



Scale: 5" / 100'
Measured Depth Log

Well Name Davis 1R-9H-G266

Location Sec. 4 T2N R66W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05123465050000

AFE # 16191036

Geographic Region Rockies

Field Wattenberg

Spud Date 6/16/2018

Drilling Completed 6/22/2018

Surface Coordinates Lat/Long: 40.154249/-104.778035

SHL: Sec: 4 Twp: 2N 66W
Footage: 2039 FSL 1468 FEL

Bottom Hole Coordinates Proposed BHL: Sec: 4 Twp: 2N 66W
Footages: 460 FNL 2078 FWL

Ground Elevation 4,917'

K.B. Elevation 4,940'

Logged Interval 6,500' **To** 15,011' MD

Total Depth 15,011' MD

Formation Codell

Type of Drilling Fluid Synthetic Oil Based Mud

Operator

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Geologist

Zone Color Coding

Geologist

Name John Ready

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Zone Color Coding



Oil



Condensate



Gas



Note



Core



Pressure



Error



Water



Seal

Other

Loggers: Mark Gross / Heather Davis

Services Provided: 2-Man Mudlogging / Geosteering

Equipment: ML-526

Contractor: Reservoir Group
6360 West Sam Houston Pkwy N
Houston, Texas, 77041

Job #: 1325RK1806

Start Date 6/17/2018

Release Date: 6/23/2018

Rock Types

? UNKNOWN

ANHYDRITE

GYPSUM

SALT

SIDERITE or LIMONITE

LIMESTONE

DOLOMITE

CHERT

COAL

MARLSTONE

CHALK

SHALE

SHALE GRAY

SHALE COLORED

SILTSTONE

SANDSTONE

CONGLOMERATE

BRECCIA

TILL

BENTONITE

TUFF

IGNEOUS

METAMORPHIC

CEMENT

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 Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

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

- ORGANIC
- PINPOINT
- 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

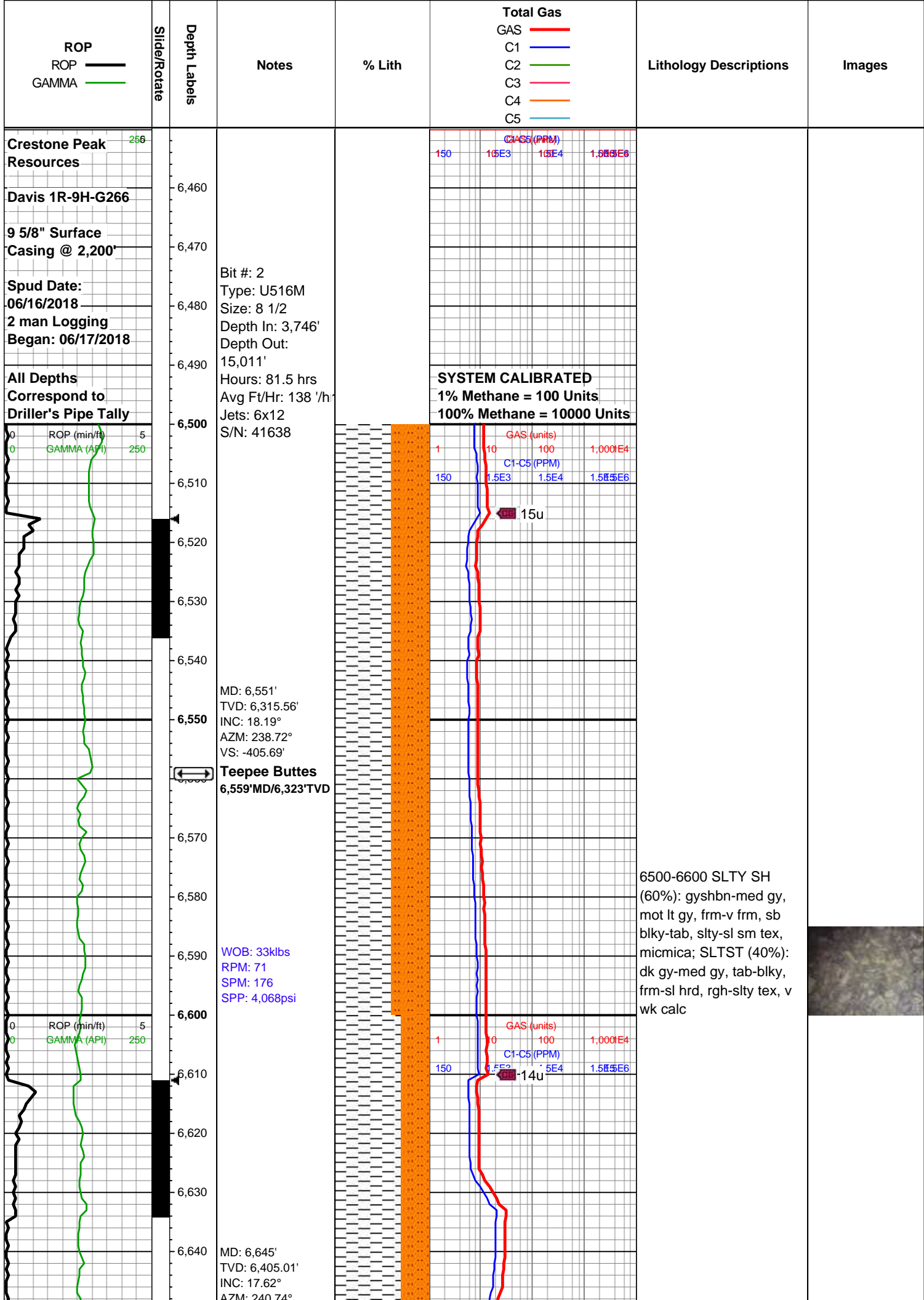
Textures

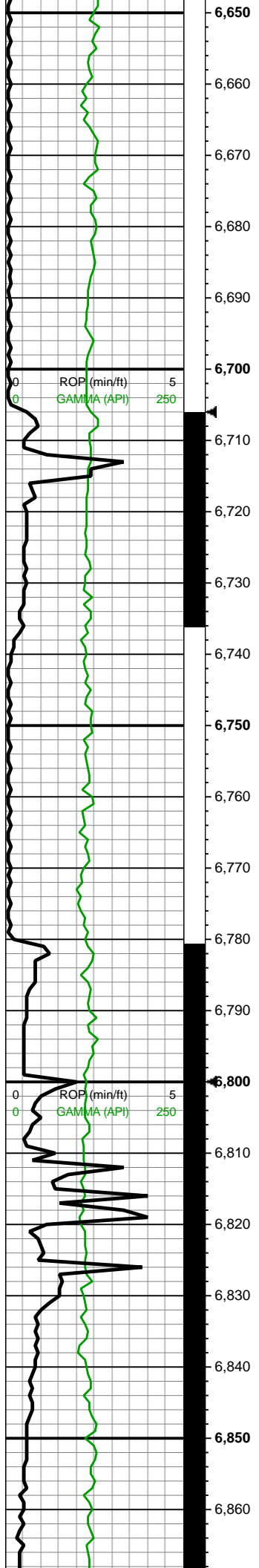
- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- E EARTHY
- F FINELYXLN
- GRAINSTONE

- L LITHOGRAPHIC
- MX MICROXLN
- MS MUDSTONE
- PS PACKSTONE
- WS WACKESTONE

Sorting

- M MODERATE
- P POOR
- W WELL





MD: 6,787'
TVD: 6,540.68'
INC: 16.96°
AZM: 250.41°
VS: -413.64'

MW IN: 9.8+
VIS IN: 47
MW OUT: 9.9
VIS OUT: 44

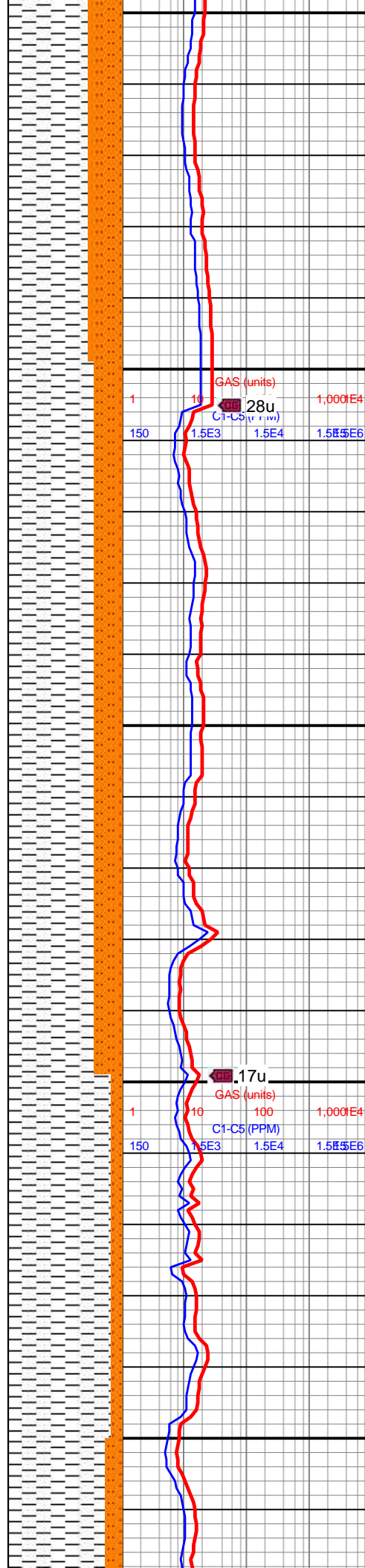
KOP @ 6,780'

MD: 6,787'
TVD: 6,540.68'
INC: 16.96°
AZM: 250.41°
VS: -421.99'

WOB: 26klbs
RPM: 0
SPM: 162
SPP: 2,986psi

MW IN: 9.6
VIS IN: 46
MW OUT: 9.6
VIS OUT: 45

MD: 6,834'
TVD: 6,585.31'
INC: 19.6°
AZM: 260.87°
VS: -421.91'

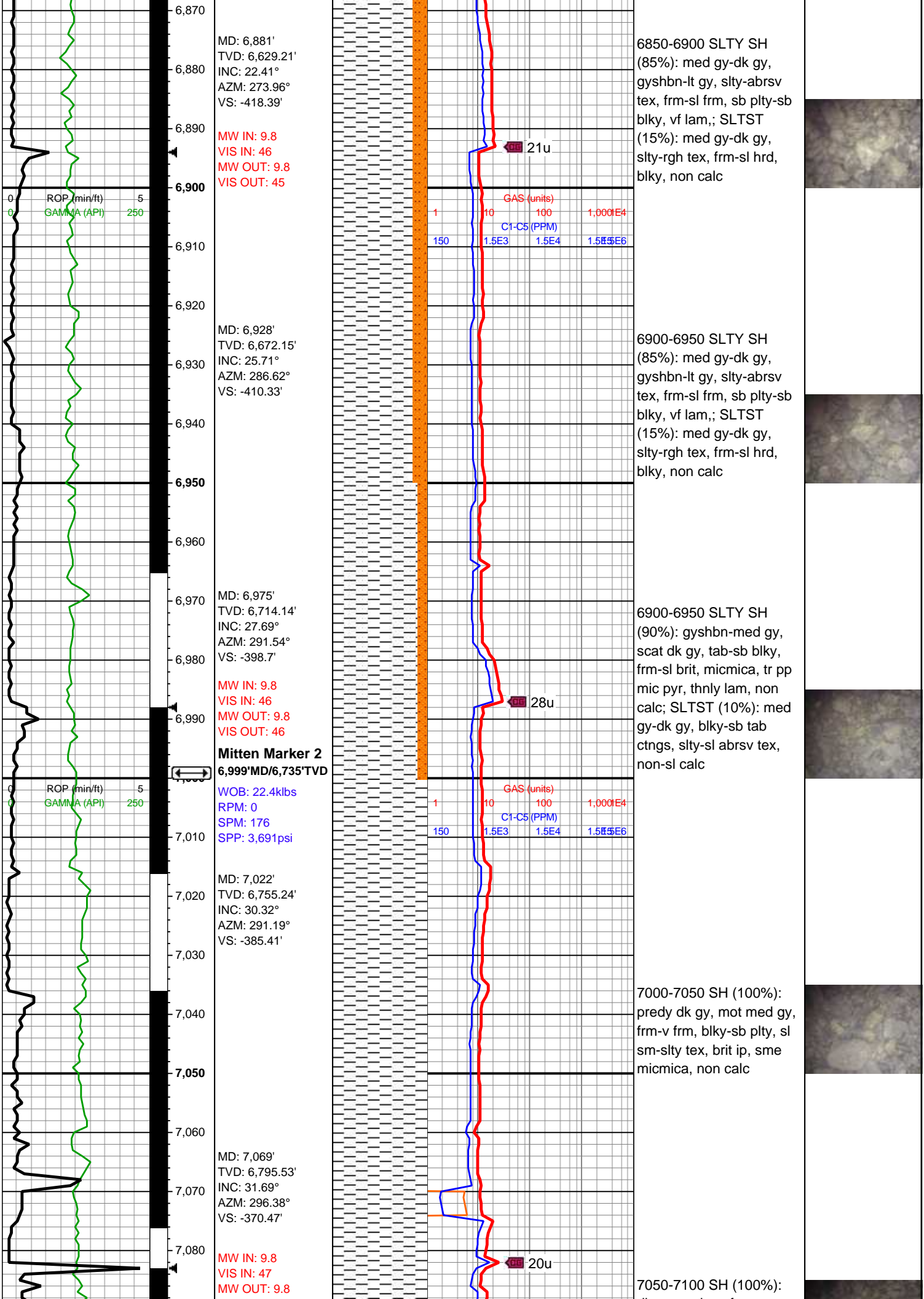


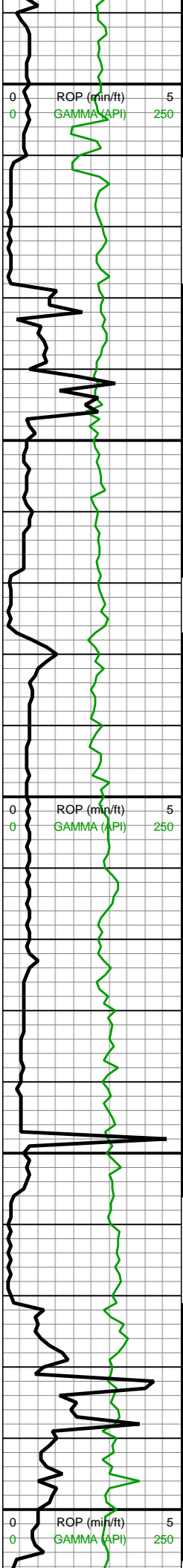
6600-6700 SLTY SH
(70%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SLTST (30%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-slt tex, v
wk calc

6700-6800 SLTY SH
(75%): med gy-dk gy, mot
bnshgy, sb hd-v frm, slty
tex, sb plty-sb blky, scat
micmica, non calc;
SLTST (25%): gy-dk gy,
blky, frm-sl hrd, slty-sl
abrsv tex, non calc

6800-6850 SLTY SH
(90%): med gy-dk gy,
gyshbn-lt gy, slty-abrsv
tex, frm-sl frm, sb plty-sb
blky, vf lam,; SLTST
(10%): med gy-dk gy,
slty-rgh tex, frm-sl hrd,
blky, non calc







VIS OUT: 46

MD: 7,116'
TVD: 6,835.65'
INC: 31.11°
AZM: 300.07°
VS: -353.92'

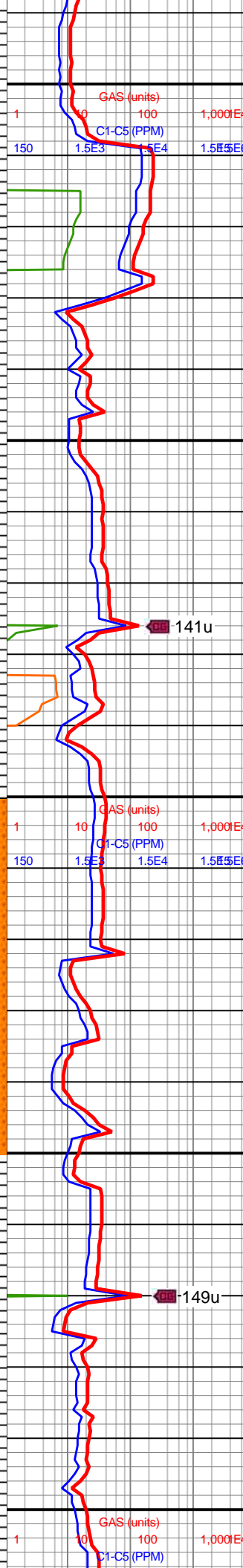
MD: 7,163'
TVD: 6,875.83'
INC: 31.47°
AZM: 306.13°
VS: -335.97'

WOB: 14.7klbs
RPM: 0
SPM: 178
SPP: 3,623psi

MD: 7,211'
TVD: 6,916.34'
INC: 33.53°
AZM: 316.59°
VS: -314.71'

MD: 7,258'
TVD: 6,955.33'
INC: 34.45°
AZM: 323.53°
VS: -291.04'

MD: 7,305'
TVD: 6,993.75'
INC: 35.9°
AZM: 328.46°



dk gy-med gy, frm,
blky-tab ctngs, sme plty,
sl sm tex, brit, sme v thnly
lam, tr micmica, non calc

