



Scale: 5" / 100'  
Measured Depth Log

**Well Name** Melbon Ranch 4K-17H-M265

**Location** Sec. 17 T2N R65W

**State** Colorado

**County** Weld

**Country** USA

**Rig Number** Ensign 153

**API Number** 05-123-47755

**AFE #** 16191468

**Geographic Region** Rockies

**Field** Wattenberg

**Spud Date** 11/11/2018

**Drilling Completed** 11/13/2018

**Surface Coordinates** Lat/Long: 40.134869/-104.696113

SHL: Sec: 17 Twp: 2N 65W  
Footage: 2500 FSL 460 FWL

**Bottom Hole Coordinates** Proposed BHL: Sec: 17 Twp: 2N 65W  
Footages: 2500 FSL 460 FEL

**Ground Elevation** 4,956'

**K.B. Elevation** 4,979'

**Logged Interval** 6,500' **To** 12,113'

**Total Depth** 12,113'

**Formation** Niobrara C

**Type of Drilling Fluid** Synthetic Oil Based Mud

## Operator

**Company** Crestone Peak Resources

**Address** 1801 California Street  
Suite 2500  
Denver, CO 80202



**CRESTONE PEAK**  
RESOURCES

## Geologist

**Name** John Ready

**Company** Crestone Peak Resources

**Address** 1801 California Street  
Suite 2500  
Denver, CO 80202



## Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

## Other

**Loggers:** Heather Davis / Tom Yull

**Services Provided:** 2-Man Mudlogging / Geosteering

**Equipment:** ML-567

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

**Start Date** 11/11/2018

**Release Date:** 11/15/2018

**Job #:** 1610RK1809

## 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

### F FOSSIL

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

### ARGILLACEOUS

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

### GLAUCONITE

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

### Stringer

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

F FISH

F FISH

F FORAMINIFERA

## Minerals

ANHYDRITIC

F FERRUGINOUS

F FERRUGINOUS PELLET

F FERRUGINOUS

F FERRUGINOUS

F SILTY

F TUFFACEOUS

F SILTSTONE STRINGER

SILTSTONE STRINGER

## Oil Show

D DEAD

E EVEN

Q QUESTIONABLE

S SPOTTED STAINING

## Porosity

E EARTHY

F FENESTRAL

F FRACTURE

X INTERCRYSTALLINE

I INTEROOLITIC

M MOLDIC

O ORGANIC

P PINPOINT

V VUGGY

## Engineering

BIT

CASING

C CONNECTION (LEFT)

C CONNECTION (RIGHT)

C CONNECTION GAS

C CORE - LOST

C CORE - RECOVERED

DST INTERVAL

F FAULT

## Other Symbols

FORMATION TOP

GAS SHOW

MN DEPTH 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

A ANGULAR

R ROUNDED

S SUBANG

S SUBRND

## Textures

B BOUNDSTONE

C CHALKY

C CRYPTOXLN

E EARTHY

F FINELYXLN

G GRAINSTONE

L LITHOGRAPHIC

M MICROXLN

M MUDSTONE

P PACKSTONE

W WACKESTONE

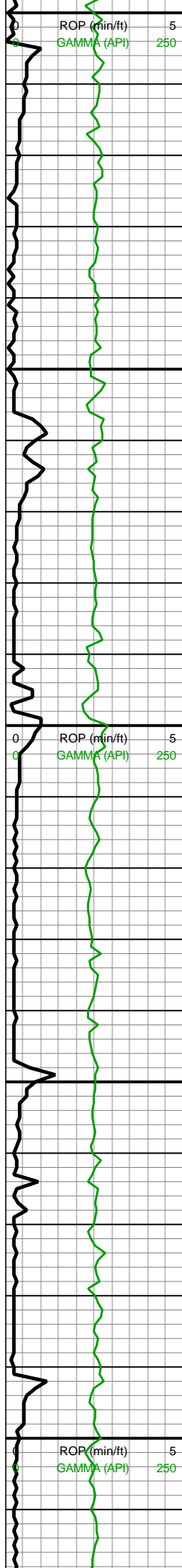
## Sorting

M MODERATE

P POOR

W WELL





RPM: 0  
SPM: 154  
SPP: 3,117psi

MW IN: 10  
VIS IN: 53  
MW OUT: 9.9  
VIS OUT: 51

MD: 6,630'  
INC: 17.01°  
AZM: 159.74°  
TVD: 6,514.7'  
VS: -246.22'

MD: 6,677'  
INC: 20°  
AZM: 150.86°  
TVD: 6,559.27'  
VS: -236.89'

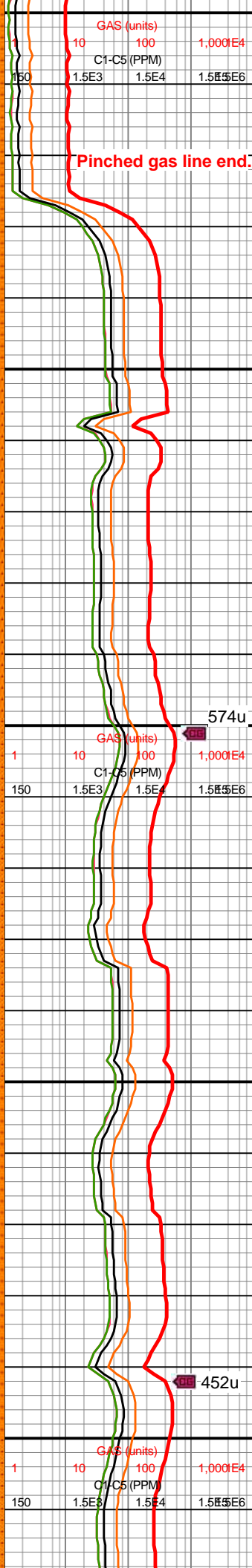
MD: 6,724'  
INC: 23.64°  
AZM: 142.34°  
TVD: 6,602.91'  
VS: -224.04'

