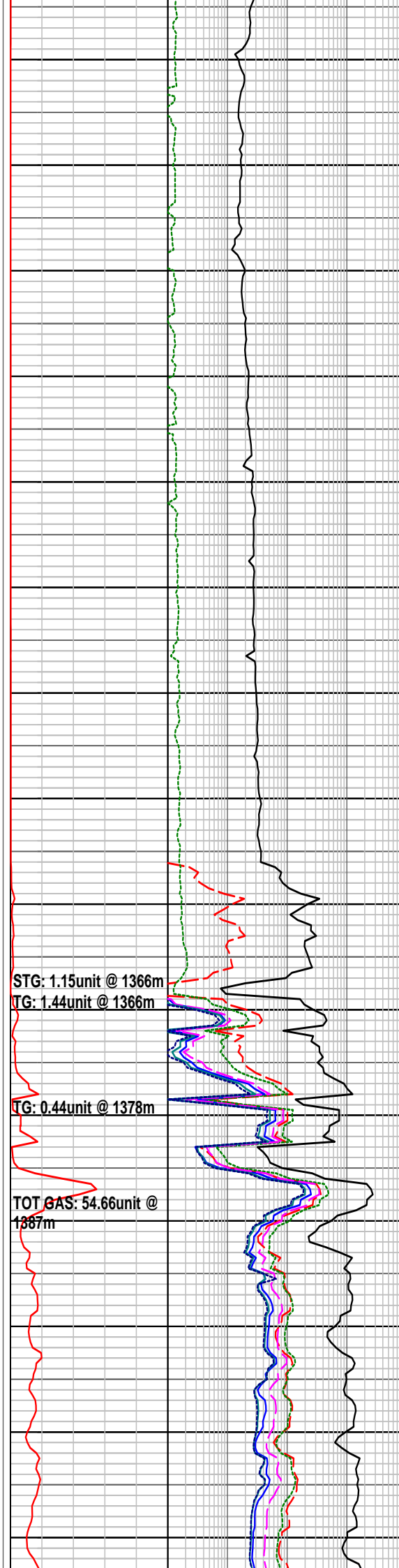
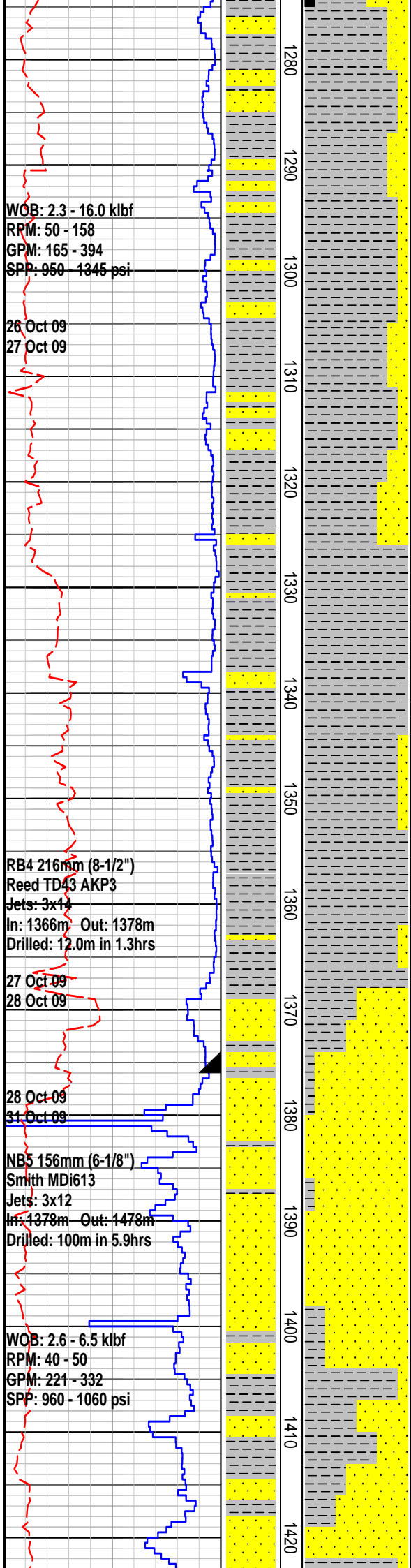