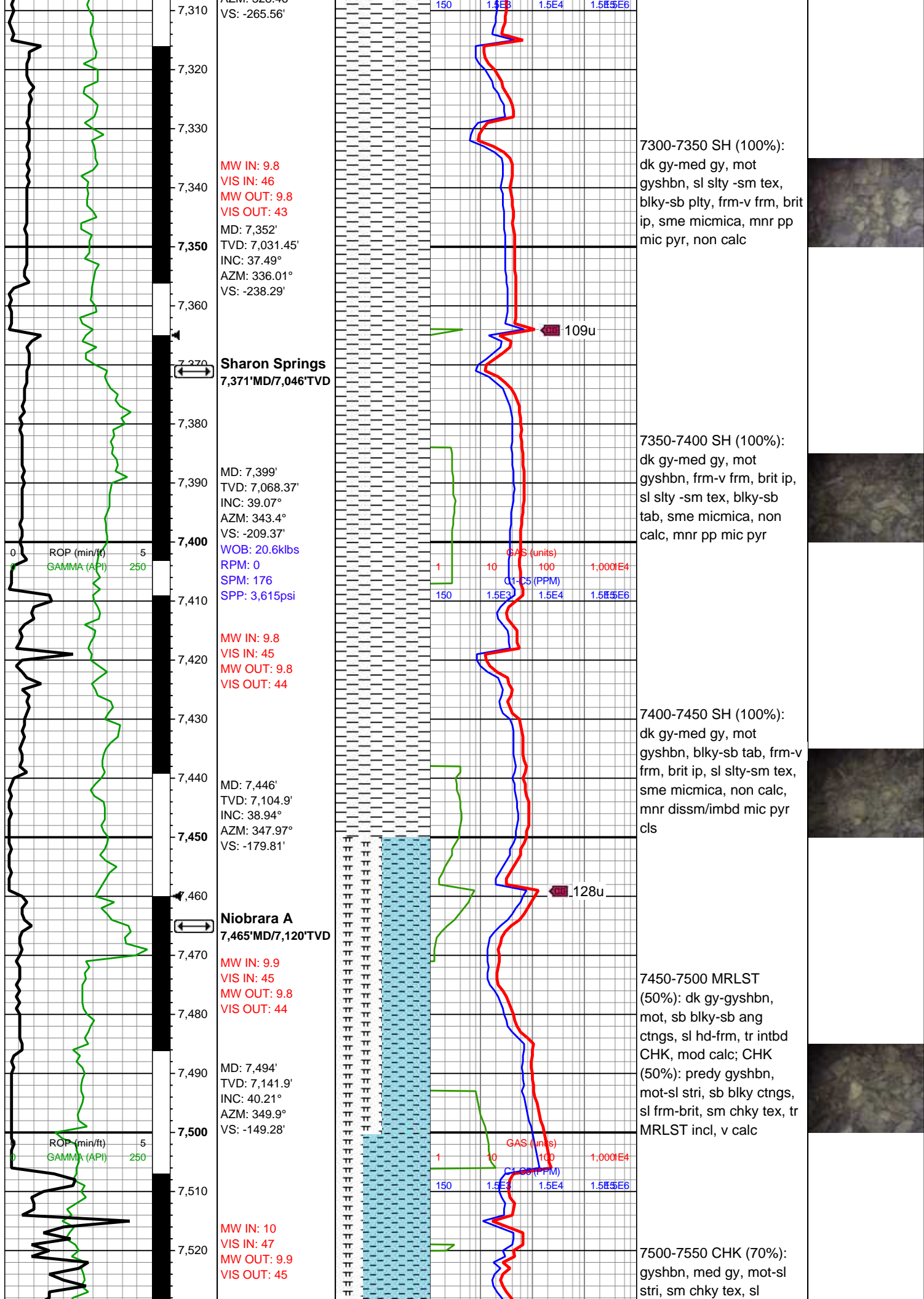
7100-7150 SH (100%):
dk gy-med gy, gyshbn,
frm-sl hd, sl sm tex, mod
brit, blky-tab ctngs, sme
plty, tr micmica, thnly lam,
non calc

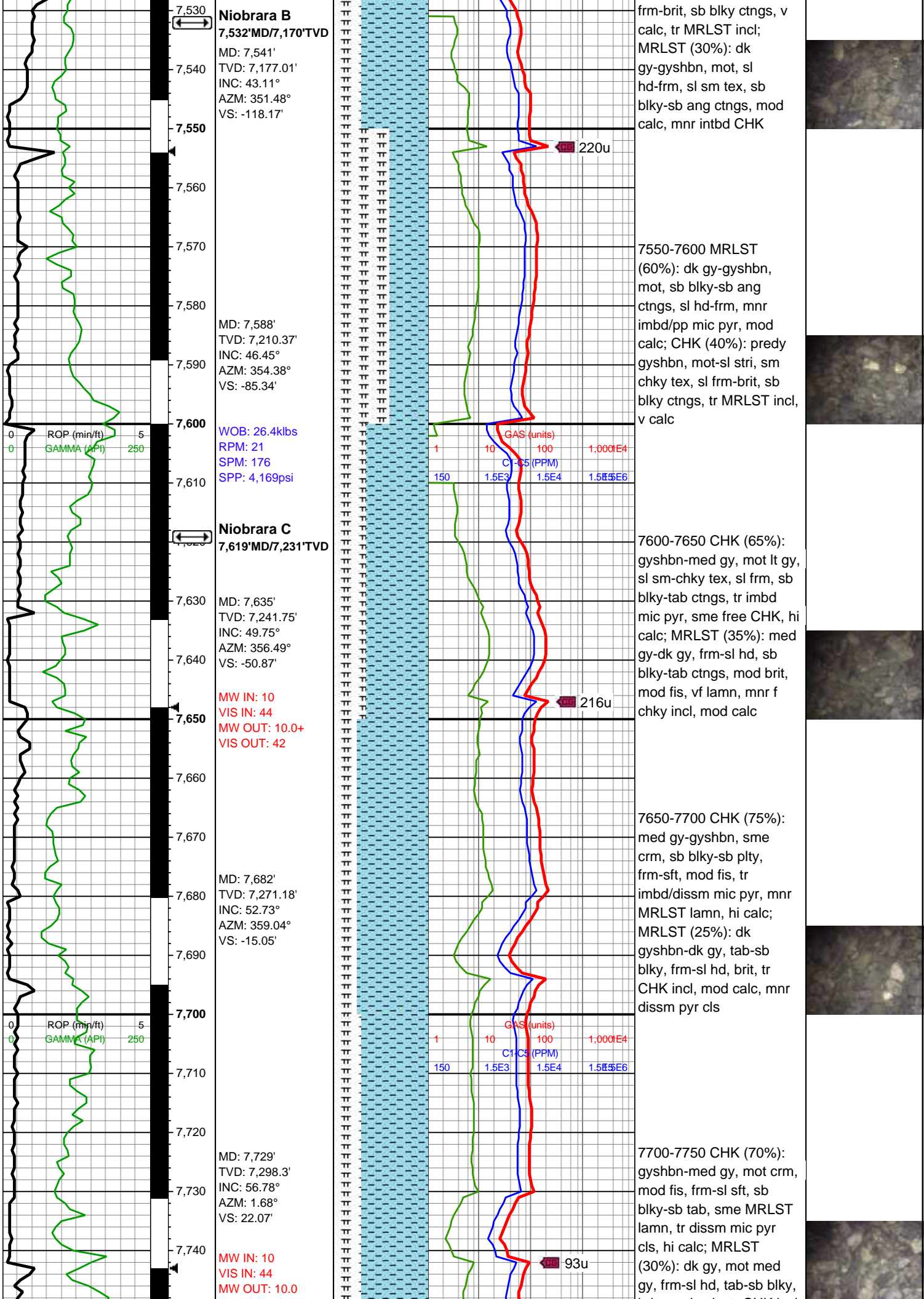
7150-7200 SH (100%):
dk gy-med gy, mot
gyshbn, sl slty -sm tex,
blky-sb plty, frm-v frm, brit
ip, sme micmica, mntr pp
mic pyr, non calc

7200-7250 SH (95%): dk
gy-med gy, mot gyshbn,
sl slty -sm tex, blky-sb
plty, frm-v frm, brit ip, sme
micmica, mntr pp mic pyr,
non calc; SLTST (5%):
med gy-dk gy, slty-sl
abrsv tex, frm, blky-sb tab
ctngs, non-sl calc

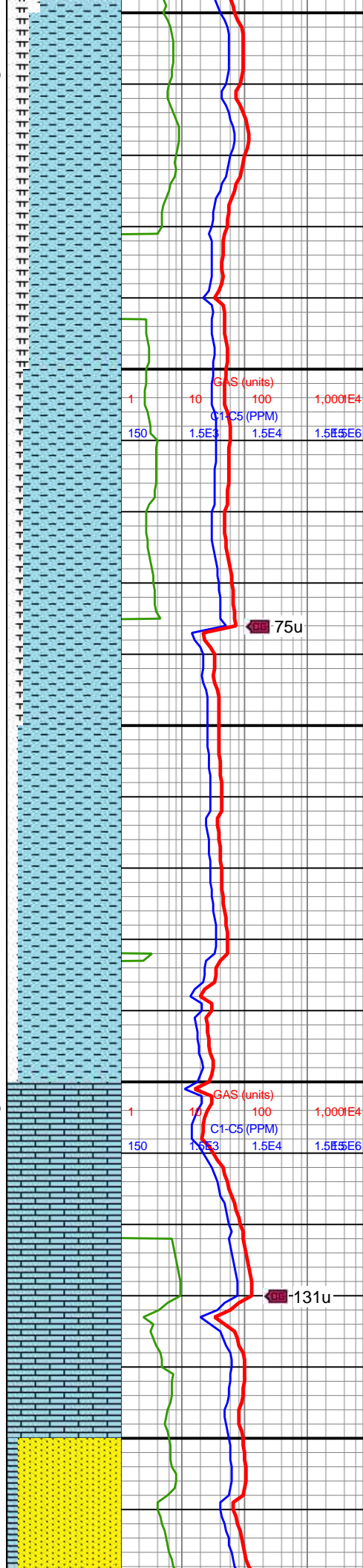
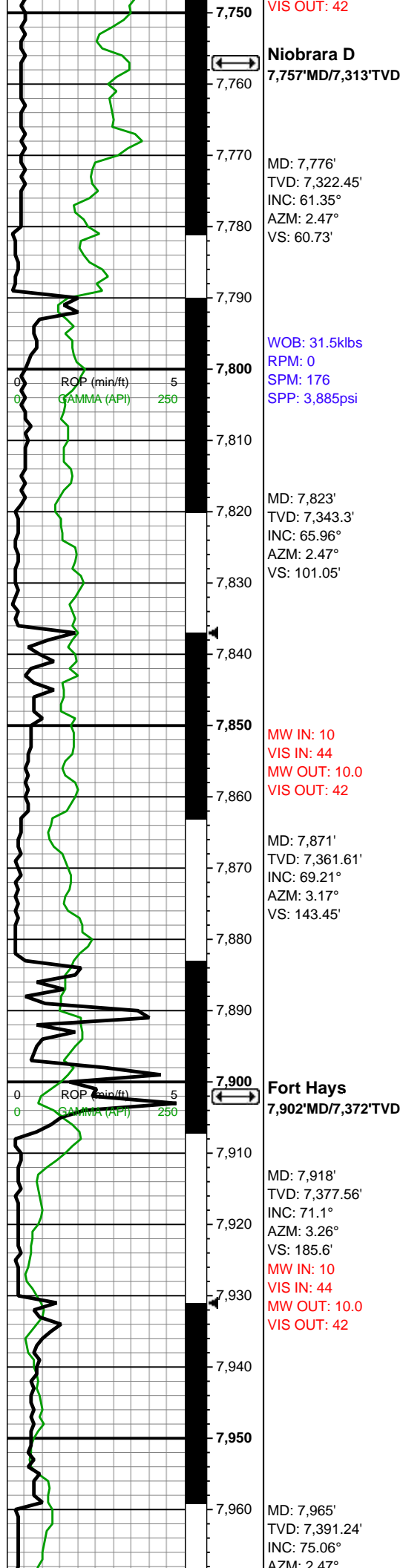
7250-7300 SH (100%):
dk gy-med gy, mot
gyshbn, sl slty -sm tex,
blky-sb plty, frm-v frm, brit
ip, sme micmica, mntr pp
mic pyr, non calc







brit, mod calc, tr CHK incl



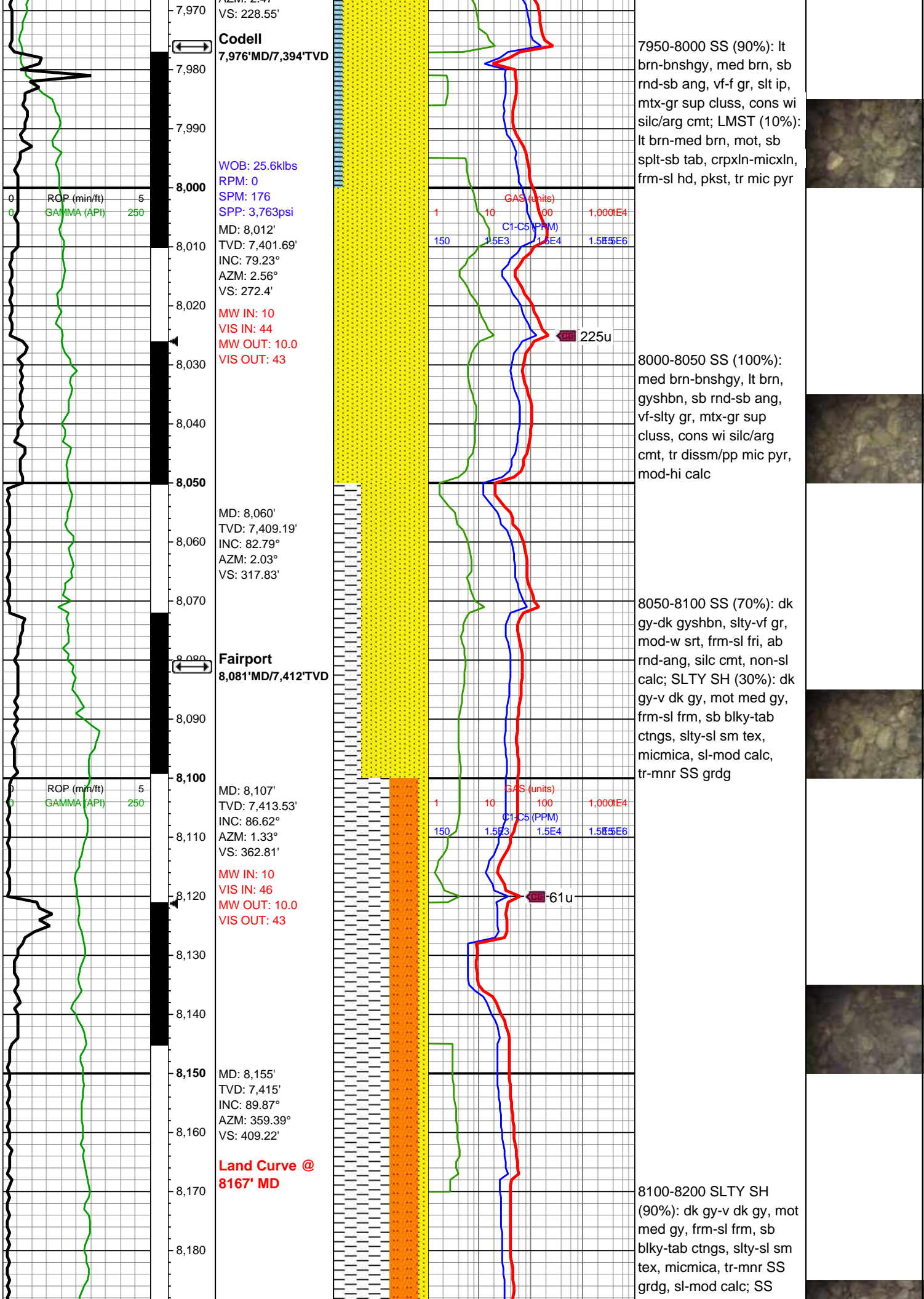
7750-7800 CHK (80%):
gyshbn, mot crm-wht,
med gy, mod fis, sb
tab-sb plty, frm-sl frm, hi
calc, sme MRLST lamn,
tr mic pyr; MRLST (20%):
dk gyshbn-dk gy, mod
brit, frm-sl hd, sl slty-sm
tex, tr CHK incl, mod calc

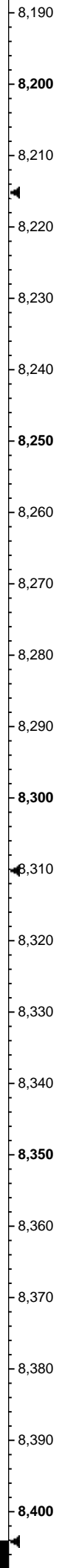
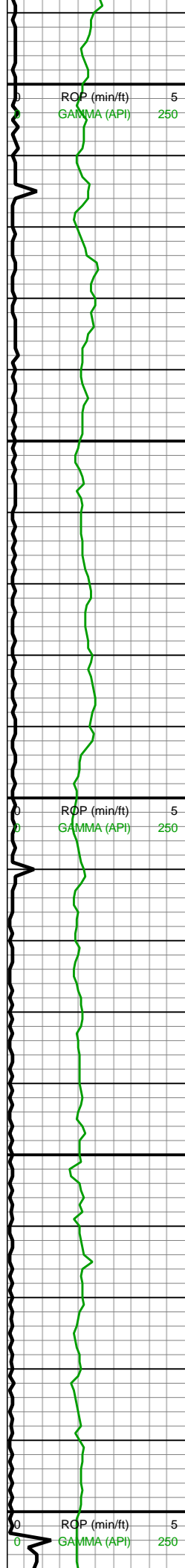
7800-7850 CHK (85%):
gyshbn-crm, mot wht,
med gy, frm-sl frm, mod
fis, sb tab-sb plty, sme
MRLST lamn, tr pp mic
pyr, hi calc; MRLST
(15%): dk gyshbn-dk gy,
frm-sl hd, sl slty-sm tex,
mod brit, tr CHK incl,
mod calc

7850-7900 CHK (85%):
gyshbn-crm, mot wht,
frm-sl frm, sb tab-sb blkly,
sme MRLST lamn, hi
calc, tr pp/imbd mic pyr
cls; MRLST (15%): dk
gy-med gy, sl slty-sm tex,
frm-sl hd, mod brit, tr
CHK incl. mod calc

7900-7950 LS (100%):
 gyshbn-crm, mot wht, sb
 tab-sb blk, pkst, vf
 xln-micxln, frm-sl frm, tr
 pp/imbd mic pyr cls, hi
 calc







