



Scale: 5" / 100'
Measured Depth Log

Well Name Troudt 3

Location S 32 T2N R67W

State Colorado

County Weld

Country USA

Rig Number Savanna 802

API Number 05-123-41437

Field Wattenberg

Region DJ Basin

Drilling Completed 9/2/2015

Spud Date 8/28/2015

Surface Coordinates Lat: 40° 5' 20.634"N
Long: 104° 54' 32.094"W

Bottom Hole Coordinates Lat: 40° 6' 54.402"N
Long: 104° 54' 26.473"W

Ground Elevation 5,079'

K.B. Elevation 5,094'

Logged Interval 5,000' To 7,000'

Total Depth 17,376'

Formation Niobrara

Type of Drilling Fluid Invert

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- ◇ INTEROOLITIC
- MOLDIC

ORGANIC

P PINPOINT

V VUGGY

Engineering

BIT

CASING

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

Textures

- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- E EARTHY
- FINELYXLN
- GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKSTONE

Sorting

- M MODERATE
- P POOR
- W WELL

Zone Color Coding

- Oil
- Condensate
- Gas
- Note
- Core
- Pressure
- Error
- Water
- Seal

Accessories

Fossils

ALGAE
 AMPHIPORA
 BELEMNITE
 BIOCLASTIC
 BRACHIOPOD
 BRYOZOA
 CEPHALOPOD
 CORAL
 CRINOID
 ECHINOID
 FISH
 FORAMINIFERA

F FOSSIL

GASTROPOD
 OOLITE
 OSTRACOD
 PELECYPOD
 PELLET
 PISOLITE
 PLANT REMAINS
 PLANT SPORES
 SCAPHOPOD
 STROMATOPOROID

Minerals

ANHYDRITIC

— ARGILLACEOUS

ARGILLITE GRAIN
 BENTONITE
 BITUMENOUS SUBSTANCE
 BRECCIA FRAGMENTS
 CALCAREOUS
 CARBONACEOUS FLAKES
 CHTDK
 CHTLT
 COAL - THIN BEDS
 DOLOMITIC
 FELDSPAR
 FERRUGINOUS PELLET
 FERRUGINOUS

∩ GLAUCONITE

GYPSIFEROUS
 HEAVY MINERAL
 KAOLIN
 MARLSTONE
 MINERAL CRYSTALS
 NODULES
 PHOSPHATE PELLETS
 PYRITE
 SALT CAST
 SANDY
 SILICEOUS
 SILTY
 TUFFACEOUS

Stringer

ANHYDRITE STRINGER
 BENTONITE STRINGER
 COAL STRINGER
 DOLOMITE STRINGER
 GYPSUM STRINGER
 LIMESTONE STRINGER
 MARLSTONE (CALC) STRG
 MARLSTONE (DOL) STRG
 SANDSTONE STRINGER
 SHALE STRINGER
 SILTSTONE STRINGER

