



Scale: 5" / 100'  
Measured Depth Log

**Well Name** Troudt 6

**Location** S 32 T2N R67W

**State** Colorado

**County** Weld

**Country** USA

**Rig Number** Savanna 802

**API Number** 05-123-41436-00

**Field** Wattenberg

**Region** DJ Basin

**Drilling Completed** 8/16/2015

**Spud Date** 8/10/2015

**Surface Coordinates** Lat: 40° 5' 20.64"N  
Long: 104° 54' 33.18"W

**Bottom Hole Coordinates** Lat: 40° 6' 54.54"N  
Long: 104° 54' 38.91"W

**Ground Elevation** 5,079'

**K.B. Elevation** 5,094'

**Logged Interval** 5,000' To 7,000'

**Total Depth** 8/16/2015

**Formation** Codell

**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: 8-10-15  
TD: 8-16-15

**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

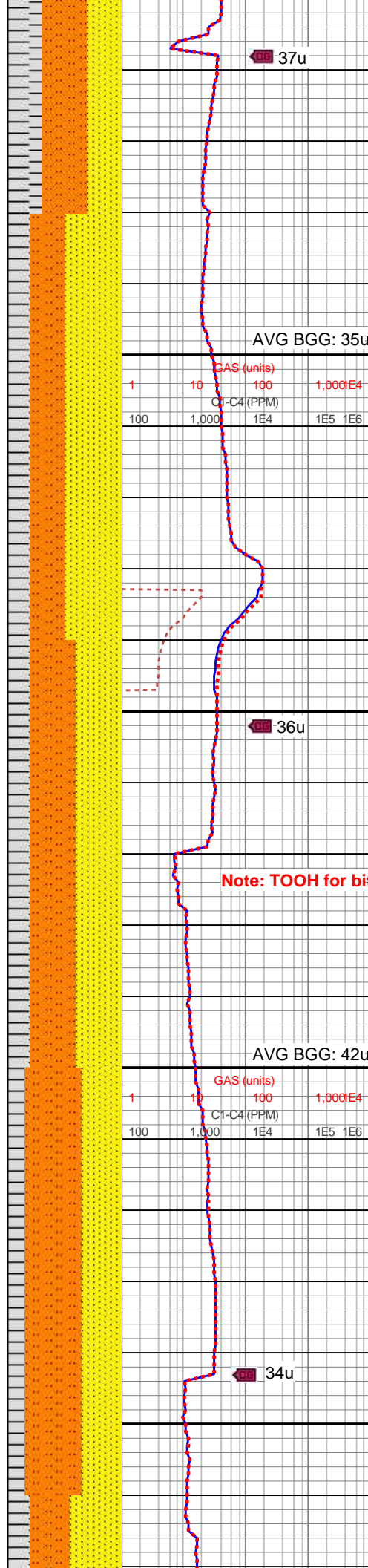
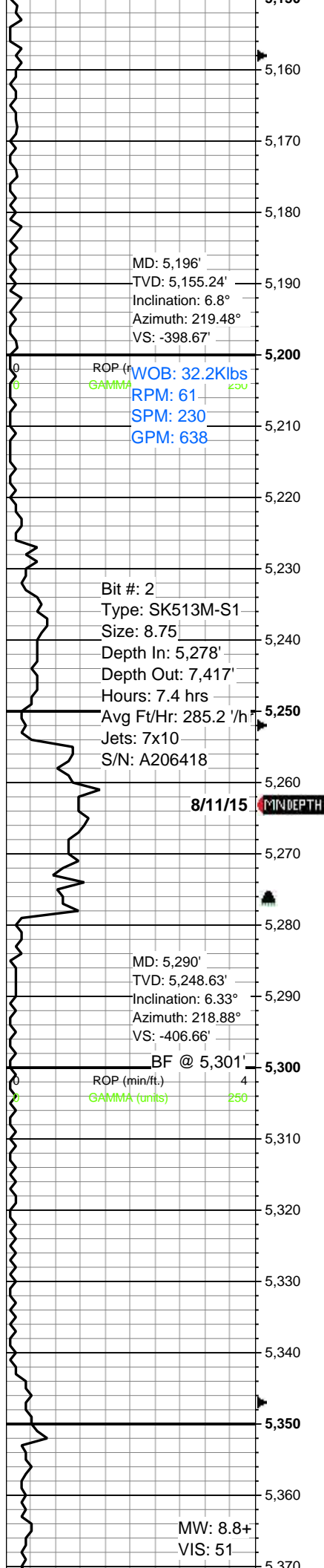
**Name** Jared Rouse

**Company** Extraction Oil & Gas

**Address** 1888 Sherman St., Suite 200



ROP ROP ——— GAMMA - - - - -		Depth Labels	% Lith	Total Gas & Chromatograph GAS ..... C1 ——— C2 - - - - - C3 ..... C4 .....		Lithology Descriptions	Interp Lith	Images
Extraction OG	Troudt 6							
Weld County, CO		4,960		Bit #: 1				
SpudDate: 8-10-15				Type: SDI513				
Surface Casing @ 1,554'				Size: 8.75				
-2-man logging began: 8-10-15		4,970		Depth In: 1,554'				
				Depth Out: 5,278'				
				Hours: 6.4 hrs				
100 units = 1% methane		4,980		Avg Ft/Hr: 581.9 '/hr				
Depth Correspond to Driller's Pipe Tally		4,990		Jets: 3x10,5x11				
				S/N: JJ5121				
WOB: 18.3Klbs RPM: 60 SPM: 230 GPM: 638		5,000		Logarithmic Scale 1-10,000 units				
MD: 5,007' TVD: 4,967.78' Inclination: 7.84° Azimuth: 217.59° VS: -380.53'		5,010		GAS (units) C1-C4 (PPM)				
		5,020		1 10 100 1,000E4 100 1,000 1E4 1E5 1E6				
		5,030				5000-5060 SLTST (50%): med gy-lt gy, frm-sl hrd, blky-sb plty, tr calc, slty-grty tex, tr micmica; SS (30%): lt gy-offwht, frm, mod-w cons, gr sup cls, occ mtx sup, vf-f grnd, mod srt, sb ang-ang grns, sl arg cmt; SH (20%): med gy-dk gy, frm, blky, sl slty tex, non calc		
		5,040						
		5,050						
		5,060		54u				
		5,070						
		5,080						
		5,090				5060-5120: SLTST (45%): med gy-gyshbn, frm-sl hrd, blky, non-sl calc, slty tex; SS (40%): lt gy-offwht, frm, w cons, pred gr sup cls, sme uncons, mod srt, vf-f grnd, sb ang-sb rnd grns, arg-sl cal cmt; SH (15%): med gy-dk gy, frm, blky, non calc, tr micmica, slty		
MD: 5,101' TVD: 5,060.96' Inclination: 7.29° Azimuth: 217.86° VS: -389.94'		5,100		AVG BGG: 47u				
		5,110		GAS (units) C1-C4 (PPM)				
		5,120		1 10 100 1,000E4 100 1,000 1E4 1E5 1E6				
		5,130						
		5,140						
		5,150				5120-5180 SLTST (40%): med gy-lt gy, v. arg, blky		