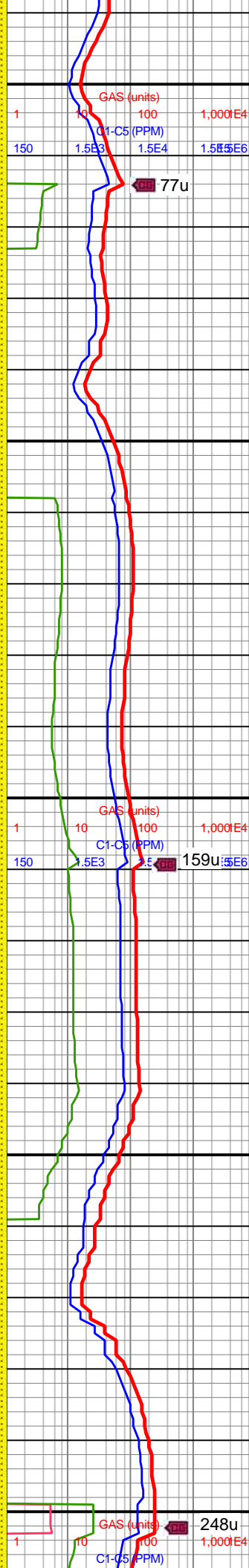
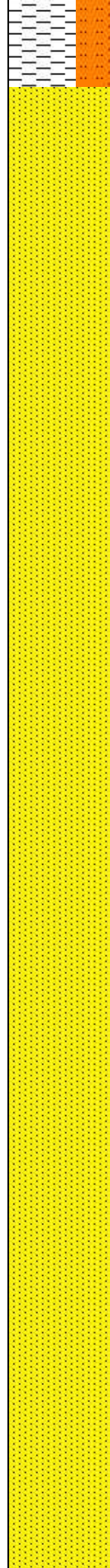
WOB: 24.1klbs
RPM: 22
SPM: 178
SPP: 4,277psi

MW IN: 10.0+
VIS IN: 45
MW OUT: 10.0
VIS OUT: 43

MD: 8,250'
TVD: 7,414.45'
INC: 90.79°
AZM: 359.83°
VS: 501.42'

MD: 8,344'
TVD: 7,412.64'
INC: 91.41°
AZM: 359.13°
VS: 592.7'

WOB: 34.5klbs
RPM: 70
SPM: 176
SPP: 4,493psi

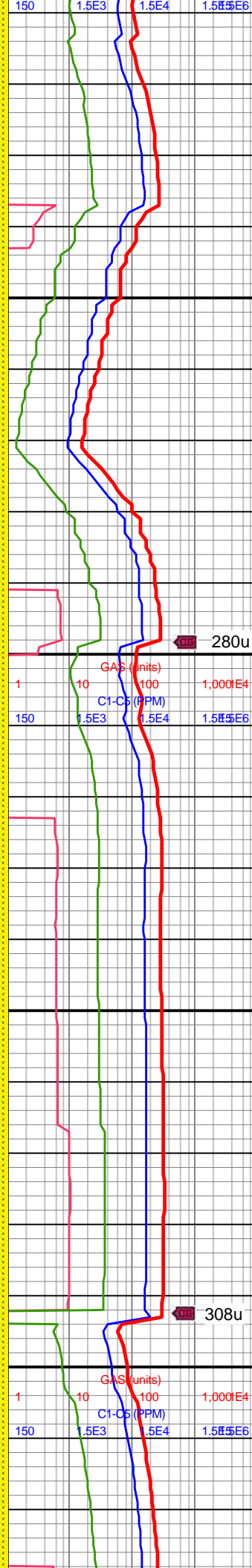
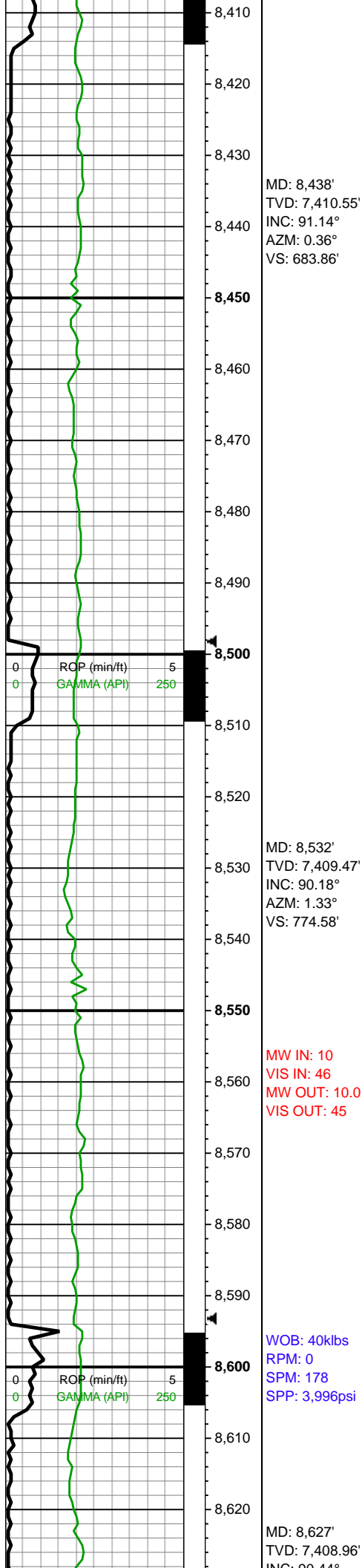


(10%): dk gy-dk gyshbn,
silty-vf gr, frm-sl fri, ab
rnd-ang, mod-w srt, silc
cmt, non-sl calc

8200-8300 SS (100%):
med brn-bnshgy, lt brn,
gyshbn, sb rnd-sb ang,
vf-silty gr, mtx-gr sup
cluss, cons wi silc/arg
cmt, tr dissm/pp mic pyr,
mod-hi calc; tr SH

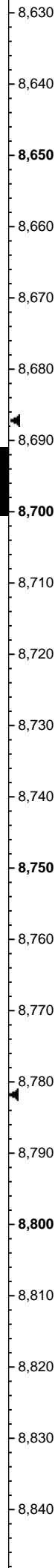
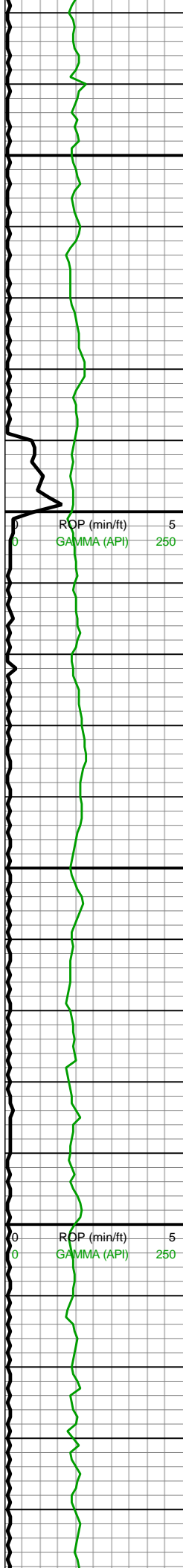
8300-8400 SS (100%):
med brn-bnshgy, lt brn,
gyshbn, sb rnd-sb ang,
vf-silty gr, mtx-gr sup
cluss, cons wi silc/arg
cmt, tr dissm/pp mic pyr,
mod-hi calc





8400-8500 SS (100%):
med brn-bnshgy, lt brn,
gyshbn, sb rnd-sb ang,
vf-slty gr, mtx-gr sup
cluss, cons wi silc/arg
cmt, tr dissm/pp mic pyr,
mod-hi calc

8500-8600 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, sme red-brn,
frm-v frm, blk, pred
mod-w cons gr sup cls
cons wi silc cmt, non
calc, vf-f grnd, occ grdg to
slt, com micmica, tr imbd
pyr, scat sh frags



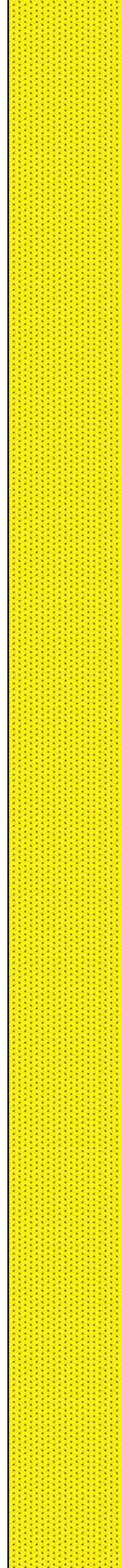
INC: 90.44°
AZM: 0.27°
VS: 866.29'

MD: 8,721'
TVD: 7,408.96'
INC: 89.56°
AZM: 0.54°
VS: 957.21'

MW IN: 10
VIS IN: 46
MW OUT: 10.0
VIS OUT: 44

WOB: 42.7klbs
RPM: 0
SPM: 176
SPP: 3,901psi

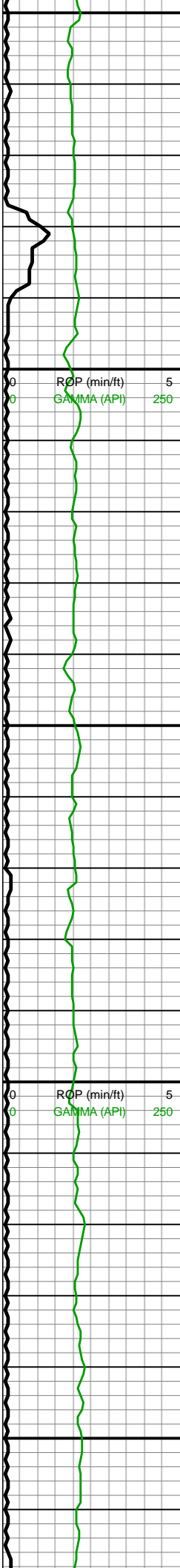
MD: 8,816'
TVD: 7,409.4'
INC: 89.91°
AZM: 0.27°
VS: 1,049.09'



8600-8700 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, sme red-brn,
frm-v frm, blk, pred
mod-w cons gr sup cls
cons wi silc cmt, non
calc, vf-f grnd, occ grdg to
slt, com micmica, tr imbd
pyr, occ sh frags

8700-8800 SST (100%):
gy-dk gy s&p sst clus,
sme tn sst clus, mod srtd
f sb rd-rd sd grs, frm-hd
sl fri predy gr sup ss clus
cons wi silc cmt, occ mtm
sup ss clus cons wi arg
& sl silc cmt, predy non
calc

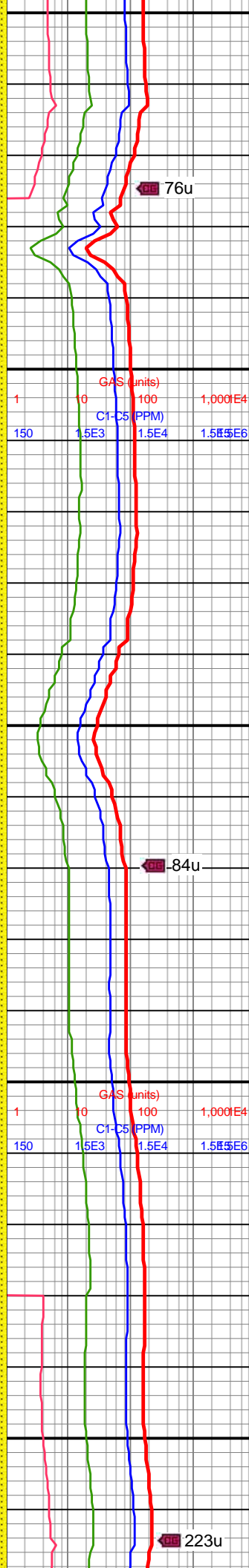




MW IN: 10
VIS IN: 46
MW OUT: 10.0
VIS OUT: 44

MD: 8,911'
TVD: 7,409.94'
INC: 89.43°
AZM: 1.5°
VS: 1,140.77'

WOB: 31.8klbs
RPM: 70
SPM: 176
SPP: 4,550psi
MD: 9,005'
TVD: 7,410.59'
INC: 89.78°
AZM: 0.89°
VS: 1,231.34'



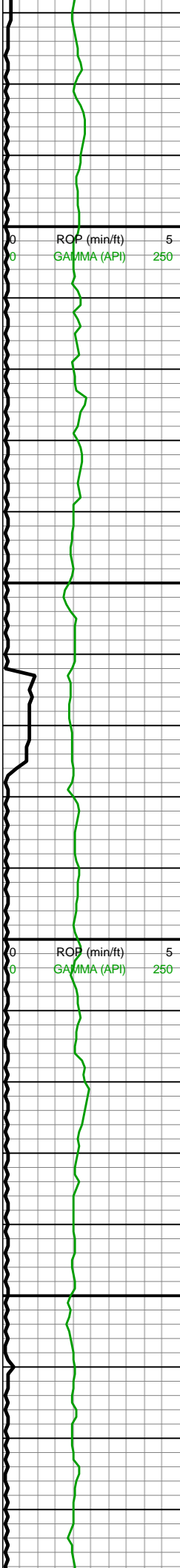
76u

84u

223u

8800-8900 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp mic pyr

8900-9000 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, rr pyr nod



9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260
9,270
9,280

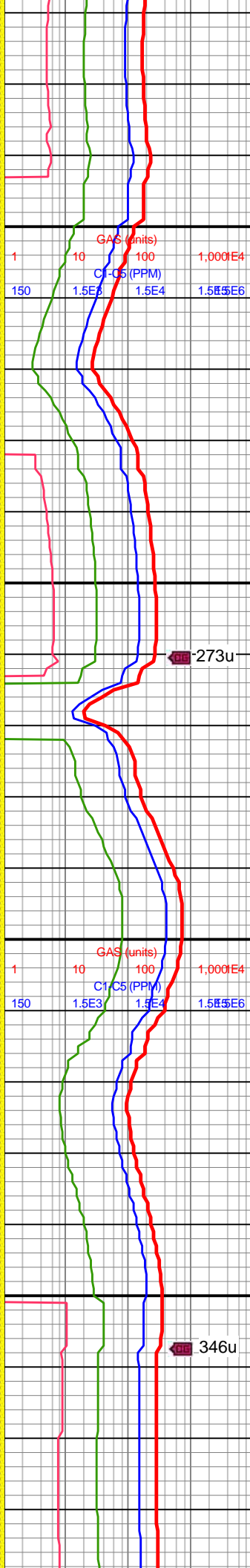
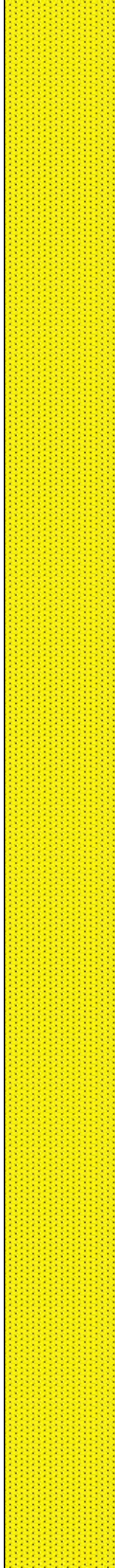
MD: 9,100'
TVD: 7,410.56'
INC: 90.26°
AZM: 1.24°
VS: 1,322.94'

MD: 9,194'
TVD: 7,410.49'
INC: 89.82°
AZM: 359.04°
VS: 1,413.96'

WOB: 31.3klbs
RPM: 70
SPM: 176
SPP: 4,535psi

MW IN: 10
VIS IN: 47
MW OUT: 10.0
VIS OUT: 47

MD: 9,289'
TVD: 7,410.28'

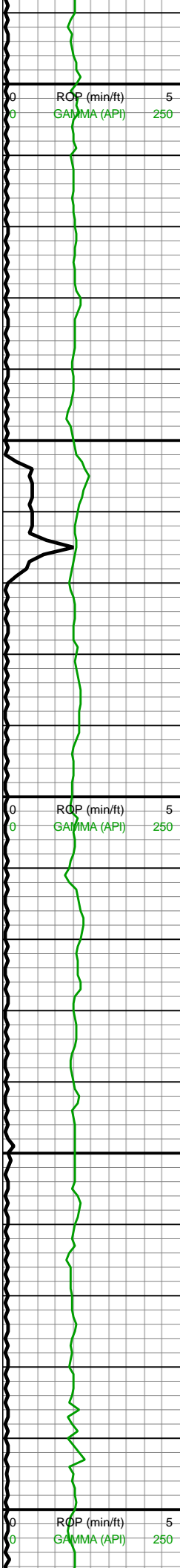


9000-9100 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, rr pyr nod

9100-9200 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, rr pyr nod

9200-9300 SST (100%):
dk gy-dk gy brn, gr-mtx
sup clus, occ lt gy-gy mtx,
shy ss, pred dk gy wi f sb
phs and chem ind on cut





INC: 90.44°
AZM: 359.31°
VS: 1,506.34'

9,300

9,310

9,320

9,330

9,340

9,350

9,360

9,370

9,380

9,390

9,400

9,410

9,420

9,430

9,440

9,450

9,460

9,470

9,480

9,490

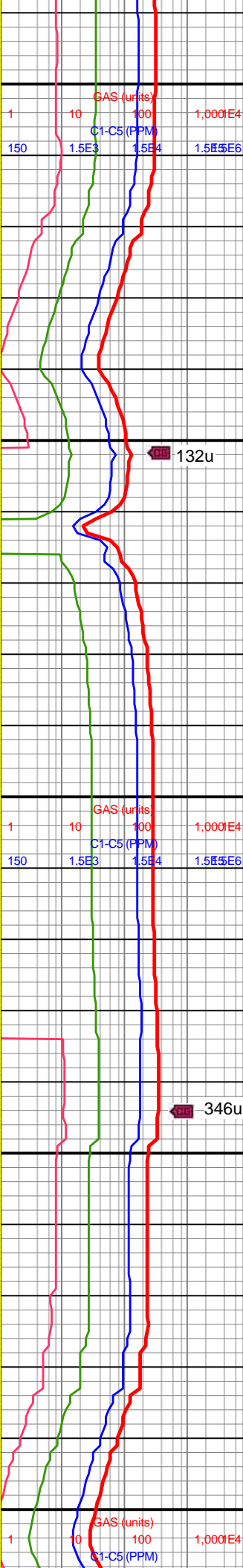
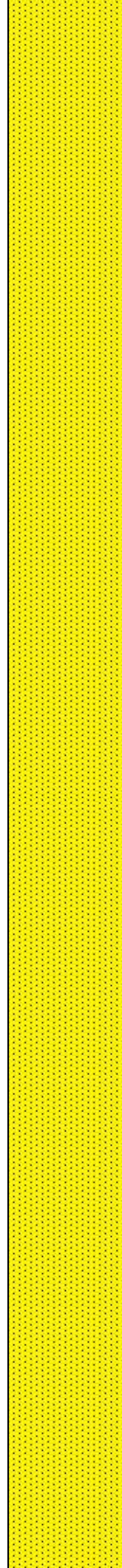
9,500

MD: 9,383'
TVD: 7,410.74'
INC: 88.99°
AZM: 0.8°
VS: 1,597.4'

