



Company : Apache

Well : Elver-1

Interval : 506.00 - 2586.87 meters

Created : 28/Dec/2008 9:53:30 AM

INTEQ

FORMATION EVALUATION LOG

Drilling Rate		MD meters	TVDRT meters	Cuttings Lithology	Oil Show	Visual Inferred Porosity	Gas Data		Chromatograph Data		Calcmetry	Interpreted Lithology	Lithology Description
ROP (m/hr)	ROP (m/hr)						Gas Hydrocarbon Avg %	Methane ppm	Ethane ppm	Propane ppm			
200	200	510	0.0				0.1 1 10 100	1	100000	100000			
180	180	520	0.0				Resistivity Shallow	1	100000	100000			
160	160	530	0.0				OHMM	1	100000	100000			
140	140	540	0.0				Resistivity Deep	1	100000	100000			
120	120	550	0.0				OHMM	1	100000	100000			
100	100	560	0.0					1	100000	100000			
80	80	570	0.0					1	100000	100000			
60	60	580	0.0					1	100000	100000			
40	40	590	0.0					1	100000	100000			
20	20	600	0.0					1	100000	100000			
0	0												

RR1 Smith XR+C
 914 mm (36")
 Jets: 4x18, (HO) 4x18
 Depth In: 526.4m
 Depth Out: 572.9m
 Drilled: 46.5m in 1.10-hrs
 Grade: 1-1-WT-A-E-IN-NO-TD

WOB: 2-14klbf
 RPM: 80-155
 GPM: 650-1300
 SPP: 900-3550psi

20/12/08
 NB2 Smith MDI610HPX
 406 mm (16")
 Jets: 9x13
 Depth In: 572.9 m
 Depth Out: 1741.7 m
 Drilled: 1168.8m in 16.10 hrs
 Grade: 1-3-CT-T-X-I-NO-TD

WOB: 2-9klbf
 RPM: 00-00

Survey @ 527.37 mMDRT
 Incl: 0.00deg
 Azi: 0.00deg
 TVD: 525.37 m

Survey @ 554.25 mMDRT
 Incl: 0.49 deg
 Azi: 285.86 deg
 TVD: 554.25 m

Elver-1 spudded @ 17:40 hrs on 20th December 2008

All measurements in meters referenced from rotary table (RT)
 RT - AHD = 21.5 m
 Water Depth = 504.9 m
 RT - Seabed = 526.4 m

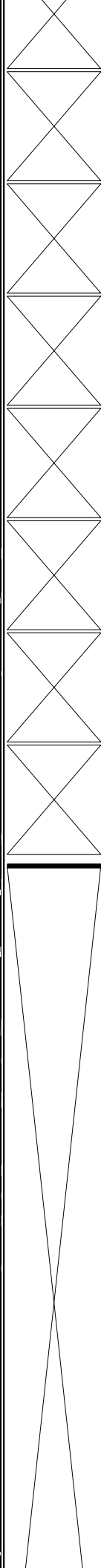
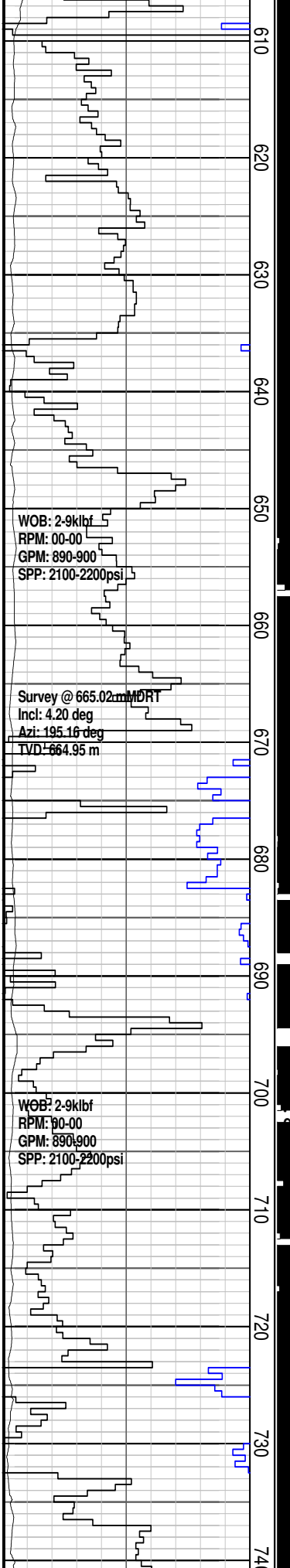
Drill 914mm (36") hole w/ seawater and hi-vis sweeps>Returns to seabed

Set 762mm (30") casing @ 572.9 mMDRT

Drill 914mm (36") hole to 572.9 mMDRT

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to

GPM: 890-900
SPP: 2100-2200psi



Survey @ 607.72 mMDRT
Incl: 1.25 deg
Azi: 216.24 deg
TVD: 607.71 m

Survey @ 636.20 mMDRT
Incl: 2.69 deg
Azi: 199.00 deg
TVD: 636.18 m

Survey @ 654.71 mMDRT
Incl: 3.58 deg
Azi: 194.43 deg
TVD: 654.66 m

WOB: 2.9klbf
RPM: 00-00
GPM: 890-900
SPP: 2100-2200psi

Survey @ 665.02 mMDRT
Incl: 4.20 deg
Azi: 195.16 deg
TVD: 664.95 m

Survey @ 683.35 mMDRT
Incl: 5.49 deg
Azi: 193.28 deg
TVD: 683.21 m

Survey @ 693.33 mMDRT
Incl: 6.32 deg
Azi: 191.52 deg
TVD: 693.14 m

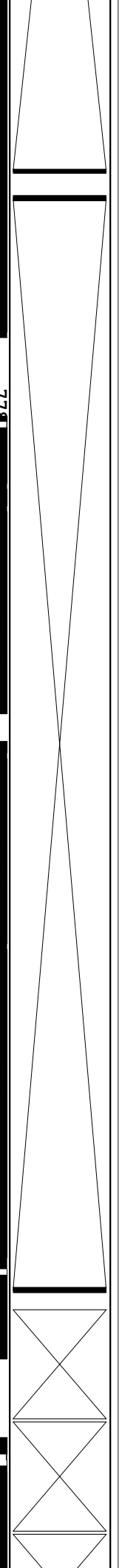
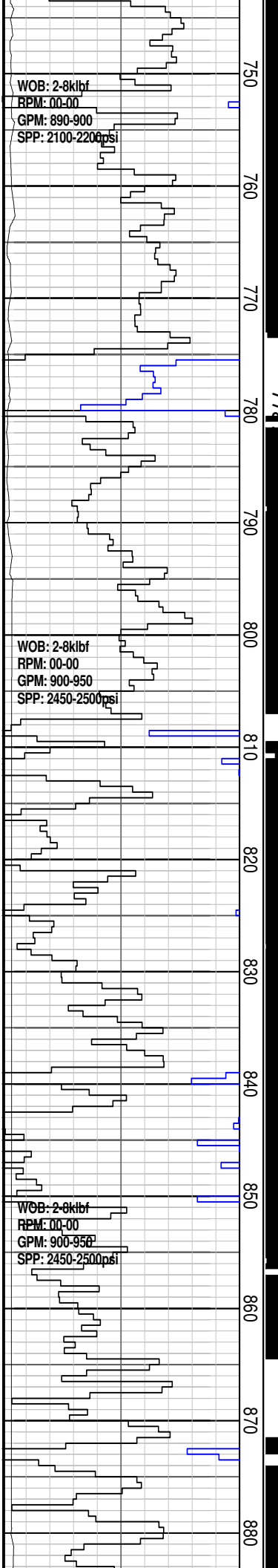
WOB: 2.9klbf
RPM: 00-00
GPM: 890-900
SPP: 2100-2200psi

