



OVERSEAS ENERGY HOLDINGS LTD

OVERSEAS ENERGY HOLDINGS LTD

WESTWOOD-1 ST1 COMPOSITE LOG



OVERSEAS ENERGY HOLDINGS LTD

INTERPRETATION BY L.E.L. BURGESS WESTMINSTER GEOLOGICAL PTY LTD

WESTWOOD-1 ST1

COMPANY OVERSEAS ENERGY HOLDINGS LTD
 COUNTRY AUSTRALIA
 STATE TASMANIA
 RIG HUNT RIG-3
 TD 1679 Mtr MD/RT

RT ELEV.
 GL ELEV.
 LATITUDE
 LONGITUDE
 UTM Y
 UTM X
 SPUD DATE
 RIG RELEASED

149.0 Mtr AHD Datum
 145.0 Mtr AHD Datum
 41 31' 9.300" S
 147 21' 2.500" E
 5403564.16
 502867.01
 25/11/2009
 4/1/2010

Geog. co-ords:
 GDA94, GRS80 Ellipsoid.
 Grid co-ords:
 MGA94, Zone 55s

BLOCK/LICENCE:**SEL 05/2005, TASMANIA**

CALCAREOUS SANDSTONE

SILTSTONE / SHALE

META SILTY SANDSTONE

SANDSTONE

DOLOMITE

META SANDSTONE

SILTY SANDSTONE

DOLERITE

META SILTSTONE

WELL TYPE: OIL EXPLORATION**WELL STATUS: PLUGGED AND ABANDONED****Oil Shows**

Good
 Fair
 Poor
 Trace

Gas Shows

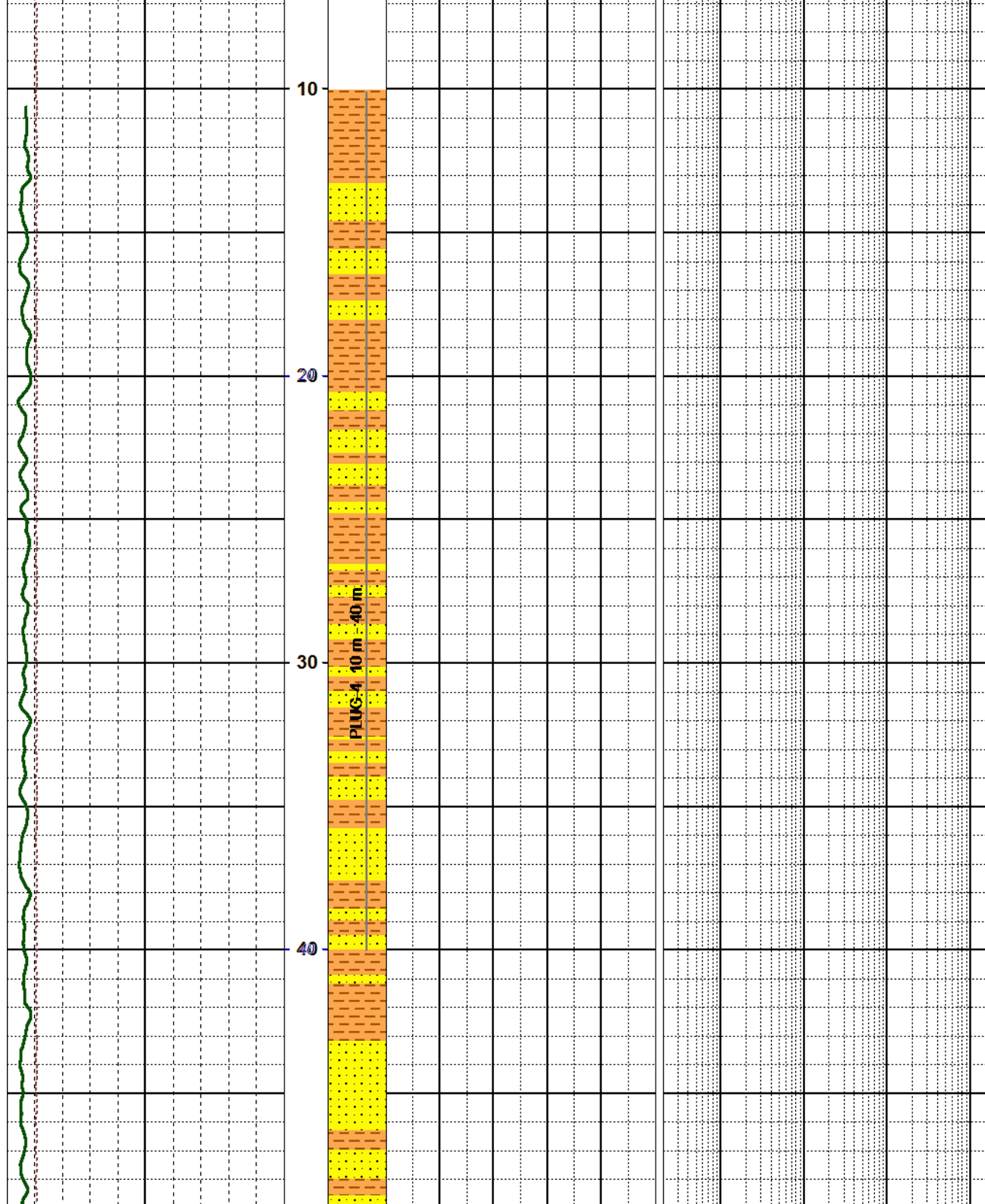
Good Poor
 Fair Trace

No Test Data

Casing Shoe

SCALE 1:200 Meters MD/RT

Rate of Penetration 30 mtr/hr 0				MD TVD mtr	User Lith Plugs	Sonic uS/ft 40				Deep LateroLog ohm-M 2000				Casing Surveys Carbide runs	Bit Data Mud Data Drill Data	Formation Tops Descriptions Comments
GREH 0 api 200						Total Gas % 0.5				Medium LateroLog ohm-M 2000						
Bit Size 6 inches 16						Sonic Porosity fractional 0				Micro-Spherically Focused ohm-M 2000						
Caliper Direction #2 6 inch 16																
Resistivity Caliper 6 inch 16																
Spontaneous Potential -150 mV 50																
				</												



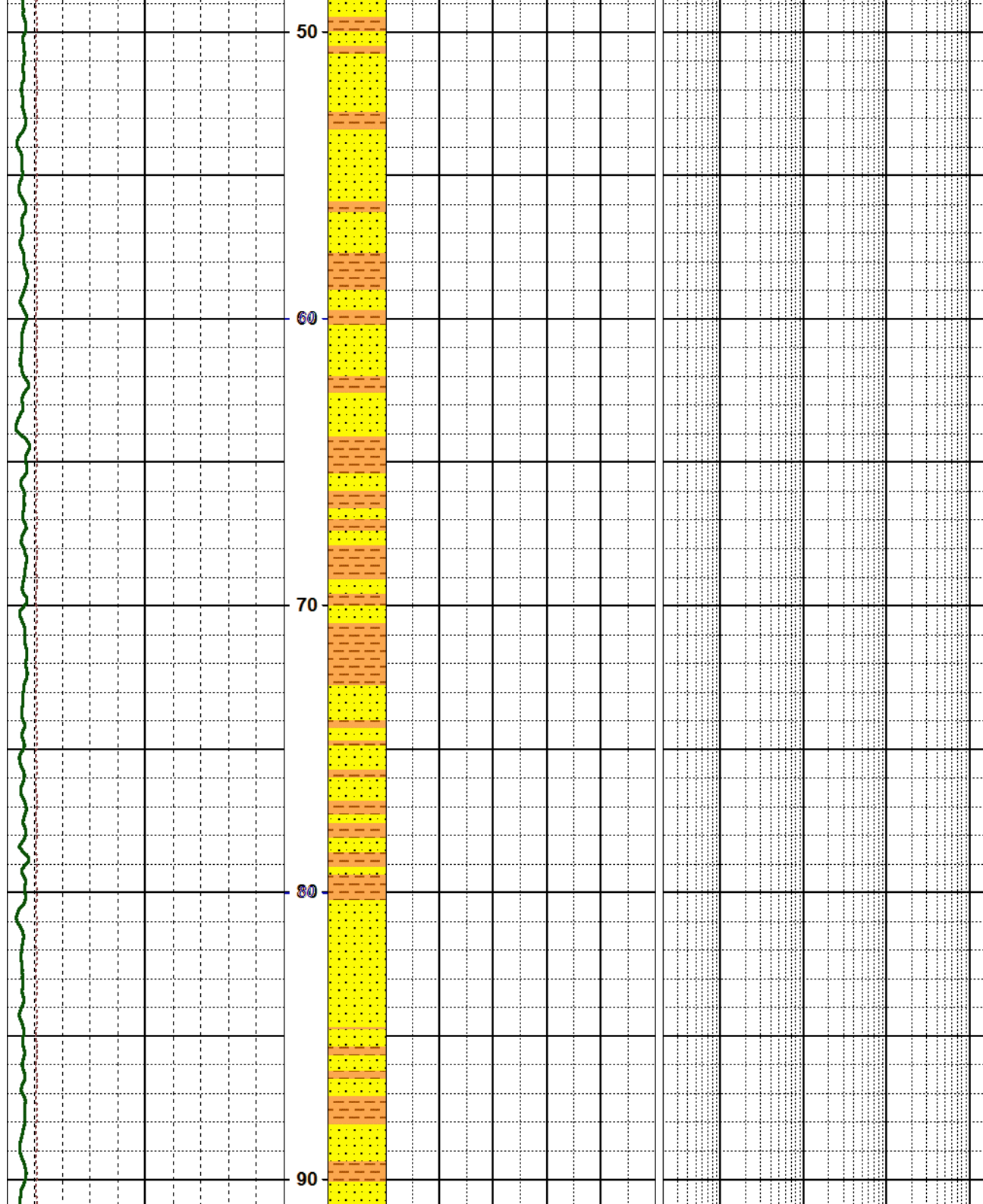
Spaulding Rig
drilled 203mm(8)
pilot hole to 112m
with Air

BIT-1RR: REED
Y11. SIZE: 445mm
(17.5). IADC: 1-1-6
JETS: 3x18. IN:
120m OUT: 122m .
RUN: 2m HRS:
21.1 REAMED

4 -15m SILTSTONE AND
CLAYSTONE WITH MINOR
INTERGRADATIONAL
SANDSTONE__ SILTSTONE: orange
brown to yellowish -grey to greyish
green, firm, subblocky to blocky, non
-calcareous, trace carbonaceous
fragments. CLAYSTONE: red brown
(hematitic) to medium brown to
yellowish brown, soft, subblocky,
locally grading to siltstone.
SANDSTONE: clear to translucent
quartz and off -white pale grey
plagioclase feldspar, very fine to
medium, subangular to subrounded,
poorly sorted, unconsolidated. Trace
subrounded dolerite and quartzite
(lithic) granules.

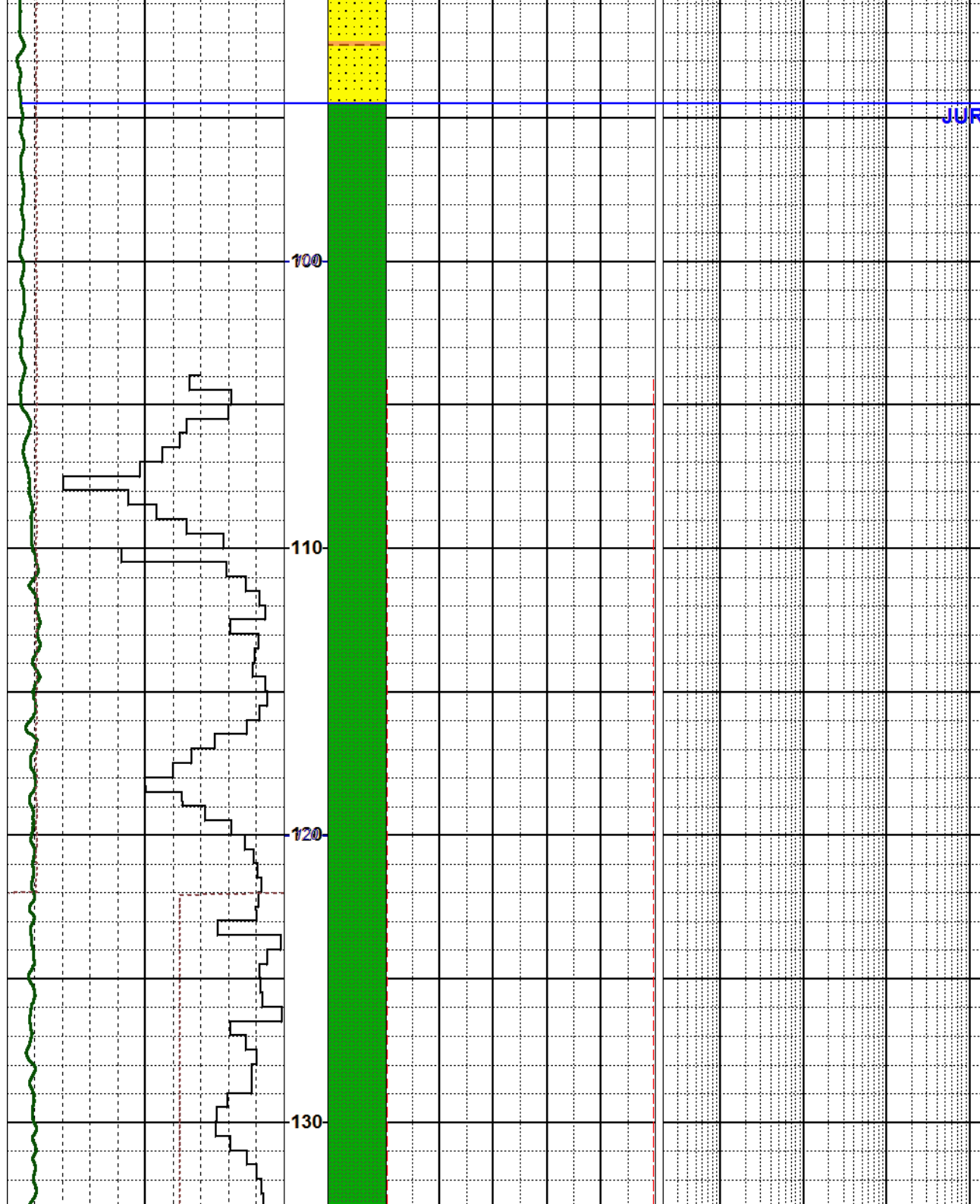
15 -36m CONGLOMERATE WITH
SANDSTONE WITH MINOR
INTERBEDDED SILTSTONE__
CONGLOMERATE: angular greyish
olive green dolerite and angular pale
grey green quartzite cuttings (clasts
broken by RC hammer).
SANDSTONE: clear to translucent
quartz and off -white pale grey
plagioclase feldspar, very fine to
granule, subangular to subrounded,
poorly sorted, unconsolidated.
SILTSTONE: greyish green to olive
-grey. Firm, subblocky to blocky, non
-calcareous, trace carbonaceous
fragments, locally clay -rich.

36 -84m SILTSTONE AND
CLAYSTONE WITH MINOR
INTERGRADATIONAL SANDSTONE
AND FELDSPATHIC SANDSTONE__
SILTSTONE: orange brown to
moderate reddish brown to yellowish
-grey to greenish -grey, Firm,
subblocky to blocky to subfissile, non
-calcareous, trace carbonaceous
fragments, locally arenaceous.
CLAYSTONE: medium brown to
yellowish brown to moderate reddish
orange to pale green blue, soft,
subblocky, locally grading to
siltstone. SANDSTONE: clear to
translucent quartz and off -white pale
grey plagioclase feldspar, very fine
to granule, subangular to
subrounded, poorly sorted



subrounded, poorly sorted, unconsolidated. FELDSPATHIC SANDSTONE: off -white pale grey plagioclase feldspar, fine to very coarse, subangular to subrounded, poorly sorted, unconsolidated, abundant coarse to granule sized dolerite lithics.

84 -94.5 INTERBEDDED CLAYSTONE, SILTSTONE AND FELDSPATHIC SANDSTONE WITH DOLERITIC LAG (?)
 CONGLOMERATE__ CLAYSTONE: moderate reddish brown, soft, subblocky SILTSTONE: greenish -grey. Firm, subblocky to subfissile, locally arenaceous. FELDSPATHIC SANDSTONE: off -white to pale grey plagioclase feldspar, fine to medium, subangular to subrounded, moderately sorted, common illite -alteration, unconsolidated. DOLERITE: angular fragments, yellowish grey (weathered) to greyish olive green (fresh), consisting of fine -grained ophitic intergrowths of plagioclase and amphibole (after clinopyroxene), hard to very hard, moderate illite -chlorite -limonite alteration.



JURASSIC DOLERITE (94.5 MD-RT, 94.5 TVD-RT, +54.5 TVD-SS)

94.5 -120m DOLERITE:
predominantly fresh greenish grey to
greenish black, fine grained ophitic
texture (plagioclase -amphibole),
with subordinate aphyric to
microporphyritic "chilled margin"
fragments (93 -96m sample), hard to
very hard, minor illite -chlorite
alteration.

104m 0.75 °

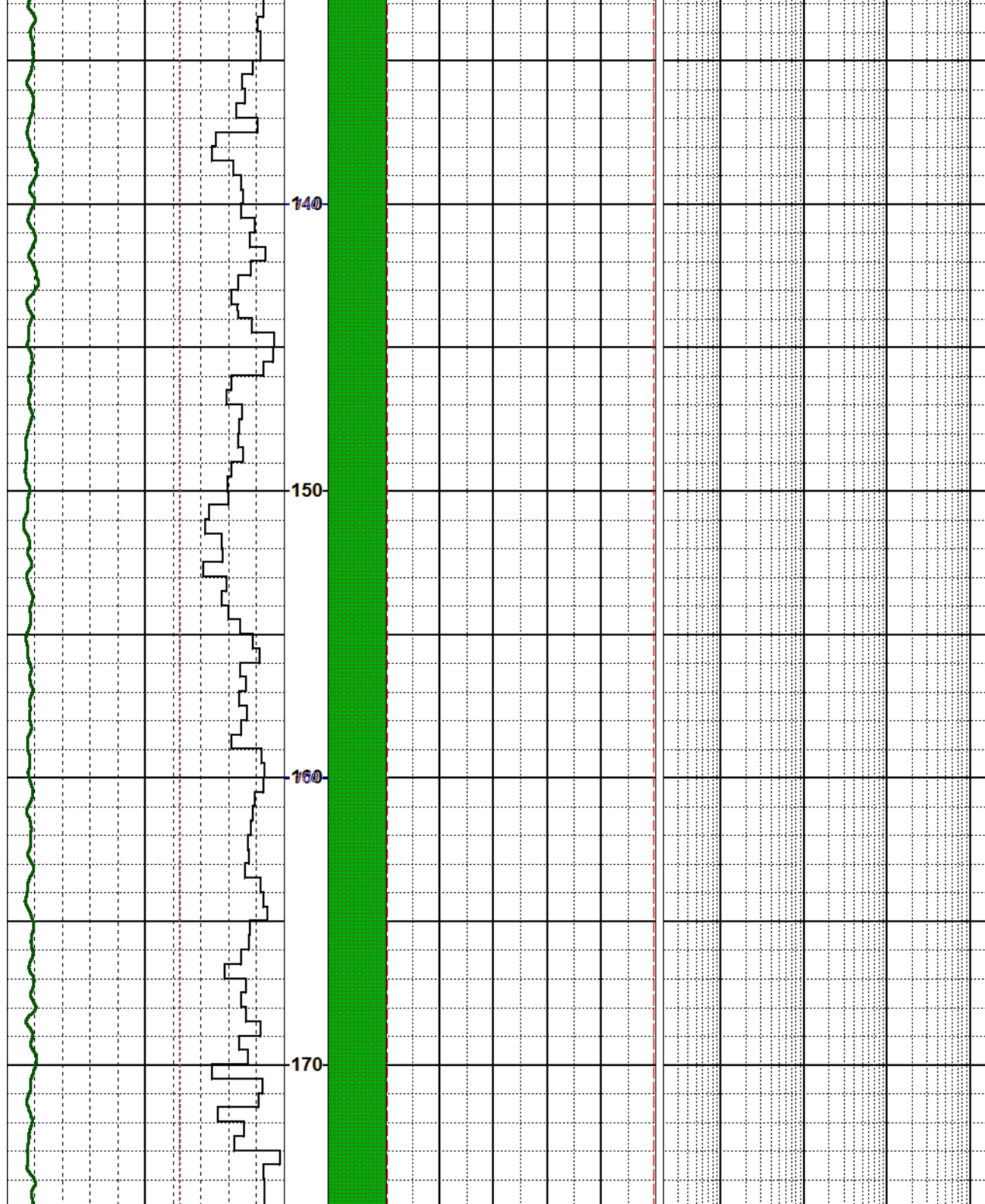
Hunt Rig 3 opened
up 203mm (8")hole
to 445mm(17.5') to
depth of 112m.

