



Scale: 5" / 100'
Measured Depth Log

Well Name Davis 1G-9H-G266

Location Sec. 9 T2N R66W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05123465070000

AFE # 16191025

Geographic Region Rockies

Field Wattenberg

Spud Date 5/27/2018

Drilling Completed 8/22/2018

Surface Coordinates Lat/Long: 40.154511/-104.77784

SHL: Sec: 9 Twp: 2N 66W
Footage: 1934 FNL 1408 FEL

Bottom Hole Coordinates Proposed BHL: Sec: 4 Twp: 2N 66W
Footages: 460 FNL 1105 FEL

Ground Elevation 4,917'

K.B. Elevation 4,940'

Logged Interval 122' **To** 2,203' / 14,779

Total Depth 14,779'

Formation Codell

Type of Drilling Fluid Surface: Water Base Mud ; Synthetic Oil Base 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



Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Loggers: Surface: Brian Ferwerda, Nick Watkins/Vertical-Lateral: Mark Gross, Heather Davis

Services Provided: 2-Man Mudlogging

Equipment: ML-526

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

Service Start Date 08/19/2018

Service End Date 08/23/2018

Rock Types

UNKNOWN	DOLOMITE	SHALE GRAY	TILL
ANHYDRITE	CHERT	SHALE COLORED	BENTONITE
GYPSUM	COAL	SILTSTONE	TUFF
SALT	MARLSTONE	SANDSTONE	IGNEOUS
SIDERITE or LIMONITE	CHALK	CONGLOMERATE	METAMORPHIC
LIMESTONE	SHALE	BRECCIA	CEMENT

Accessories

Fossils

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

Fossil

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

Minerals

ANHYDRITIC

Argillaceous

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

Glaucconite

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
- Q INTEROOLITIC
- M 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

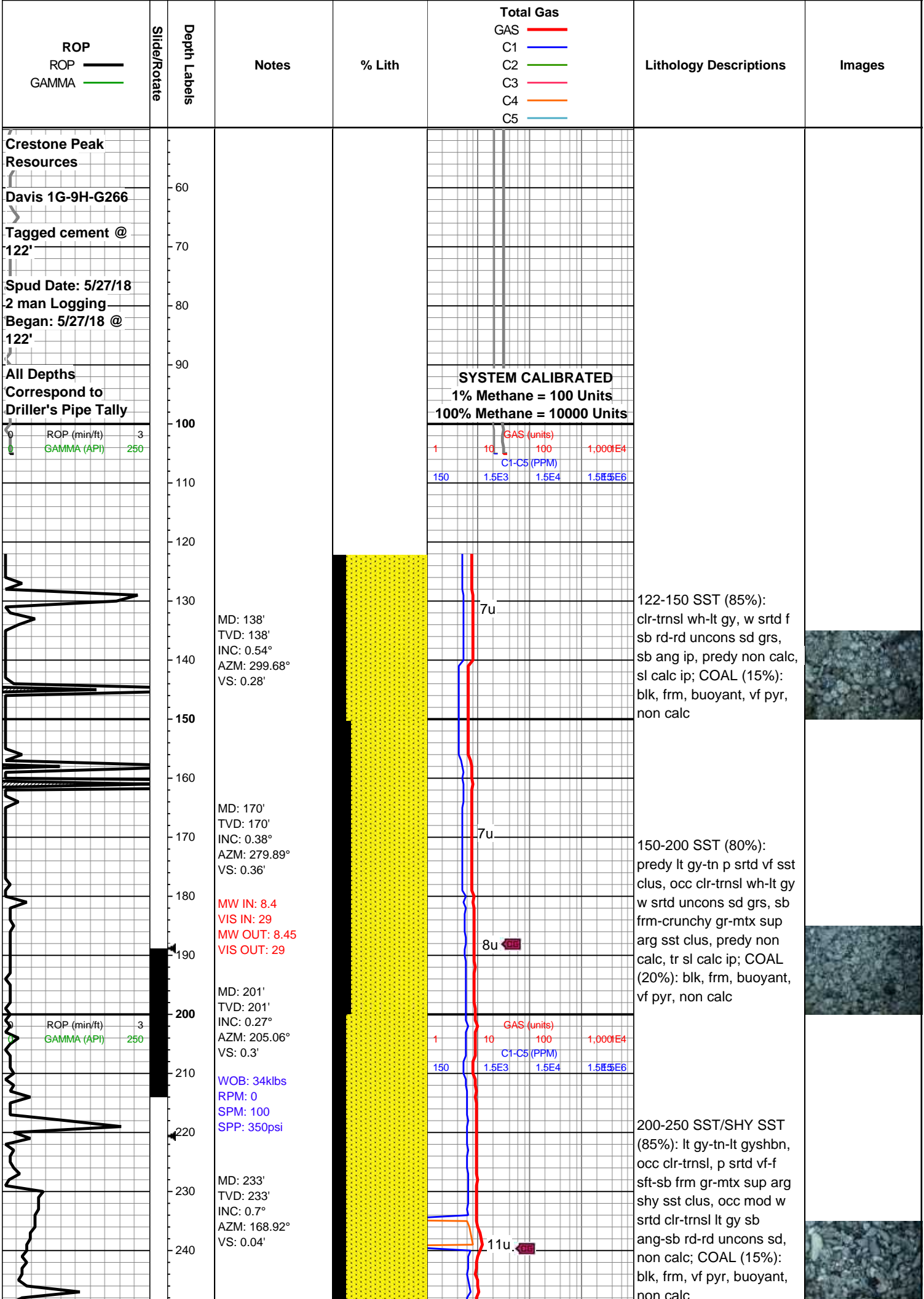
Textures

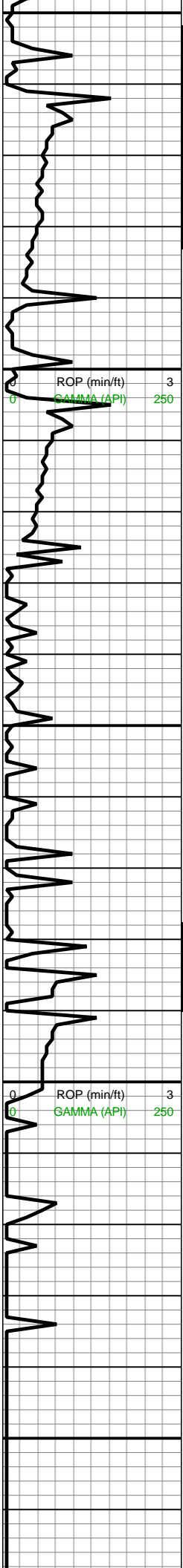
- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- E EARTHY
- F FINELYXLN
- GRAINSTONE

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

Sorting

- M MODERATE
- P POOR
- W WELL





MD: 264'
TVD: 263.99'
INC: 1.18°
AZM: 161.45°
VS: -0.44'

MD: 295'
TVD: 294.98'
INC: 1.56°
AZM: 160.13°
VS: -1.13'

MW IN: 8.5
VIS IN: 28
MW OUT: 8.7
VIS OUT: 28

MD: 327'
TVD: 326.97'
INC: 1.77°
AZM: 162.06°
VS: -1.99'

MD: 359'
TVD: 358.95'
INC: 1.85°
AZM: 159.25°
VS: -2.93'

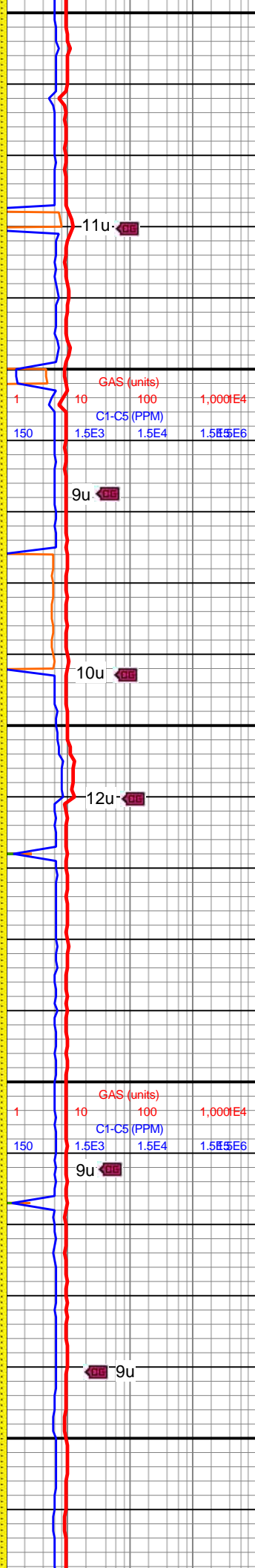
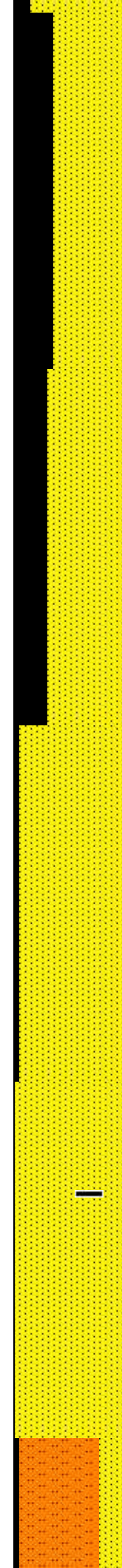
MW IN: 8.45
VIS IN: 29
MW OUT: 8.55
VIS OUT: 28

MD: 390'
TVD: 389.94'
INC: 1.96°
AZM: 155.29°
VS: -3.86'

WOB: 0klbs
RPM: 0
SPM: 136
SPP: 430psi

MD: 421'
TVD: 420.92'
INC: 1.99°
AZM: 153.18°
VS: -4.79'

MD: 453'
TVD: 452.9'
INC: 2.02°
AZM: 156.79°
VS: -5.79'



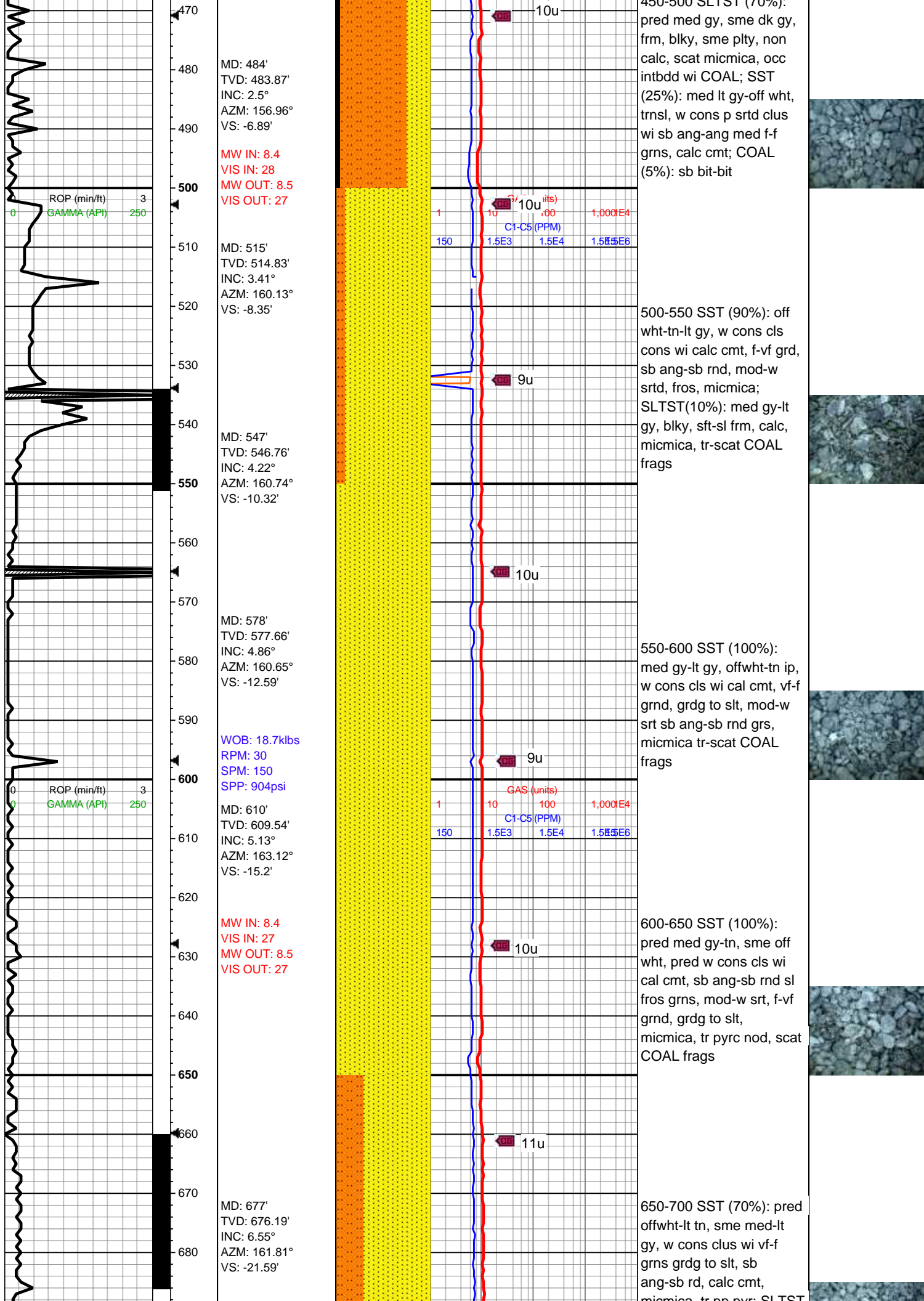
250-300 SST (65%): off
wh-lt gy-tn-lt gyshbn, occ
clr-trnsl unconsl sd grs, p
srted vf-f sft-sb frm gr-mtx
sup sst clus cons wi sft
arg cmt-v fri silc cmt, occ
mod w srted clr-trnsl lt gy
sb ang-sb rd-rd unconsl
sd, non calc; COAL
(35%): blk, frm, vf pyr,
buoyant, non calc

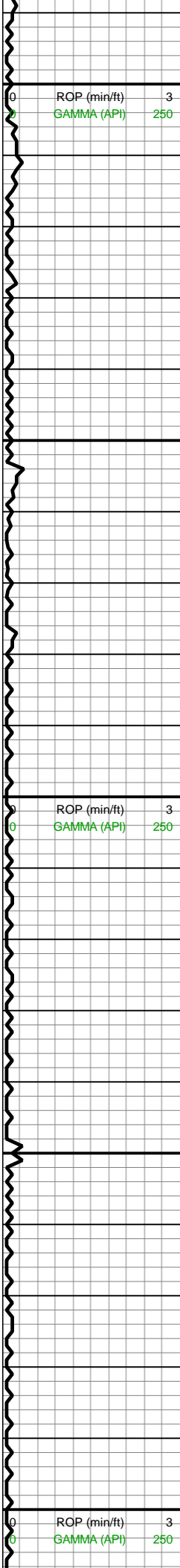
300-350 SST (70%): off
wh-lt gy, com s&p, rr
clr-trnsl unconsl sd grs,
frm-hd sli fri mod-mod w
srted vf-f gr-mtx sup sst
clus cons wi sb frm arg
cmt-sli fri silc cmt, incr
arg cmt grd to shy sst
ip, occ mod w srted
clr-trnsl lt gy sb ang-sb
rd-rd unconsl sd, non
calc; COAL (30%): blk,
frm, vf pyr, buoyant, non
calc

350-400 SST (95%):
clr-trnsl wh-lt gy, v w srted f
sb rd-rd unconsl sd grs,
sb ang ip, rr predy mtx
sup gy arg ss clus wi vf
sd grs, non calc, sl calc
ip; COAL (5%): blk, frm,
buoyant, vf pyr, non calc

400-450 SST (100%):
clr-trnsl wh-lt gy, mod
w-w srted f ang-sb rd-rd
sd grs, clr-fros unconsl
sd grs-com v fri-sli fri gr
sup ss clus cons wi silc
cmt non calc, sl calc ip,
wi rr coal







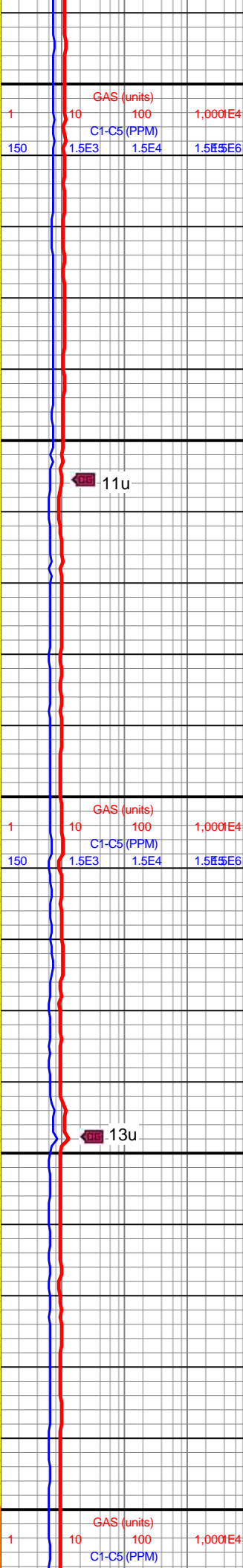
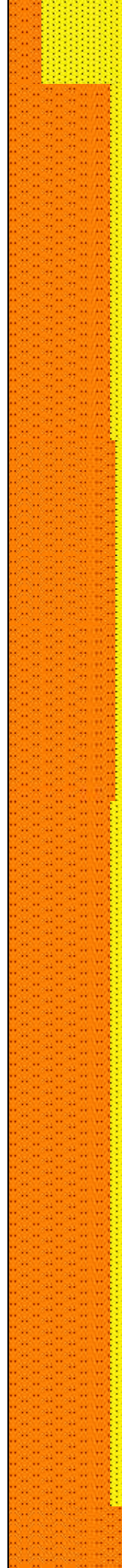
690
700
710
720
730
740
750
760
770
780
790
800
810
820
830
840
850
860
870
880
890
900

MD: 772'
TVD: 770.52'
INC: 7.13°
AZM: 157.14°
VS: -31.97'

WOB: 19.9klbs
RPM: 40
SPM: 178
SPP: 1,287psi

MW IN: 8.5
VIS IN: 27
MW OUT: 8.6+
VIS OUT: 27

MD: 866'
TVD: 863.88'
INC: 6.22°
AZM: 158.84°
VS: -41.89'



micmica, tr pp pyr, SLTST (30%): pred med gy-sl dk gy, sft-sl frm, blk, sl calc, micmica

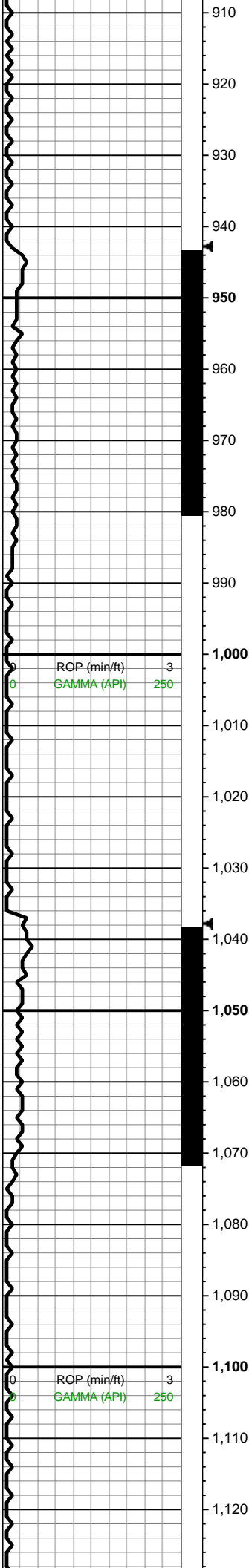
700-750 SLTST (90%): pred med gy-sl dk gy, occ v dk gy, pred sft, sme frm, occ v frm, blk, occ intbdd SS; SST (10%): med gy, w cons clus cons si calc cmt, med v- sl c p srt ang-sb ang grns, silc cmt, tr pp pyr

750-800 SLTST (95%) med-dk gy wi pred med gy, rr dk gy, sl sft-frm, sub blk-rrd wi sl rgh tex, pp-tr pyr, occ micmica; SST (5%) lt-med gy wi brn specs, cons cl wi non calc, f wi p srt ang-sb ang grns, silc cmt, tr pp pyr

800-850 SLTST (90%): pred med gy-sl dk gy, occ v dk gy, pred sft, sme frm, occ v frm, blk, occ intbdd SS; SST (10%): med gy, w cons clus cons si calc cmt, med v- sl c p srt ang-sb ang grns, silc cmt, tr pp pyr

850-900 SLTST (90%) med-dk gy wi occ v dk gry, sl sft-frm, sub blk-ang wi sl rgh tex, pp-tr pyr, occ micmica; SST (10%) lt-med gy, cons cl wi sme calc, f-c wi p srt ang-sb ang grns, cmt, tr pp pyr





MD: 961'
TVD: 958.3'
INC: 6.45°
AZM: 154.27°
VS: -51.29'

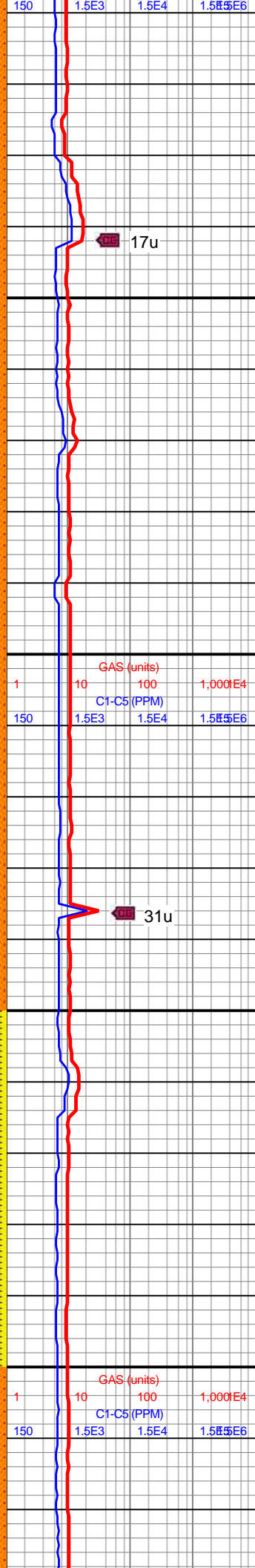
WOB: 24.1klbs
RPM: 46
SPM: 198
SPP: 1,514psi

✱ Isotube - 19u

MD: 1,055'
TVD: 1,051.38'
INC: 9.5°
AZM: 156.94°
VS: -62.92'

ROP (min/ft) 3
GAMMA (API) 250

ROP (min/ft) 3
GAMMA (API) 250



900-950 SLTST (100%)
pred med gr wi sme dk
gy, sub blk-y-rnd, rr
micmica, sft-sl frm, occ
pp pyr

950-1000 SLTST (100%)
pred med gy, blk-y-sub
ang, rr micmica wi sme tr
pyr, v frm,

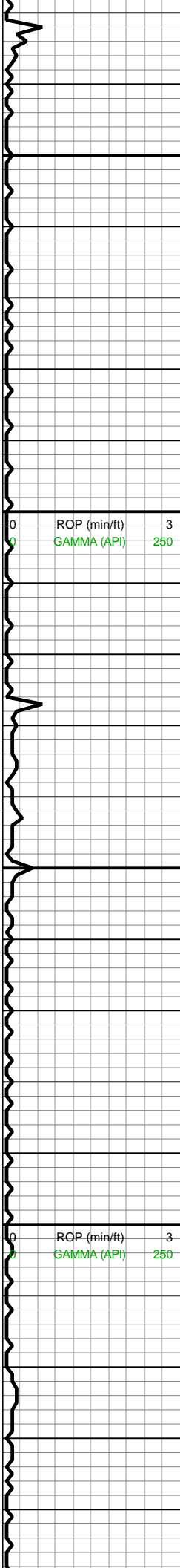
1000-1050 SST (100%):
pred med gy-dk gy, sme
gyshbn, frm, com sft,
blk-y, sme plty, v calc, tr
micmica, tr pp pyr

1050-1100 SLTST (95%):
med gy-dk gy, gyshbn ip,
pred sft, sme frm, blk-y,
calc-v calc, com micmica,
tr pp pyr; SST (5%): pred
med gy-dk gy, sme lt gy,
pred w cons cls cons wi
calc cmt, pred f-med f sb
ang-ang mod-w srtd grns

GAS (units)
C1-C5 (PPM)
1 10 100 1,000
150 1.5E3 1.5E4 1.5E6

GAS (units)
C1-C5 (PPM)
1 10 100 1,000
150 1.5E3 1.5E4 1.5E6





1,130
1,140
1,150
1,160
1,170
1,180
1,190
1,200
1,210
1,220
1,230
1,240
1,250
1,260
1,270
1,280
1,290
1,300
1,310
1,320
1,330
1,340

MD: 1,150'
TVD: 1,144.93'
INC: 10.55°
AZM: 160.87°
VS: -78.05'

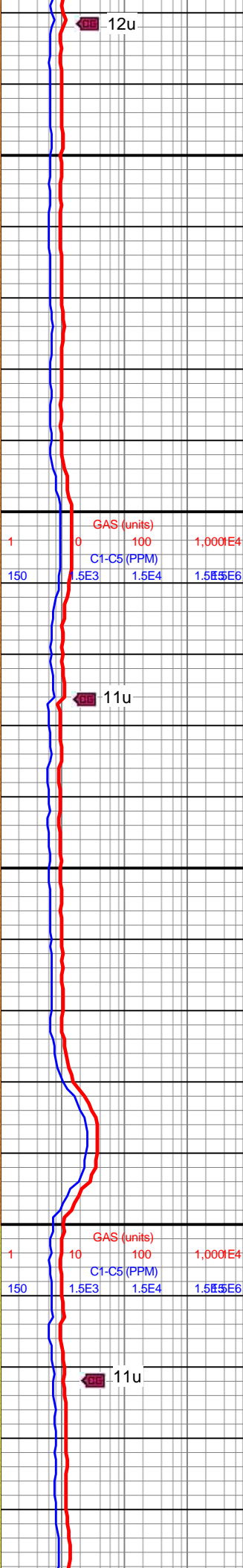
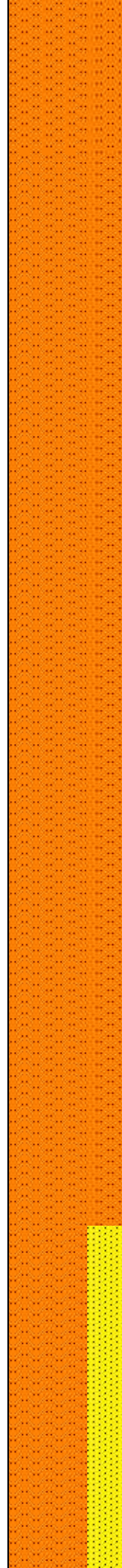
WOB: 26klbs
RPM: 44
SPM: 198
SPP: 1,568psi

MD: 1,245'
TVD: 1,238.46'
INC: 9.6°
AZM: 161.52°
VS: -93.51'

✱ Isotube - 30u

MW IN: 8.6
VIS IN: 27
MW OUT: 8.8
VIS OUT: 27

MD: 1,339'
TVD: 1,331.11'
INC: 9.89°
AZM: 160.34°
VS: -108.28'



1100-1150 SLTST
(100%): pred gyshbn-dk
gy, sme lt gy, pred sft, occ
frm, blk, v calc, sme non
calc, tr micmica, tr pp pyr

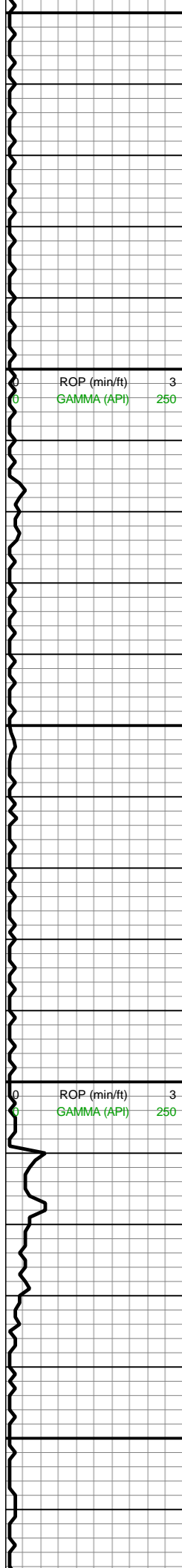
1150-1200 SLTST
(100%): pred med
gyshbn-dk gyshbn, sme
dk brn, sft-frm, blk, sme
plty, pred v calc, sme non
calc, tr micmica, v rr pp
pyr

1200-1250 SLTST
(100%) pred med gy, sft-v
frm, sub blk-sl rnd, hi
calc, sme non calc,
micmica, tr pyr

1250-1300 SLTST
(100%) pred med gy,
pred sft- occ frm, sub
blk-sl rnd, hi calc, sme
non calc, occ micmica, tr
pp pyr

1300-1350 SLTST (70%)
pred med gy wi sme lt
gry, v frm-sl sft, sub
ang-sl rnd wi sme blk,
occ micmica, sl calc, tr
micmica, pp pyr; SST
(30%) pred lt gy wi sme lt
gy, sub ang-ang, cons
clus wi calc cmt





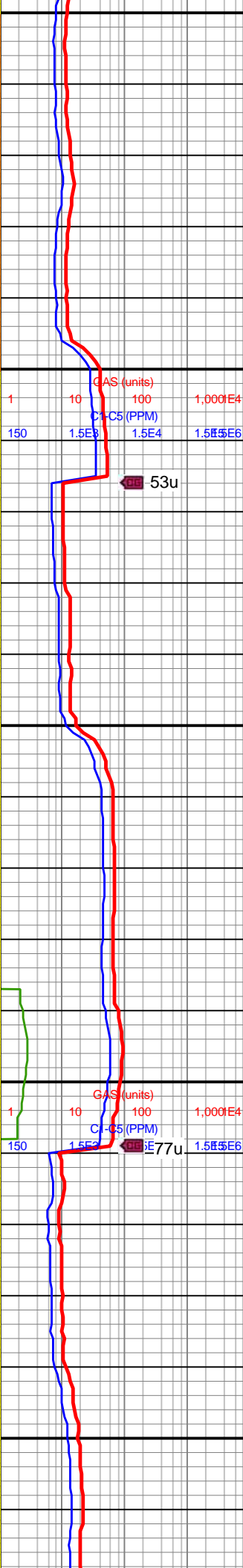
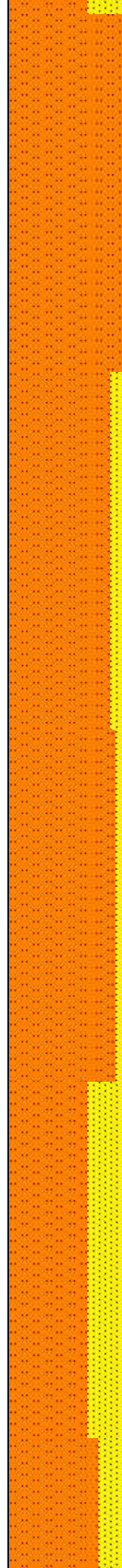
1,350
1,360
1,370
1,380
1,390
1,400
1,410
1,420
1,430
1,440
1,450
1,460
1,470
1,480
1,490
1,500
1,510
1,520
1,530
1,540
1,550
1,560

WOB: 30.8klbs
RPM: 45
SPM: 198
SPP: 1,700psi

MD: 1,433'
TVD: 1,423.61'
INC: 10.59°
AZM: 162.29°
VS: -123.84'

✱ Isotube - 91u

MD: 1,528'
TVD: 1,517'
INC: 10.5°
AZM: 162.4°
VS: -140.14'



clus wi calc cmt,

1350-1400 (100%)
SLTST: pred med gy wi v
l dk gy,sl sm, pred rnd wi
sl sub ang, rr-occ pyr, tr
micmica, sme calc;



1400-1450 SLTST (90%)
v med gry wi sme lt gy, v
frm-sl hrd, v blk-sub blk
wi sl sm tex, tr micmica,
tr-rr pp pyr, non calc; SST
(10%) pred med-v lt gy, v
hrd, sl c-f, cons clus wi hi
calc cmt;



