Country : Australia
Field : ZaneGrey / Gippsland Basin
Location : Lat: 38° 34' 31.64" South
Long: 147° 59' 16.27" East
Well : ZaneGrey-1 ST2
Company : Bass Strait Oil Company Ltd
Rig : Ocean Patriot

HALLIBURTON
Sperry Drilling Services

1 : 500

RIG MONITORING
FORMATION EVALUATION LOG

Company	: Bass Strait Oil Company Ltd
Rig	: Ocean Patriot
Well	: ZaneGrey-1 ST2
Field	: ZaneGrey / Gippsland Basin
Country	: Australia
DOE Number	:

LOCATION
Latitude : 38° 34' 31.64" South
Longitude : 147° 59' 16.27" East
UTM Easting = 586,049.89 m
UTM Northing = 5,729,856.42 m

Other Services

Permanent Datum : Mean Sea Level Elevation : 0.00 m
Log Measured From : Drill Floor 21.50 m Above Permanent Datum
Drilling Measured From : Drill Floor

Elev. KB 0.00 m
DF 21.50 m
GL 0.00 m
WD 72.50 m

MD LOG

Depth Logged : 3,075.00 m To 3,675.00 m
Date Logged : 27-Jan-05 To 10-Mar-05
Total Depth MD : 3,675.00 m TVD : 3,219.80 m
Spud Date : 27-Jan-05

Unit No. : 197
Plot Type : Final
Plot Date : 23-Jun-05
Job No. : AUFE0003576081

Borehole Record (MD)

Run No.	Size	From	To
11	216.000 mm	3,075.00 m	3,675.00 m

Borehole Record (MD)

Run No.	Size	From	To

Casing Record (MD)

Size	Weight	From	To

LEGEND

Abbreviations and Symbols

Drilling Data

BG	Background Gas
BHT	Bottomhole Temp
C	Carbide Test
CB	Core Bit
CG	Connection Gas
CKF	Check For Flow
CO	Circulate Out
DB	Diamond Bit
DC	Depth Correction
DS	Direction Survey
DST	Drillstem Test
FLT	Flowline Temp.
LAT	Logged After Trip
NB	New Bit
NR	No Returns
PDC	Polycrystalline Diamond Compound Bit
PR	Partial Returns
RPM	Revs Per Minute
RRB	Rerun Bit
STG	Short Trip Gas
TB	Turbo Drill
TG	Trip Gas
U	Gas Units
WOB	Weight On Bit

Mud Data

Cl-	Chloride Ion Conc	Rm	Mud Resistivity
FC	Filter Cake	Rmf	Filtrate Resistivity
FL	Filtrate Loss	S	Solids Content
G	Gels	Vis	Funnel Viscosity
pH	Hydrogen Ion Content	MW	Mud Weight
PV	Plastic Viscosity	YP	Yield Point

Engineering Data

Core No.	Water
DST No.	Salt Water
Casing Seat	Fresh Water
Side Wall Core	Hydrocarbons Smell
Gas Traces	H2S Smell
Gas	RFT Interval Tester
Oil Traces	E-LOG Wireline Log Run
Oil	LOT Leakoff Test

Lithology Symbols

Sandstone	Calcisiltite
Silty Sandstone	Calcarenite
Silt	Mudstone
Siltstone	Marl
Clay	Glauconitic Sandstone
Claystone	Chert
Calcareous Claystone	Conglomerate
Limestone	Igneous
Dolomite	Coal
Calcilutite	No Sample

Bitumen

PIT Pressure Integrity Test

No Sample

Gamma Ray
api
0 150 300

ROP Avg
m/hr
200 100 0
400 300 200

Bit Weight
mT
0 10 20

Sliding

DEPTH - metres

MDRT

Cuttings Lithology

Oil Show
fair
poor

EWR Deep Phase Res
ohm-metre
0.1 1 10 100

EWR Medium Phase Res
ohm-metre
0.1 1 10 100

Gas Hydrcbn Avg
%
0.01 0.1 1 10

Gas Chromatograph
ppm
C1 Avg
C2 Avg
C3 Avg
C4 Total Avg
C5 Total Avg
10 100 1K 10K 100K KM

Calcimetry
% DOL
100 0
% LST
0 100

Interpreted Lithology

Lithology Descriptions and Remarks

06/03/05
Bit 11
216mm Hycalog
DS43STG
Jets: 3 x 20
TFA: 0.90
In/Out: 3070.0/3092.0 mMDRT
Drilled: 22 m
HOB: 6.8
Bit Grading: NOT GRADED

DK, SM, MV

Bit 9RR
216mm Hycalog
RSX163DGW
Jets: 4 x 16
TFA: 0.90
In/Out: 3092.0/3675.0 mMDRT
Drilled: 583 m
HOB: 23.4
Bit Grading: 2-3-WT-A-X-0.63-BU-TD.

