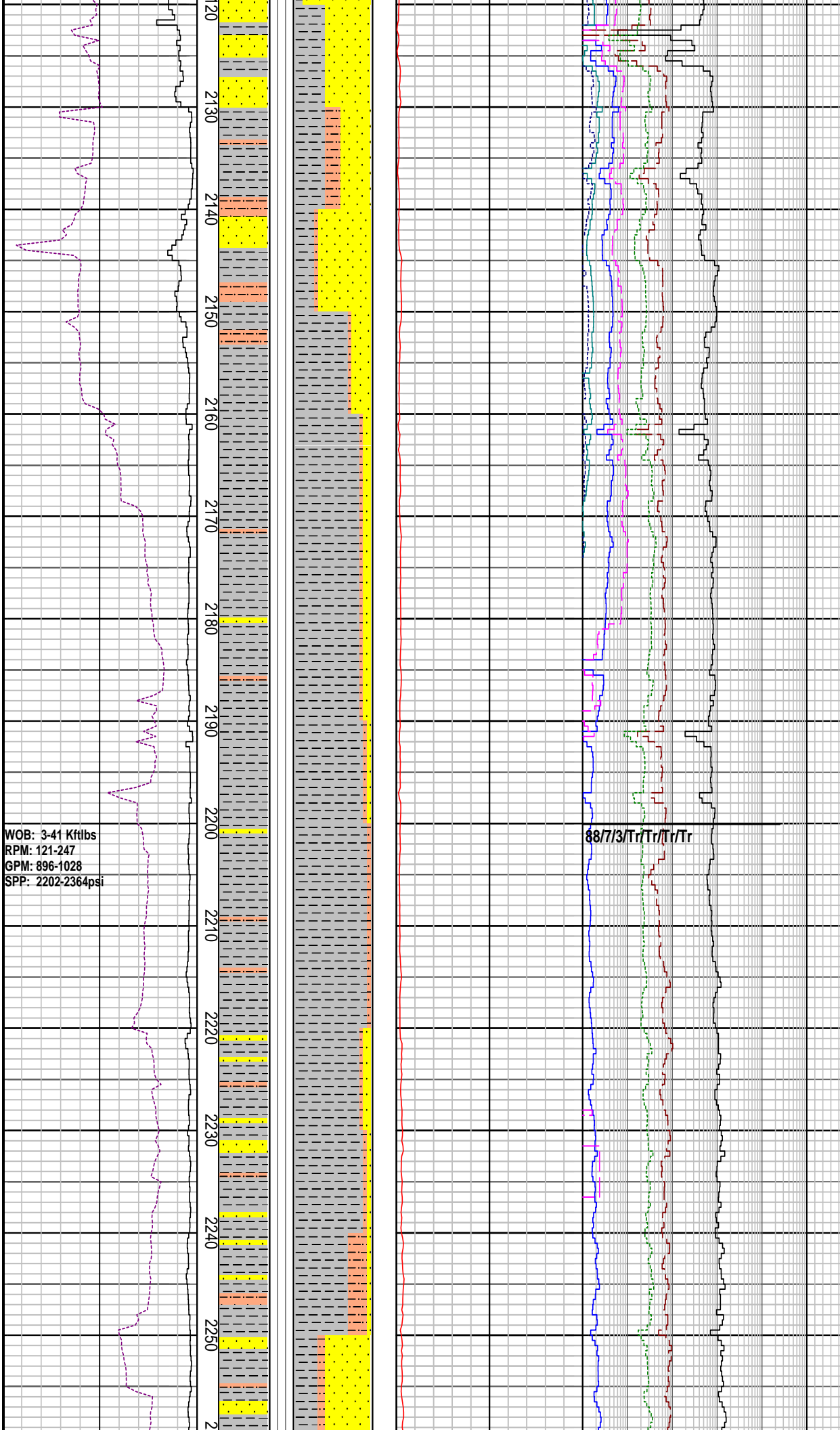
SANDSTONE: qtz, clr-trnsl, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissemin pyr, com carb mat, tr Fe stn, occ hd aggr, pred disaggr, p-f por, n fluor

|              |              |
|--------------|--------------|
| 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 & dissemin 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° |