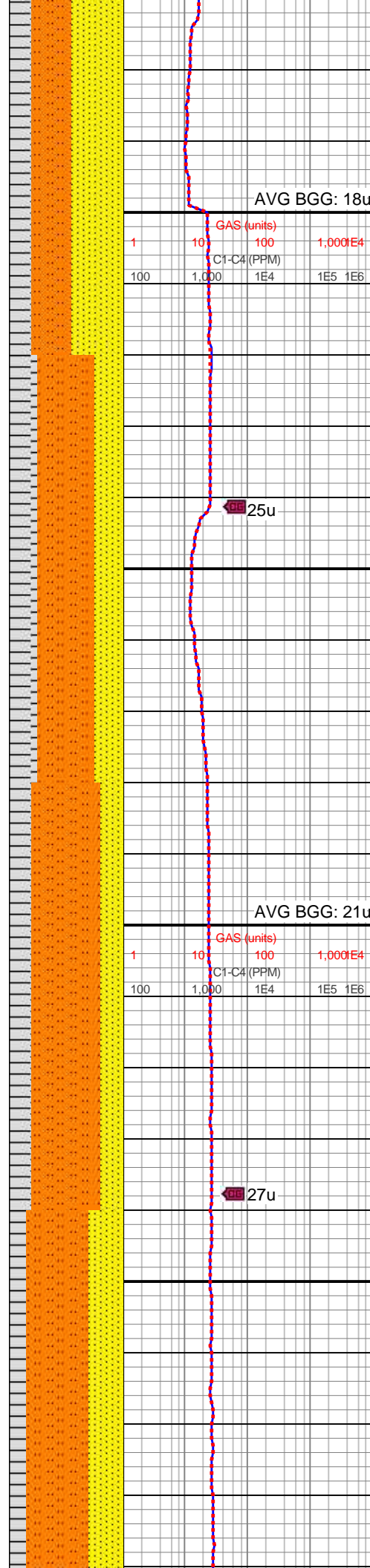
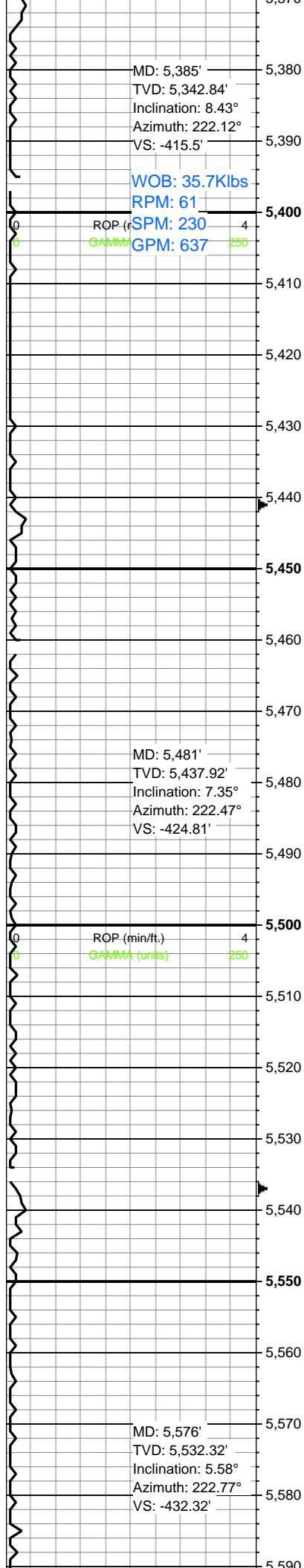
med gy-lt gy, v arg, blk, occ slty-sdy, pred non calc; SS (30%): lt gy-off wh, mod w srt, vf-f grs, sl frm, gr sup cls, cons wi sil-arg cmt, sl slty thru, sl calc cmt; SH (30%): med gy-dk gy, frm-v frm, sl brit, mod fis, sb tab, sm-slty tex, non calc

5180-5240 SS (50%): lt gyshbn-lt gy, offwht, frm-fri, pred gr sup cls, cons wi sil-arg cmt, tr sl cal, occ uncon, pred vf-f grn, sb ang, slty; SLTST (30%): med gy-gyshbn, frm-sl hrd, sb blk, non calc, arg thru; SH: (20%) dk gy-v dk gy, sl hrd, tab-sb plty, non calc, abrsv tex, slty

5240-5300 SS (40%): pred lt gy-offwht, sdy intbds-clr sd grs, mod w srt, vf-f grs, med frm-fri, gr sup cls cons wi sil-com arg cmt, sl slty thru, occ vf pyr, sil-calc cmt; SLTST (40%): pred med gy-sl brn gy, v arg, grd to ss, pred non calc; SH (20%): med gy-dk gy, frm-v frm, sb plty-tab, slty-abrsv tex, non calc

5300-5360 SLTST (50%): dk gy-med gy, occ gyshbn, frm-sl hrd, sb blk-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