WOB 5.2 mT
RPM 46
Mot RPM 168
SPP 20780 KPa
LPM 2231

Dev @ 3073.8 m Inc 31.1 deg Az 12.8 deg

Dev @ 3114.3 m Inc 31.5 deg Az 19.0 deg

Dev @ 3131.1 m Inc 31.2 deg Az 19.2 deg

3100

3150

Bit #7 and motor rotor was lost in the hole while POOH. ZaneGrey-1ST1 was plugged back to 2959.0 mMDRT. ZaneGrey-1 ST2 was kicked off @ 3075.0 mMDRT on 05/03/05 at 07:30 hrs.

3075.0 - 3162.0 m MDRT
Sandstone interbedded with Siltstone and Claystone and minor Coal. Trace Amber in parts.

SANDSTONE: pred lse qtz grns, trnsl - v lt gy, clr, tr pa - dk yelsh orng and dk gy, vf - crs grn (vfU - cU) peb i/p., pred f - med (fU - mU), sbang, - ang, mod - por srtd, cons i/p., tr - 50% lt gy - lt brnsh gy, frm, fri, vf - med grn (vfL - mU), tr arg mtx, tr crs pyr nod, tr micr mic and crs mic flks, tr rk frag & lith i/p., fr - gd inf por, nf, ncut.

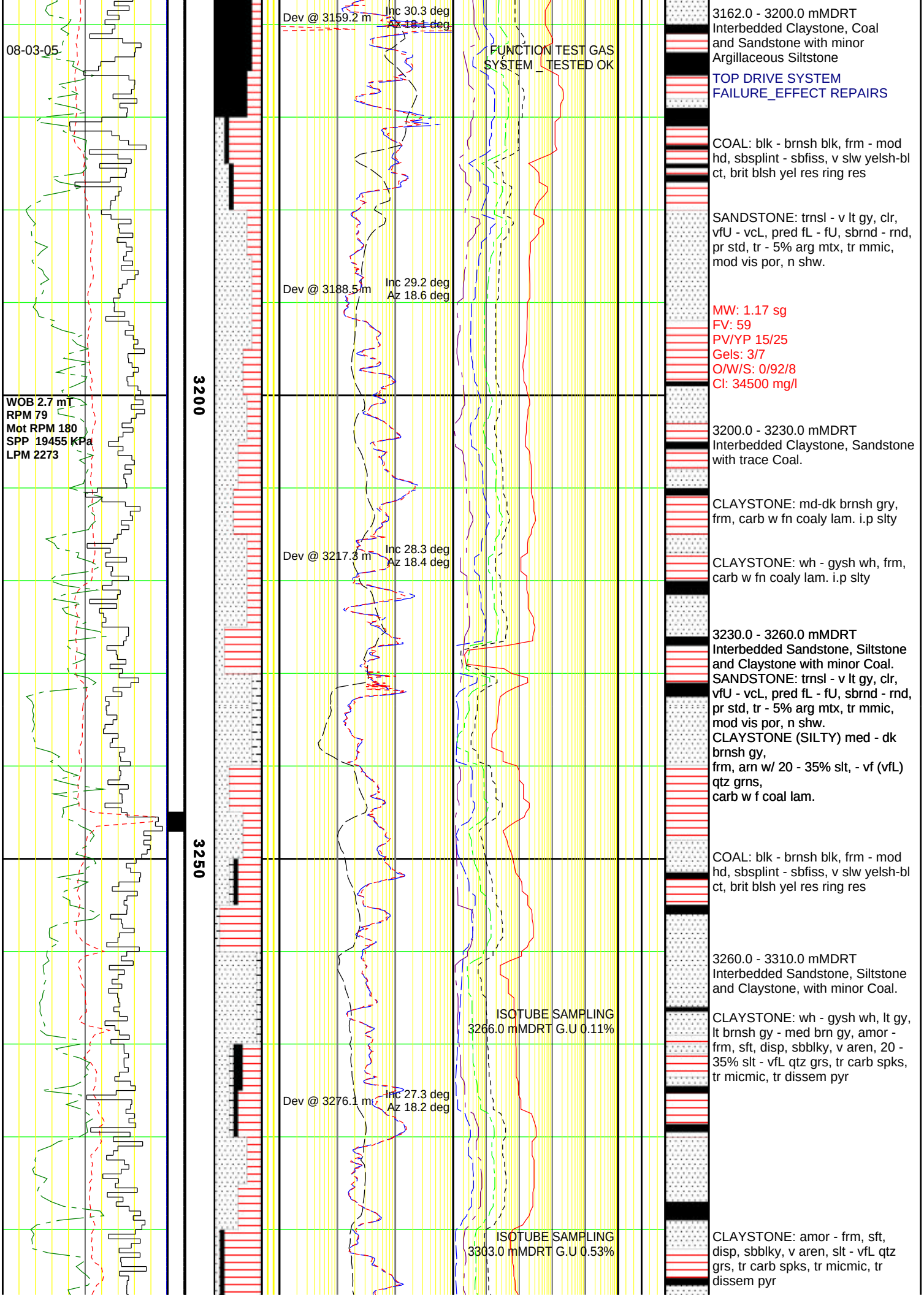
ARGILLACEOUS SILTSTONE: lt gy, dsky yelsh brn, pl yelsh brn - brnsh gy, olv blk - brnsh blk i.p., sft - loc frm, sbblky, com amor, 15 - 20% arg mtx, grd to SLTY CLYST i.p., com micmic i.p, tr - abdt carb spks, frags lam & prtng, non calc.