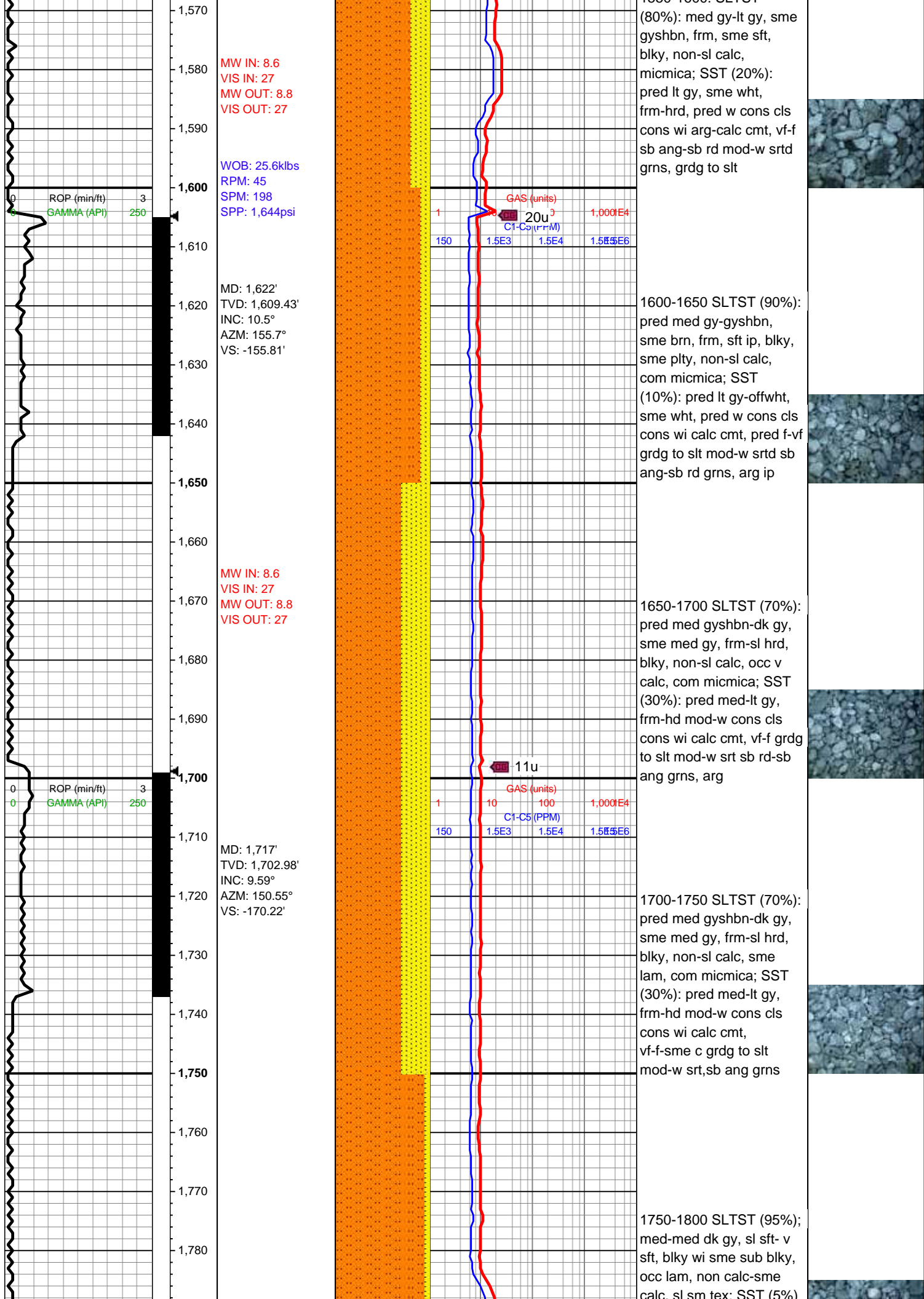
1450-1500 SLTST (95%)
v med gy, frm-sl brit,
blk-sub blk, sl sm tex
wi sme tr pp pyr, v hi calc;
SST(5%) pred lt gy wi
offwht cmt, frm,c-f, v hi
calc,

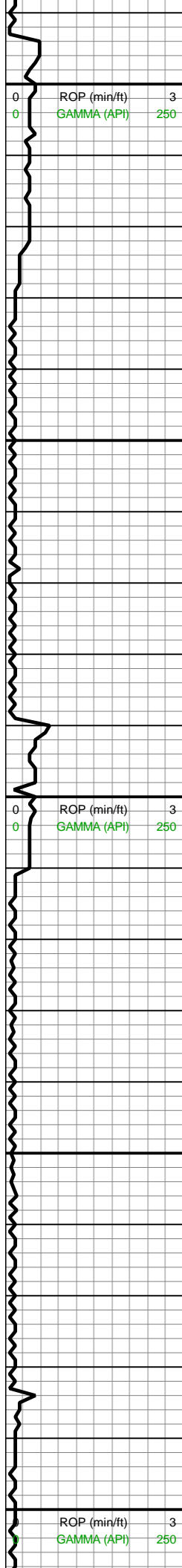


1500-1550 SLTST (70%):
pred med gy-gyshbn,
sme lt gy, frm, sme v frm,
blk-pty, pred calc, sme
non calc, tr micmica, tr pp
pyr; SS (30%): pred
offwht-wht-lt gy, sme tn,
hrd, pred w cons cls
cons wi silc cmt, vf-f sb
ang-sb rd mod-w srtd
grns, arg ip



1550-1600: SLTST





WOB: 24.6klbs
RPM: 45
SPM: 198
SPP: 1,791psi

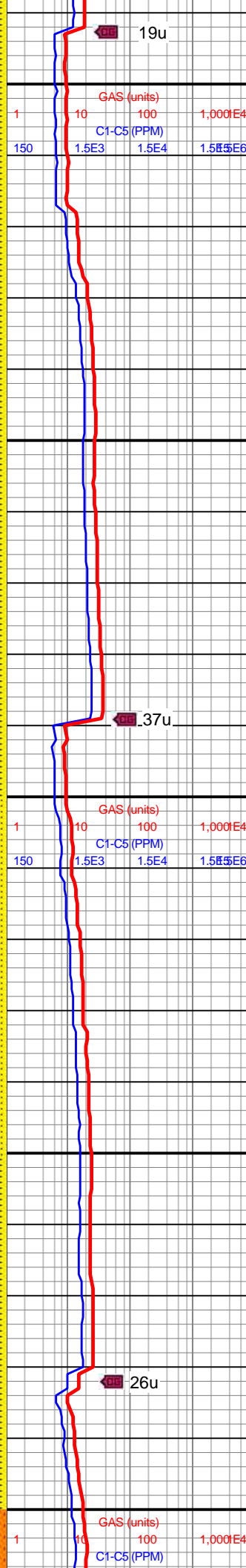
MD: 1,812'
TVD: 1,796.88'
INC: 7.81°
AZM: 155.19°
VS: -182.64'

MW IN: 8.6+
VIS IN: 27
MW OUT: 8.8
VIS OUT: 27

MD: 1,907'
TVD: 1,890.92'
INC: 8.59°
AZM: 165.07°
VS: -195.13'

WOB: 19.4klbs
RPM: 45
SPM: 198
SPP: 1,750psi

MD: 2,001'
TVD: 1,983.88'
INC: 8.48°
AZM: 170.41°
VS: -208.59'



19u

GAS (units)

C1-C5 (PPM)

37u

GAS (units)

C1-C5 (PPM)

26u

GAS (units)

C1-C5 (PPM)

calc, sst, ss (30%);
wht-pred lt gry, f-vf wi sl
sub ang- ang, cons clas
grs, frm- sl hrd, v-hi calc
cme

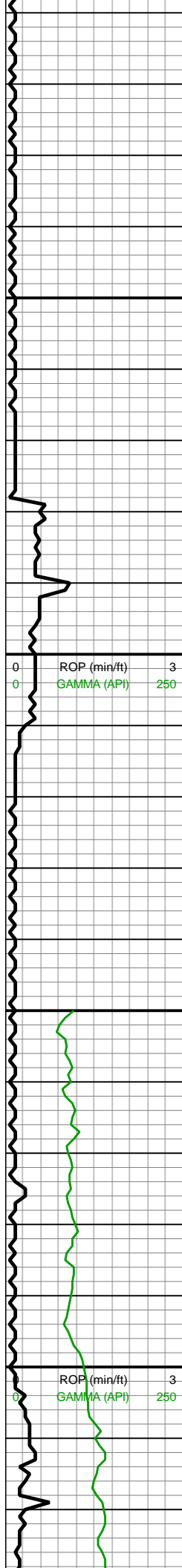
1800-1850 SLTST (95%):
med gy-dk gy, gyshbn ip,
pred sft, sme frm, blk,
calc-v calc, com micmica,
tr pp pyr; SST (5%): pred
med gy-dk gy, sme lt gy,
pred w cons cls cons wi
calc cmt, pred f-med f sb
ang-ang mod-w srtd grns

1850-1900 SLTST (95%)
pred med gy, sl sft-frm,
blk-sub blk, sl sm tex
wi sme tr pp pyr, non-occ
calc; SST(5%) pred lt gy
wi offwht cmt, frm,f-v c, v
hi calc,

1900-1950 SLTST (70%):
pred med gy-gyshbn,
sme lt gy, frm, sme v frm,
blk-pty, pred calc, sme
non calc, tr micmica, tr pp
pyr; SS (30%): pred
offwht-wht-lt gy, sme tn,
hrd, pred w cons cls
cons wi hi calc cmt, vf-f
sb v f-sl c srtd grns, arg
ip

1950-2000 SLTST (95%):
pred med gy-gyshbn,
sme brn, frm, sft ip, blk,
sme pty, non-sl calc,
com micmica; SST (5%):
pred med gy-offwht, sme
lt gy, pred wi cons cls
cons wi calc cmt, pred f-vf
grdg to slt mod-w srtd sb
ang-sb rd grns, arg ip





2,010
2,020
2,030
2,040
2,050
2,060
2,070
2,080
2,090
2,100
2,110
2,120
2,130
2,140
2,150
2,160
2,170
2,180
2,190
2,200
2,210
2,220

MW IN: 8.6
VIS IN: 27
MW OUT: 8.8
VIS OUT: 28

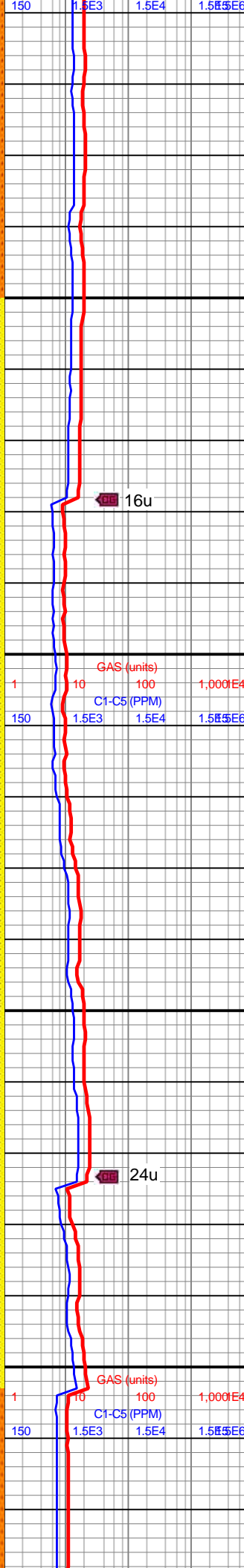
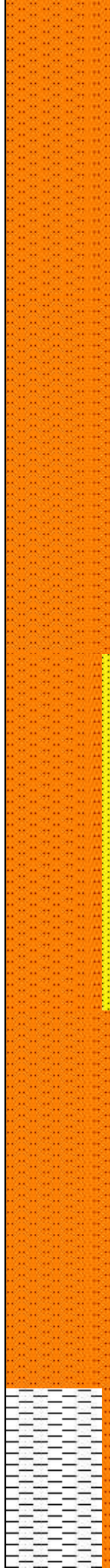
MD: 2,095'
TVD: 2,076.81'
INC: 8.8°
AZM: 167.71°
VS: -222.31'

MD: 2,126'
TVD: 2,107.43'
INC: 9.19°
AZM: 164.12°
VS: -226.94'

TD Surface @
15:00hrs 5/28/18

WOB: 16.5klbs
RPM: 45
SPM: 197
SPP: 1,802psi

Bit #: 2
Type: GT56S
Size: 8.5
Depth In: 2,203'
Jets: 5x15
S/N: 13076571



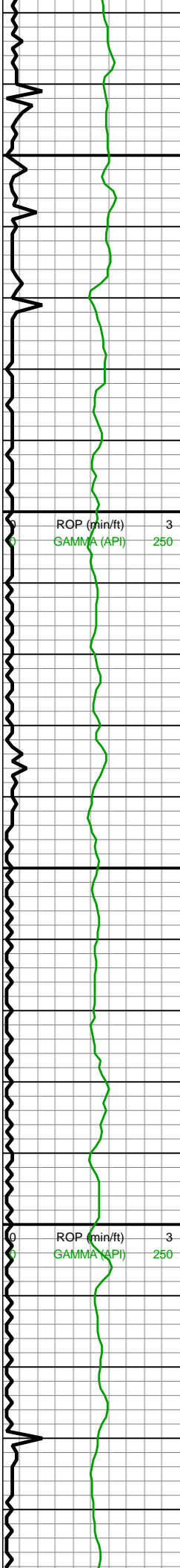
2000-2050 SLTST
(100%): pred dk gy-dk
gyshbn, sme med gy,
frm-sl frm, occ sft, blk,
tr-sl calc, tr fy lam,
micmica

2050-2100 SLTST (95%):
pred dk gy-sk gyshbn,
frm, sme sft, blk, non-sl
calc, intbdd wi SST (5%):
med gy, sme lt gy,
frm-hrd w cons cls cons
wi cal cmt, vf grnd grdg to
slt, sb ang-ang mod-w
srt, tr pp pyr

2100-2150 SLTST (85%):
pred med gy-dk gy, sme
gyshbn, frm-sl frm, blk,
occ plty, non-sl calc,
micmica, tr pp pyr intbdd
wi SST (15%): med gy-lt
gy, sme s&p, frm-hrd,
pred w cons cls cmt wi
cal cmt, vf-f grnd grdg to
slt, sb ang-sb rd, mod-w
srt, arg

2150-2200 SLTST (95%):
med gy-sl dk gy, occ
gyshbn, frm-sl frm, blk,
non-sl calc, micmica, tr
pp pyr; SST (5%): pred
med gy-lt gy, frm-sl hrd, w
cons cls cons wi calc
cmt, vff grnd grdg to slt,
sb ang-sb rd, mod-w srt





2,230
2,240
2,250
2,260
2,270
2,280
2,290
2,300
2,310
2,320
2,330
2,340
2,350
2,360
2,370
2,380
2,390
2,400
2,410
2,420
2,430
2,440

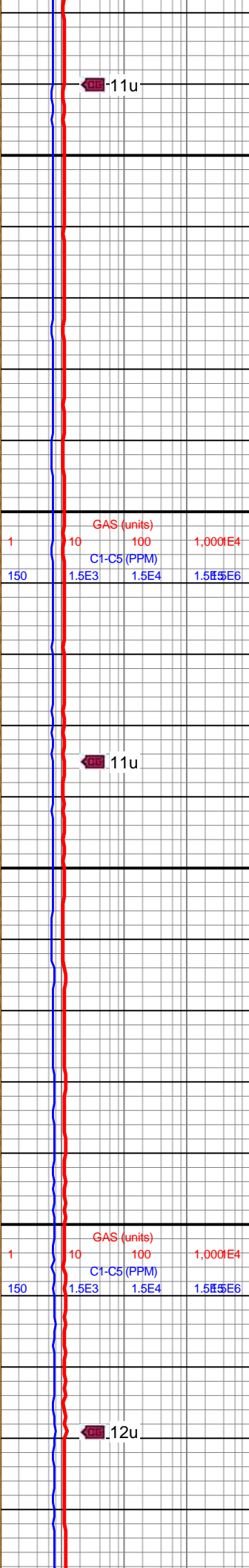
MD: 2,240'
TVD: 2,220'
INC: 8.97°
AZM: 156.44°
VS: -243.54'

MW IN: 9.8
VIS IN: 74
MW OUT: 9.8
VIS OUT: 76

MD: 2,271'
TVD: 2,250.63'
INC: 8.83°
AZM: 156.18°
VS: -247.84'

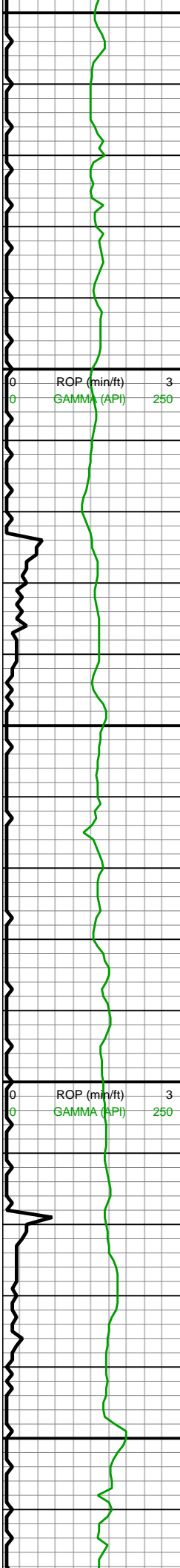
MD: 2,366'
TVD: 2,344.58'
INC: 8.26°
AZM: 155.48°
VS: -260.43'

WOB: 36klbs
RPM: 60
SPM: 188
SPP: 2,617psi



2200-2400 SH (85%): lt gy-med gy, mot gyshbn, ang-sb blkly ctngs, sm-sl slty tex, sl frm-sft, mod cly content, non calc; SLTST (15%): med gy, mot dk gy, blkly-tab, slty-sl sm tex, frm, non calc





2,450
2,460
2,470
2,480
2,490
2,500
2,510
2,520
2,530
2,540
2,550
2,560
2,570
2,580
2,590
2,600
2,610
2,620
2,630
2,640
2,650
2,660

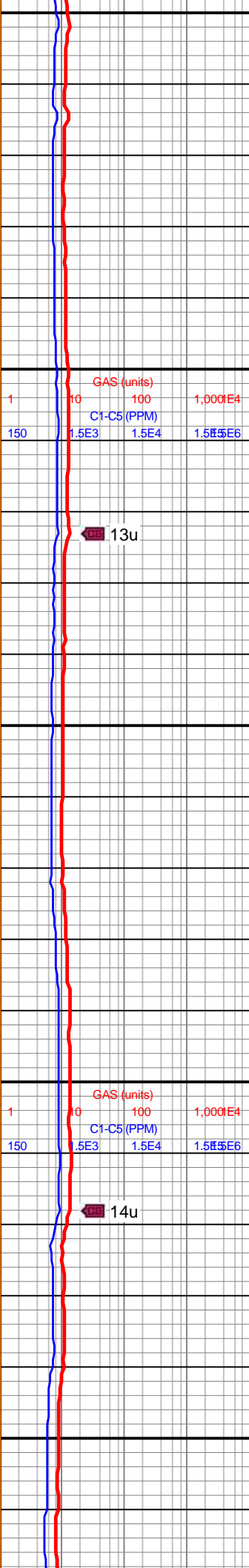
MD: 2,460'
TVD: 2,437.73'
INC: 7.12°
AZM: 154.42°
VS: -271.56'

MD: 2,555'
TVD: 2,531.89'
INC: 8.09°
AZM: 154.77°
VS: -282.65'

WOB: 35.8klbs
RPM: 69
SPM: 217
SPP: 3,222psi

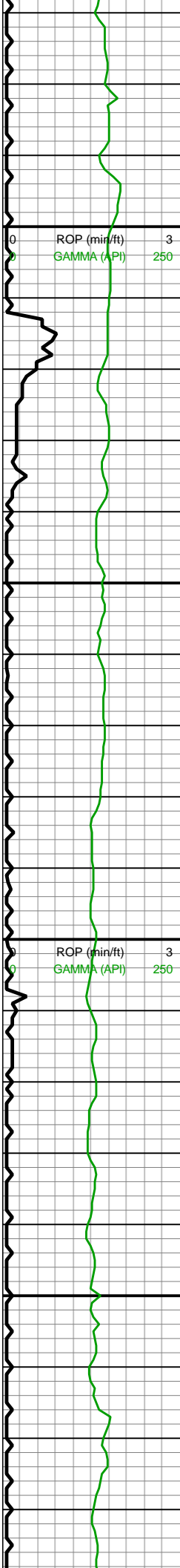
MW IN: 9.6+
VIS IN: 70
MW OUT: 9.7
VIS OUT: 63

MD: 2,649'
TVD: 2,624.85'
INC: 9.01°
AZM: 153.9°
VS: -294.95'



2400-2600 SH (85%): lt
gy-med gy, mot gyshbn,
sl frm-sft, ang-sb blk
ctngs, sm-sl slty tex, mod
cly content, non calc;
SLTST (15%): med gy,
mot dk gy, slty-sl sm tex,
frm, blkly-tab, non calc





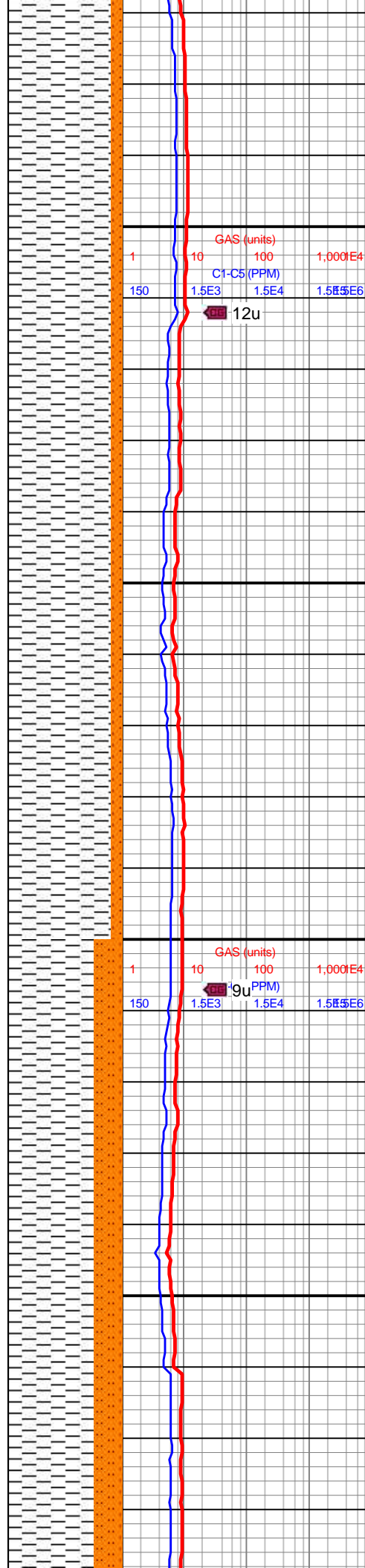
2,670
2,680
2,690
2,700
2,710
2,720
2,730
2,740
2,750
2,760
2,770
2,780
2,790
2,800
2,810
2,820
2,830
2,840
2,850
2,860
2,870
2,880

MD: 2,743'
TVD: 2,717.58'
INC: 9.89°
AZM: 163.91°
VS: -309.04'

WOB: 38.1klbs
RPM: 70
SPM: 218
SPP: 3,320psi

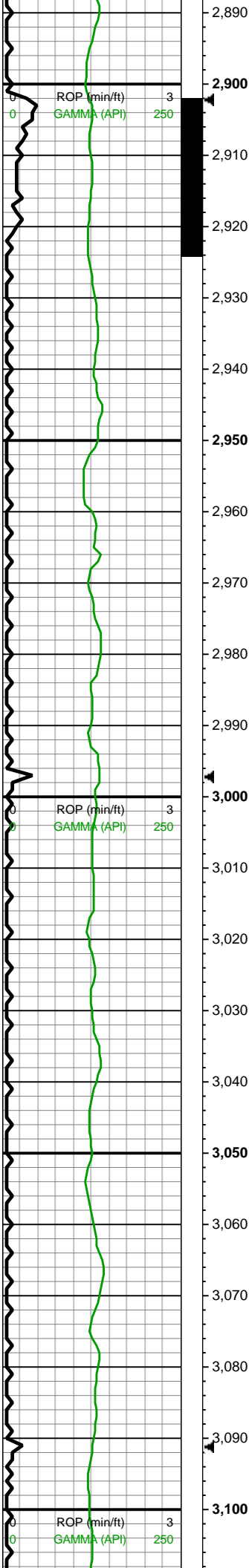
MW IN: 9.7
VIS IN: 69
MW OUT: 9.7
VIS OUT: 63

MD: 2,837'
TVD: 2,810.26'
INC: 9.32°
AZM: 163.04°
VS: -323.85'



2600-2800 SH (90%): lt
gy-med gy, mot gyshbn,
ang-sb blkly ctngs, sl
frm-sft, sm-sl slty tex, non
calc, mod cly content;
SLTST (10%): med gy,
mot dk gy, slty-sl sm tex,
blkly-tab, frm, non calc

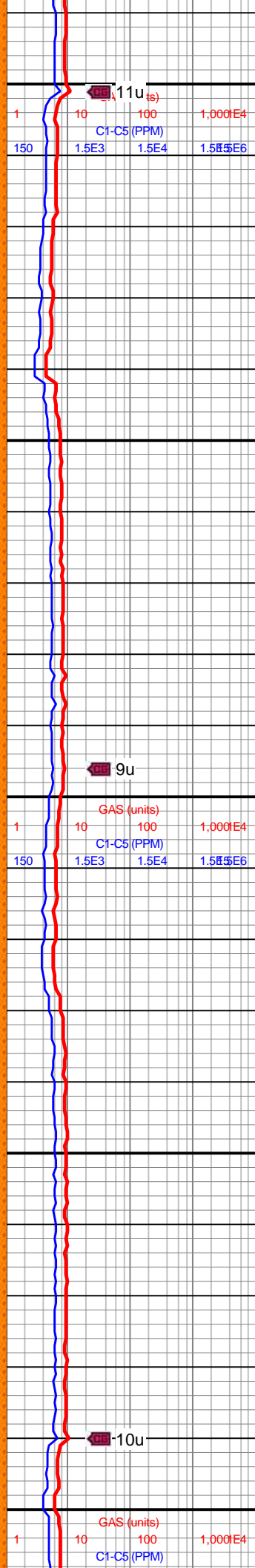




MD: 2,932'
TVD: 2,903.62'
INC: 11.91°
AZM: 162.77°
VS: -340.31'

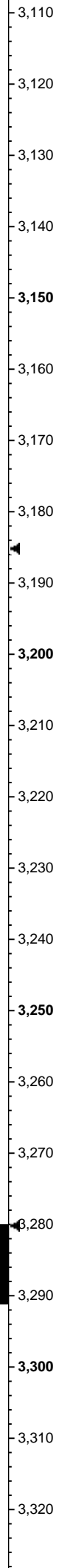
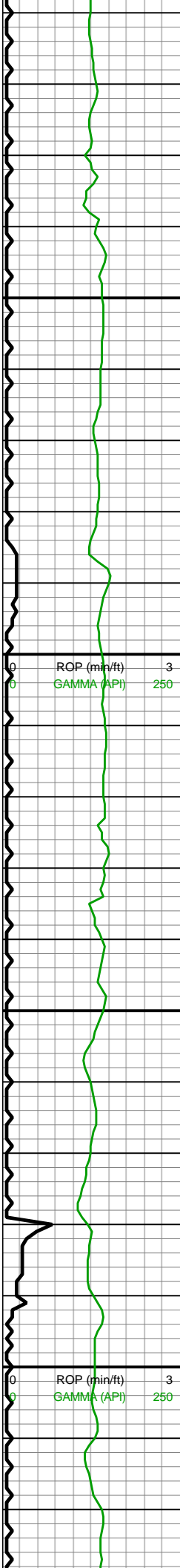
WOB: 20.1klbs
RPM: 69
SPM: 218
SPP: 3,179psi

MD: 3,026'
TVD: 2,995.77'
INC: 10.9°
AZM: 162.24°
VS: -357.76'



2800-3000 SH (75%): lt
gy-med gy, mot gyshbn,
ang-sb blk cy ctngs, sl
frm-sft, mod cly content,
sm-sl slty tex, non calc;
SLTST (25%): med gy,
mot dk gy, slty-sl sm tex,
blk cy-tab, frm, mnr
micmica, non calc



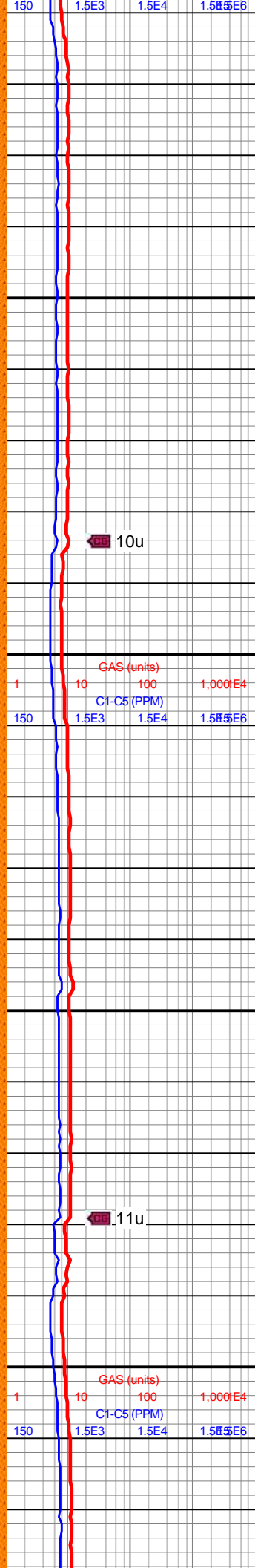
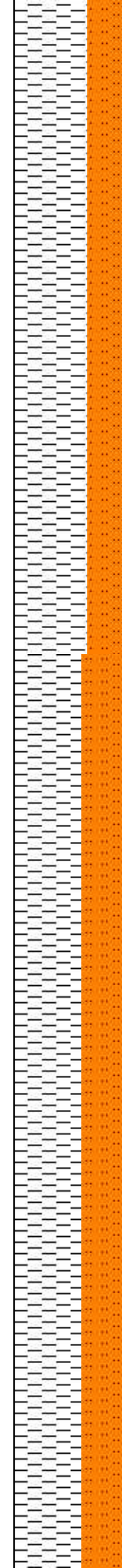


MD: 3,121'
TVD: 3,089.19'
INC: 10.02°
AZM: 162.16°
VS: -373.91'

WOB: 25.8klbs
RPM: 70
SPM: 218
SPP: 3,284psi

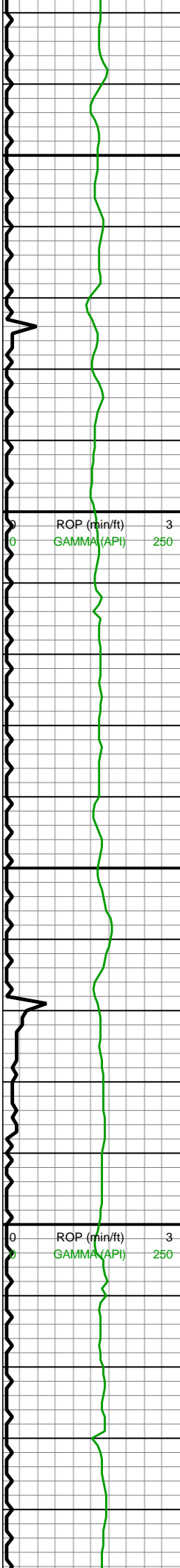
MD: 3,215'
TVD: 3,181.92'
INC: 8.79°
AZM: 163.21°
VS: -388.34'

MD: 3,310'
TVD: 3,275.75'
INC: 9.27°
AZM: 155.57°
VS: -401.99'



3000-3200 SH (75%):
med gy-lt gy, mot gyshbn,
sl frm-sft, sb blk-y-sb spl
ctngs, sm-sl slty tex, non
calc, mod cly content;
SLTST (25%): med gy,
mot dk gy, slty-sl sm tex,
frm, blk-y-tab, non calc,
mnr micmica