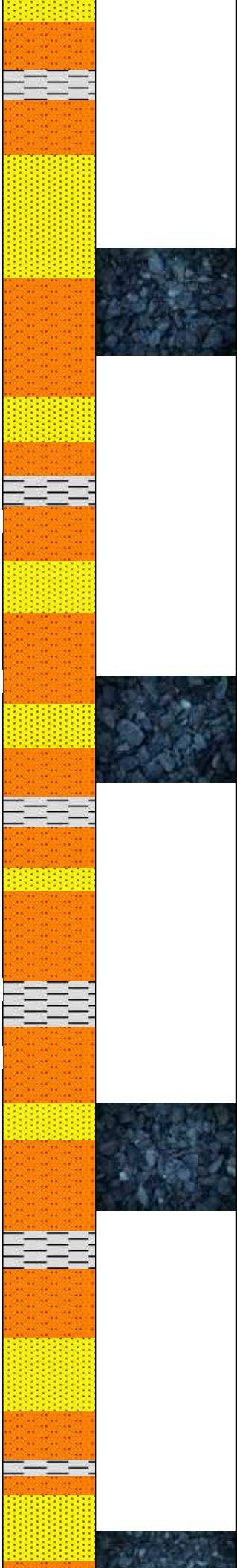


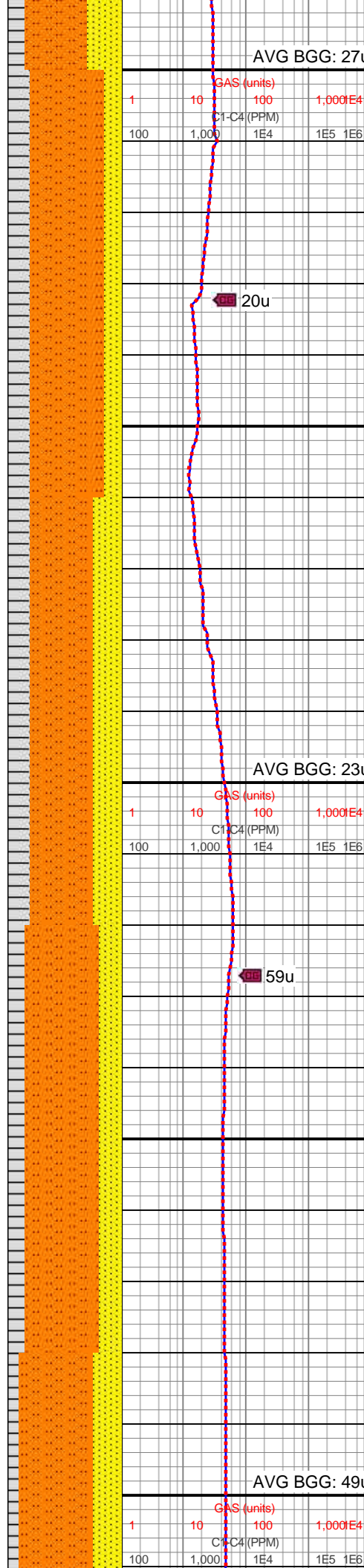
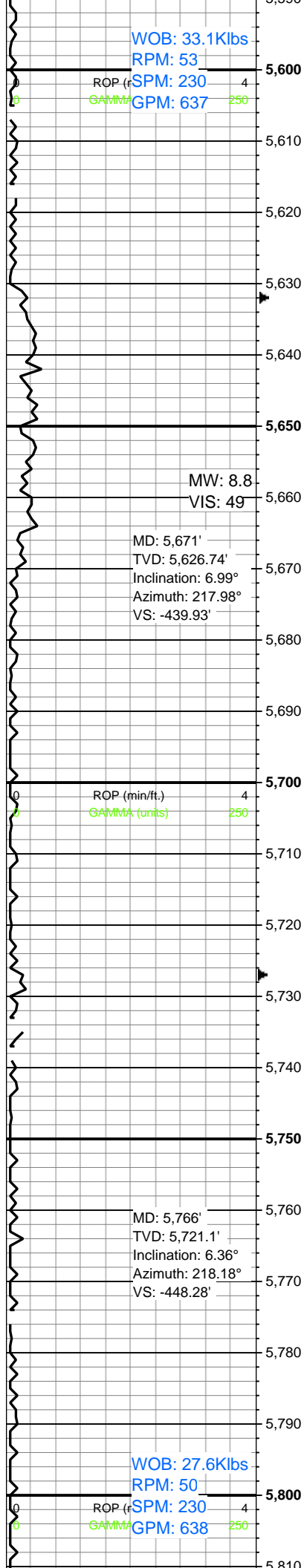
5360-5420 SS (45%):  
pred lt gy-offwht, sdy  
intbds-clr sd grs, mod w  
srt, vf-f grs, med frm-fri,  
gr sup cls cons wi  
sil-com arg cmt, sl slty  
thru, occ vf pyr, sil-calc  
cmt; SLTST (35%): pred  
med gy-sl brn gy, v arg,  
grd to ss, pred non calc;  
SH (20%): med gy-dk gy,  
frm-v frm, sb plty-tab,  
slty-abrsv tex, non calc

5420-5480 SLTST (50%):  
pred med gy-gyshbn,  
frm-sl hrd, sb blk, non  
calc, arg thru; SH (25%):  
dk gy-med gy, sl hrd,  
blk-sb plty, non calc, rgh  
tex, slty; SS (25%): med  
gy-lt gy-offwh, frm-fri, pred  
gr sup cls, cons wi  
sil-arg cmt, tr sl cal, occ  
uncons, pred vf-f sb ang  
qtz sd grs, slty

5480-5540: SLTST  
(60%): med gy-sl dk gy,  
gyshbn, frm-sl hrd,  
plty-sb blk, non-sl calc, tr  
sm tex, pred slty tex; SH  
(20%): med gy-dk gy, frm,  
blk, non calc, tr micmica,  
slty; SS (20%): pred lt gy,  
gyshbn-offwht, frm, w  
cons, gr sup-mtx sup cls,  
sme uncons, mod-w srt,  
vf grnd, occ f, sb ang-ang  
grns, arg-sl cal

5540-5600 SLTST  
(55%):pred med  
gy-gyshbn, frm-sl hrd, sb  
blk-plty, v arg, occ sdy,  
predy non calc; SS  
(30%): predy lt gy, occ  
offwht-clr sd grs, mod w  
srt, vf-f grs, frm-sl fri,  
sil-arg cmt, sl slty thru;  
SH (15%): dk gy-med gy,





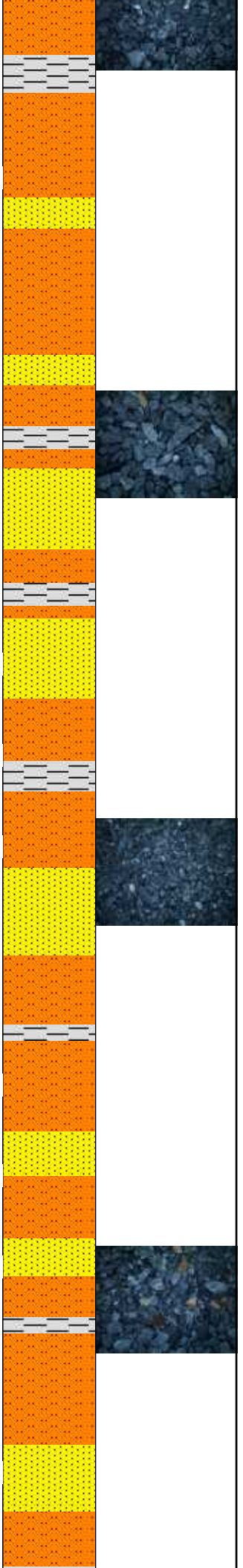
frm, plty-sb blk, sm-abrsv tex, micmica, non calc

5600-5660 SLTST (65%):  
pred med gy-sl dk gy,  
gyshbn, sl mot ip, frm-sl  
hrd, sb blk-plty, occ sl  
calc, pred rgh tex, tr-scat  
sdy, occ arg, tr micmica;  
SS (20%): gyshbn-lt gy,  
offwht, frm-sl fri, sb  
ang-ang, vf-f grn, cons wi  
sil-arg cmt, grdg sltst, sl  
calc; SH (15%): dk  
gy-med gy, blk-plty, sb  
elg, frm-sl hrd, non-sl  
calc, sm-sltv tex, tr  
micmica, tr pp pyr