Other

Equipment ML 461

Comments Start: 8-29-15
TD: 9-2-15

Logger Names Brian Ferwerda / Mark Gross

Services Provided 2-man Logging

Address Empirica, LLC.
6360 W Sam Houston Pkwy N
Suite 100
Houston, TX 77041

Operator

Company Extraction Oil & Gas

Address 1888 Sherman St., Suite 200
Denver, CO 80203

Rock Types

? UNKNOWN

ANHYDRITE
 GYPSUM
 SALT
 SIDERITE or LIMONITE
 LIMESTONE

DOLOMITE
 CHERT
 COAL
 MARLSTONE
 CLAYSTONE
 SHALE

SHALE GRAY
 SHALE COLORED
 SILTSTONE
 SANDSTONE
 CONGLOMERATE
 BRECCIA

TILL
 BENTONITE
 TUFF
 IGNEOUS
 METAMORPHIC
 CEMENT

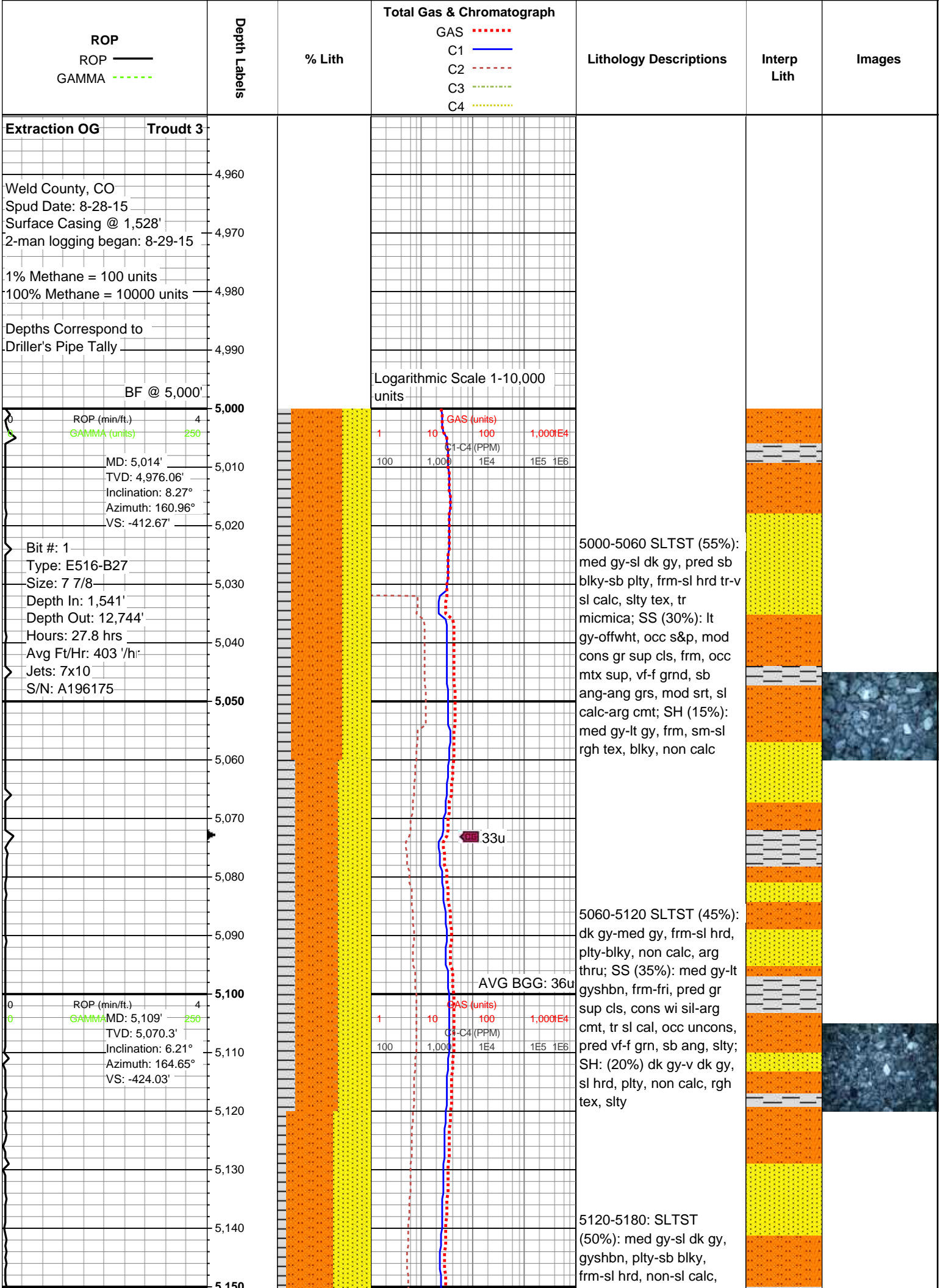
Geologist

Name Jared Rouse

Company Extraction Oil & Gas

Address 1888 Sherman St., Suite 200

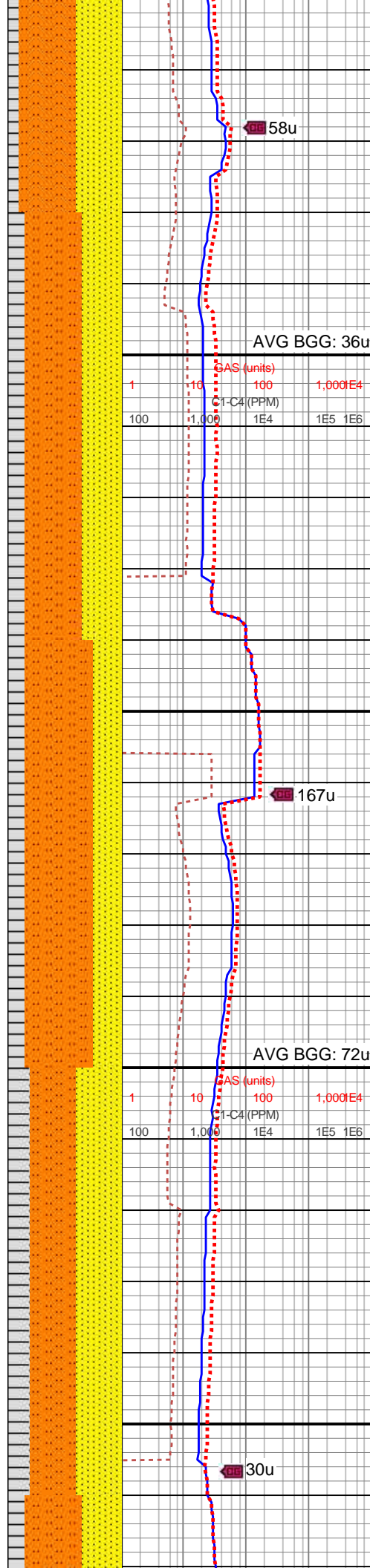
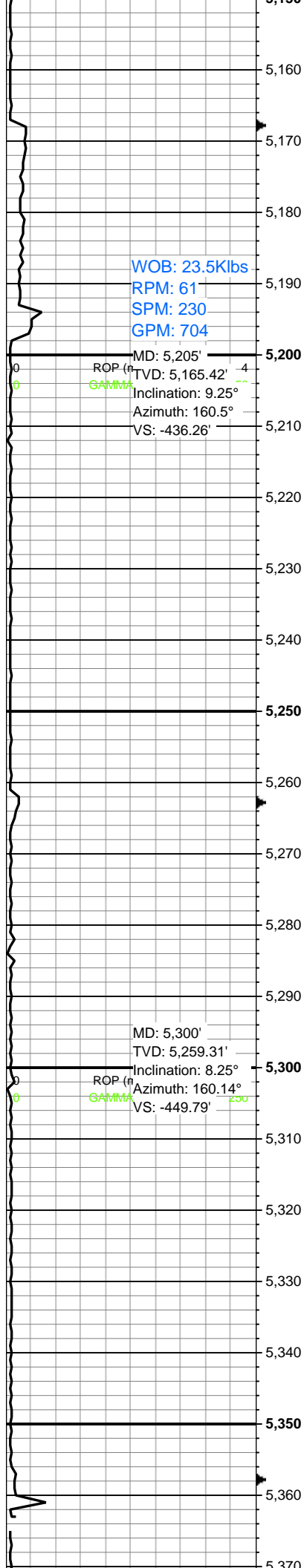




5000-5060 SLTST (55%): med gy-sl dk gy, pred sb blk-y-sb plty, frm-sl hrd tr-v sl calc, slty tex, tr micmica; SS (30%): lt gy-offwht, occ s&p, mod cons gr sup cls, frm, occ mtz sup, vf-f grnd, sb ang-ang grs, mod srt, sl calc-arg cmt; SH (15%): med gy-lt gy, frm, sm-sl rgh tex, blk-y, non calc

5060-5120 SLTST (45%): dk gy-med gy, frm-sl hrd, plty-blky, non calc, arg thru; SS (35%): med gy-lt gyshbn, frm-fri, pred gr sup cls, cons wi sil-arg cmt, tr sl cal, occ unconc, pred vf-f grn, sb ang, slty; SH: (20%) dk gy-v dk gy, sl hrd, plty, non calc, rgh tex, slty

5120-5180: SLTST (50%): med gy-sl dk gy, gyshbn, plty-sb blk-y, frm-sl hrd, non-sl calc,