WOB: 3-41 Kftlbs  
RPM: 121-247  
GPM: 896-1028  
SPP: 2202-2364psi

88/7/3/Tr/Tr/Tr

**SANDSTONE:** qtz, trnsp-trnsl, v f-m, sbang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr nod & dissem 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, stly grd to Arg Siltst, 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, stly grd to arg Siltst, 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 & dissem pyr, com carb mat



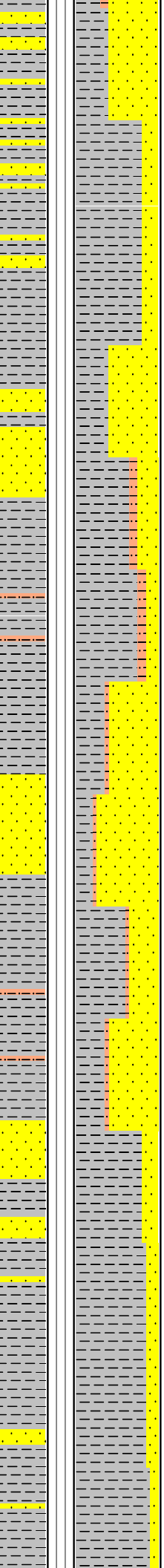
24/12/2008

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

2260  
2270  
2280  
2290  
2300  
2310  
2320  
2330  
2340  
2350  
2360  
2370  
2380  
2390