WOB: 33.1klbs
RPM: 69
SPM: 177
SPP: 4,620psi

MW IN: 10
VIS IN: 46
MW OUT: 10.1
VIS OUT: 46

MD: 9,478'
TVD: 7,411.58'
INC: 90°
AZM: 2.03°
VS: 1,688.84'

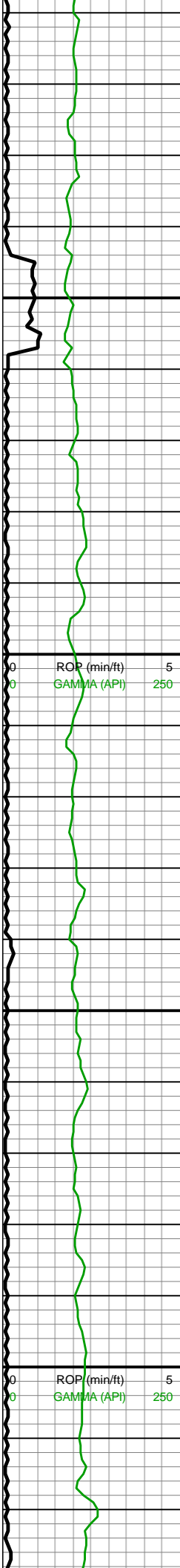


rd qtz sd gr incl, p srted,
vf-f, pred sb rd-rd, sl fri,
grn sup clus, silc & arg
cmt, uncons ip, non calc

9300-9400 SST (100%):
dk gy-dk gy brn, gr-mtx
sup clus, occ lt gy-gy mtx,
shy ss, pred dk gy wi f sb
rd qtz sd gr incl, p srted,
vf-f, pred sb rd-rd, sl fri,
grn sup clus, silc & arg
cmt, uncons ip, non calc

9400-9500 SST (100%):
dk gy-dk gy brn, gr-mtx
sup clus, occ lt gy-gy mtx,
shy ss, pred dk gy wi f sb
rd qtz sd gr incl, p srted,
vf-f, pred sb rd-rd, sl fri,
grn sup clus, silc & arg
cmt, uncons ip, non calc





9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
9,660
9,670
9,680
9,690
9,700
9,710
9,720

MD: 9,571'
TVD: 7,412.61'
INC: 88.73°
AZM: 1.59°
VS: 1,778.17'

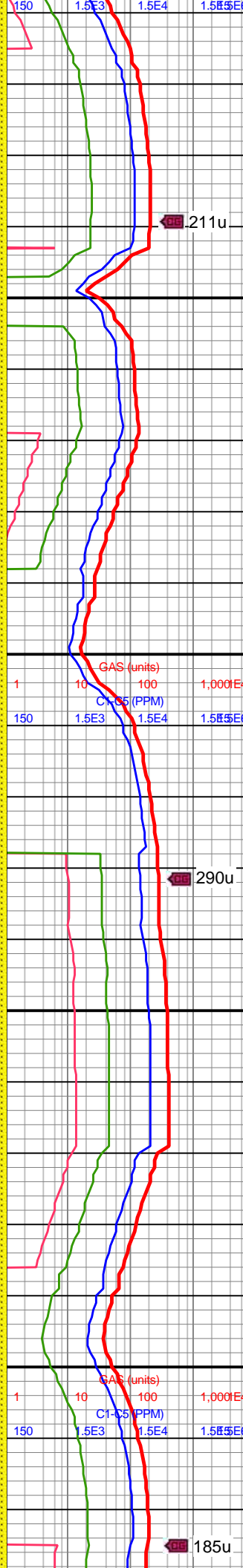
WOB: 31.7klbs
RPM: 69
SPM: 176
SPP: 4,601psi

MW IN: 10
VIS IN: 47
MW OUT: 10.0
VIS OUT: 47

MD: 9,666'
TVD: 7,414.32'
INC: 89.21°
AZM: 1.06°
VS: 1,869.64'

MINDEPTH

06/20/2018



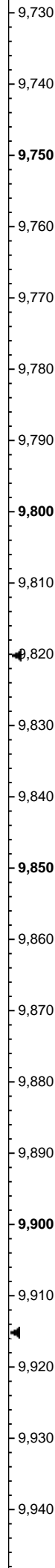
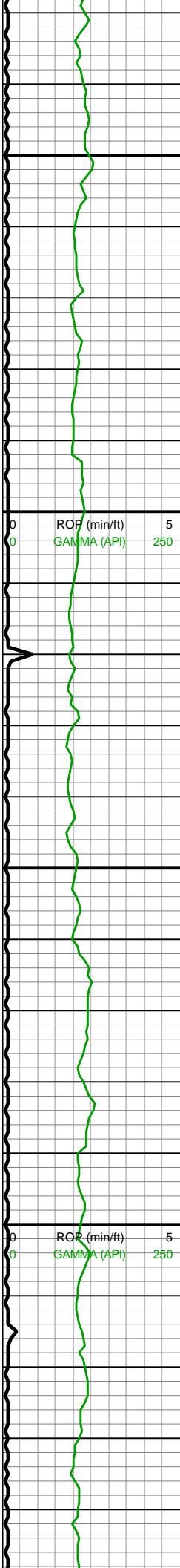
211u

290u

185u

9500-9600 SST (100%):
predy gyshbn, gy-lt gy,
occ dk gy, mod srtd, vf-f
sb ang-sb rd sd grs, sb
frm-frm, lt gy mtx sup arg
ss clus-com frm-hd sl fri,
silc cmt, gy-dk gy gr sup
ss clus, l-no calc

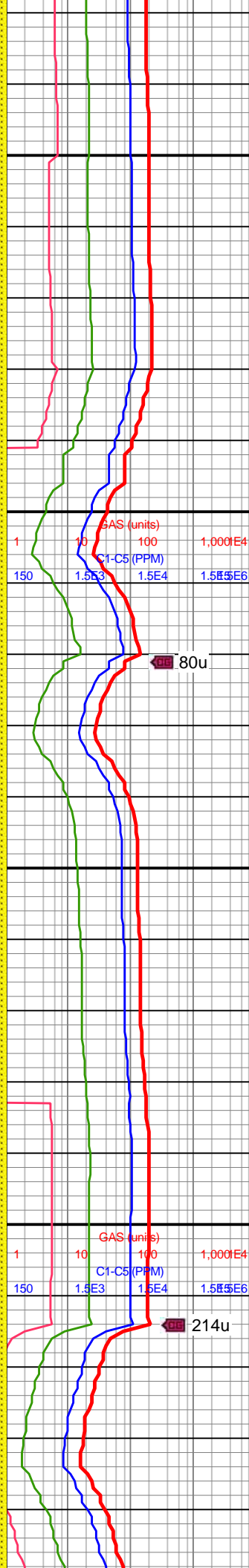
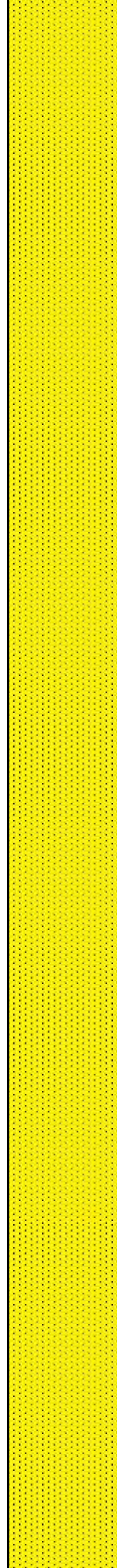
9600-9700 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, rr pyr nod



MD: 9,760'
TVD: 7,415.18'
INC: 89.74°
AZM: 0.54°
VS: 1,960.39'

MD: 9,855'
TVD: 7,415.18'
INC: 90.26°
AZM: 0.1°
VS: 2,052.31'

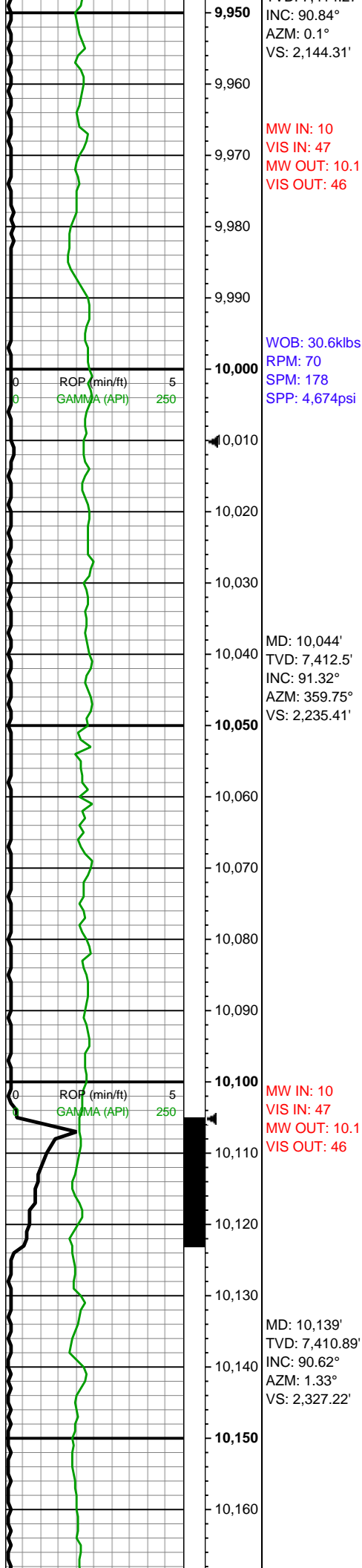
MD: 9,950'
TVD: 7,414.27'



9700-9800 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, tr pyr nod

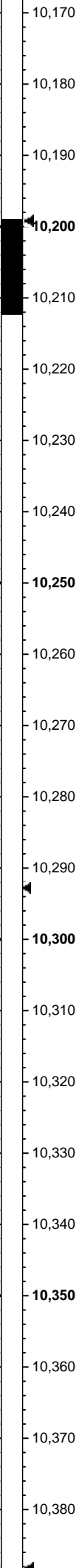
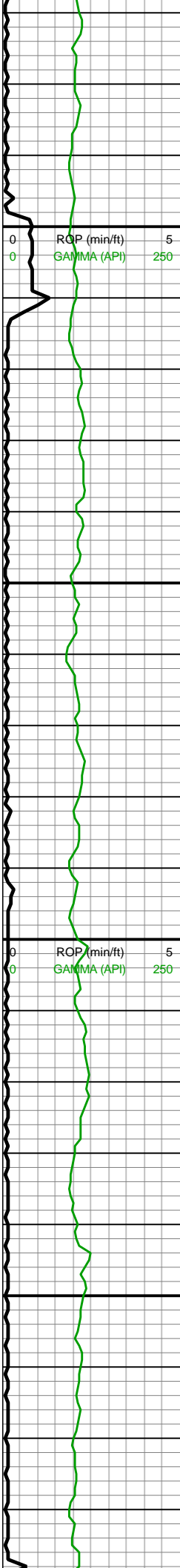
9800-9900 SST (100%):
gyshbn-lt gy, dk gy ip,
p-mod srtd, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp mic pyr





9900-10000 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, sme red-brn,
frm-v frm, blk, mod-w
cons, gr sup cls, silc cmt,
non calc, vf-f grnd, occ
grdg to slt, com micmica,
tr imbd pyr, occ sh frags

10000-10100 SST
(100%): predy gyshbn,
gy-lt gy, occ dk gy, mod
srted, vf-f, sb ang-sb rd, sb
frm-frm, mtx sup arg clus,
frm-hd sl fri, silc cmt, l-no
calc

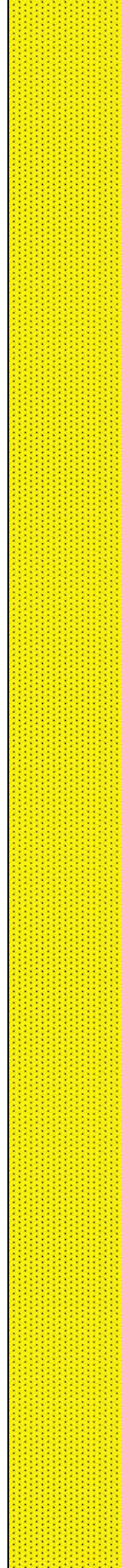


WOB: 47.5klbs
RPM: 0
SPM: 176
SPP: 4,135psi

MD: 10,233'
TVD: 7,411.03'
INC: 89.21°
AZM: 0.8°
VS: 2,417.85'

MD: 10,327'
TVD: 7,411.89'
INC: 89.74°
AZM: 0.1°
VS: 2,508.75'

MW IN: 10
VIS IN: 48
MW OUT: 10.1
VIS OUT: 46

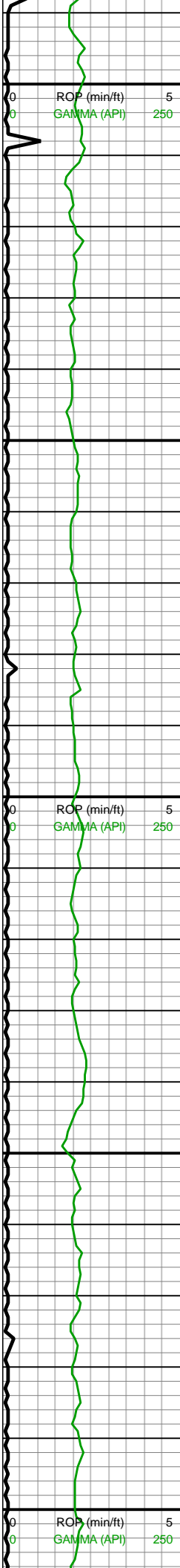


10100-10200 SST
(100%): predy gyshbn,
gy-lt gy, occ dk gy, mod
srted, vf-f, sb ang-sb rd, sb
frm-frm, mtx sup arg clus,
frm-hd sl fri, silc cmt, l-no
calc

10200-10300 SST
(100%): gyshbn-lt gy, dk
gy ip, p-mod srted, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, tr pyr nod

10300-10400 SST
(100%): gyshbn-lt gy, dk
gy ip, p-mod srted, vf-f, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt, tr
pp pyr, tr pyr nod





10,390
10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570
10,580
10,590
10,600

WOB: 35.1klbs
RPM: 69
SPM: 177
SPP: 4,812psi

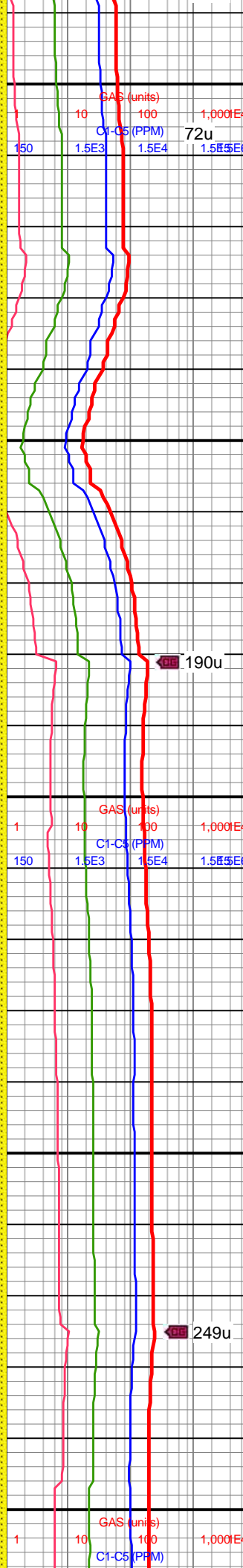
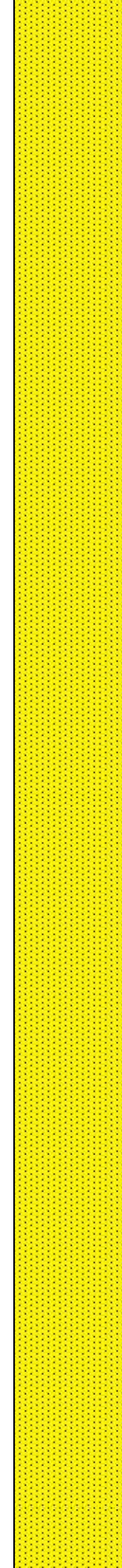
MD: 10,422'
TVD: 7,412.07'
INC: 90.04°
AZM: 359.92°
VS: 2,600.8'

MD: 10,516'
TVD: 7,411.6'
INC: 90.53°
AZM: 0.1°
VS: 2,691.87'

MW IN: 10.0+
VIS IN: 46
MW OUT: 10.1
VIS OUT: 44

WOB: 33.2klbs
RPM: 70
SPM: 174
SPP: 4,661psi

MD: 10,610'
TVD: 7,410.3'