# FORMATION EVALUATION LOG

RATE OF PENETRATION ROP (0-100m/hr) Backup ROP (100-200m/hr) WOB (klb)	INTERPRETED LITHOLOGY	MD meters	LITHOLOGY	CORE	OIL SHOWS	TOTAL GAS TOTAL GAS unit BACKUP TOTAL GAS unit	CHROMATOGRAPH				REMARKS
							1	Methane ppm	10000	1	
							1	Ethane ppm	10000	1	
							1	Propane ppm	10000	1	
							1	iso-Butane ppm	10000	1	
							1	n-Butane ppm	10000	1	
							1	iso-Pentane ppm	10000	1	
								n-Pentane ppm			
							10	100	1000	10000	
25 Oct 09 26 Oct 09 RB3 216mm (8-1/2") Reed HP219 Jets: 3x14 In: 1184m Out: 1366m Drilled: 182m in 35.9hrs WOB: 0.3 - 12.2 klbf RPM: 51 - 140 GPM: 144 - 332 SPP: 565 - 1357 psi		70 1180 1190 1200 1210 1220 1230 1240 1250 1260 1270				TG: 0.82unit @ 1184m					CLAYSTONE: wh-m brn, v slt & v aren i/p, kao i/p, sli-mod carb, tr blk c flks, tr micrmic, frm, v disp & washing f/spl, n fiss  MW 10.1 FV 48 PV 16 YP 24 Gels 4/6 F 8.0 Ck 1.0 Sol 8.3 pH 8.5 Cl 20.0k  SANDSTONE: v lt gry-lt brn gy, v f-v crs, dom m-crs, ang-sbrnd, v p srtd, mod sil cmt, com-abd wh-lt brn argill & slt mtrx, quartzose w/clr-op qtz gr, rr gn & blk cht lith, tr blk c detr, fri-mod hd, fr-gd inf por, no fluor  CLAYSTONE: off wh-m brn, v slt & v aren, v kao i/p, sli carb, tr blk c flks, tr micrmic, frm-mod hd, v disp, n fiss  MW 10.3 FV 47 PV 15 YP 29 Gels 7/9 F 7.8 Ck 2.0 Sol 9.2 pH 8.5 Cl 17.0k  COAL: v dk brn-dom blk, blky-sbconch frac, ea-sli sbvit lstr, sli-m argill, mod hd



CLAYSTONE: off wh-m brn, v slt & v f aren, v kao i/p, sli carb, tr blk c flks, tr micrmic, rr pyr, frm-mod hd, v disp, n fiss

MW 10.35 FV 54 PV 20 YP 34  
Gels 7/10 F 7.0 Ck 2.0 Sol 10.0  
pH 8.5 Cl 18.0k

SANDSTONE: v lt gry-lt brn gy, v f-gt, dom m, ang-sbrnd, v p srted, mod sil cmt, abd off wh-lt brn argill & slt mtrx, quartzose w/clr-op qtz gr, rr gn & blk cht lith, tr blk c detr, tr pyr, mod hd, fr inf por, no fluor

CLAYSTONE: off wh-m brn, dom lt brn, v slt & v f aren, v kao i/p, sli carb, tr blk c flks, tr micrmic, tr pyr, mod hd, v disp, sli sbfiss

Survey at 1354m  
N60degSE  
1.5 degs

CLAYSTONE: off wh-m gn gry-m brn gry, mod slty, tr vf off wh alt fspr gr, tr brn-blk carb spks, tr micrmic, sft, v disp, sli sbfiss