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

cmt, tr nod & disse pyr, com carb ma  
mod hd aggr, pred disaggr, p-f por, n  
flour

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 flour

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  
agg, pred disaggr, p-f por, n flour

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

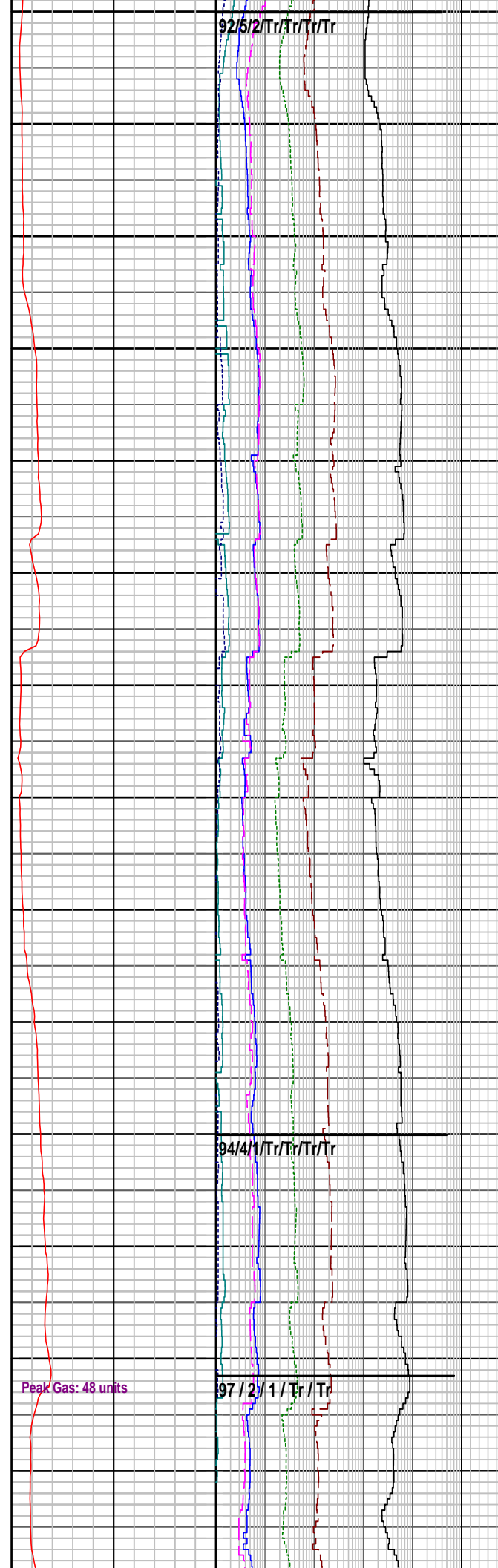
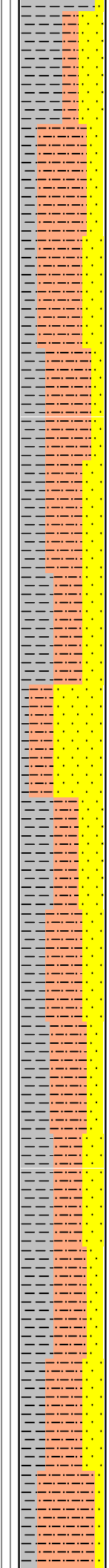
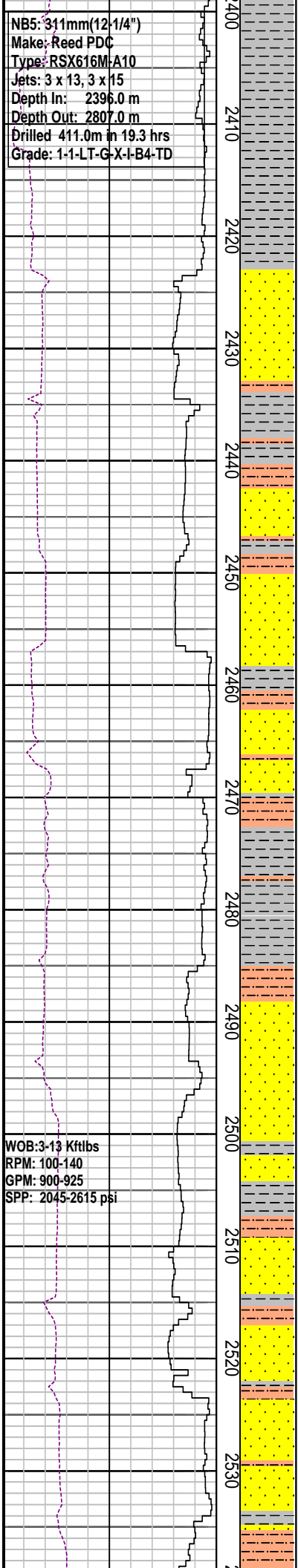
SANDSTONE: qtz, trnsp-trnsl, occ med  
gy, v f gr, occ m-crs gr, sbang-sbrnnd,  
mod srt, v slty, loc dolcalc/sil cmt, occ  
arg, tr nod & disse pyr, com carb spks,  
com hd aggr, pred dis