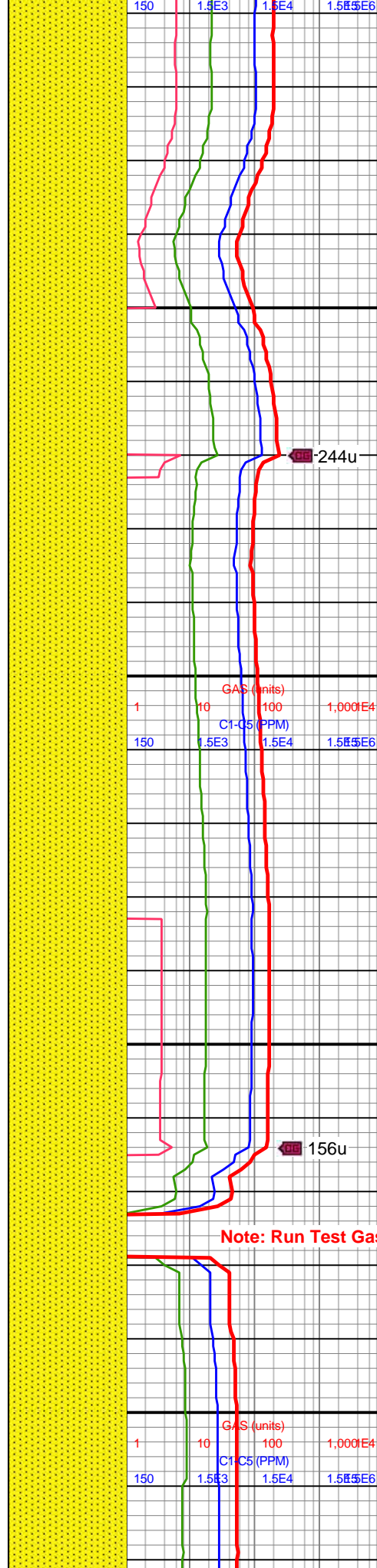
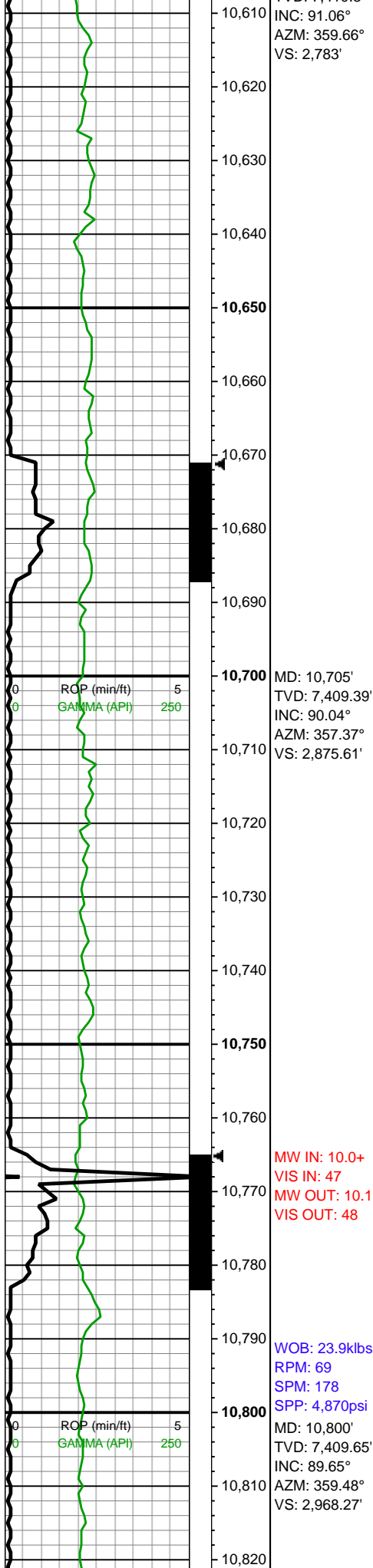


gy ip, p-mod srted, vi-l, sb
ang-sb rd, predy frm lt gy
mtx sup clus, arg cmt,
com pp pyr, tr pyr nod

10400-10500 SST
(100%): predy gyshbn,
gy-lt gy, occ dk gy, mod
srted, vf-f sb ang-sb rd sd
grs, sb frm-frm, lt gy mtx
sup arg ss clus-com
frm-hd sl fri, silc cmt,
gy-dk gy gr sup ss clus,
l-no calc

10500-10600 SST
(100%): predy gyshbn,
mot lt gy, occ dk gy, sb
frm-frm, mod srted, vf-f gr,
sb ang-sb rd grs, grn sup
arg ss clus, silc cmt,
med gy-dk gy gr sup ss
clus, l-no calc

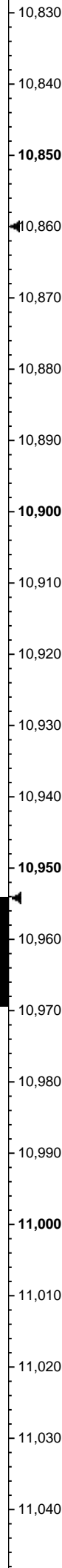
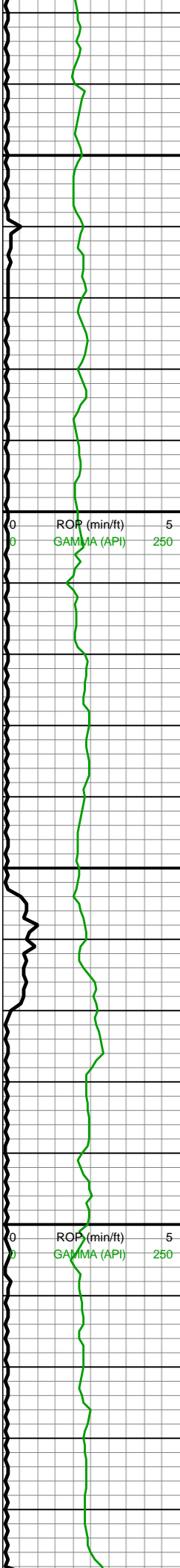




10600-10700 SST
(100%): gyshbn-med brn,
mot dk gy, sb ang-sb rd
grs, sb frm-frm, mod srted,
vf-f gr, grn sup arg ss
clus, silc cmt, med gy-dk
gy gr sup ss clus, l-no
calc, tr pp mic pyr

10700-10800 SS (100%):
gyshbn-med brn, mot
med gy, lt brn ip, vf-f gr,
mod srted, sb ang-sb rd,
grn sup clus, silc cmt, tr
pp mic pyr cls, non-sl
calc

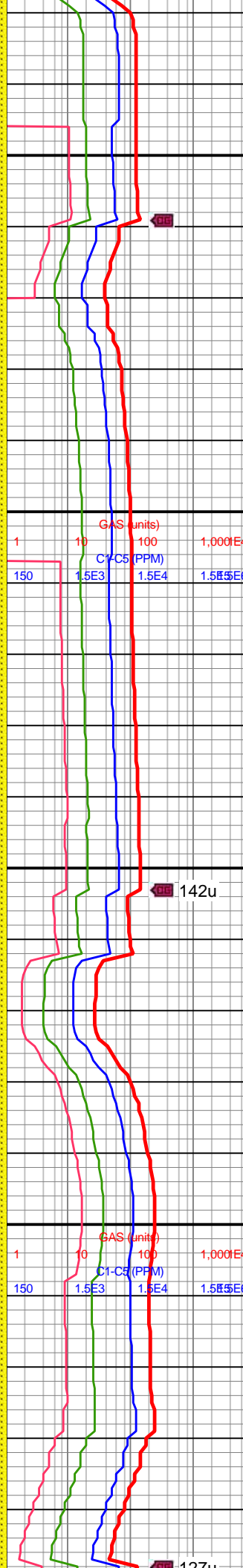




MD: 10,894'
TVD: 7,410.01'
INC: 89.91°
AZM: 359.39°
VS: 3,059.58'

MW IN: 10.0+
VIS IN: 47
MW OUT: 10.1
VIS OUT: 46

MD: 10,988'
TVD: 7,410.47'
INC: 89.52°
AZM: 1.06°
VS: 3,150.57'
WOB: 33.2klbs
RPM: 70
SPM: 176
SPP: 4,947psi



10800-10900 SS (100%):
gyshbn-med brn, mot lt
gy, sb ang-sb rd grs,
mod srtd, sb frm-frm, vf-f
gr, grn sup clus, silc cmt,
sme med gy-dk gy gr sup
ss clus, tr pp mic pyr,
non-sl calc

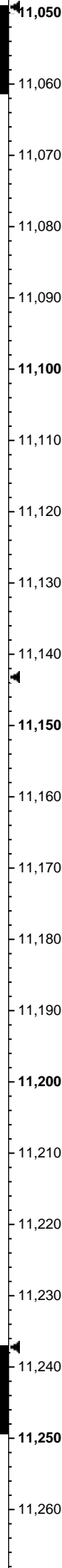
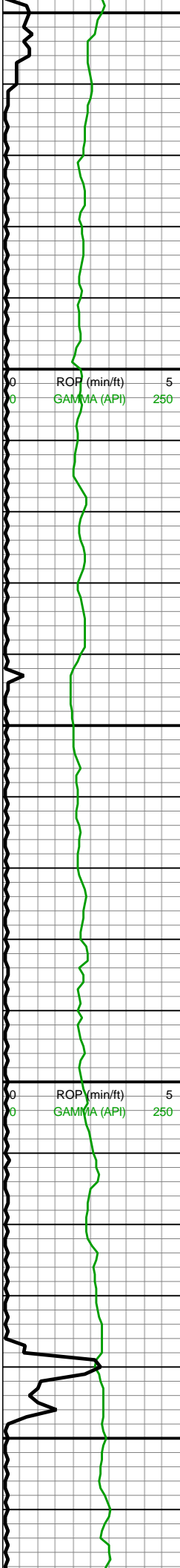


142u

10900-11000 SS (100%):
gyshbn-med brn, mot lt
brn, sb frm-frm, vf-f gr, sb
ang-sb rd grs, mod srtd,
grn sup clus, silc cmt, tr
pp mic pyr cls, non-sl
calc, sme med gy-dk gy
gr sup ss clus



127u



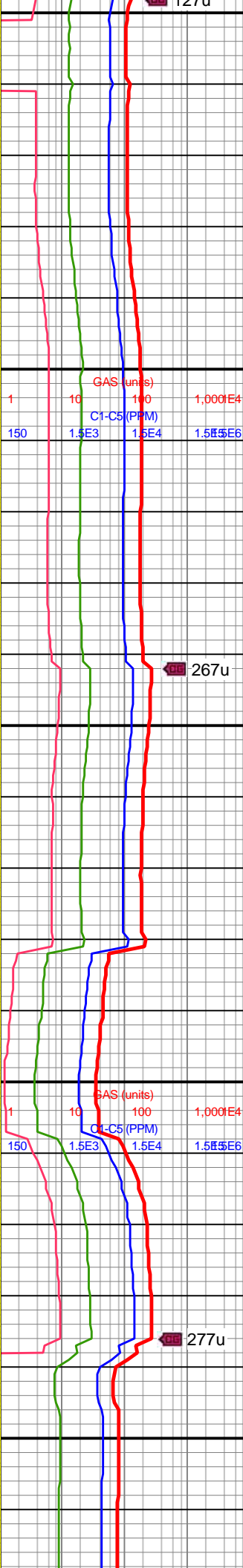
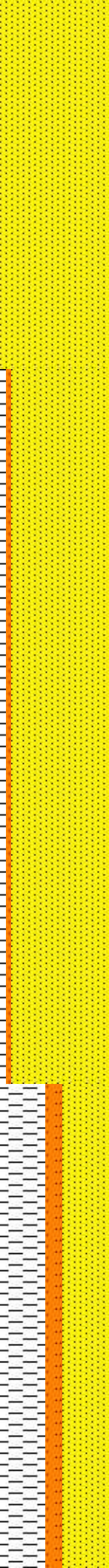
MW IN: 10.1
VIS IN: 47
MW OUT: 10.2
VIS OUT: 46

MD: 11,083'
TVD: 7,411.63'
INC: 89.08°
AZM: 1.77°
VS: 3,242'

MD: 11,177'
TVD: 7,412.86'
INC: 89.43°
AZM: 1.15°
VS: 3,332.46'

WOB: 32kbs
RPM: 70
SPM: 178
SPP: 5,107psi

MD: 11,272'

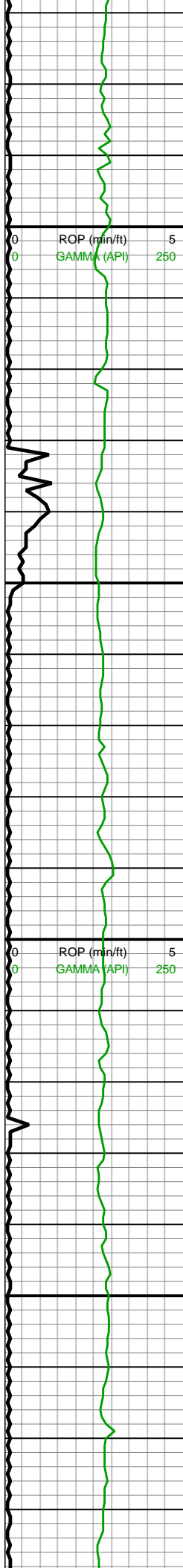


11000-11100 SS (100%):
gyshbn-lt brn, mot med
brn, vf-f gr, sb ang-sb rd
grs, sb frm-frm, mod srted,
grn sup clus, silc cmt,
sme med gy-dk gy gr sup
ss clus, tr pp mic pyr cls,
non-sl calc

11100-11200 SS (85%):
dk gyshbn-med brn, mot
dk gy, slty-vf gr, mod-w
srt, frm-sl fri, sb rnd-ang,
silc cmt, mnr SLTY SH
lamn, non-sl calc; SLTY
SH (15%): dk gy-v dk gy,
mot med gy, sb blkly-tab
ctngs, slty-sl sm tex,
frm-sl frm, micmica,
sl-mod calc

11200-11300 SLTY SH





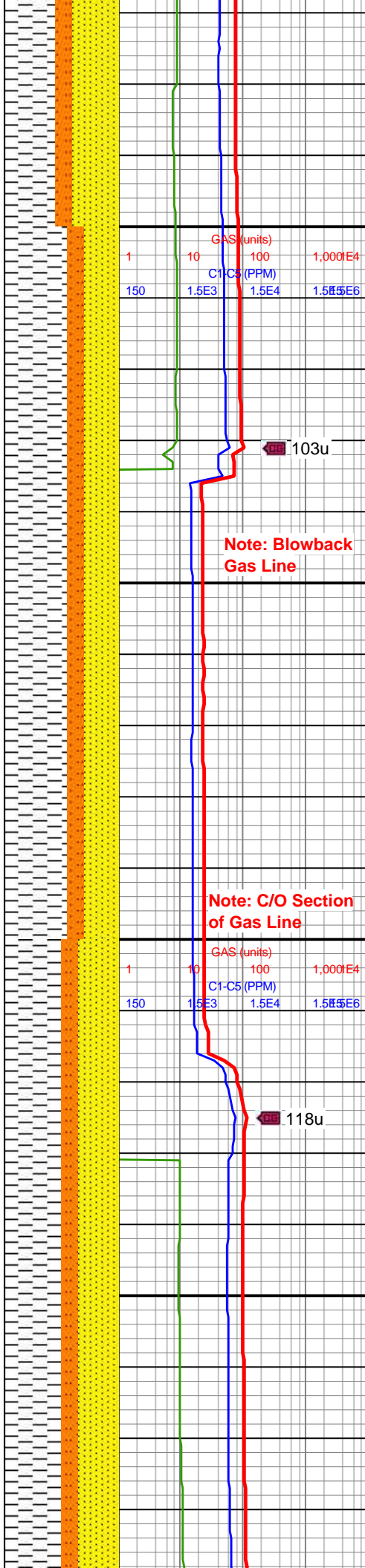
TVD: 7,413.22'
INC: 90.13°
AZM: 0.8°
VS: 3,424.09'

MW IN: 10.1
VIS IN: 47
MW OUT: 10.2
VIS OUT: 45

MD: 11,366'
TVD: 7,412.11'
INC: 91.23°
AZM: 2.73°
VS: 3,514.41'

WOB: 34.2klbs
RPM: 69
SPM: 177
SPP: 5,069psi

MD: 11,460'
TVD: 7,409.91'
INC: 91.45°
AZM: 2.91°
VS: 3,604.21'

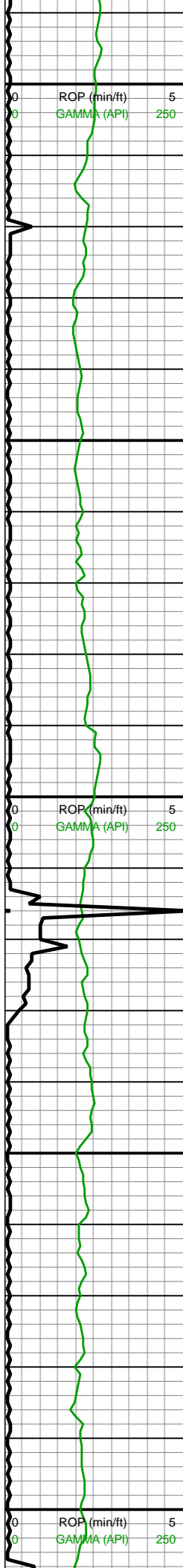


(60%): dk gy-v dk gy, mot med gy, slty-sl sm tex, sb blkly-tab ctngs, frm-sl frm, micmica, sl-mod calc, tr pp mic pyr; SS (40%): dk gyshbn-med brn, mot dk gy, slty-vf gr, sb rnd-ang, mod-w srt, frm-sl fri, silc cmt, non-sl calc, mnr SLTY SH lamn

11300-11400 SLTY SH (70%): dk gy-v dk gy, mot med gy, slty-sl sm tex, frm-sl frm, sb blkly-tab ctngs, micmica, tr pp mic pyr, sl-mod calc; SS (30%): dk gyshbn-med brn, mot dk gy, slty-vf gr, frm-sl fri, sb rnd-ang, mod-w srt, silc cmt, mnr SLTY SH lamn, non-sl calc

11400-11500 SLTY SH (60%): dk gy-v dk gy, mot med gy, frm-sl frm, slty-sl sm tex, sb blkly-tab ctngs, tr pp mic pyr, micmica, sl-mod calc; SS (40%): dk gyshbn-med brn, mot dk gy, frm-sl fri, sb





11,490
11,500
11,510
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
11,600
11,610
11,620
11,630
11,640
11,650
11,660
11,670
11,680
11,690
11,700

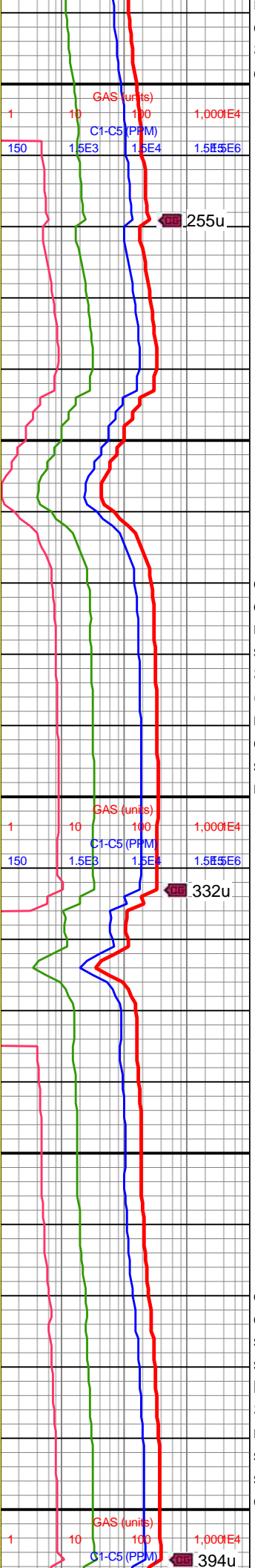
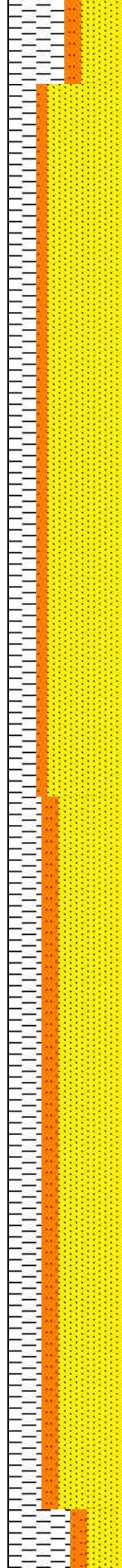
MW IN: 10.1+
VIS IN: 45
MW OUT: 10.1
VIS OUT: 44