340mm (13-3/8")
Casing Shoe set
@104.00 mMDRT

Drilled 311mm
(12.25') hole
section from 112m
on 29/11/2009

MW: 8.7ppg
(1.04sg) FV: 36 PV:
5 GELS: 7/9 NACI:
2-3% YP: 17 pH: 11

BIT-2: SMITH
GFS20BODVCPS
IADC: 517 SIZE:
311mm (12.25').
JETS: 2x18 1x20
1x16 IN: 122m
OUT: 340m
RUN:2184 HRS:
38.5 COND:
2.2.CT.A.E.1.BT.CSC

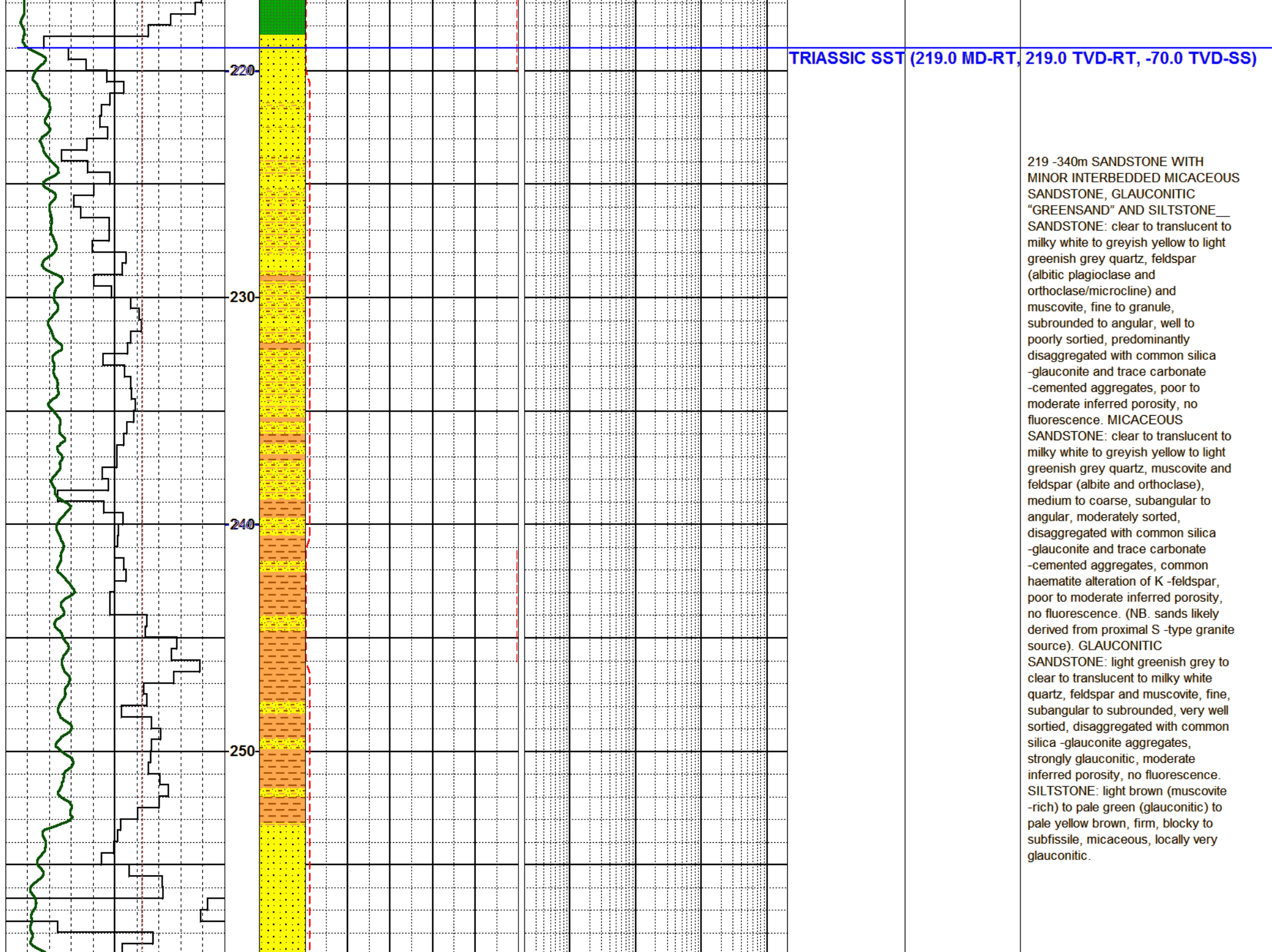


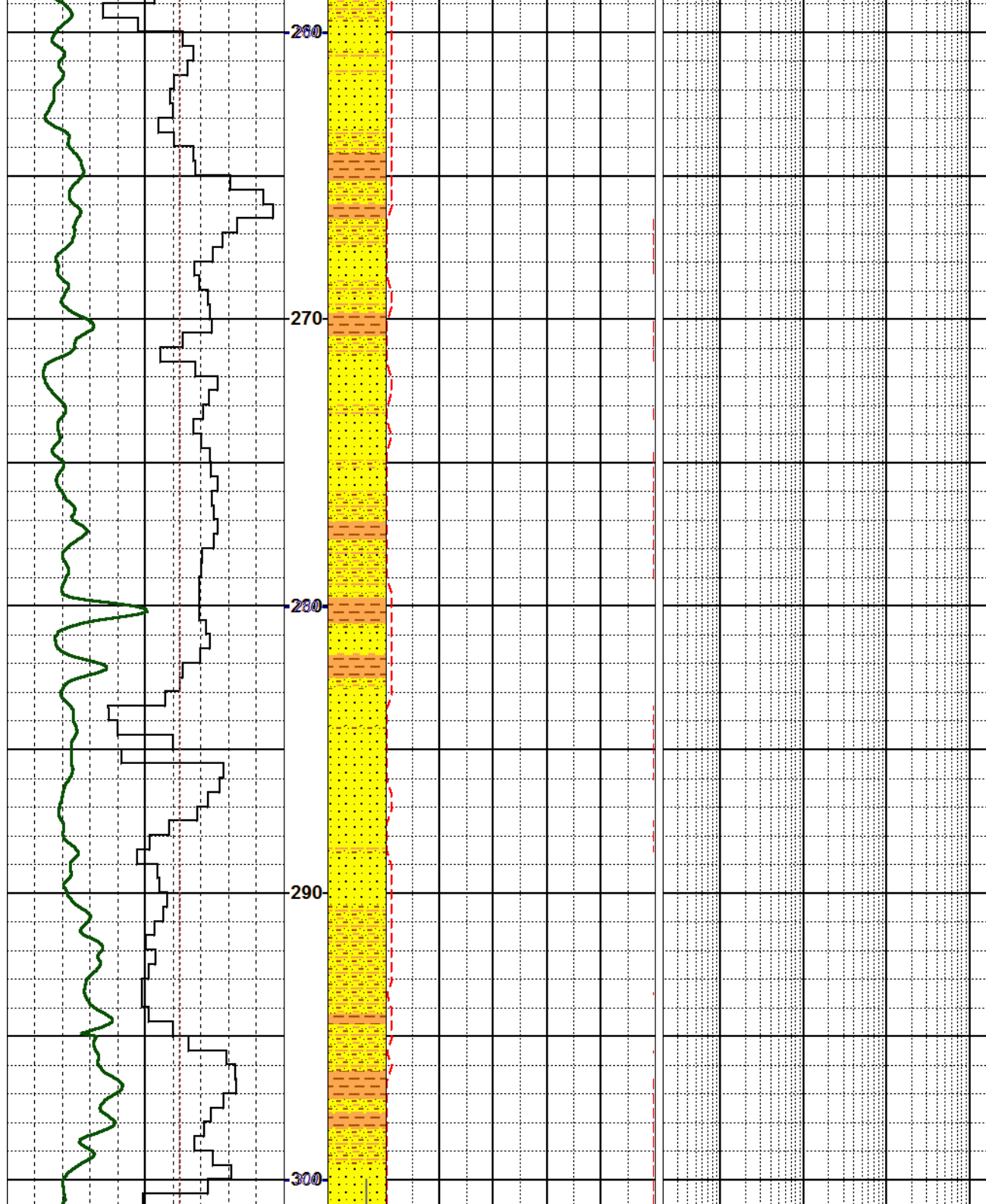
MW: 9ppg (1.08sg)
FV: 31 PV: 4 GELS:
3/7 NACL: 2-3% YP:
7 pH: 10.5



WOB: 2 - 34 klbf
RPM: 29 - 94
FLOW: 278 - 597
gpm SPP: 256 -
563 psi

184 -219m LAYERED DOLERITE
-PLAGIOCLASE -RICH
"LEUCODOLERITE" __ DOLERITE:
greyish green to dusky green, fine to
medium grained, ophitic plagioclase
-augite -amphibole + Fe -Ti oxides
with weak chlorite -illite alteration,
moderately hard to hard, trace vein
(?) calcite -sericite, trace pyrite, no
porosity, no fluorescence,
PLAGIOCLASE -RICH
"LEUCODOLERITE": greyish green
to pale green, medium grained,
ophitic plagioclase >> augite
-amphibole -biotite + Fe -Ti oxides +
pyrite with trace chlorite -illite + trace
epidote alteration, moderately hard
to hard, trace vein (?) calcite
-sericite, no porosity, no
fluorescence. HORNFELS: yellowish
green to pale green, very fine,
epidote -chlorite altered siltstone
and/or chilled dolerite (?).





265m 1.25 °

MW: 9.3ppg
(1.116sg) FV: 38
PV: 10 GELS: 5/17
NACI: 2-3% YP: 18
pH: 9.5

WOB: 5 - 51 klbf
RPM: 29 - 74

FLOW: 320 - 620
gpm SPP: 234 -
830 psi

310

320

330

340

327.02 m 1.69 °, Az
81.54 °, TVD 326.97
m

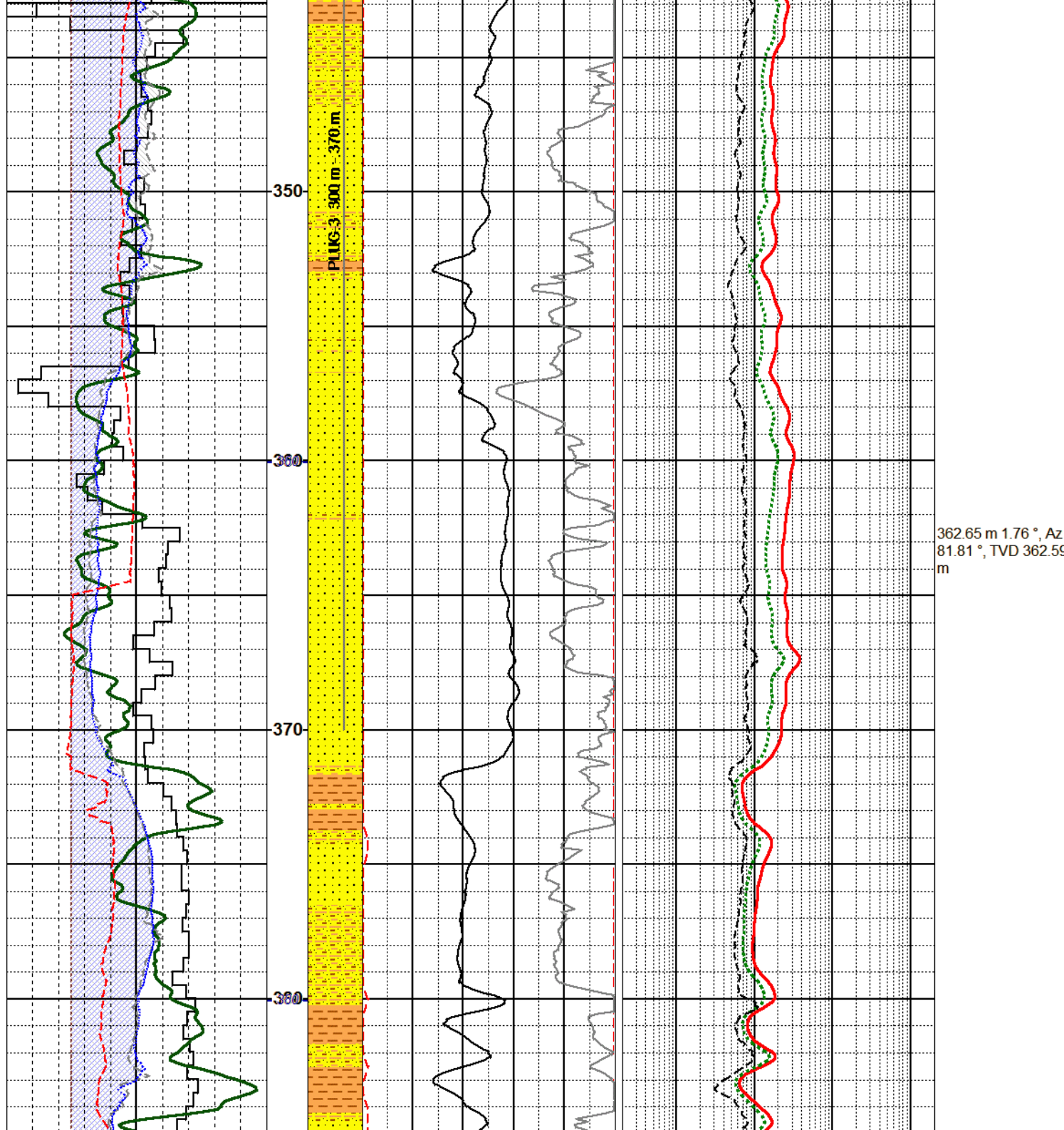
CARBIDE GAS K
@340.0m, TG 1.28
HOLE IN GAUGE

9 5/8"

244mm (9.625)
CASING SET @
338m

BIT-3: SMITH
EBXS12DS IADC:
437 SIZE: 216mm
(8.5). JETS: 3x14
IN: 340m OUT:

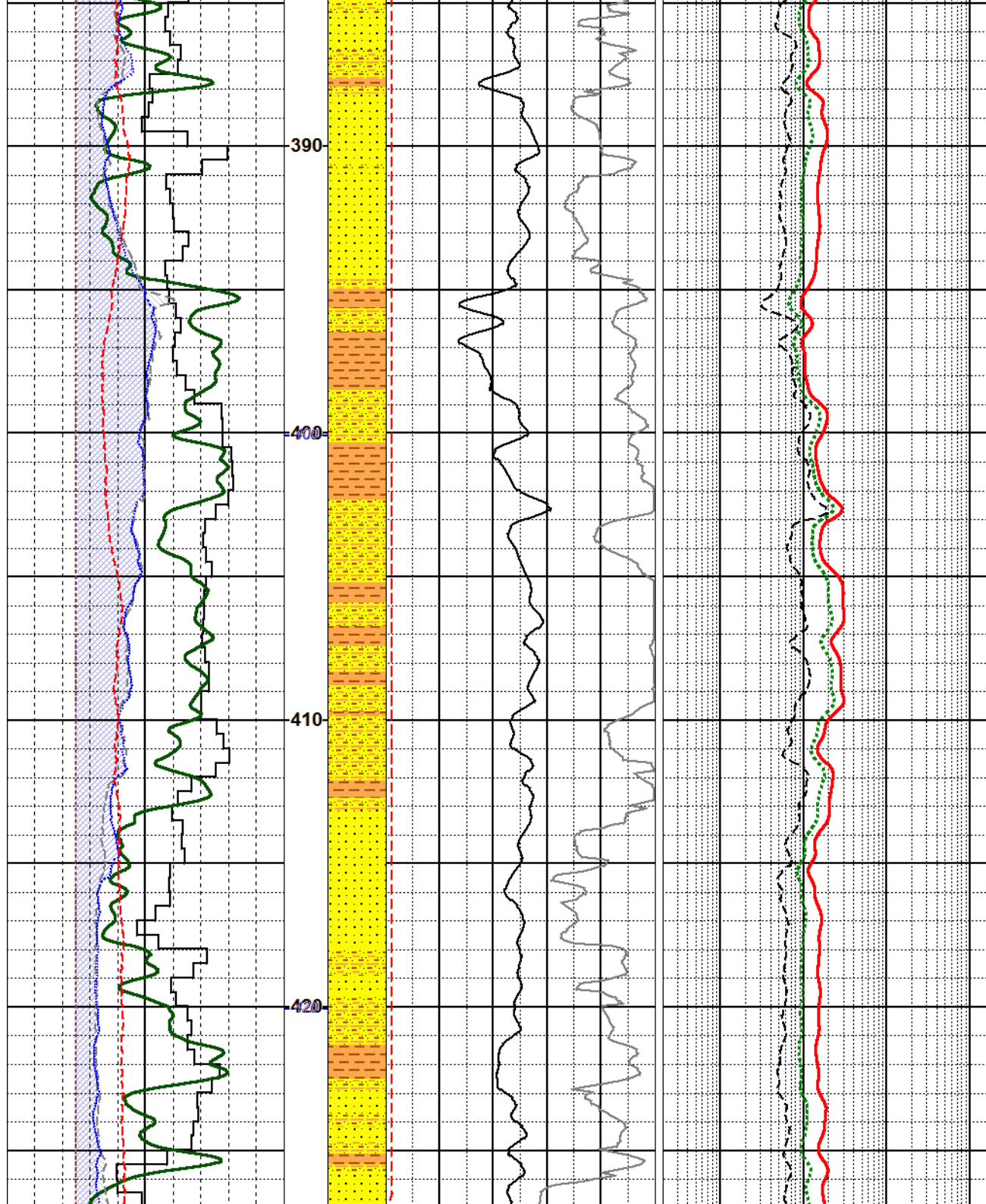
340 -427m SANDSTONE AND
GLAUCONITIC 'GREENSAND', WITH
INTERBEDDED MICACEOUS
SANDSTONE, MICACEOUS
SILTSTONE AND SILTSTONE



558m RUN:218
HRS: 29 COND:
1.1.WT.A.E.In.NO.PR

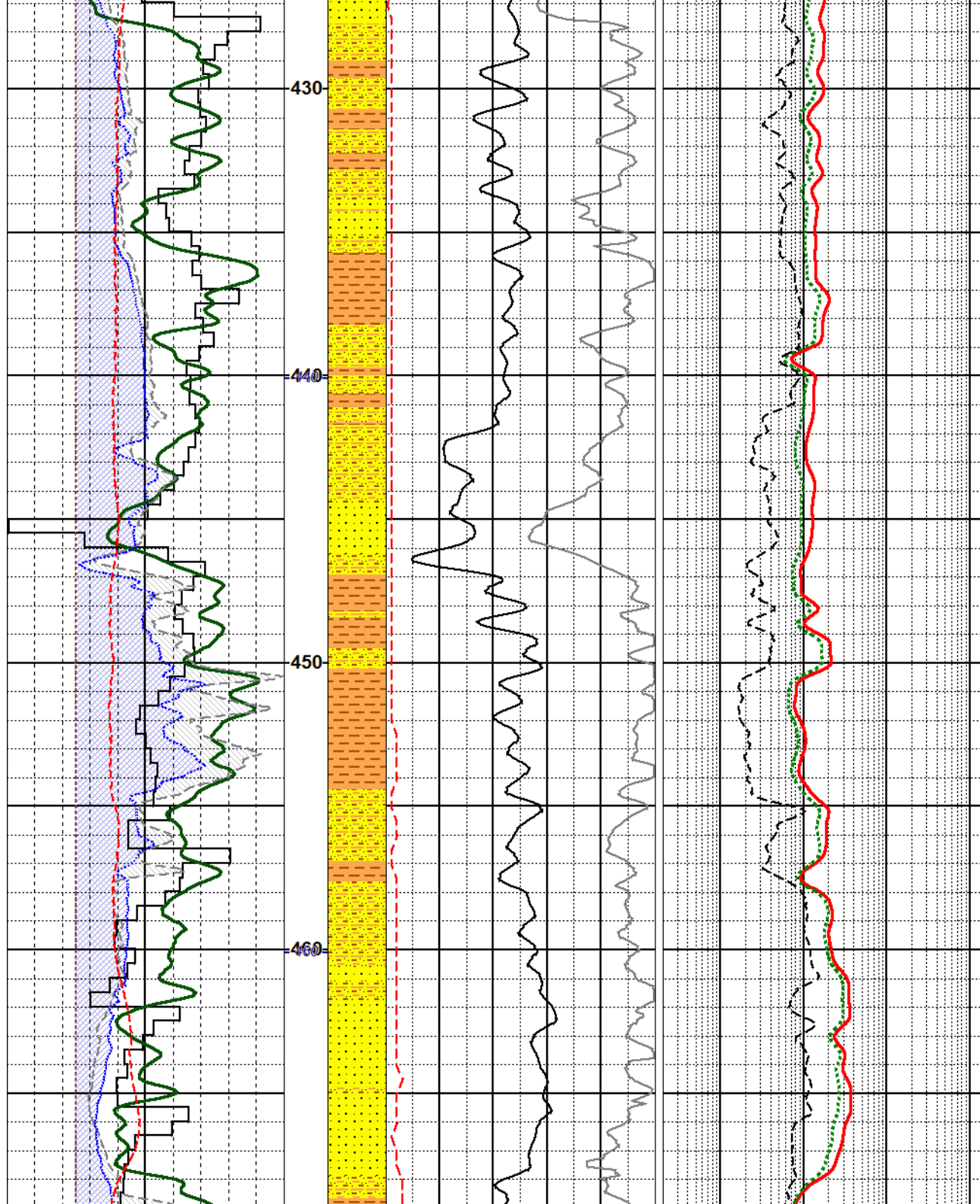
LOT @ 343m:
1000psi with
8.6ppg mud. EMW
= 25.8ppg

SILTSTONE AND SILTSTONE —
SANDSTONE: clear to translucent to milky white to greyish yellow to light greenish grey quartz, feldspar, and muscovite, fine to granule, subrounded to angular, well to poorly sorted, predominantly disaggregated with common silica -glauconite and trace carbonate -cemented aggregates, trace pyrite nodules, trace monazite, poor to moderate inferred porosity, no fluorescence. GLAUCONITIC SANDSTONE: light greenish grey to pale green to greenish white, quartz, feldspar and muscovite, fine to very coarse, subangular to subrounded, poorly to very well sorted, disaggregated with common weakly glauconite cemented aggregates, strongly glauconitic, moderate inferred porosity, no fluorescence. MICACEOUS SANDSTONE: clear to translucent to milky white to greyish yellow to light greenish grey quartz, muscovite, biotite and feldspar (albite and orthoclase), medium to coarse, angular to subrounded, moderately sorted, disaggregated with common silica -glauconite and trace carbonate -cemented aggregates, common hematite alteration of K -feldspar, poor to moderate inferred porosity, no fluorescence. MICACEOUS SILTSTONE: olive grey to medium light grey to pale green, (glauconitic), firm, subblocky to subfissile, locally arenaceous. SILTSTONE: light brown (muscovite -rich) to pale green (glauconitic) to pale yellow brown, firm, blocky to subfissile, micaceous, locally very glauconitic.



400.65 m 1.46 °, Az
329.2 °, TVD 400.58
m

WOB: 5 - 42 klbf
RPM: 35 - 91
FLOW: 262 - 521
gpm SPP: 238 -
758 psi

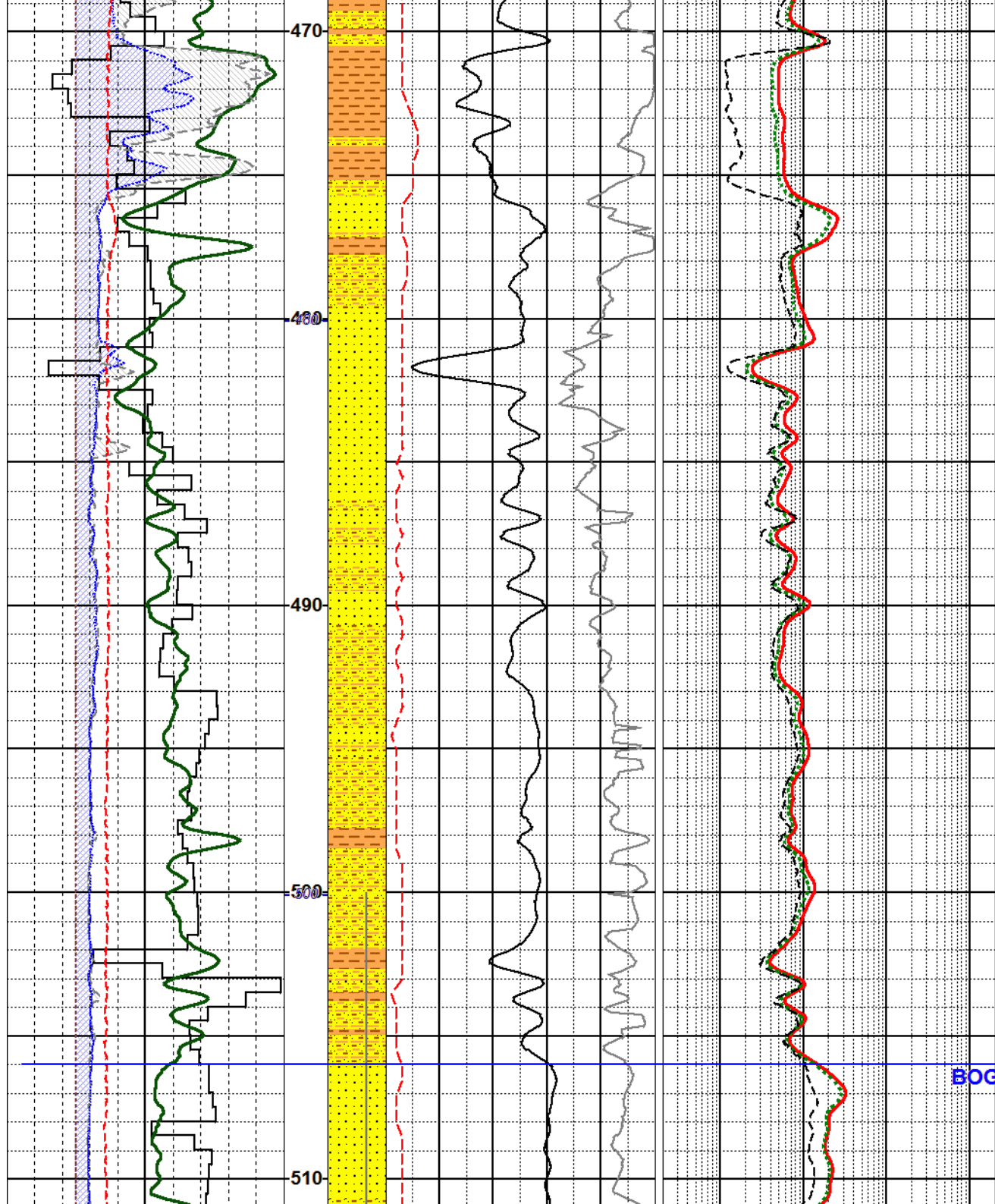


438.65 m 1.32 °, Az
335.92 °, TVD
438.57 m

427 -478 SANDSTONE WITH INTERBEDDED SILTSTONE, CLAYSTONE AND MINOR MICACEOUS SANDSTONE
SANDSTONE: clear to translucent to milky white to greyish yellow to pale green, quartz, feldspar and muscovite fine to granule, angular to subrounded, poorly to moderately well sorted, locally weakly glauconitic, disaggregated with minor carbonate cemented fine to medium sand aggregates, trace to common (~3%) monazite, trace massive magnetite granules (449 -435m), trace granule euhedral hedenbergite (at 439 -442m), moderate inferred porosity, no fluorescence.
SILTSTONE: light grey to pale olive, firm, blocky, grading to very fine sandstone, common very fine, feldspar, biotite and muscovite.
CLAYSTONE: light brown, soft amorphous, slightly calcareous.
MICACEOUS SANDSTONE: clear to translucent to milky white to greyish yellow to light grey quartz, feldspar, muscovite and medium, subangular to angular, well sorted, silica cemented aggregates, poor inferred porosity, no fluorescence.