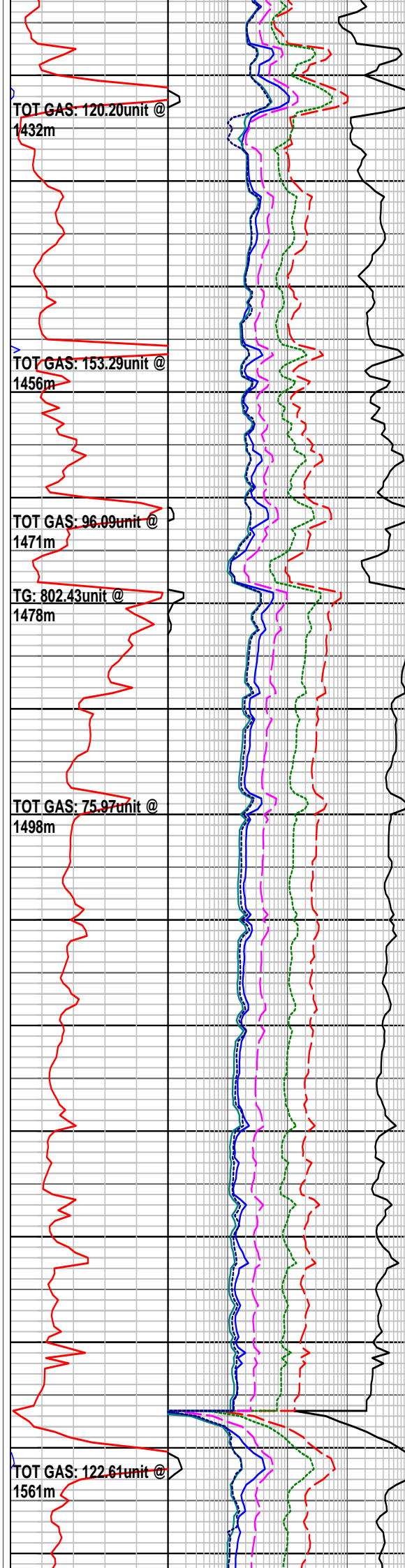
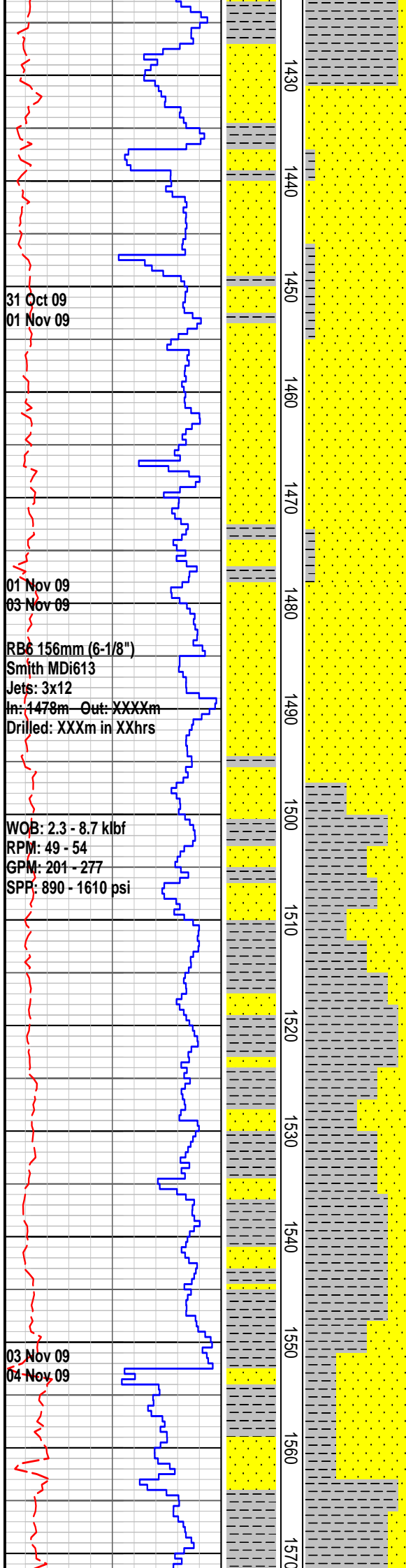
Run#1 HALS - BHC - PEX  
1361 - 299m  
GR to Surface

178mm (7") casing shoe  
at 1376mMD

SANDSTONE: lt gry, vf-f, occ m, dom f, sbang-sbrnd, mod srted, wk sil cmt, abd off wh argill & mtrx, abd alt fspr gr, com rd brn gry & gn, lith, tr qtz gr, tr c brn mic flk, tr v f blk carb detr, tr pyr, fri, v p vis por, no fluor

Formation L.O.T. @ 1382m  
MW: 9.8ppg EMW: 13.1ppg

CLAYSTONE: off wh-m gn gry-m gry,



occ m brn gry, mod sity, tr v f on wr  
alt fspr gr, tr brn-blk carb spks, tr  
micrmic, frm, v disp, sli sbfiss

MW 10.0 FV 42 PV 10 YP 22  
Gels 4/7 F N/A Ck 35.0 Sol 9.5  
pH 9.5 CI 16.8k

SANDSTONE: lt gry-lt gn gry, v f-rr m,  
dom f, dom f, sbang-sbrnd, mod srtd,  
mod sil cmt, wk calc cmt i/p, abd off  
wh argill mtrx, abd alt fspr gr & rd brn  
gry & gn lith, 10% qtz gr, tr crs brn  
mic flks, tr v f blk carb detr, tr pyr, fri,  
v p vis por, no fluor

DST #1 1383m - 1478m  
IF 15 min  
ISI 90 min  
FF 180 min  
FSI 540 min  
GTS 5 min into FF @ RTSM  
Rec 140m gas cut rathole mud