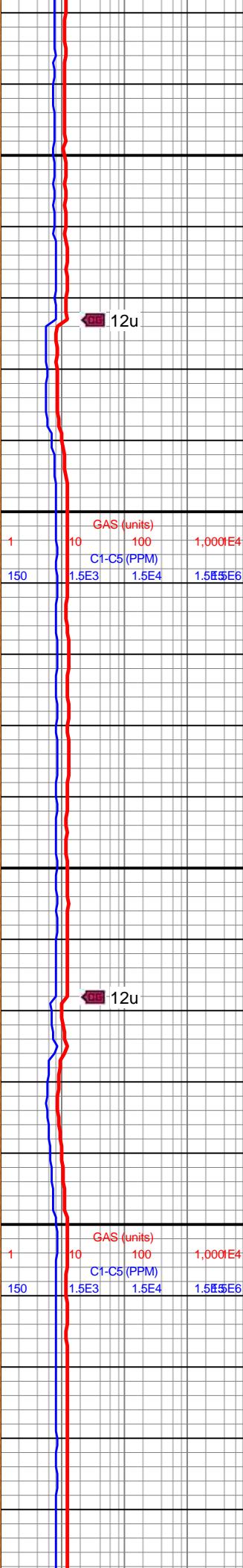
3,330
3,340
3,350
3,360
3,370
3,380
3,390
3,400
3,410
3,420
3,430
3,440
3,450
3,460
3,470
3,480
3,490
3,500
3,510
3,520
3,530
3,540

WOB: 38klbs
RPM: 70
SPM: 219
SPP: 3.525psi

MD: 3,404'
TVD: 3,368.73'
INC: 7.6°
AZM: 156.36°
VS: -414.3'

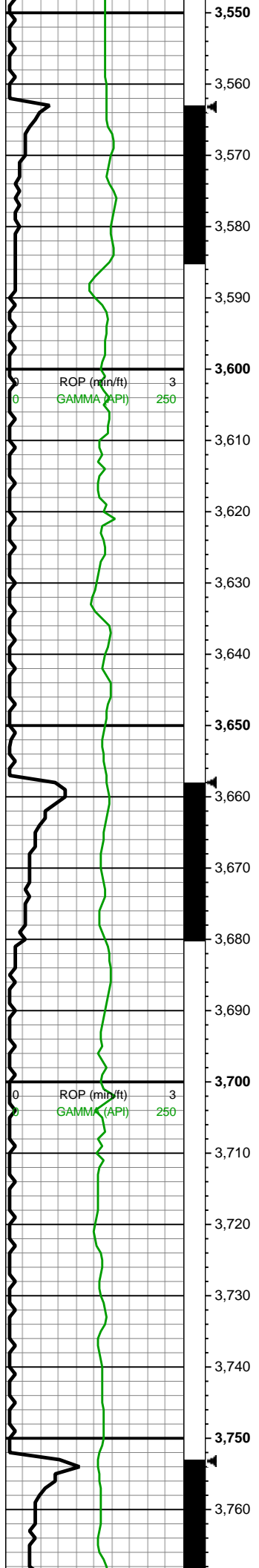
MW IN: 9.7
VIS IN: 67
MW OUT: 9.6+
VIS OUT: 64

MD: 3,499'
TVD: 3,462.93'
INC: 7.3°
AZM: 149.5°
VS: -424.98'



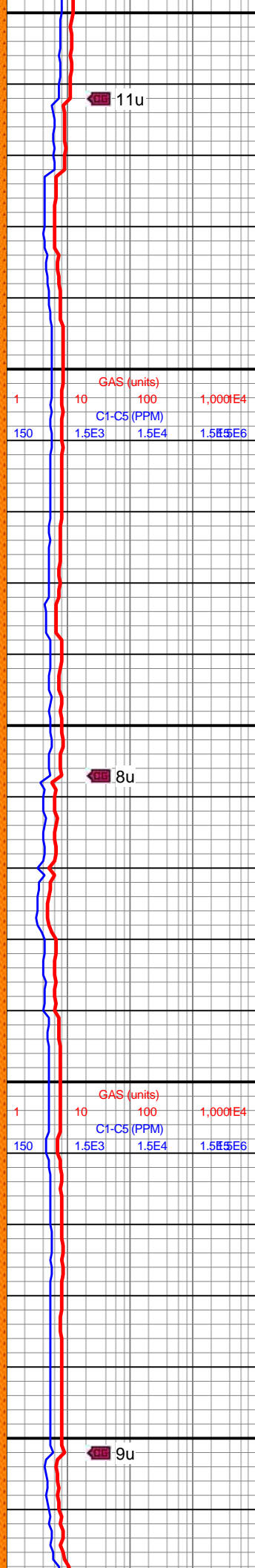
3200-3400 SH (60%):
med gy-gyshbn, lt gy,
mot, sl frm, sm-sl slty tex,
sb blk-y-sb splt ctngs, non
calc, mod cly content;
SLTST (40%): med gy,
mot dk gy, frm, blk-y-tab,
slty-sl sm tex, mnr
micmica, non calc





MD: 3,593'
TVD: 3,556.34'
INC: 5.58°
AZM: 131.48°
VS: -432.84'
WOB: 32.8klbs
RPM: 69
SPM: 219
SPP: 3,472psi

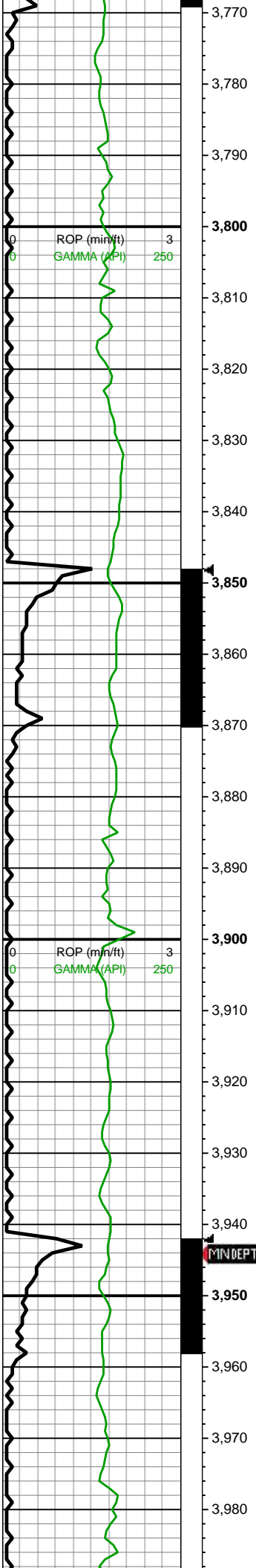
MD: 3,688'
TVD: 3,650.64'
INC: 8.26°
AZM: 139.13°
VS: -440.67'



3400-3600 SH (65%): lt
gy-med gy, mot gyshbn,
ang-sb blkly ctngs, sl
frm-sft, l-mod cly content,
sm-sl slty tex, non calc, tr
dissm pyrc cls; SLTST
(35%): med gy, mot dk
gy, slty-sl sm tex,
blkly-tab, frm, mnr
micmica, non calc



3600-3800 SH (65%): lt



MD: 3,783'
TVD: 3,744.62'
INC: 8.61°
AZM: 148.62°
VS: -451.51'

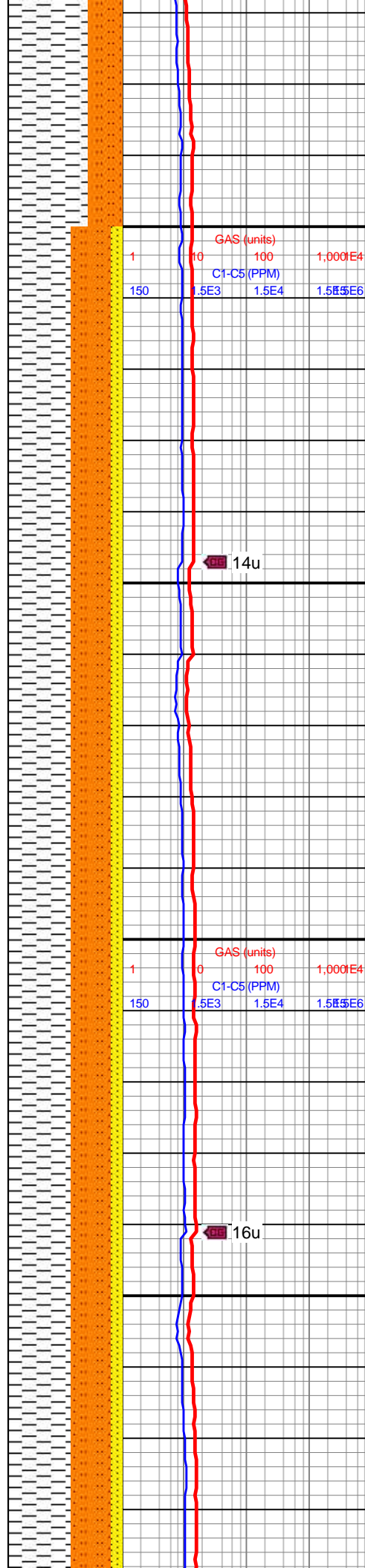
WOB: 34.9klbs
RPM: 70
SPM: 219
SPP: 3,543psi

MD: 3,878'
TVD: 3,838.3'
INC: 10.5°
AZM: 154.77°
VS: -465.05'

MW IN: 9.7
VIS IN: 60
MW OUT: 9.6+
VIS OUT: 55

MIN DEPT 8/20/2018

MD: 3,972'
TVD: 3,930.81'
INC: 9.98°
AZM: 165.15°
VS: -480.38'



	GAS (units)	C1-C5 (PPM)
1	10	100
150	1.5E3	1.5E4
	1,000E4	1.5E6

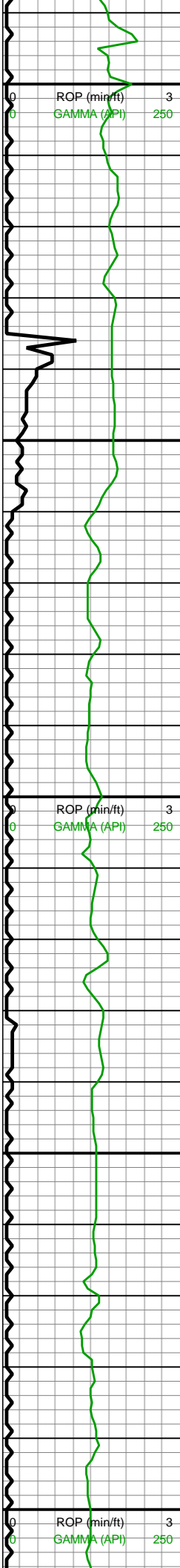
14u

	GAS (units)	C1-C5 (PPM)
1	10	100
150	1.5E3	1.5E4
	1,000E4	1.5E6

16u

gy-med gy, mot gyshbn,
sl frm-sft, ang-sb blk
ctngs, l cly content, sm-sl
silty tex, non calc, tr diss
pyrc cls; SLTST (35%):
med gy, mot dk gy, slty-sl
sm tex, frm, blk-tab, mnr
micmica, non calc; mnr
SS: lt gy, mot med gy,
slty-vf gr, fri-sl hd, sb rnd

3800-4000 SH (55%):
med gy-dk gy, sl frm,
blk-sb plty, sl sm tex,
micmica, non calc;
SLTST (35%): med gy,
gyshbn, frm-v frm, blk-sb
plty, non calc, tr micmica;



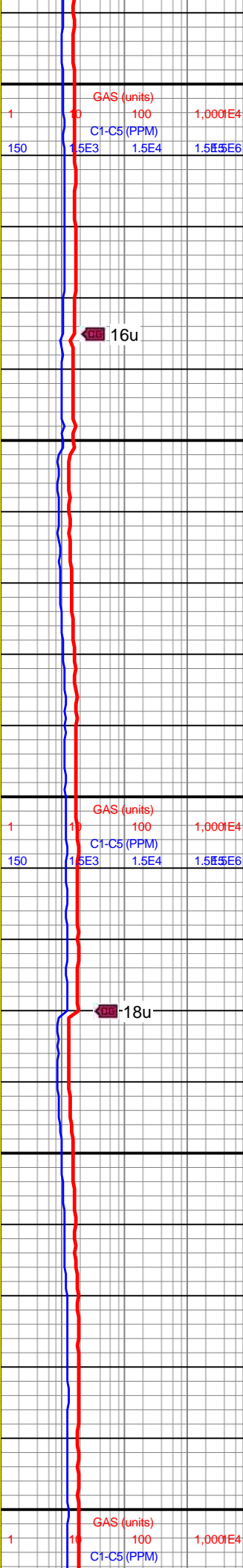
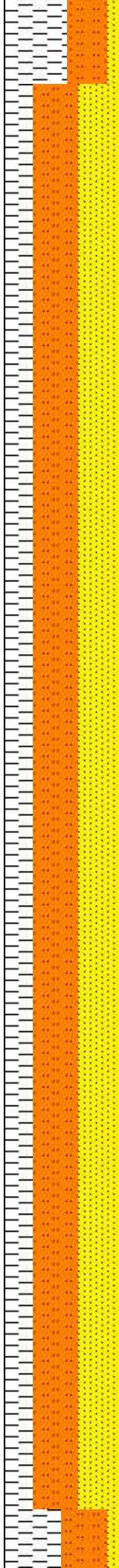
WOB: 38.7klbs
RPM: 70
SPM: 218
SPP: 3,651psi

MD: 4,066'
TVD: 4,023.14'
INC: 11.6°
AZM: 163.39°
VS: -497.07'

MW IN: 9.7
VIS IN: 60
MW OUT: 9.7
VIS OUT: 54

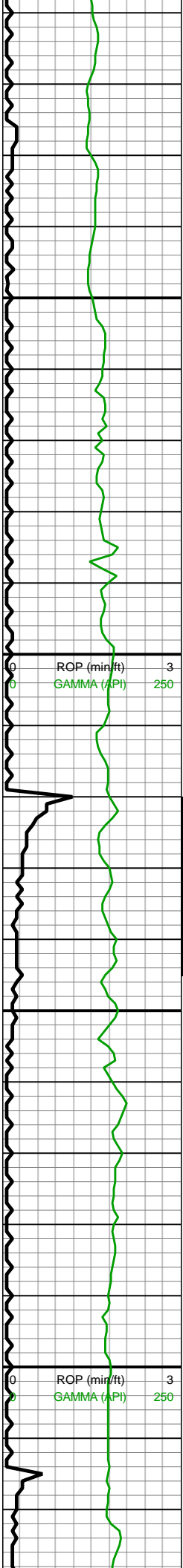
MD: 4,161'
TVD: 4,116.31'
INC: 10.94°
AZM: 164.18°
VS: -514.63'

WOB: 33.8klbs
RPM: 69
SPM: 219
SPP: 3,755psi



SS (10%): offwht-wht, lt gy, vf-f gr, w srted grns, arg ip, hrd-fri, predy w cons cls wi silc cmt

4000-4200 SLTST (40%): med gy, gyshbn, blk-y-sb plty, frm-v frm, tr micmica, non calc; SS (35%): offwht-wht, lt gy, vf-f gr, hrd-fri, w srted grns, arg ip, w cons cls wi silc cmt; SH (25%): med gy-dk gy, sl frm, sl sm tex, blk-y-sb plty, non calc, micmica



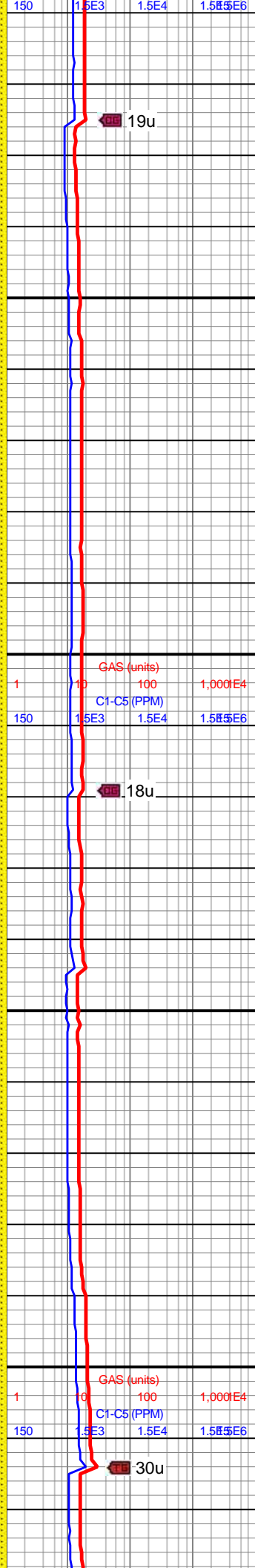
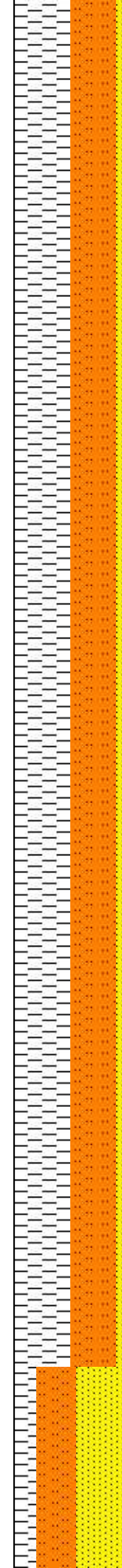
4,210
4,220
4,230
4,240
4,250
4,260
4,270
4,280
4,290
4,300
4,310
4,320
4,330
4,340
4,350
4,360
4,370
4,380
4,390
4,400
4,410
4,420

MD: 4,256'
TVD: 4,209.75'
INC: 9.89°
AZM: 165.5°
VS: -530.97'

MD: 4,371'
TVD: 4,322.89'
INC: 10.77°
AZM: 154.42°
VS: -549.86'

WOB: 35.1klbs
RPM: 70
SPM: 219
SPP: 3,782psi

MW IN: 9.6
VIS IN: 63
MW OUT: 9.6+
VIS OUT: 57



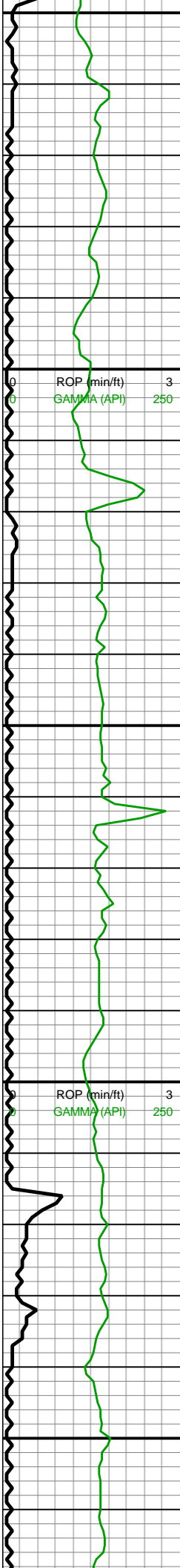
19u

18u

30u

4200-4400 SH (50%):
med gy-dk gy, sl sm tex,
sl frm, blk-y-sb plty, non
calc, micmica; SLTST
(40%): med gy, gyshbn,
silty-grty tex, frm-v frm,
blk-y-sb plty, tr micmica,
non calc; SS (10%):
offwht-lt gy, w srt'd grns,
vf-f gr, hrd-fri, cons cls wi
silc cmt, arg ip





4,650
4,660
4,670
4,680
4,690
4,700
4,710
4,720
4,730
4,740
4,750
4,760
4,770
4,780
4,790
4,800
4,810
4,820
4,830
4,840
4,850
4,860

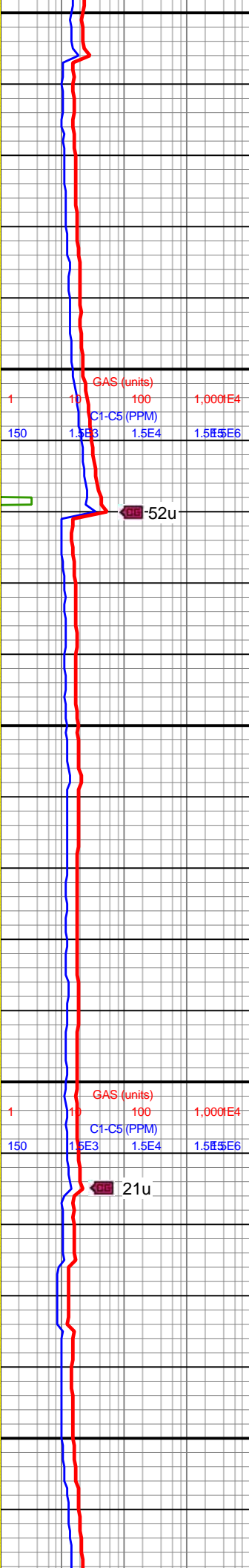
MD: 4,656'
TVD: 4,603.51'
INC: 11.47°
AZM: 162.16°
VS: -593.99'

MW IN: 9.7
VIS IN: 62
MW OUT: 9.7
VIS OUT: 57

MD: 4,751'
TVD: 4,696.76'
INC: 10.55°
AZM: 157.15°
VS: -610.68'

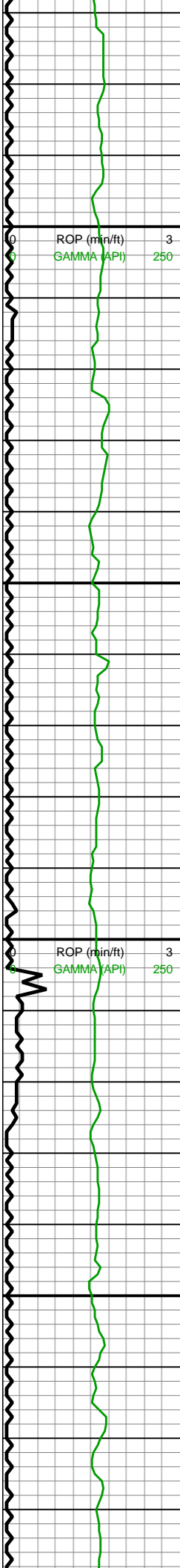
WOB: 33.5klbs
RPM: 69
SPM: 218
SPP: 4,735psi

MD: 4,846'
TVD: 4,789.86'
INC: 12.44°
AZM: 163.65°
VS: -628.2'



4600-4800 SH (35%):
med gy-dk gy, sl frm-sft,
sl sm tex, blk-y-sb plty,
micmica, non calc; SS
(35%): offwht-wht, mot lt
gy, w srted, vf-f gr, sft-fri, sl
hd, cons wi arg cmt,
sl-mod calc; SLTST
(30%): med gy, gyshbn,
silty tex, blk-y-sb plty, frm-v
frm, tr micmica, non calc;





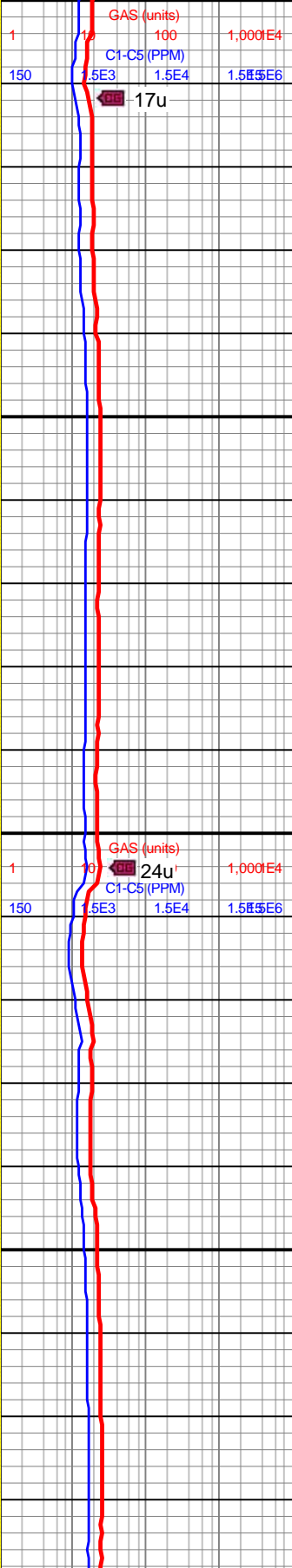
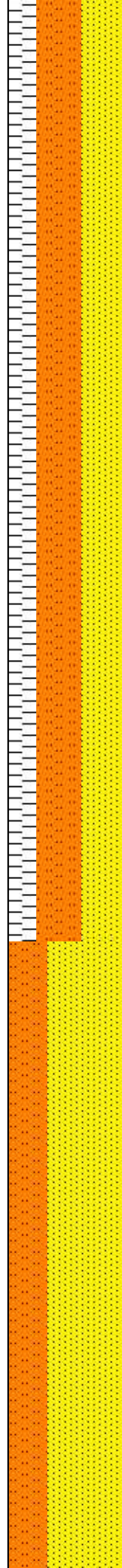
4,870
4,880
4,890
4,900
4,910
4,920
4,930
4,940
4,950
4,960
4,970
4,980
4,990
5,000
5,010
5,020
5,030
5,040
5,050
5,060
5,070
5,080

MD: 4,940'
TVD: 4,881.91'
INC: 10.94°
AZM: 161.54°
VS: -646.09'

WOB: 35.8klbs
RPM: 70
SPM: 218
SPP: 4,770psi

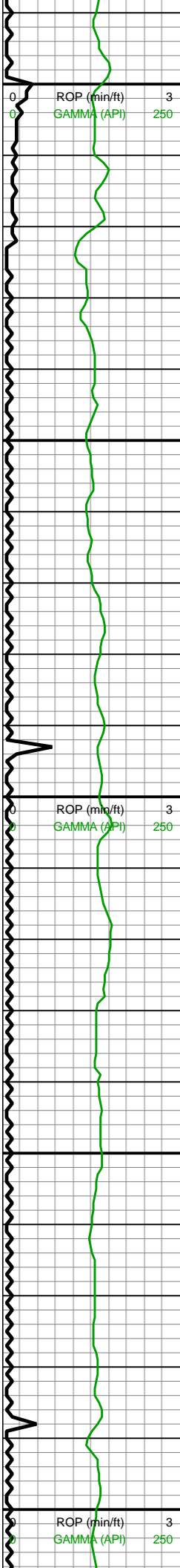
MW IN: 9.7+
VIS IN: 62
MW OUT: 9.7+
VIS OUT: 56

MD: 5,034'
TVD: 4,974.24'
INC: 10.68°
AZM: 159.52°
VS: -662.42'



4800-5000 SLTST (40%):
med gy, gyshbn, slty tex,
blky-sb plty, frm-v frm, tr
micmica, non calc; SS
(35%): offwht-wht, mot lt
gy, w srtd, vf-f gr, sft-fri, sl
hd, cons wi arg cmt,
sl-mod calc; SH (25%):
med gy-dk gy, sl frm-sft,
sl sm tex, blky-sb plty,
micmica, non calc;



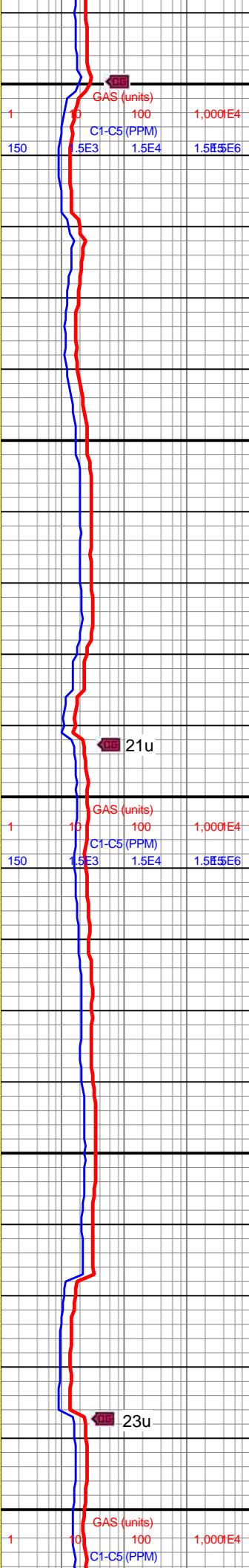
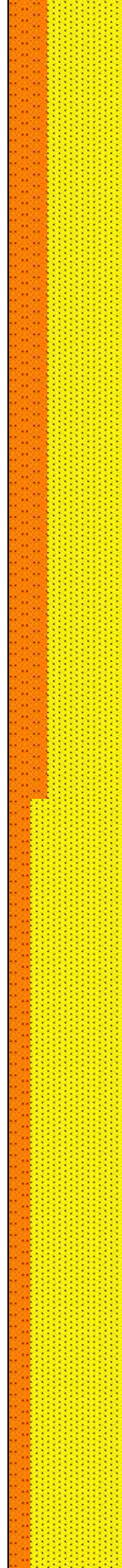


5,090
5,100
5,110
5,120
5,130
5,140
5,150
5,160
5,170
5,180
5,190
5,200
5,210
5,220
5,230
5,240
5,250
5,260
5,270
5,280
5,290
5,300

MD: 5,129'
TVD: 5,067.45'
INC: 11.65°
AZM: 167.87°
VS: -679.78'

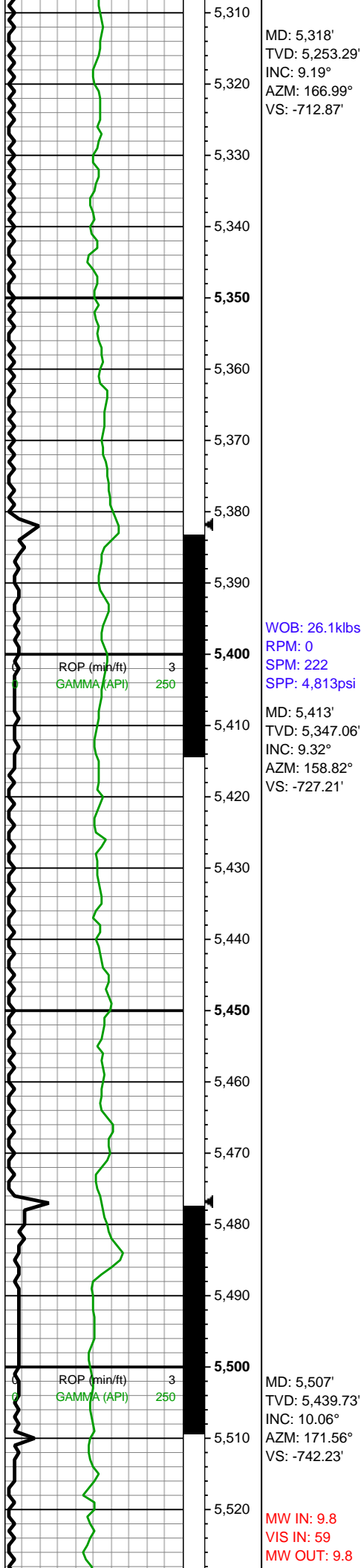
WOB: 35.3klbs
RPM: 70
SPM: 222
SPP: 4,900psi

MW IN: 9.7+
VIS IN: 60
MW OUT: 9.7+
VIS OUT: 53
MD: 5,224'
TVD: 5,160.68'
INC: 10.5°
AZM: 167.17°
VS: -697.39'



5000-5200 SS (65%):
offwht-wht, mot lt gy, w
srted, vf-f gr, sft-fri, sl hd,
cons wi arg cmt, sl-mod
calc; SLTST (35%): med
gy, gyshbn, slty tex,
blky-sb plty, frm-v frm, tr
micmica, non calc; tr SH