MW: 9.1ppg
(1.09sg) FV: 41 PV:
19 GELS: 2/6 NACL:
0.08% MD: 47-11

Z-3% YP: 17 pP:
10.5



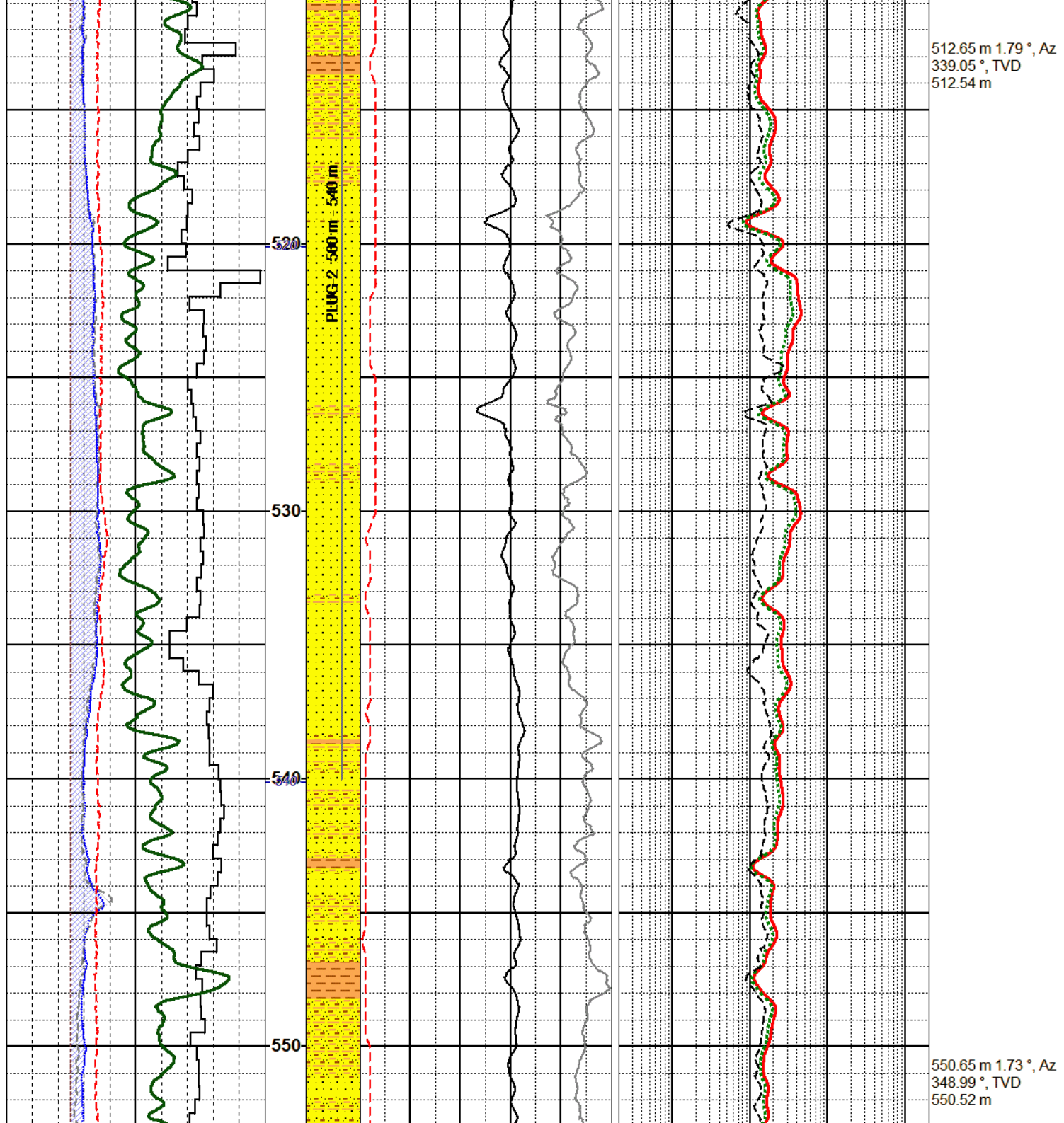
476.65 m 1.48 °, Az
336.45 °, TVD
476.56 m

WOB: 2 - 34 klbf
RPM: 64 - 78
FLOW: 302 - 328
gpm SPP: 613 -
802 psi

BOGAN GAP GRP (506.0 MD-RT, 505.9 TVD-RT, -356.9 TVD-SS)

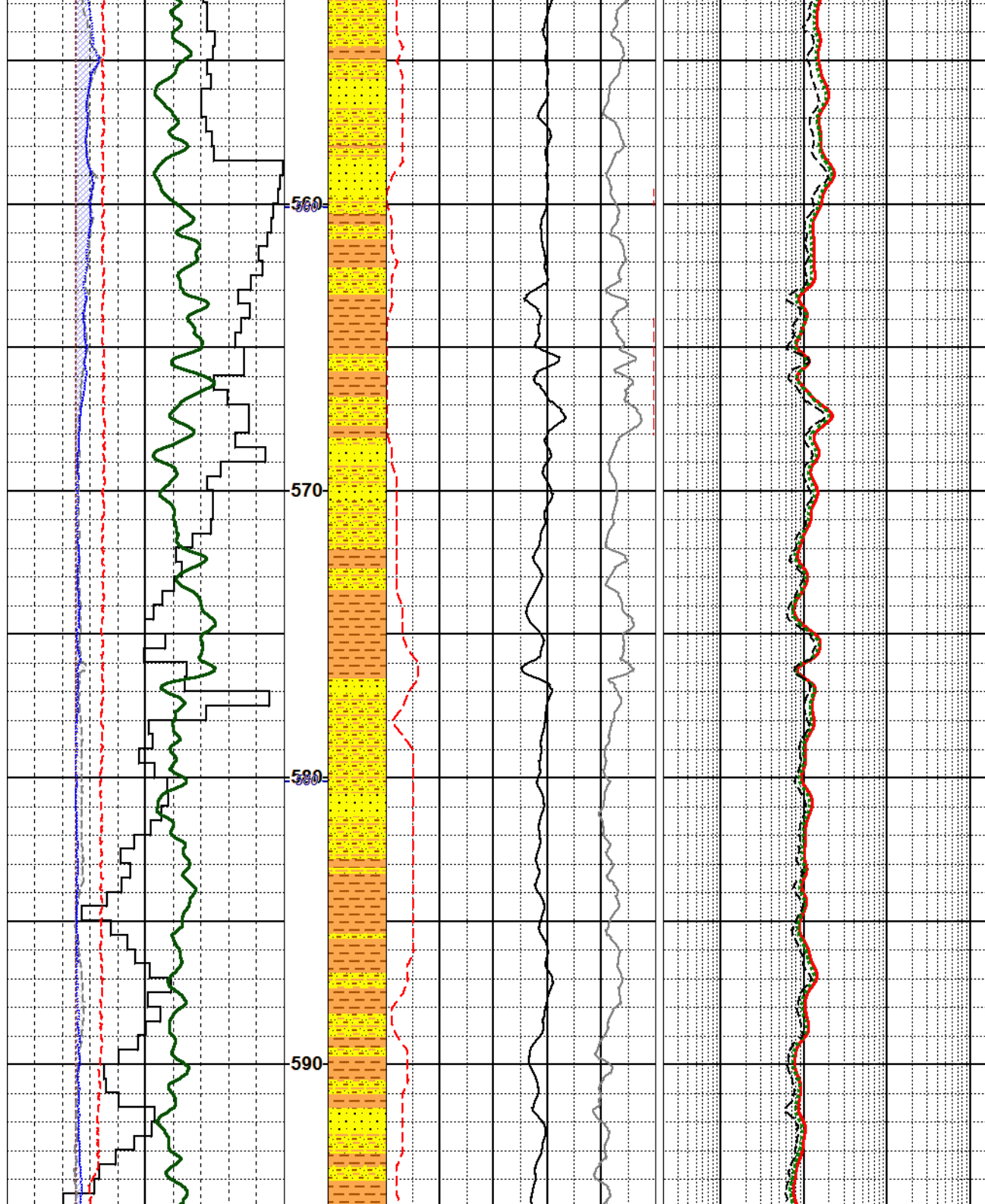
478 -506 INTERGRADATIONAL
SILTSTONE AND FELDSPATHIC
SANDSTONE, WITH MINOR
SANDSTONE__ SILTSTONE:
medium light grey to olive grey, hard,
blocky, grading to very fine
feldspathic sandstone, common very
fine, feldspar, biotite and muscovite.
FELDSPATHIC SANDSTONE: light
grey to medium light grey, very fine
to medium, angular to subangular,
well sorted, hard, silica cemented
aggregates with minor carbonate
cement, common muscovite, biotite,
trace fine monazite, very poor
inferred porosity. SANDSTONE:
clear to translucent to milky white to
greyish, quartz, with minor feldspar,
medium to coarse, angular to
subangular, moderately sorted,
predominantly disaggregated with
rare calc cemented fine sand
aggregates, trace muscovite, trace
glauconite, moderate inferred
porosity, no fluorescence.

506 -520 INTERGRADATIONAL
SILTSTONE AND FELDSPATHIC



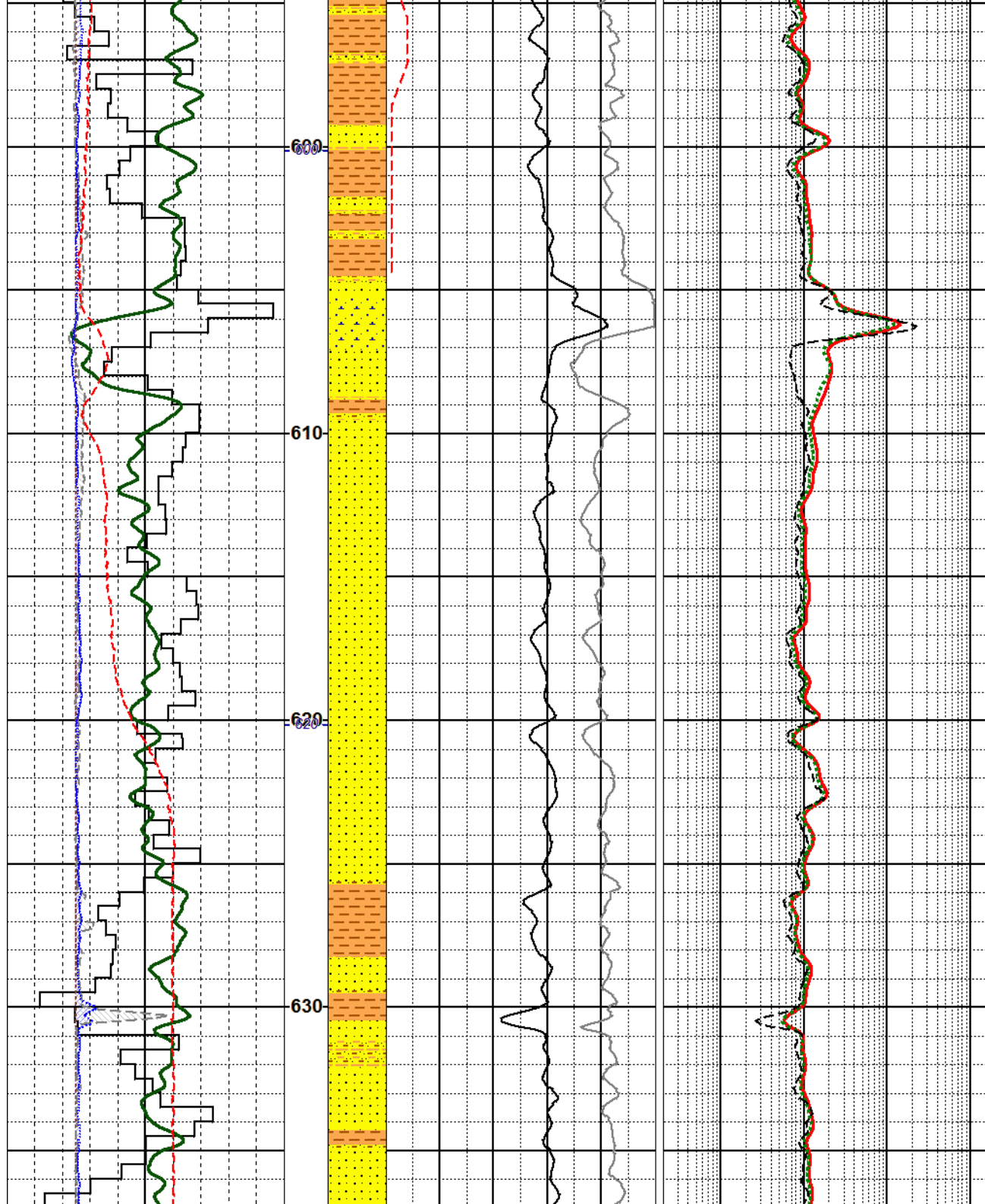
SANDSTONE, WITH MINOR SANDSTONE__ SILTSTONE: medium light grey to olive grey, hard, blocky, grading to very fine feldspathic sandstone, common very fine, feldspar, biotite and muscovite. FELDSPATHIC SANDSTONE: light grey to medium light grey, very fine to medium, angular to subangular, well sorted, hard, silica cemented aggregates with minor carbonate cement, common muscovite, biotite, trace fine monazite, very poor inferred porosity. SANDSTONE: clear to translucent to milky white to greyish, quartz, with minor feldspar, medium to coarse, angular to subangular, moderately sorted, predominantly disaggregated with rare calc cemented fine sand aggregates, trace muscovite, trace glauconite, moderate inferred porosity, no fluorescence.

520 -604m INTERGRADATIONAL SILTSTONE AND FELDSPATHIC SANDSTONE, WITH MINOR INTERBEDDED SANDSTONE__ SILTSTONE: medium light grey to greyish olive grey, firm to hard, blocky to subfissile, grading to very fine feldspathic sandstone, locally pyritic, common very fine, feldspar, biotite and muscovite. FELDSPATHIC SANDSTONE: light grey to medium light grey, very fine to fine, angular to subangular, well sorted, hard, silica cemented aggregates with minor calcareous cement, common muscovite, biotite, trace fine monazite, very poor inferred porosity. SANDSTONE: translucent to white to yellowish grey, quartz and feldspar, fine to coarse, angular to subangular, moderately to well sorted, predominantly disaggregated with common silica cemented fine to medium sand aggregates from 560m, trace calcareous cemented aggregates, trace muscovite, trace monazite, trace glauconite, trace quartz granules, trace pyrite nodules, poor to moderate inferred porosity, no fluorescence.



BIT-4: SMITH MI716
PDC SIZE: 216mm
(8.5). JETS: 7x12
IN: 558m OUT:
1005m RUN:447
HRS: 53.5 COND:
6.2.WT.N.X.In.NO.BH

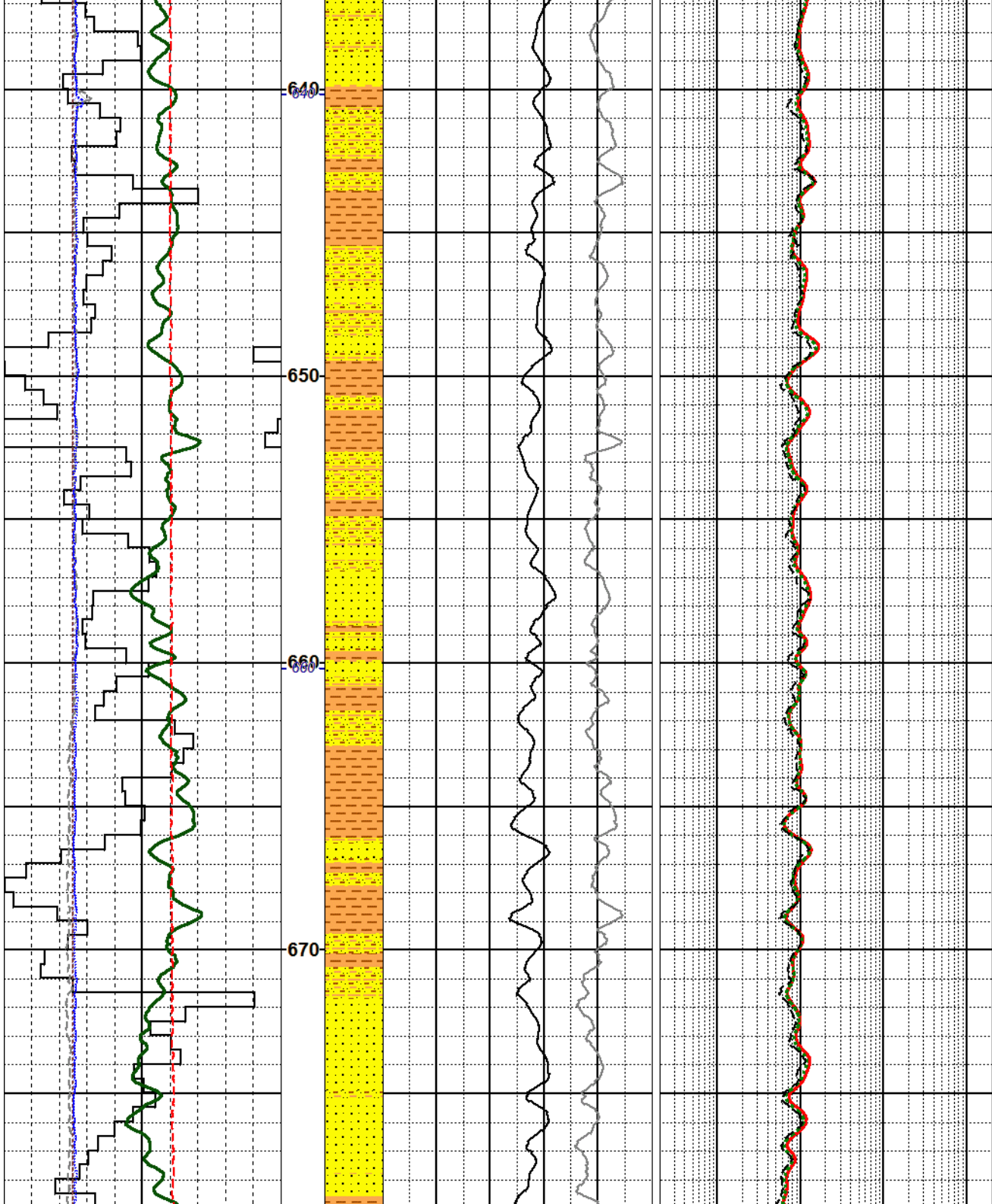
MW: 9.4ppg
(1.12sg) FV: 45 PV:
18 GELS: 7/13
NACL: 2-3% YP: 24
pH: 10

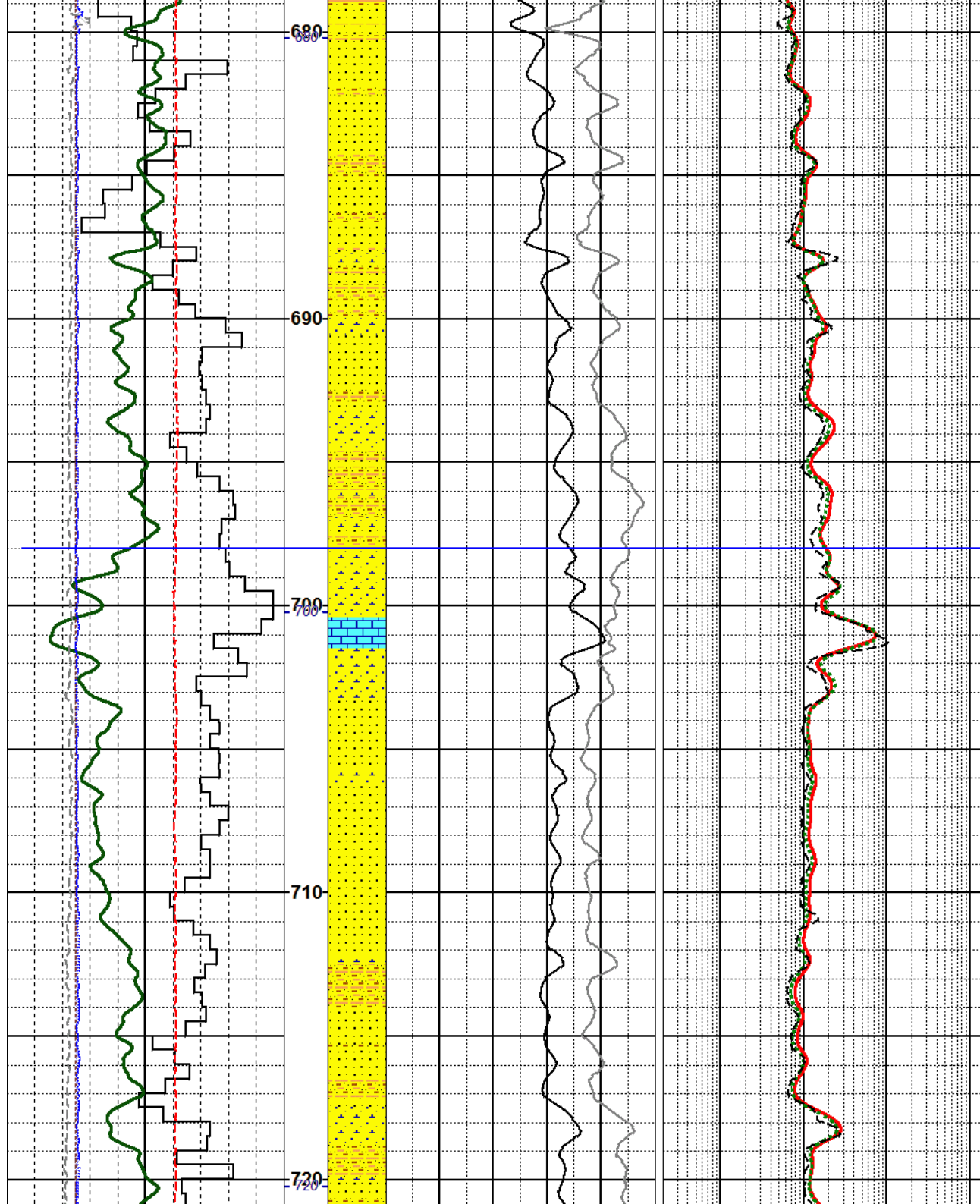


WOB: 8 - 39 klbf
RPM: 65 - 107
FLOW: 272 - 456
gpm SPP: 407 -
1250 psi

604 -698m SILTSTONE WITH
INTERBEDDED TO
INTERGRADATIONAL
SANDSTONE__ SILTSTONE:
medium light grey to greyish olive
grey, firm to hard, blocky to
subfissile, grading to very fine
sandstone, locally pyritic, common
very fine, feldspar, biotite and
muscovite, common embedded (ice
-rafted) granule sized lithics
(metapelite, metaquartzite and S
-type 2 -mica granite) up to 3mm.
SANDSTONE: translucent to white to
yellowish grey, quartz and feldspar,
fine to coarse, angular to
subrounded, poorly to well sorted,
predominantly disaggregated with
common silica cemented fine to
medium sand aggregates, trace
calcareous cemented aggregates,
trace muscovite, trace monazite,
trace glauconite, trace quartz
granules, trace pyrite nodules, poor
to moderate inferred porosity, no
fluorescence.