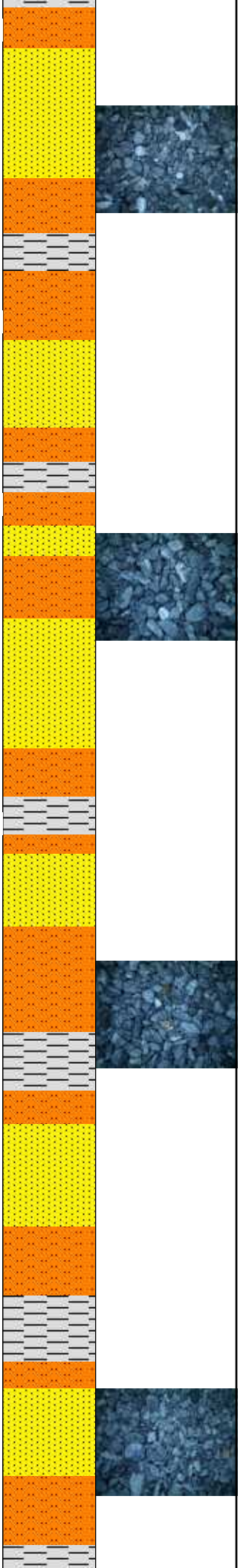


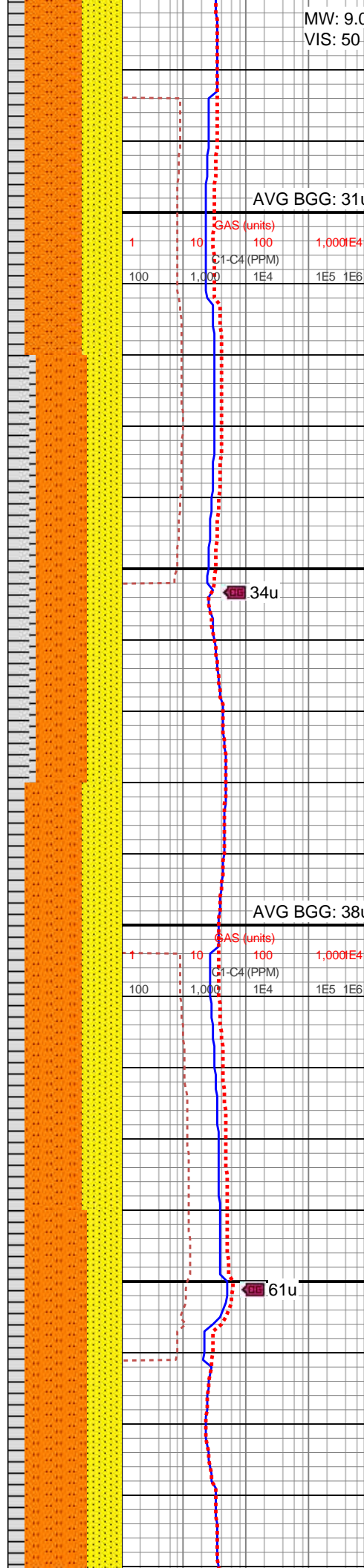
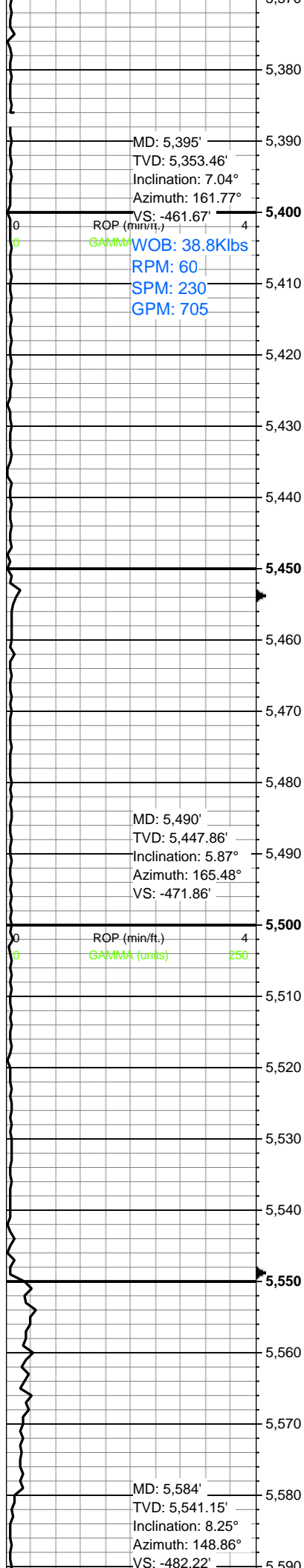
pred slty tex; SS (40%): lt gy-gyshbn, offwht, vf grnd, w cons, gr sup-mtx sup cls, frm, sme uncon, mod-w srt, occ f, sb ang-ang grs, arg-sl cal; SH (10%): med gy-dk gy, blk, frm, tr micmica, non calc, slty

5180-5240 SLTST (50%): pred dk gy-med gy, occ gyshbn, sb blk-plty, frm-sl hrd, occ tab, slty tex, non-v sl calc, tr micmica; SS (35%): med gy-lt gy-offwht, tr s&p, vf-f grnd, sub ang-ang, pred gr sup cls, frm, fri, w cons w/sil-arg cmt, sme uncon, w srt; SH (15%): dk gy-v dk gy, plty, non calc, frm, sl hrd ip, rgh tex, slty

5240-5300 SLTST (60%): med gy-gyshbn, blk-plty, sdy, v arg, pred non calc; SS (25%): lt gy-offwht, gyshbn, pred vf-f, sb ang, frm-fri, pred gr sup cls, cons wi sil-arg cmt, occ uncon, qtz sd grs, slty; SH (15%): dk gy-med gy, plty-sb blk, sl hrd, non calc, rgh tex, slty

5300-5360 SS (40%): lt gy-off wh, mod w srt, vf-f grs, med frm, gr sup cls, cons wi sil cmt-arg cmt, sl slty thru, sl calc cmt; SLTST (40%): gy-sl brn gy, v arg, occ slty-sdy, pred non calc; SH (20%): med gy-dk gy, frm-v frm, sl brit, mod fis, sb plty, sm-slty tex, non calc