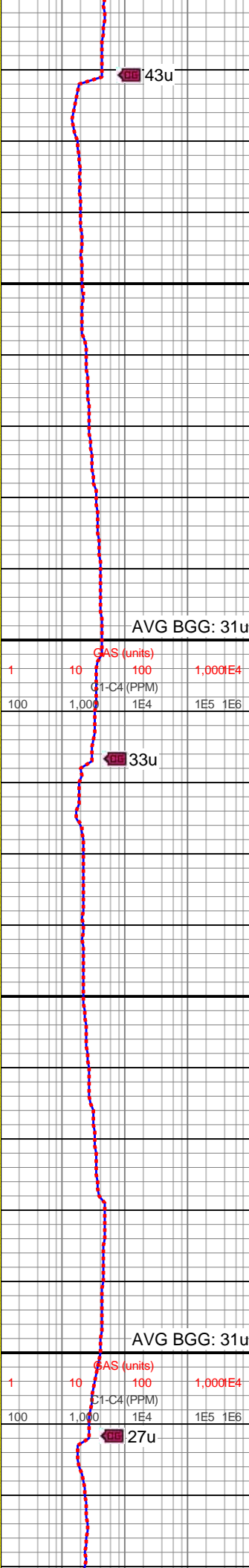
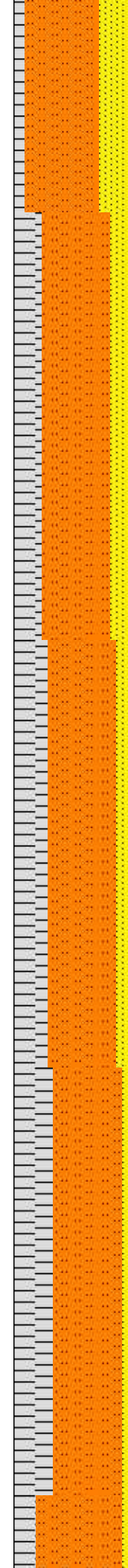
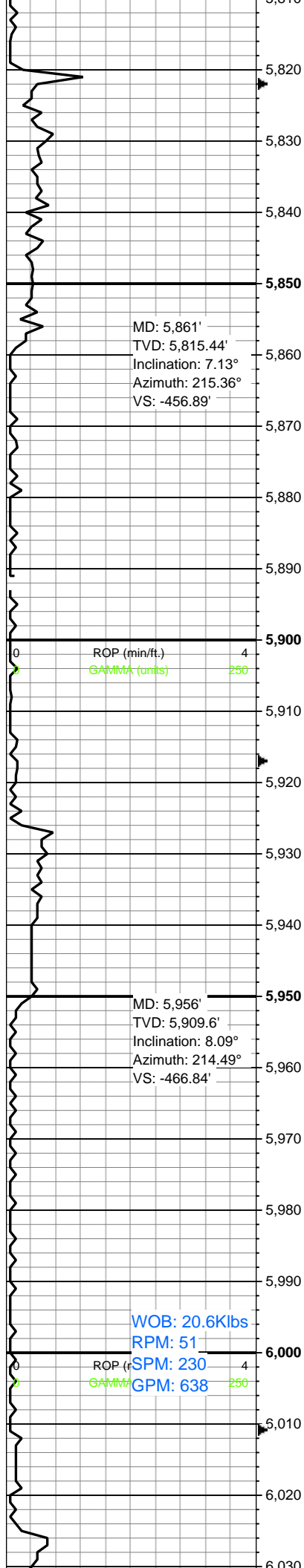
5660-5720 SLTST (55%):  
pred med gy-gyshbn,  
frm-sl hrd, sb blk, non  
calc, arg thru; SS (25%):  
med gy-lt gy-offwh, frm-fri,  
pred gr sup cls, cons wi  
sil-arg cmt, tr sl cal, occ  
uncons, pred vf-f sb ang  
qtz sd grs, slty; SH (20%):  
dk gy-med gy, sl hrd,  
blk-sb plty, non calc, rgh  
tex, slty

5720-5780 SLTST (65%):  
pred med gy-gyshbn,  
frm-sl hrd, sb blk, non  
calc, arg thru; SS (20%):  
med gy-lt gy-offwh, frm-fri,  
pred gr sup cls, cons wi  
sil-arg cmt, tr sl cal, occ  
uncons, pred vf-f sb ang  
qtz sd grs, slty; SH (15%):  
dk gy-med gy, sl hrd,  
blk-sb plty, non calc, rgh  
tex, slty

5780-5840 SLTST (65%):  
med gy-dk gy, occ  
gyshbn, frm-hrd, sb  
plty-blky, sl cal, slty tex,  
grdg sdy; SS (25%): lt





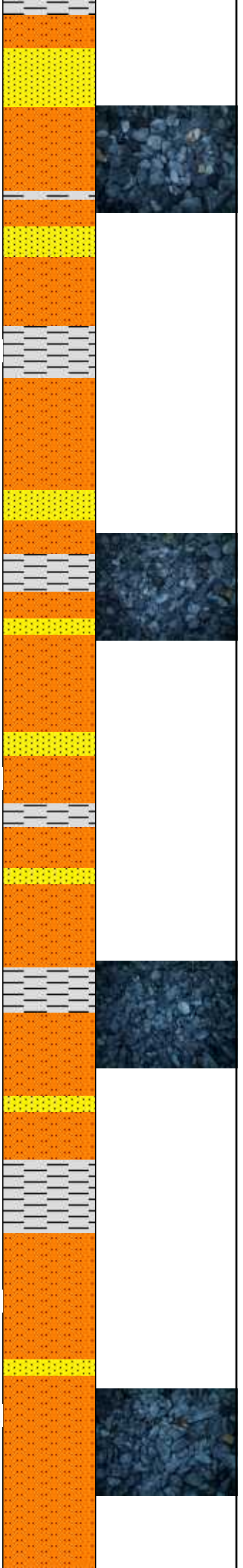


gy-offwht, tr s&p, occ  
clr-trnsl grns, vf-f grnd, sb  
ang-ang, mod-w srtd,  
pred gr sup cls, cons wi  
sil-arg cmt, tr-sl cal; SH  
(10%): med gy-sl dk gy,  
frm, occ sl hrd, sb  
plty-plty, slty tex, micmica,  
tr f lam, non calc