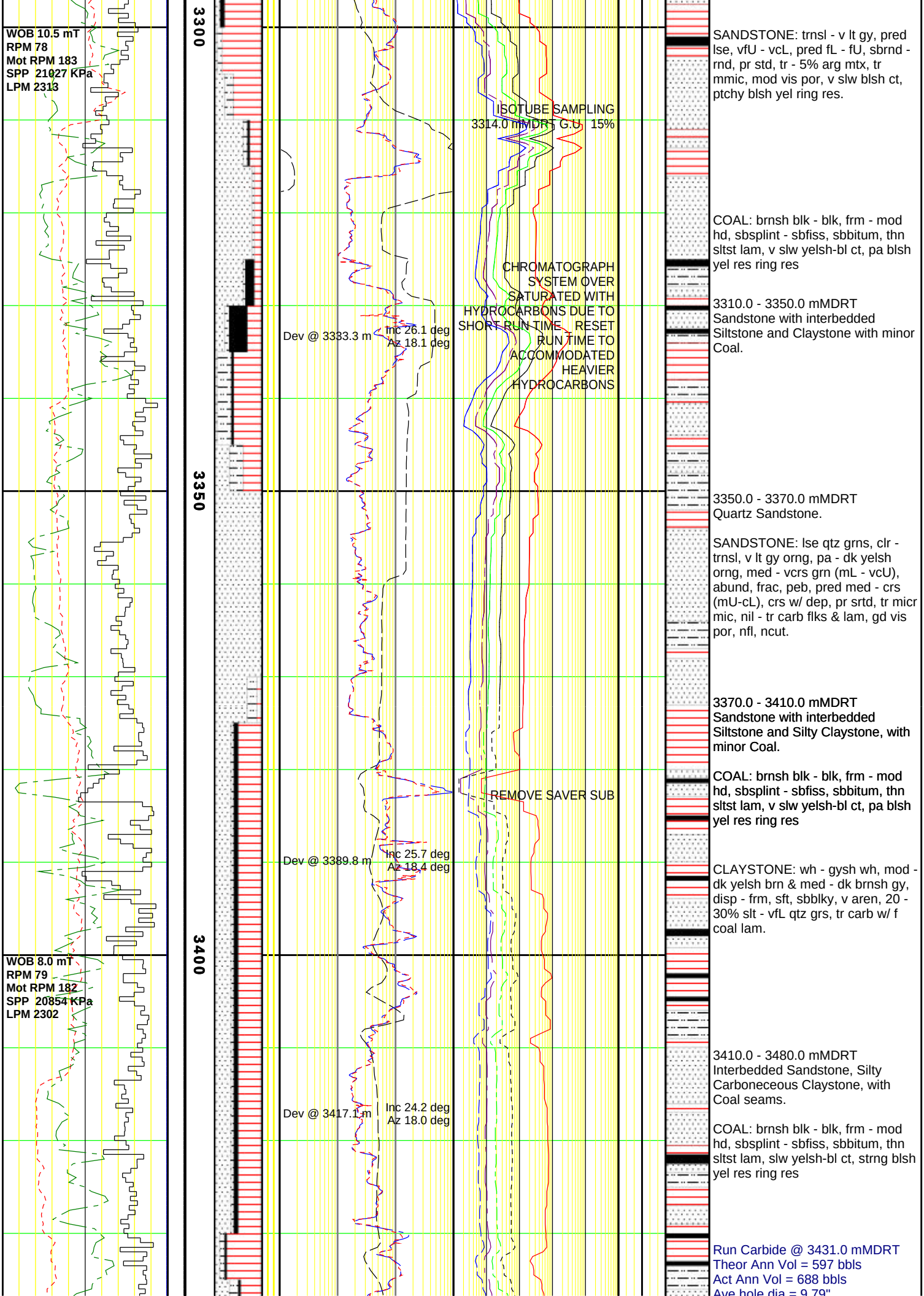
SANDSTONE: trnsl - v lt gy, tr trnsp, lse, vfU - vcL, pred mL - mU, sbang - ang, mod std, tr - 20% arg mtx, tr mmic, tr carb mat, tr cse pyr nod, gd vis por, n shw.