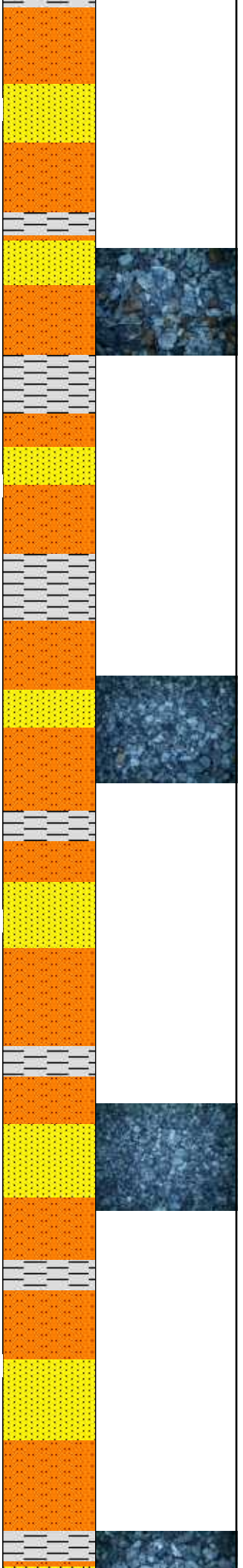


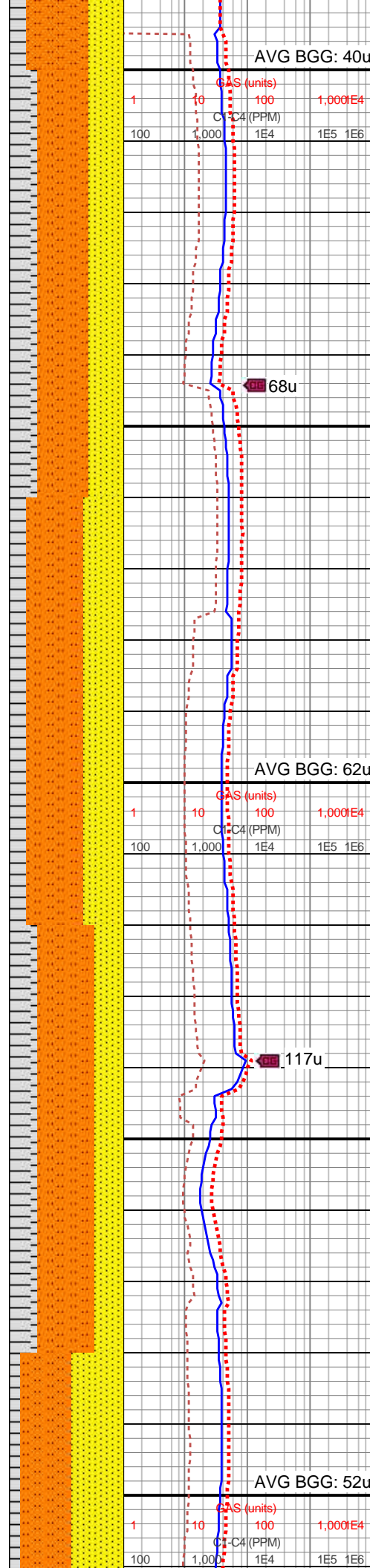
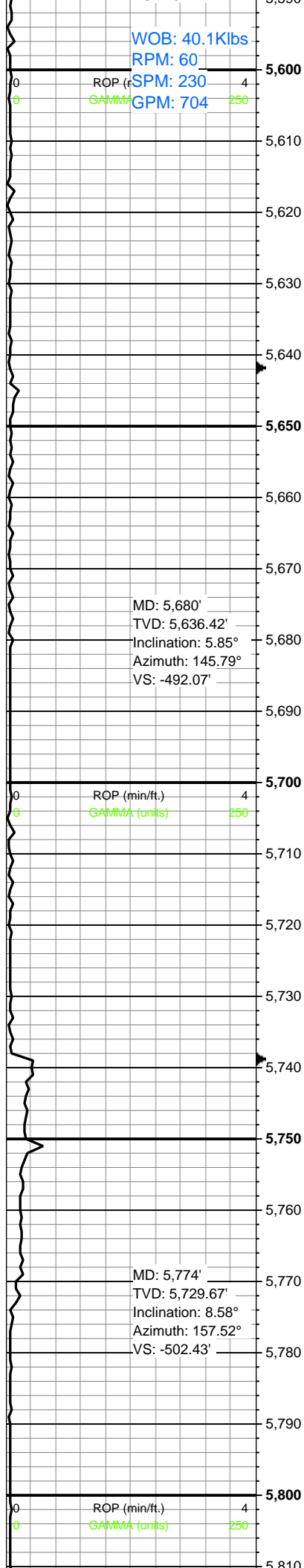
5360-5420 SLTST (50%): med gy-gyshbn, plty-blky, frm-sl hrd, non calc, arg thru; SS (35%): lt gy-offwht, vf-f grn, sb ang-sb rnd, frm-fri, pred gr sup cls, cons w/sil-arg cmt, sme uncon, tr sl cal; SH: (15%) dk gy-med gy, plty, slty tex, sl hrd, non calc

5420-5480 SLTST (45%): pred med gy-sl brn gy, grdg to ss, v arg, pred non calc; SS (30%): lt gy-offwht, sdy intbds-clr sd grs, vf-f grs, med frm-fri, mod w srted, gr sup cls cons wi sil-com arg cmt, sl slty thru, occ vf pyr, sil-calc cmt; SH (25%): med gy-dk gy, sb plty-tab, frm-v frm, slty-abrsv tex, non calc

5480-5540 SLTST (50%): dk gy-med gy, occ gyshbn, frm-sl hrd, sb blky-plty, slty tex, non-v sl calc, tr micmica; SS (35%): lt gy-offwht, tr s&p, frm-fri, gr sup cls, w cons w/sil-arg cmt, sme uncon, vf-f grnd, sb ang-sb rnd, w srt; SH (15%): dk gy-med gy, frm-sl hrd, plty, non calc, slty tex

5540-5600 SLTST (55%): med gy-sl gyshbn, v arg, pred non calc, blky; SS (30%): pred lt gy-gy, occ offwht, mod w srted, vf-f grs, med frm, gr sup cls, cons wi sil-arg cmt, sl slty thru, occ vf pyr, sil-calc cmt; SH (15%):





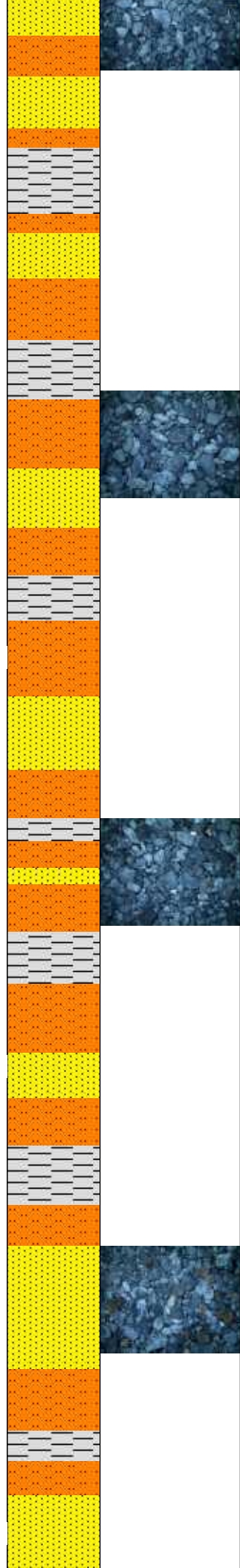
med gy-dk gy, frm-v frm,
sl brit, sb plty,
sm-sltly-sdy tex, non calc