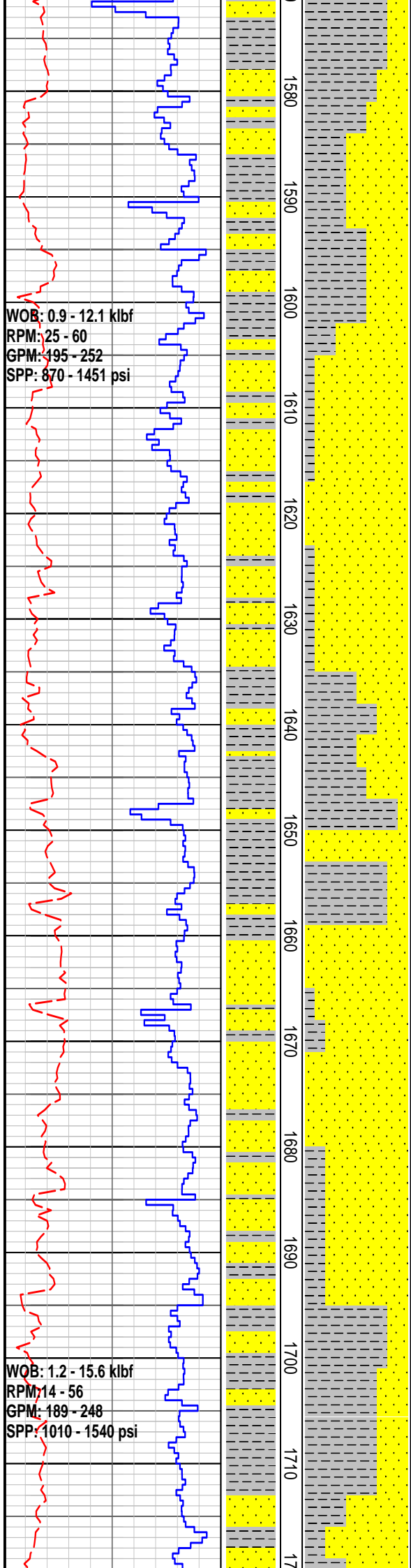
SANDSTONE: lt gn gry, v f-occ m,  
dom f, sbang-sbrnd, mod srtd, mod si  
cmt, wk calc cmt i/p, abd off wh argill  
mtrx, abd alt fspr gr & rd brn gry & gn  
lith, 10% qtz gr, tr crs brn mic flks, tr v  
f blk carb detr, rr pyr, fria, v p vis por,  
no fluor

CLAYSTONE: lt-m brn gry-m gry-occ  
m gn gry, v slty i/p grdg to argill  
SLTST, v f aren i/p, tr v f off wh alt  
fspr gr, tr-com brn-blk carb spks, tr  
micrmic, frm, v disp, sli sbfiss

MW 9.8 FV 46 PV 15 YP 22  
Gels 5/7 F N/A Ck 28 Sol 7.8  
pH 9.5 CI 18.0k

SANDSTONE: lt gn gry, v f-f, dom f,  
sbang-sbrnd, mod srtd, mod sil cmt,  
wk calc cmt i/p, abd off wh argill mtrx,  
abd alt fspr gr & rd brn gry & gn lith,  
com qtz gr, tr crs brn mic flks, tr v f  
blk carb detr, tr calc lined frac, fria, no  
vis por, no fluor

MW 9.7 FV 39 PV 10 YP 17  
Gels 3/4 F 9.0 Ck 1.0 Sol 7.3  
pH 9.5 CI 12.0k



TOT GAS: 139.76unit @ 1585m

CLAYSTONE: lt-m gn gry-m gry-m brn gry, mod-v slty grdg to argill SLTST i/p, v f aren i/p, tr v f off wh alt fspr gr, tr-com brn-blk carb spks & c detr, tr micrmic, frm, v disp, sli sbfiss