Survey @ 722.44 mMDRT
Incl: 8.88 deg
Azi: 186.99 deg
TVD: 721.99 m

seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



Survey @ 750.81 mMDRT
Incl: 11.95 deg
Azi: 182.44 deg
TVD: 749.89 m

Survey @ 779.60 mMDRT
Incl: 13.44 deg
Azi: 182.44 deg
TVD: 777.97 m

Survey @ 814.19 mMDRT
Incl: 15.56 deg
Azi: 190.62 deg
TVD: 811.46 m

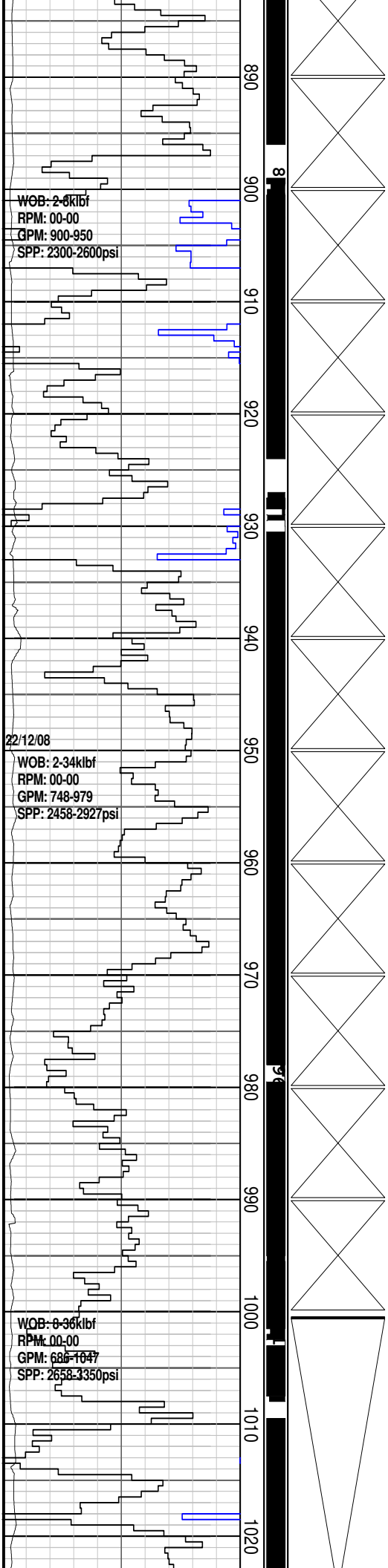
Survey @ 842.98 mMDRT
Incl: 19.17 deg
Azi: 193.57 deg
TVD: 838.94 m

Survey @ 871.68 mMDRT
Incl: 20.62 deg
Azi: 194.19 deg
TVD: 865.92 m

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



Survey @ 895.45 mMDRT
Incl: 22.54 deg
Azi: 193.03 deg
TVD: 888.03 m

Survey @ 924.90 mMDRT
Incl: 24.17 deg
Azi: 197.59 deg
TVD: 915.06 m

Survey @ 952.68 mMDRT
Incl: 25.47 deg
Azi: 194.80 deg
TVD: 940.28 m

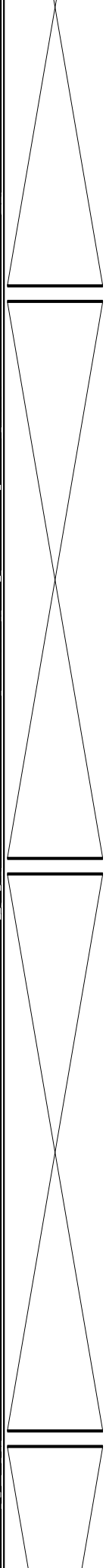
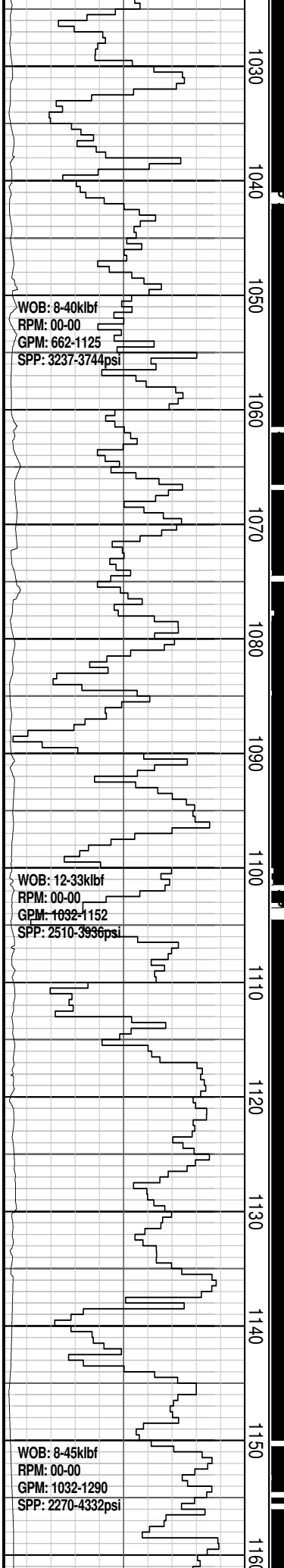
Survey @ 981.86 mMDRT
Incl: 28.37 deg
Azi: 192.20 deg
TVD: 966.29 m