625.65 m 2.14 °, Az
8.53 °, TVD 625.48
m



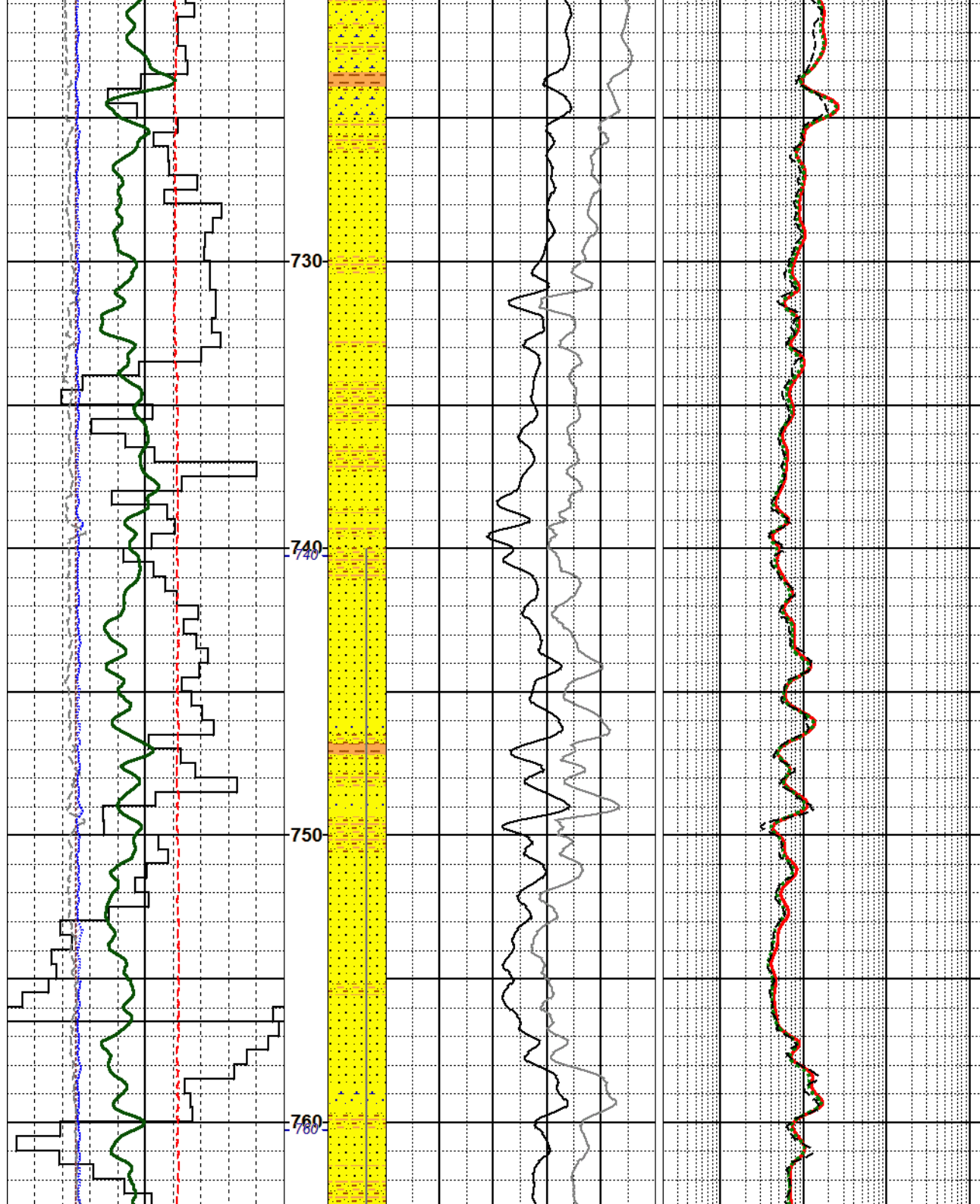


POATINA GR (698.0 MD-RT, 697.8 TVD-RT, -548.8 TVD-SS)

701.65 m 2.33 °, Az
14.84 °, TVD 701.42
m

WOB: 13 - 27 klbf
RPM: 94 - 108
FLOW: 280 - 369
gpm SPP: 351 -
620 psi

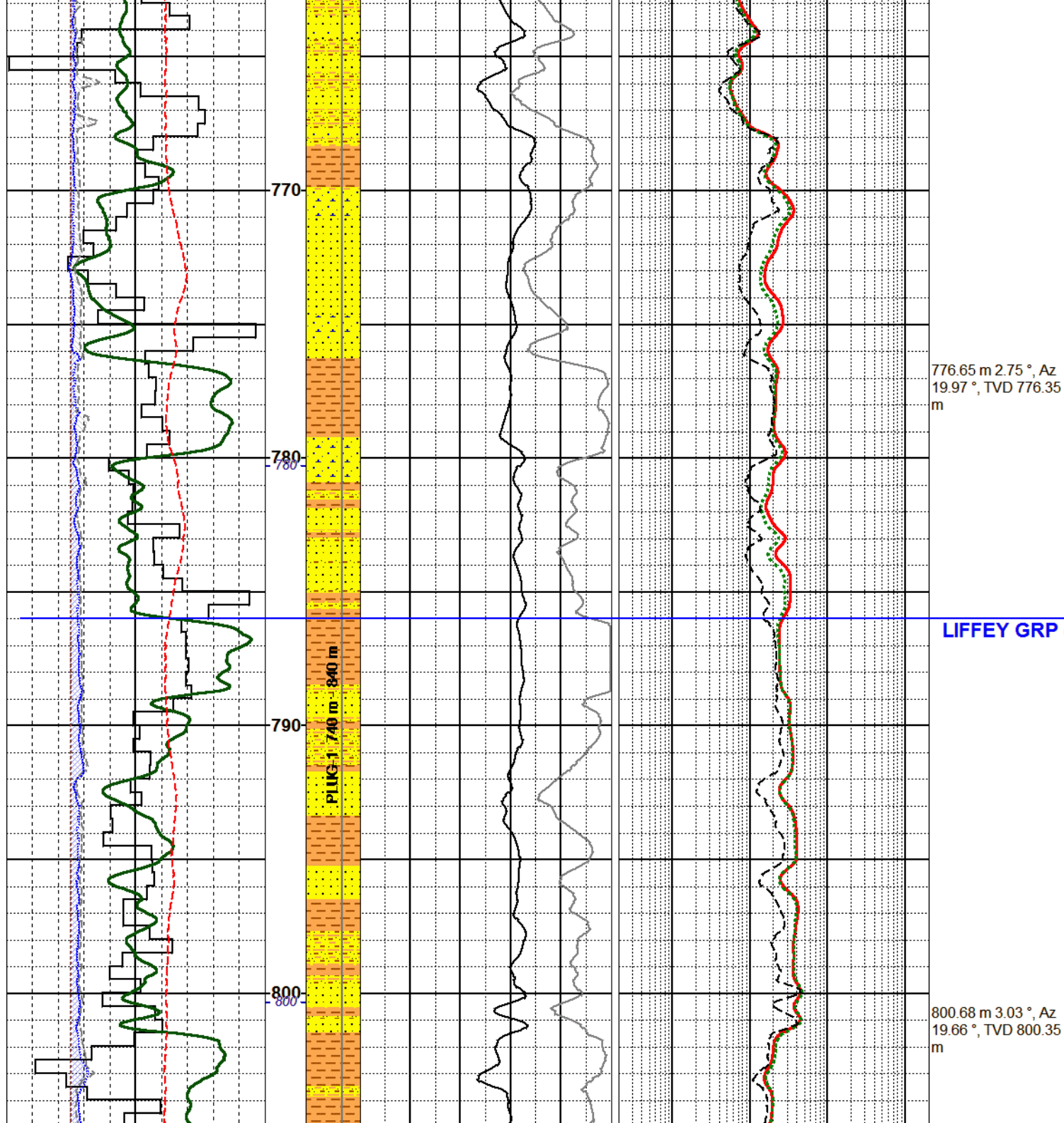
698 - 727m INTERBEDDED
LIMESTONE, SILTSTONE AND
CALCAREOUS SANDSTONE_
LIMESTONE: greyish yellow to
moderate yellow to milky white,
bioskeletal and fossiliferous
boundstone (?) containing fragments
of crinoids, bivalves (clamus sp?),
and bryozoans, locally dolomitic,
hard. SILTSTONE: medium light grey
to greyish olive grey, firm to hard,
blocky to subfissile, grading to very
fine sandstone, locally calcareous,
rare embedded (ice -rafted?)
granule sized metamorphic and
granitoid lithics. CALCAREOUS
SANDSTONE: greyish yellow to
yellowish grey to light olive grey,
quartz, calcite and rare feldspar, fine
to coarse, angular to subangular,
well to moderately sorted, firm to
hard, carbonate cemented
aggregates with minor
disaggregated sand, poor inferred
porosity, no fluorescence.



739 m 2.61 °, Az
13.37 °, TVD 738.74
m

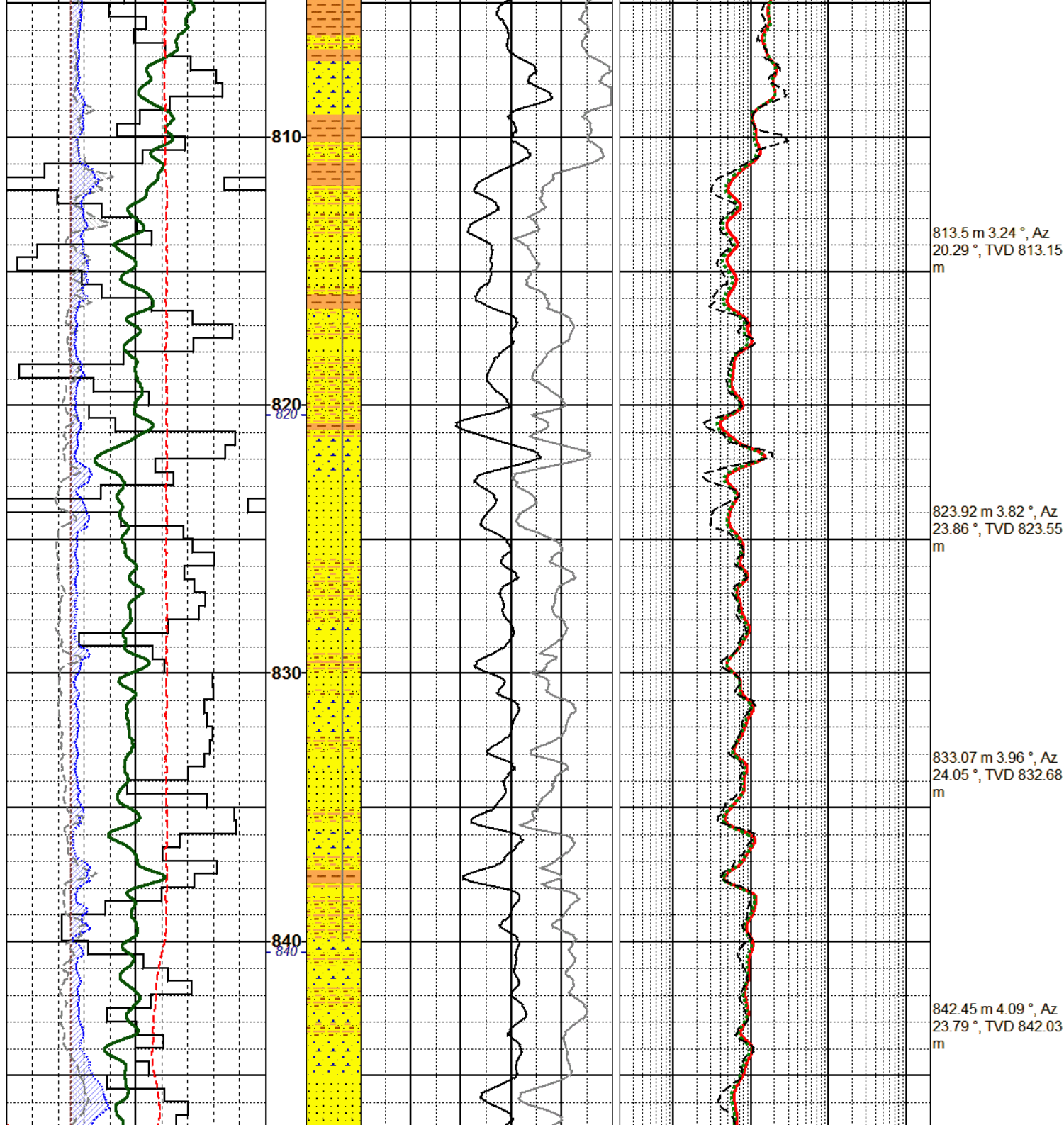
MW: 9.2ppg
(1.02sg) FV: 45 PV:
13 GELS: 6/14
NACl: 2-3% YP: 18
pH: 10

727 -786m SILTSTONE WITH
INTERBEDDED CALCAREOUS
SANDSTONE: SILTSTONE: medium
light grey to dusky yellow to light
olive grey, firm to hard, blocky to
subfissile, grading to very fine
sandstone, moderately calcareous,
locally pyritic, trace black shale.
CALCAREOUS SANDSTONE:
greyish yellow to yellowish grey to
light olive grey, quartz, calcite and
rare feldspar, fine to coarse, angular
to subangular, well to moderately
sorted, firm to hard, carbonate
cemented aggregates with minor
disaggregated sand, poor inferred
porosity, no fluorescence.



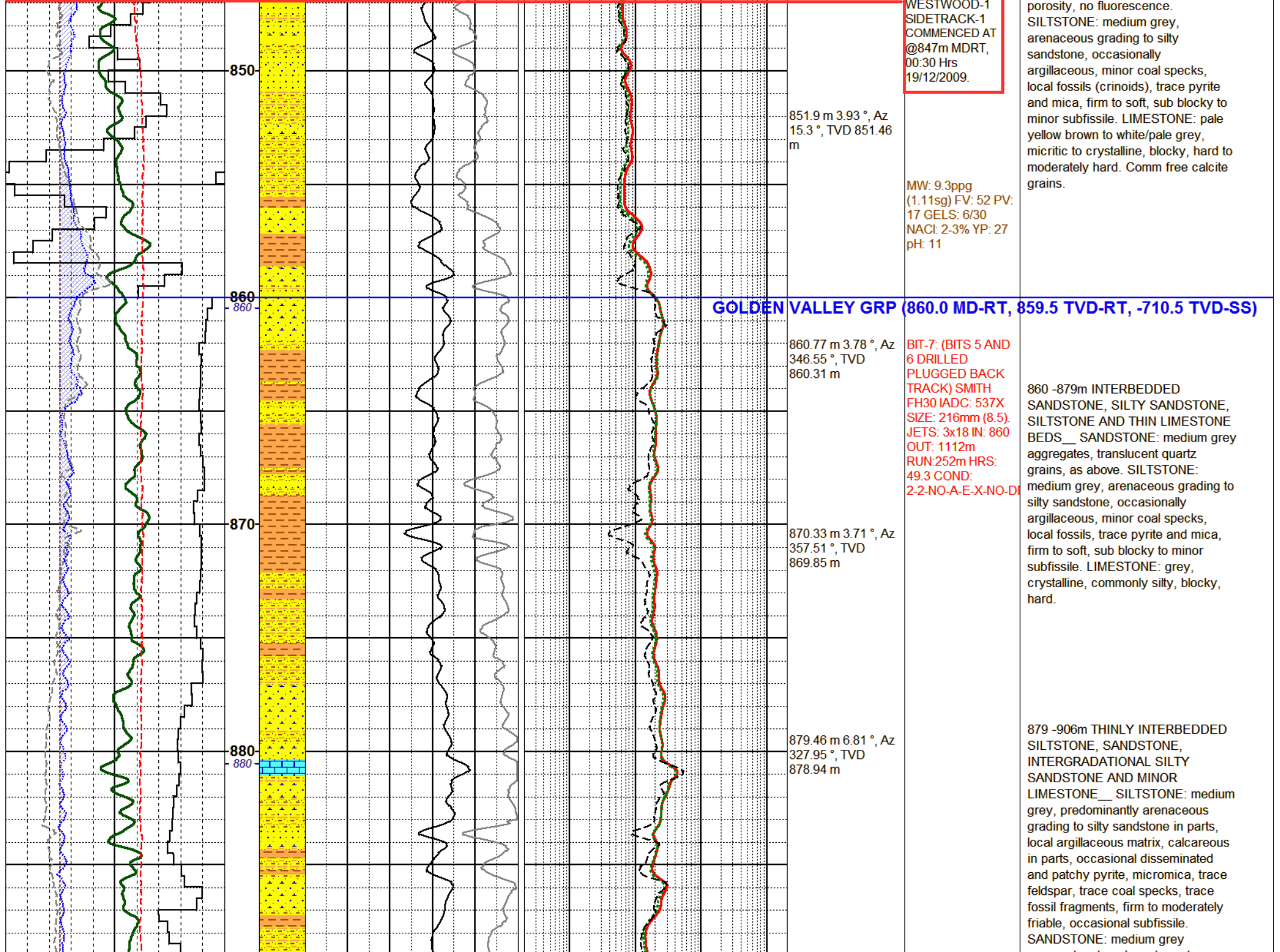
786 -817m SILTSTONE WITH
INTERBEDDED TO
INTERGRADATIONAL SANDSTONE:
SILTSTONE: light olive grey to olive
black, firm to hard, blocky to
subfissile, grading to very fine
sandstone, locally micaceous (biotite
-rich), locally pyritic. SANDSTONE:
white to very light grey, fine to
medium, angular to subangular,
moderately to well sorted, firm silica
cemented aggregates, trace biotite,
trace pyrite, poor inferred porosity,
no fluorescence.

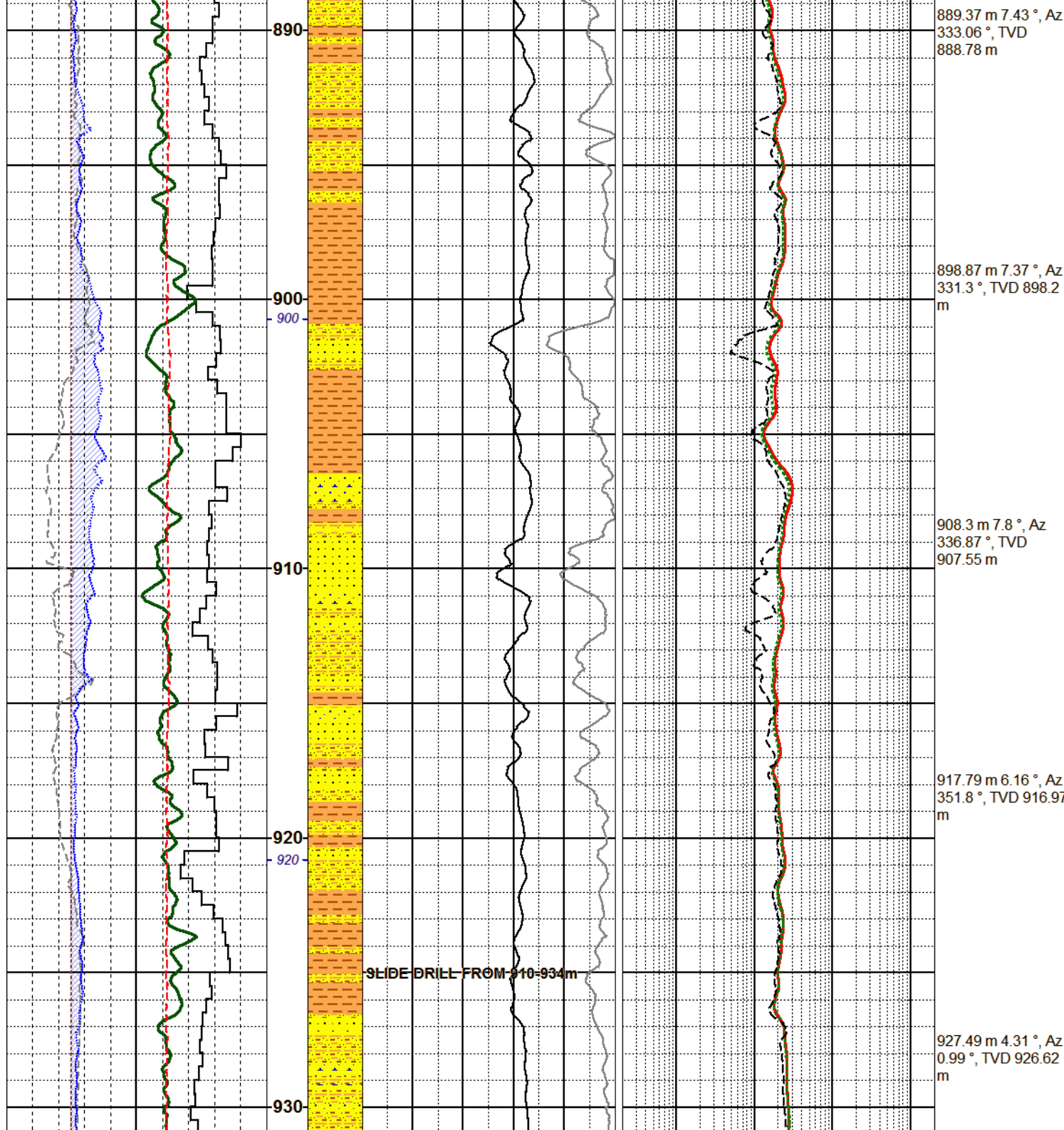
WOB: 5 - 53 klbf
RPM: 21 - 107
FLOW: 322 - 404
gpm SPP: 317 -
748 psi



817 -847m SILTSTONE WITH INTERBEDDED TO INTERGRADATIONAL SANDSTONE: SILTSTONE: light olive grey to olive black, firm to hard, blocky to subfissile, grading to very fine sandstone, locally micaceous (biotite -rich), non calcareous, locally pyritic. SANDSTONE: white to very light grey, quartzose, fine to medium, angular to subangular, moderately to well sorted, firm silica cemented aggregates, trace biotite, trace pyrite, poor inferred porosity, no fluorescence.

847 -860m INTERBEDDED SANDSTONE, SILTY SANDSTONE, SILTSTONE AND THIN LIMESTONE BEDS__ SANDSTONE: medium grey aggregates, translucent to minor clear quartz grains, very fine to fine, occasionally medium, subrounded to subangular, moderately well sorted, weak to moderately strong siliceous and increasing calcareous cement, common to abundant silty and argillaceous matrix grading to silty sandstone, minor coal specks, local fossils (crinoids?) and bivalves, trace pyrite and mica, moderately friable to firm, occasionally hard where calcareous, poor to tight visual





889.37 m 7.43 °, Az
333.06 °, TVD
888.78 m

898.87 m 7.37 °, Az
331.3 °, TVD 898.2
m

908.3 m 7.8 °, Az
336.87 °, TVD
907.55 m

917.79 m 6.16 °, Az
351.8 °, TVD 916.97
m

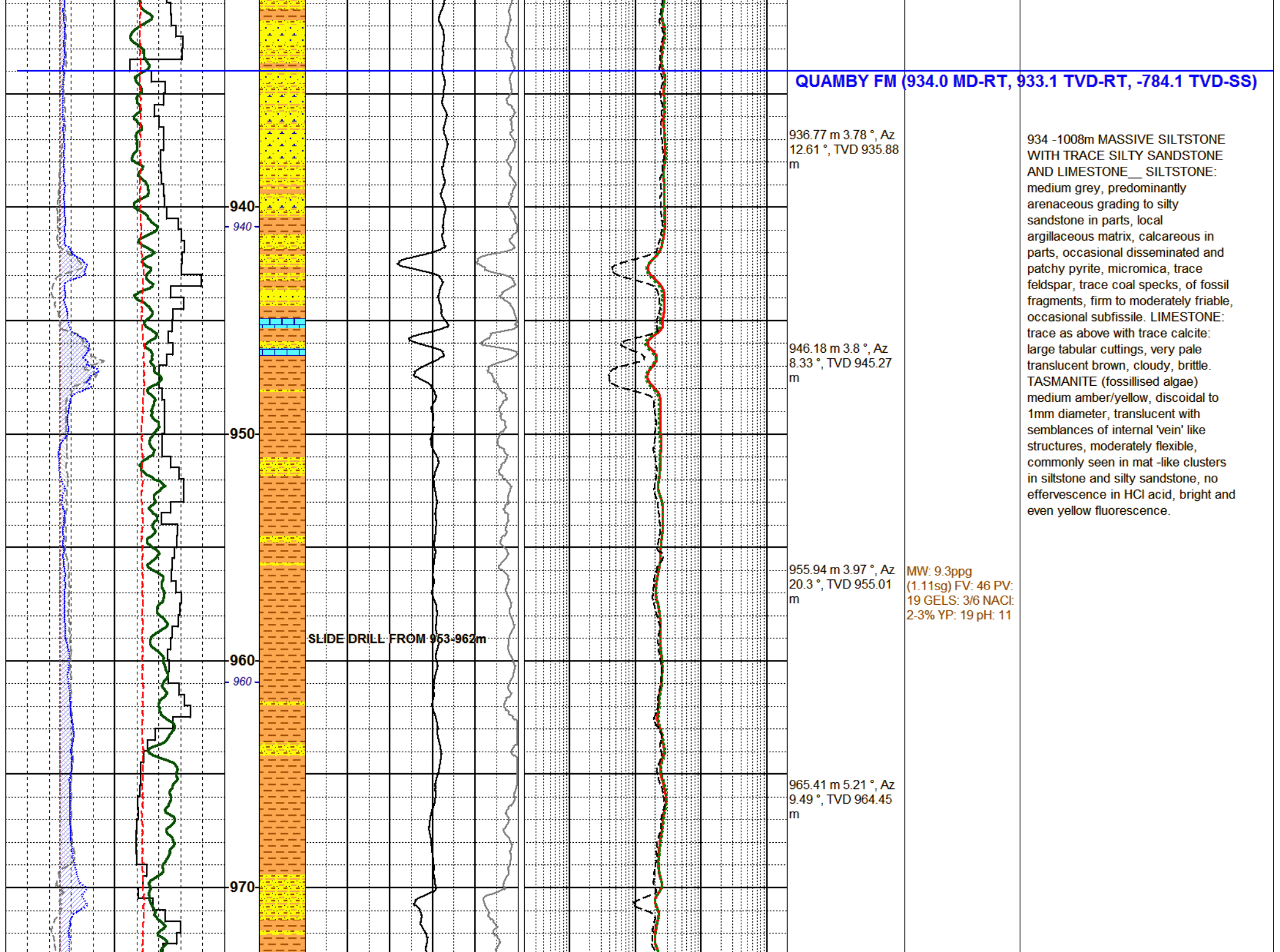
927.49 m 4.31 °, Az
0.99 °, TVD 926.62
m