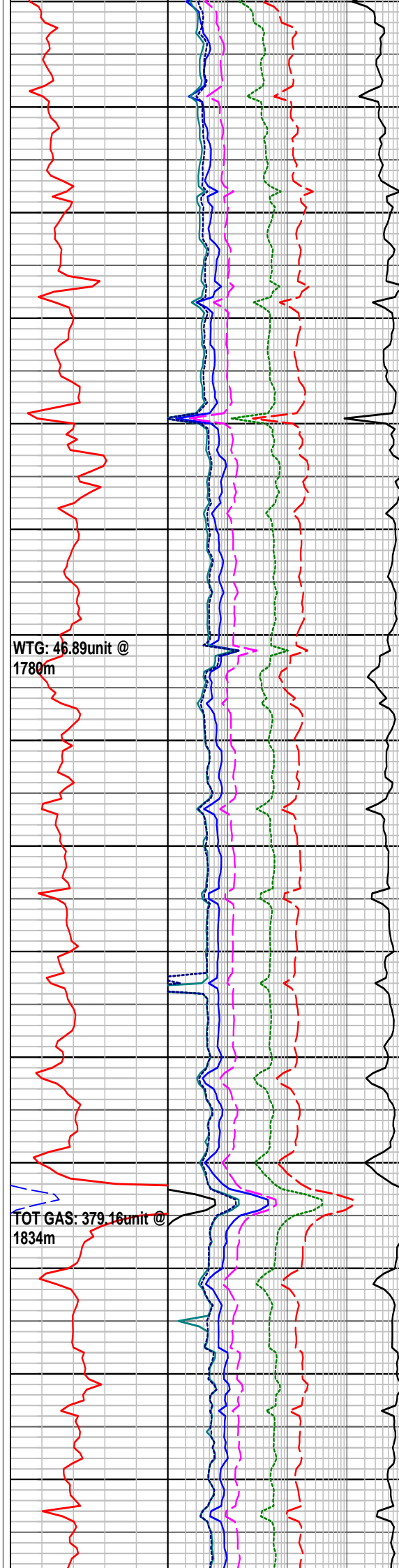
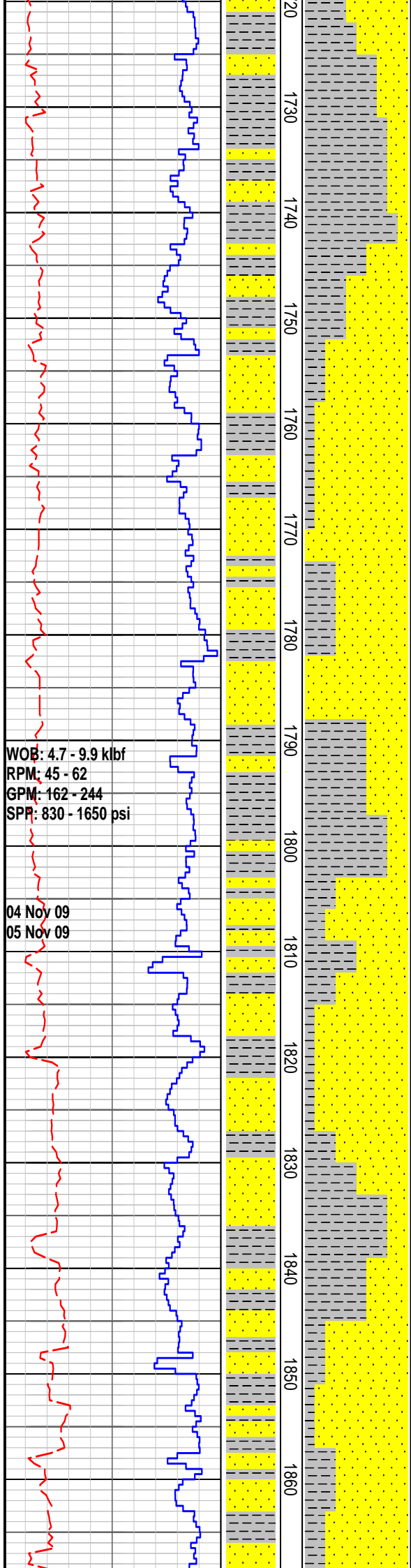
SANDSTONE: lt gn gry, v f-m, dom m, sbang-sbrnd, mod srtd, mod sil cmt, wk calc cmt i/p, abd off wh argill mtrx, abd alt fspr gr & rd brn gry & gn lith, com qtz gr, tr crs brn mic flks, tr blk c detr, fria, no vis por, no fluor

SANDSTONE: lt gn gry, v f-m, dom f, sbang-sbrnd, mod srtd, mod sil cmt, mod-strong calc cmt i/p, abd off wh argill mtrx, abd alt fspr gr & rd brn gry & gn lith, com qtz gr, tr crs brn mic flks, tr blk c detr, rr calc infilled frac, fria, p vis por, no fluor

MW 9.75 FV 42 PV 13 YP 22  
Gels 3/5 F 7.5 Ck 1.0 Sol 7.6  
pH 9.5 Cl 10.5k

CLAYSTONE: lt-m gn gry-m gry-m brn gry, mod-v slty grdg to argill SLTST i/p, v f aren i/p, tr v f off wh alt fspr gr, tr-com brn-blk carb spks & c detr, tr micrmic, tr calc infilled frac, frm-mod hd, v disp, sli sbfiss





SANDSTONE: lt gn gry, v f-f, dom f, sbang-sbrnd, mod srted, mod sil cmt, mod-strong calc cmt i/p, abd off wh argill mtrx, abd alt fspr gr & rd brn gry & gn lith, com qtz gr, tr crs brn mic flks, tr blk c detr, rr calc infilled frac, fria, p vis por, no fluor