Survey @ 1009.79 mMDRT
Incl: 30.90 deg
Azi: 192.87 deg
TVD: 990.56 m

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



Survey @ 1039.49 mMDRT
Incl: 33.01 deg
Azi: 194.58 deg
TVD: 1015.77 m

Survey @ 1067.30 mMDRT
Incl: 35.27 deg
Azi: 196.86 deg
TVD: 1038.78 m

Survey @ 1097.02 mMDRT
Incl: 36.46 deg
Azi: 198.81 deg
TVD: 1062.87 m

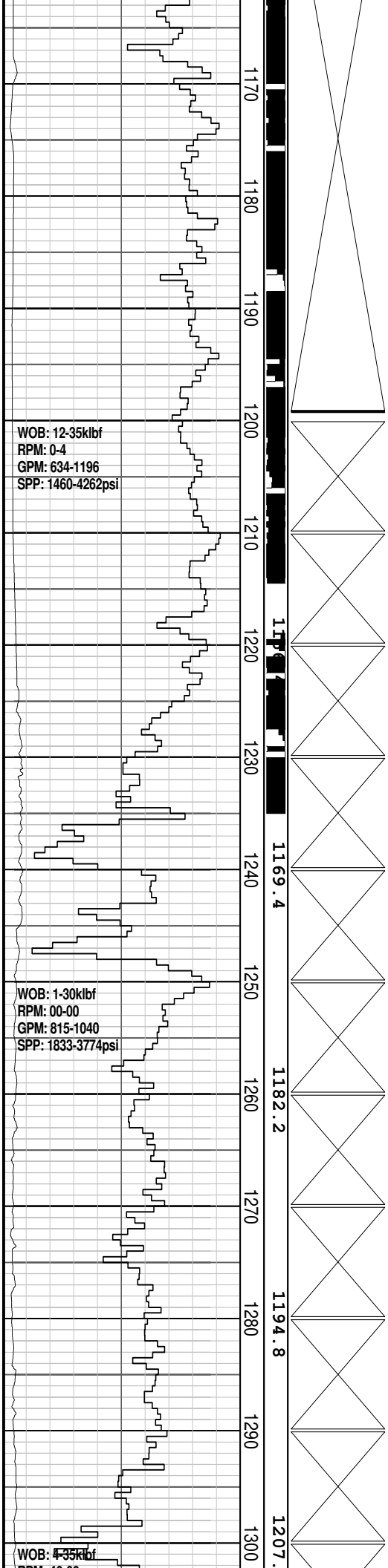
Survey @ 1125.42 mMDRT
Incl: 37.85 deg
Azi: 194.86 deg
TVD: 1085.51 m

Survey @ 1159.87 mMDRT
Incl: 38.82 deg

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



Azi: 196.61 deg
TVD: 1112.53 m

Survey @ 1188.66 mMDRT
Incl: 42.24 deg
Azi: 197.32d eg
TVD: 1134.41 m

Survey @ 1217.27 mMDRT
Incl: 48.01 deg
Azi: 197.75 deg
TVD: 1154.59 m

Survey @ 1238.31 mMDRT
Incl: 50.20 deg
Azi: 196.21 deg
TVD: 1168.36 m

Survey @ 1270.80 mMDRT
Incl: 50.77 deg
Azi: 196.32 deg
TVD: 1189.03 m

Survey @ 1299.61 mMDRT
Incl: 51.38 deg

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

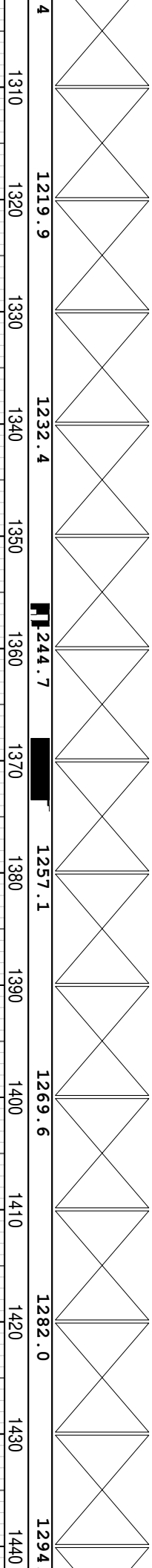
Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater