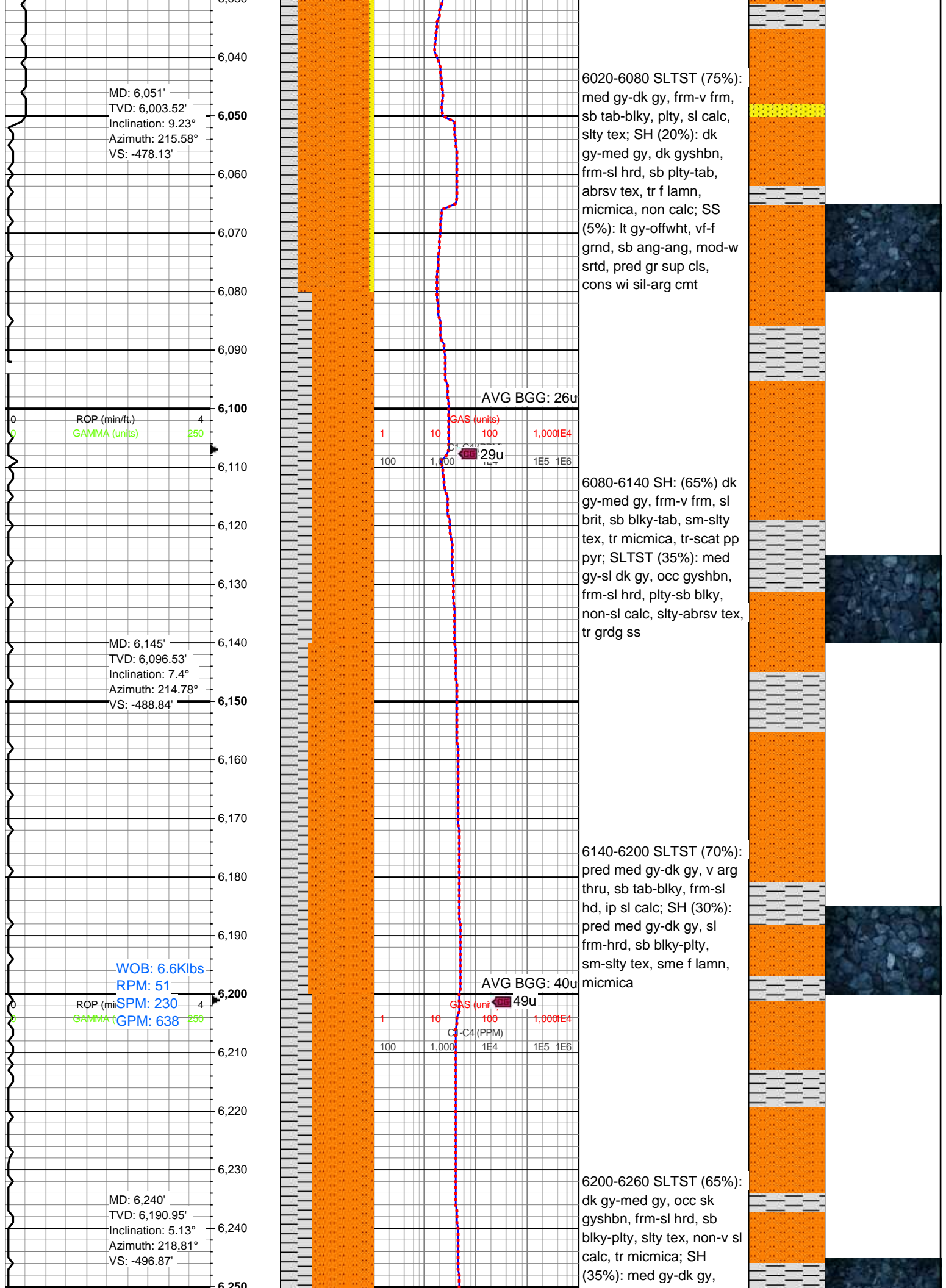
5840-5900 SLTST (60%):  
dk gy-med gy, occ  
gyshbn, frm-sl hrd, sb  
blky-plty, slty tex, non-v sl  
calc, tr micmica; SS  
(25%): lt gy-offwht, tr s&p,  
frm-fri, gr sup cls, w cons  
w/sil-arg cmt, sme  
uncons, vf-f grnd, sb  
ang-sb rnd, w srt; SH  
(15%): dk gy-med gy,  
frm-sl hrd, plty, non calc,  
slty tex

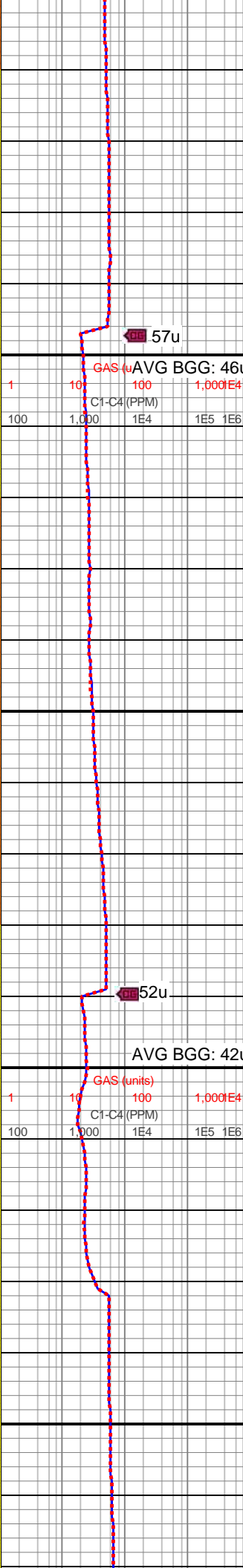
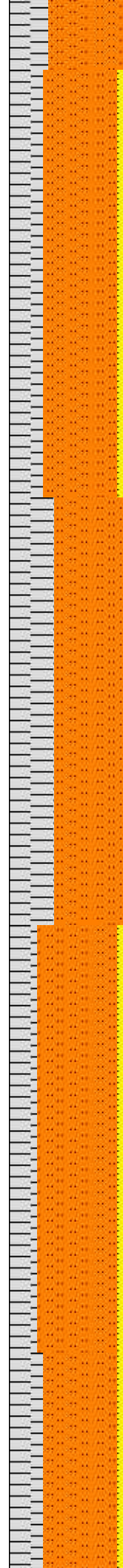
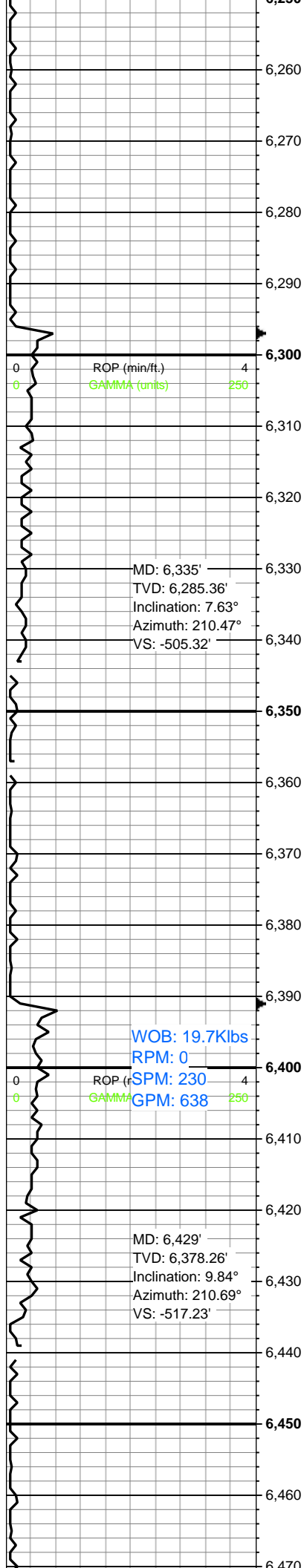
5900-5960 SLTST (60%):  
med gy-sl gyshbn,  
blky-plty, v arg, sme sdy,  
pred non calc; SH (30%):  
med gy-dk gy, frm-v frm,  
sl brit, mod fis, sb  
plty-blky, sm-slty tex, non  
calc; SS (10%): lt  
gy-offwht, gyshbn, mod w  
srtd, vf-f grs, sb ang-sb  
rnd, med frm-fri, gr sup  
cls, cons wi sil-arg cmt,  
sl slty thru