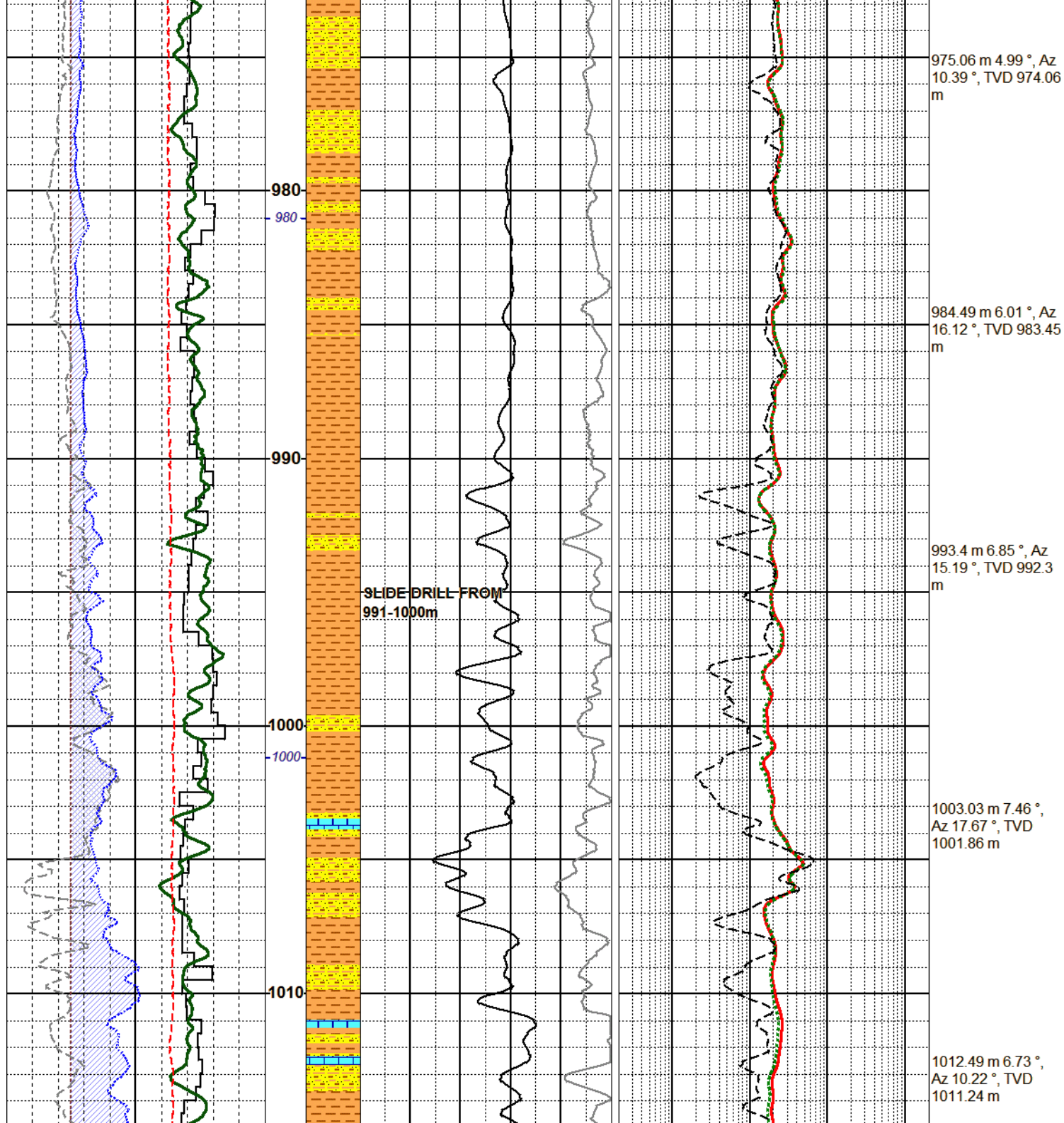
WOB: 10 - 43 klbf
RPM: 58 - 159
FLOW: 207 - 324
gpm SPP: 588 -
1221 psi

MW: 9.2ppg
(1.02sg) FV: 45 PV:
14 GELS: 7/16
NACl: 2-3% YP: 25
pH: 9.5

aggregates, translucent quartz
grains, as above. SILTY
SANDSTONE: medium grey, very
fine grading to arenaceous siltstone,
common to abundant silty and local
argillaceous matrix, calcareous in
parts, coal specks, trace pyrite and
micromica, friable to firm, poor visual
porosity, no fluorescence.
LIMESTONE: trace as above.

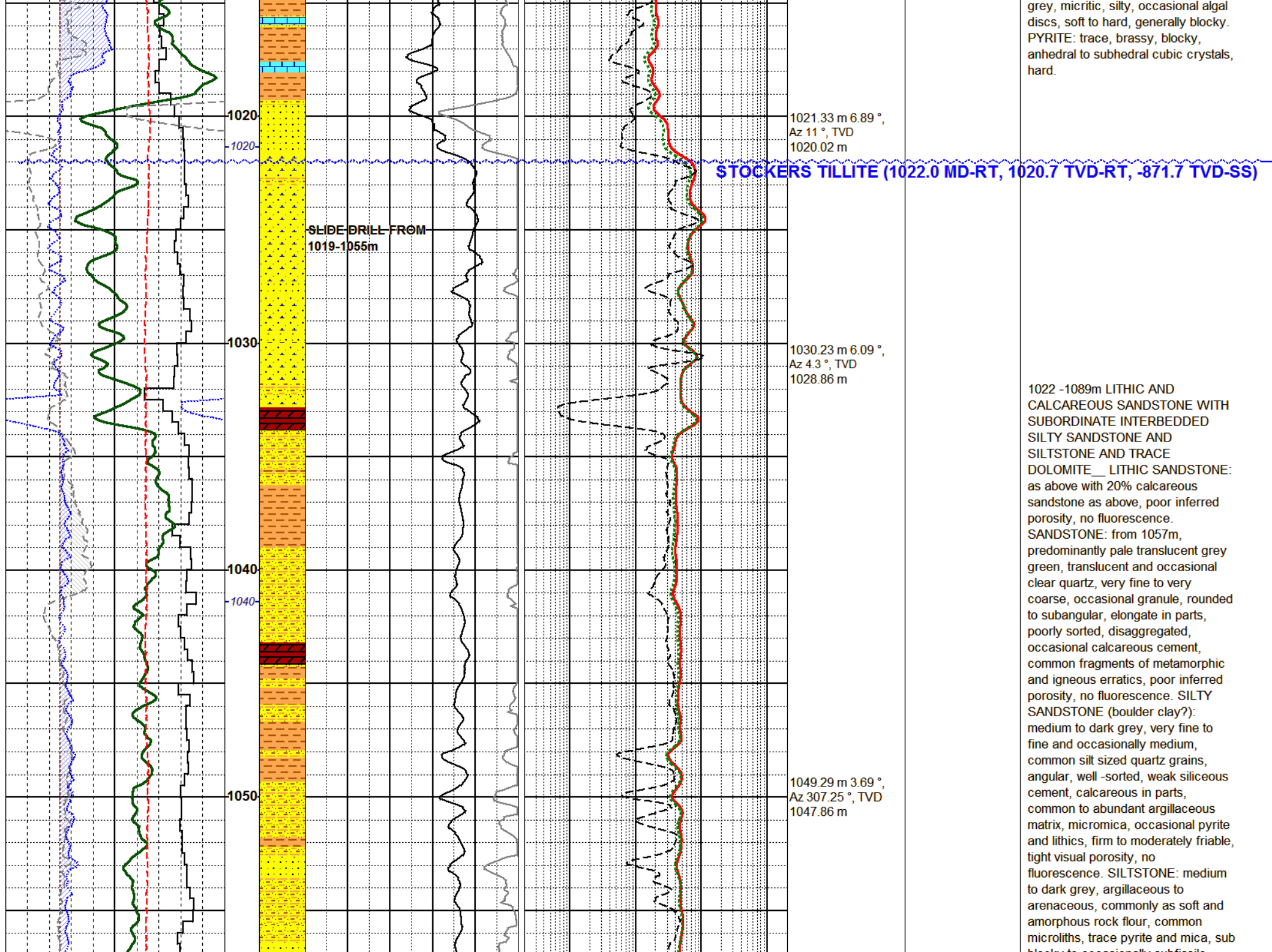
906 -934m DOMINANTLY
SANDSTONE WITH
INTERGRADATIONAL SILTY
SANDSTONE, INTERBEDDED
SILTSTONE AND TRACE
LIMESTONE__ SANDSTONE:
medium grey aggregates,
translucent quartz grains, very fine
grading to arenaceous siltstone,
subrounded to subangular,
moderately well sorted, weak to
moderately strong siliceous and
occasional calcareous cement, clean
to local silty matrix grading to silty
sandstone, minor coal specks, local
fossils, trace pyrite and mica,
moderately friable to firm,
occasionally hard where calcareous,
poor to tight visual porosity, no
fluorescence. SILTSTONE: medium
grey, as above. SILTY SANDSTONE:
medium grey, as above.
LIMESTONE: trace as above with
trace calcite: large tabular cuttings,
very pale translucent brown, cloudy,
brittle.





WOB: 13 - 29 klbf
 RPM: 79 - 187
 FLOW: 281 - 397
 gpm SPP: 922 - 1366 psi

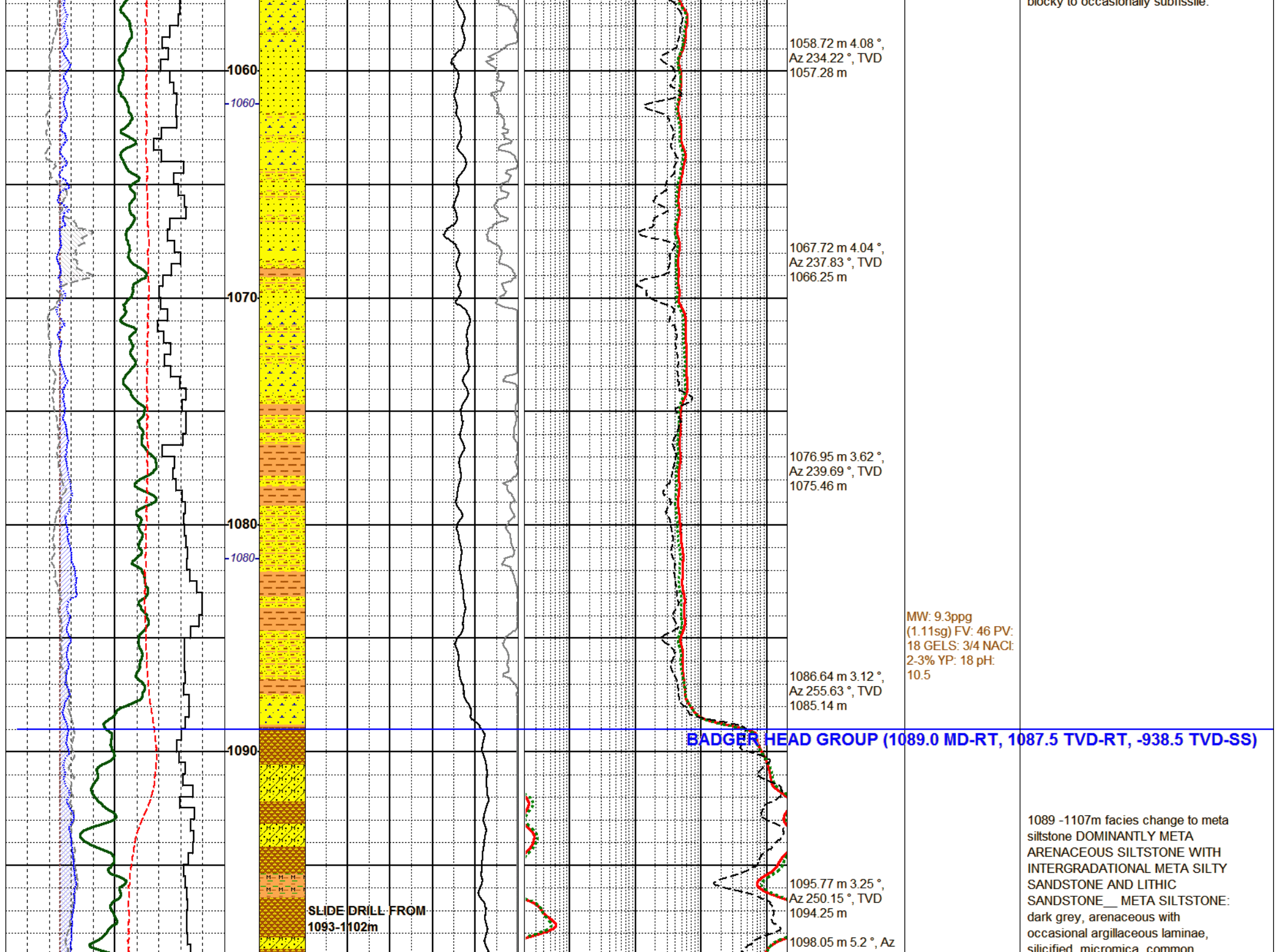
1008 - 1022m SILTSTONE WITH INTERBEDDED SANDSTONE WITH MINOR LIMESTONE AND HEAVY TRACE TASMANITE__ SILTSTONE: as above SANDSTONE: medium to light grey, very fine to fine with occasional medium to coarse grains below 1027m, angular, moderately well sorted, weak to strong siliceous and calcareous cement, silty in parts, occasional algal discs, disseminated to minor anhedral pyrite, micromica, rare coal specks, trace lithics, (igneous and metamorphic), firm to friable, poor to tight visual porosity, no fluorescence. LIMESTONE: pale

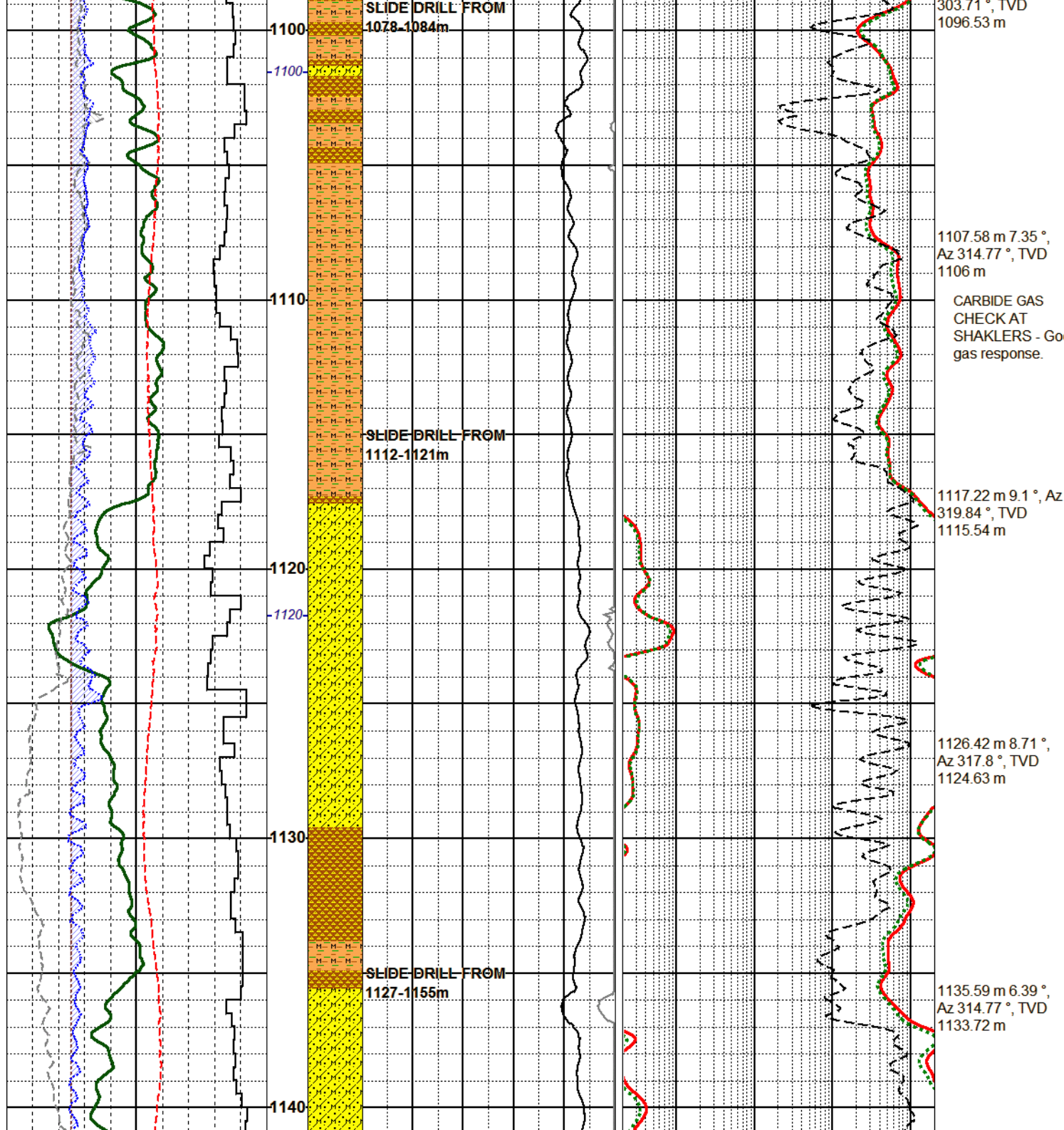


grey, micritic, silty, occasional algal discs, soft to hard, generally blocky. PYRITE: trace, brassy, blocky, anhedral to subhedral cubic crystals, hard.

1022 -1089m LITHIC AND CALCAREOUS SANDSTONE WITH SUBORDINATE INTERBEDDED SILTY SANDSTONE AND SILTSTONE AND TRACE DOLOMITE__ LITHIC SANDSTONE: as above with 20% calcareous sandstone as above, poor inferred porosity, no fluorescence. SANDSTONE: from 1057m, predominantly pale translucent grey green, translucent and occasional clear quartz, very fine to very coarse, occasional granule, rounded to subangular, elongate in parts, poorly sorted, disaggregated, occasional calcareous cement, common fragments of metamorphic and igneous erratics, poor inferred porosity, no fluorescence. SILTY SANDSTONE (boulder clay?): medium to dark grey, very fine to fine and occasionally medium, common silt sized quartz grains, angular, well -sorted, weak siliceous cement, calcareous in parts, common to abundant argillaceous matrix, micromica, occasional pyrite and lithics, firm to moderately friable, tight visual porosity, no fluorescence. SILTSTONE: medium to dark grey, argillaceous to arenaceous, commonly as soft and amorphous rock flour, common microliths, trace pyrite and mica, sub blocky to occasionally sub-facile.

blocky to occasionally submassive.





WOB: 11 - 25 klbf
RPM: 80 - 173
FLOW: 248 - 395
gpm SPP: 1024 - 1364 psi

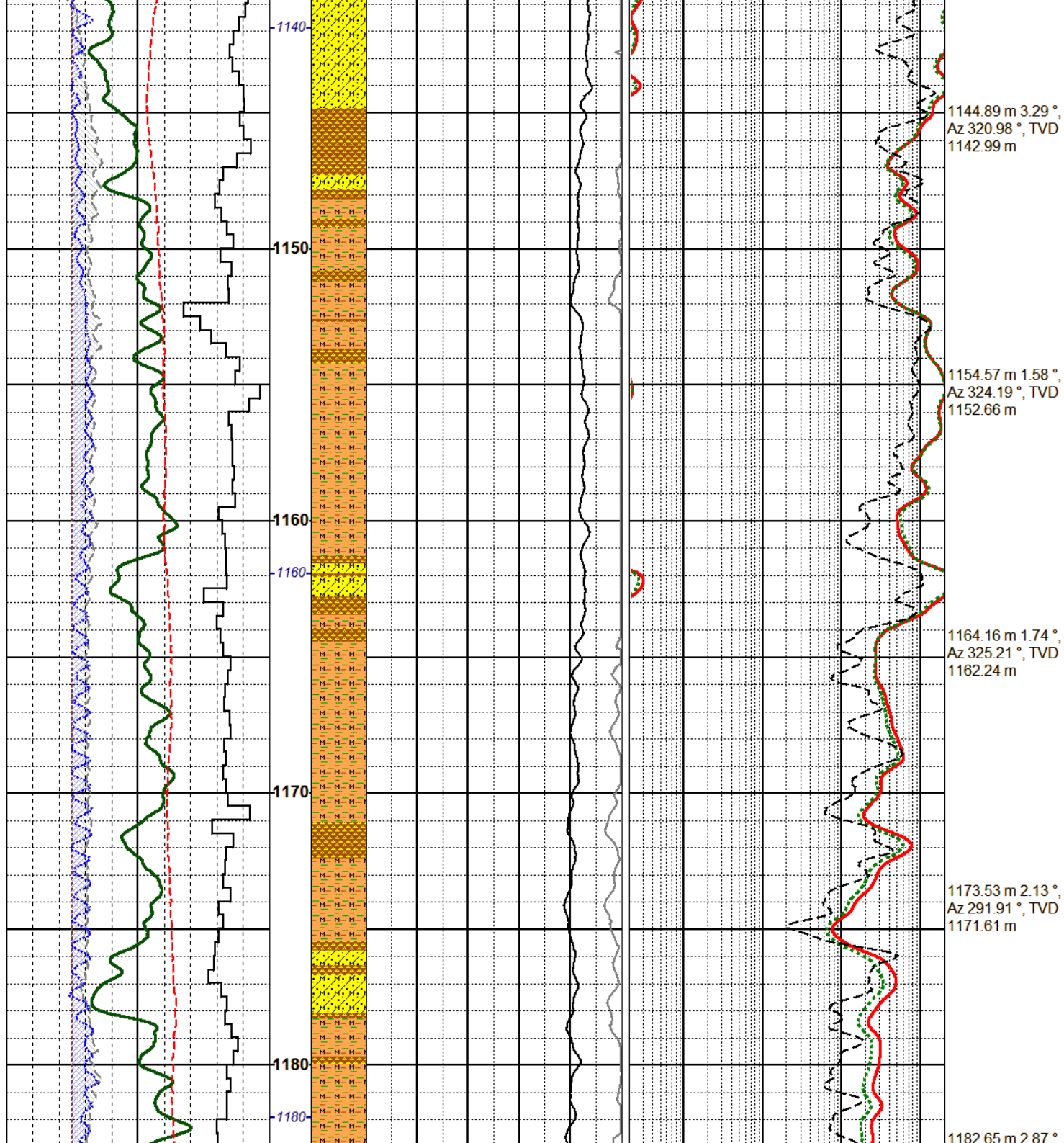
BIT-8: SMITH FH30
IADC: 537X SIZE:
216mm (8.5).
JETS: 3x18 IN:
1112m OUT:
1389m RUN:277m
HRS:61 COND:
3-2-NO-A-E-X-NO
-DMF

MW: 9.3ppg
(1.11sg) FV: 44 PV:
19 GELS: 3/4 NACL:
2-3% YP: 16 pH:
10.5

micaceous sheen on cleavage surfaces, generally shaley to minor slaty, platy, subfissile to splintery, brittle in parts. [NOTE: distinctive H2S odours in HCl]. META SILTY SANDSTONE: dark grey to black, very fine to fine, common silt sized quartz grains, subrounded to subangular, well -sorted, silicified, commonly calcareous, laminated, hard, occasionally subfissile, tight porosity, no fluorescence. LITHIC SANDSTONE: translucent white to grey and pale green quartz, varicoloured igneous and metamorphic siliceous fragments, very fine to fine and occasionally medium, becoming coarse to very coarse and pebbly from 1114m, generally disaggregated, poor inferred porosity, no fluorescence. LIMESTONE: mottled to patchy medium to light grey, occasionally off -white, silty in parts, moderately hard to hard, blocky.