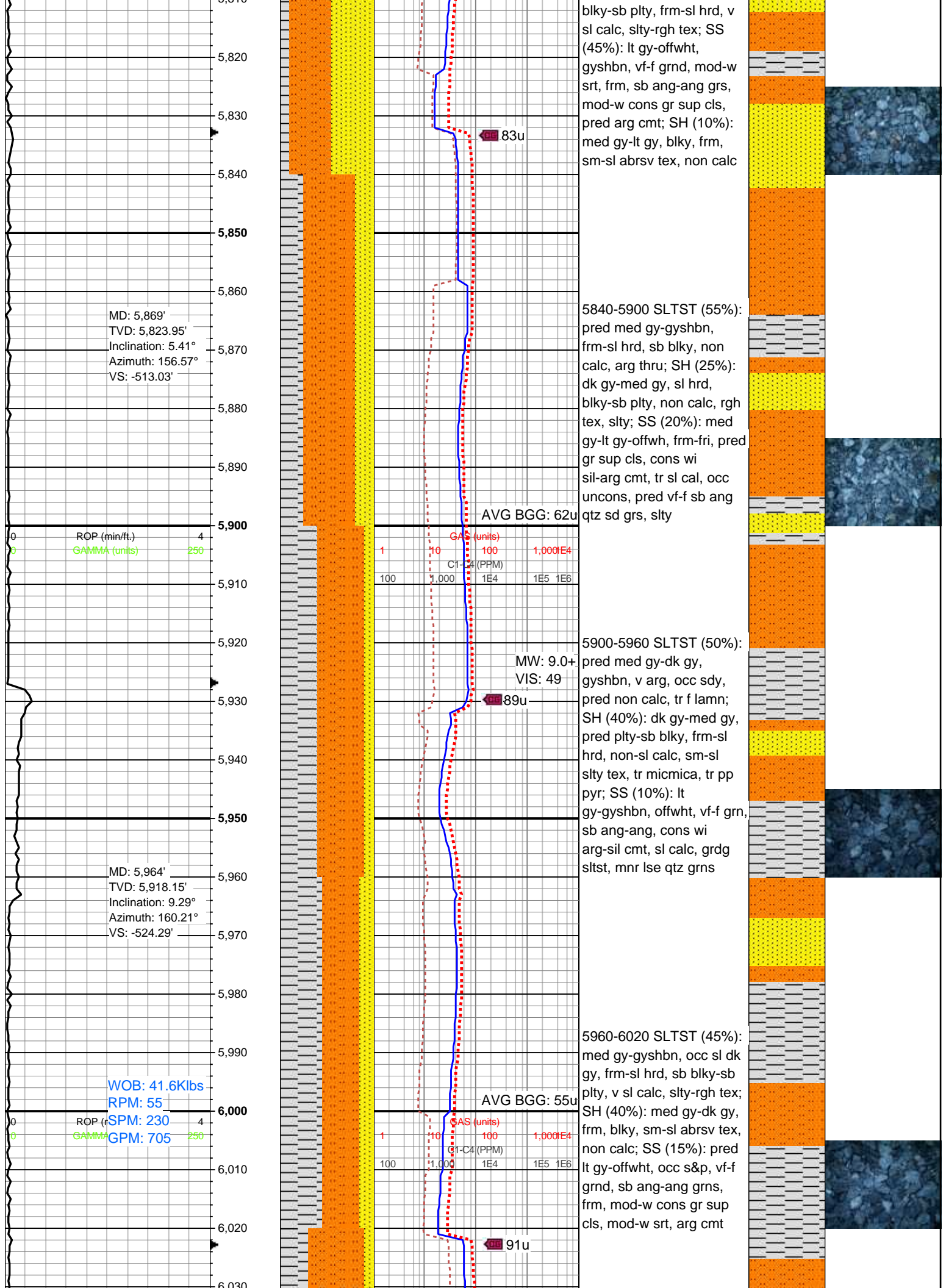
5600-5660 SLTST
(45%):pred med
gy-gyshbn, frm-sl hrd, sb
blky-plty, v arg, occ sdy,
predy non calc; SS
(35%): predy lt gy, occ
offwht-clr sd grs, mod w
srted, vf-f grs, frm-sl fri,
sil-arg cmt, sl slty thru;
SH (25%): dk gy-med gy,
frm, plty-sb blky,
sm-abrsv tex, micmica,
non calc