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

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

NBS: 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



92/5/2/Tr/Tr/Tr

94/4/1/Tr/Tr/Tr

97/2/1/Tr/Tr

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° |

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

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

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

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

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

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

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

SLIDE: 2455m-2465m

SLIDE: 2469m-2484m

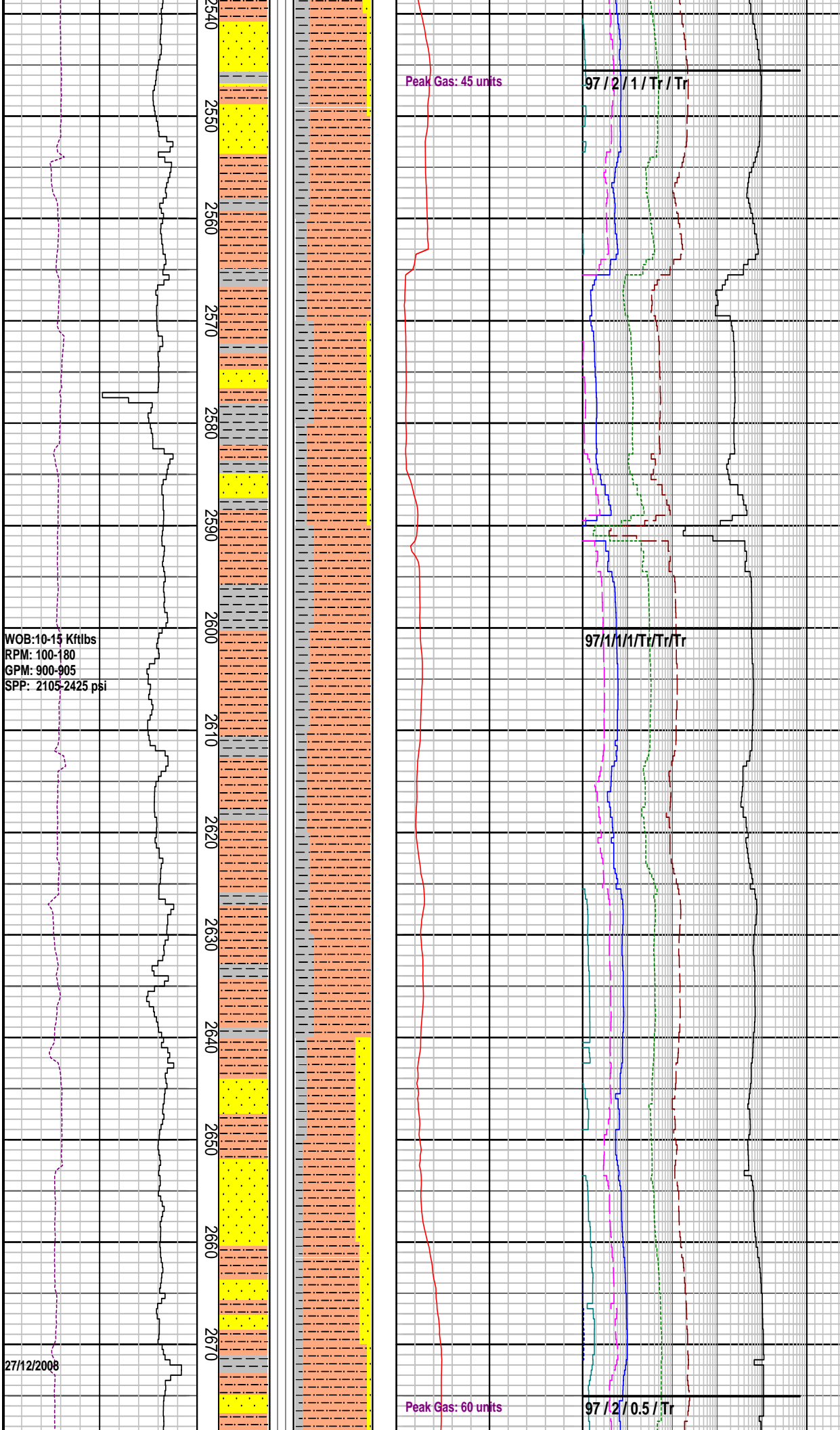
CLAYSTONE: dk gy-m dk gy, sft-frm, m hd I.P. blky-sbbkly, v slty mtrx, grd to arg Sltst, sli calc, mnr carb spk, micr mic

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

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

sbbiky-biky, 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,  
sbbiky-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

WOB: 10-15 Kftlbs  
RPM: 100-180  
GPM: 900-905  
SPP: 2105-2425 psi

27/12/2008

Peak Gas: 60 units

97/2/0.5/Tr

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

SLIDE: 2692m-2701m

SILTSTONE: dk gy- blk, hd-v hd, sbbiky-blky, 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 slty 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, sbbiky-blky, 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