CLAYSTONE: wh - gysh wh, lt gy, lt brnsh gy - med brn gy, amor - frm, sft, disp, sbblky, v aren, 20 - 35% slt - vfL qtz grs, tr carb spks, tr micmic, tr dissem pyr.

COAL: blk - brnsh blk, frm - mod hd, sbsplint - sbfiss, sbbitum lam in CLYST I.P, v slw yelsh-bl ct, brit blsh yel res ring res.

MW: 1.14 sg
FV: 50
PV/YP 19/17
Gels: 4/9
O/W/S: 0/92/8
Cl: 32000 mg/l


08-03-05
Dev @ 3159.2 m
Inc 30.3 deg
Az 18.1 deg
FUNCTION TEST GAS SYSTEM _ TESTED OK
3162.0 - 3200.0 mMDRT
Interbedded Claystone, Coal and Sandstone with minor Argillaceous Siltstone
TOP DRIVE SYSTEM FAILURE_EFFECT REPAIRS
COAL: blk - brnsh blk, frm - mod hd, sbsplint - sbfiss, v slw yelsh-bl ct, brit blsh yel res ring res
SANDSTONE: trnsl - v lt gy, clr, vfU - vcL, pred fL - fU, sbrnd - rnd, pr std, tr - 5% arg mtx, tr mmic, mod vis por, n shw.
Dev @ 3188.5 m
Inc 29.2 deg
Az 18.6 deg
MW: 1.17 sg
FV: 59
PV/YP 15/25
Gels: 3/7
O/W/S: 0/92/8
Cl: 34500 mg/l
WOB 2.7 mT
RPM 79
Mot RPM 180
SPP 19455 KPa
LPM 2273
3200
3200.0 - 3230.0 mMDRT
Interbedded Claystone, Sandstone with trace Coal.
CLAYSTONE: md-dk brnsh gry, frm, carb w fn coaly lam. i.p slty
Dev @ 3217.3 m
Inc 28.3 deg
Az 18.4 deg
CLAYSTONE: wh - gysh wh, frm, carb w fn coaly lam. i.p slty
3230.0 - 3260.0 mMDRT
Interbedded Sandstone, Siltstone and Claystone with minor Coal.
SANDSTONE: trnsl - v lt gy, clr, vfU - vcL, pred fL - fU, sbrnd - rnd, pr std, tr - 5% arg mtx, tr mmic, mod vis por, n shw.
CLAYSTONE (SILTY) med - dk brnsh gy,
frm, arn w/ 20 - 35% slt, - vf (vfL) qtz grns,
carb w f coal lam.
3250
COAL: blk - brnsh blk, frm - mod hd, sbsplint - sbfiss, v slw yelsh-bl ct, brit blsh yel res ring res
3260.0 - 3310.0 mMDRT
Interbedded Sandstone, Siltstone and Claystone, with minor Coal.
ISOTUBE SAMPLING
3266.0 mMDRT G.U 0.11%
CLAYSTONE: wh - gysh wh, lt gy, lt brnsh gy - med brn gy, amor - frm, sft, disp, sbblky, v aren, 20 - 35% slt - vfL qtz grs, tr carb spks, tr micmic, tr dissem pyr
Dev @ 3276.1 m
Inc 27.3 deg
Az 18.2 deg
ISOTUBE SAMPLING
3303.0 mMDRT G.U 0.53%
CLAYSTONE: amor - frm, sft, disp, sbblky, v aren, slt - vfL qtz grs, tr carb spks, tr micmic, tr dissem pyr