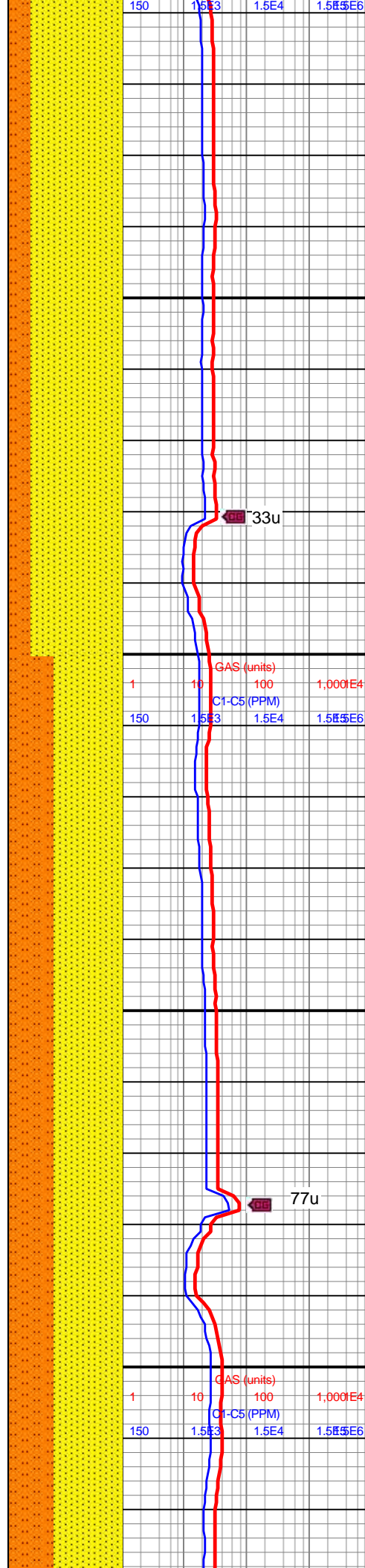
MD: 5,318'
TVD: 5,253.29'
INC: 9.19°
AZM: 166.99°
VS: -712.87'

WOB: 26.1klbs
RPM: 0
SPM: 222
SPP: 4,813psi

MD: 5,413'
TVD: 5,347.06'
INC: 9.32°
AZM: 158.82°
VS: -727.21'

MD: 5,507'
TVD: 5,439.73'
INC: 10.06°
AZM: 171.56°
VS: -742.23'

MW IN: 9.8
VIS IN: 59
MW OUT: 9.8



MD: 5,318'
TVD: 5,253.29'
INC: 9.19°
AZM: 166.99°
VS: -712.87'

WOB: 26.1klbs
RPM: 0
SPM: 222
SPP: 4,813psi

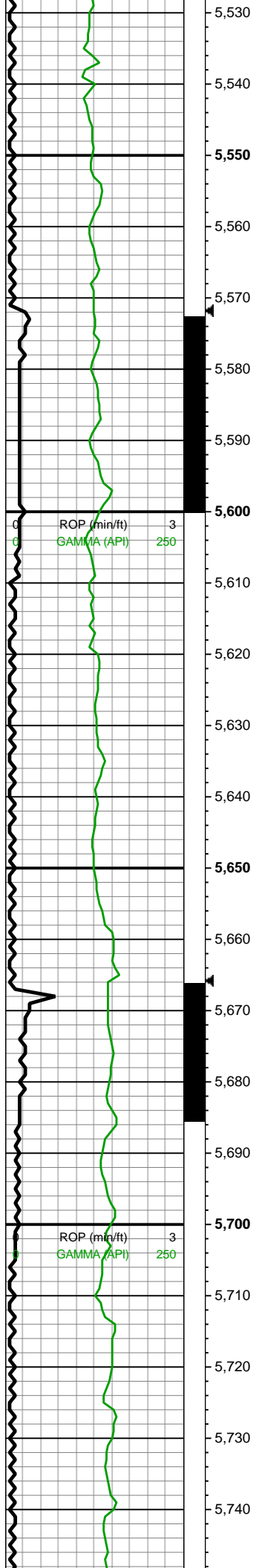
MD: 5,413'
TVD: 5,347.06'
INC: 9.32°
AZM: 158.82°
VS: -727.21'

MD: 5,507'
TVD: 5,439.73'
INC: 10.06°
AZM: 171.56°
VS: -742.23'

MW IN: 9.8
VIS IN: 59
MW OUT: 9.8

5200-5400 SS (80%): lt
gy-offwht, mot lt gy, w
srtd, vf-f gr, sft-fri, sl hd,
cons wi arg cmt, sl-mod
calc, tr free qtz; SLTST
(20%): med gy, gyshbn,
sly tex, blk-y-sb pty, frm-v
frm, tr micmica, non calc;



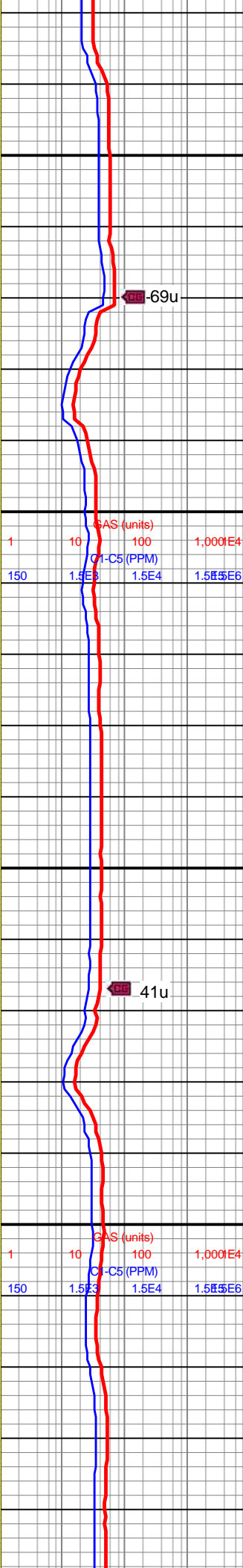
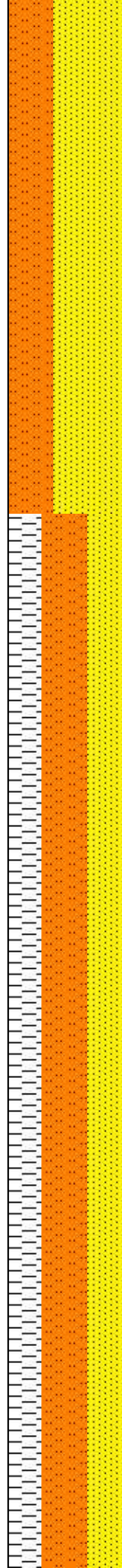


VIS OUT: 53

WOB: 22.6klbs
RPM: 0
SPM: 222
SPP: 4,768psi

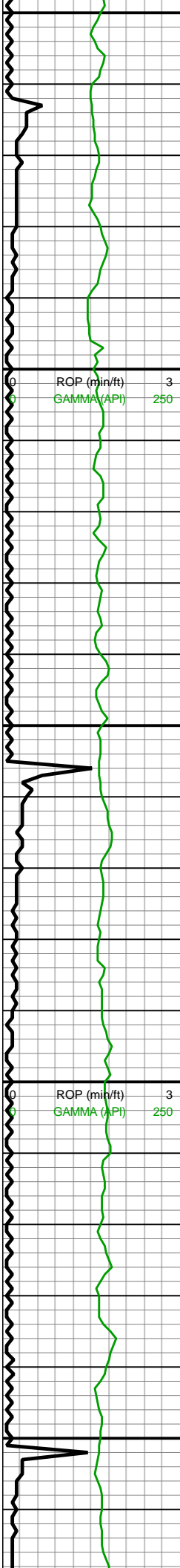
MD: 5,602'
TVD: 5,533.16'
INC: 10.77°
AZM: 163.74°
VS: -758.76'

MD: 5,696'
TVD: 5,625.39'
INC: 11.51°
AZM: 160.05°
VS: -775.72'



5400-5600 SS (60%): lt gy-offwht, mot lt gy, w srted, vf-f gr, sft-fri, sl hd, cons wi arg cmt, sl-mod calc, tr free qtz; SLTST (40%): med gy, gyshbn, slty tex, blk-y-sb plty, frm-v frm, tr micmica, non calc;



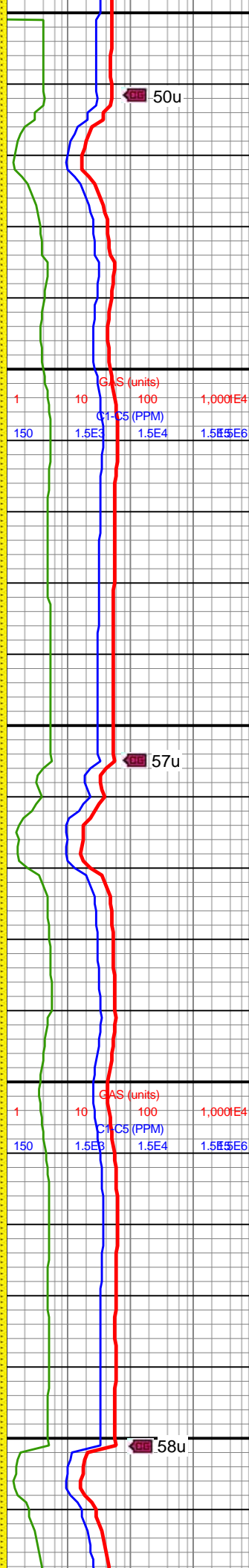
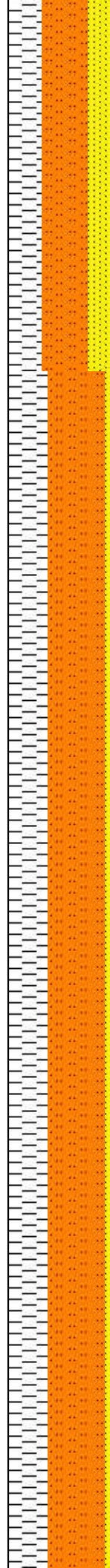


MW IN: 9.8
VIS IN: 58
MW OUT: 9.8
VIS OUT: 52

MD: 5,791'
TVD: 5,718.7'
INC: 10.28°
AZM: 143.26°
VS: -791.02'

WOB: 37.2klbs
RPM: 70
SPM: 223
SPP: 5,038psi

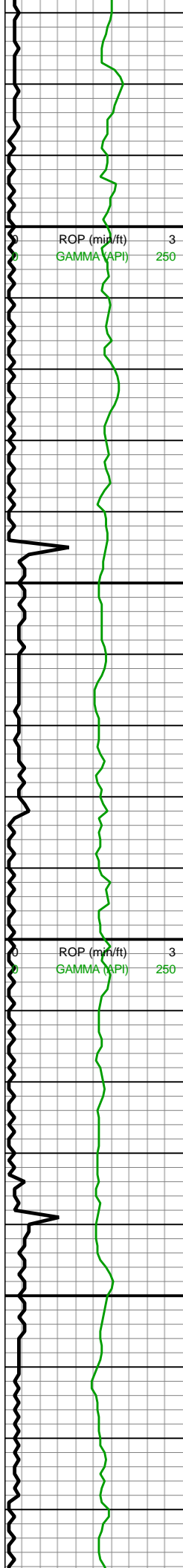
MD: 5,885'
TVD: 5,811.07'
INC: 11.12°
AZM: 150.2°
VS: -805.14'



5600-5800 SLTST (40%):
med gy, gyshbn, slty tex,
blky-sb plty, frm-v frm, tr
micmica, non calc; SS
(30%): lt gy-offwht, mot lt
gy, w srted, vf-f gr, sft-fri, sl
hd, cons wi arg cmt,
sl-mod calc, tr free qtz;
SLTY SH (30%):
gyshbn-med gy, mot lt gy,
frm-v frm, sb blky-tab,
slty-sl sm tex, micmica;



5600-5800 SLTST (50%):
med gy, gyshbn, slty tex,



MD: 5,980'
TVD: 5,904.62'
INC: 8.92°
AZM: 154.51°
VS: -819.36'

WOB: 35.4klbs
RPM: 70
SPM: 224
SPP: 5,096psi

MD: 6,075'
TVD: 5,998.18'
INC: 11.07°
AZM: 145.9°
VS: -833.15'

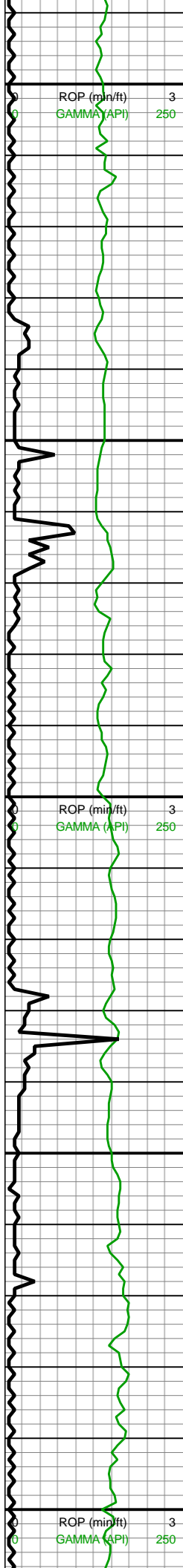
MW IN: 9.8
VIS IN: 55
MW OUT: 9.8
VIS OUT: 52

MD: 6,169'
TVD: 6,090.87'
INC: 8.26°
AZM: 170.33°
VS: -846.98'



blky-sb plty, frm-v frm, tr
micmica, non calc; SLTY
SH (35%): gyshbn-med
gy, mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SS (15%): lt
gy-offwht, mot lt gy, w
srtd, vf-f gr, sft-fri, sl hd,
cons wi arg cmt, sl-mod
calc, tr free qtz

6000-6200 SLTY SH
(50%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SLTST (50%):



6,190
6,200
6,210
6,220
6,230
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
6,360
6,370
6,380
6,390
6,400

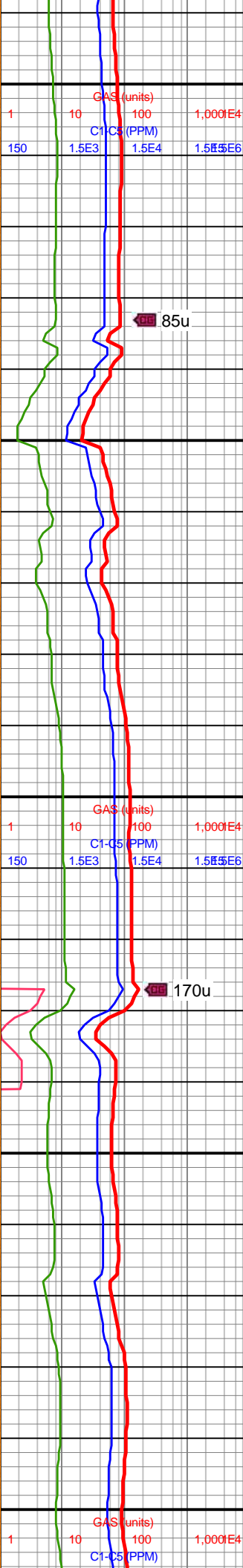
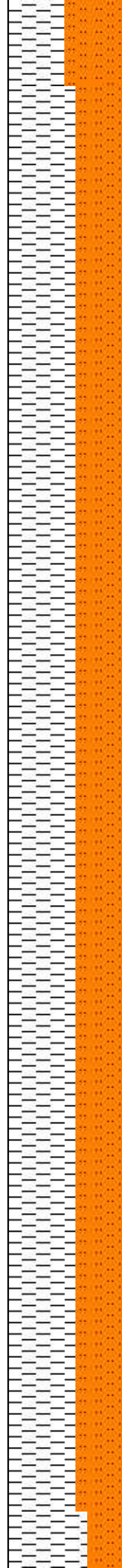
WOB: 32.7klbs
RPM: 70
SPM: 222
SPP: 5,022psi

MD: 6,263'
TVD: 6,184.18'
INC: 5.58°
AZM: 167.34°
VS: -857.99'

MW IN: 9.8
VIS IN: 54
MW OUT: 9.8
VIS OUT: 51

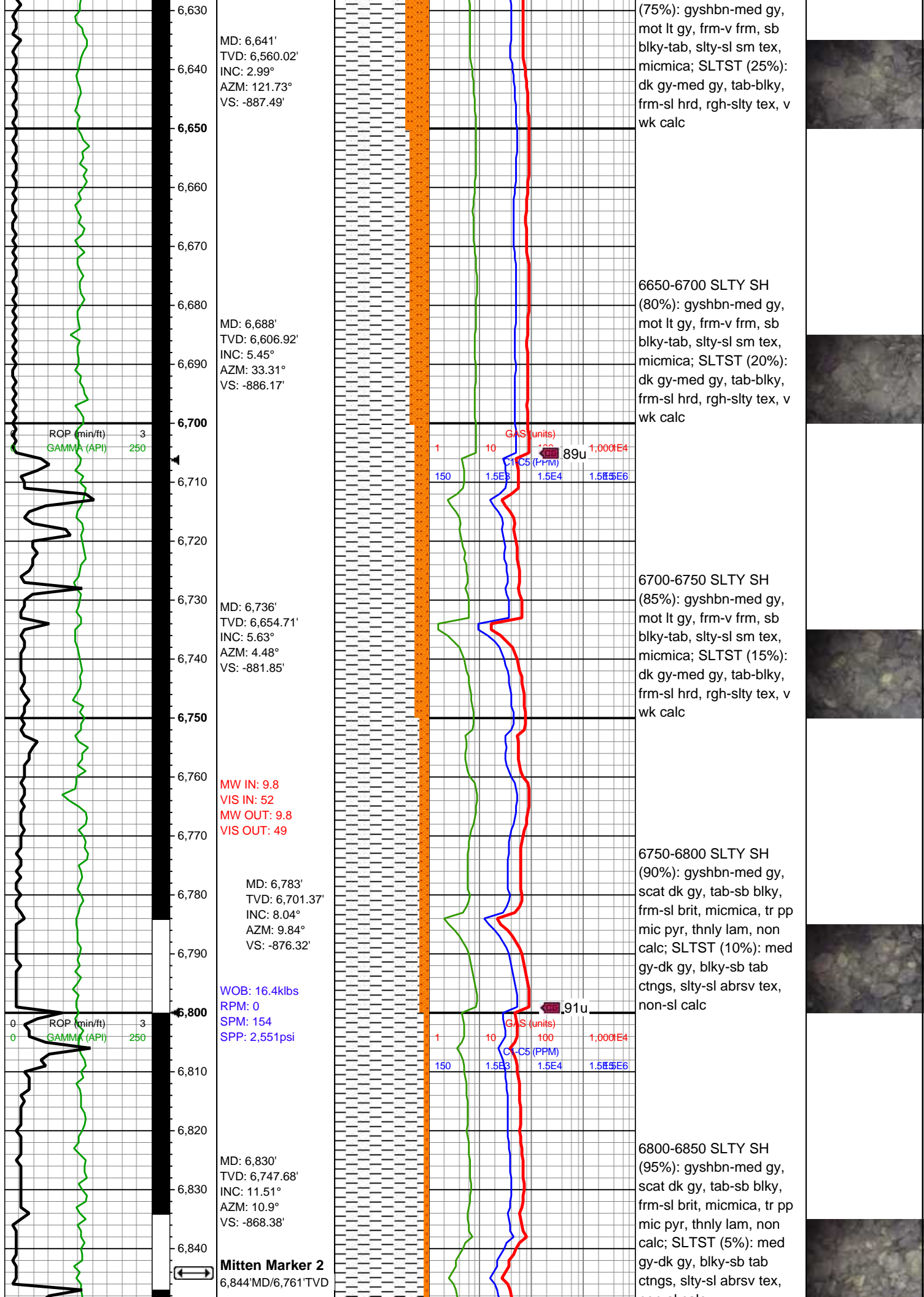
MD: 6,357'
TVD: 6,277.83'
INC: 4.44°
AZM: 138.95°
VS: -865.02'

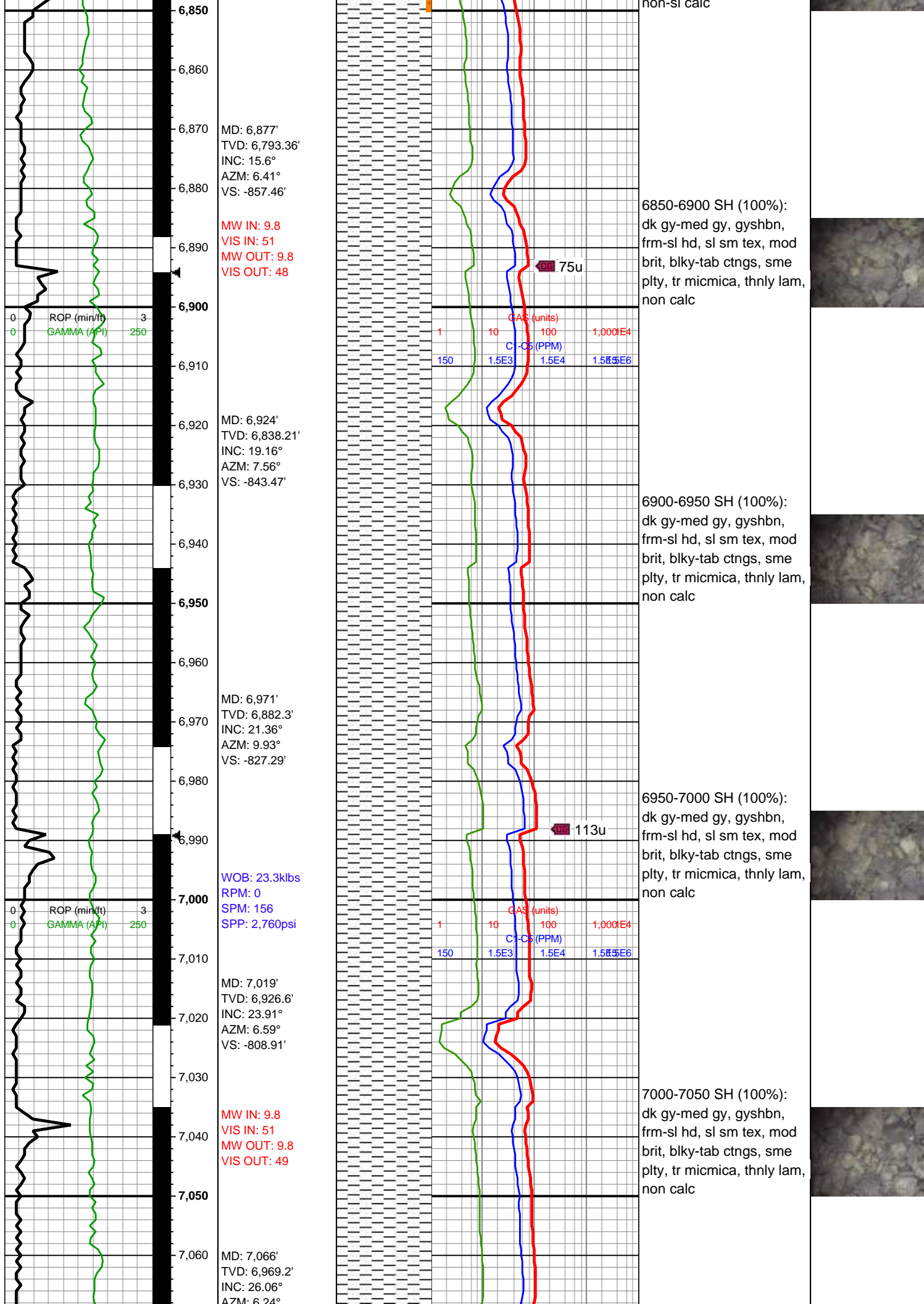
WOB: 35.1klbs
RPM: 70
SPM: 224
SPP: 5,135psi

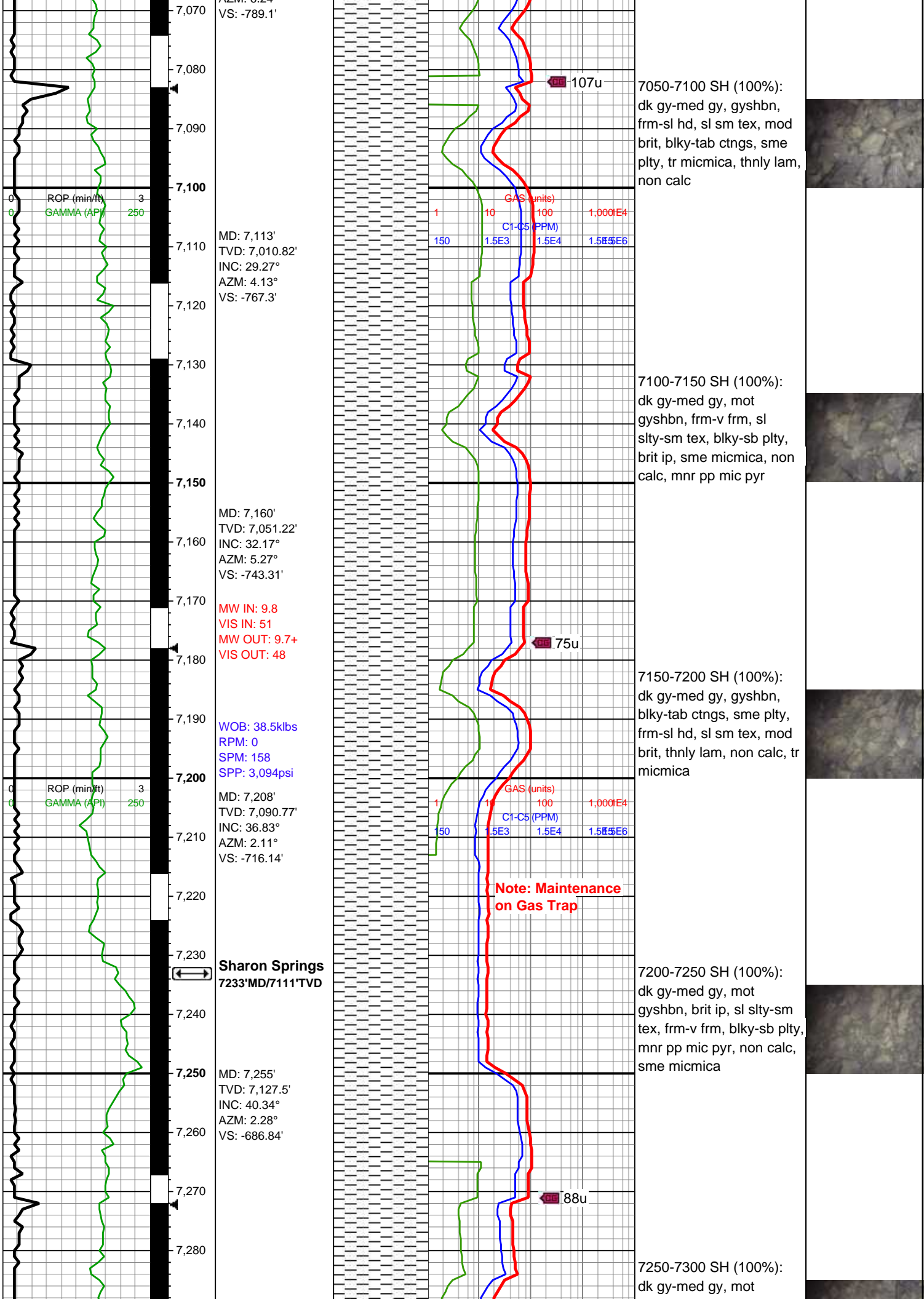


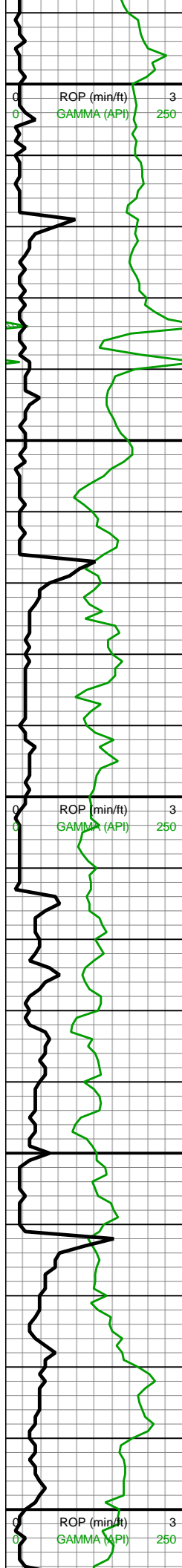
micmica, SLTST (50%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-sltly tex, v
wk calc

6200-6400 SLTY SH
(60%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica, SLTST (40%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-sltly tex, v
wk calc









MD: 7,303'
TVD: 7,162.83'
INC: 44.87°
AZM: 360°
VS: -654.37'
MW IN: 9.7+
VIS IN: 50
MW OUT: 9.7+
VIS OUT: 48

Niobrara A
7331'MD/7182'TVD

MD: 7,350'
TVD: 7,195.34'
INC: 47.59°
AZM: 356.75°
VS: -620.54'

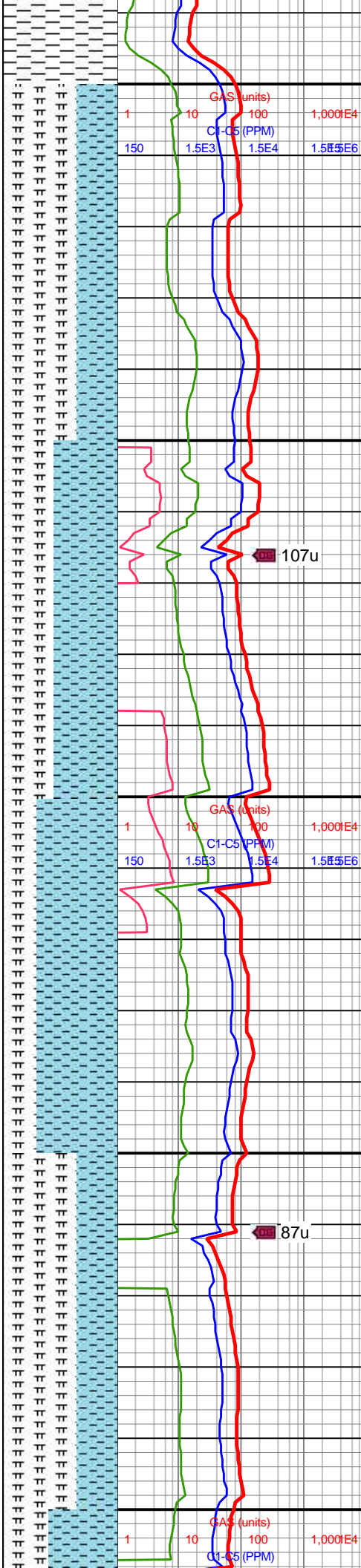
Niobrara B
7391'MD/7222'TVD

MD: 7,397'
TVD: 7,225.93'
INC: 51.2°
AZM: 356.83°
VS: -585.05'
WOB: 34.1kibs
RPM: 0
SPM: 152
SPP: 2,940psi

MD: 7,444'
TVD: 7,254.18'
INC: 54.89°
AZM: 359.74°
VS: -547.62'

MW IN: 9.8
VIS IN: 50
MW OUT: 9.7+
VIS OUT: 47

MD: 7,492'
TVD: 7,280.1'
INC: 59.72°
AZM: 1.32°
VS: -507.27'