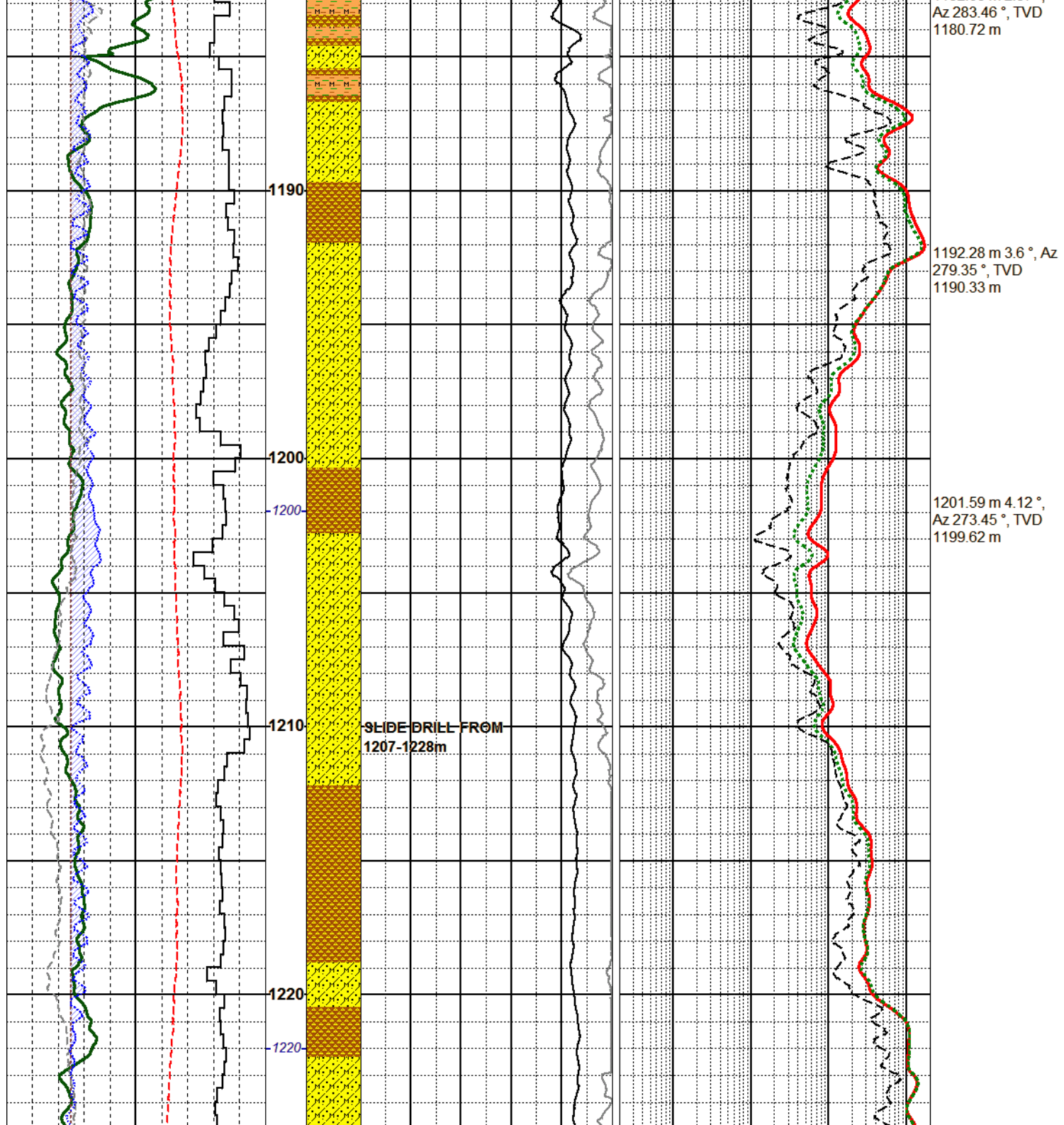
1107 -1129m METASILTSTONE WITH MINOR INTERGRADATIONAL META SILTY SANDSTONE, SANDSTONE AND LIMESTONE: METASILTSTONE: as above, hard to bright, shaley in parts. META SILTY SANDSTONE: as above SANDSTONE: as above predominantly coarse to pebble fragments. LIMESTONE: as above with common free Calcite, white, brittle -firm.

1129 -1177m METASILTSTONE WITH INTERGRADATIONAL META SILTY SANDSTONE, METASANDSTONE AND LIMESTONE BEDS. METASILTSTONE: black to dark -grey, arenaceous-siliceous in parts, carbonaceous with patchy dull coal (no gas detected), trace micromica, trace disseminated pyrite, shaley in parts. METASILTSTONE: phyllitic, medium to light grey/silver grey, vitreous lustre (metallic), sub conchoidal fracture surfaces, brittle, subfissile. METASANDSTONE: translucent to occasional clear (recrystallised) quartz, very fine to



fine, occasionally medium, local coarse angular quartzite pebble shards, angular to subrounded, poorly sorted, disaggregated to occasionally weak siliceous cement, slightly calcareous in parts, minor silt matrix, no fluorescence. METASANDSTONE: (20%) grey/translucent quartz with minor black inclusions, very fine to fine grading to arenaceous metasiltstone, subrounded to subangular, well -sorted, strong siliceous and dolomitic cement, minor mica flakes, rare pyrite, common silt matrix grading to meta silty sandstone (psammite), hard to brittle, occasionally subfissile, tight visual porosity, no fluorescence. META SILTY SANDSTONE: medium to dark grey, fine to very fine grading to arenaceous siltstone, subrounded to subangular, moderately well sorted, strong siliceous to moderately strong calcareous cement, common silty matrix, trace micromica, moderately friable, poor visual porosity, no fluorescence. LIMESTONE: pale grey, translucent, patchy to mottled in parts, micritic to crystalline, silty and occasional very fine quartz grains, moderately hard, brittle. CALCITE: common free calcite, opaque to cloudy white, brittle -firm.

1177 -1195m FINELY INTERBEDDED AND LAMINATED METASANDSTONE, SILICIFIED ARENACEOUS METASILTSTONE, META SILTY SANDSTONE AND LIMESTONE__ METASANDSTONE: generally translucent, white and pale olive grey as above with up to 10% medium to very coarse and granule

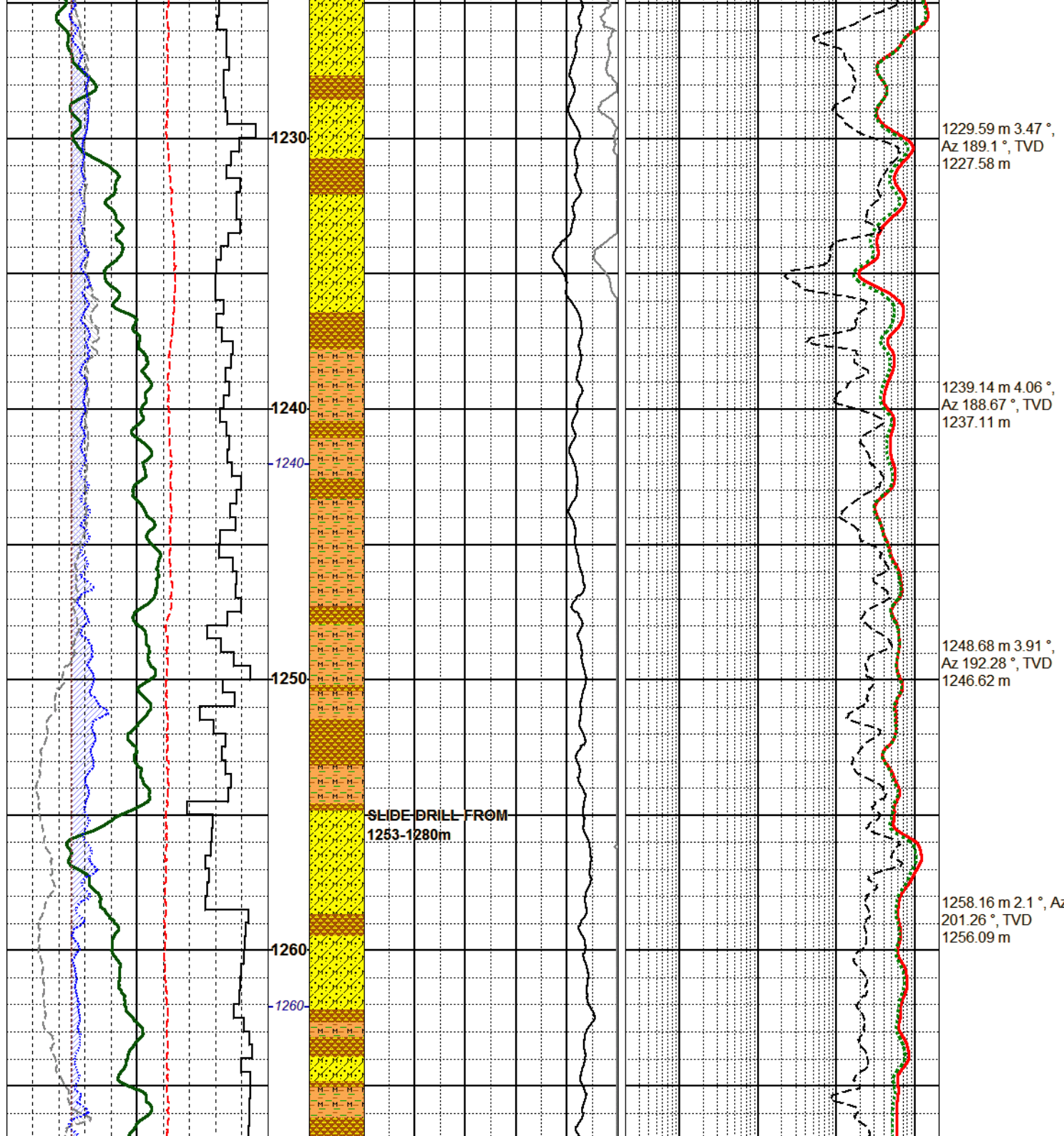


MW: 9.3ppg
(1.11sg) FV: 43 PV:
16 GELS: 2/3 NACI:
2-3% YP: 14 pH:
10.5

WOB: 10 - 31 klbf
RPM: 86 - 172
FLOW: 292 - 394
gpm SPP: 1138 -
1394 psi

sized white quartz pebble fragments, no fluorescence. METASILTSTONE: medium to dark grey, arenaceous/siliceous grading to meta silty sandstone, common very fine quartz, finely laminae, argillaceous and micaceous bedding surfaces in parts, local disseminated to anhedral pyrite, hard to brittle, minor splintery and subfissile. META SILTY SANDSTONE: as above Limestone: as above and common free calcite grains.

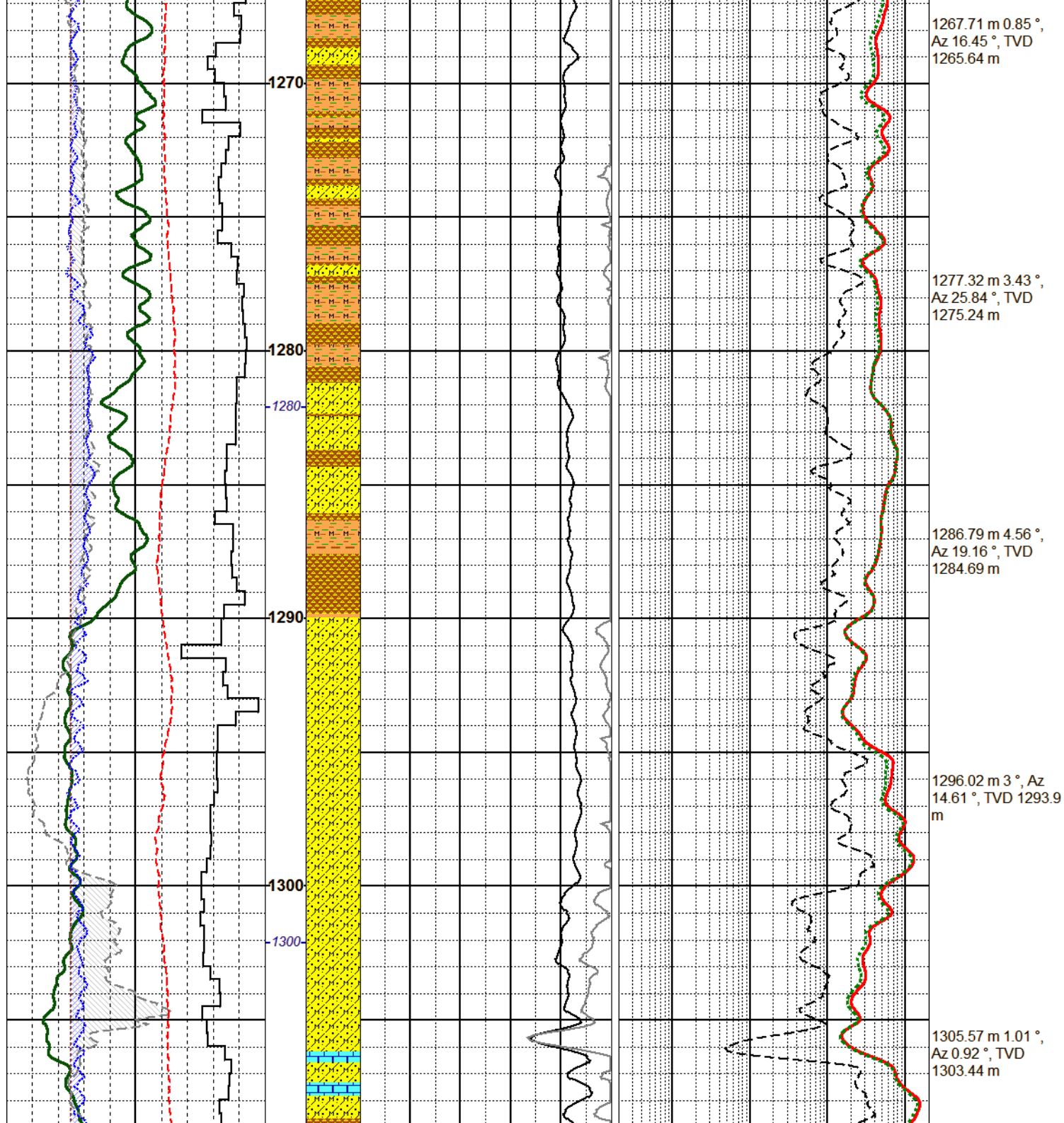
1195 -1255m META CALCAREOUS SANDSTONE WITH MINOR META SILTY SANDSTONE, METASILTSTONE AND LIMESTONE__ METASANDSTONE: very pale green, very fine to very coarse (10% coarse to pebbly) – generally fine to medium, subrounded to subangular, occasional frosted grain surfaces, moderately well sorted, disaggregated to strong siliceous cement, calcareous in parts, tight inferred porosity, no fluorescence. META CALCAREOUS SANDSTONE: translucent to pale grey, very pale translucent green, silicified very fine to fine subrounded -sub angular quartz grains, minor silt and lithic inclusions, calcareous in parts, hard to moderately friable (fractured?), tight inferred porosity, no fluorescence. META SILTY SANDSTONE: as above plus minor brownish black, very fine, subrounded, well -sorted, strong siliceous cement, common silt matrix, hard to moderately hard, poor to tight visual porosity, no fluorescence. METASILTSTONE: as above with phyllitic texture in parts, subfissile to fissile, brittle to firm. LIMESTONE: as above trace to 10%, generally as rock flour. PYRITE: trace, brassy, nodular, blocky, very hard.



MW: 9.3ppg
(1.11sg) FV: 40 PV:
17 GELS: 3/4 NACL:
2-3% YP: 16 pH:
10.5

1255 -1288m PREDOMINANTLY METASILTSTONE WITH SUBORDINATE INTERBEDDED METASANDSTONE AND MINOR LIMESTONE__ METASILTSTONE: dark to medium grey, phyllitic texture, arenaceous to generally silicified, calcareous in parts, occasional very fine quartz grains, occasional micromica and subhedral to anhedral pyrite, shaley to slate-like platy fissile cuttings, brittle to moderately hard. METASANDSTONE: as above, tight and hard with occasional coarse to pebbly drop -stones (10 -20%) to 1282m. CALCAREOUS

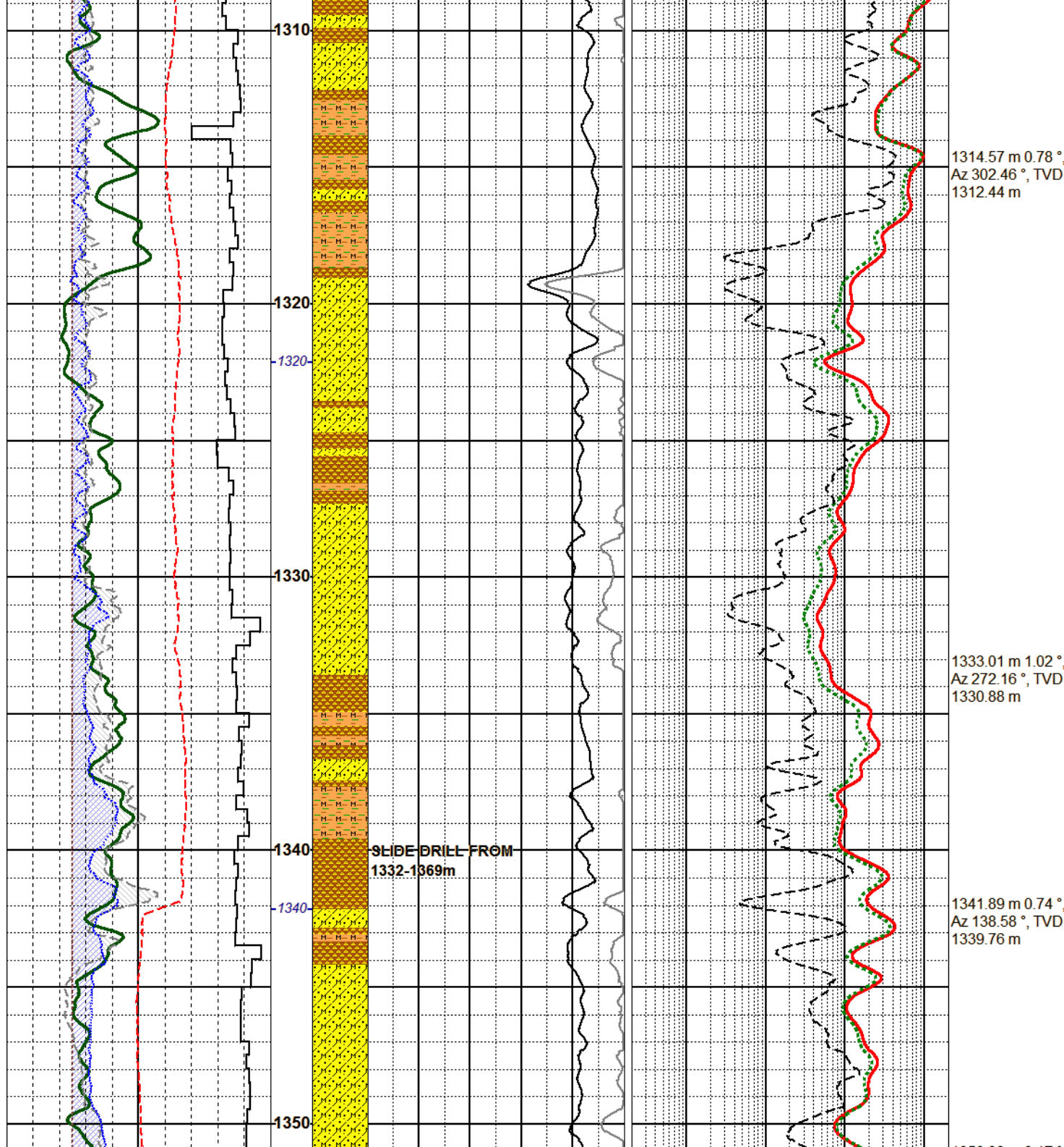
MW: 9.3ppg
(1.11sg) FV: 44 PV:
16 GELS: 4/6 NACL:
2-3% YP: 21 pH:
10.5



SANDSTONE: banded pale to medium grey, mottled pale grey/translucent, fine to very fine grading to arenaceous siltstone, subangular to subrounded, well-sorted, moderately strong calcareous cement, common siliceous cement, silty in parts, moderately hard, poor micro porosity, no fluorescence.

1288 - 1312m METASANDSTONE: pale to medium grey, pale yellow brown, translucent quartz and aggregates, very fine to coarse, predominantly medium, subangular to subrounded, occasional elongate grains with etched/pitted surfaces, poorly sorted, strong siliceous and local calcareous cement, generally silicified aggregates with welded grains and relic matrix, occasional metasiltstone clasts, abundant disaggregated grains, hard aggregates with tight porosity, no fluorescence. CALCITE: trace, very pale translucent green, crystalline, blocky, hard to brittle.