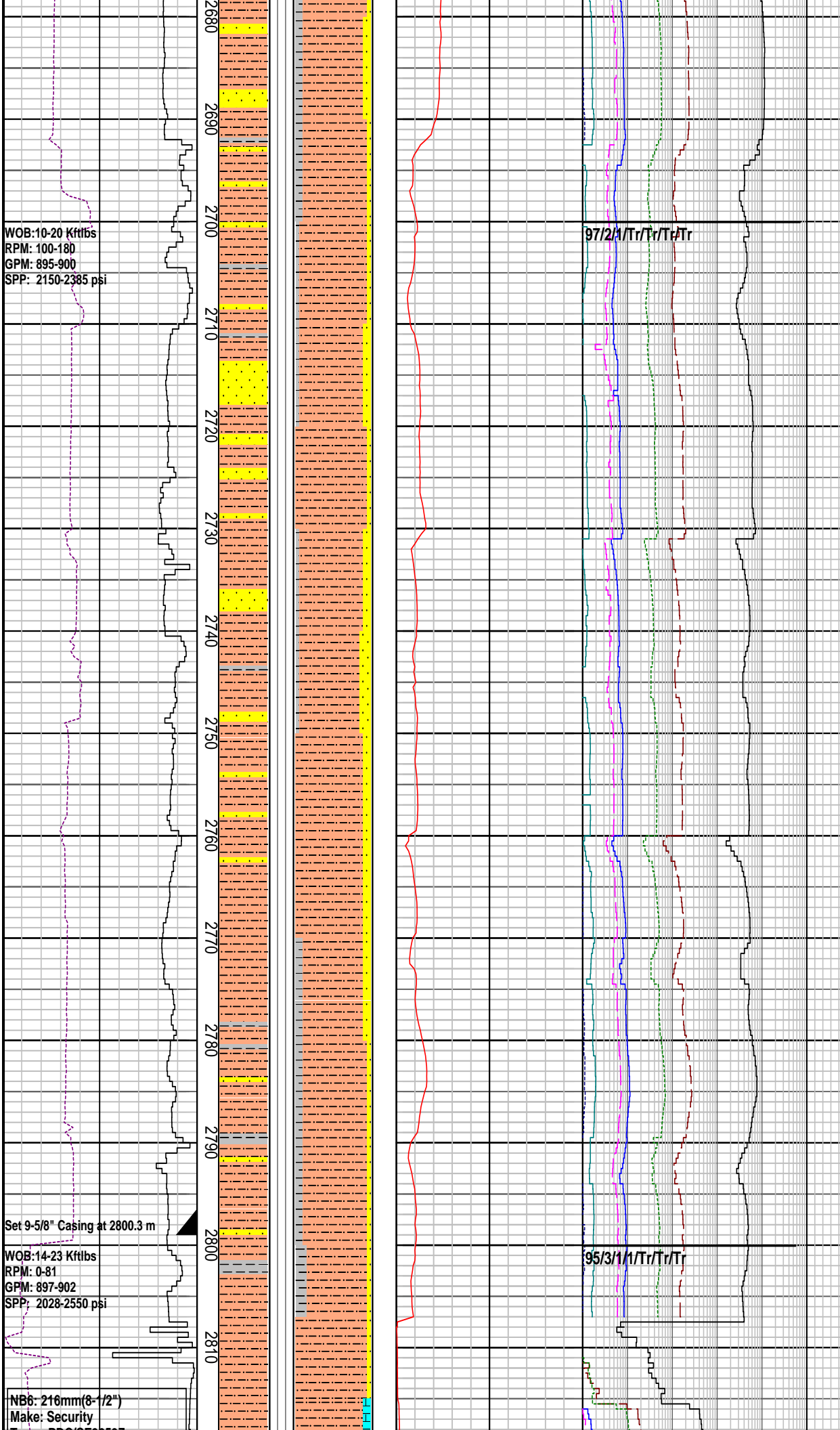
MD: 2816.25m Inc: 3.18°  
TVD: 2813.7m Azi: 78.94°