HPM: 46-66
GPM: 850-950
SPP: 2500-3500psi

WOB: 4-35klbf
RPM: 44-66
GPM: 850-950
SPP: 2200-3500psi

WOB: 6-38klbf
RPM: 50-95
GPM: 990-1010
SPP: 2500-3500psi



Azi: 196.11 deg
TVD: 1207.14 m

Survey @ 1328.78 mMDRT
Incl: 51.02 deg
Azi: 196.11 deg
TVD: 1225.41 m

Survey @ 1353.78 mMDRT
Incl: 51.02 deg
Azi: 196.11 deg
TVD: 1225.41 m

Survey @ 1384.89 mMDRT
Incl: 51.25 deg
Azi: 195.67 deg
TVD: 1260.16 m

WOB: 6-38klbf
RPM: 50-95
GPM: 990-1010
SPP: 2500-3500psi

Survey @ 1415.19 mMDRT
Incl: 51.76 deg
Azi: 195.40 deg
TVD: 1296.30 m

and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

WOB: 6-38klbf
RPM: 90-95
GPM: 990-1010
SPP: 2500-3500psi

WOB: 6-38klbf
RPM: 00-104
GPM: 1000-1020
SPP: 3500-3700psi

WOB: 6-38klbf
RPM: 90-114
GPM: 1000-1020
SPP: 2500-3700psi

1450
1460
1470
1480
1490
1500
1510
1520
1530
1540
1550
1560
1570
1580

1319.4
1332.2
1345.0
1357.6
1370.1
1382

Survey @ 1443.77 mMDRT
Incl: 52.76 deg
Azi: 195.01 deg
TVD: 1314.30 m

Survey @ 1501.31 mMDRT
Incl: 50.19 deg
Azi: 194.04 deg
TVD: 1332.90 m

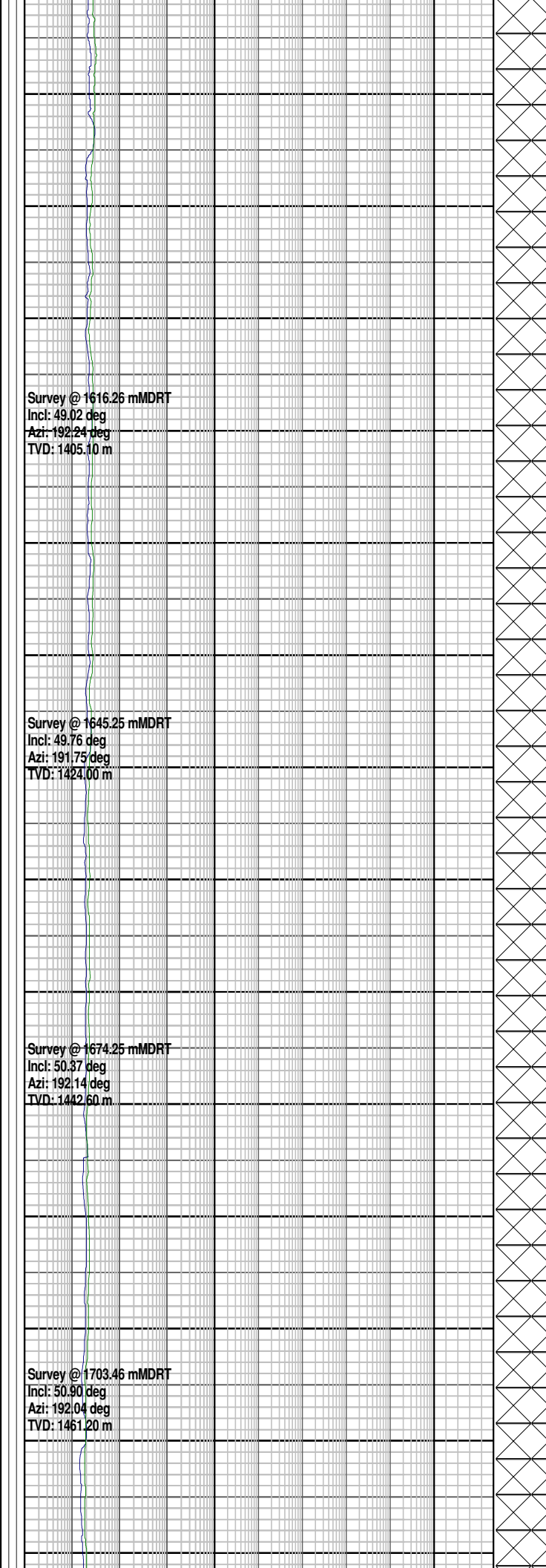
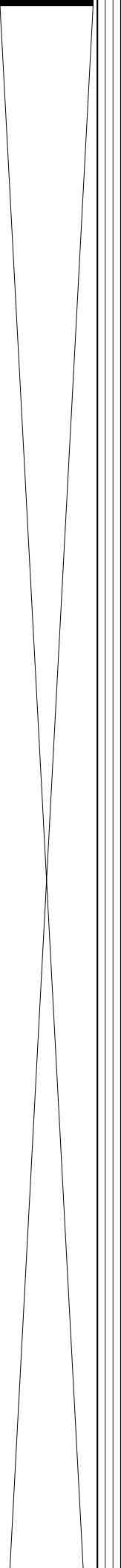
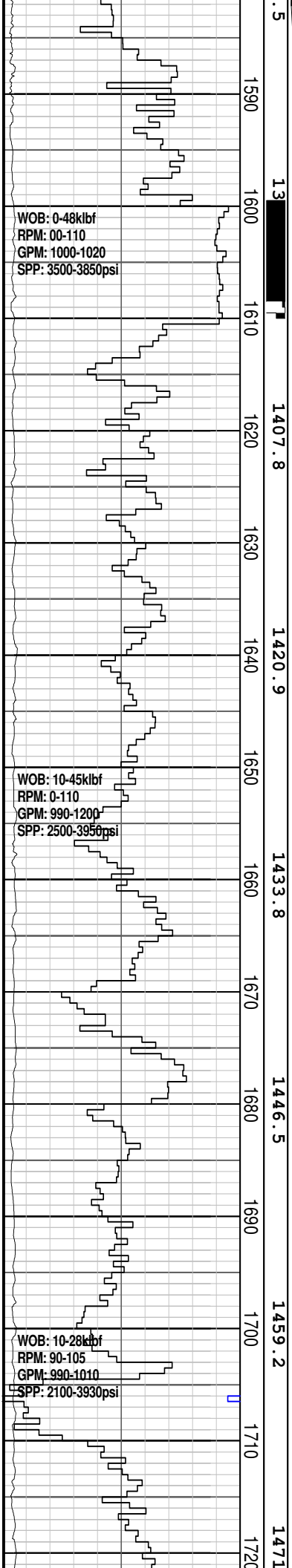
Survey @ 1530.05 mMDRT
Incl: 50.30 deg
Azi: 193.58 deg
TVD: 1351.10 m

Survey @ 1538.72 mMDRT
Incl: 51.56 deg
Azi: 193.59 deg
TVD: 1369.10 m

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

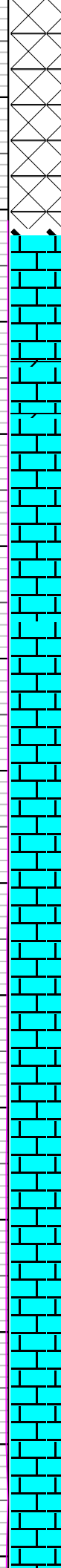
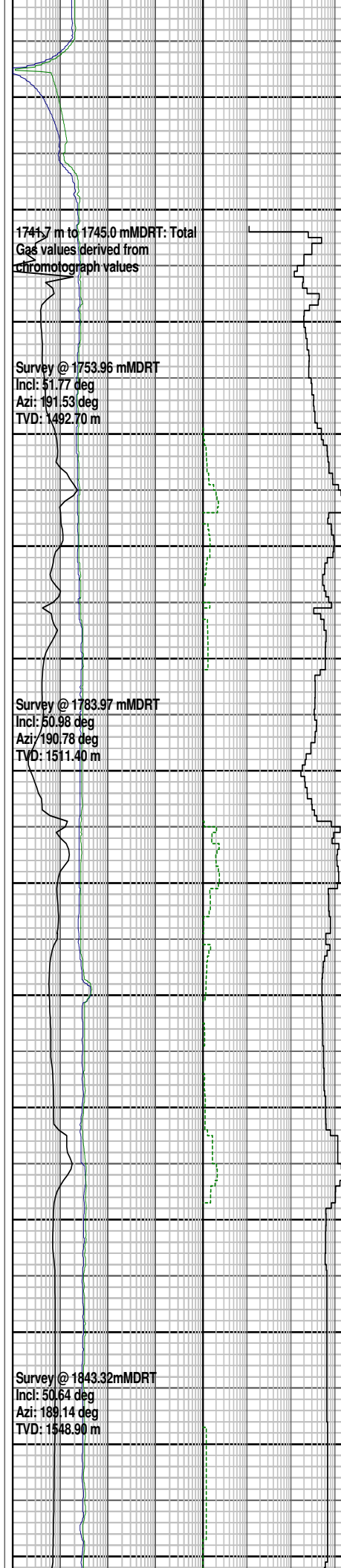
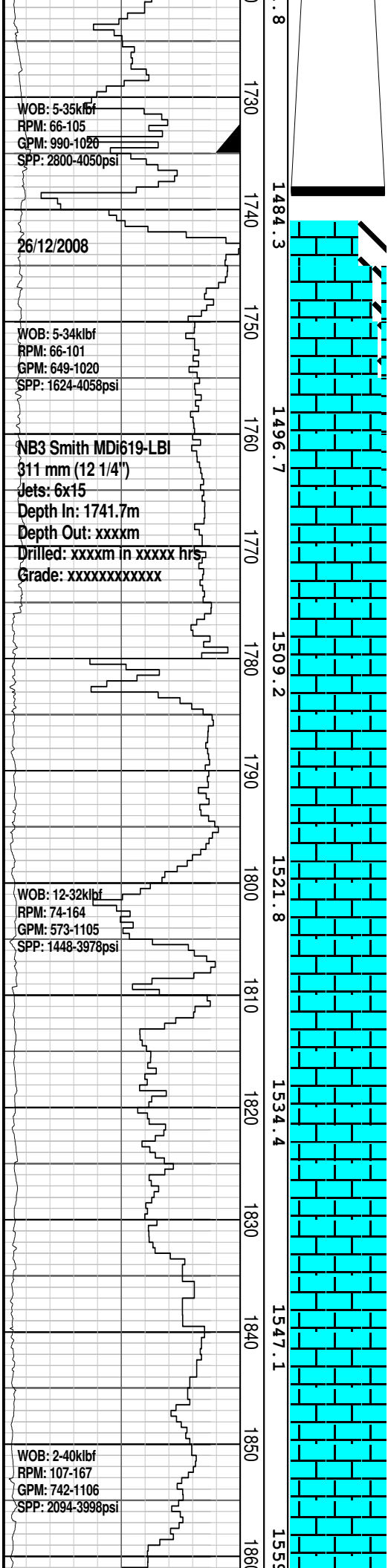
Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.