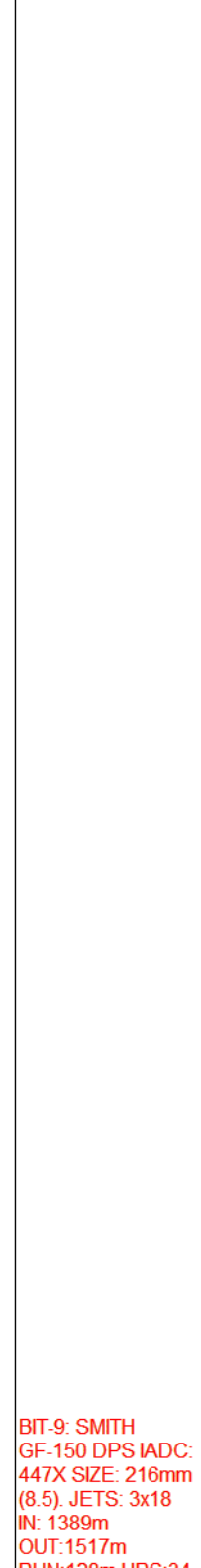
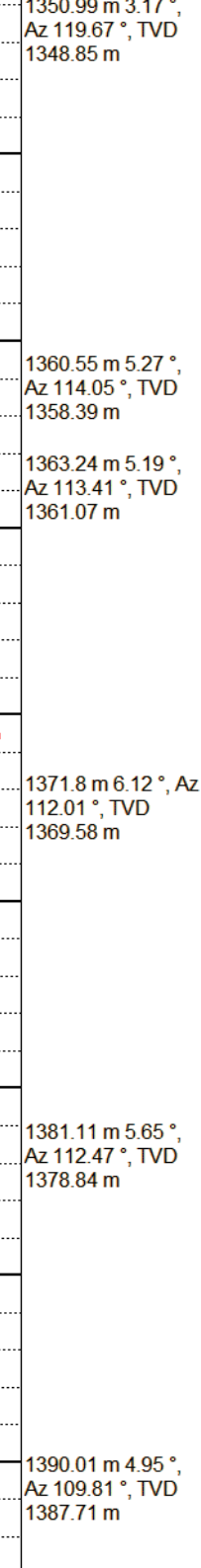
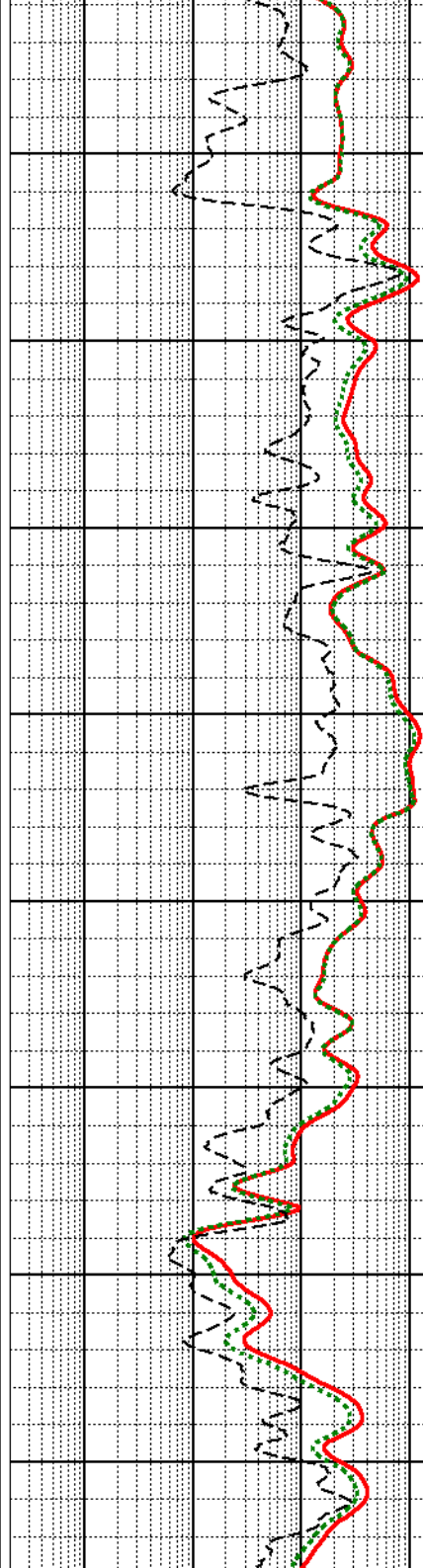
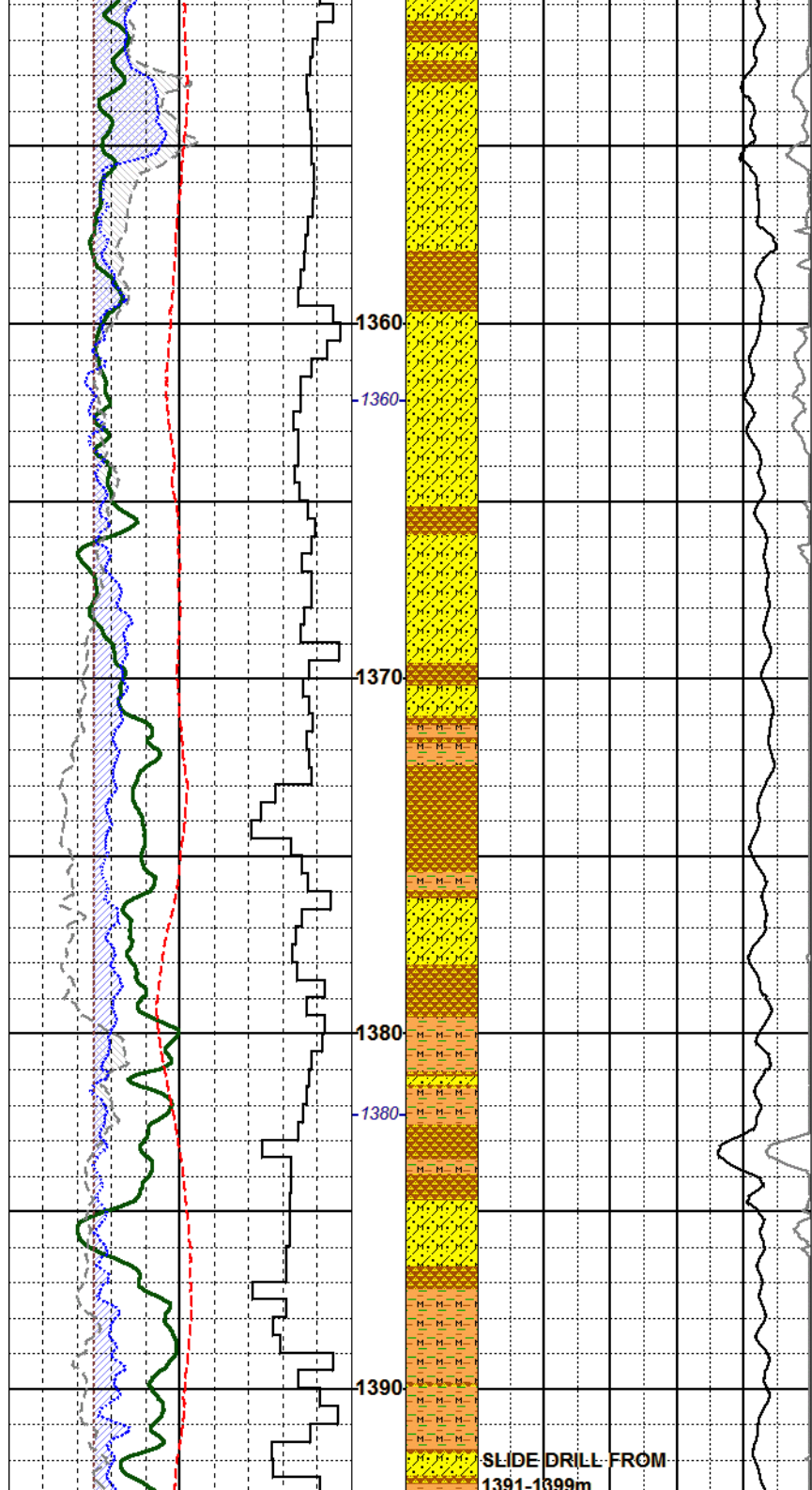
WOB: 9 - 34 klbf
RPM: 86 - 180
FLOW: 295 - 403
gpm SPP: 1135 -
1929 psi



MW: 9.3ppg
(1.11sg) FV: 41 PV:
15 GELS: 4/6 NAC:
2-3% YP: 17 pH:
10.5

1312 -1321m METASANDSTONE WITH INTERBEDDED METASILTSTONE AND CALCITE__ METASANDSTONE: as above with common metasiltstone matrix and clasts grading to meta silty sandstone and with up to 20% coarse to pebbly drop -stones. METASILTSTONE: dark to medium grey, phyllitic texture in parts (common very fine mica flakes), arenaceous, generally silicified, calcareous in parts, occasional very fine quartz grains, occasional micromica and anhedral pyrite, shaley to slate -like platy fissile cuttings, brittle to moderately hard. CALCITE: white, occasionally very pale grey to grey -green, crystalline, blocky, hard to brittle.

1321 -1348m PREDOMINANTLY METASILTSTONE WITH SUBORDINATE INTERBEDDED META SILTY SANDSTONE, METASANDSTONE AND MINOR LIMESTONE__ METASILTSTONE: dark to medium grey, phyllitic texture, generally silicified, calcareous in parts, occasional very fine quartz grains, carbonaceous with dull flaky and patchy coal (no gas detected), occasional micromica and subhedral to anhedral pyrite, shaley to slate -like platy fissile cuttings, brittle to moderately hard. METASANDSTONE: as above, tight and hard with occasional coarse to pebbly drop -stones (10%) to 1327m. META SILTY SANDSTONE: patchy medium to dark grey/translucent/off -white, fine to very fine grading to arenaceous siltstone, subrounded, well -sorted, silicified aggregates, common micro metasiltstone laminae (occasionally showing phyllitic texture), trace mica and pyrite, firm to hard, tight visual porosity, no fluorescence. LIMESTONE: generally as off white amorphous rock flour, occasionally patchy grey/white crystalline (marble -like), silty in parts, moderately hard to brittle.

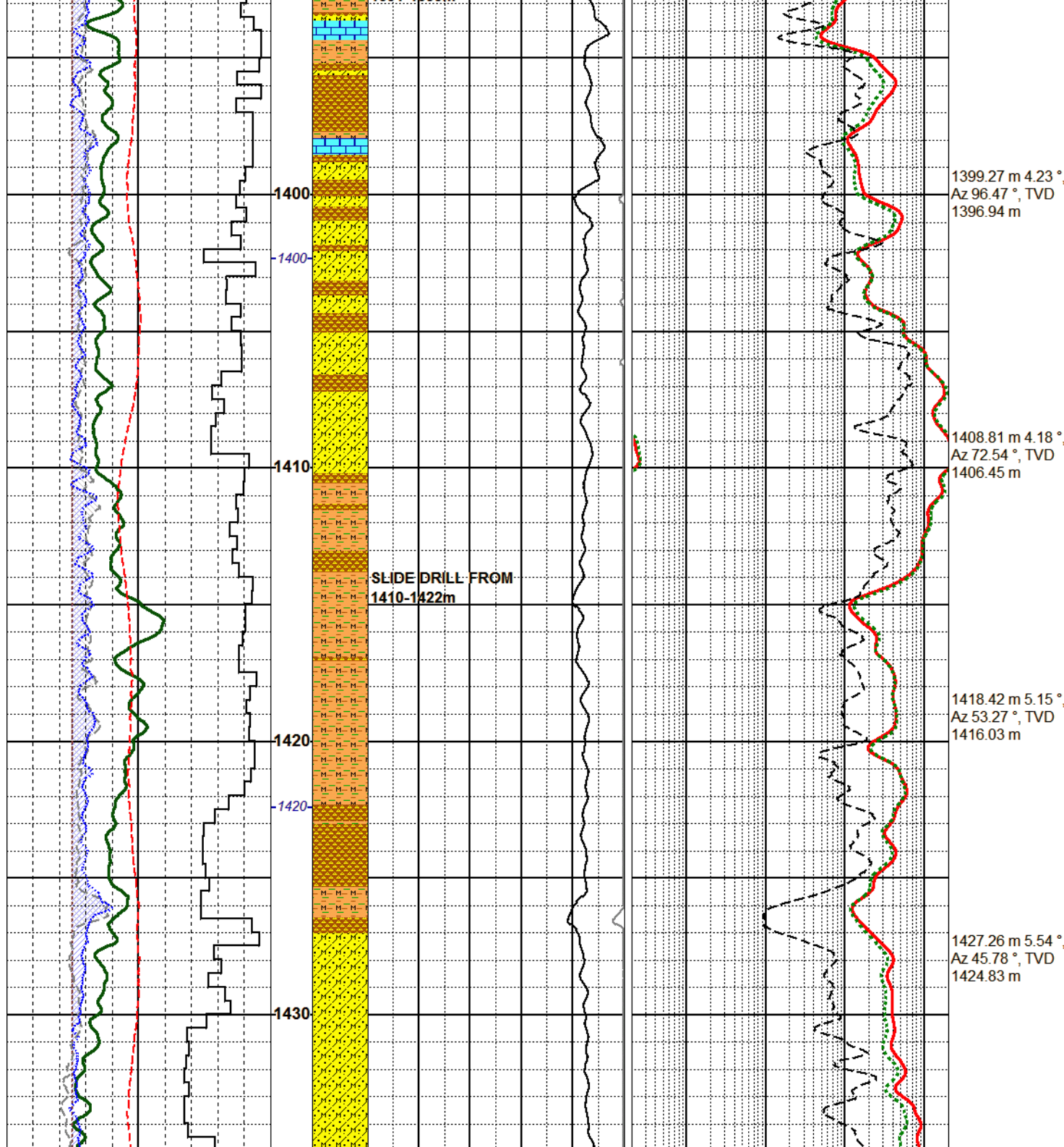


1348 -1375m DOMINANTLY METASILTSTONE/ SLATE WITH MINOR SILTY SANDSTONE AND LIMESTONE BEDS__ SLATE (30%): dark grey, platy, smooth surfaces, trace micromica, occasional pyrite laminae and rare 'vertical' pyrite micro -veins, splintery to brittle, subfissile to fissile in parts. METASILTSTONE: dark to medium grey, arenaceous in parts, generally silicified, micromica, trace pyrite, phyllitic in parts with abundant micromica on cleavage planes, carbonaceous with dull flaky and patchy coal (no gas detected), hard to moderately hard, occasionally brittle where subfissile. SILTY SANDSTONE: as above with common metasiltstone laminae and clasts. LIMESTONE: generally as off white amorphous rock flour, occasionally patchy grey/white crystalline (marble -like), silty in parts, moderately hard to brittle.

1375 -1389m METASILTSTONE WITH INTERGRADATIONAL SILTY SANDSTONE, SANDSTONE AND LIMESTONE__ METASILTSTONE: as above carbonaceous in parts. META SILTY SANDSTONE: as above. METASANDSTONE: pale grey to white aggregates, very fine to fine, occasionally medium and minor coarse (10 -20% drop -stones), subrounded to subangular, moderately well sorted aggregates, strong to moderately strong siliceous and calcareous cement, clean to local silty matrix, hard to moderately hard, tight porosity, no fluorescence. META DOLOMITIC SANDSTONE: patchy light to medium grey/black/translucent aggregates, very fine to fine, occasionally medium, subrounded to subangular, poorly sorted, strong dolomitic cement, siliceous in parts, micromica, occasional pyrite, coal flakes (dull black, no gas), hard to moderately friable, tight visual

SLIDE DRILL FROM
1391-1399m

BIT-9: SMITH
GF-150 DPS IADC:
447X SIZE: 216mm
(8.5). JETS: 3x18
IN: 1389m
OUT: 1517m
RUN: 1389m LDC: 24



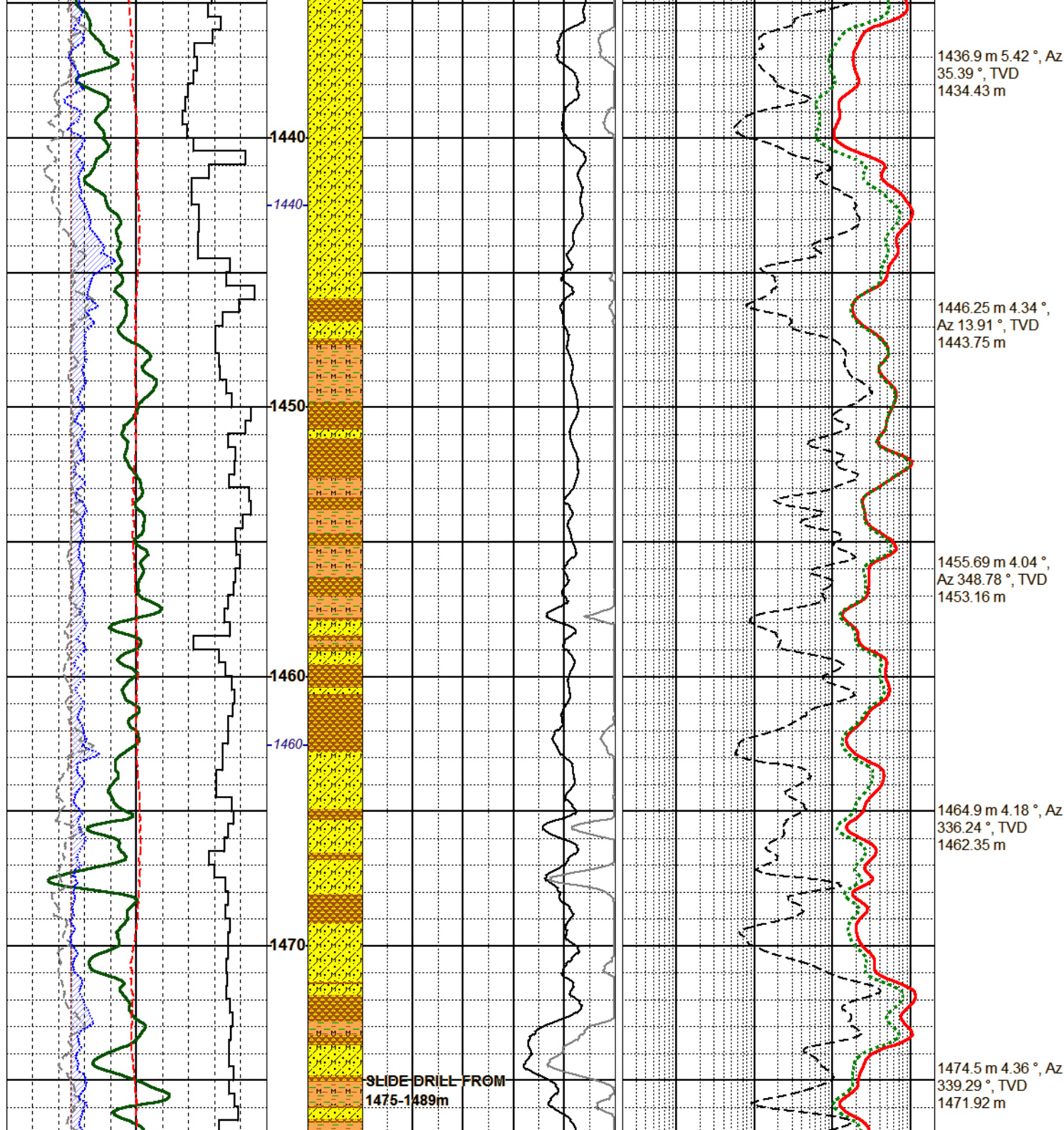
RUN: 128m HRS: 34
COND: 4-7-BT-G-EX-SD-DT

moderately massive, light visual porosity, no fluorescence. DOLOMITE: white, satin lustre, local quartz grains, moderately hard to hard.

1389 -1438m METASILTSTONE WITH MINOR SILTY SANDSTONE AND LIMESTONE AND TRACE QUARTZITE DROP -STONES
METASILTSTONE: dark to medium grey, rare carbonaceous in parts with dull disseminated coal (no gas detected), commonly silicified where arenaceous to shaley where predominantly argillaceous, calcareous in parts showing possible micro varves, local parallel and cross-cutting calcite filled veins, occasional anhedral to euhedral pyrite, phylitic in parts (silver grey with abundant micromica on cleavage planes), hard to firm, commonly brittle, sub blocky to subfissile. META CALCAREOUS SILTY SANDSTONE: patchy medium to dark grey/translucent/off -white, fine to very fine grading to arenaceous siltstone, subrounded, well -sorted, calcified to silicified aggregates (dolomitic in parts), occasional micro metasiltstone laminae (occasionally showing phylitic texture), trace mica and pyrite, firm to hard and occasionally moderately friable, tight to poor visual and inferred porosity, no fluorescence. LIMESTONE: generally as amorphous white calcite and off white amorphous rock flour, occasionally patchy grey/white crystalline and occasionally silty, moderately hard to brittle. QUARTZITE: translucent to opaque white, very coarse to pebble fragments.

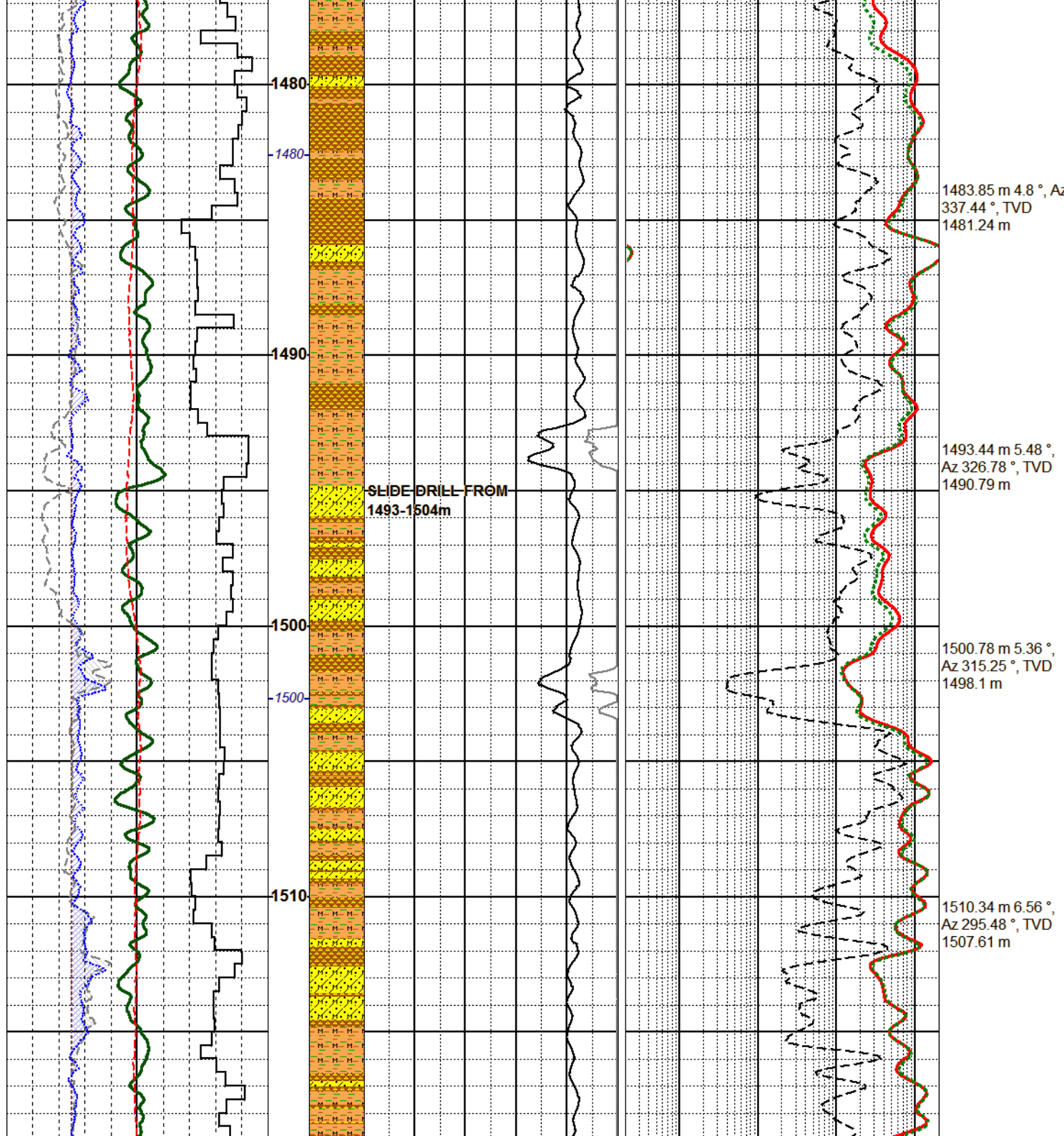
WOB: 10 - 35 klbf
RPM: 89 - 162
FLOW: 235 - 370 gpm
SPP: 1110 - 1512 psi

MW: 9.35ppg
(1.12sg) FV: 41 PV:
16 GELS: 4/6 NACL:
2-3% YP: 19 pH:
10.



1438 -1468m INTERBEDDED METASILTSTONE AND METASANDSTONE WITH INCREASING INTERGRADATIONAL SILTY SANDSTONE AND MINOR LIMESTONE__ METASILTSTONE: dark to medium grey, rare carbonaceous in parts with dull disseminated coal (no gas detected), commonly silicified where arenaceous to shaley where predominantly argillaceous, calcareous in parts showing possible micro varves, local parallel and cross-cutting calcite filled veins, occasional anhedral to euhedral pyrite, phylitic in parts (silver grey with abundant micromica on cleavage planes), hard to firm, commonly brittle, sub blocky to subfissile. METASANDSTONE: as translucent to opaque white quartzite, very coarse to pebble fragments, interpreted to be drop-stones. META SILTY SANDSTONE: grey/translucent/wh/very fine to fine grading to arenaceous siltstone, subrounded to subangular, well-sorted, weak to strong calcareous and siliceous cement, dolomitic in parts, common silty matrix, trace pyrite and mica, firm to hard, poor to tight visual and inferred porosity, no fluorescence. LIMESTONE: generally as amorphous white calcite and off white amorphous rock flour, occasionally patchy grey/white crystalline and occasionally silty, moderately hard to brittle.

1468 -1516m DOMINANTLY METASANDSTONE WITH INTERGRADATIONAL META SILTY SANDSTONE AND MINOR METASILTSTONE WITH TRACE



METASILTSTONE WITH TRACE DOLOMITE AND CALCITE — METASANDSTONE: patchy medium to light grey/translucent, very fine to predominantly fine, occasionally medium and coarse, subrounded to subangular, moderately well sorted, etched grain surfaces, silicified, calcareous in parts, welded aggregates with metasiltstone clasts and relic matrix (bands and microlaminae), micaceous in parts, moderately hard to very hard, tight to no visual porosity, no fluorescence. QUARTZITE: as very coarse to pebbly drop stones, maximum 20% at 1468m. SANDSTONE: (10% maximum from 1495m) very pale grey, very fine to fine to occasionally medium, rounded to subangular, moderately well sorted, strong to moderately strong siliceous cement, clean to occasional biotite and silt matrix, friable to moderately hard, fair to tight porosity, no fluorescence. META SILTY SANDSTONE: banded to patchy medium to dark -grey, light grey in parts, fine to very fine, subrounded disaggregated grains, generally silicified and dolomitised aggregates, trace mica and pyrite, hard to moderately hard, hard to occasionally subfissile, tight porosity, no fluorescence. METASILTSTONE: black, dark -grey, sub vitreous, uneven to crenulated cleavage/bedding surfaces, finely arenaceous in parts, common disseminated micro coal granules and flakes (? no gas), moderately hard, fissile to sub blocky. DOLOMITE: trace, opaque white, crystalline, satin lustre, banded in parts with siltstone and very fine sandstone, blocky, hard. CALCITE: white, amorphous firm to brittle grains.