WOB: 10-20 Kftlbs  
RPM: 100-180  
GPM: 895-900  
SPP: 2150-2385 psi

Set 9-5/8" Casing at 2800.3 m

WOB: 14-23 Kftlbs  
RPM: 0-81  
GPM: 897-902  
SPP: 2028-2550 psi

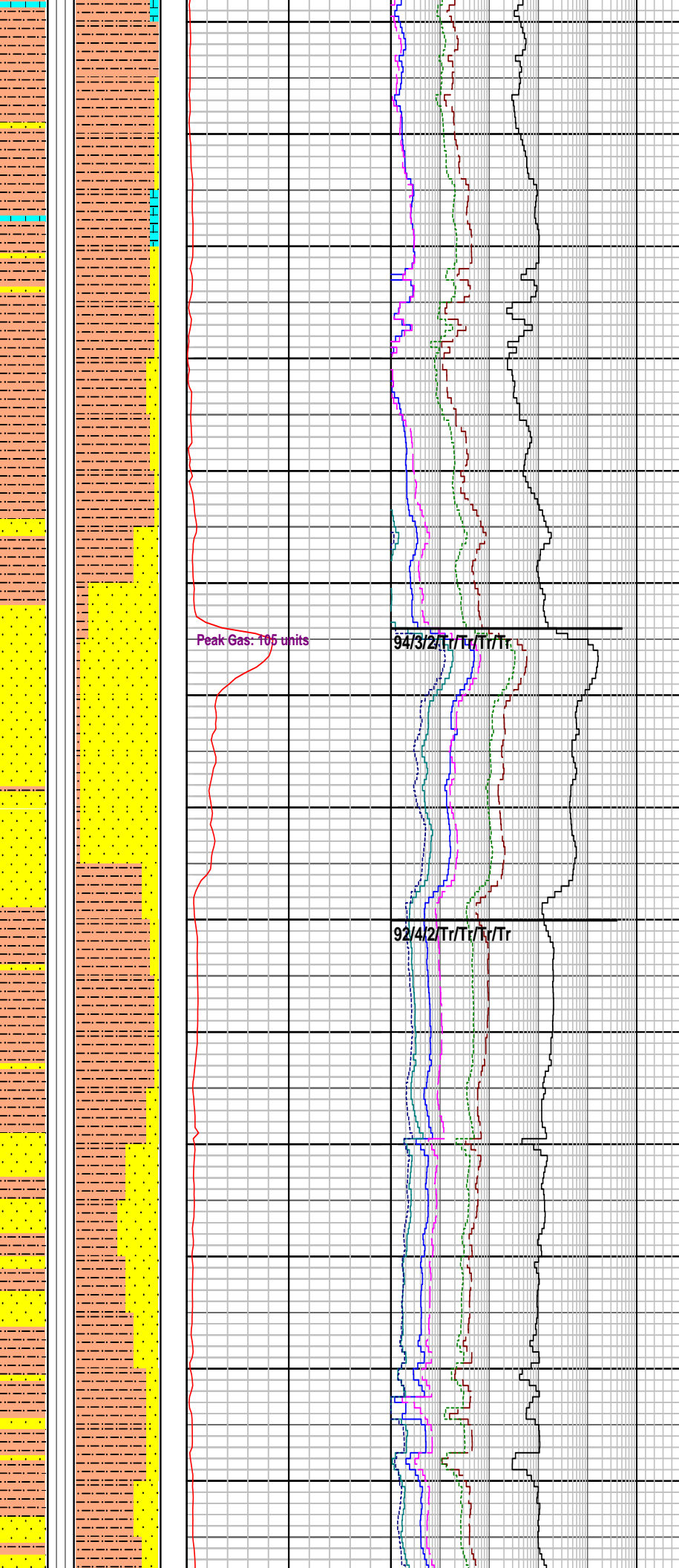
NB6: 216mm(8-1/2")  
Make: Security



Type: PDC/SE3653Z  
 Jets: 6 x 14  
 Depth In: 2807.0 m  
 Depth Out: xxxxx m  
 Drilled: xxxxm in xxx 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: clst, gy brn-dsky 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, slty, 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, sbblkly-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° |