SANDSTONE: trnsl - v lt gy, pred lse, vfU - vcL, pred fL - fU, sbrnd - rnd, pr std, tr - 5% arg mtx, tr mmic, mod vis por, v slw blsh ct, ptchy blsh yel ring res.

COAL: brnsh blk - blk, frm - mod hd, sbsplint - sbfiss, sbbitum, thn sltst lam, v slw yelsh-bl ct, pa blsh yel res ring res

3310.0 - 3350.0 mMDRT
Sandstone with interbedded Siltstone and Claystone with minor Coal.

3350.0 - 3370.0 mMDRT
Quartz Sandstone.

SANDSTONE: lse qtz grns, clr - trnsl, v lt gy orng, pa - dk yelsh orng, med - vcrs grn (mL - vcU), abund, frac, peb, pred med - crs (mU-cL), crs w/ dep, pr srtd, tr micr mic, nil - tr carb flks & lam, gd vis por, nfl, ncut.

3370.0 - 3410.0 mMDRT
Sandstone with interbedded Siltstone and Silty Claystone, with minor Coal.

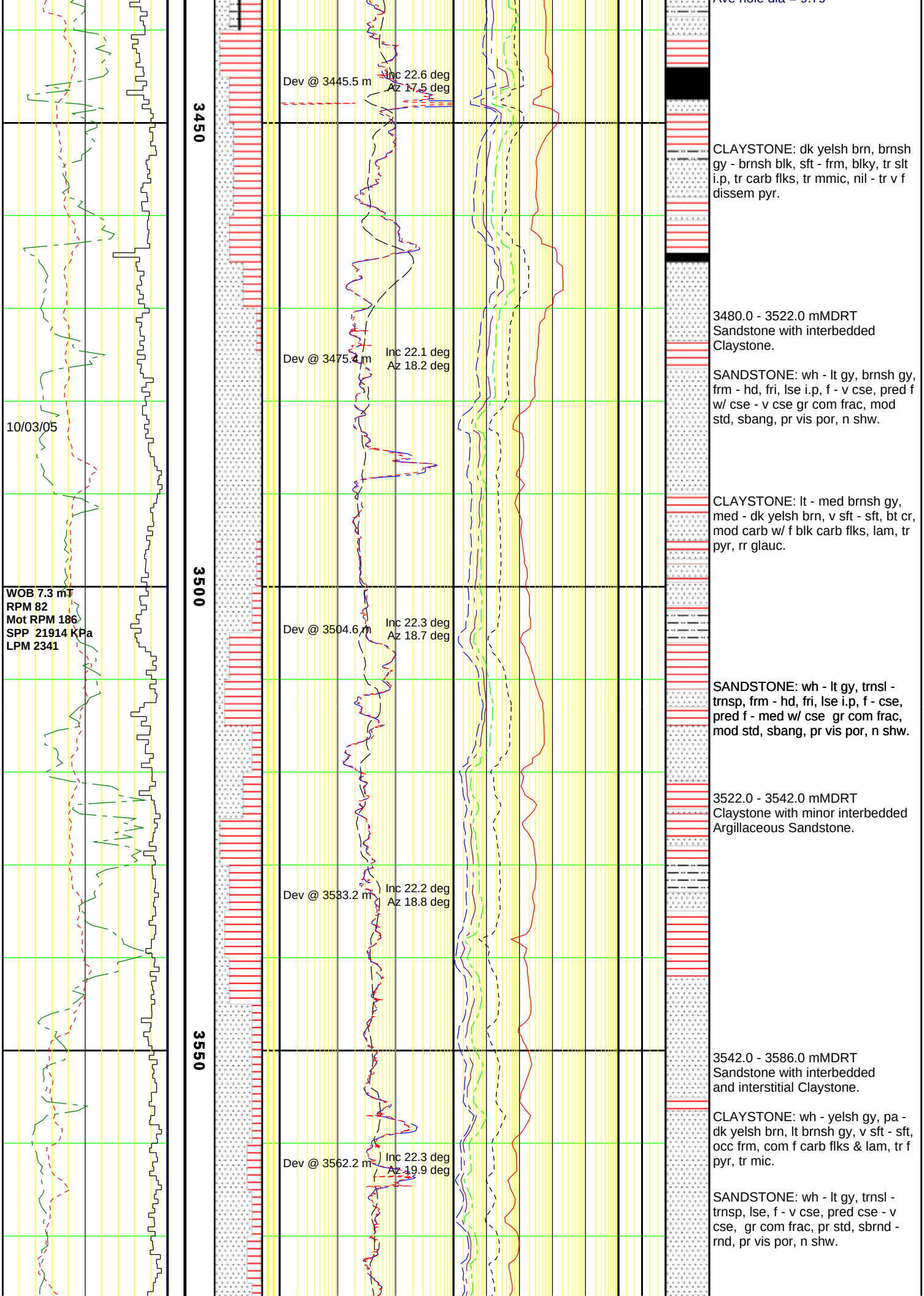
COAL: brnsh blk - blk, frm - mod hd, sbsplint - sbfiss, sbbitum, thn sltst lam, v slw yelsh-bl ct, pa blsh yel res ring res