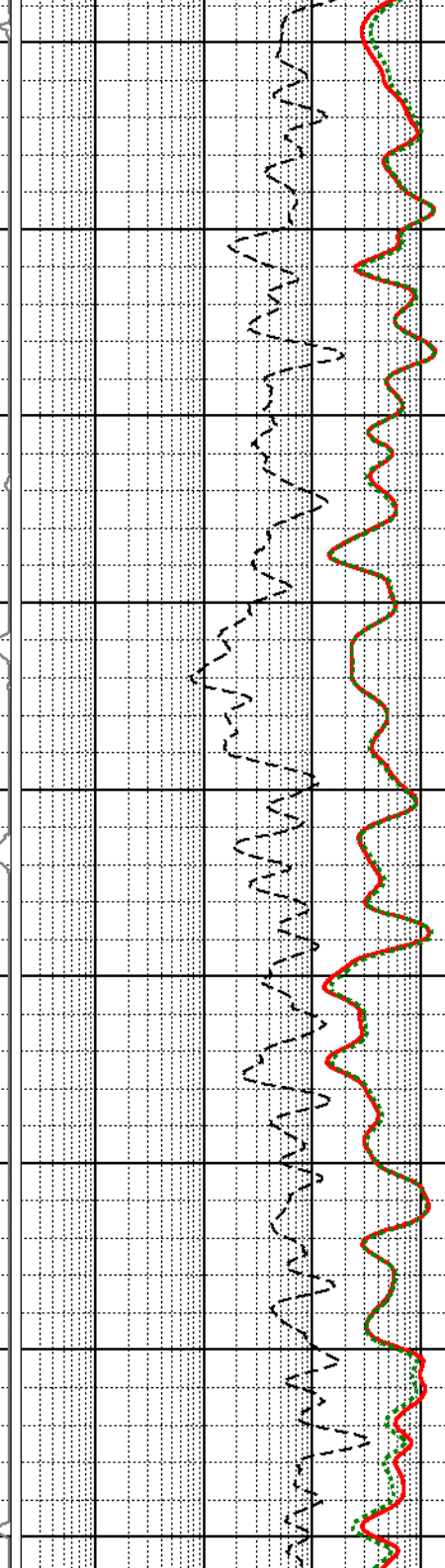
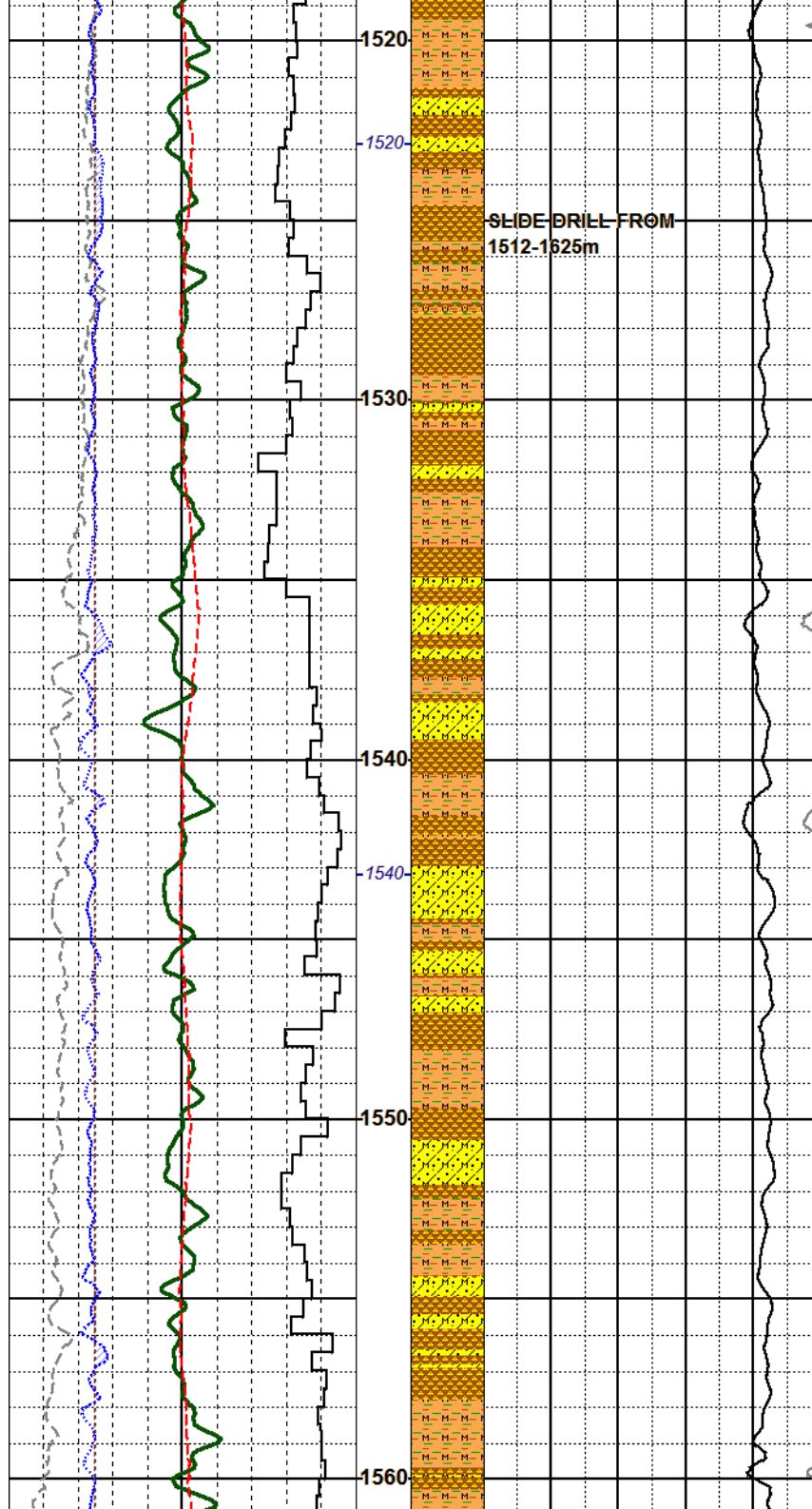
MW: 9.3ppg (1.11sg) FV: 40 PV: 16 GELS: 4/6 NACL: 2-3% YP: 20 pH: 10.5

WOB: 12 - 35 klbf RPM: 81 - 169 FLOW: 277 - 368 gpm SPP: 1006 - 1468 psi

MW: 9.3ppg (1.11sg) FV: 41 PV: 15 GELS: 4/6 NACL: 2-3% YP: 21 pH: 10.2

BIT-10: REED-HYCALOG R30 APHD IADC: 103 075 243

1516 -1537m DOMINANTLY METASANDSTONE WITH INTERGRADATIONAL META SILTY SANDSTONE AND MINOR METASILTSTONE WITH TRACE



1519.95 m 8.6 °, Az
278.7 °, TVD
1517.14 m

1539.1 m 11.17 °,
Az 263.96 °, TVD
1535.99 m

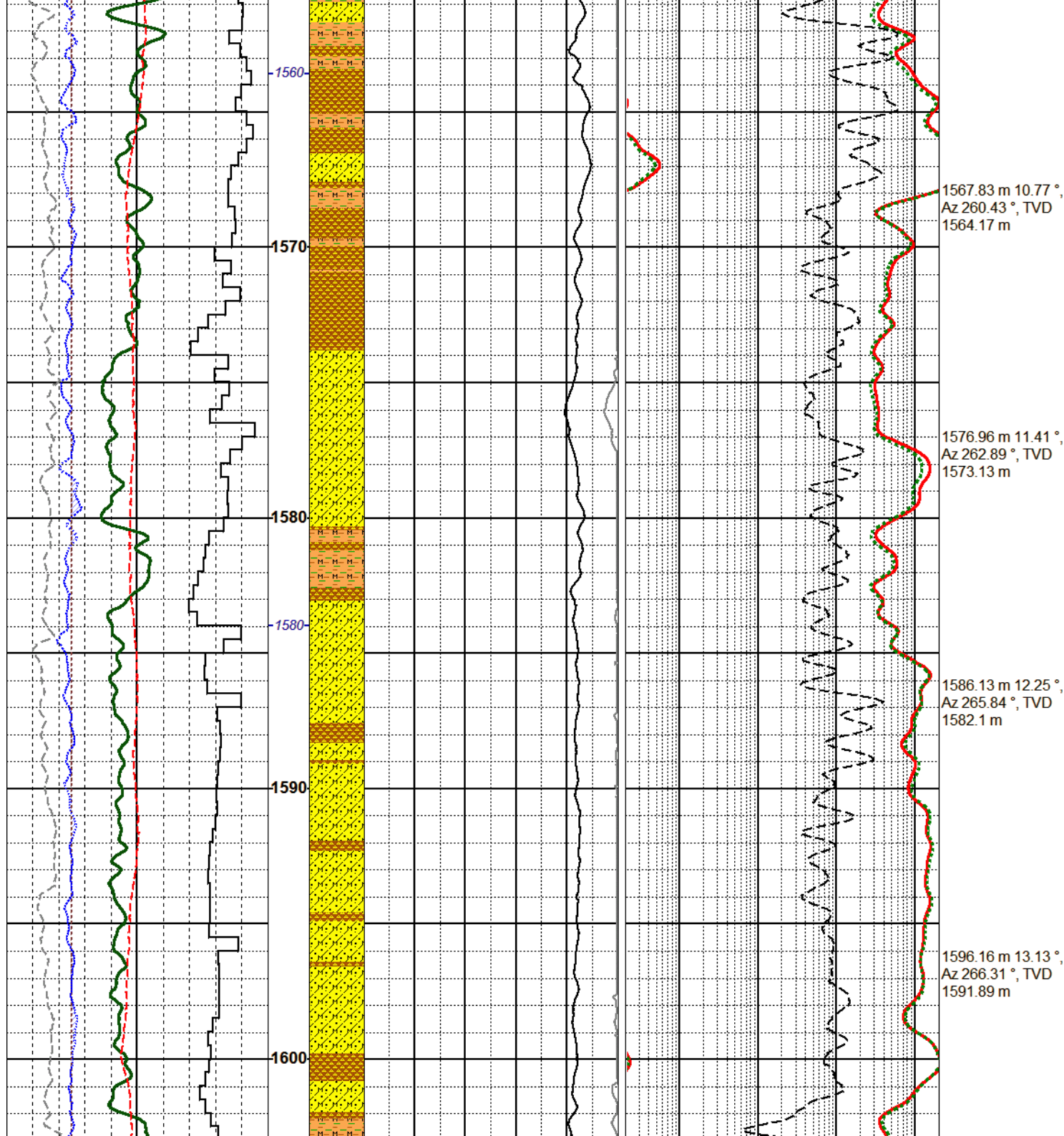
1548.71 m 11.43 °,
Az 259.53 °, TVD
1545.41 m

1558.28 m 11.28 °,
Az 258.3 °, TVD
1554.8 m

537 SIZE: 216mm
(8.5). JETS: 3x18
IN: 1517m OUT:
1604m RUN:87m
HRS: 18.4 COND:
6-4-BT-G-E-X-SD-BH

METASILTSTONE WITH TRACE
DOLOMITE AND CALCITE —
METASANDSTONE: patchy medium
to light grey/translucent, very fine to
predominantly fine, occasionally
medium and coarse, subrounded to
subangular, occasional orientated
grains producing some fissility,
moderately well sorted, common
etched grain surfaces, silicified,
welded aggregates with
metasiltstone clasts and relic matrix
(bands and microlaminae),
micaceous in parts, moderately hard
to very hard, tight to no visual
porosity, no fluorescence.
QUARTZITE: trace as very coarse to
pebbly drop stones. META SILTY
SANDSTONE: banded to patchy
medium to dark -grey, light grey in
parts, fine to very fine, subrounded
disaggregated grains, generally
silicified and dolomitised aggregates,
trace mica and pyrite, hard to
moderately hard, hard to
occasionally subfissile, tight porosity,
no fluorescence. METASILTSTONE:
black, dark -grey, sub vitreous in
parts where micaceous, smooth to
minor uneven surfaces, finely
arenaceous in parts, firm to
moderately hard and brittle, shaley
to minor slate -like, fissile to sub
blocky.

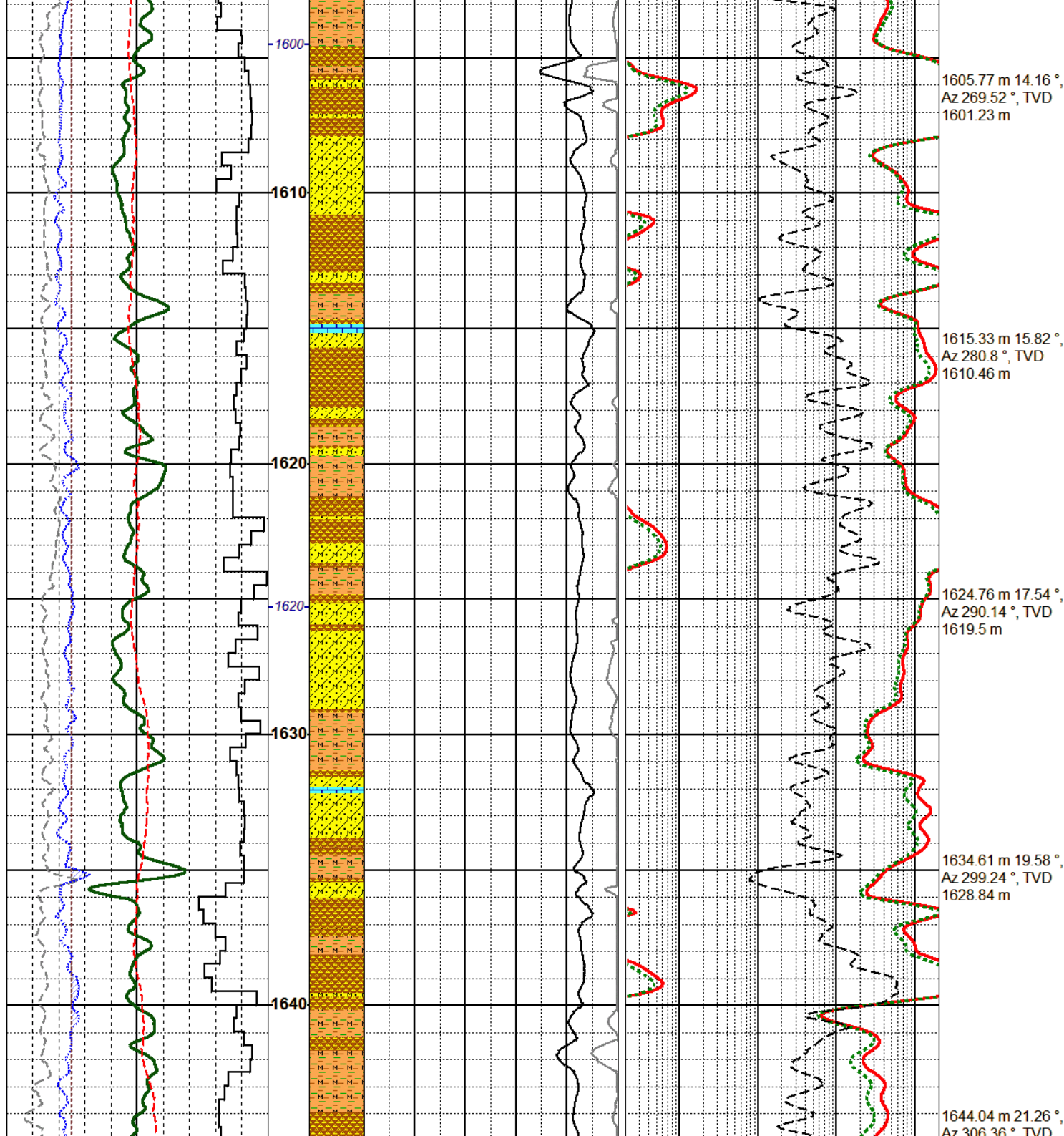
1537 -1604m METASANDSTONE
WITH INTERGRADATIONAL META
SILTY SANDSTONE AND
SUBORDINATE METASILTSTONE —
METASANDSTONE: mottled light to
medium grey, very fine to fine to
occasionally medium with local
coarse quartzite and silicified
aggregate fragments, weak to strong
siliceous cement, calcareous in
parts, occasional carbonaceous
patches laminae (no gas response),
trace pyrite and mica, predominantly
hard to occasionally moderately
friable, tight to poor porosity, no
fluorescence. META SILTY
SANDSTONE: patchy medium to
dark -grey, light grey in parts, fine to
very fine, subrounded disaggregated
grains, generally silicified and
occasional dolomitised aggregates,
minor weakly cemented, relic
banding and silty laminae, trace mica
and pyrite, hard to moderately hard
and occasionally moderately friable



MW: 9.3ppg
(1.11sg) FV: 42 PV:
17 GELS: 4/6 NACL:
2-3% YP: 22 pH:
10.1

WOB: 13 - 40 kilbf
RPM: 70 - 148
FLOW: 265 - 384
gpm SPP: 1207 -
1528 psi

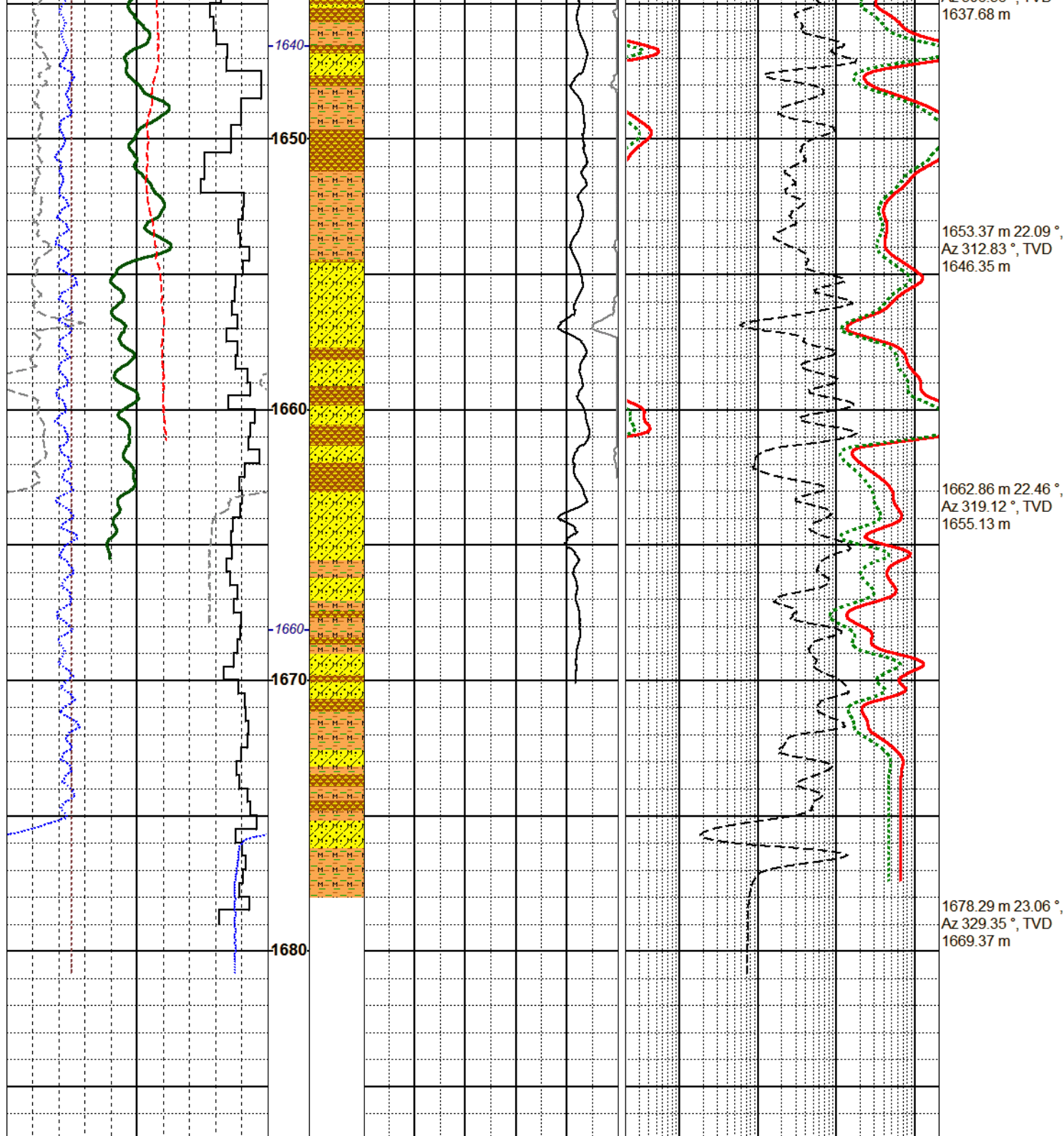
and occasionally moderately friable, occasionally subfissile where 'foliated', tight porosity, no fluorescence. QUARTZITE: trace, as very coarse to pebbly drop -stones. CALCAREOUS SANDSTONE: trace, pale grey, very fine, subrounded, well -sorted, weak to moderately strong calcareous cement, dolomitic in parts, clean aggregates, firm to moderately friable, tight to poor visual porosity, no fluorescence. METASILTSTONE: black, dark -grey, sub vitreous in parts where micaceous, smooth to minor uneven surfaces, finely arenaceous in parts, firm to moderately hard and brittle, shaley to minor slate -like, fissile to sub blocky.



BIT-11RR7 SMITH
FH30 IADC: 537X
SIZE: 216mm (8.5).
JETS: 3x20 IN:
1604m OUT:
1679m RUN:75m
HRS:21 COND:
5-4-BT-G-E-X-BT-TD

MW: 9.3ppg
(1.11sg) FV: 43 PV:
16 GELS: 4/5 NAC:
2-3% YP: 19 pH:
9.7

1604 -1642m METASANDSTONE WITH MINOR SANDSTONE AND META SILTY SANDSTONE AND TRACE TUFF__ METASANDSTONE: as above with common calcareous cement and irregular of white kaolinite after decomposed feldspar, hard to occasionally moderately friable, tight to poor porosity, no fluorescence. SANDSTONE: (trace) light to medium grey, translucent to common clear quartz grains, very fine to medium, trace coarse, rounded to subangular, poorly sorted, weak to moderately strong calcareous and siliceous cement, trace feldspar, trace kaolinite, possible black, granulated coal (?), hard to firm, occasionally friable, tight to poor porosity, no fluorescence. CALCAREOUS SANDSTONE: pale grey, fine to very fine grading to arenaceous siltstone, subrounded to sub angular, well-sorted, weak to moderately strong calcareous and subordinate calcareous cement, local kaolinite, pyrite, biotite mica flakes and lithics, firm to moderately friable, fair to poor visual porosity, no fluorescence. TUFF: pale grey, laminated (pumice like), amorphous very fine to occasionally medium sized quartz, common brick-red flakes and micro-shards of volcanic glass, trace mafics, moderately hard to firm, irregular fracture surfaces, no fluorescence.



MW: 9.3ppg
(1.11sg) FV: 41 PV:
15 GELS: 4/5 NACL:
2-3% YP: 16 pH:
10.5

216mm (8.5) HOLE
DRILLED TO
1679m,DRL,
1678m Lgr

RAN
ABANDONMENT
PLUGS.

1642 -1679m DOMINANTLY META
CALCAREOUS SANDSTONE (70
-90%) WITH INTERGRADATIONAL
META SILTY SANDSTONE AND
MAXIMUM 20% SILICIFIED TO
SHALEY METASILTSTONE_
CALCAREOUS META SILTY
SANDSTONE: mottled white/pale
grey/very pale brown, very fine to
medium and occasionally coarse,
subrounded to angular, moderately
well sorted aggregates, common
etched grain surfaces, strong to very
strong calcareous and siliceous
cement, crystalline texture in parts
where grains and matrix are silicified,
minor pyrite, trace micromica, hard,
tight porosity, no fluorescence.
MICACEOUS SANDSTONE: (trace)
pale grey, very fine to fine, trace
medium, rounded to subangular, well
-sorted, weakly cemented, large
biotite flakes, foliated, friable to
subfissile, poor porosity, no
fluorescence. META SILTY
SANDSTONE: mottled medium to
pale grey, black in parts where
slightly carbonaceous, very fine to
medium, generally fine, subrounded
to subangular, strong silica cement,
calcareous to dolomitic cement in
parts, occasionally micaceous, trace
pyrite, foliated in parts with
occasional sub fissility, relic banding
and meta siltstone laminae,
generally hard to occasionally
moderately friable with poor to tight
porosity, no fluorescence.
METASILTSTONE: black to medium
grey, generally arenaceous grading
to meta silty sandstone, laminated in
parts, commonly silicified,
occasionally foliated with sub fissility,
hard to occasionally brittle, mainly
blocky to sub blocky.

**TD 1679m Driller, 1678m Logger
REACHED AT 05:00 HRS,
1/1/2010.**

**WEATHERFORD WIRELINE
LOGGING RUN**

**RUN 1: RESISTIVITY-DEEP,
MEDIUM AND SHALLOW**

												INVASION-GAMMA RAY -CALIPER-SONIC-SPONTANEOUS POTENTIAL. MAX.TEMP. 61°C (142°F) @ 1663m after 10.3 hrs HUNT RIG-2 RELEASED AT 18:00 HRS, 4/1/2010			