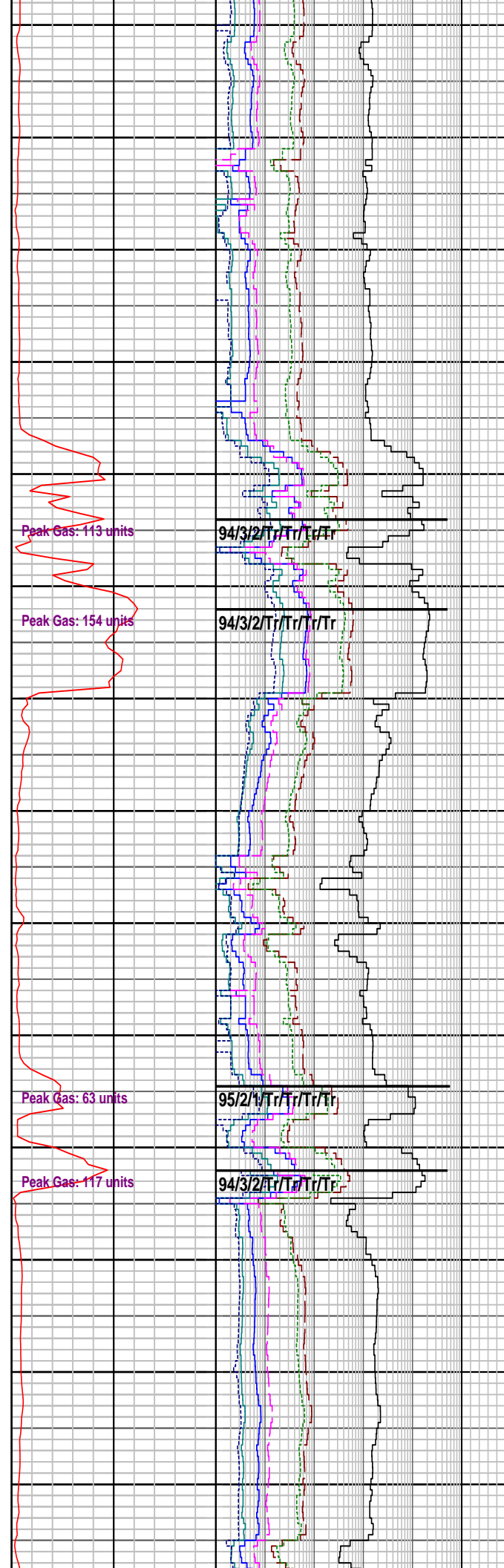
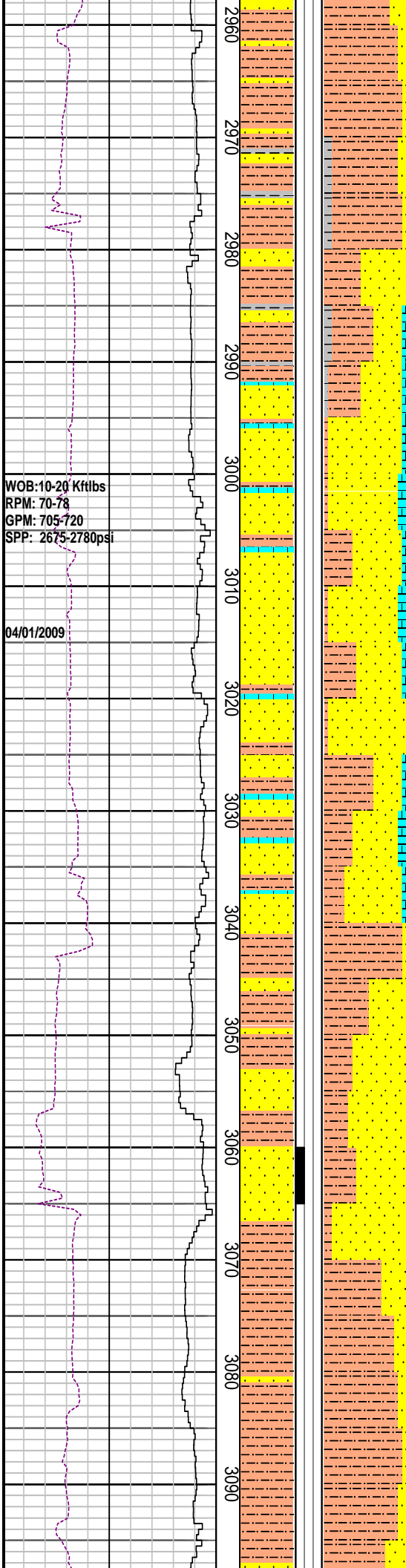
SANDSTONE: qtz, clr-trnsl, fros, f-pred m-crs, ang-sbrndd, mod srt, loc wk dolcalc cmt, tr carb frg, tr glau/chl, tr musc, occ lim stnd Qtz, fri-disagg, gd por, n fluor

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

SILTSTONE: m dk gy- dk gy, occ blk, hd-v hd, sbblkly-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. blk-pIty, n por, n fluor

**SANDSTONE:** qtz, clr-trnsl, fros, f- m crs, ang-sbrndd, mod-slt 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, sbbIky-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, blk