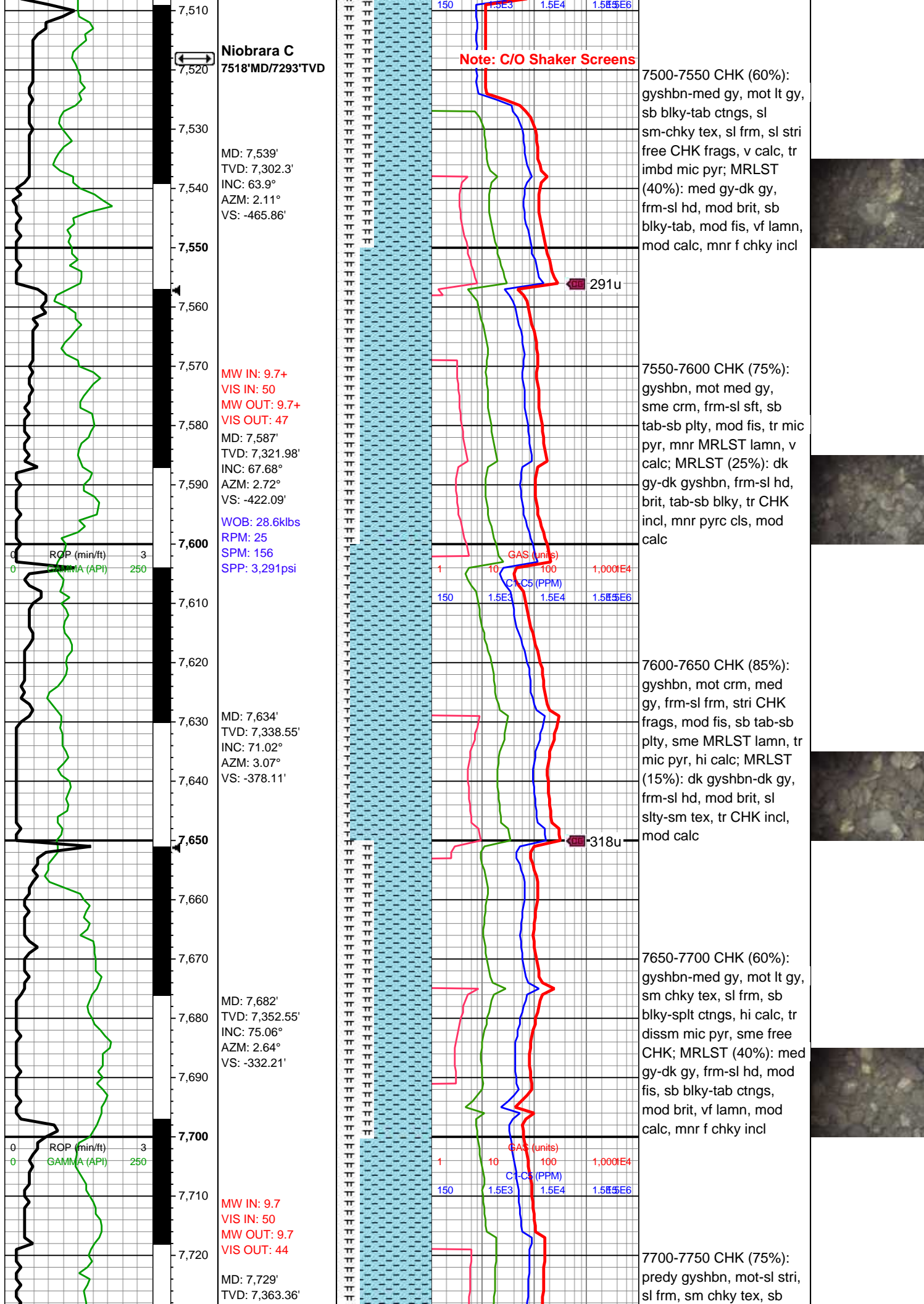
gyshbn, frm-v frm, brit ip,
sl slty tex, blk-sb plty,
mnr pp mic pyr, sme
micmica, non calc

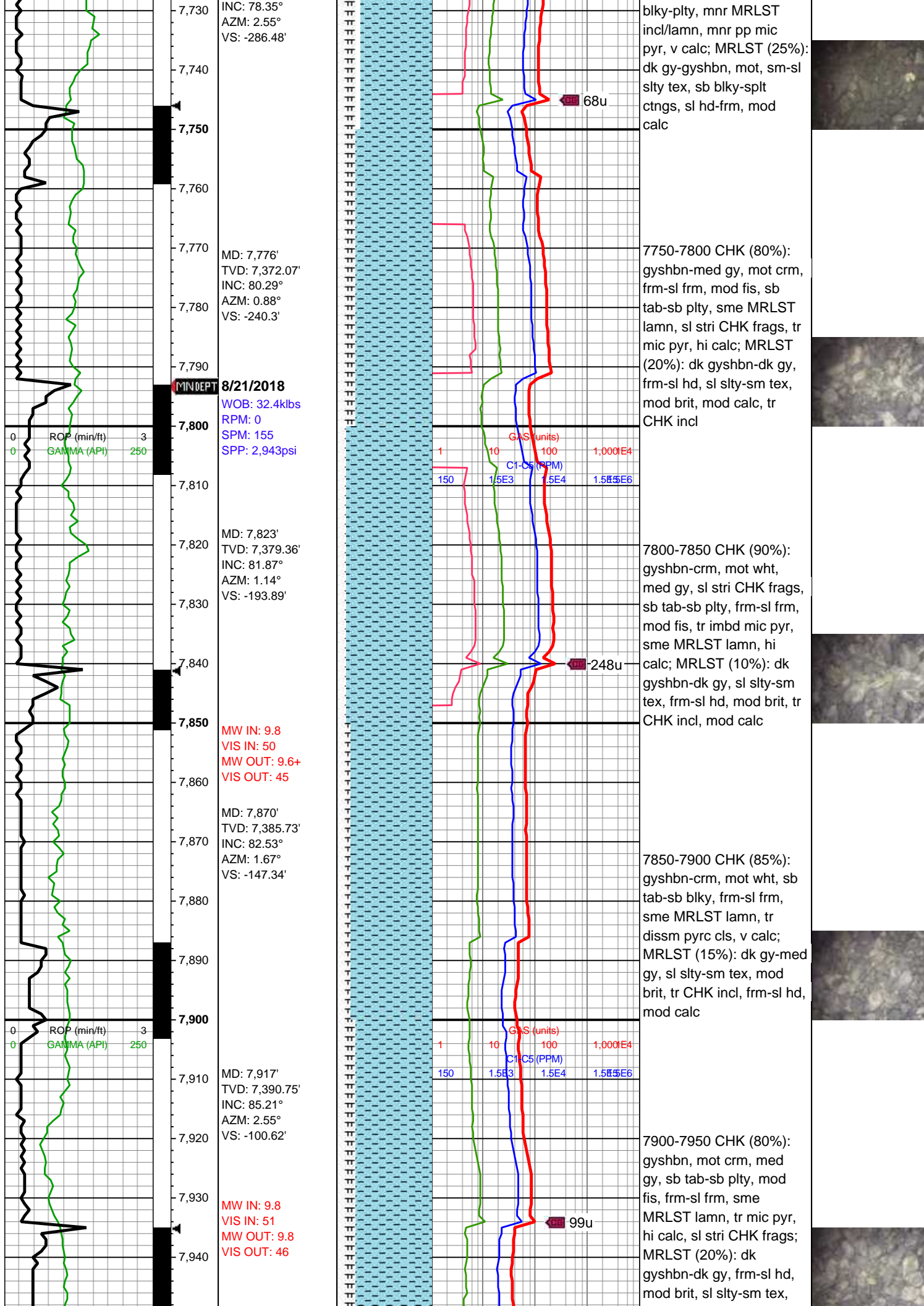
7300-7350 MRLST
(65%): dk gy-gyshbn,
mot, sb blk-sb plty
ctngs, sl hd-frm, mod
calc, mnr imbd/pp mic
pyr; CHK (35%): med
gy-gyshbn, mot-sl stri, sl
frm-brit, sm chky tex, sb
blk-ctngs, tr MRLST incl,
hi calc

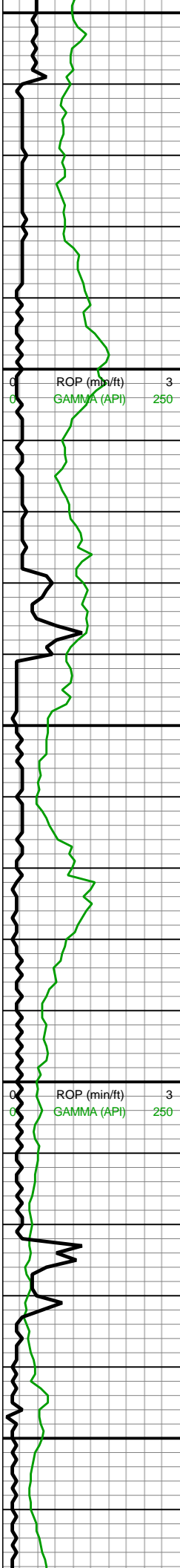
7350-7400 MRLST
(45%): dk gy, v dk gy, mot
med gy, sb blk-sb ang
ctngs, sl hd-frm, mnr pp
mic pyr, mod calc; CHK
(55%): med gy-gyshbn,
mot, sl frm-brit, sl stri
frags, sm chky tex, sb
blk-ctngs, tr MRLST incl,
v calc

7400-7450 CHK (70%):
gyshbn, med gy, mot, sl
stri CHK frags, sb blk-
ctngs, sm chky tex, sl
frm-brit, v calc, tr MRLST
incl; MRLST (30%): dk
gy-gyshbn, mot, sl sm
tex, sl hd-frm, sb blk-sb
ang ctngs, mnr intbd
CHK, mod calc

7450-7500 MRLST
(65%): dk gy-med gy, mot
gyshbn, sl hd-frm, sb
blk-sb plty ctngs, sl
slty-sm tex, mnr pp mic
pyr, mod calc; CHK
(35%): gyshbn-med gy,
mot, sl stri CHK frags, sl
frm-brit, sm chky tex, sb
blk-ctngs, v calc, tr
MRLST lamn







MD: 7,965'
TVD: 7,393.55'
INC: 88.11°
AZM: 3.07°
VS: -52.7'

Curve landed
7981' MD/7393'TVD

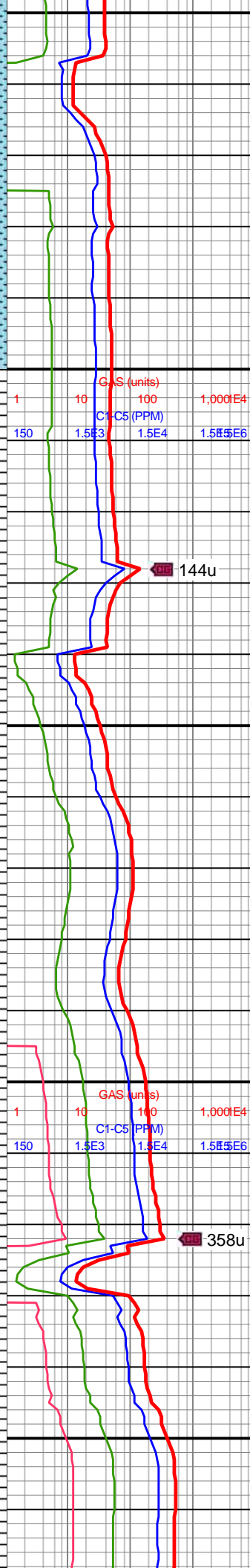
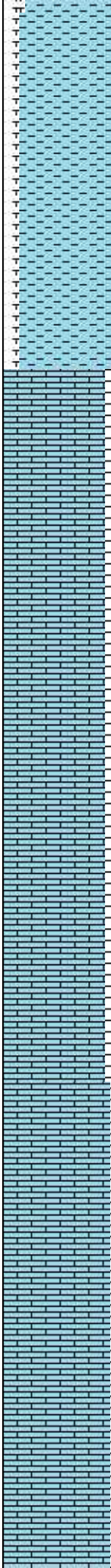
WOB: 22.7klbs
RPM: 25
SPM: 154
SPP: 3,314psi

MW IN: 9.8
VIS IN: 48
MW OUT: 9.8
VIS OUT: 46

Ft Hays
8059'MD/7396'TVD

MD: 8,059'
TVD: 7,395.96'
INC: 88.95°
AZM: 2.02°
VS: 41.26'

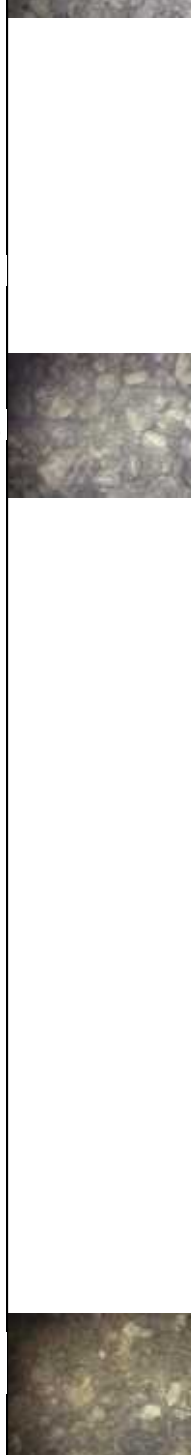
MD: 8,153'
TVD: 7,398.45'
INC: 88.02°
AZM: 0.17°
VS: 135.19'

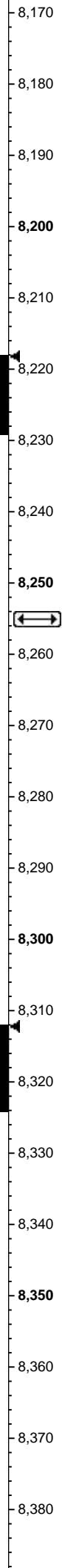
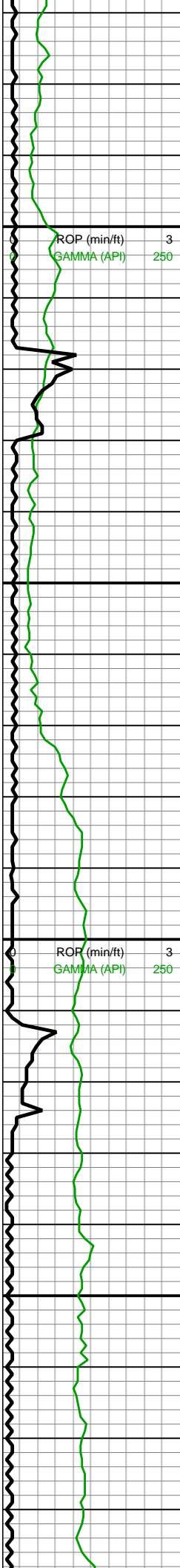


mod calc, tr CHK incl

7950-8000 CHK (85%):
gyshbn-crm, mot wht, sm
chky tex, frm-sl frm, sb
tab-sb blkly, sme MRLST
lamn, v calc, tr diss
pyrc cls; MRLST (15%):
dk gy-med gy, tr CHK incl,
sl slty-sm tex, mod brit,
frm-sl hd, mod calc

8000-8100 LS (90%):
med brn-bnshgy, mot
crm, sb tab-sb blkly,
pkst-wkst, frm-sl frm, vf
xln-micxln, tr pp/imbd mic
pyr cls, hi calc; SH (10%):
dk gy, plty-ang, frm-sl hd,
sl slty tex, sl calc





MW IN: 9.8
VIS IN: 52
MW OUT: 9.8
VIS OUT: 47

WOB: 36.8klbs
RPM: 70
SPM: 218
SPP: 5,394psi

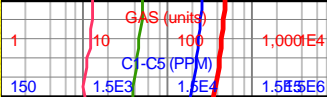
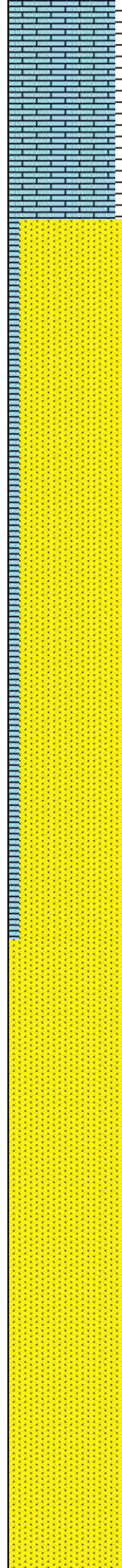
MD: 8,248'
TVD: 7,401.51'
INC: 88.29°
AZM: 358.33°
VS: 229.96'



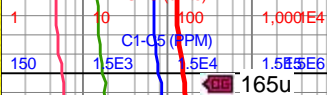
Codell
8255'MD/7402'TVD

MW IN: 9.8
VIS IN: 46
MW OUT: 9.8
VIS OUT: 46

MD: 8,342'
TVD: 7,403.99'
INC: 88.68°
AZM: 358.5°
VS: 323.67'



376u



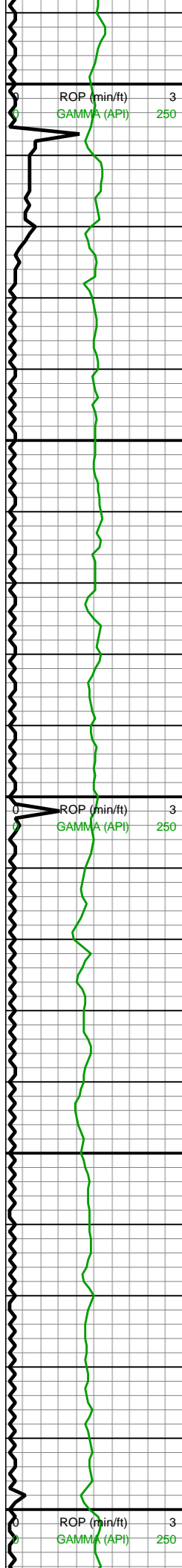
165u

8100-8200 LS (95%):
med brn-bnshgy, mot
crm, frm-sl frm, sb tab-sb
blk, pkst-wkst, vf
xln-micxln, hi calc, tr imbd
mic pyr cls; SH (5%): dk
gy, frm-sl hd, sl slty tex,
plty-ang, sl calc

8200-8300 SS (90%): lt
brn-bnshgy, med brn, sb
rnd-sb ang, vf-f gr, slt ip,
mtx-gr sup cluss, cons wi
silc/arg cmt; LMST (10%):
lt brn-med brn, mot, sb
splt-sb tab, crpxln-micxln,
frm-sl hd, pkst, tr mic pyr

8300-8400 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, frm-v frm, blk,
pred mod-w cons gr sup
cls, silc cmt, non calc, vf-f



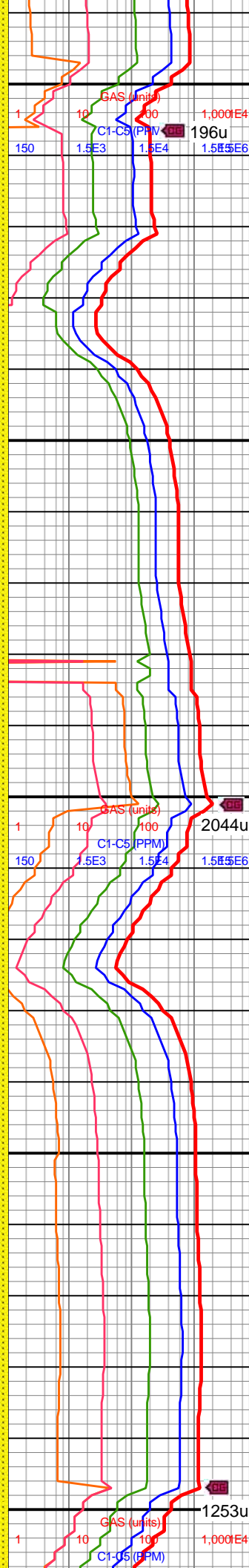


WOB: 34.6klbs
RPM: 70
SPM: 218
SPP: 5,405psi

MD: 8,437'
TVD: 7,404.9'
INC: 90.22°
AZM: 359.12°
VS: 418.44'

MD: 8,532'
TVD: 7,404.9'
INC: 89.78°
AZM: 358.24°
VS: 513.2'

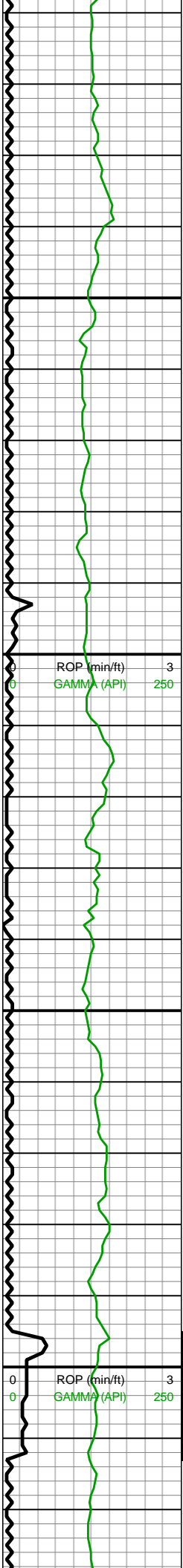
WOB: 23.5klbs
RPM: 70
SPM: 223
SPP: 5,383psi



cls, silc cmt, non calc, vf-f
grnd, occ grdg to slt, com
micmica, tr imbd pyr, tr
sh frags

8400-8500 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, frm-v frm, blkly,
pred mod-w cons gr sup
cls, silc cmt, non calc, vf-f
grnd, occ grdg to slt, com
micmica, tr imbd pyr, tr
sh frags

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



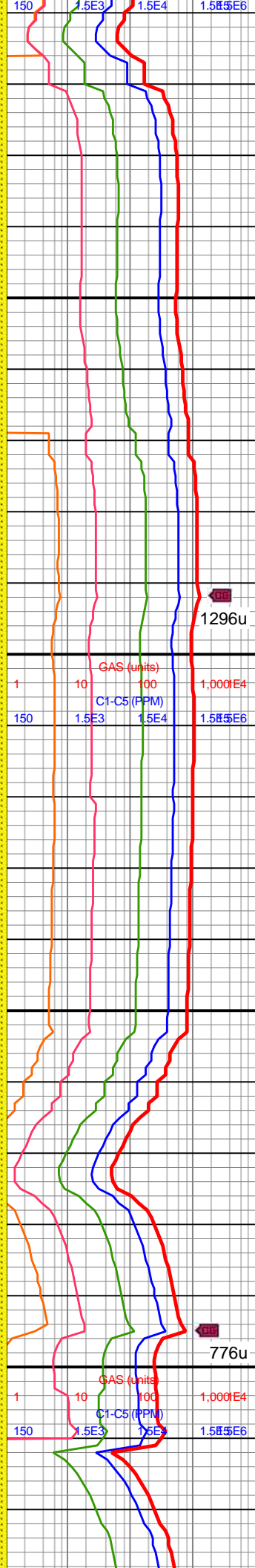
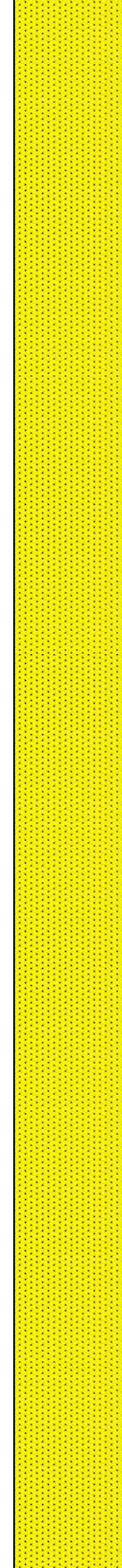
MD: 8,626'
TVD: 7,405.48'
INC: 89.52°
AZM: 358.07°
VS: 606.9'

MW IN: 9.8
VIS IN: 46
MW OUT: 9.8
VIS OUT: 46

MD: 8,720'
TVD: 7,406.63'
INC: 89.08°
AZM: 358.33°
VS: 700.6'

WOB: 32klbs
RPM: 0
SPM: 218
SPP: 5,210psi

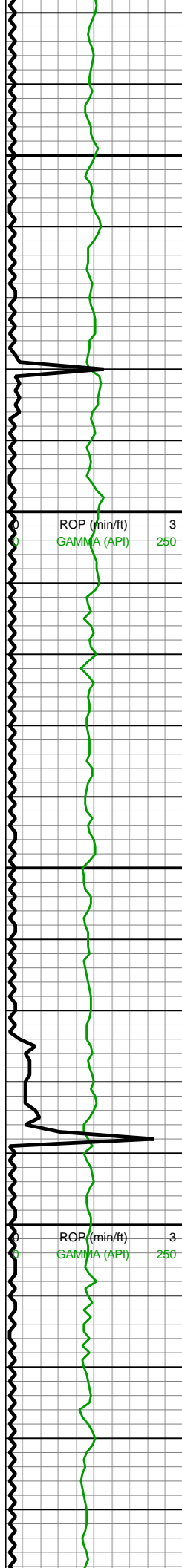
MD: 8,814'
TVD: 7,406.86'
INC: 90.75°
AZM: 358.94°
VS: 858.2'



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

8700-8800 SST (100%):
pred med gyshbn, occ lt
gy-lt brn, frm-v frm, blk, y,
pred mod-w cons gr sup
cls, silc cmt, non calc, vf-f
grnd, com micmica, occ
imbd pyr, scat sh frags





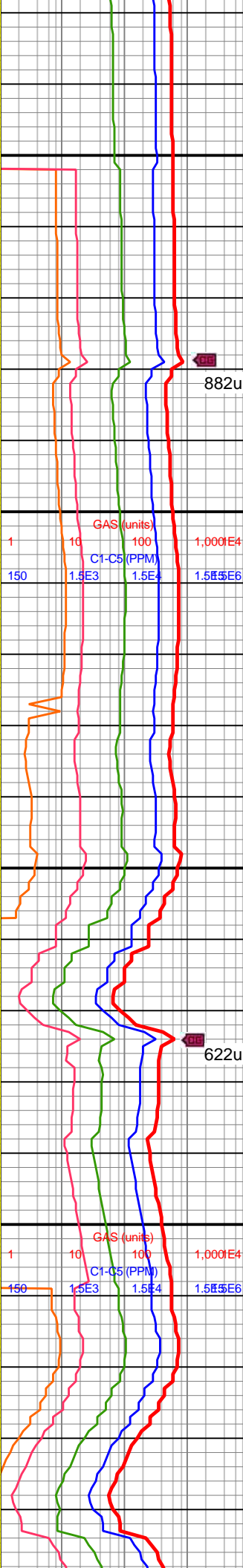
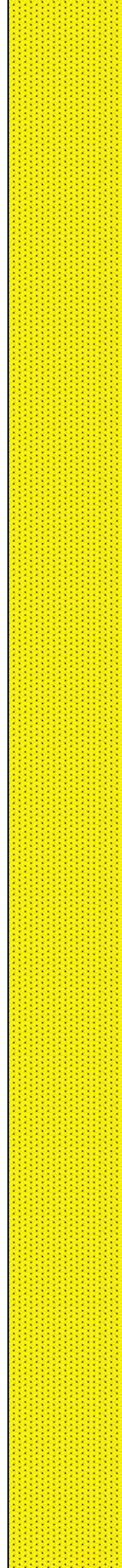
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040

MD: 8,909'
TVD: 7,405.93'
INC: 90.26°
AZM: 358.86°
VS: 889.15'

MW IN: 9.8
VIS IN: 47
MW OUT: 9.8+
VIS OUT: 46

WOB: 32.8klbs
RPM: 70
SPM: 212
SPP: 5,469psi

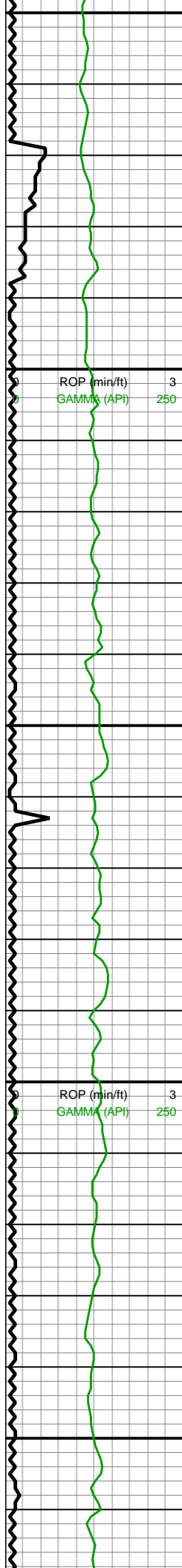
MD: 9,003'
TVD: 7,406.04'
INC: 89.6°
AZM: 358.94°
VS: 982.94'



8800-8900 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, pred
mod-w cons gr sup cls,
silc cmt, non calc, vf-f
grnd, occ micmica, tr
imbd pyr, rr sh frags

8900-9000 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, pred
mod-w cons gr sup cls,
silc cmt, non calc, vf-f
grnd, occ micmica, tr
imbd pyr, rr sh frags





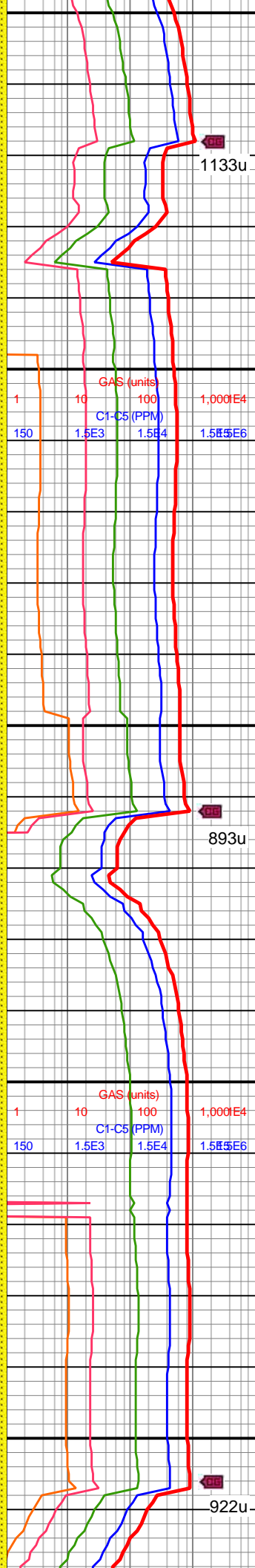
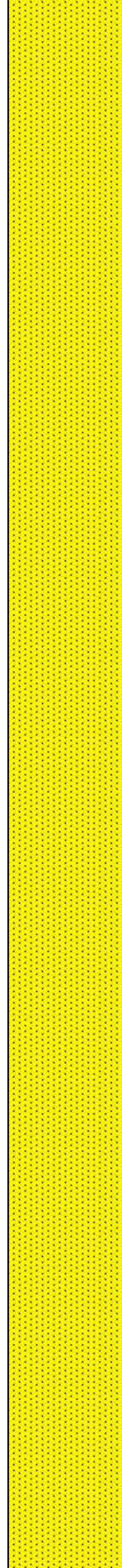
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260

MD: 9,098'
TVD: 7,405.43'
INC: 91.14°
AZM: 359.82°
VS: 1,077.77'

MW IN: 9.8
VIS IN: 47
MW OUT: 9.8+
VIS OUT: 46

MD: 9,193'
TVD: 7,403.75'
INC: 90.88°
AZM: 359.74°
VS: 1,172.64'

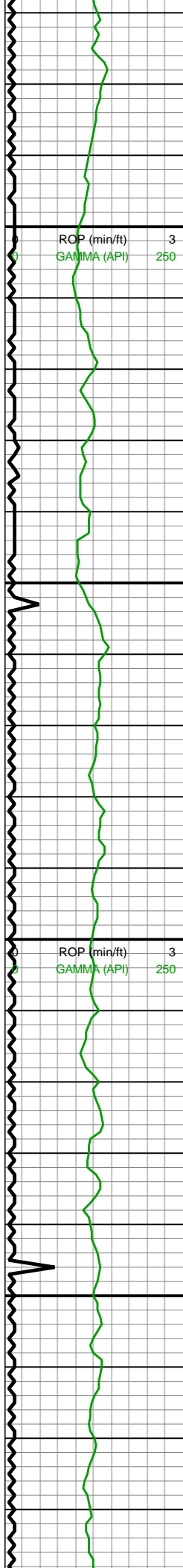
WOB: 34.9klbs
RPM: 69
SPM: 215
SPP: 5,684psi



9000-9100 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, w
cons gr sup cls, silc cmt,
non calc, vf-f grnd, com
micmica, tr imbd pyr, rr
sh frags

9100-9200 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, w
cons gr sup cls, silc cmt,
non calc, vf-f grnd, com
micmica, tr imbd pyr, rr
sh frags



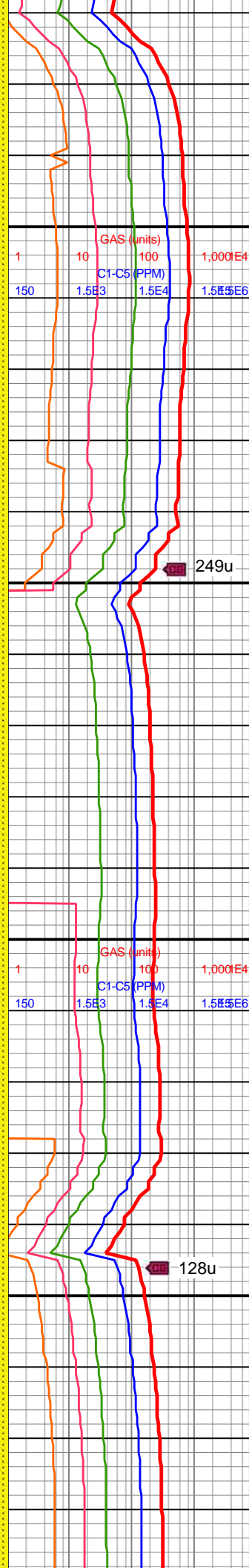


MD: 9,287'
TVD: 7,402.56'
INC: 90.57°
AZM: 359.56°
VS: 1,266.49'