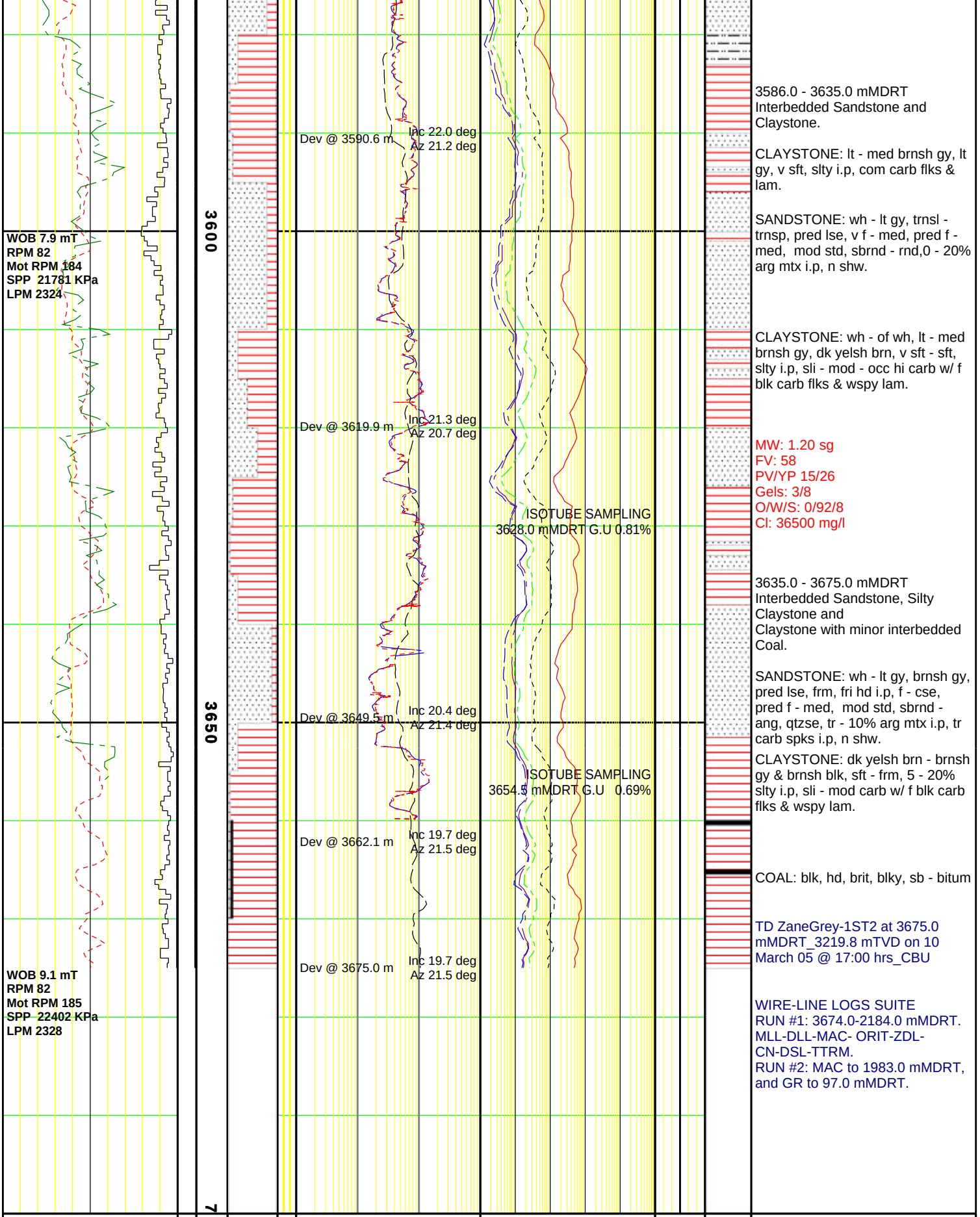
CLAYSTONE: wh - gysh wh, mod - dk yelsh brn & med - dk brnsh gy, disp - frm, sft, sbblky, v aren, 20 - 30% slt - vfL qtz grs, tr carb w/ f coal lam.