5960-6020 SH (60%): dk  
gy-med gy, pred plty-sb  
blky, frm-sl hrd, non-sl  
calc, sm-sl slty tex, tr  
micmica, tr pp pyr; SLTST  
(35%): pred med gy-dk  
gy, gyshbn, v arg, occ  
sdy, pred non calc, tr f  
lamn; SS (5%): lt  
gy-gyshbn, offwht, vf-f grn,  
sb ang-ang, cons wi  
arg-sil cmt, sl calc, grdg  
sltst, mnrlse qtz grns









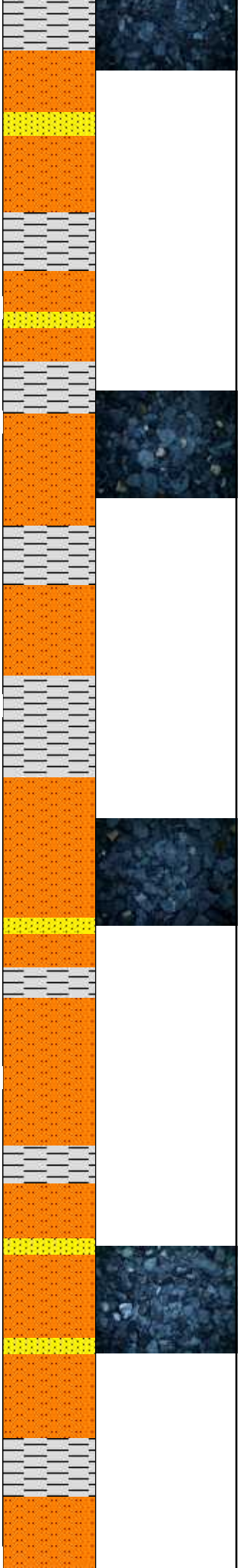
frm-v frm, sl brit, mod fis,  
sb plty-blky, sm-sltly tex,  
non calc

6260-6320 SH (65%):  
pred dk gy-med gy,  
gyshbn ip, pred plty-sb  
blky, frm-sl hrd, non-sl  
calc, sm-sl slty tex, tr  
micmica, tr pp pyr; SLTST  
(30%): pred med gy-dk  
gy, gyshbn, v arg, occ  
sdy, pred non calc, tr f  
lamn; SS (5%): lt  
gy-gyshbn, offwht, vf-f grn,  
sb ang-ang, cons wi  
arg-sil cmt, sl calc, grdg  
sltst

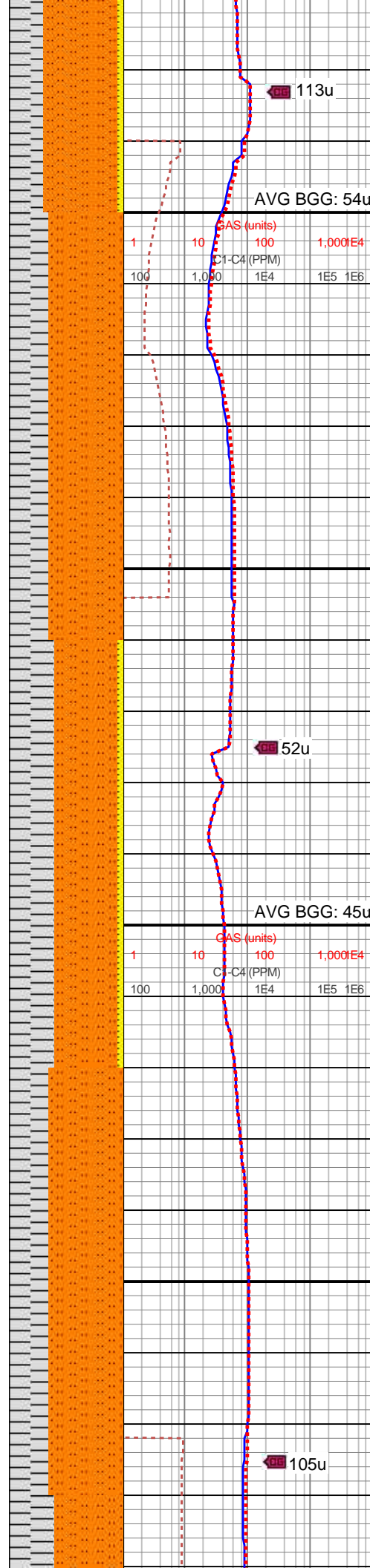
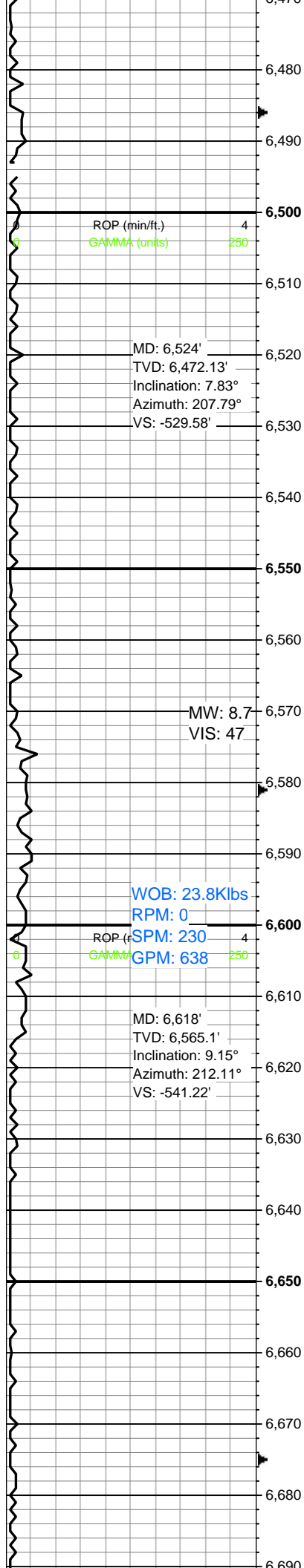
6320-6380 SLTST (60%):  
pred med gy-sl dk gy,  
gyshbn, sl mot ip, frm-sl  
hrd, sb blky-plty, occ sl  
calc, pred rgh tex, tr-scat  
sdy, occ arg, tr micmica;  
SH (40%): dk gy-med gy,  
blky-plty, sb elg, frm-sl  
hrd, non-sl calc, sm-sltly  
tex, tr micmica, tr pp pyr;