MD: 11,554'
TVD: 7,407.2'
INC: 91.85°
AZM: 3.08°
VS: 3,693.92'

WOB: 35.2klbs
RPM: 69
SPM: 178
SPP: 5,173psi

MW IN: 10.1
VIS IN: 45
MW OUT: 10.1+
VIS OUT: 44

MD: 11,648'
TVD: 7,405.22'
INC: 90.57°
AZM: 3°
VS: 3,783.62'

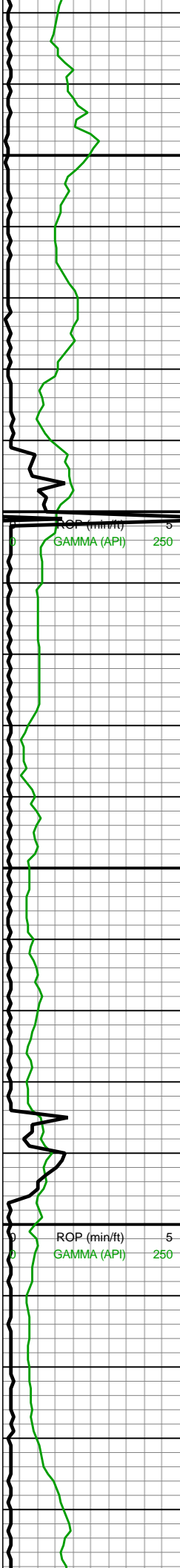


rnd-ang, slty-vf gr, silc
cmt, mod-w srt, mnr
SLTY SH lamn, non-sl
calc

11500-11600 SS (65%):
dk gyshbn-med brn, mot
dk gy, frm-sl fri, slty-vf gr,
mod-w srt, sb rnd-ang,
silc cmt, non-sl calc, mnr
SLTY SH lamn; SLTY SH
(35%): dk gy-v dk gy, mot
med gy, sb blkylab
ctngs, frm-sl frm, slty-sl
sm tex, sl-mod calc,
micmica

11600-11700 SS (55%):
dk gyshbn-med brn, mot
dk gy, slty-vf gr, frm-sl fri,
sb rnd-ang, mod-w srt,
silc cmt, mnr SLTY SH
lamn, non-sl calc; SLTY
SH (45%): dk gy-v dk gy,
mot med gy, frm-sl frm,
sb blkylab ctngs, slty-sl
sm tex, micmica, sl-mod
calc





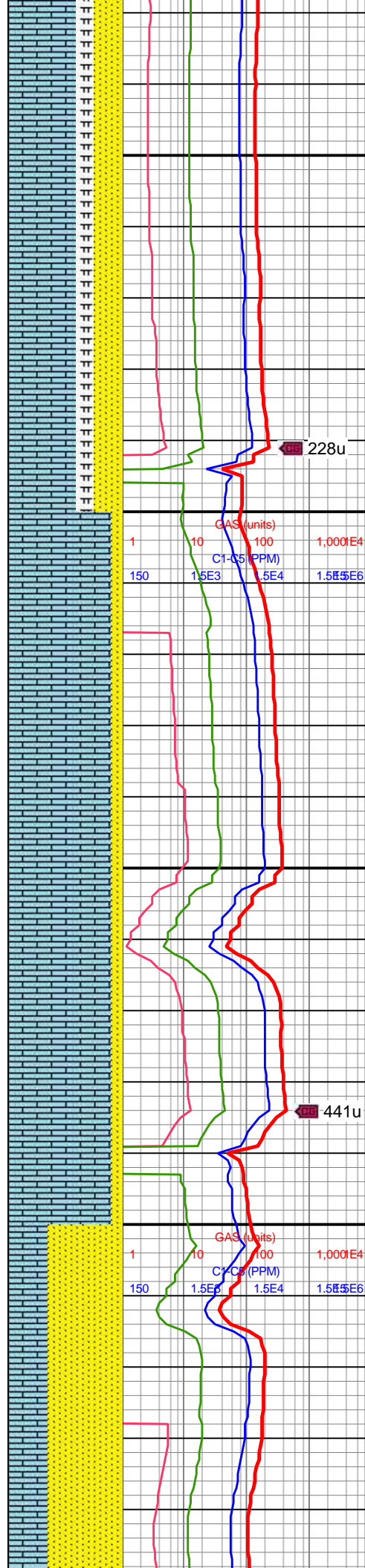
VD: 7,408.58'
INC: 88.77°
AZM: 2.65°
VS: 4,054.54'

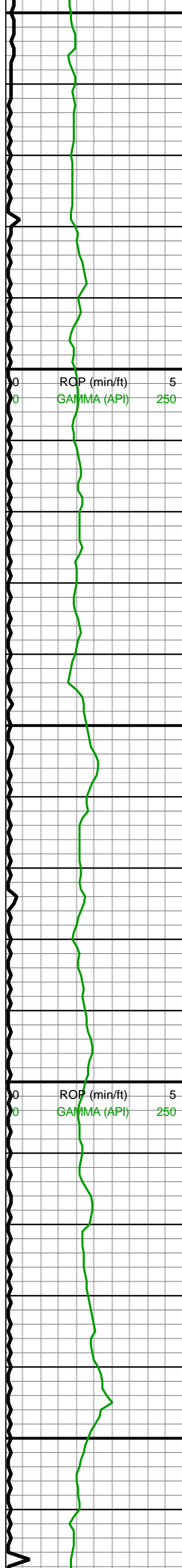
WOB: 60.6klbs
RPM: 0
SPM: 177
SPP: 4,405psi

MD: 12,025'
TVD: 7,410.92'
INC: 88.37°
AZM: 1.77°
VS: 4,144.63'

MW IN: 10.1+
VIS IN: 46
MW OUT: 10.2
VIS OUT: 44

MD: 12,119'
TVD: 7,412.41'
INC: 89.82°
AZM: 1.5°
VS: 4,235'





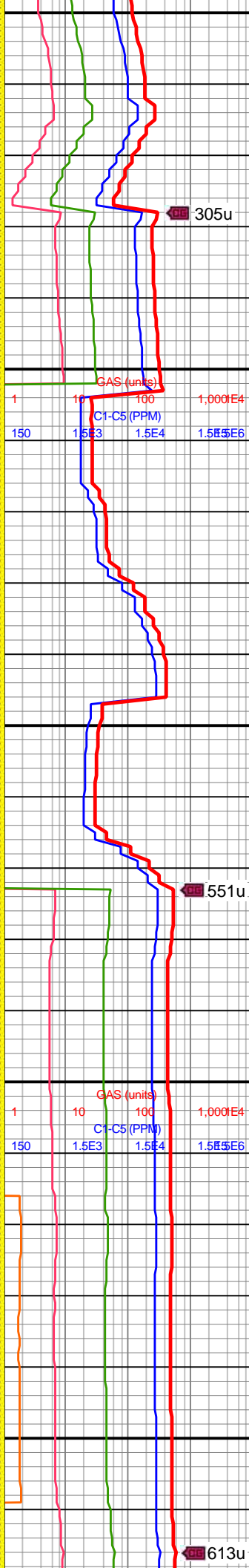
12,150
12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340
12,350
12,360

WOB: 31.5klbs
RPM: 70
SPM: 176
SPP: 5,068psi

MD: 12,213'
TVD: 7,412.34'
INC: 90.26°
AZM: 1.06°
VS: 4,325.54'

MW IN: 10.1
VIS IN: 45
MW OUT: 10.1+
VIS OUT: 43

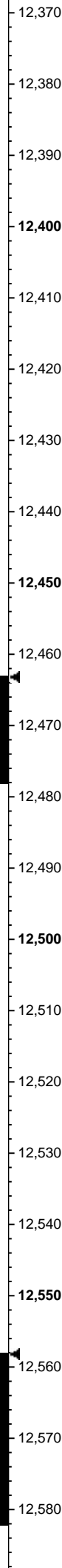
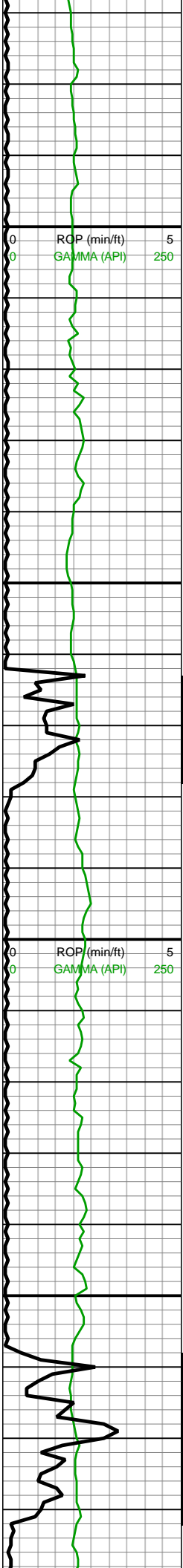
MD: 12,308'
TVD: 7,411.73'
INC: 90.48°
AZM: 1.15°
VS: 4,417.12'



12100-12200 SS (65%):
bnshgy-med brn, vf-f gr,
slt ip, sb rnd-sb ang,
mtx-gr sup clus, cons wi
silc/arg cmt, tr diss m pyr
cls; LMST (35%): lt
brn-med brn, mot, frm-sl
hd, sb splt-sb tab, pkst,
crpxln-micxln, tr pp mic
pyr

12200-12300 SS (90%):
bnshgy-med brn, mot lt
brn, vf-f gr, slt ip, sb
rnd-sb ang, mtx-gr sup
clus, silc/arg cmt, tr
diss m pyr cls, non-sl
calc; LMST (10%): med
brn, mot gyshbn, frm-sl
hd, sb splt-sb tab, pkst, tr
pp mic pyr, crpxln-micxln



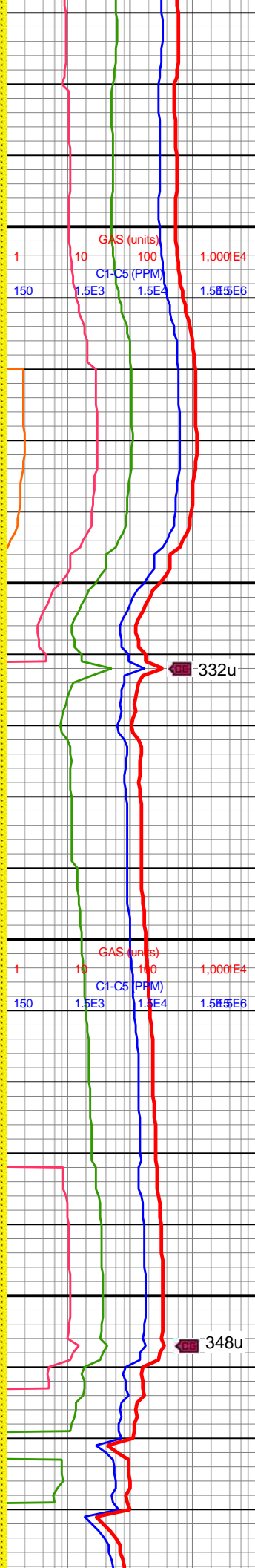
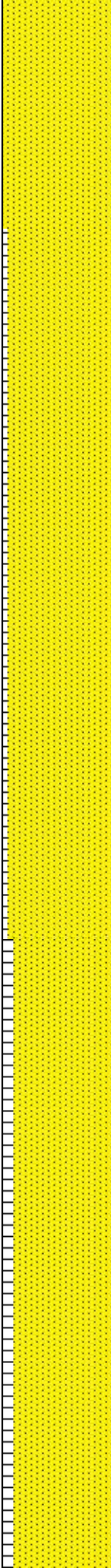


WOB: 32.8klbs
RPM: 69
SPM: 177
SPP: 5,250psi
MD: 12,403'
TVD: 7,410.39'
INC: 91.14°
AZM: 0.62°
VS: 4,508.79'

MW IN: 10
VIS IN: 45
MW OUT: 10.2
VIS OUT: 49

MD: 12,497'
TVD: 7,408.19'
INC: 91.54°
AZM: 2.12°
VS: 4,599.26'

MD: 12,592'
TVD: 7,406.18'
INC: 90.88°
AZM: 2.03°
VS: 4,599.26'

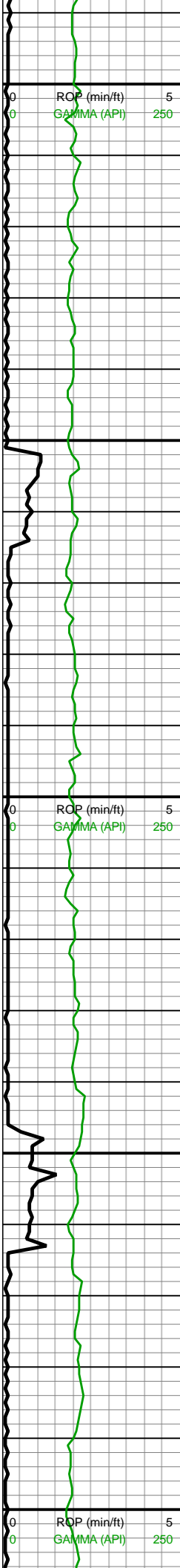


12300-12400 SST
(100%): gyshbn-med brn, mot lt gy, occ dk gy, vf-f gr, mod srted, sb frm-frm, sb ang-sb rd, mtx sup arg clus, silc cmt, arg ip, sl-non calc, tr diss pyr cls

12400-12500 SST (95%): gyshbn-med brn, mot lt gy, occ dk gy, vf-f gr, mod srted, sb frm-frm, sb ang-sb rd, mtx sup arg clus, silc cmt, arg ip, sl-non calc, tr pyr nod; SH (5%): dk gy-blk, v frm-hrd, blk, sme plty, calc, micmica, tr pp pyr, rgh tex

12500-12600 SST (90%): gyshbn-med brn, mot lt gy, occ dk gy, vf-f gr, mod srted, sb frm-frm, sb ang-sb rd, mtx sup arg clus, silc cmt, arg ip, sl-non calc, tr pyr nod; SH





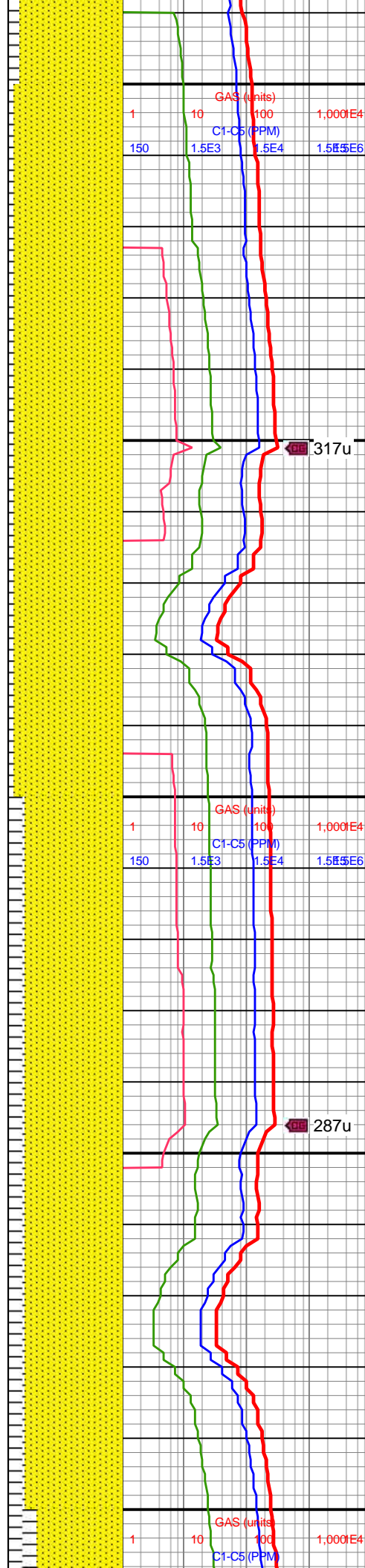
WOB: 27klbs
RPM: 70
SPM: 180
SPP: 5,044psi

MW IN: 10.1
VIS IN: 47
MW OUT: 10.1
VIS OUT: 45

MD: 12,686'
TVD: 7,405.46'
INC: 90°
AZM: 0.01°
VS: 4,781.03'

MD: 12,781'
TVD: 7,406.7'
INC: 88.51°
AZM: 0.18°
VS: 4,873.04'

WOB: 18.6klbs
RPM: 70
SPM: 178
SPP: 5,234psi

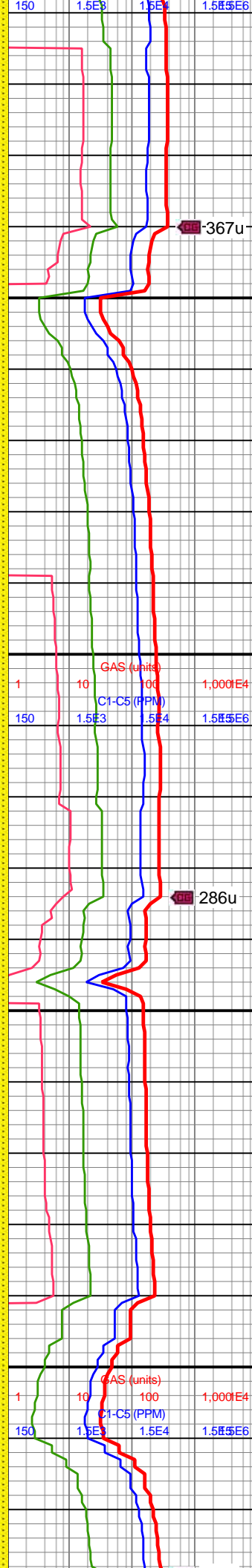
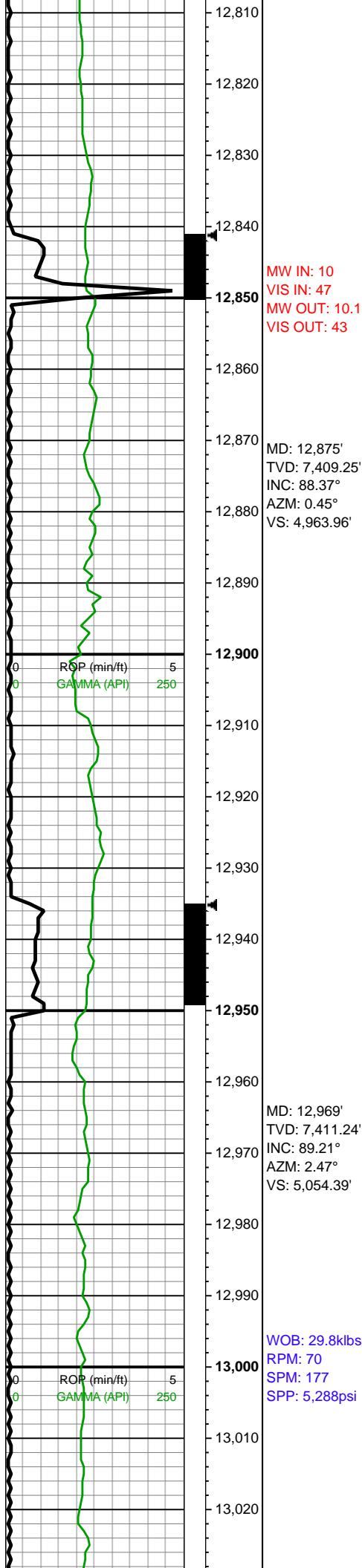