Drill 406mm (16") hole w/ seawater and hi-vis gel sweeps. Returns to seabed.



340mm (13 3/8") casing shoe @ 1734.9 mMDRT

Reached 406mm (16") Section TD @ 1741.7m at 22:50 hrs on 22/12/2008

CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yl or, tr med-crs sbang qtz grs, slt i/p grd to CLSLT, tr v f glauc gr, frm-mod hd, p vis por, no hydc fluor

DOLOMITE: lt brn, dk yelsh brn, xln, v calc, grd to DOL LST, mod hd-hd, brit

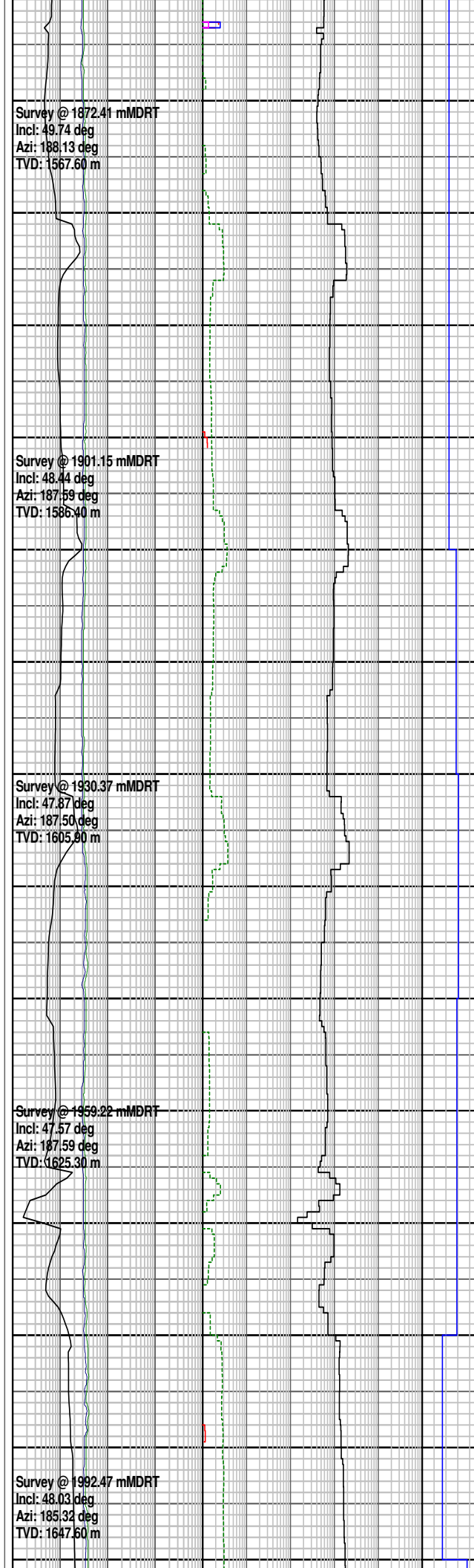
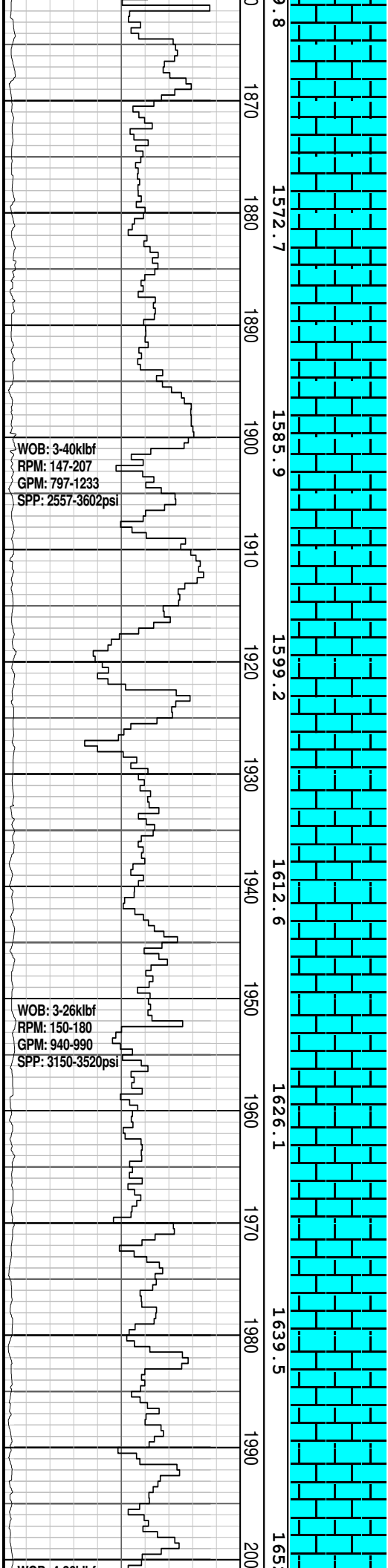
CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p, grd to CLSLT, tr v f glauc, tr lt brn hd dol frags, sft-frm, amor-sbblky, sbfiss i/p

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbblky

CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yel org, tr f-crs sbang qtz grs, slty i/p grd to CLSLT, tr v f glauc grs, frm-mod hd, pr vis por, no hydc fluor

CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p grd to CLSLT, tr v f glauc grs, tr forams, tr oo, sft-frm, amor-sbblky

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbblky



CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p grd to CLSLT, tr v f glauc grs, tr forams, tr oo, sft-frm, amor-sbbly

CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yel org, tr f-crs sbang qtz grs, slty i/p grd to CLSLT, tr v f glauc grs, frm-mod hd, pr vis por, no hydc fluor

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbbly

CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yel org, tr f-crs sbang qtz grs, slty i/p grd to CLSLT, tr v f glauc grs, frm-mod hd, pr vis por, no hydc fluor

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbbly

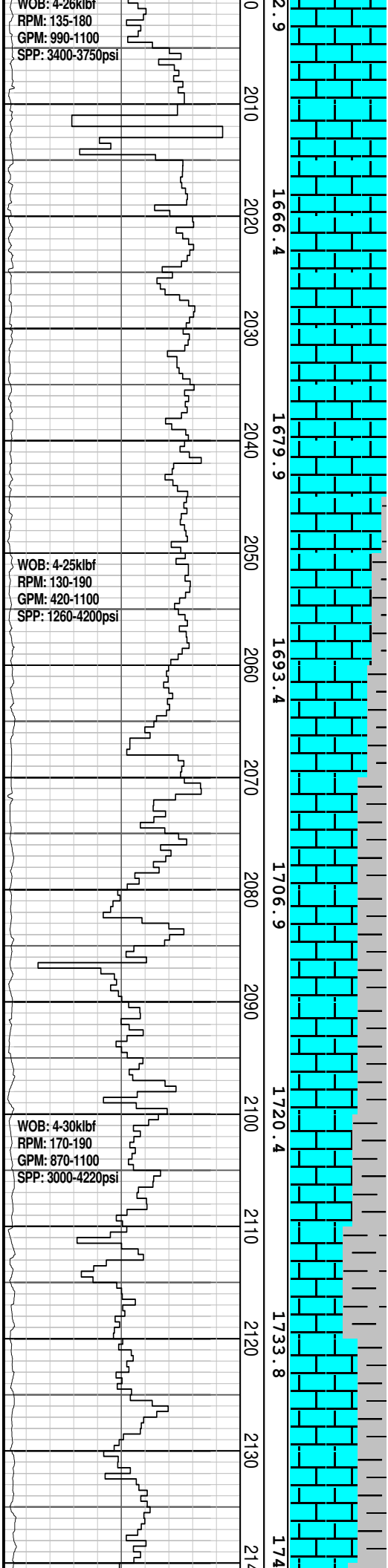
CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yel org, tr f-crs sbang qtz grs, slty i/p grd to CLSLT, tr v f glauc grs, frm-mod hd, pr vis por, no hydc fluor

CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p grd to CLSLT, tr v f glauc grs, tr forams, tr oo, sft-frm, amor-sbbly

WOB: 4-26klbf
RPM: 135-180
GPM: 990-1100
SPP: 3400-3750psi

WOB: 4-25klbf
RPM: 130-190
GPM: 420-1100
SPP: 1260-4200psi

WOB: 4-30klbf
RPM: 170-190
GPM: 870-1100
SPP: 3000-4220psi



Survey @ 2017.72 mMDRT
Incl: 47.36 deg
Azi: 184.93 deg
TVD: 1664.60 m

Survey @ 2046.54 mMDRT
Incl: 47.51 deg
Azi: 184.35 deg
TVD: 1684.36 m

Survey @ 2074.71 mMDRT
Incl: 47.72 deg
Azi: 185.32 deg
TVD: 1703.10 m

Survey @ 2103.75 mMDRT
Incl: 47.75 deg
Azi: 184.46 deg
TVD: 1722.60 m

Survey @ 2133.30 mMDRT
Incl: 47.75 deg
Azi: 183.67 deg
TVD: 1742.50 m

CALCARENITE: v lt gy-lt gnsh gy, off wh-pl yel org, tr f-crs sbang qtz grs, slty i/p grd to CLSLT, tr v f glauc grs, frm-mod hd, pr vis por, no hydc fluor

CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p grd to CLSLT, tr v f glauc grs, tr forams, tr oo, sft-frm, amor-sbblky

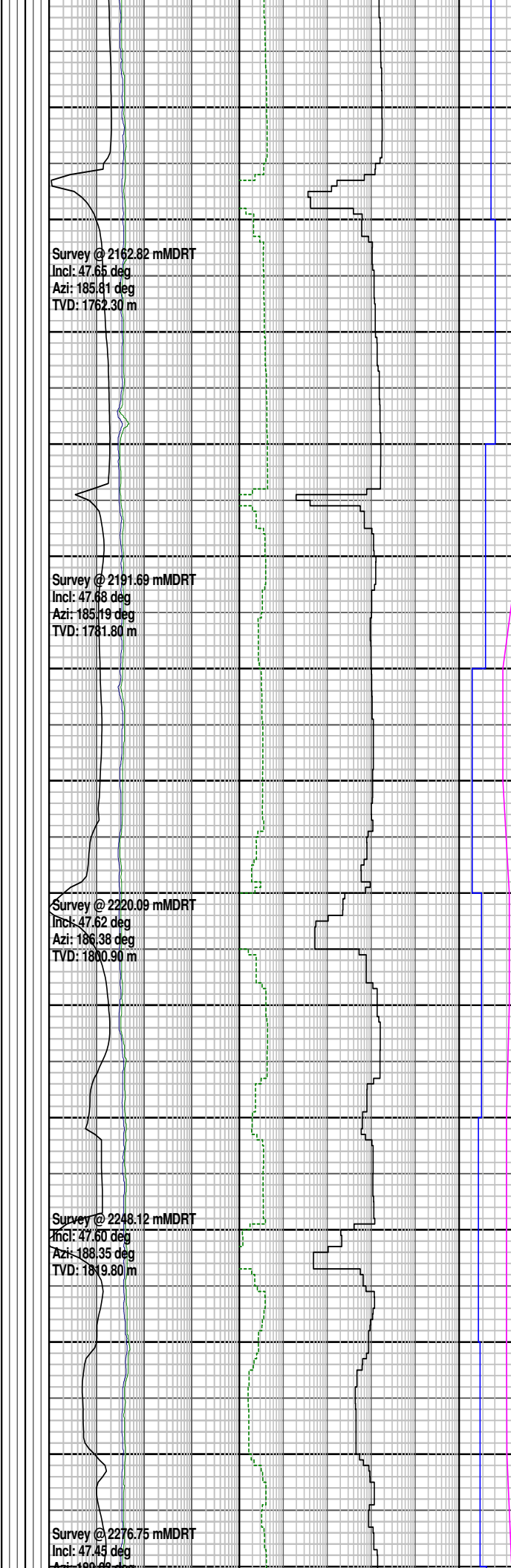
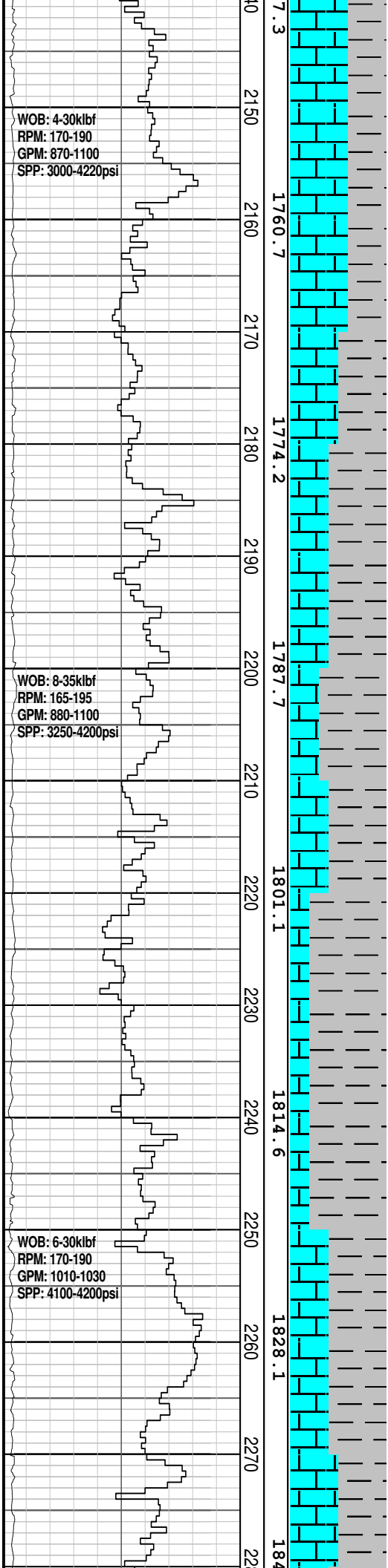
CALCAREOUS CLAYSTONE: med gy- lt olv gy, v calc grd to CLCLT, tr micmic, tr v f glauc, slty, sft-dom frm, sbblky-blky