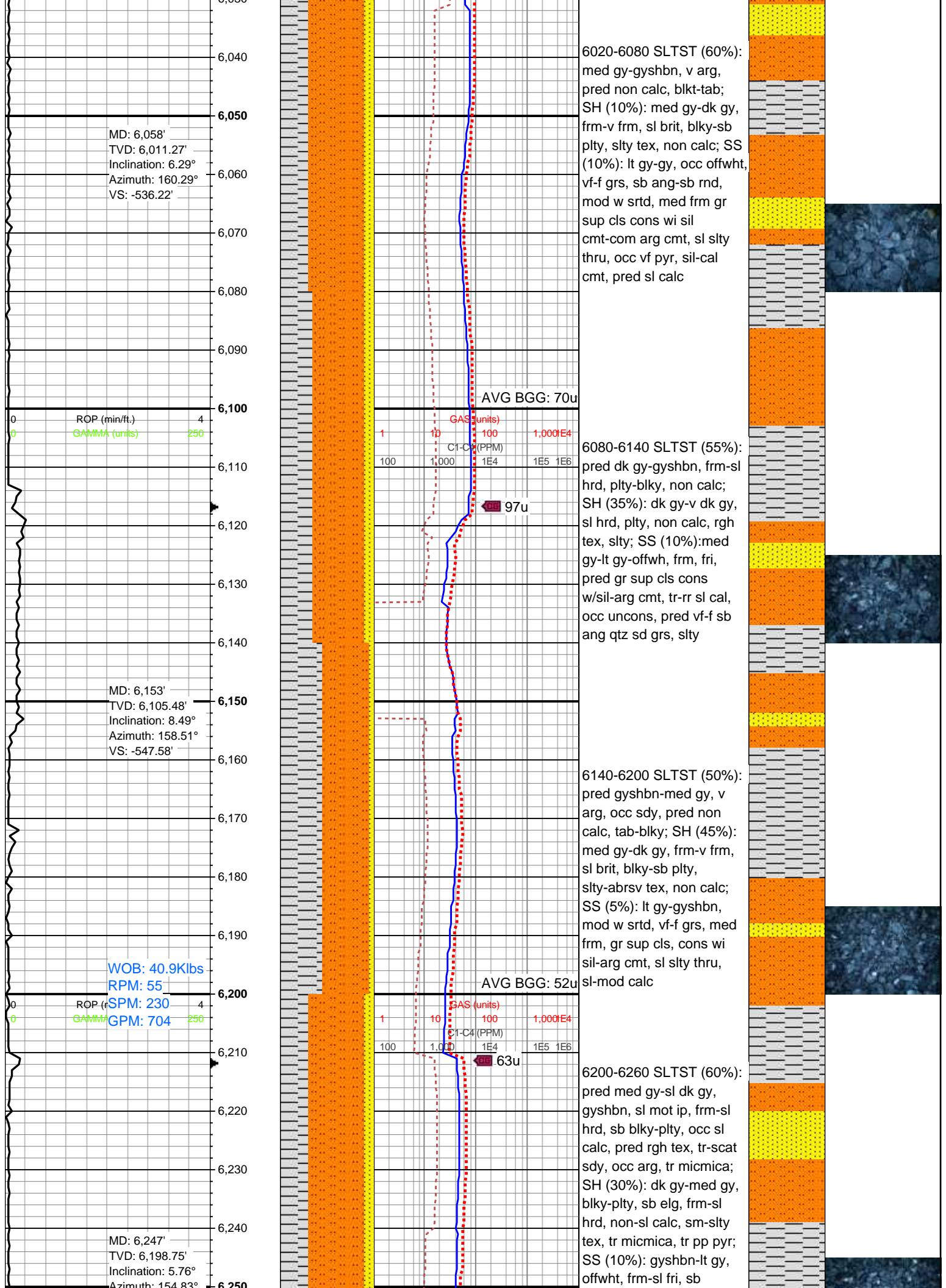
5660-5720 SLTST (50%):
pred dk gy-gyshbn,
plty-blky, frm-sl hrd, non
calc, arg thru; SS (35%):
med gy-lt gy, offwht, pred
gr sup cls, frm-fri, cons
wi sil-arg cmt, occ
uncons, tr sl cal, pred vf-f
sb ang qtz sd grs, slty;
SH (15%): dk gy-v dk gy,
sl hrd, plty, non calc, rgh
tex, slty

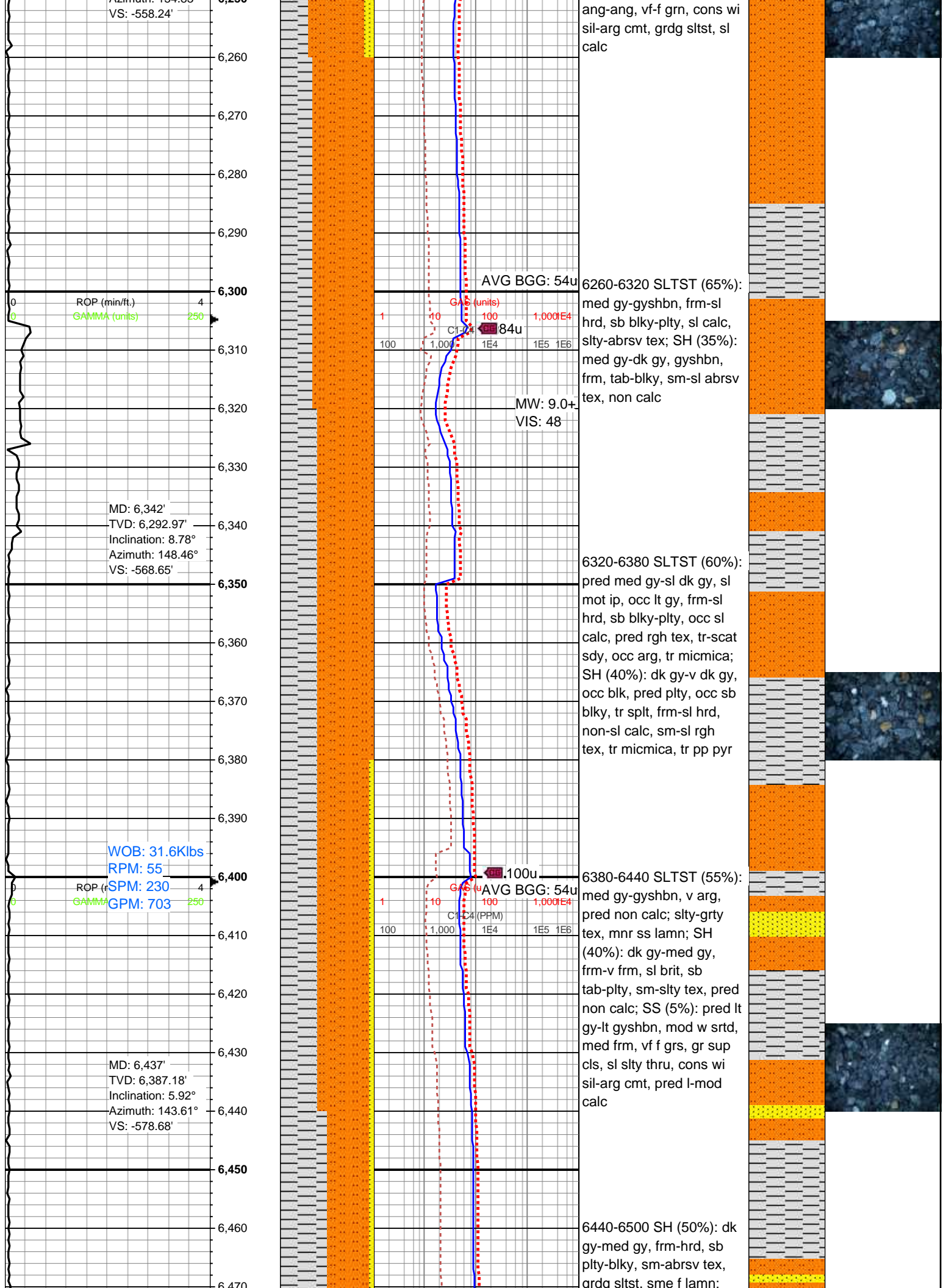
5720-5780 SLTST (50%):
med gy-dk gy, gyshbn,
plty-blky, frm-hrd, slty tex,
sl cal, grdg sdy; SH
(25%): med gy-dk gy, sb
plty-tab, frm-sl hrd, slty
tex, micmica, tr f lamn,
non calc; SS (25%): lt
gy-offwht, occ clr-trnsl
grs, vf-f grnd, mod-w srt,
sb ang-ang, cons wi
sil-arg cmt, pred gr sup
cls, tr-sl cal