(10%): dk gy-blk, v
frm-hrd, blk, sme plty,
calc, micmica, tr pp pyr,
rgh tex

12600-12700 SST (95%):
gyshbn-med brn, mot lt
gy, occ dk gy, vf-f gr, mod
srted, sb frm-frm, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr pyr nod;
SLTY SH (5%): dk gy-v dk
gy, mot med gy, sb
blk-tab, slty-sl sm tex,
frm-sl frm, micmica,
sl-mod calc

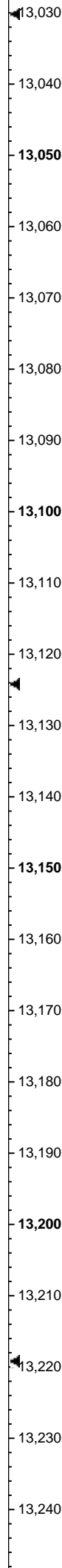
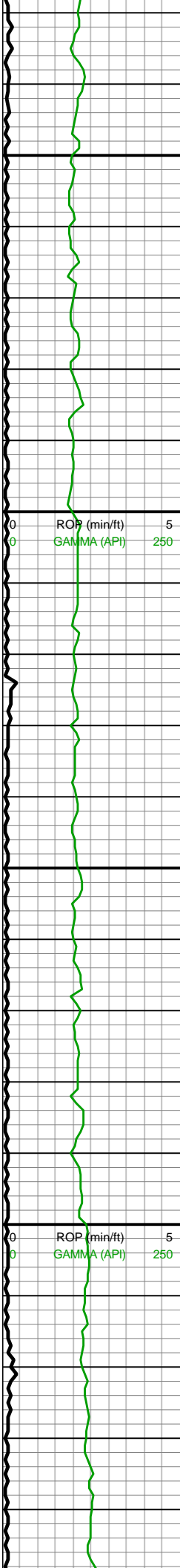
12700-12800 SST (85%):
gyshbn-med brn, mot lt
gy, occ dk gy, vf-f gr, mod
srted, sb frm-frm, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr pyr nod; SH
(15%): dk gy-blk, v
frm-hrd, blk, sme plty,
calc, micmica, tr pp pyr,
rgh tex





12700-12800 SST (75%):
gyshbn-med brn, mot lt
gy, occ dk gy, vf-f gr, mod
strtd, sb frm-frm, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr pyr nod; SH
(25%): dk gy-blk, v
frm-hrd, blk, sme plty,
calc, micmica, tr pp pyr,
rgh tex

12900-13000 SST (85%):
 gyshbn-med brn, mot lt
 gy, occ dk gy, vf-f gr, mod
 strtd, sb frm-frm, sb
 ang-sb rd, mtx sup arg
 clus, silc cmt, arg ip,
 sl-non calc, tr pyr nod; SH
 (15%): dk gy-blk, v
 frm-hrd, blk, sme plty,
 calc, micmica, tr pp pyr,
 rgh tex

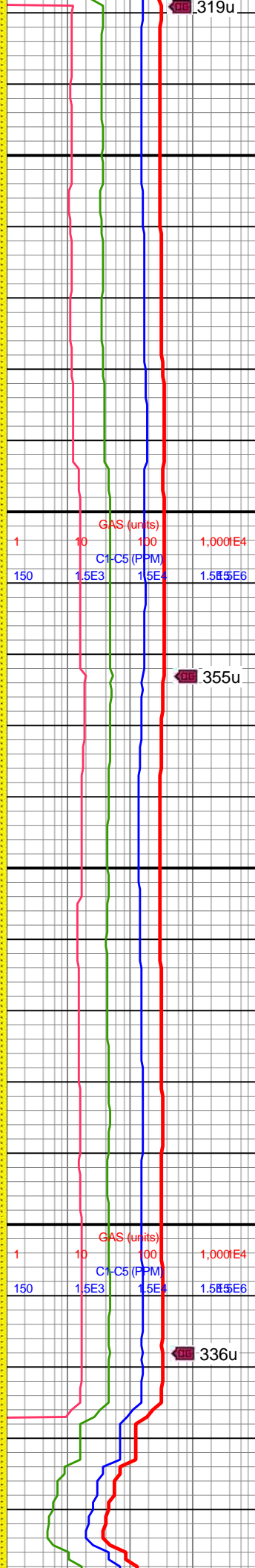
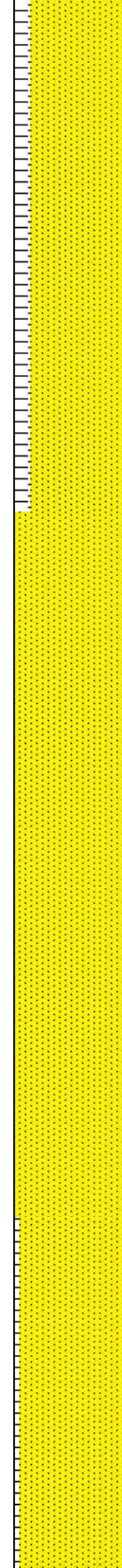


MD: 13,064'
TVD: 7,412.29'
INC: 89.52°
AZM: 2.12°
VS: 5,145.42'

MD: 13,158'
TVD: 7,412.47'
INC: 90.26°
AZM: 2.03°
VS: 5,235.61'

WOB: 31.3klbs
RPM: 70
SPM: 178
SPP: 5,334psi

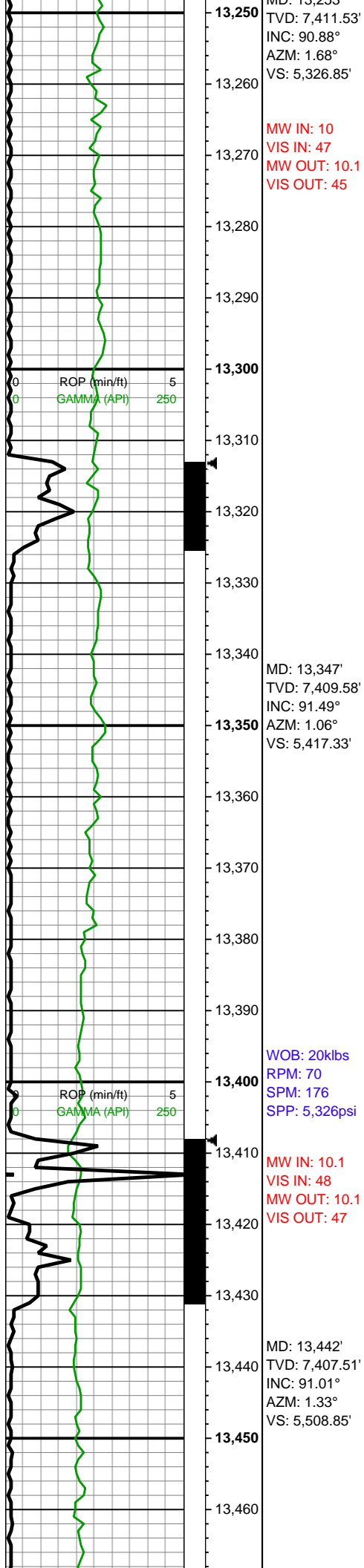
MD: 13,252'



13000-13100 SST (85%):
med brn, mot, slty-vf gr,
sb rd-sb ang, p srted SS
clus, frm-sl fri, mtx sup,
cons wi silc/arg cmt, non
calc; SH (15%): dk gy-blk,
v frm-hrd, blkly, sme plty,
calc, micmica, tr pp pyr,
rgh tex

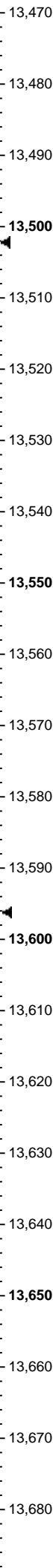
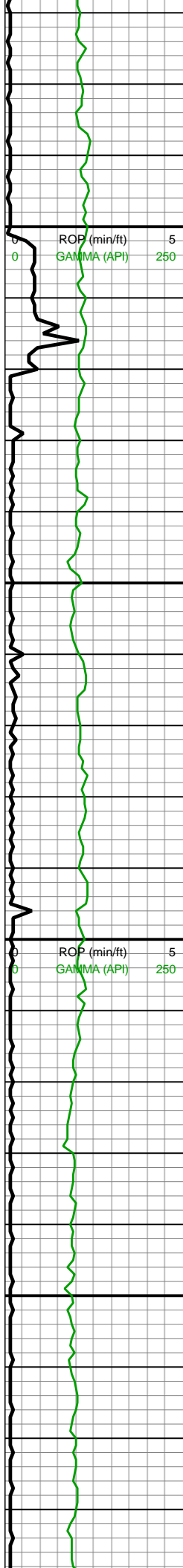
13100-13200 SST
(100%): gyshbn-med brn,
mot lt gy, occ dk gy, vf-f gr,
mod srted, sb frm-frn, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr dissd pyr
cls





13200-13300 SST (95%):
gyshbn-med brn, mot lt
gy, occ dk gy, vf-f gr, mod
srted, sb frm-frm, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr diss pyr
cls; SH (5%): dk gy-blk, v
frm-hrd, blk, sme plty,
calc, micmica, tr pp pyr,
rgh tex

13300-13400 SST (90%):
gyshbn-med brn, mot lt
gy, occ dk gy, vf-f gr, mod
srted, sb frm-frm, sb
ang-sb rd, mtx sup arg
clus, silc cmt, arg ip,
sl-non calc, tr diss pyr
cls; SH (10%): dk gy-blk,
v frm-hrd, blk, sme plty,
calc, micmica, tr pp pyr,
rgh tex



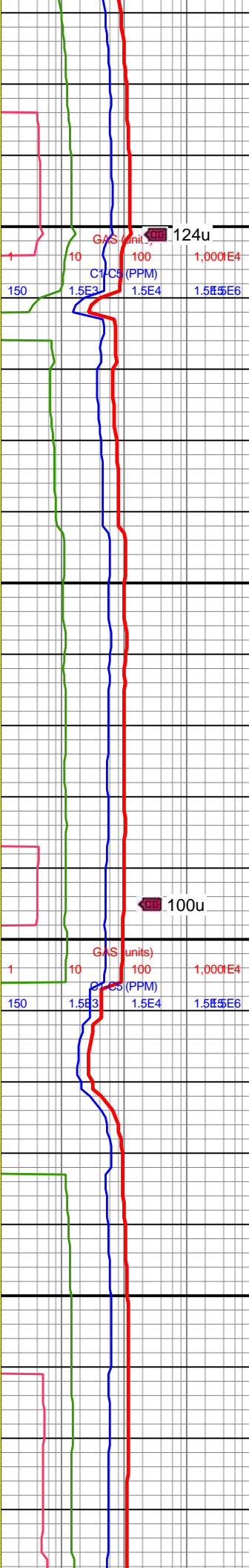
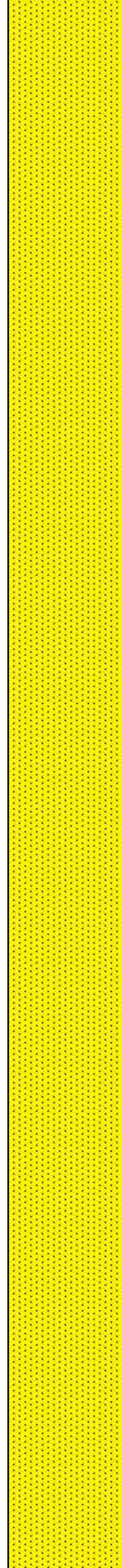
MW IN: 10
VIS IN: 47
MW OUT: 0.0
VIS OUT: 47

MD: 13,536'
TVD: 7,405.67'
INC: 91.23°
AZM: 3.52°
VS: 5,598.84'

WOB: 13.7klbs
RPM: 70
SPM: 176
SPP: 4,907psi

MD: 13,630'
TVD: 7,403.11'
INC: 91.89°
AZM: 2.82°
VS: 5,688.47'

MW IN: 10
VIS IN: 47
MW OUT: 10.1
VIS OUT: 46

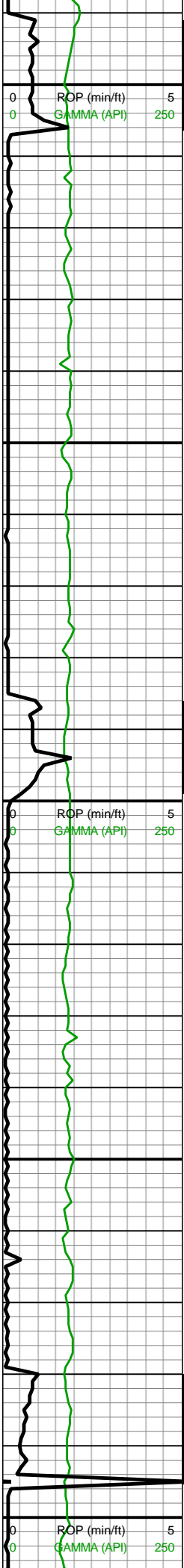


13400-13500 SST
(100%): predy dsky brn,
com lt gy, sme med-dk
gy, frm-hd, fri, sme brit,
blky-sb blky, sb rnd-sb
ang, vf-f, mod-w srt,
predy cls sup, mtx sup ip,
qtz mtx, silc-calc cmt,
scat pp pyr

13500-13600 SST
(100%): predy dk gy brn,
com lt gy, sme med-dk
gy, frm-hd, fri, sme brit,
blky-sb blky, sb rnd-sb
ang, vf-f, mod-w srt, predy
cls sup, mtx sup ip, qtz
mtx, silc-calc cmt, scat pp
pyr

13600-13700 SST
(100%): dk gy-dk gy brn
gr-mtx sup clus, occ lt
gy-gy mtx sup shy ss,
pred dk gy wi f sb rd qtz
sd gr incl, p srted vf-f sd
mod-w srt, mod-w srt, mod-w srt

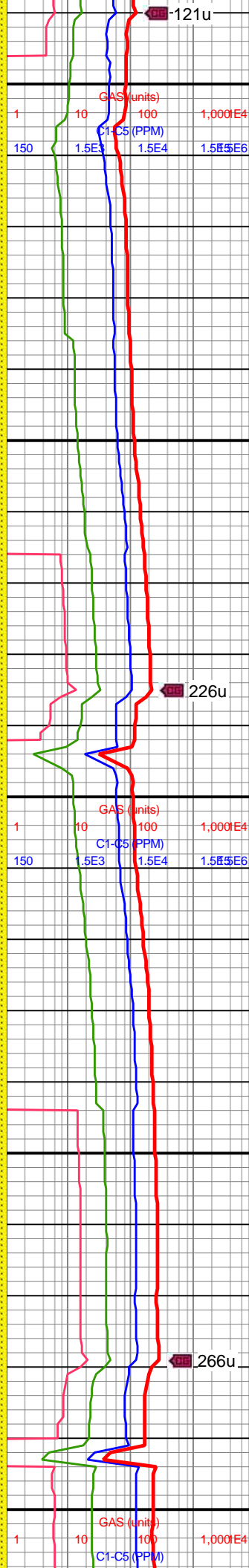




MD: 13,725'
TVD: 7,400.89'
INC: 90.79°
AZM: 3.44°
VS: 5,779.07'

WOB: 27.6klbs
RPM: 31
SPM: 176
SPP: 4,907psi

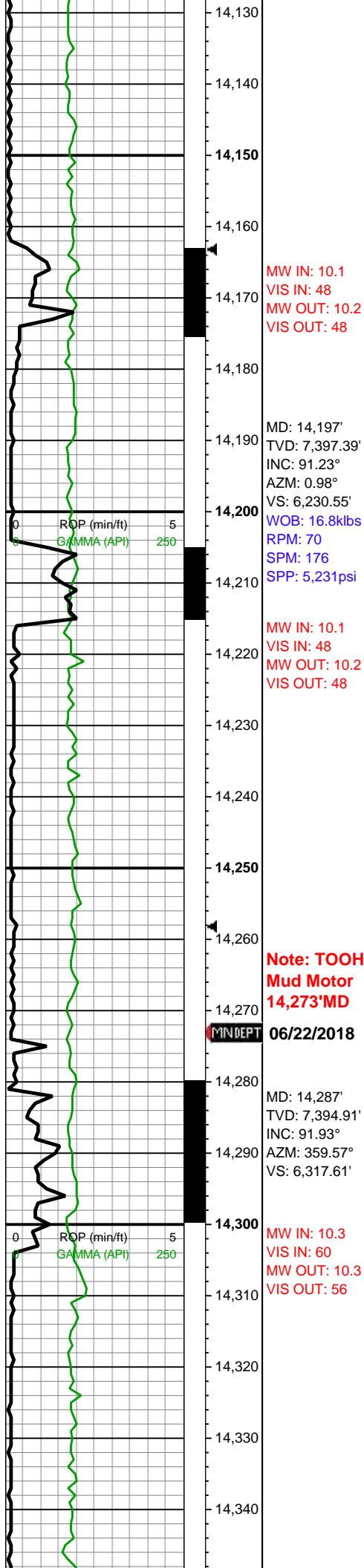
MD: 13,820'
TVD: 7,399.8'
INC: 90.53°
AZM: 3.96°
VS: 5,869.41'



grs, pred sb rd-rd sli fri gr
sup ss clus cons wi silc
& arg cmt, unconsl ip, non
calc