MD: 9,382'
TVD: 7,401.15'
INC: 91.14°
AZM: 0.97°
VS: 1,361.39'

WOB: 35klbs
RPM: 70
SPM: 215
SPP: 5,881psi

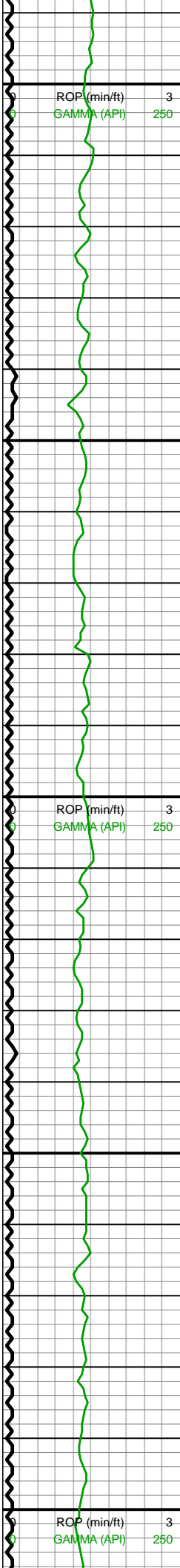
MD: 9,477'
TVD: 7,399.47'
INC: 90.88°
AZM: 0.17°
VS: 1,456.31'



9200-9300 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, w
cons gr sup cls, silc cmt,
non calc, vf-f grnd, com
micmica, tr pp pyr

9300-9400 SST (100%):
pred med gyshbn, occ lt
brn, frm-v frm, blk, w
cons gr sup cls, silc cmt,
occ grdg to slt, non calc,
vf-f grnd, com micmica, tr
pp pyr

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



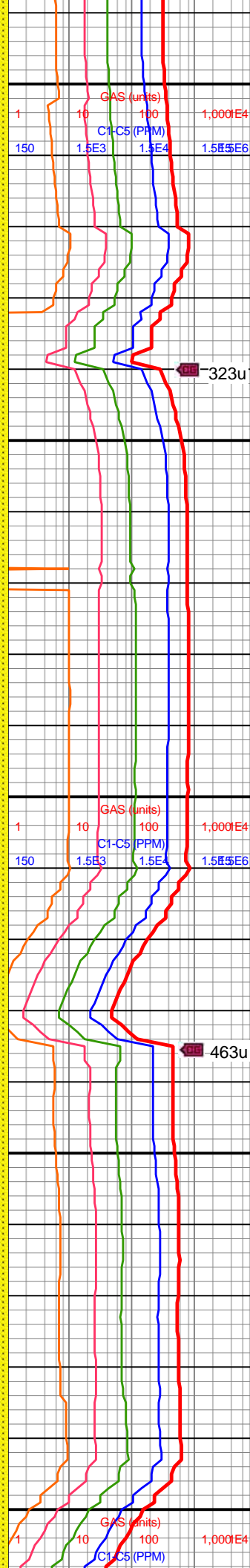
9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
9,660
9,670
9,680
9,690
9,700

MW IN: 9.9
VIS IN: 48
MW OUT: 9.9+
VIS OUT: 46

MD: 9,571'
TVD: 7,398.39'
INC: 90.44°
AZM: 359.47°
VS: 1,550.19'

WOB: 34.7klbs
RPM: 69
SPM: 208
SPP: 5,623psi

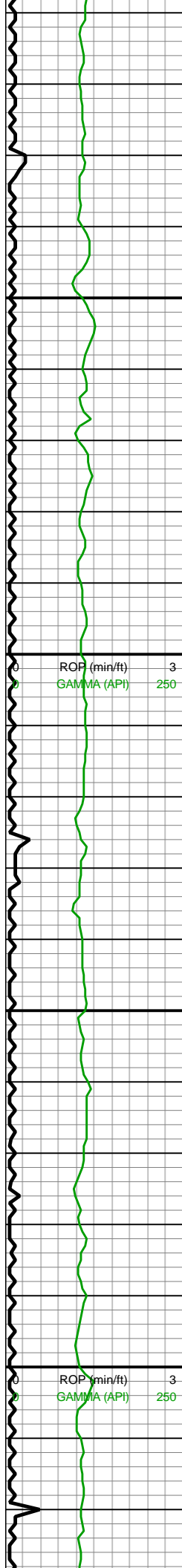
MD: 9,666'
TVD: 7,397.73'
INC: 90.35°
AZM: 359.38°
VS: 1,645.03'



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

9500-9600 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, rr pyr nod

9600-9700 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



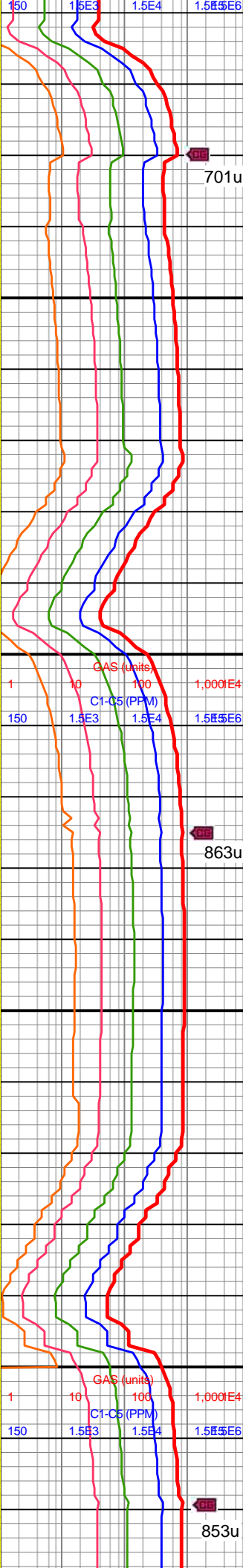
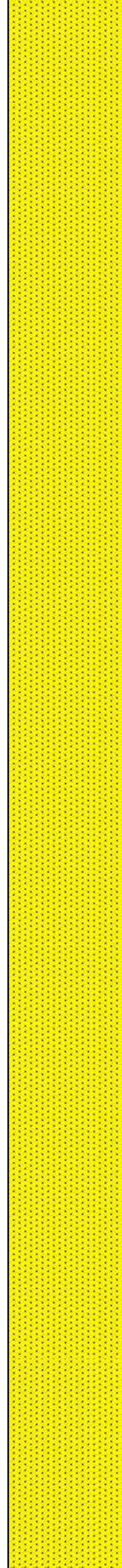
9,710
9,720
9,730
9,740
9,750
9,760
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
9,880
9,890
9,900
9,910
9,920

MD: 9,760'
TVD: 7,397.41'
INC: 90.04°
AZM: 359.03°
VS: 1,738.85'

WOB: 34.5klbs
RPM: 70
SPM: 210
SPP: 5,711psi

MD: 9,854'
TVD: 7,397.6'
INC: 89.74°
AZM: 358.33°
VS: 1,832.62'

MW IN: 10



701u

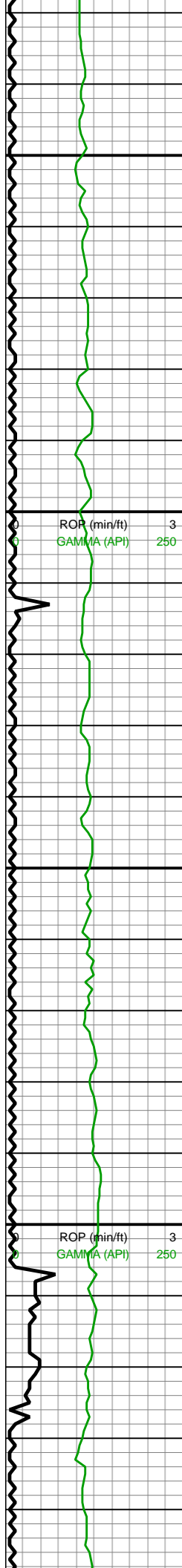
9700-9800 (100%): dk
gy-dk gy brn, gr-mtx sup
clus, occ lt gy-gy mtx, shy
ss, pred dk gy wi f sb rd
qtz sd gr incl, p srted, vf-f,
pred sb rd-rd, sl fri, grn
sup clus, silc & arg cmt,
uncons ip, non calc

863u

9800-9900 (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

853u





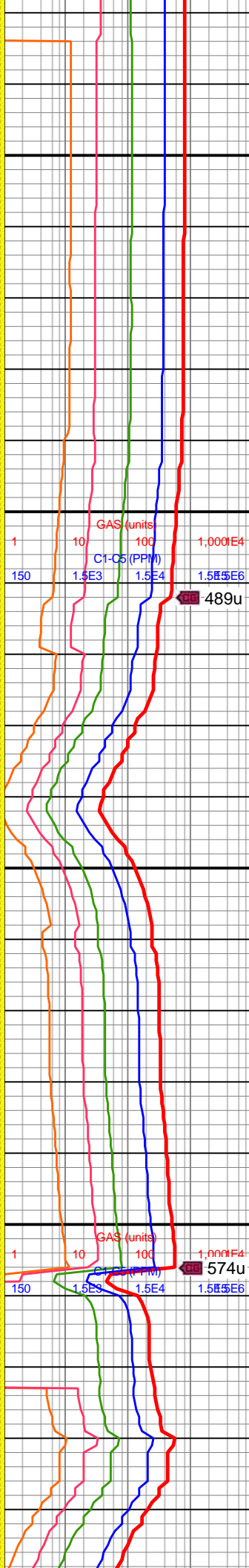
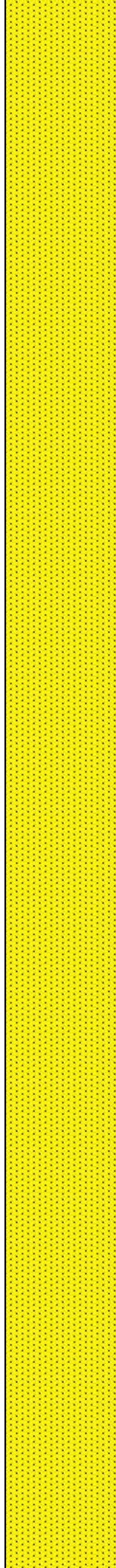
VIS IN: 48
MW OUT: 10.1
VIS OUT: 46

MD: 9,948'
TVD: 7,398.28'
INC: 89.43°
AZM: 357.8°
VS: 1,926.31'

WOB: 36.5klbs
RPM: 69
SPM: 203
SPP: 5,544psi

MD: 10,042'
TVD: 7,399.36'
INC: 89.25°
AZM: 357.45°
VS: 2,019.93'

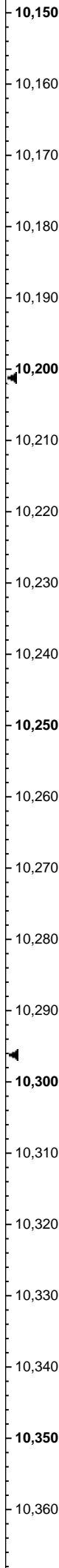
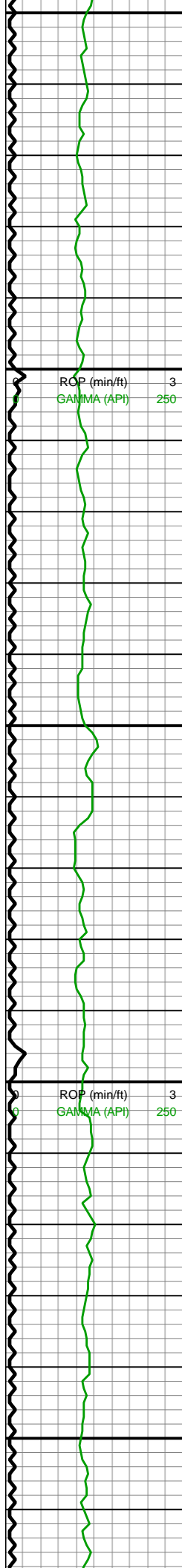
MD: 10,137'
TVD: 7,400.2'
INC: 89.74°
AZM: 360°
VS: 2,114.69'



9900-10000 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

10000-10100 SST
(100%): dk gy-dk gy brn,
gr-mtx sup clus, occ lt
gy-gy mtx, pred dk gy wi f
sb rd qtz sd gr incl, p srtd,
vf-f, pred sb rd-rd, sl fri,
grn sup clus, silc & arg
cmt, unconsl ip, non calc



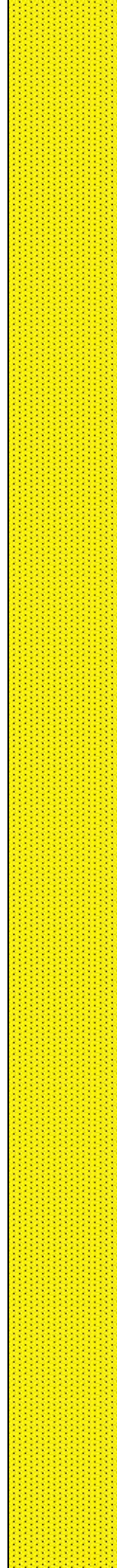


WOB: 35.9klbs
RPM: 70
SPM: 204
SPP: 5,503psi

MD: 10,232'
TVD: 7,400.67'
INC: 89.69°
AZM: 359.91°
VS: 2,209.58'

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

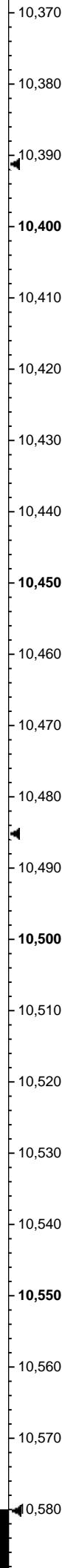
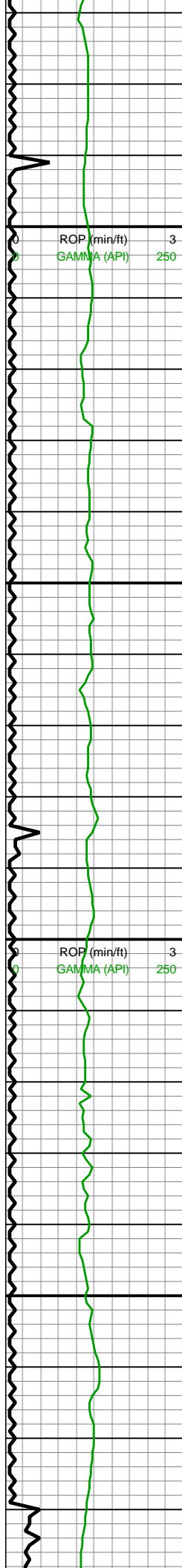
MD: 10,327'
TVD: 7,401.26'
INC: 89.6°
AZM: 359.56°
VS: 2,304.45'



10100-10200 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

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

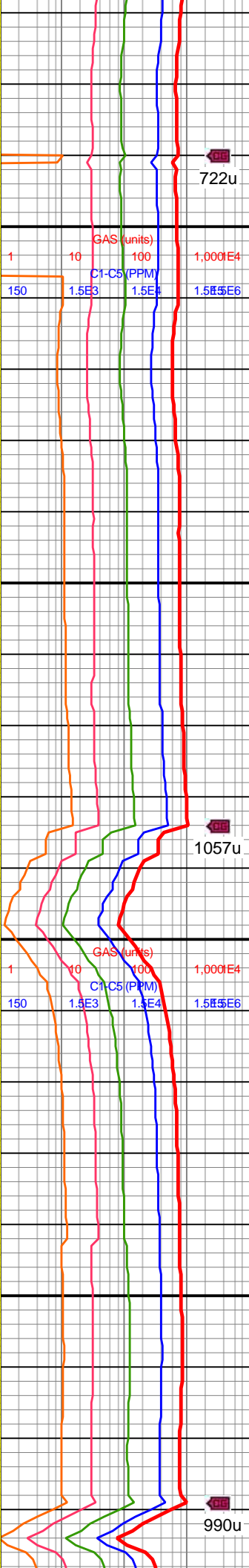
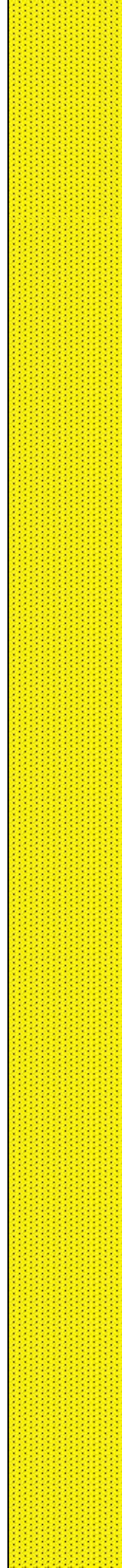




WOB: 34.1klbs
RPM: 69
SPM: 202
SPP: 5,466psi

MD: 10,421'
TVD: 7,401.87'
INC: 89.65°
AZM: 0.97°
VS: 2,398.36'

MD: 10,516'
TVD: 7,402.27'
INC: 89.87°
AZM: 1.14°
VS: 2,493.32'

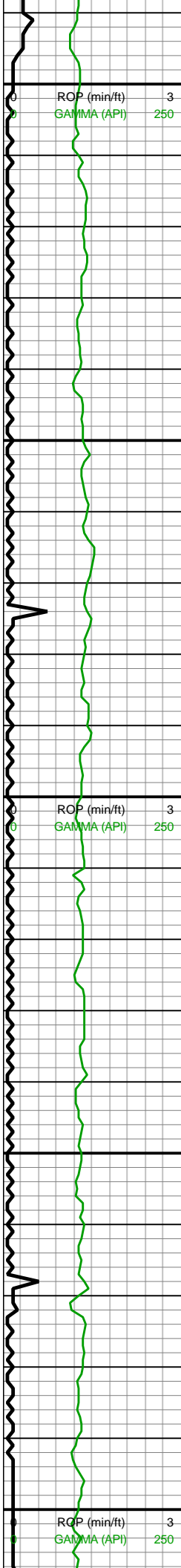


10300-10400 SST
(100%): gy-dk gy s&p
clus, sme tn, mod srted f
sb rd-rd, frm-hd, sl fri,
predy gr sup, cons wi silc
cmt, occ mtx sup clus,
arg & sl silc cmt, predy
non calc

10400-10500 SST
(100%): gy-dk gy s&p
clus, sme tn, mod srted, f
sb rd-rd, frm-hd, sl fri,
predy gr sup, cons wi silc
cmt, occ mtx sup clus,
arg & sl silc cmt, predy
non calc

10500-10600 SST
(100%): pred med
gyshbn, occ lt gy-lt brn,
frm-v frm, rd- sb rd, pred
mod-w cons, gr sup cls,





10,590
10,600
10,610
10,620
10,630
10,640
10,650
10,660
10,670
10,680
10,690
10,700
10,710
10,720
10,730
10,740
10,750
10,760
10,770
10,780
10,790
10,800

WOB: 18.1klbs
RPM: 70
SPM: 202
SPP: 5,303psi

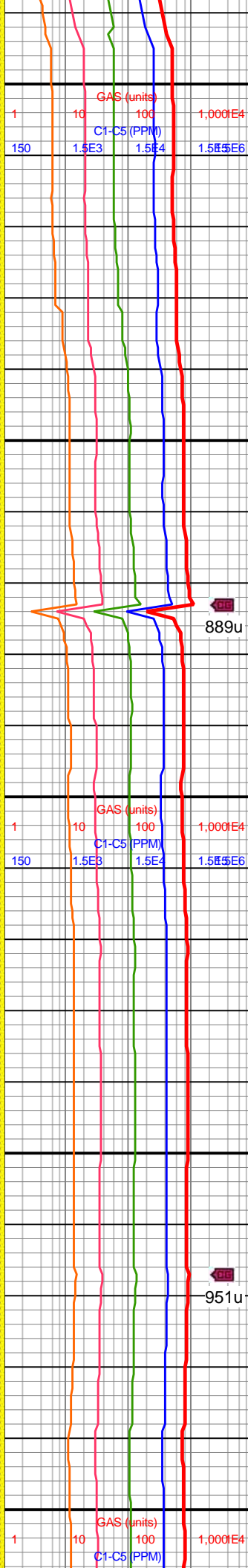
MD: 10,610'
TVD: 7,401.04'
INC: 91.63°
AZM: 359.03°
VS: 2,587.2'

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

MD: 10,704'
TVD: 7,398.44'
INC: 91.54°
AZM: 359.21°
VS: 2,680.98'

MD: 10,798'
TVD: 7,396.45'
INC: 90.88°
AZM: 357.71°
VS: 2,774.7'

WOB: 33.1klbs
RPM: 69
SPM: 202



silc cmt, non calc, vf-f
grnd, occ grdg to slt, com
micmica, tr imbd pyr, tr
sh frags

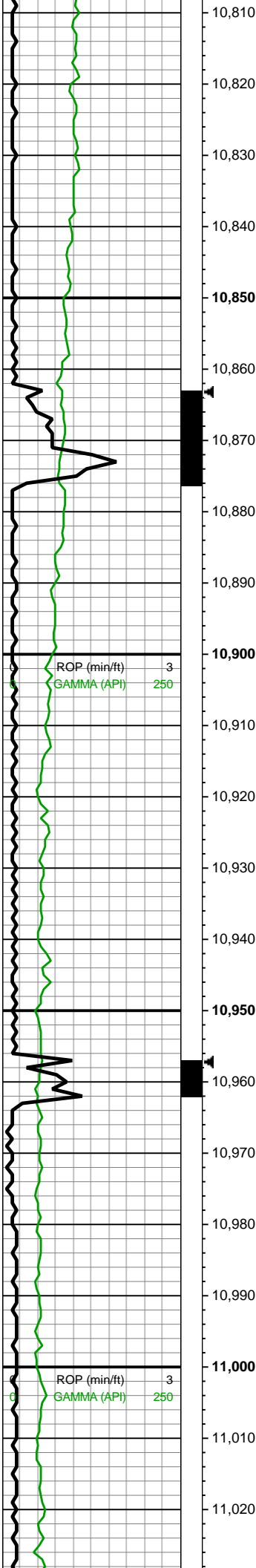
889u

10600-10700 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

951u

10700-10800 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

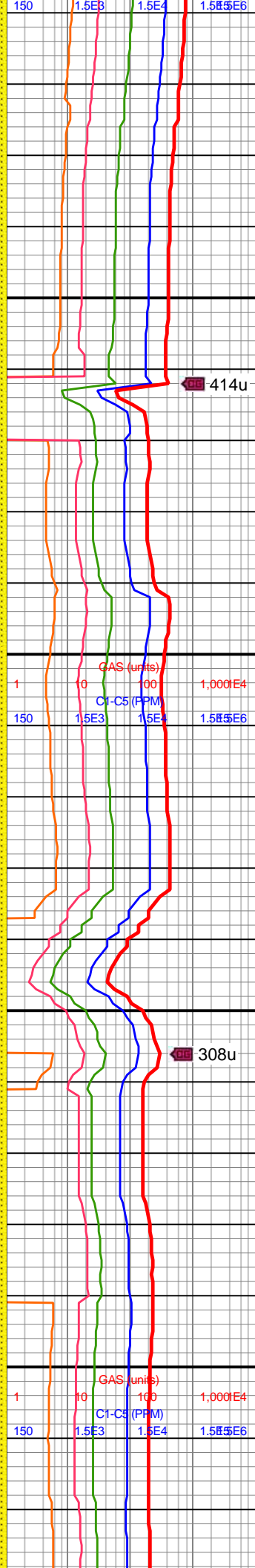
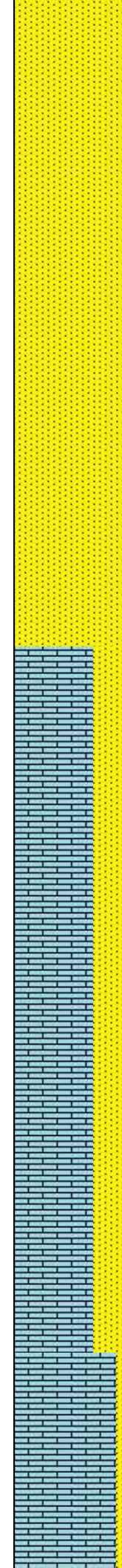
SPP: 5,694psi



MD: 10,893'
TVD: 7,395.69'
INC: 90.04°
AZM: 359.3°
VS: 2,869.43'

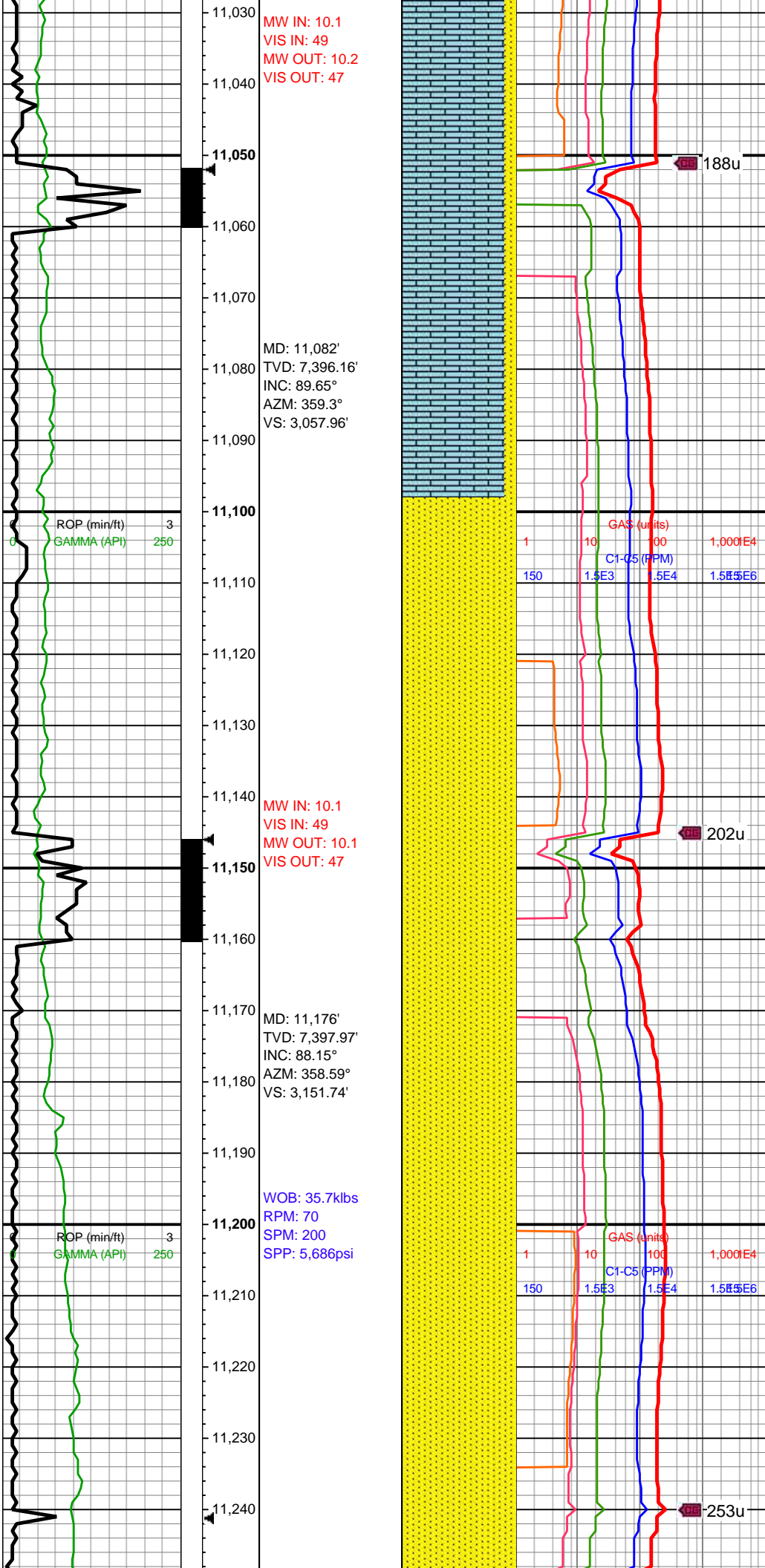
MD: 10,987'
TVD: 7,395.77'
INC: 89.87°
AZM: 358.07°
VS: 2,963.2'

WOB: 35.1klbs
RPM: 70
SPM: 194
SPP: 5,351psi



10800-10900 SST
(100%): gyshbn-med brn,
mot lt gy, occ dk gy, vf-f,
mod srtd, fri-frn, sb
ang-sb rd, mtx sup, silc
cmt, arg ip, sl-non calc, tr
dissm pyr

10900-11000 LMST
(70%): lt brn-med brn,
mot, sb splt-sb tab,
crpxln-micxln, frm-sl hd,
pkst, tr mic pyr; SS (30%):
lt brn-bnshgy, med brn,
sb rnd-sb ang, vf-f gr, slt
ip, mtx-gr sup cluss,
cons wi silc/arg cmt;



MW IN: 10.1
VIS IN: 49
MW OUT: 10.2
VIS OUT: 47

MD: 11,082'
TVD: 7,396.16'
INC: 89.65°
AZM: 359.3°
VS: 3,057.96'

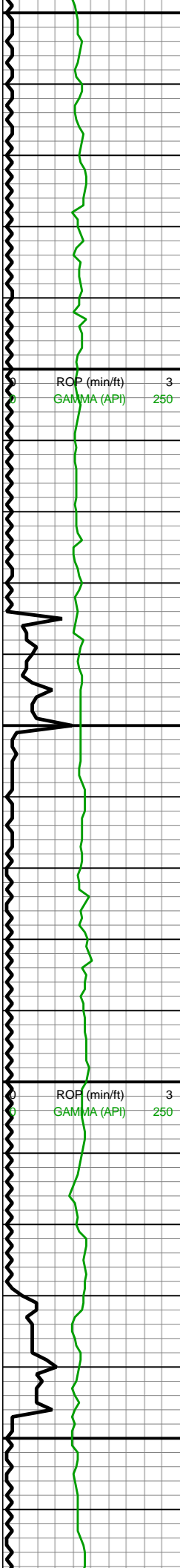
MW IN: 10.1
VIS IN: 49
MW OUT: 10.1
VIS OUT: 47

MD: 11,176'
TVD: 7,397.97'
INC: 88.15°
AZM: 358.59°
VS: 3,151.74'

WOB: 35.7klbs
RPM: 70
SPM: 200
SPP: 5,686psi

11000-11100 LMST
(90%): lt brn-med brn,
mot, sb splt-sb tab,
crpxln-micxln, frm-sl hd,
pkst, tr mic pyr; SS (10%):
lt brn-bnshgy, med brn,
sb rnd-sb ang, vf-f gr, slt
ip, mtx-gr sup cluss,
cons wi silc/arg cmt;

11100-11200 SST
(100%): gyshbn-med brn,
mot lt gy, occ dk gy, vf-f,
mod srtd, fri-frm, sb
ang-sb rd, mtx sup, silc
cmt, arg ip, sl-non calc, tr
dissm pyr; tr LMST



11,250
11,260
11,270
11,280
11,290
11,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
11,380
11,390
11,400
11,410
11,420
11,430
11,440
11,450
11,460

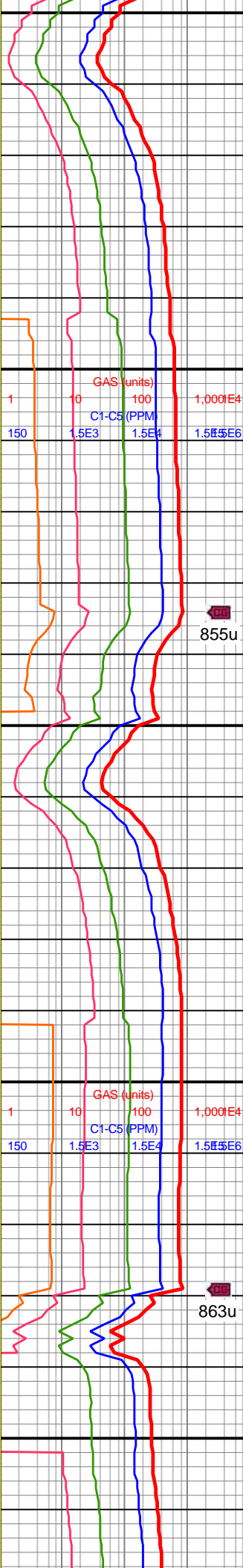
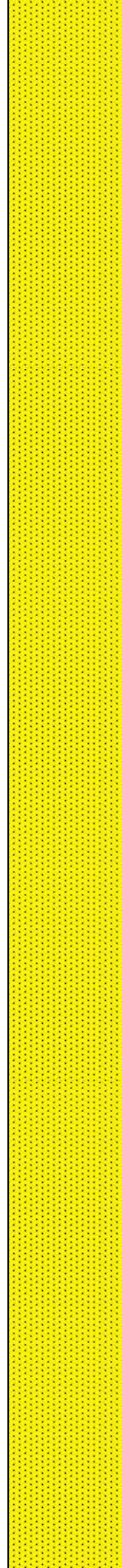
MD: 11,271'
TVD: 7,402.05'
INC: 86.92°
AZM: 358.15°
VS: 3,246.38'