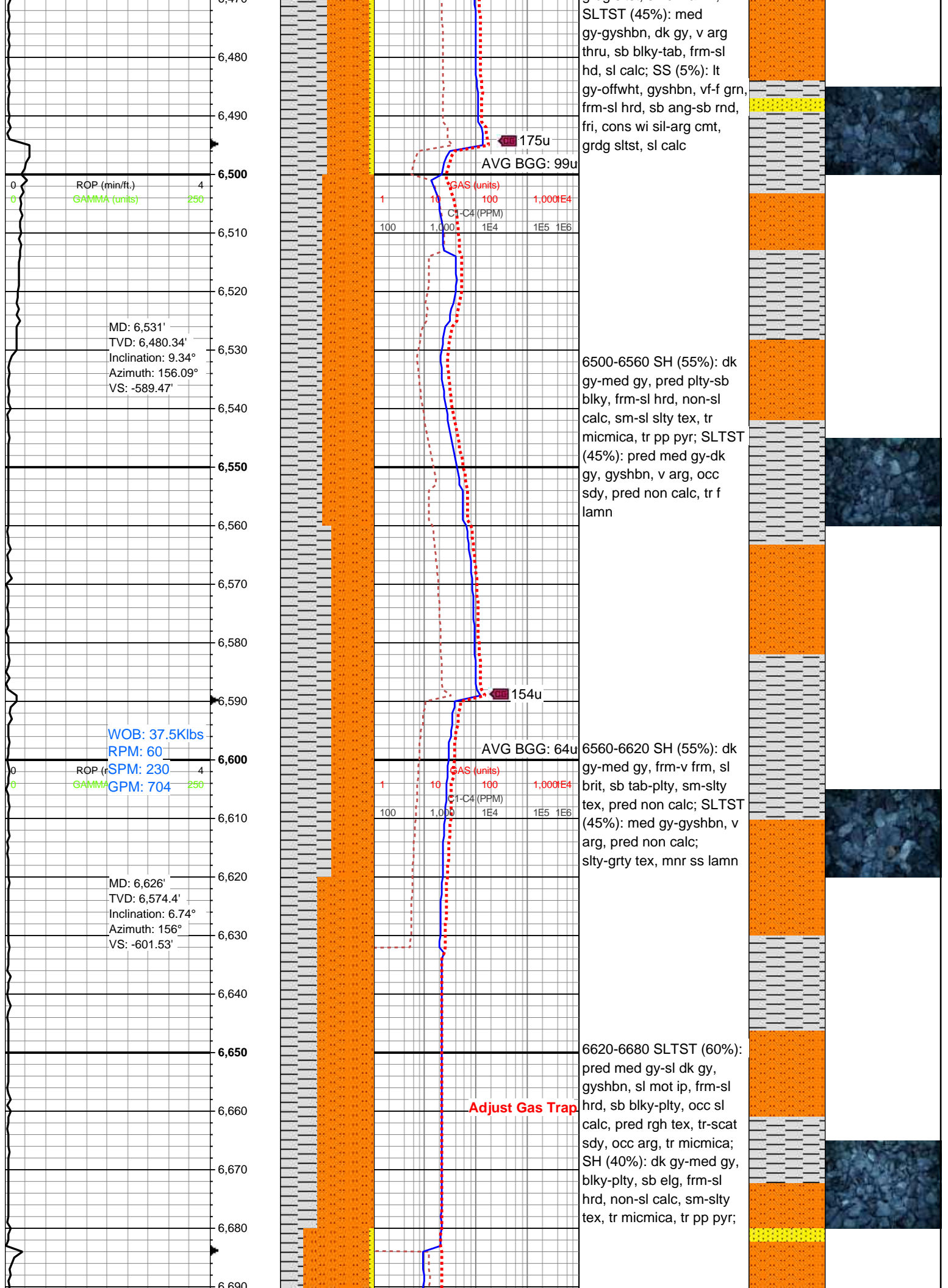
5780-5840 SLTST (45%):
med gy-gyshbn, dk gy, sb