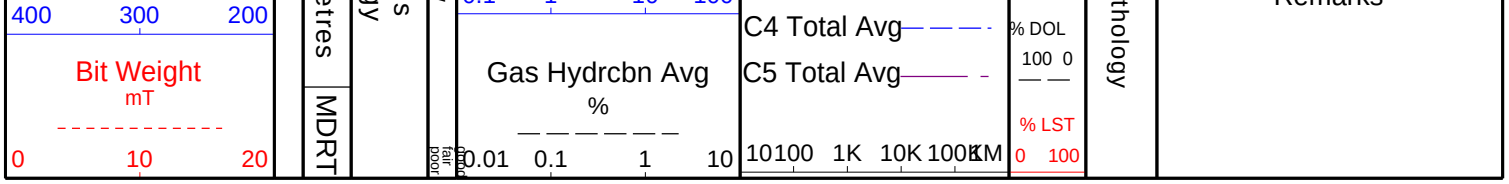
3410.0 - 3480.0 mMDRT
Interbedded Sandstone, Silty Carboneceous Claystone, with Coal seams.

COAL: brnsh blk - blk, frm - mod hd, sbsplint - sbfiss, sbbitum, thn sltst lam, slw yelsh-bl ct, strng blsh yel res ring res

Run Carbide @ 3431.0 mMDRT
Theor Ann Vol = 597 bbls
Act Ann Vol = 688 bbls
Ave hole dia = 9.79"


Dev @ 3445.5 m
Inc 22.6 deg
Az 17.5 deg
Dev @ 3475.4 m
Inc 22.1 deg
Az 18.2 deg
10/03/05
WOB 7.3 mT
RPM 82
Mot RPM 186
SPP 21914 KPa
LPM 2341
Dev @ 3504.6 m
Inc 22.3 deg
Az 18.7 deg
Dev @ 3533.2 m
Inc 22.2 deg
Az 18.8 deg
Dev @ 3562.2 m
Inc 22.3 deg
Az 19.9 deg
3450
3500
3550
CLAYSTONE: dk yelsh brn, brnsh gy - brnsh blk, sft - frm, blky, tr slt i.p, tr carb flks, tr mmic, nil - tr v f dissem pyr.
3480.0 - 3522.0 mMDRT Sandstone with interbedded Claystone.
SANDSTONE: wh - lt gy, brnsh gy, frm - hd, fri, lse i.p, f - v cse, pred f w/ cse - v cse gr com frac, mod std, sbang, pr vis por, n shw.
CLAYSTONE: lt - med brnsh gy, med - dk yelsh brn, v sft - sft, bt cr, mod carb w/ f blk carb flks, lam, tr pyr, rr glauc.
SANDSTONE: wh - lt gy, trnsl - trnsp, frm - hd, fri, lse i.p, f - cse, pred f - med w/ cse gr com frac, mod std, sbang, pr vis por, n shw.
3522.0 - 3542.0 mMDRT Claystone with minor interbedded Argillaceous Sandstone.
3542.0 - 3586.0 mMDRT Sandstone with interbedded and interstitial Claystone.
CLAYSTONE: wh - yelsh gy, pa - dk yelsh brn, lt brnsh gy, v sft - sft, occ frm, com f carb flks & lam, tr f pyr, tr mic.
SANDSTONE: wh - lt gy, trnsl - trnsp, lse, f - v cse, pred cse - v cse, gr com frac, pr std, sbrnd - rnd, pr vis por, n shw.