MD: 11,365'
TVD: 7,406.24'
INC: 87.98°
AZM: 358.68°
VS: 3,340.02'

WOB: 34.9klbs
RPM: 70
SPM: 197
SPP: 5,499psi

MW IN: 10.1
VIS IN: 49
MW OUT: 10.1
VIS OUT: 47

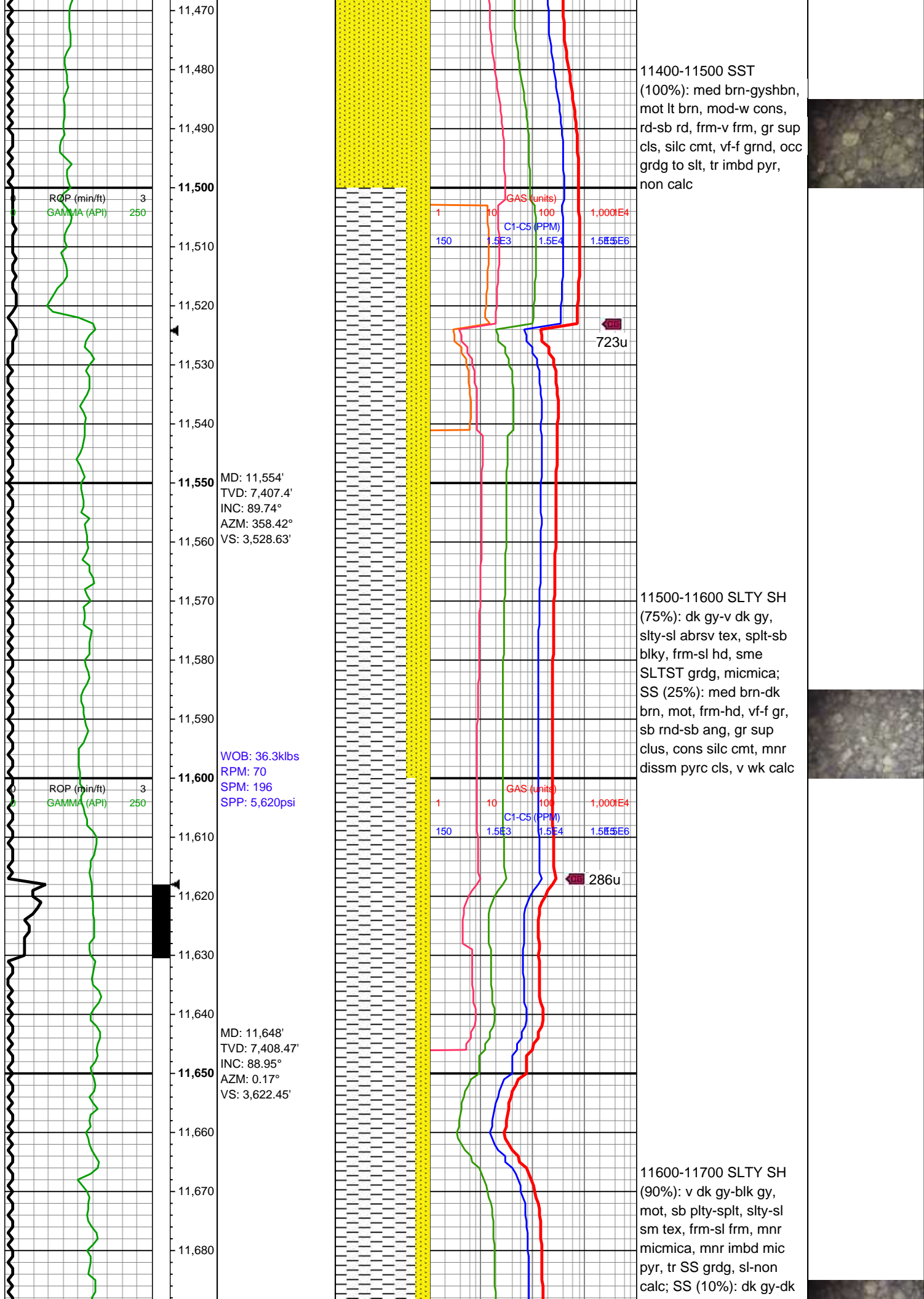
MD: 11,460'
TVD: 7,407.55'
INC: 90.44°
AZM: 359.65°
VS: 3,434.82'

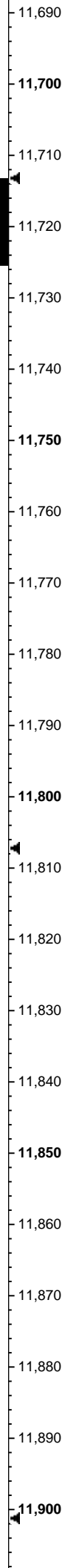
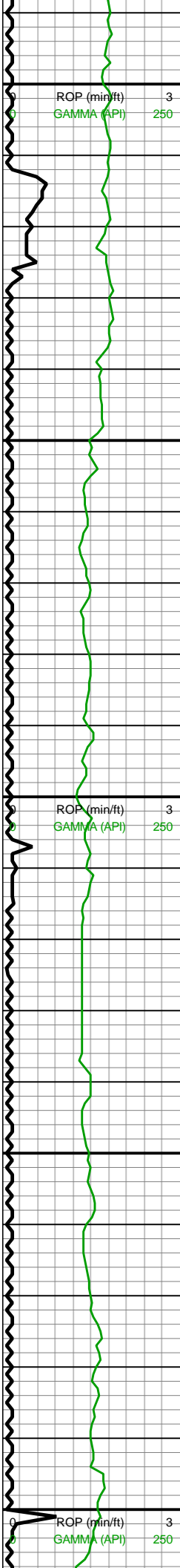


11200-11300 SST
(100%): pred med
gyshbn, occ lt gy-lt brn,
frm-v frm, rd- sb rd, pred
mod-w cons, gr sup cls,
silc cmt, non calc, vf-f
grnd, occ grdg to slt, com
micmica, tr imbd pyr, tr
sh frags

11300-11400 SST
(100%): pred med
gyshbn, occ lt gy-lt brn,
frm-v frm, rd- sb rd, pred
mod-w cons, gr sup cls,
silc cmt, non calc, vf-f
grnd, occ grdg to slt, com
micmica, tr imbd pyr







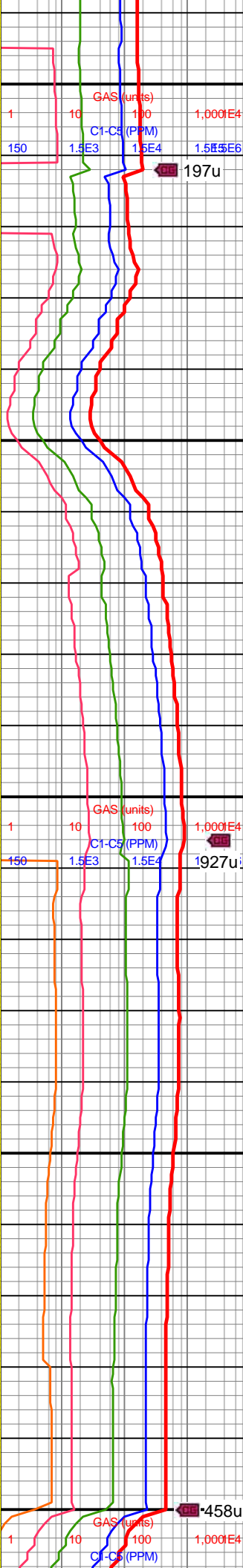
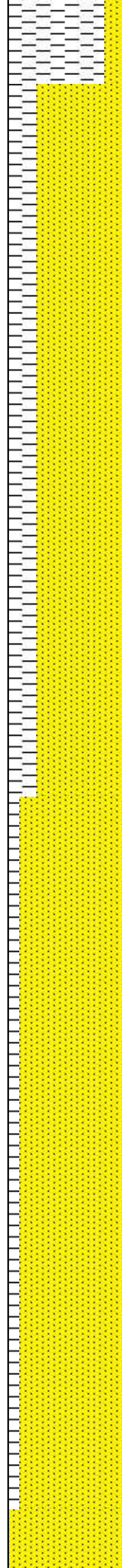
MW IN: 10.1
VIS IN: 49
MW OUT: 10.2
VIS OUT: 46

MD: 11,742'
TVD: 7,409.08'
INC: 90.31°
AZM: 0.26°
VS: 3,716.35'

WOB: 35.4klbs
RPM: 69
SPM: 194
SPP: 5,470psi

MD: 11,837'
TVD: 7,408.46'
INC: 90.44°
AZM: 359.91°
VS: 3,811.25'

MW IN: 10.1+
VIS IN: 49
MW OUT: 10.1+
VIS OUT: 47

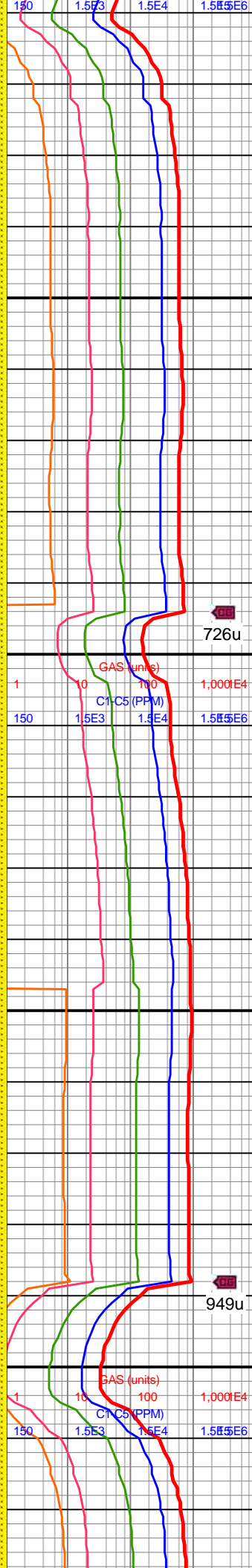
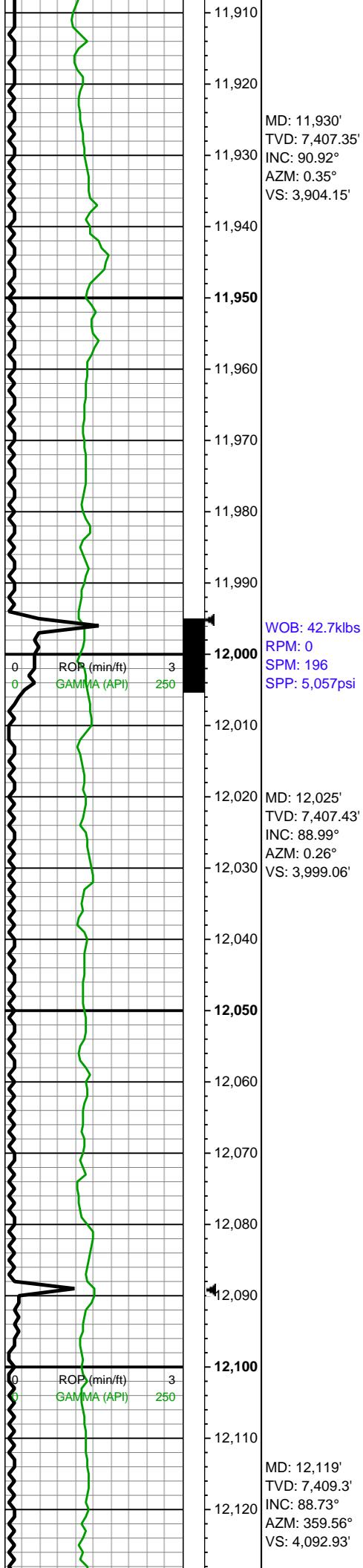


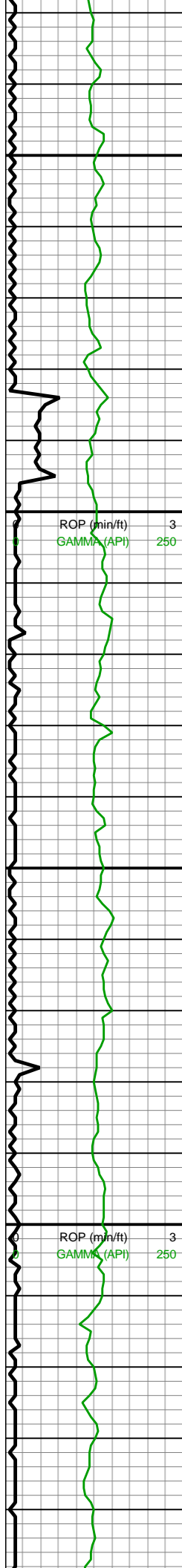
gyshbn, slty-vf gr, mod
srt, frm-sl fri, sb rnd-ang,
silc cmt, sme SLTST
grdg, non-sl calc

11700-11800 SS (75%):
dk brn-dk bnshgy, mot
med brn, vf-f gr, mod-w
srt, sb rnd-sb ang,
frm-hd, gr sup clus, silc
cmt, mnr SLTST grdg, tr
imbd mic pyr, sl calc;
SLTY SH (25%): dk gy-v
dk gy, frm-sl hd, slty tex,
spl-tsb plty, non calc,
micmica

11800-11900 SS (90%):
med brn-dk gyshbn, sb
rnd-ang, frm-sl fri, mod
srt, slty-vf gr, grn cons wi
silc cmt, non-sl calc;
SLTY SH (10%): dk gy-v
dk gy, mot, frm-sl frm, slty
tex, sb blk-y-tab, mnr SS
grdg, micmica, tr mic pyr
cls, non-sl calc







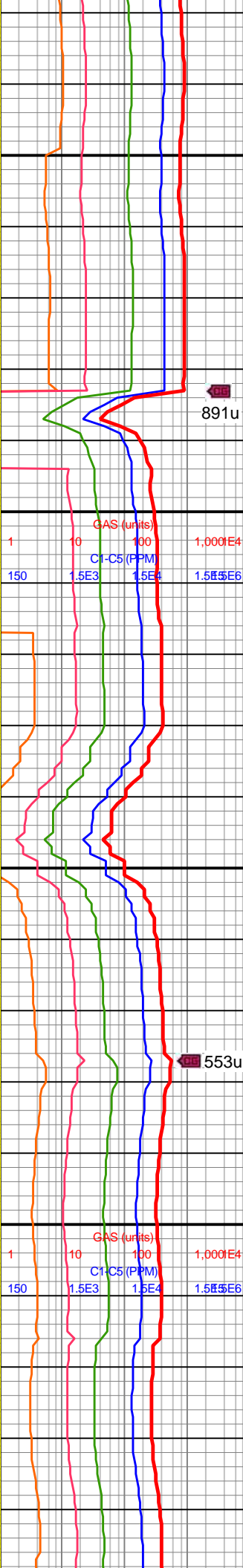
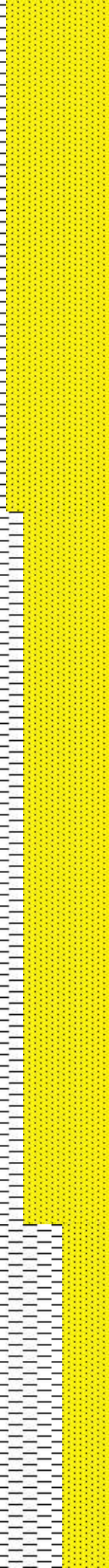
12,130
12,140
12,150
12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340

WOB: 17.7klbs
RPM: 69
SPM: 195
SPP: 5,388psi

MD: 12,213'
TVD: 7,410.16'
INC: 90.22°
AZM: 0.61°
VS: 4,186.82'

MW IN: 10.1
VIS IN: 54
MW OUT: 10.1
VIS OUT: 49

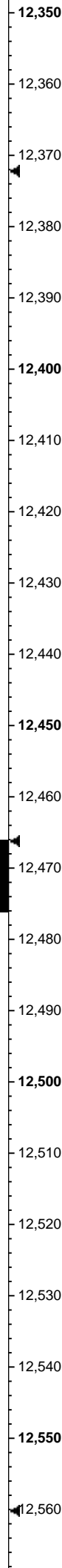
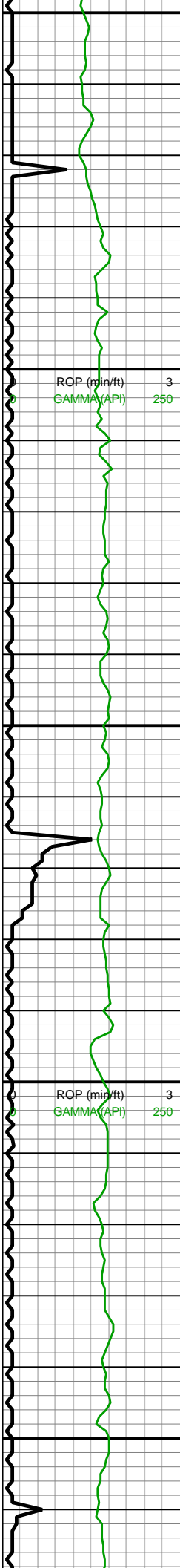
MD: 12,308'
TVD: 7,409.9'
INC: 90.09°
AZM: 0.35°
VS: 4,281.75'



12100-12200 SS (90%):
dk brn, med brn-med gy,
mot, sb rnd-sb ang, vf-f
gr, frm-hd, gr sup clus,
cons silc cmt, v wk calc;
SLTY SH (10%): dk gy-v
dk gy, sb splt-plty, slty tex,
frm-sl hd, micmica,
non-sl calc

12200-12300 SS (75%):
dk brn-med brn, mot dk
gy, mod srt, slty-vf gr,
frm-sl fri, sb rnd-ang, grn
sup clus, silc cmt, non-sl
calc; SLTY SH (25%): dk
gy-v dk gy, mot, frm-sl
frm, slty-sl abrsv tex, sb
plty-splt, micmica,
sl-mod calc, mnr SS grdg



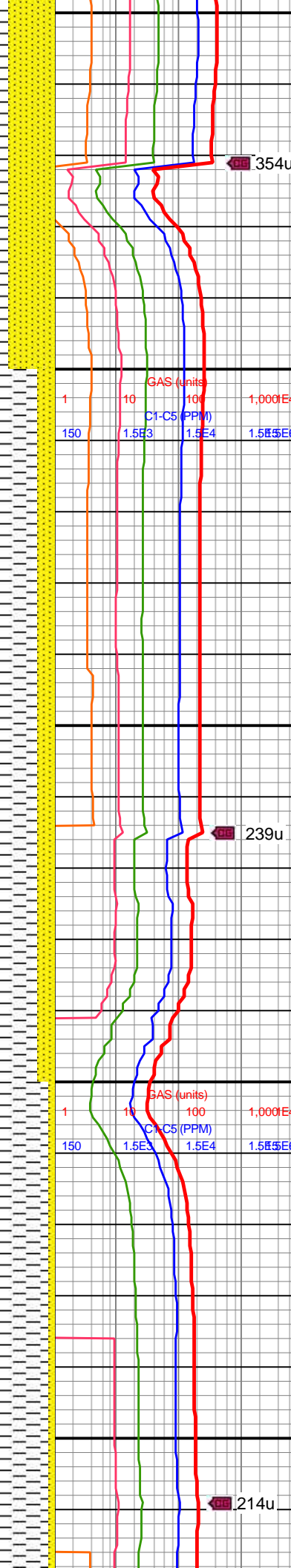


WOB: 37.1klbs
RPM: 70
SPM: 190
SPP: 5.634psi

MD: 12,402'
TVD: 7,410.16'
INC: 89.6°
AZM: 359.3°
VS: 4,375.63'

MW IN: 10.1+
VIS IN: 52
MW OUT: 10.2+
VIS OUT: 49

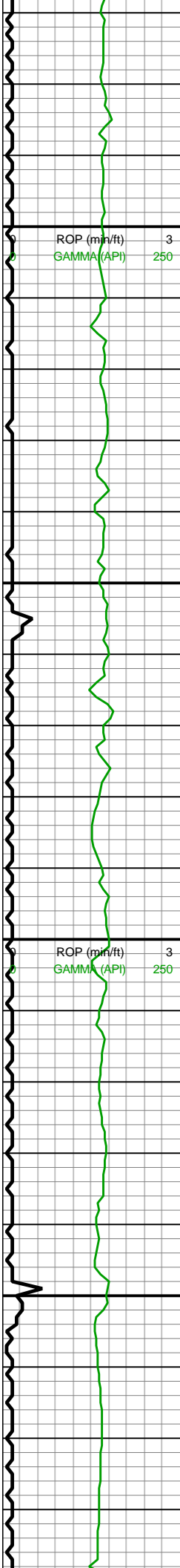
MD: 12,496'
TVD: 7,409.84'
INC: 90.79°
AZM: 358.24°
VS: 4,469.41'



354u
12300-12400 SLTY SH
(60%): dk gy-v dk gy, mot,
frm-sl frm, slty-sl sm tex,
sb blkly-tab, mnr SS grdg,
micmica, sl-mod calc; SS
(40%): dk brn-dk gyshbn,
mod srt, slty-vf gr, frm-sl
fri, sb rnd-ang, silc cmt,
non-sl calc

239u
12400-12500 SLTY SH
(85%): dk gy-v dk gy,
spltt-sb plty, slty tex, frm-sl
hd, micmica, sme SLTST
grdg, non calc; SS (15%):
med brn-dk brn, mot,
slty-vf gr, frm-hd, sb
rnd-sb ang, gr sup clus,
cons silc cmt, v wk calc,
mnr SLTST grdg, tr
micmica

214u



12,570
12,580
12,590
12,600
12,610
12,620
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
12,740
12,750
12,760
12,770
12,780

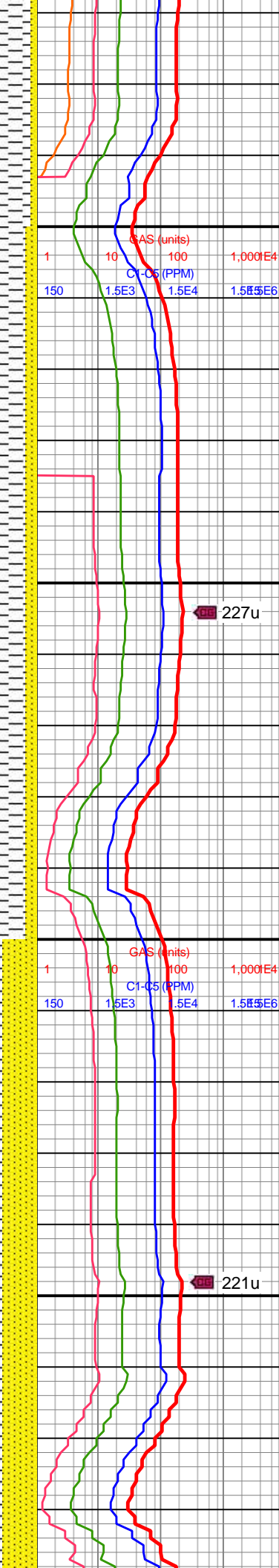
MD: 12,590'
TVD: 7,408.86'
INC: 90.4°
AZM: 358.59°
VS: 4,563.14'

WOB: 35klbs
RPM: 70
SPM: 188
SPP: 5,530psi

MD: 12,685'
TVD: 7,408.46'
INC: 90.09°
AZM: 358.07°
VS: 4,657.86'

MW IN: 10.1+
VIS IN: 56
MW OUT: 10.2+
VIS OUT: 50

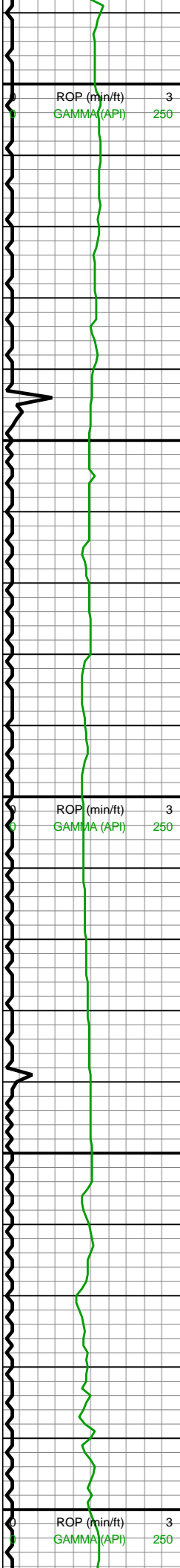
MD: 12,780'
TVD: 7,408.09'
INC: 90.35°
AZM: 358.68°
VS: 4,752.58'



12500-12600 SLTY SH
(95%): dk gy-v dk gy, mot,
silty-sl abrsv tex, splt-plty,
frm-sl frm, micmica, mnr
mic pyr, sl-non calc; SS
(5%): dk gy-dk brn, mod
srt, sb rnd-ang, slty-vf gr,
frm-sl fri, sme SLTST
grdg, grn sup clus, silc
cmt, non-sl calc

12600-12700 SLTY SH
(90%): v dk gy-blk gy,
mot, slty-sl sm tex, sb
plty-splt, frm-sl frm, mnr
micmica, tr SS grdg,
sl-non calc, mnr imbd
mic pyr; SS (10%): dk
gy-dk gyshbn, slty-vf gr,
sb rnd-ang, mod srt,
frm-sl fri, silc cmt, sme
SLTST grdg, non-sl calc

12700-12800 SLTY SH
(70%): dk gy-v dk gy,
silty-sl abrsv tex, frm-sl
hd, sb splt-plty, sme
SLTST grdg, micmica,
non-sl calc; SS (30%):
med brn-dk brn, mot, vf-f
gr, sb rnd-sb ang, frm-hd,



12,790
12,800
12,810
12,820
12,830
12,840
12,850
12,860
12,870
12,880
12,890
12,900
12,910
12,920
12,930
12,940
12,950
12,960
12,970
12,980
12,990
13,000

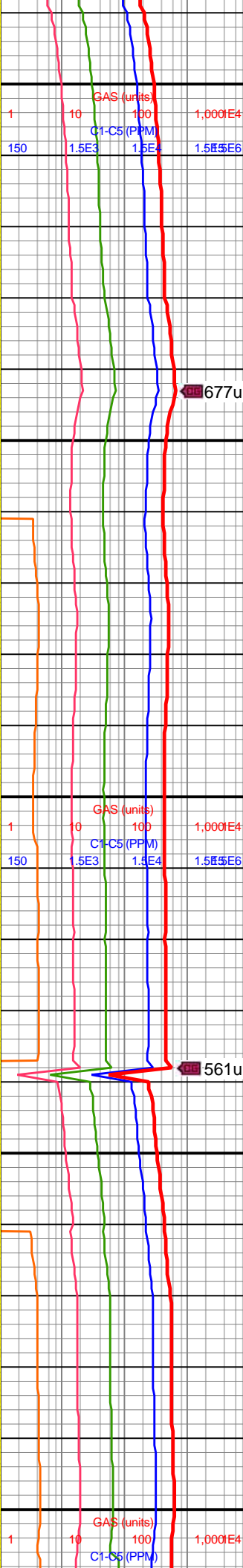
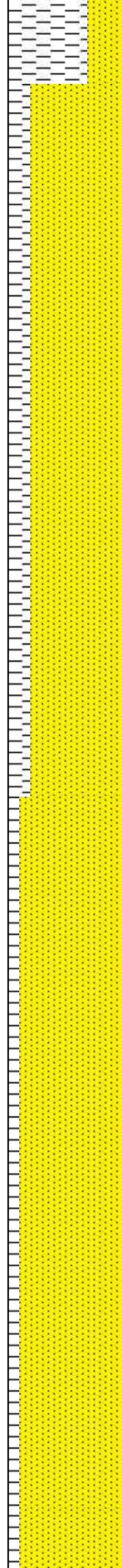
WOB: 35.7klbs
RPM: 70
SPM: 189
SPP: 5,601psi

MD: 12,874'
TVD: 7,407.19'
INC: 90.75°
AZM: 358.5°
VS: 4,846.34'

MW IN: 10.1+
VIS IN: 56
MW OUT: 10.2+
VIS OUT: 54

MD: 12,969'
TVD: 7,406.09'
INC: 90.57°
AZM: 358.33°
VS: 4,941.06'

WOB: 36klbs
RPM: 70
SPM: 189
SPP: 5,623psi

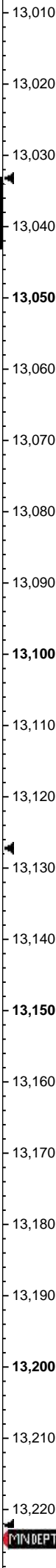
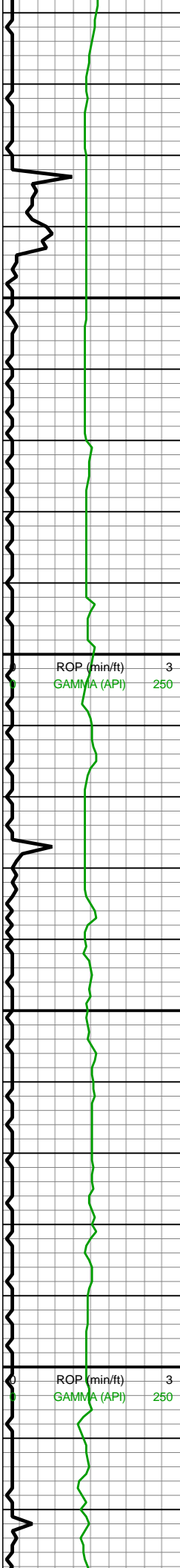


gr sup clus, cons silc
cmt, mnr SLTST grdg,
mnr dissm pyrc cls, v wk
calc

12800-12900 SS (80%):
dk brn, mot med brn, vf-f
gr, mod-w srt, frm-hd, sb
rnd-sb ang, gr sup clus
wi silc cmt, mnr SLTST
grdg, sl calc, tr imbd mic
pyr; SLTY SH (20%): dk
gy-v dk gy, slty tex, frm-sl
hd, splt-sb plty, non calc,
micmica, sme SLTST
grdg

12900-13000 SS (90%):
dk gy-dk gyshbn, sb
rnd-ang, frm-sl fri, slty-vf
gr, mod srt, grn sup clus
wi silc cmt, non-sl calc,
mnr SLTST grdg; SLTY
SH (10%): dk gy-v dk gy,
mot, sb blk-y-tab, frm-sl
frm, slty tex, mnr SS grdg,
micmica, tr mic pyr cls,
sl-mod calc

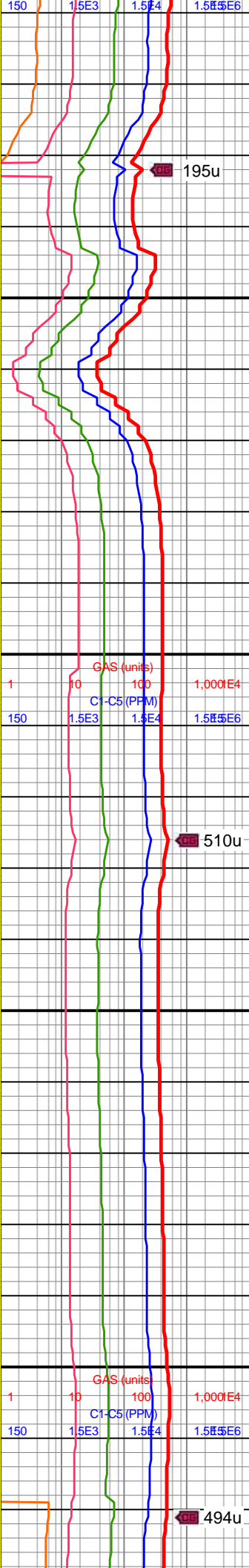
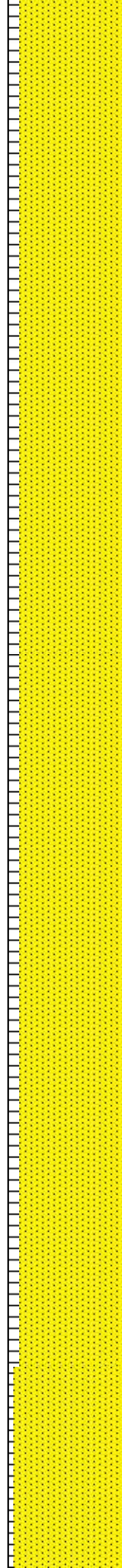