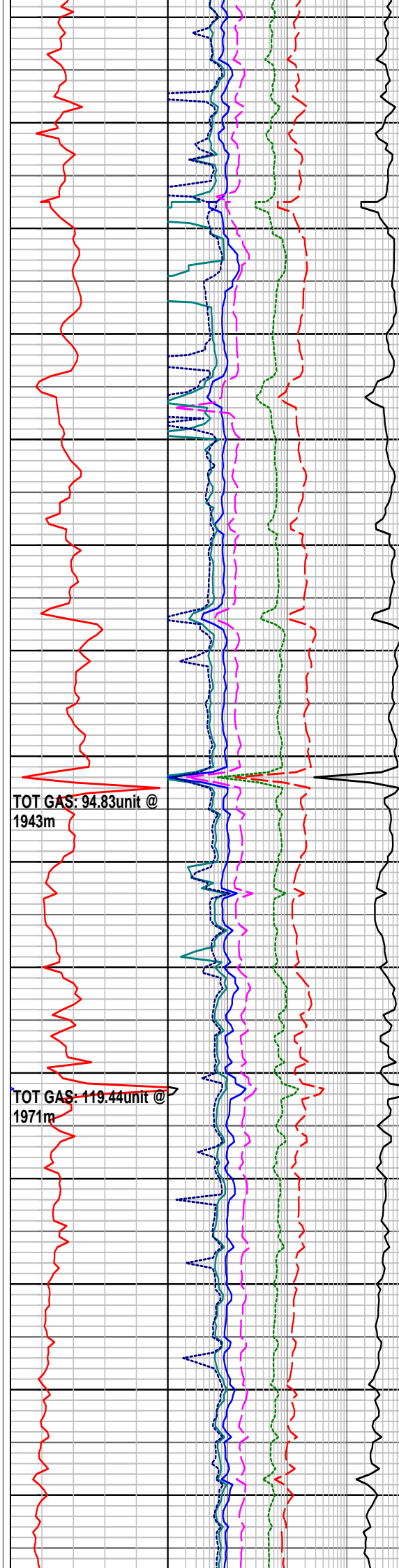
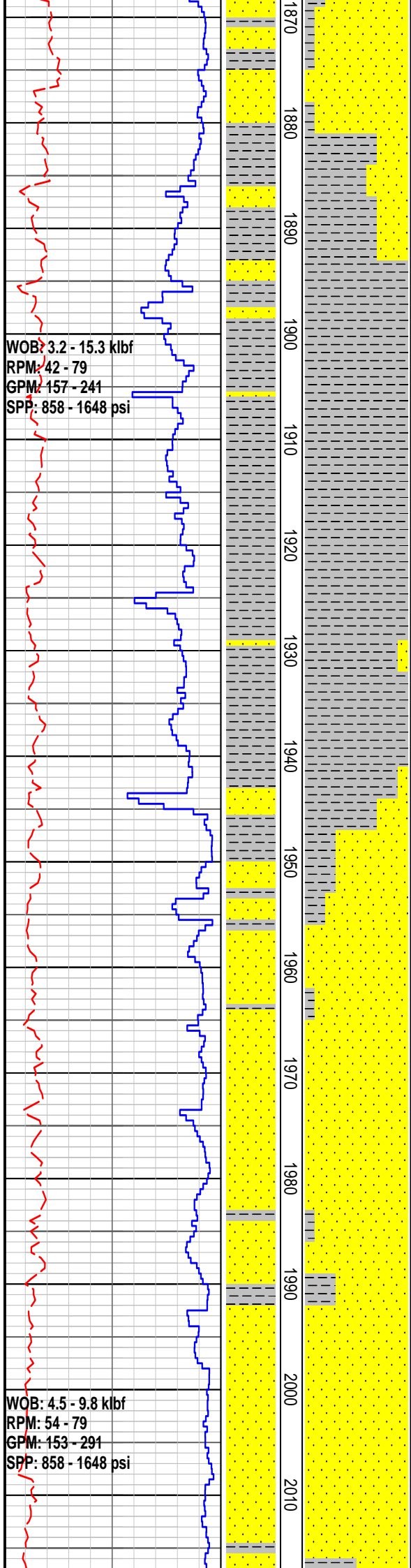
CLAYSTONE: lt-m gn gry-m gry-m brn gry, mod-v slty grd to argill SLTST i/p, v f aren i/p, tr v f off wh alt fspr gr, tr-com brn-blk carb spks & c detr, tr micrmic, rr calc infilled frac, frm-mod hd, v disp, sli sbfiss

Survey at 1768m  
N340degsW  
4 degs

CLAYSTONE: lt-m gn gry-m gry-m brn gry, mod-v slty grd to argill SLTST i/p, v f aren i/p, tr v f off wh alt fspr gr, tr brn-blk carb spks & c detr, tr micrmic, tr calc infilled frac, frm-mod hd, v disp, sbfiss