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

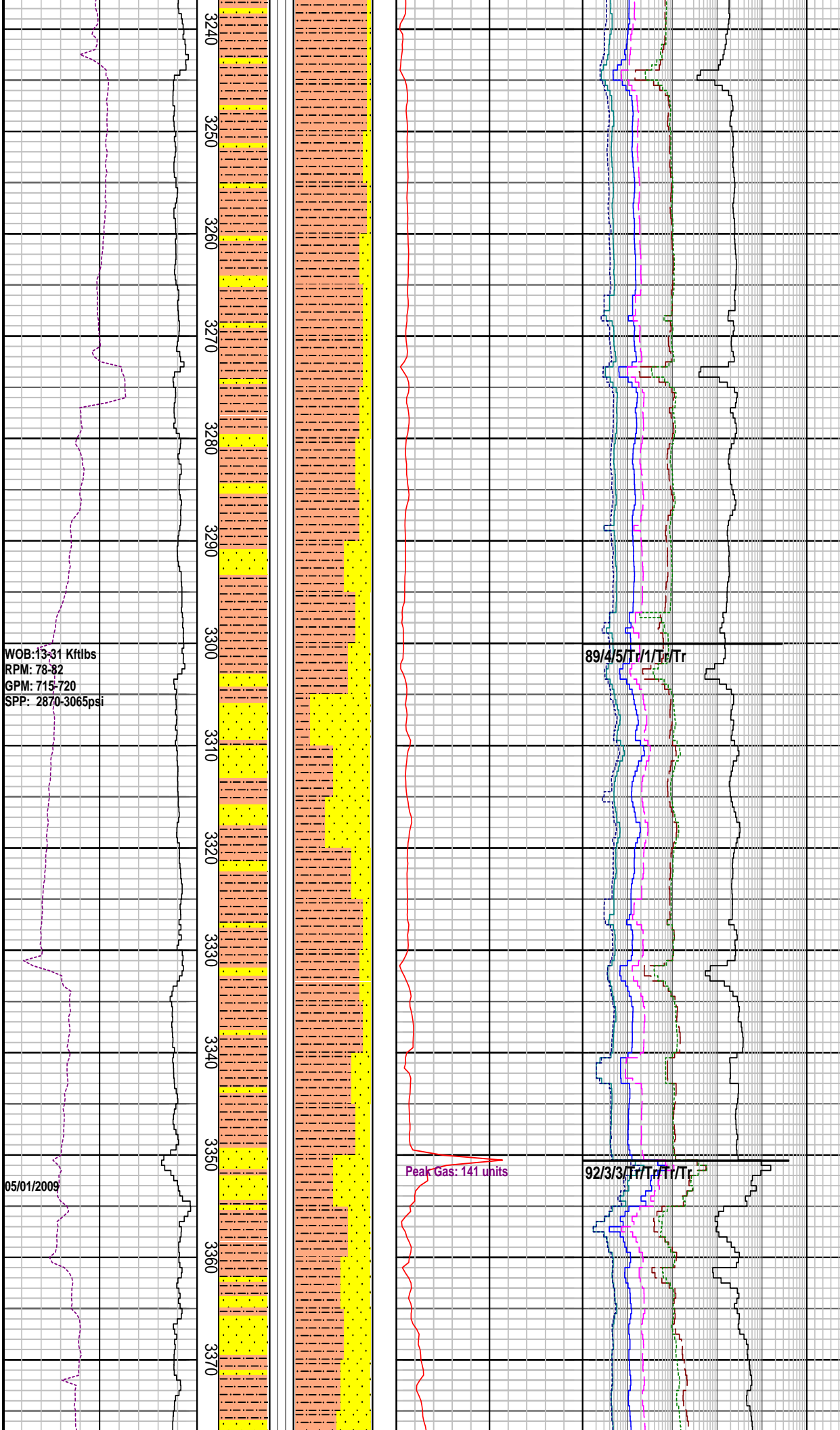
MD: 3170.28m Inc: 3.47°  
TVD: 3167.2m Azi: 152.03°

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-blky

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°



WOB: 13-31 Kftlbs  
 RPM: 78-82  
 GPM: 715-720  
 SPP: 2870-3065psi

05/01/2009

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-rndd, wl srt, wk calc cmt, arg mtrx, tr dol, tr carb mat, p por, n fluor