6380-6440 SLTST (70%):  
med gy-dk gy, frm-v frm,  
sb tab-blky, plty, sl calc,  
slty tex; SH (25%): dk  
gy-med gy, dk gyshbn,  
frm-sl hrd, sb plty-tab,  
abrsv tex, tr f lamn,  
micmica, non calc; SS  
(5%): lt gy-offwht, vf-f  
grnd, sb ang-ang, mod-w  
srtd, pred gr sup cls,  
cons wi sil-arg cmt

6440-6500 SLTST (65%):





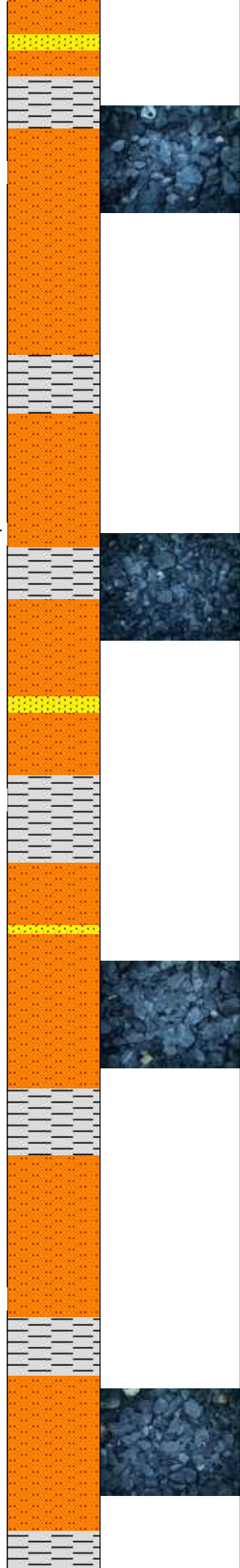


med gy-gyshbn, frm-sl  
hrd, blkly-tab, non calc;  
SH (35%): dk gy-med gy,  
sl hrd, plty-sl elg, non  
calc, rgh tex, slty; SS  
(5%): lt gy-offwh, vf-f grn,  
frm-fri, gr sup cls, cons  
wi sil-arg cmt, sl calc, occ  
uncons, sb ang qtz grs

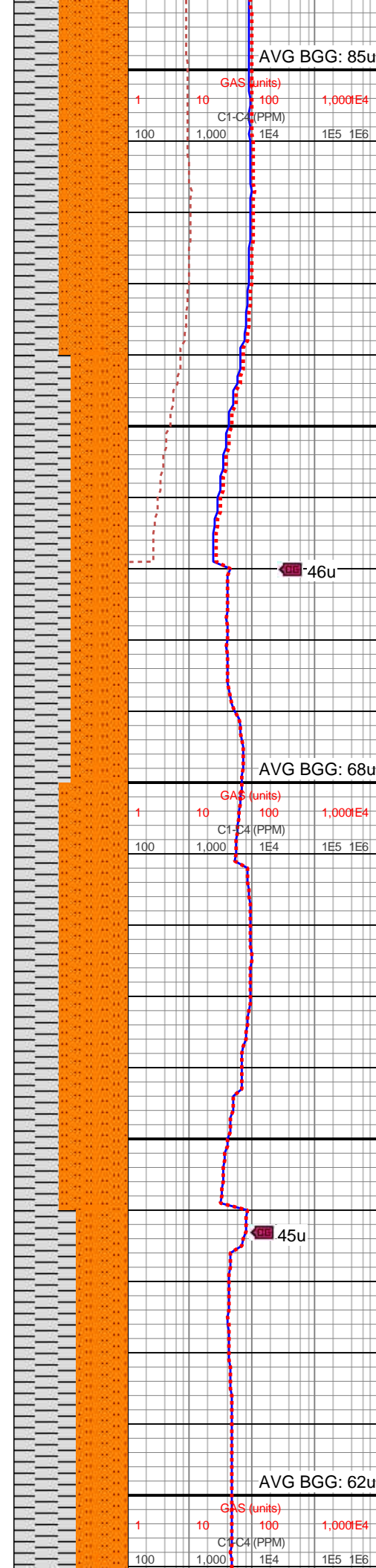
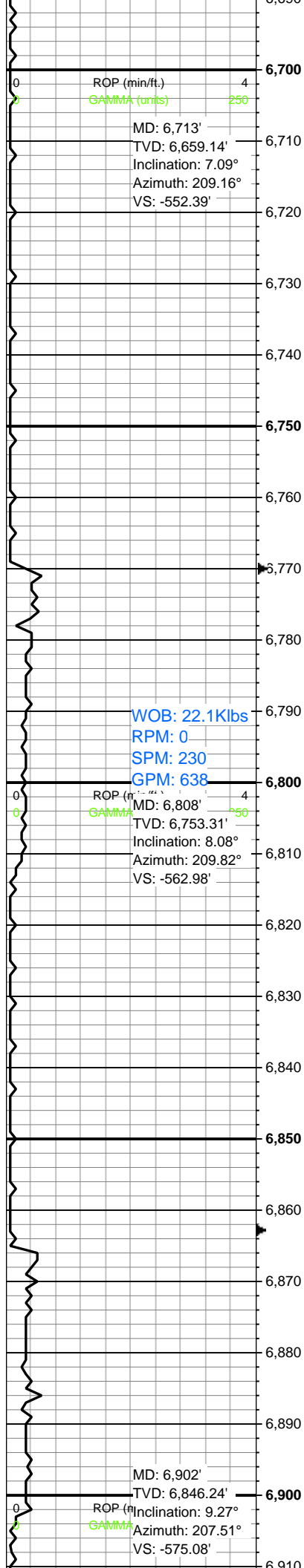
6500-6560 SH (55%): dk  
gy-med gy, pred plty-sb  
blkly, frm-sl hrd, non-sl  
calc, sm-sl slty tex, tr  
micmica, tr pp pyr; SLTST  
(40%): pred med gy-dk  
gy, gyshbn, v arg, occ  
sdy, pred non calc, tr f  
lamn

6560-6620 SLTST (55%):  
med gy-gyshbn, v arg,  
blkly-plty, sdy, pred non  
calc; SH (40%): dk  
gy-med gy, sl hrd, plty-sb  
blkly, non calc, rgh tex,  
slty; SS (5%):lt gy-offwh,  
gyshbn, frm-fri, pred gr  
sup cls, cons wi sil-arg  
cmt, occ uncons, pred  
vf-f, sb ang, qtz sd grs,  
slty

6620-6680 SLTST (65%):  
med gy-dk gy, occ  
gyshbn, frm-hrd, sb  
plty-blky, sl cal, slty tex,  
grdg sdy; SH (35%): med  
gy-sl dk gy, frm, occ sl  
hrd, sb plty-plty, slty tex,  
micmica, tr f lam, non  
calc