MW 9.9 FV 44 PV 14 YP 21  
Gels 2/4 F 8.0 Ck 1.0 Sol 8.7  
pH 9.5 Cl 10.0k

SANDSTONE: lt gn gry-m gn, v f-m, dom f, sbang-sbrnd, mod srted, mod sil cmt, mod calc cmt i/p, com-abd off wh-m gn argill mtrx, abd alt fspr gr & rd brn gry & gn lith, com qtz gr, tr crs brn mic flks, tr blk c detr, tr calc infilled frac, fria, fr vis por, no fluor

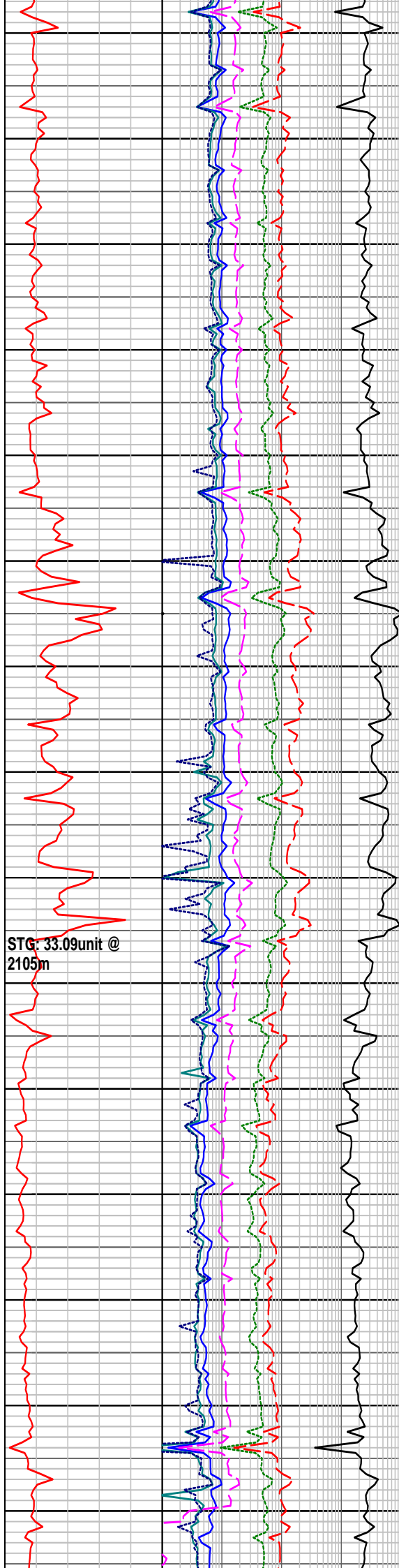
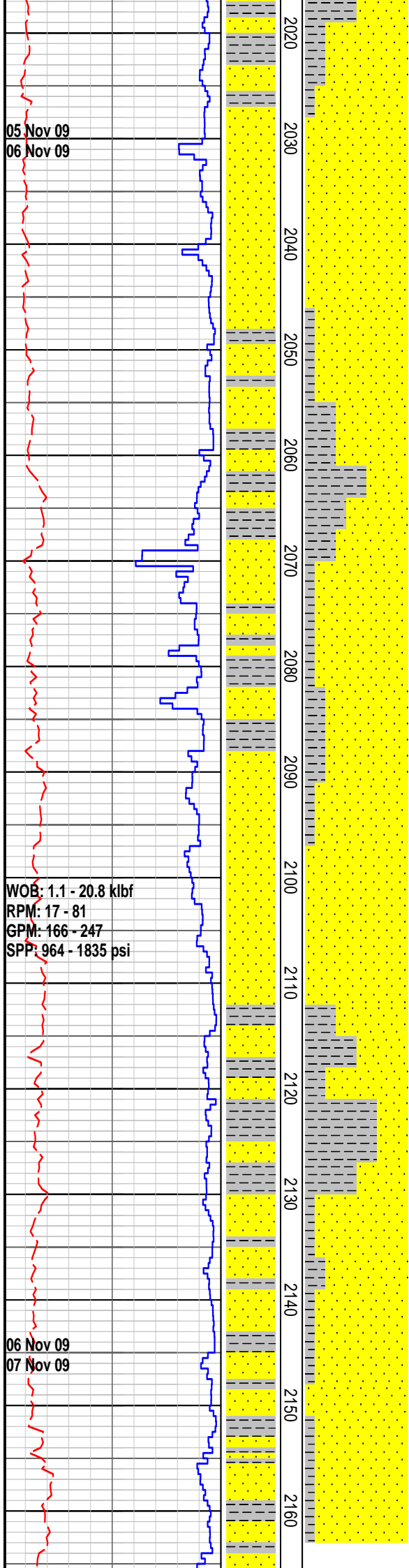