MD: 13,063'
TVD: 7,405.52'
INC: 90.13°
AZM: 359.74°
VS: 5,034.87'

MD: 13,158'
TVD: 7,405.52'
INC: 89.87°
AZM: 358.77°
VS: 5,129.69'

WOB: 36klbs
RPM: 70
SPM: 188
SPP: 5,626psi



13000-13100 SS (90%):
dk brn-med brn, mot dk
bnshgy, mod srt, slty-vf
gr, sb rnd-ang, frm-sl fri,
silc cmt, non-sl calc;
SLTY SH (10%): dk gy-v
dk gy, mot, sb blk-ly-tab,
frm-sl frm, slty tex,
sl-mod calc, micmica, tr
mic pyr cls

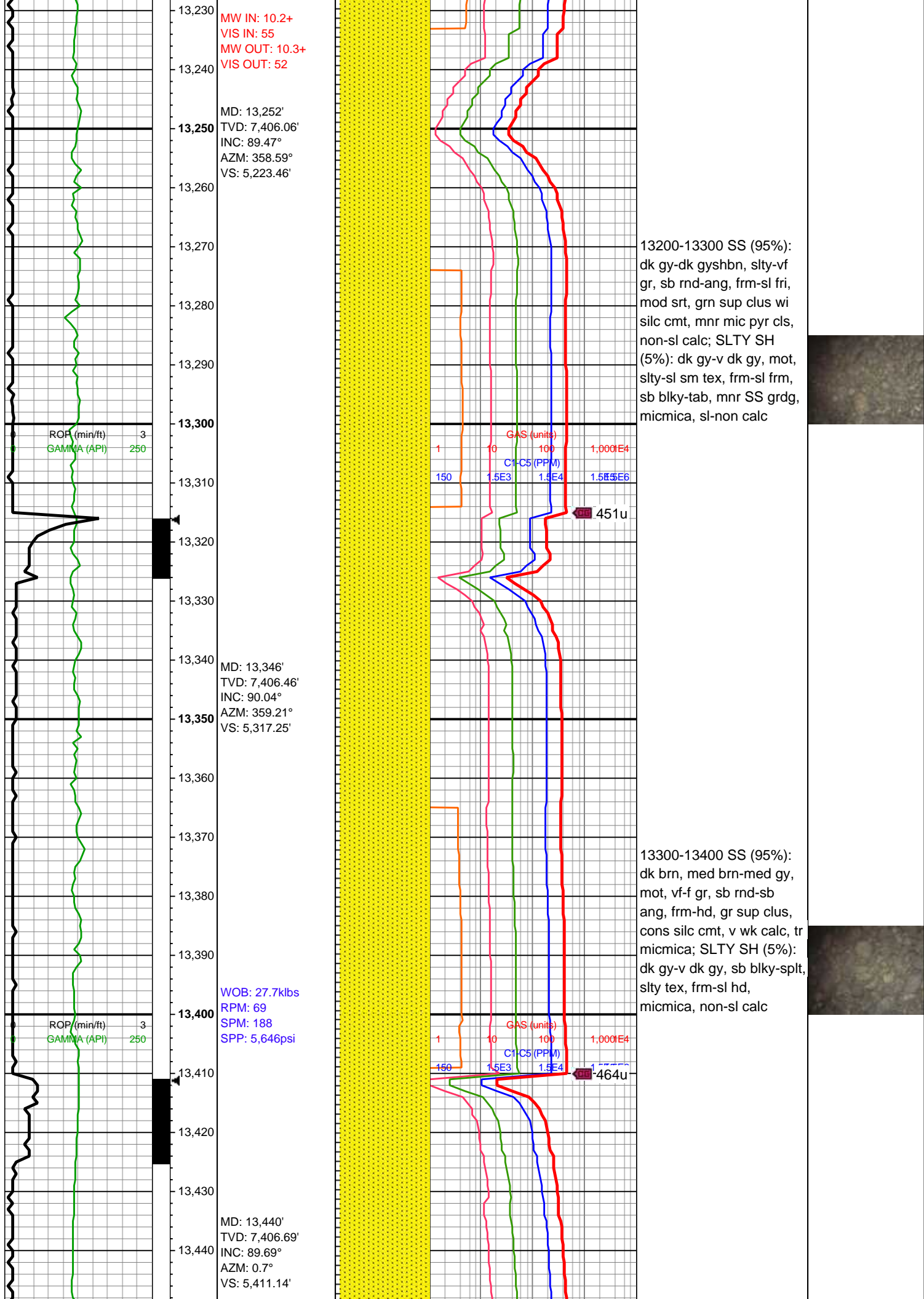
13100-13200 SS (90%):
dk gy-dk gyshbn, slty-vf
gr, mod srt, sb rnd-ang,
frm-sl fri, grn sup clus,
silc cmt, non-sl calc;
SLTY SH (10%): dk gy-v
dk gy, mot, sb blk-ly-tab,
frm-sl frm, slty tex, mn
SS grdg, micmica, sl
calc, tr pp mic pyr cls

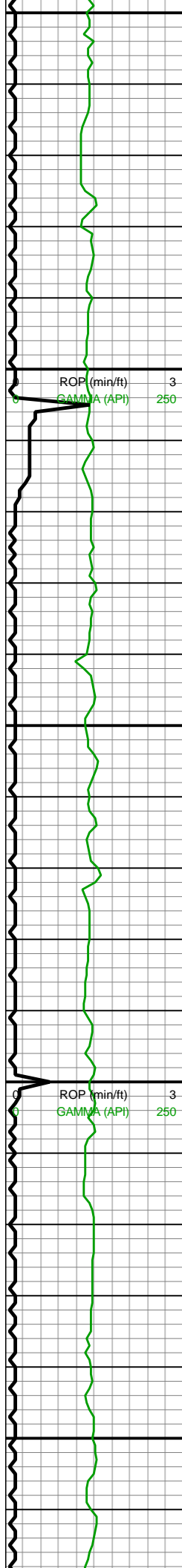


195u

510u

494u





MW IN: 10.2+
VIS IN: 55
MW OUT: 10.4
VIS OUT: 54

ROP (min/ft) 3
GAMMA (API) 250

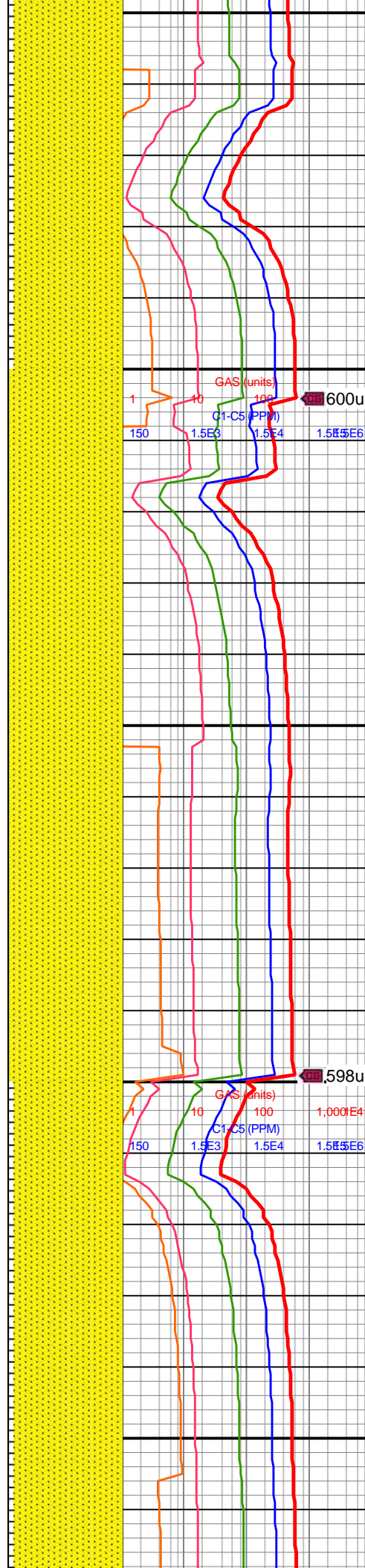
MD: 13,535'
TVD: 7,406.54'
INC: 90.48°
AZM: 1.32°
VS: 5,506.09'

WOB: 7.7klbs
RPM: 69
SPM: 188
SPP: 4,978psi

ROP (min/ft) 3
GAMMA (API) 250

MD: 13,629'
TVD: 7,405.86'
INC: 90.35°
AZM: 0.09°
VS: 5,600.03'

ROP (min/ft) 3
GAMMA (API) 250

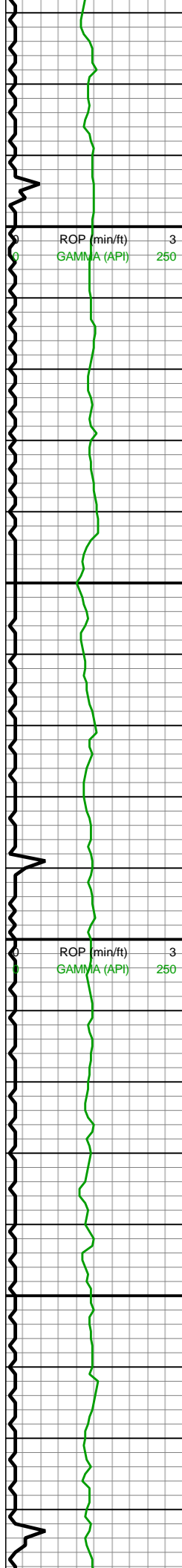


13400-13500 SS (95%):
dk brn, med brn-med gy,
mot, frm-hd, vf-f gr, gr sup
clus, cons silc cmt, sb
rnd-sb ang, tr micmica, v
wk calc; SLTY SH (5%):
dk gy-v dk gy, sb blk-splt,
frm-sl hd, micmica, slty
tex, non-sl calc

600u

13500-13600 SS (100%):
dk brn, med brn-med gy,
mot, slty-vf gr, w srt,
frm-hd, sb rnd-sb ang, gr
sup clus wi silc cmt, v wk
calc, tr pp mic pyr, mnr
SLTST grdg

598u



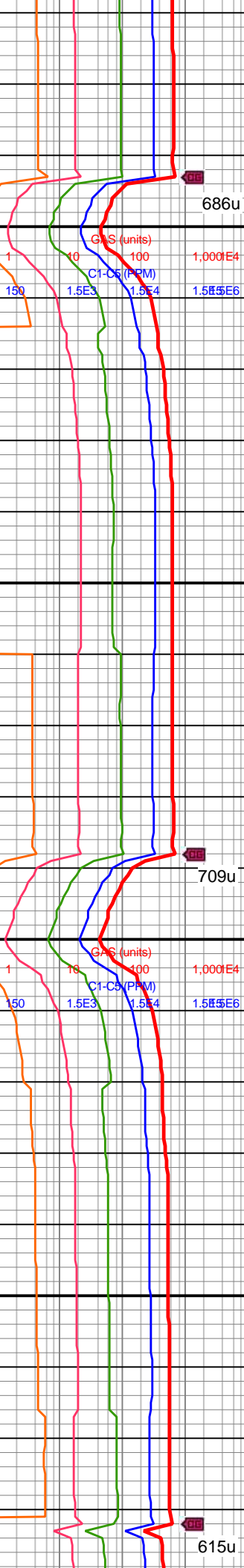
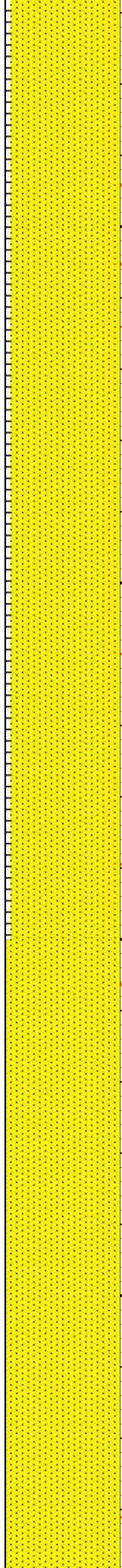
13,670
13,680
13,690
13,700
13,710
13,720
13,730
13,740
13,750
13,760
13,770
13,780
13,790
13,800
13,810
13,820
13,830
13,840
13,850
13,860
13,870
13,880

MW IN: 10.3
VIS IN: 54
MW OUT: 10.3+
VIS OUT: 52

MD: 13,724'
TVD: 7,405.06'
INC: 90.62°
AZM: 360°
VS: 5,694.93'

WOB: 35.3klbs
RPM: 70
SPM: 186
SPP: 5,608psi

MD: 13,818'
TVD: 7,404.12'
INC: 90.53°
AZM: 359.12°
VS: 5,788.78'

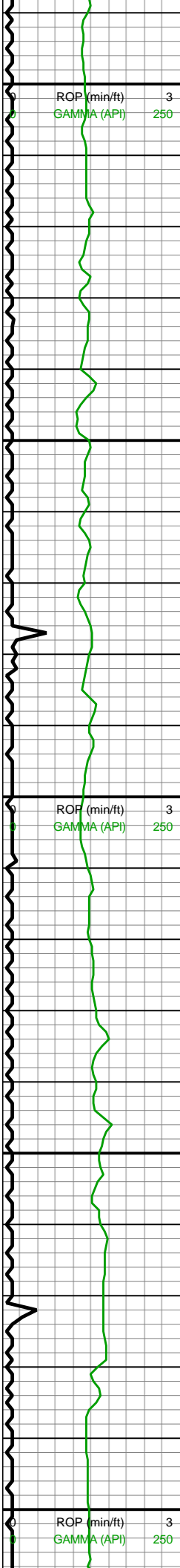


13600-13700 SS (95%):
dk brn, med brn-med gy,
mot, slty-vf gr, sb rnd-sb
ang, w srt, frm-hd, gr sup
clus wi silc cmt, tr pp mic
pyr, v wk calc; SLTY SH
(5%): dk gy-v dk gy, mot,
plty-splt, slty tex, frm-sl
hrd, non-sl calc

13700-13800 SS (95%):
dk brn-med brn, mot dk
gy, sb rnd-ang, slty-vf gr,
frm-sl fri, mod srt, grn
sup clus, silc cmt, non-sl
calc; SLTY SH (5%): dk
gy-v dk gy, mot, frm-sl
frm, sb plty-splt, slty-sl
abrsv tex, sl-mod calc,
micmica, mnv SS grdg

13800-13900 SS (100%):
dk brn-dk bnshgy, mot lt
brn, mod-w srt, frm-v





13,890
13,900
13,910
13,920
13,930
13,940
13,950
13,960
13,970
13,980
13,990
14,000
14,010
14,020
14,030
14,040
14,050
14,060
14,070
14,080
14,090
14,100

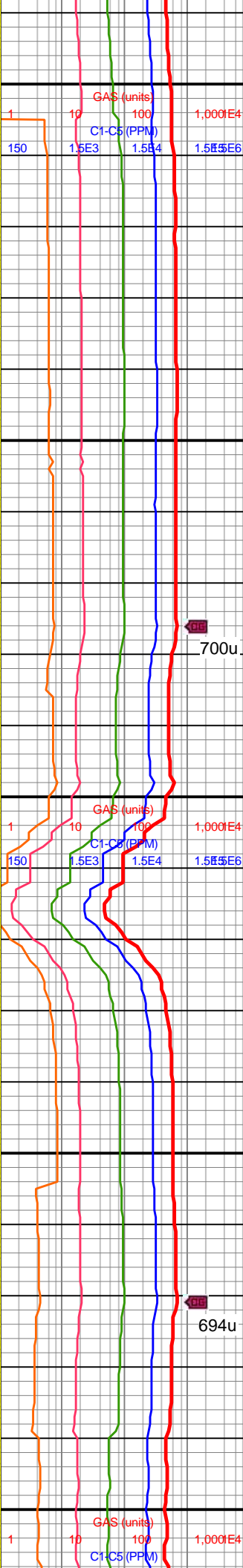
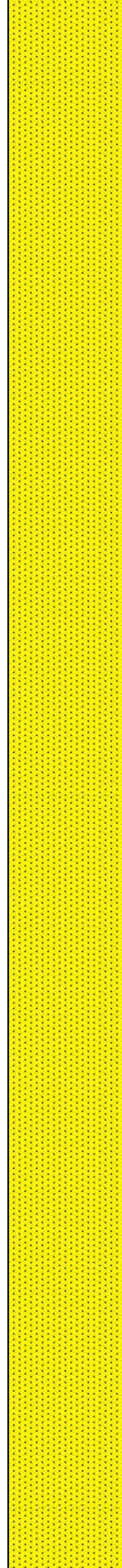
MW IN: 10.3
VIS IN: 55
MW OUT: 10.4
VIS OUT: 53

MD: 13,913'
TVD: 7,402.87'
INC: 90.97°
AZM: 359.38°
VS: 5,883.6'

WOB: 35klbs
RPM: 70
SPM: 184
SPP: 5,631psi

MD: 14,007'
TVD: 7,401.39'
INC: 90.84°
AZM: 359.03°
VS: 5,977.41'

MD: 14,102'
TVD: 7,399.31'
INC: 91.67°
AZM: 358.86°
VS: 6,072.18'

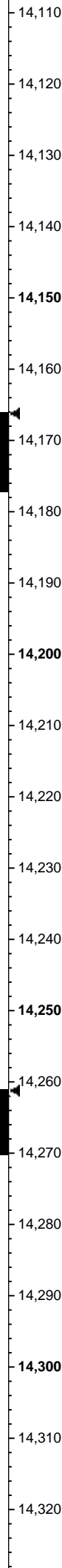
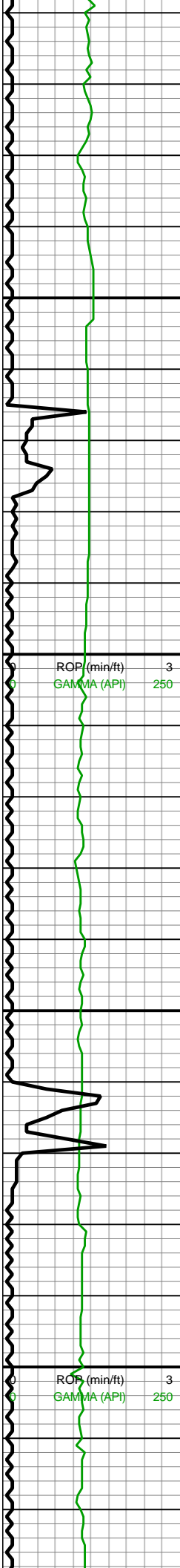


fr, blky, gr sup cls cons
wi silc cmt, non calc,
silty-vf, occ grdg to slt, tr
imbd pyr, sme SH frags

13900-14000 SS (100%):
dk brn-dk bnshgy, mot lt
brn, slty-vf, mod-w srtd,
frm-v frm, gr sup cls cons
wi silc cmt, occ grdg to
slt, sme SH frags, tr imbd
pyr, non calc

14000-14100 SS (100%):
dk brn-bnshgy, mot med
brn, slty-vf, mod-w srtd, gr
sup cls wi silc cmt, frm-v
frm, sme SH frags, tr
imbd pyr, non calc, mnr
grdg to SLTST

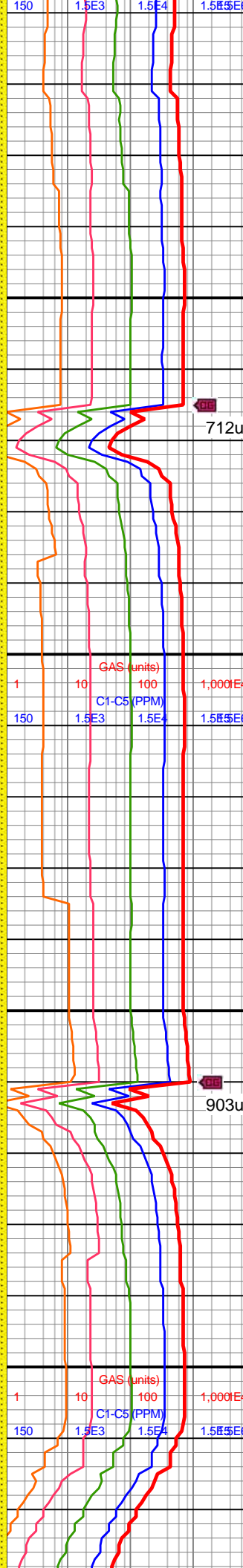
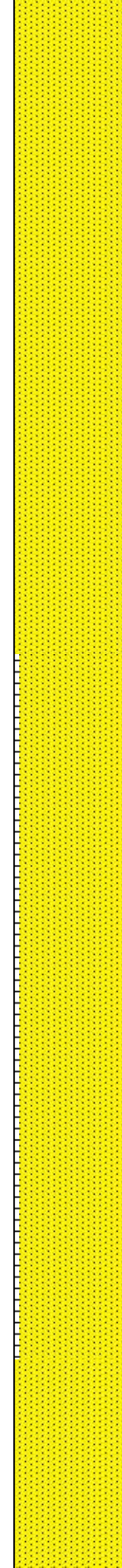




MW IN: 10.3+
VIS IN: 57
MW OUT: 10.4
VIS OUT: 55

MD: 14,197'
TVD: 7,397.19'
INC: 90.88°
AZM: 359.82°
VS: 6,166.99'
WOB: 31.2klbs
RPM: 69
SPM: 185
SPP: 5,654psi

MD: 14,292'
TVD: 7,395.44'
INC: 91.23°
AZM: 358.59°
VS: 6,261.79'



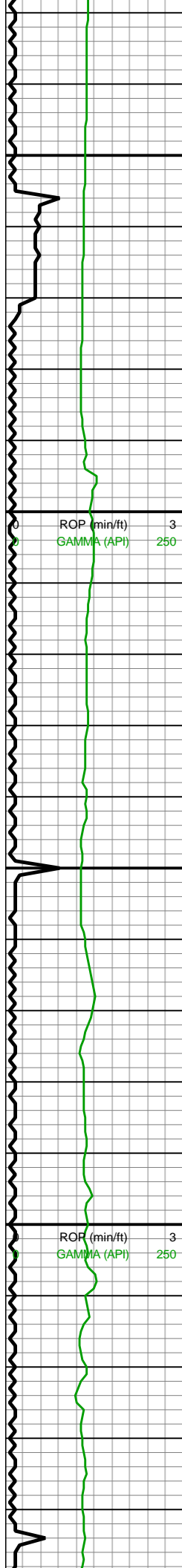
712u

14100-14200 SS (100%):
med brn-bnshgy, mot dk
brn, slty-vf gr, mod w srted,
frm-v frm, gr sup clus,
cons wi silc cmt, occ
SLTST grdg, tr dissm
pyrc cls, mnr SH frags,
non calc

903u

14200-14300 SS (95%):
med brn-bnshgy, mot dk
brn, slty-vf gr, sb rnd-ang,
frm-sl fri, mod srt, silc
cmt, mnr mic pyr cls,
non-sl calc; SLTY SH
(5%): dk gy-v dk gy, mot,
frm-sl frm, slty-sl sm tex,
sb blk-y-tab, mnr SS grdg,
micmica, sl-mod calc





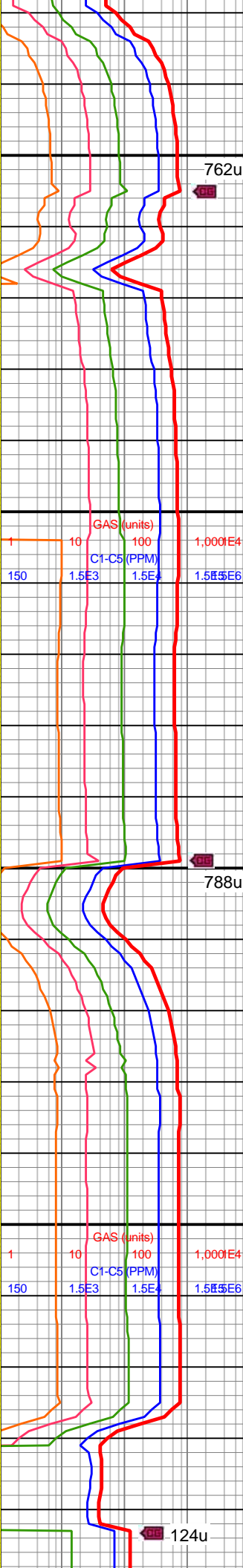
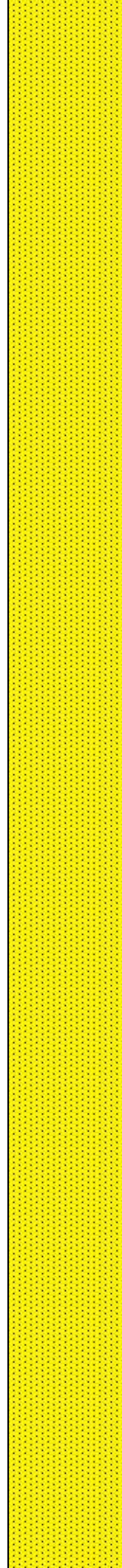
14,330
14,340
14,350
14,360
14,370
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
14,500
14,510
14,520
14,530
14,540

MD: 14,386'
TVD: 7,394.94'
INC: 89.39°
AZM: 359.03°
VS: 6,355.57'

WOB: 33.6kls
RPM: 70
SPM: 181
SPP: 5,483psi

MW IN: 10.3+
VIS IN: 56
MW OUT: 10.5
VIS OUT: 54

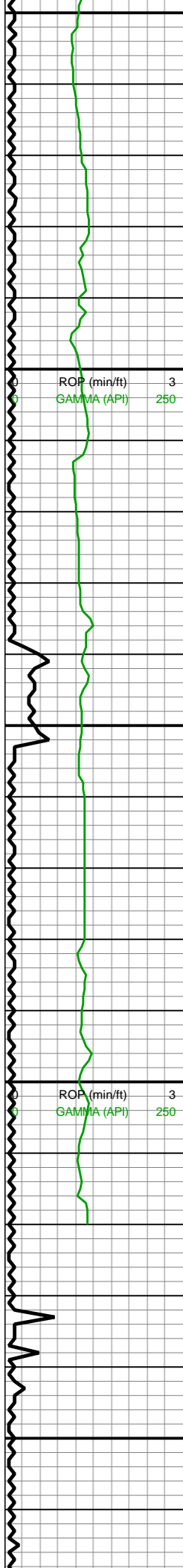
MD: 14,480'
TVD: 7,396.26'
INC: 88.99°
AZM: 358.24°
VS: 6,449.32'



14300-14400 SS (100%):
dk brn, med brn-med gy,
mot, frm-hd, sb rnd-sb
ang, slty-vf gr, w srt, gr
sup clus wi silc cmt, tr pp
mic pyr, v wk calc

14400-14500 SS (100%):
pred med gyshbn, occ lt
gy-lt brn, frm-v frm, blk,
pred mod-w cons, gr sup
cls, silc cmt, non calc,
vf-f, occ grdg to slt, com
micmica, tr imbd pyr, occ
sh frags, com free qtz





14,550
14,560
14,570
14,580
14,590
14,600
14,610
14,620
14,630
14,640
14,650
14,660
14,670
14,680
14,690
14,700
14,710
14,720
14,730
14,740
14,750
14,760

MD: 14,574'
TVD: 7,397.95'
INC: 88.95°
AZM: 356.75°
VS: 6,542.92'

WOB: 30.4klbs
RPM: 70
SPM: 184
SPP: 5,528psi

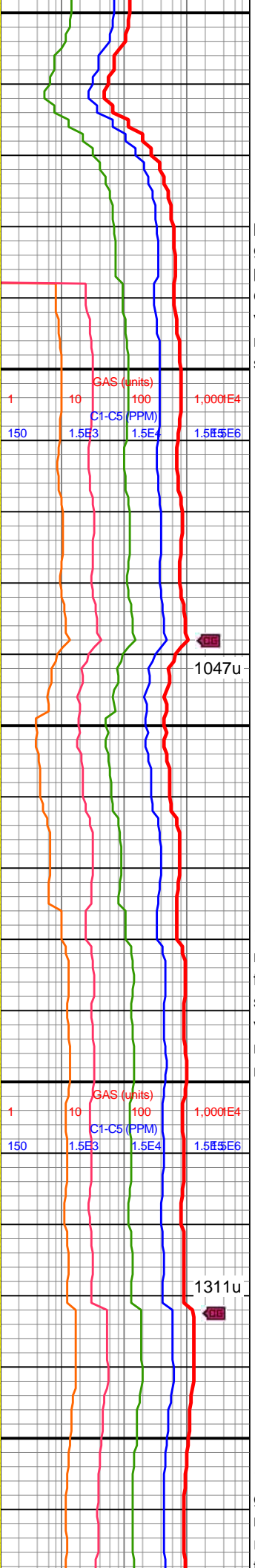
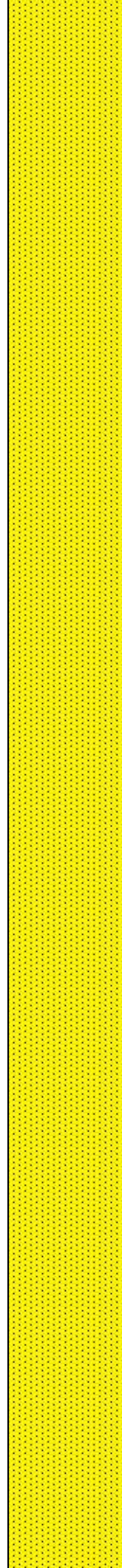
MD: 14,669'
TVD: 7,399.48'
INC: 89.21°
AZM: 358.68°
VS: 6,637.54'

MW IN: 10.3
VIS IN: 56
MW OUT: 10.5
VIS OUT: 54

MD: 14,715'
TVD: 7,400.1'
INC: 89.25°
AZM: 357.98°
VS: 6,683.4'

Projection to Bit:

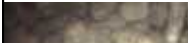
MD: 14,779'
TVD: 7,400.94'
INC: 89.25°
AZM: 357.98°
VS: 6,683.4'

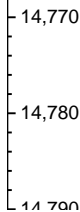
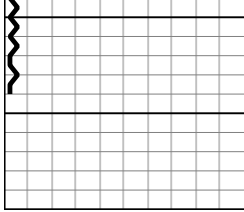


14500-14600 SS (100%):
pred med gyshbn, occ lt
gy-lt brn, frm-v frm, blk,
pred mod-w cons gr sup
cls, silc cmt, non calc,
vf-f, occ grdg to slt, com
micmica, tr imbd pyr, occ
sh frags

14600-14700 SS (100%):
med brn-dk brn, mot,
frm-hd, sb rnd-sb ang, gr
sup clus, cons silc cmt,
vf-f w srt grns, v wk calc,
mnr SLTST grdg, tr
micmica

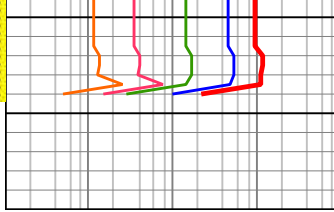
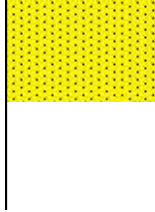
14700-14779 SS (100%):
gyshbn-med brn, med gy,
mot lt brn, vf-f gr, sb
rnd-sb ang, mod w srt,
frm-hd, sme gr sup clus





AZM: 357.98°
VS: 6,747.18'

**Total Depth of
14,779' MD
Reached on
08/22/2018
@06:26MST**



mm-Hd, sme gr sup clus,
cons silc cmt, mnr
SLTST grdg, non-sl calc,
sme vf sb ang free qtz