10700-10800 SST
(100%): pred med gy-dk
gy brn wi f sb rd qtz sd gr
incl, fri-sli fri gr sup shy
ss clus cons wi arg & silc
cmt, occ lt gy-gy mtx sup
shy ss cons wi arg cmt, p
srted vf-f sd grs, com
uncons sd, non calc

13800-13900 SST
(100%): med-lt gy, occ dk
gy, mod srted, vf-f sb
ang-sb rd sd grs, sb
frm-frm, lt gy mtx sup arg
ss clus-com frm-hd sl fri,
gy-dk gy gr sup ss clus
cons wi silc cmt, l-no calc



MW IN: 10.1
VIS IN: 48
MW OUT: 10.2
VIS OUT: 48

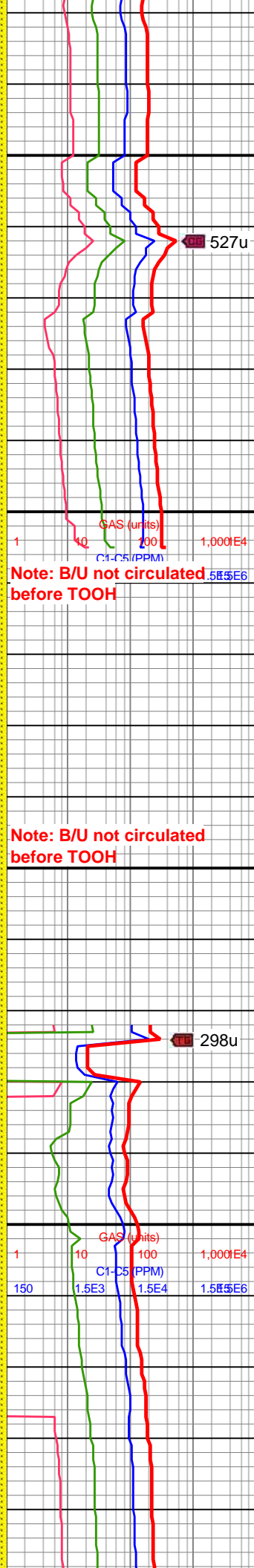
MD: 14,197'
TVD: 7,397.39'
INC: 91.23°
AZM: 0.98°
VS: 6,230.55'
WOB: 16.8klbs
RPM: 70
SPM: 176
SPP: 5,231psi

MW IN: 10.1
VIS IN: 48
MW OUT: 10.2
VIS OUT: 48

Note: TOOH for
Mud Motor @
14,273'MD
MIN DEPT 06/22/2018

MD: 14,287'
TVD: 7,394.91'
INC: 91.93°
AZM: 359.57°
VS: 6,317.61'

MW IN: 10.3
VIS IN: 60
MW OUT: 10.3
VIS OUT: 56



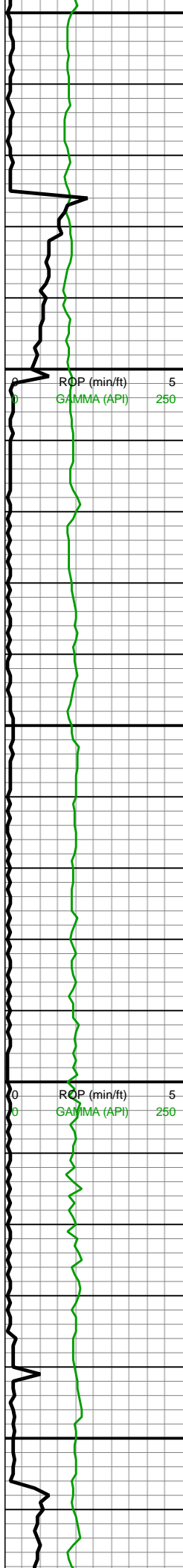
Note: B/U not circulated
before TOOH

Note: B/U not circulated
before TOOH

298u

14100-14200 SST
(100%): med-lt gy bn, occ
dk gy, mod srtd, vf-f sb
ang-sb rd, sb frm-frm,
lt-med gy mtx sup arg ss
clus-com frm-hd sl fri,
gy-dk gy gr sup ss clus
cons wi silc cmt, l-no calc

14200-14300 SST
(100%): gy-dk gy, sme tn,
mod srtd f sb rd-rd,
frm-hd sl fri predy gr sup,
cons wi silc cmt, occ mtx
sup, cons wi arg & sl silc
cmt, predy non calc, com
free qtz



14,350
14,360
14,370
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
14,500
14,510
14,520
14,530
14,540
14,550
14,560

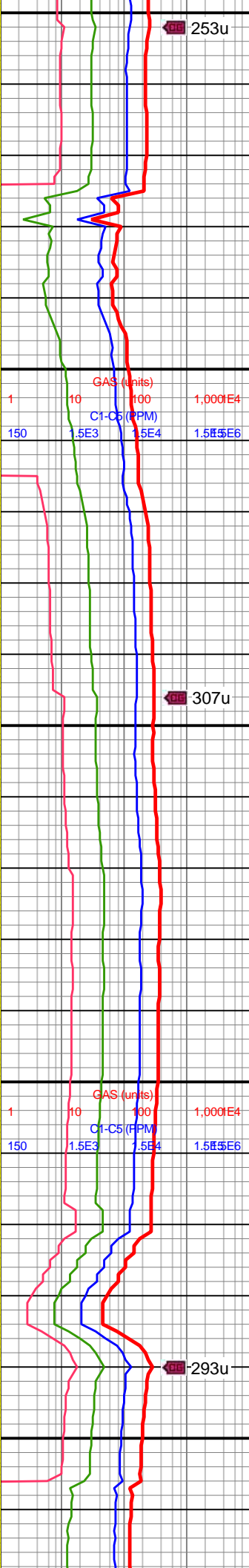
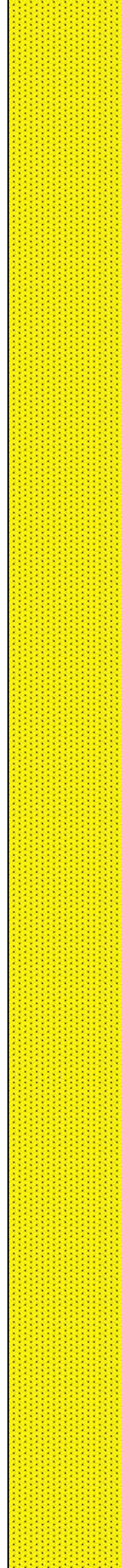
MD: 14,382'
TVD: 7,393.34'
INC: 89.96°
AZM: 357.64°
VS: 6,410.18'

WOB: 9.3klbs
RPM: 70
SPM: 175
SPP: 4,915psi

MW IN: 10.1
VIS IN: 52
MW OUT: 10.1
VIS OUT: 47

MD: 14,476'
TVD: 7,394.82'
INC: 88.24°
AZM: 355.97°
VS: 6,502.4'

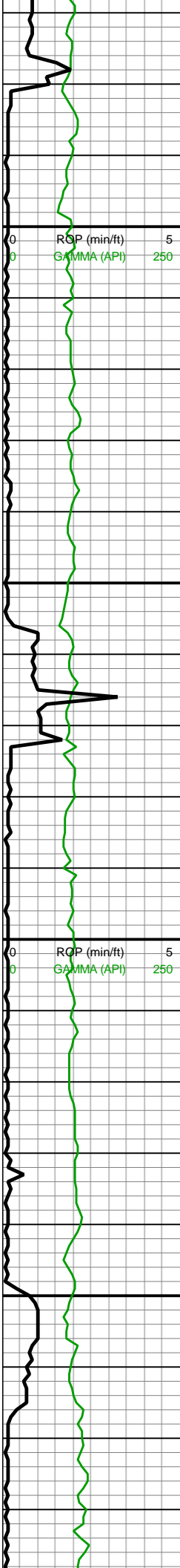
MD: 14,571'



14300-14400 SST
(100%): gy-dk gy, sme tn,
mod srted f sb rd-rd,
frm-hd sl fri predy gr sup,
cons wi silc cmt, occ mtx
sup, cons wi arg & sl silc
cmt, predy non calc, abnt
free qtz

14400-14500 SST
(100%): predy med gy-dk
gyshbn, sme tn, mod srted
f sb rd-rd, frm-hd sl fri
predy gr sup, cons wi silc
cmt, occ mtx sup, cons wi
arg & sl silc cmt, predy
non calc, abnt free qtz





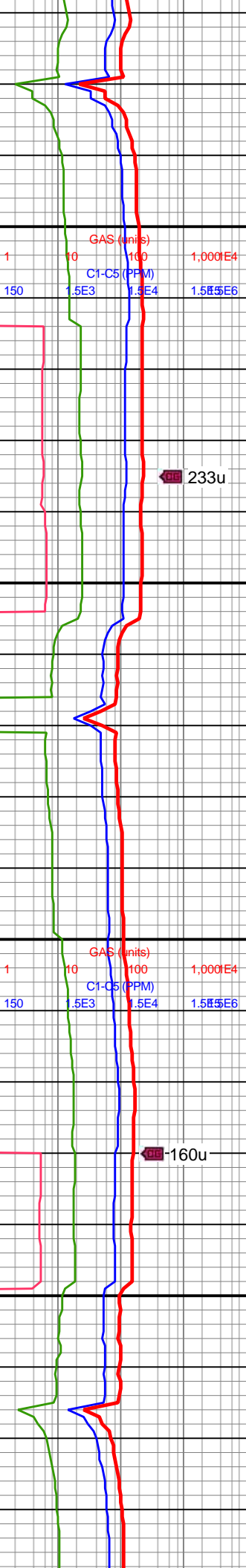
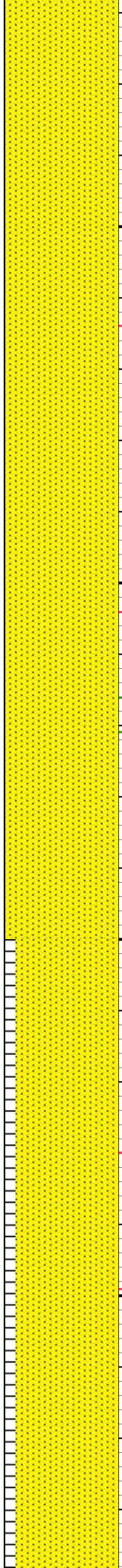
VD: 7,397.15'
INC: 88.95°
AZM: 354.82°
VS: 6,596.01'

MW IN: 10.1
VIS IN: 50
MW OUT: 10.2
VIS OUT: 47

WOB: 20.2klbs
RPM: 69
SPM: 176
SPP: 5,400psi

MD: 14,665'
TVD: 7,398.63'
INC: 89.25°
AZM: 353.42°
VS: 6,688.98'

MD: 14,759'
TVD: 7,400.5'
INC: 88.46°
AZM: 352.19°
VS: 6,782.24'

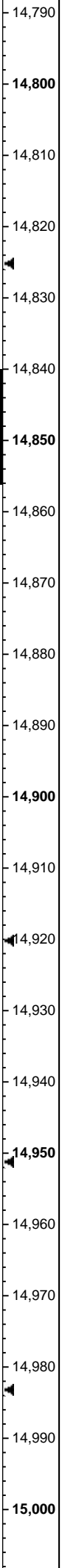
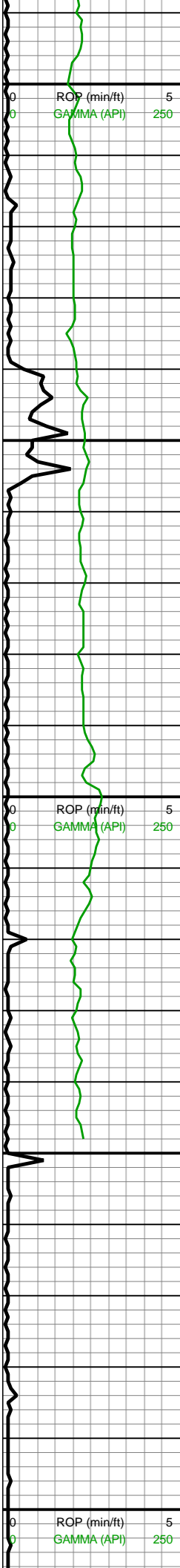


14500-14600 SST
(100%): med-lt gy bn, occ
dk gy, mod srted, vf-f sb
ang-sb rd, sb frm-frm,
lt-med gy mtx sup arg ss
clus-com frm-hd sl fri,
gy-dk gy gr sup ss clus
cons wi silc cmt, l-no
calc, com free qtz

14600-14700 SS (100%):
med brn-bnshgy, occ dk
gy, sb frm-frm, mod srted,
vf-f sb ang-sb rd, frm-hd,
sl fri, grn sup clus, cons
wi silc cmt, arg ip, sl-non
calc

14700-14800 SS (90%):
med brn-bnshgy, occ dk
gy, vf-f gr, sb frm-frm, sl
fri, mod srted, sb ang-sb
rd, grn sup clus, silc cmt,





WOB: 25.7klbs
RPM: 70
SPM: 176
SPP: 5,522psi

MW IN: 10.2
VIS IN: 50
MW OUT: 10.2+
VIS OUT: 48

MD: 14,854'
TVD: 7,403.56'
INC: 87.85°
AZM: 349.64°
VS: 6,876.79'

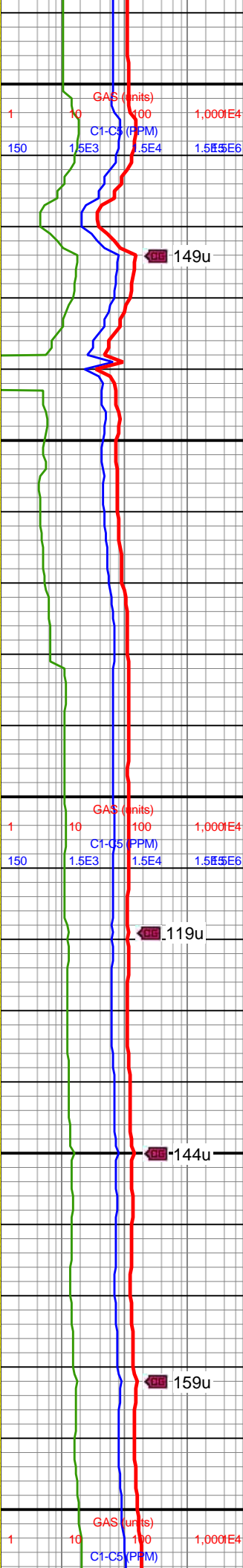
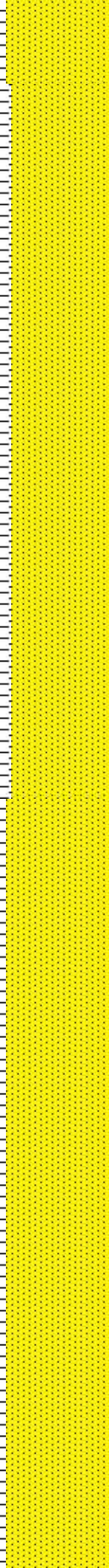
MD: 14,946'
TVD: 7,407.16'
INC: 87.67°
AZM: 348.06°
VS: 6,968.57'

MW IN: 10.2+
VIS IN: 48
MW OUT: 10.2+
VIS OUT: 47

WOB: 18.8klbs
RPM: 70
SPM: 179
SPP: 5,445psi

Projection to Bit

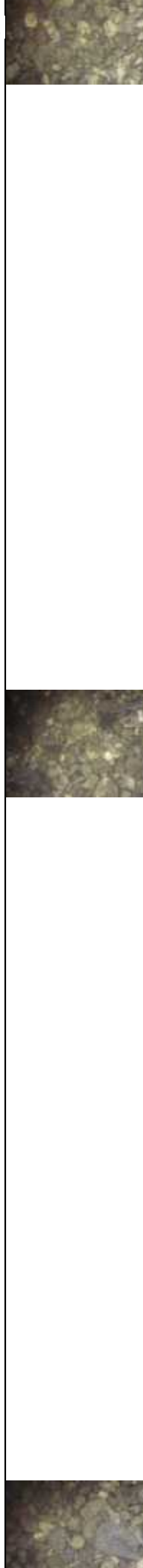
MD: 15,011'

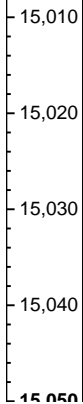
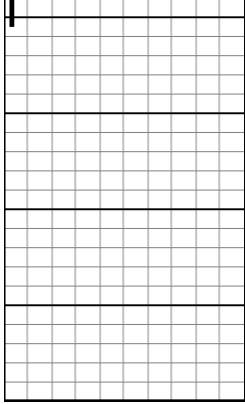


arg ip, sl-non calc; SH
(10%): dk gy-med gy, plty,
sl slty-sm tex, brit, sl hd,
non calc

14800-14900 SS (85%):
med brn-bnshgy, occ dk
gy, vf-f gr, mod srtd, sb
ang-sb rd, sb frm-frm, sl
fri, grn sup clus, silc cmt,
arg ip, sl-non calc; SH
(15%): dk gy-med gy, sl
slty-sm tex, plty, sl hd,
brit, non calc

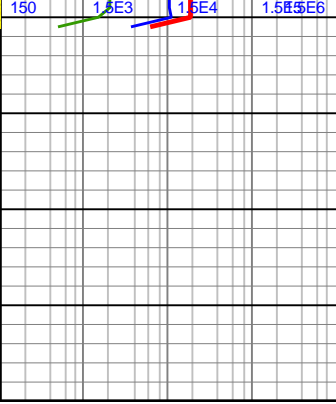
14900-15011 SS (90%):
med brn-bnshgy, occ dk
gy, mod srtd, sb ang-sb
rd, vf-f gr, sb frm-frm, sl
fri, grn sup clus, silc cmt,
arg ip, sl-non calc; SH
(10%): dk gy-med gy, sl
hd, plty, sl slty-sm tex,





MD: 15,011'
TVD: 7,409.8'
INC: 87.67°
AZM: 348.06°
VS: 7,033.46'

**Note: TD well at
15,011' MD
(7,033' TVD) on
6/22/2018**



non calc, brit