SANDSTONE: off wh-lt gn gry-lt pk, v f-f, dom f, sbang-sbrnd, mod srtd, strong sil cmt, mod calc cmt i/p, abd off wh-m gn argill mtrx, abd wh & pk fspr gr, com gn rd brn gry & blk lith, tr qtz gr, tr crs gn brn mic flks, tr blk c detr, tr calc infilled frac, hd, no vis por, no fluor

CLAYSTONE: lt-m gn gry, occ m gn gry-m brn gry, mod-v slty grd to argill SLTST i/p, v f aren i/p, tr-com v f off wh alt fspr gr, tr brn-blk carb spks & c detr i/p, tr-com micrmic, rr calc infilled frac, mod hd, v disp, sbfiss

SANDSTONE: off wh-lt gn gry, v f-m, dom f, sbang-sbrnd, mod srtd, strong sil cmt, mod calc cmt i/p, abd off wh-occ pk argill mtrx, abd wh & occ pk fspr gr, com gn rd brn gry & blk lith, tr qtz gr, tr crs gn brn mic flks, tr blk c detr, tr calc & rd min vn, hd, no vis intgran por, no fluor

CLAYSTONE: lt-m gry-occ m brn gry, mod-v slty, v f aren i/p, tr-com v f off wh alt fspr gr, tr -com brn-blk carb spks & c detr, tr-com micrmic, tr calc & rd min infilled frac, com slick, mod hd, v disp, sbfiss



SANDSTONE: off wh-lt gn gry-lt pk gry, v f-occ m, dom f, sbang-sbrnd, mod srted, strong sil cmt, strong calc cmt i/p, abd off wh & tr pk argill mtrx, abd wh & occ pk fspr gr, com gn rd brn gry & blk lith, 10% qtz gr, tr gn brn mic flks, rr blk c detr, tr calc & rd min vn, hd, no vis intgran por, no fluor

CLAYSTONE: m gn gry-m gry-m brn gry, mod-v slty, v f aren i/p, tr-com v f off wh alt fspr gr, tr -com brn-blk carb spks & c detr, com micrmic, tr calc & rd min infilled frac, com slick, mod hd, v disp, sbfiss

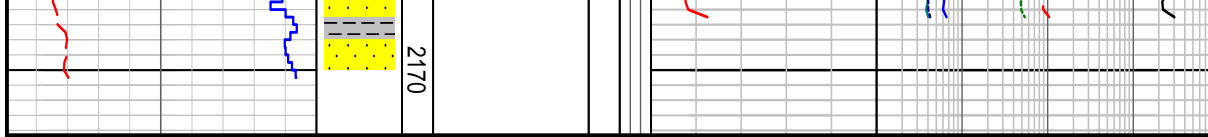
gas from coal  
detritus

SANDSTONE: off wh-lt gn gry-lt pk gry, v f-occ m, dom f, sbang-sbrnd, mod srted, strong sil cmt, strong calc cmt i/p, abd off wh & tr pk argill mtrx, abd wh & occ pk fspr gr, com gn rd brn gry & blk lith, 10% qtz gr, tr gn brn mic flks, rr blk c detr, tr calc & rd min vn, hd, no vis intgran por, no fluor

Survey at 2105m  
12 degs

CLAYSTONE: m gry, occ m gn gry-m brn gry, mod-v slty, v f aren i/p, tr-com v f off wh alt fspr gr, com brn-blk carb spks & c detr, com micrmic, tr calc infilled frac, com slick, mod hd, v disp, sbfiss

SANDSTONE: off wh-lt gn gry, lt pk gry, v f-occ m, dom f, sbang-sbrnd, mod srted, strong sil cmt, strong calc cmt i/p, abd off wh & tr pk argill mtrx, abd wh & pk fspr gr, com gn rd brn gry & blk lith, 10% qtz gr, tr gn brn mic flks, com-abd blk c detr, com calc & rd min vn. hd. no vis intaran por. n



fluor

## FORMATION EVALUATION LOG

RATE OF PENETRATION														
ROP (0-100m/hr)														
100	90	80	70	60	50	40	30	20	10					
Backup ROP (100-200m/hr)														
200	190	180	170	160	150	140	130	120	110					
WOB (klb)														
5	10	15	20	25	30	35	40	45	50					
LITHOLOGY	INTERPRETED LITHOLOGY	MD meters 1:500	LITHOLOGY	CORE	OIL SHOWS	TOTAL GAS				CHROMATOGRAPH				REMARKS
						20   40   60   80   100 unit				1 Methane ppm 10000				
						280   460   640   820   1000 unit				1 Ethane ppm 10000				
										1 Propane ppm 10000				
										1 iso-Butane ppm 10000				
										1 n-Butane ppm 10000				
										1 iso-Pentane ppm 10000				
										n-Pentane ppm				
										10   100   1000   10000				