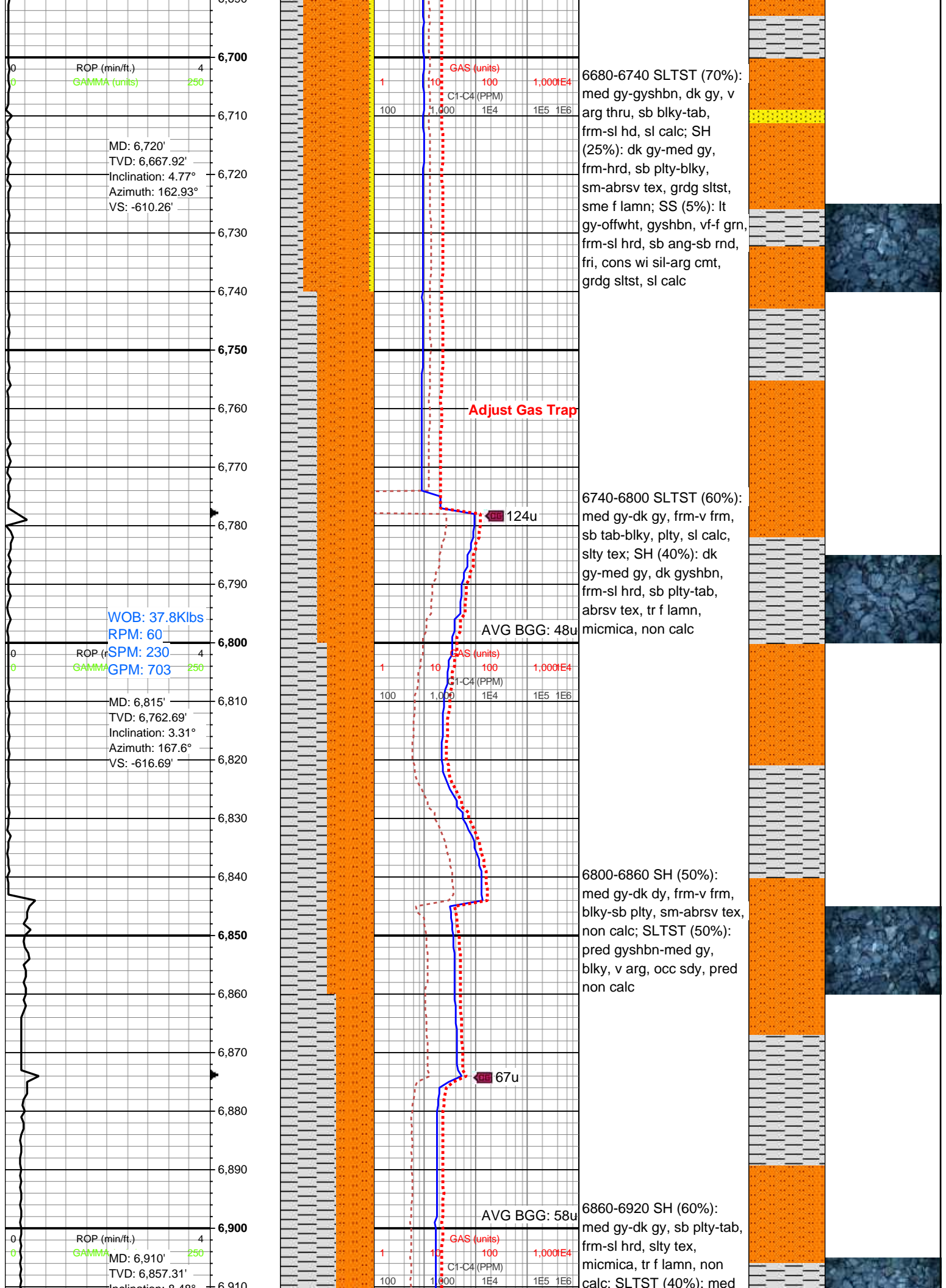








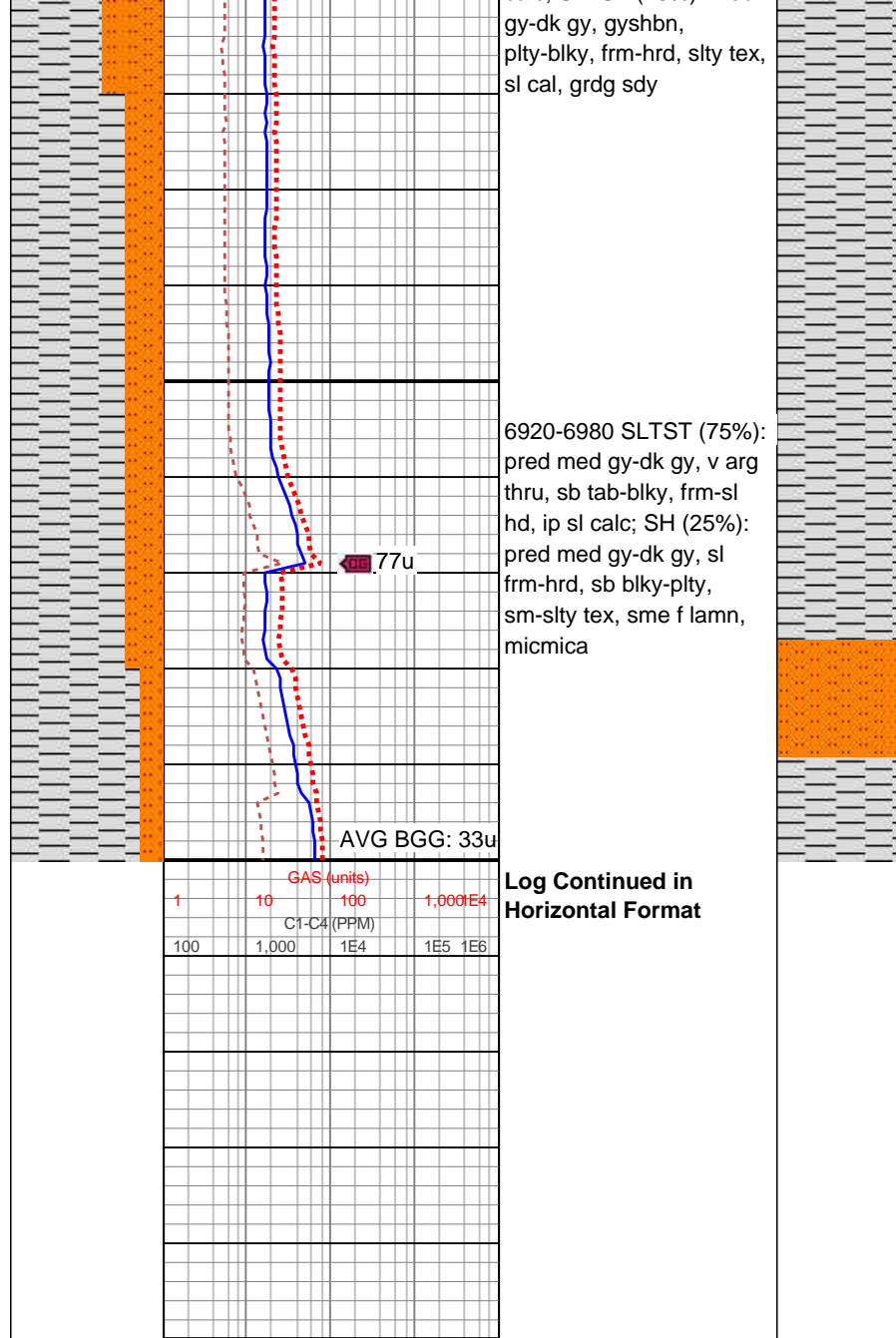




Inclination: 6.48°
Azimuth: 67.38°
VS: -616.57'

6,910
6,920
6,930
6,940
6,950
6,960
6,970
6,980
6,990
7,000
7,010
7,020
7,030
7,040
7,050

ROP (ft/min)
WOB: 17.4Klbs
RPM: 0
SPM: 200
GPM: 613



6920-6980 SLTST (75%):
pred med gy-dk gy, v arg
thru, sb tab-blky, frm-sl
hd, ip sl calc; SH (25%):
pred med gy-dk gy, sl
frm-hrd, sb blky-plty,
sm-slty tex, sme f lamn,
micmica

Log Continued in
Horizontal Format