CALCILUTITE: v lt gy-lt gnsh gy, off wh, slty i/p grd to CLSLT, tr v f glauc grs, tr forams, tr oo, sft-frm, amor-sbblky

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbblky

CALCAREOUS CLAYSTONE: med gy- lt olv gy, v calc grd to CLCLT, tr micmic, tr v f glauc, slty, sft-dom frm, sbblky-blky

CALCISILTITE: med lt gy-lt olv gy, lt gnsh gy, argl i/p grd to CLCLT, tr v f sd grs, tr v f glauc, tr micmic, sft-frm, sbfiss-sbblky



CALCAREOUS CLAYSTONE:
med gy- lt olv gy, abdt calc
grd to CLCLT, tr micmic, tr v f
glauc, tr v f carb spks, sft-
frm, sbbly-blky

CALCISILTITE: med lt gy-lt
olv gy, lt gnsh gy, com slty,
argl i/p grd to CLCLT, tr v f sd
grs, tr v f glauc, tr micmic,
sft-frm, sbfiss-sbbly

CALCILUTITE: v lt gy-lt gnsh
gy, off wh, slty i/p grd to
CLSLT, argl i/p grd to CALC
CLYST, tr v f glauc grs, tr v f
carb spks, sft-frm,
amor-sbbly

CALCAREOUS CLAYSTONE:
lt gy- lt olv gy, abdt grd to
CLCLT, tr micmic, tr v f glauc,
tr v f carb spks, dom sft-fr,
amor-sbbly

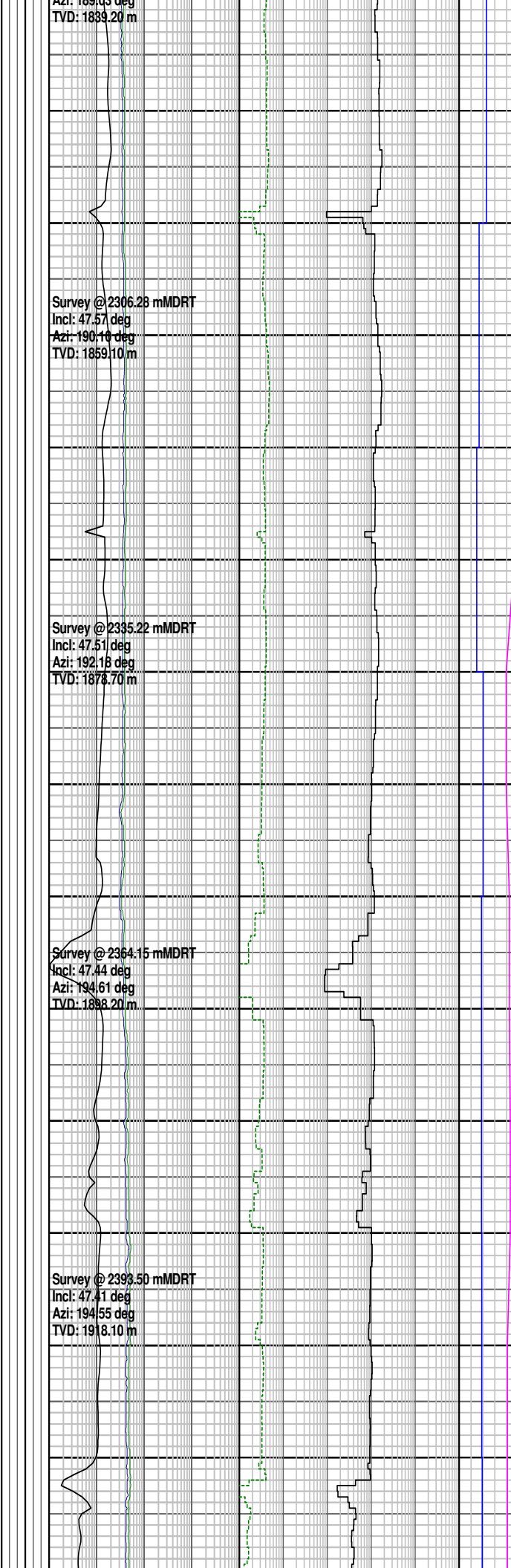
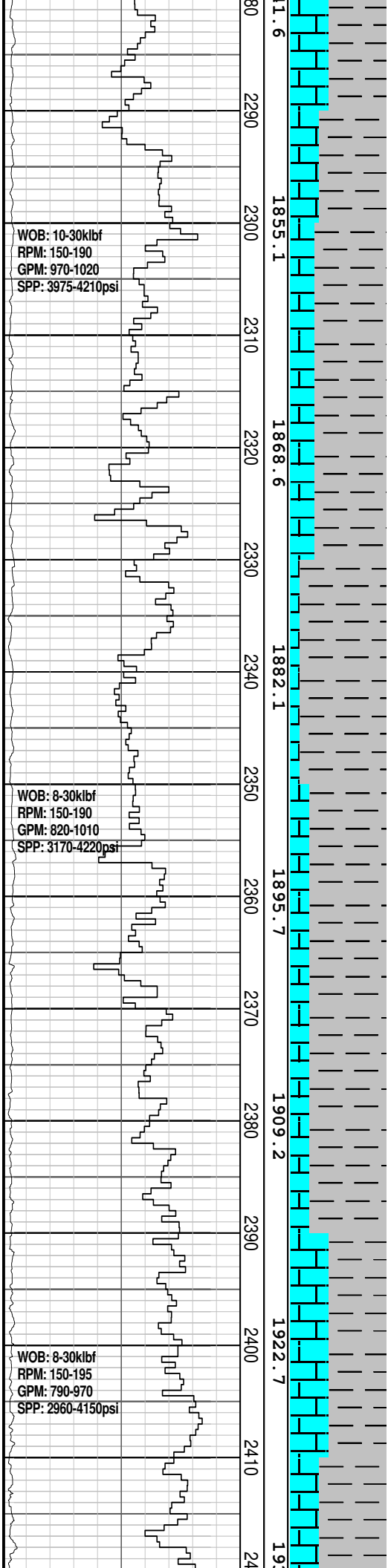
CALCISILTITE: med lt gy-lt
olv gy, lt gnsh gy, com slty,
argl i/p grd to CLCLT, tr v f sd
grs, tr v f glauc, tr micmic,
sft-frm, sbfiss-sbbly