WOB 7.9 mT
RPM 82
Mot RPM 184
SPP 21781 KPa
LPM 2324
3600
Dev @ 3590.6 m
Inc 22.0 deg
Az 21.2 deg
Dev @ 3619.9 m
Inc 21.3 deg
Az 20.7 deg
ISOTUBE SAMPLING
3628.0 mMDRT G.U 0.81%
3650
Dev @ 3649.5 m
Inc 20.4 deg
Az 21.4 deg
ISOTUBE SAMPLING
3654.5 mMDRT G.U 0.69%
Dev @ 3662.1 m
Inc 19.7 deg
Az 21.5 deg
Dev @ 3675.0 m
Inc 19.7 deg
Az 21.5 deg
WOB 9.1 mT
RPM 82
Mot RPM 185
SPP 22402 KPa
LPM 2328
3586.0 - 3635.0 mMDRT
Interbedded Sandstone and Claystone.
CLAYSTONE: lt - med brnsh gy, lt gy, v sft, slty i.p, com carb flks & lam.
SANDSTONE: wh - lt gy, trnsl - trnsp, pred lse, v f - med, pred f - med, mod std, sbrnd - rnd,0 - 20% arg mtx i.p, n shw.
CLAYSTONE: wh - of wh, lt - med brnsh gy, dk yelsh brn, v sft - sft, slty i.p, sli - mod - occ hi carb w/ f blk carb flks & wspy lam.
MW: 1.20 sg
FV: 58
PV/YP 15/26
Gels: 3/8
O/W/S: 0/92/8
Cl: 36500 mg/l
3635.0 - 3675.0 mMDRT
Interbedded Sandstone, Silty Claystone and Claystone with minor interbedded Coal.
SANDSTONE: wh - lt gy, brnsh gy, pred lse, frm, fri hd i.p, f - cse, pred f - med, mod std, sbrnd - ang, qtzse, tr - 10% arg mtx i.p, tr carb spks i.p, n shw.
CLAYSTONE: dk yelsh brn - brnsh gy & brnsh blk, sft - frm, 5 - 20% slty i.p, sli - mod carb w/ f blk carb flks & wspy lam.
COAL: blk, hd, brit, blky, sb - bitum
TD ZaneGrey-1ST2 at 3675.0 mMDRT_3219.8 mTVD on 10 March 05 @ 17:00 hrs_CBU
WIRE-LINE LOGS SUITE
RUN #1: 3674.0-2184.0 mMDRT.
MLL-DLL-MAC- ORIT-ZDL-CN-DSL-TTRM.
RUN #2: MAC to 1983.0 mMDRT, and GR to 97.0 mMDRT.
Gamma Ray
api
0
150
300
ROP Avg
m/hr
200
100
0
Sliding
DEPTH - me
Cutting
Litholog
Oil Show
EWR Deep Phase Res
ohm-metre
0.1
1
10
100
EWR Medium Phase Res
ohm-metre
0.1
1
10
100
Gas Chromatograph
ppm
C1 Avg
C2 Avg
C3 Avg
Calcimetry
Interpreted Li
Lithology Descriptions
and
Remarks


400
300
200
Bit Weight
mT
0
10
20
MDRT
Gas Hydrcbn Avg
%
0.01
0.1
1
10
C4 Total Avg
C5 Total Avg
10
100
1K
10K
100K
1M
% DOL
100
0
% LST
0
100
Remarks