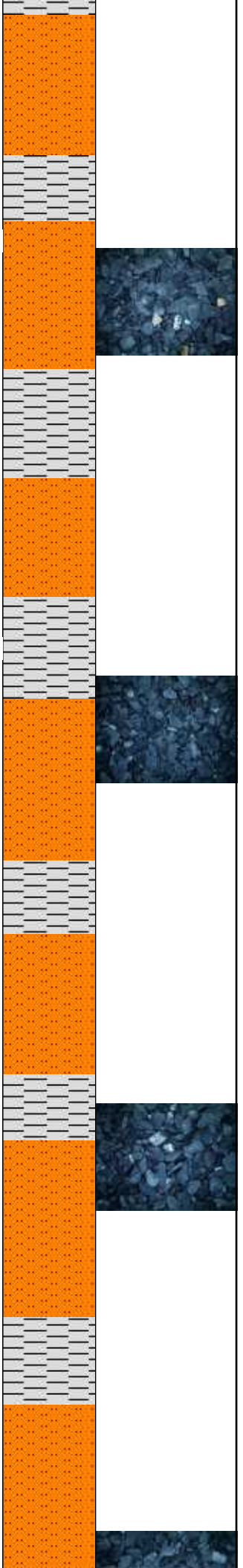


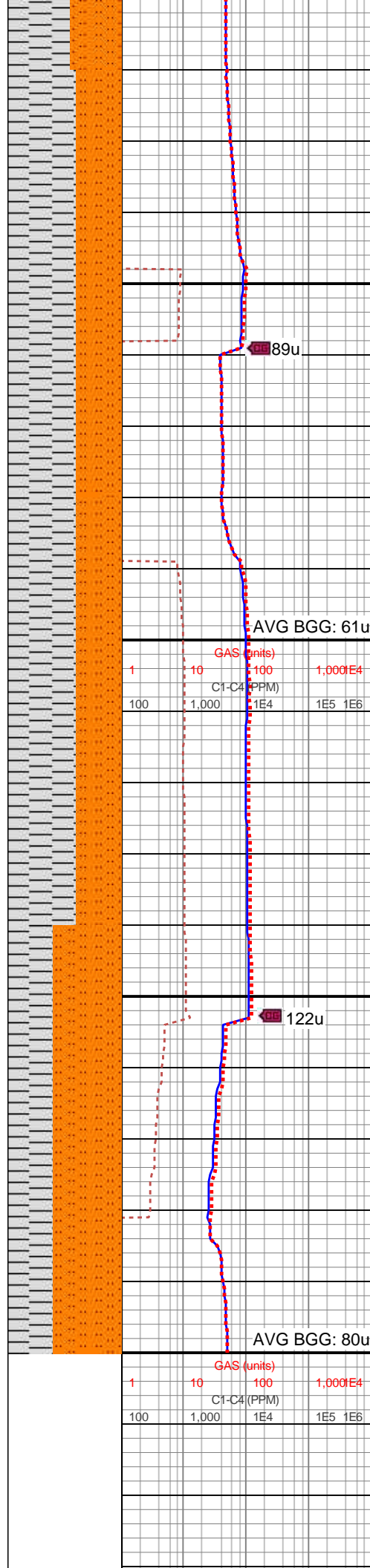
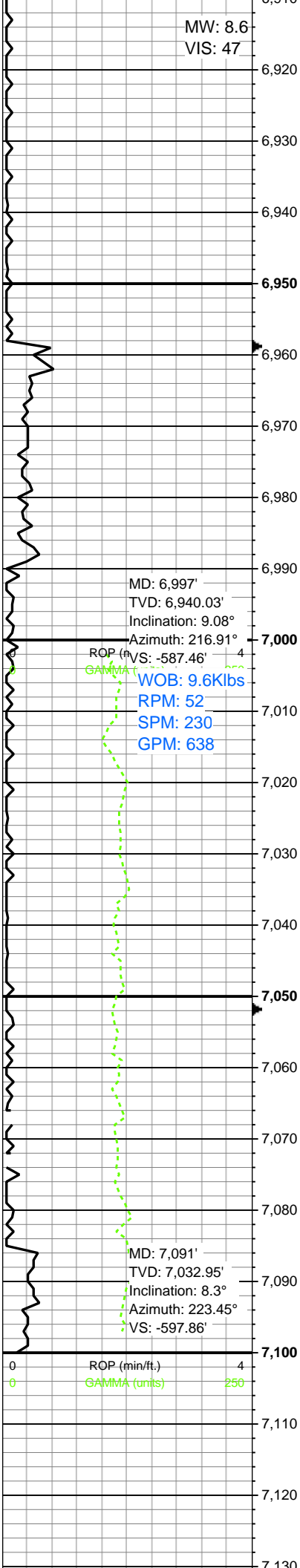
6680-6740 SH (60%): dk gy-med gy, pred plty-sb blkly, frm-sl hrd, non-sl calc, sm-sl slty tex, tr micmica, tr pp pyr; SLTST (40%): pred med gy-dk gy, gyshbn, v arg, occ sdy, pred non calc, tr f lamn

6740-6800 SH (50%): dk gy-med gy, plty-tab, frm-sl hrd, sl slty-rgh tex, non calc; SLTST (50%) med gy-lt gy, frm-sl hrd, slty tex, micmica, non calc, grdg to med gy sh

6800-6860 SLTST (50%): pred med gy-dk gy, gyshbn, v arg, occ sdy, pred non calc, tr f lamn; SH (50%): dk gy-med gy, pred plty-sb blkly, frm-sl hrd, non-sl calc, sm-sl slty tex, tr micmica, tr pp pyr

6860-6920 SH (55%): dk gy-med gy, dk gyshbn, frm-sl hrd, sb plty-tab, abrsv tex, tr f lamn, micmica, non calc; SLTST (45%): pred med gy-dk gy, gyshbn, v arg, occ sdy, pred non calc, tr f lamn





SLTST (45%): pred med gy-gyshbn, frm-sl hrd, sb blk, non calc, arg thru

6920-6980 SH (60%): dk gy-v dk gy, occ blk, pred plty-sb plty, slty ip, sl rgh tex, non-v sl calc, tr pp pyr; SLTST(40%): pred med gy-sl dk gy, frm-sl hrd, pred plty, occ blk, sm-sl rgh tex, tr micmica, non calc

6980-7040 SH (60%): med gy-dk gy, frm-v frm, sl brit, mod fis, sb plty-blky, sm-slty tex, non calc; SLTST (40%): dk gy-med gy, occ sk gyshbn, frm-sl hrd, sb blk-plty, slty tex, non-v sl calc, tr micmica

7040-7100 SLTST (60%): pred med gy-dk gy, v arg thru, sb tab-blky, frm-sl hd, ip sl calc; SH (40%): pred med gy-dk gy, sl frm-hrd, sb blk-plty, sm-slty tex, sme f lamn, micmica

Log Continued in Horizontal Format