CALCAREOUS CLAYSTONE:
med gy- lt olv gy, v calc grd
to CLCLT, tr micmic, tr v f
glauc, tr v f carb spks, dom
sft-frm, amor-sbbly

CALCISILTITE: med lt gy-lt
olv gy, lt gnsh gy, com slty,
argl i/p grd to CLCLT, tr v f sd
grs, tr v f glauc, tr micmic,
sft-frm, sbfiss-sbbly

CALCAREOUS CLAYSTONE:
med gy- lt olv gy, v calc grd
to CLCLT, tr micmic, tr v f
glauc, tr v f carb spks, dom
sft-frm, amor-sbbly

CALCISILTITE: v lt gy-lt olv
gy, grd to CLCLT, tr v f aren,
tr v f glauc, tr micmic, tr v f
carb spks, dom sft-frm,
amor-sbbly



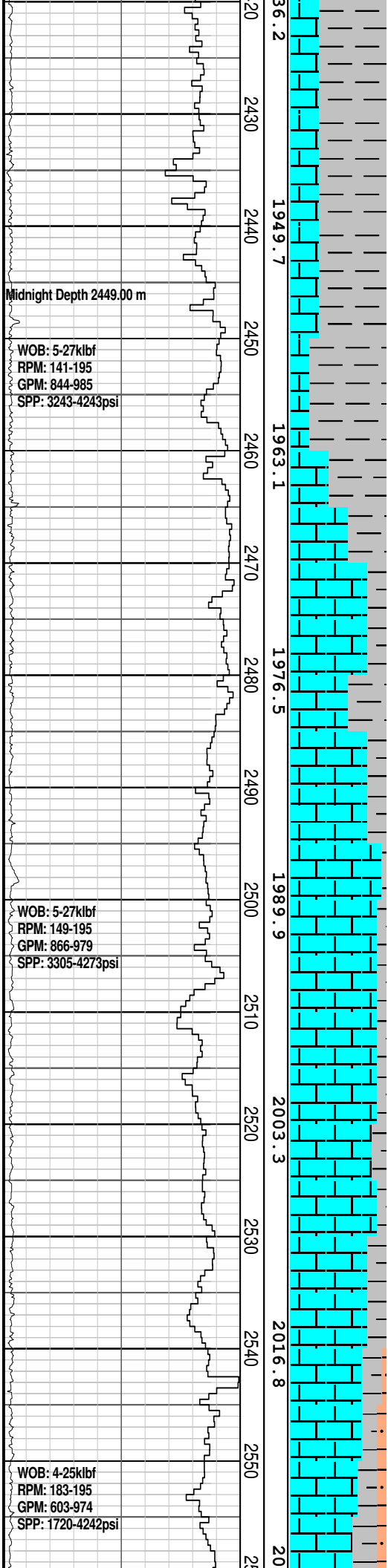
CALCAREOUS CLAYSTONE:
lt gy-lt olv gy, abdt calc grd to CLCLT, tr micmic, tr v f glauc, tr v f carb spks, dom sft-frm, amor-sbbiky

CALCAREOUS CLAYSTONE:
lt gy-med lt gy, lt olv gy, abdt calc grd to CALCILUTITE, tr micmic, tr v f glauc, tr v f carb spks, dom sft-frm, amor-sbbiky

CALCAREOUS CLAYSTONE:
lt gy-med lt gy, lt olv gy, abdt calc grd to CALCILUTITE, tr micmic, tr v f glauc, tr v f carb spks, dom sft-frm, amor-sbbiky

CALCAREOUS CLAYSTONE:
lt gy-med lt gy, lt olv gy, abdt calc grd to CLCLT, tr micmic, tr v f glauc, tr v f carb spks, dom sft-frm, amor-sbbiky

SILTY CALCISILTITE: v lt gy-lt olv gy, grd to Argillaceous SILTSTONE, tr v f aren, tr v f glauc, tr micmic, tr v f carb spks, dom sft-frm, amor-sbbiky



Survey @ 2421.02 mMDRT
Incl: 47.62 deg
Azi: 193.04 deg
TVD: 1936.70 m

Survey @ 2450.66 mMDRT
Incl: 47.77 deg
Azi: 190.15 deg
TVD: 1956.60 m

Survey @ 2478.84 mMDRT
Incl: 48.04 deg
Azi: 188.36 deg
TVD: 1975.50 m

Survey @ 2508.14 mMDRT
Incl: 47.90 deg
Azi: 186.97 deg
TVD: 1995.10 m

Survey @ 2536.37 mMDRT
Incl: 47.46 deg
Azi: 183.24 deg
TVD: 2014.10 m

CALCAREOUS CLAYSTONE:
lt gy-med lt gy, lt olv gy, abdt calc grd to CLCLT, tr micmic, tr v f glauc, tr v f carb spks, dom sft frm, amor-sbblky

CALCISILTITE: v lt gy-lt olv gy, grd to SLT CLCLT and CALC SLTST, tr v f aren, tr v f glauc, tr micmic, tr v f carb spks, dom sft frm, amor-sbblky, tr blkly

CALCISILTITE: v lt gy-lt olv gy, grd to SLT CLCLT and CALC SLTST, tr v f aren, tr v f glauc, tr micmic, tr v f carb spks, dom sft frm, amor-sbblky, tr blkly

CALCISILTITE: v lt gy-lt olv gy, grd to SLT CLCLT and CALC SLTST, tr v f aren, tr v f glauc, tr micmic, tr v f carb spks, dom sft frm, amor-sbblky, tr blkly