MW IN: 10  
VIS IN: 53  
MW OUT: 10  
VIS OUT: 52

MD: 6,771'  
INC: 27.73°  
AZM: 138.38°  
TVD: 6,645.26'  
VS: -207.66'

WOB: 12.5klbs  
RPM: 0  
SPM: 154  
SPP: 2,983psi

MD: 6,819'  
INC: 31.64°  
AZM: 129.11°  
TVD: 6,689.91'  
VS: -200.11'



Pinched gas line end.

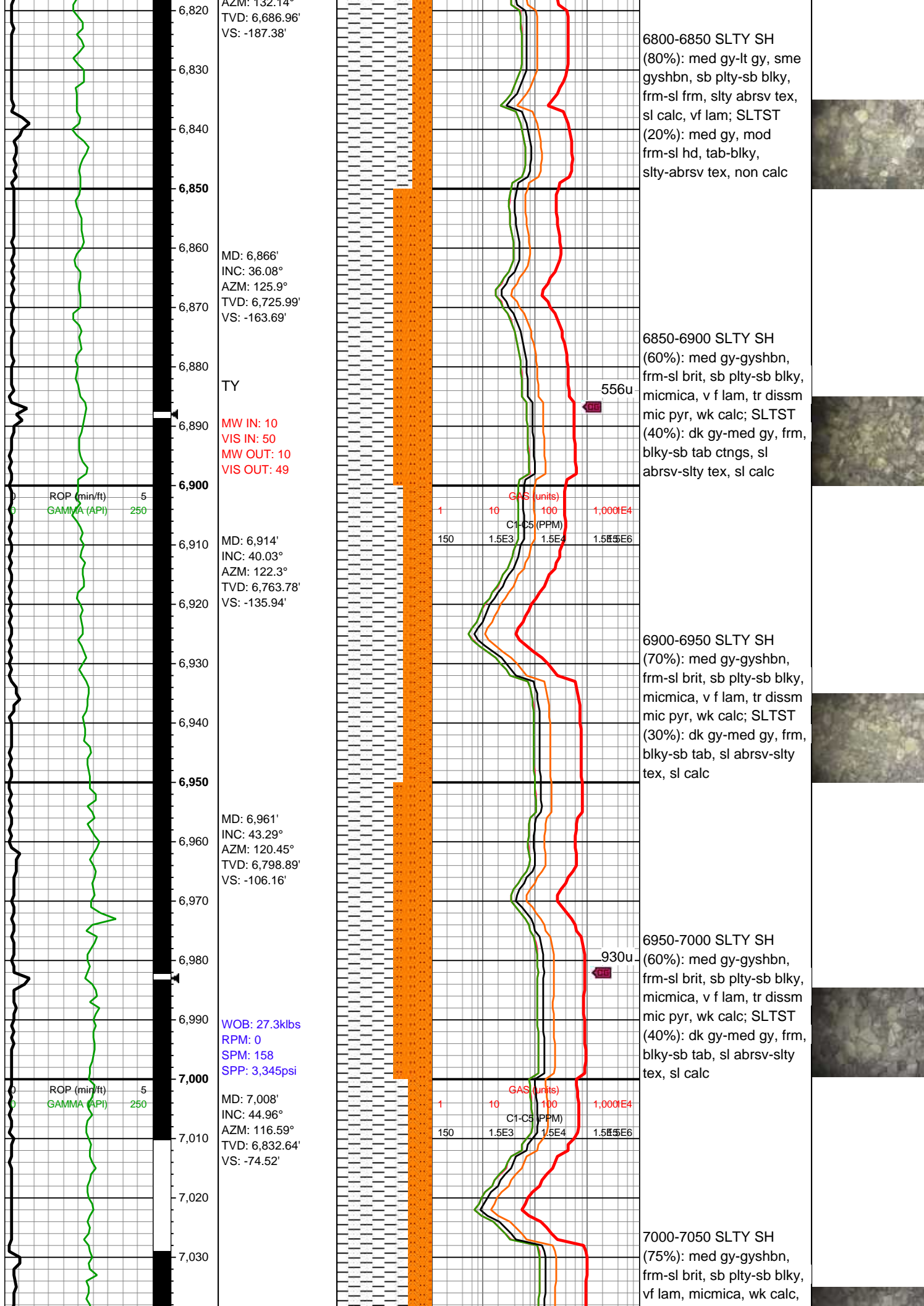
6600-6650 SLTY SH  
(65%): med gy-gyshbn,  
silty-sl sm tex, frm-sl frm,  
sb plty-sb blkly, vf lam,  
micmica, sl calc; SLTST  
(35%): med gy-dk gy,  
mod frm-sl hd, blkly-tab,  
silty-sl abrsv tex, non calc

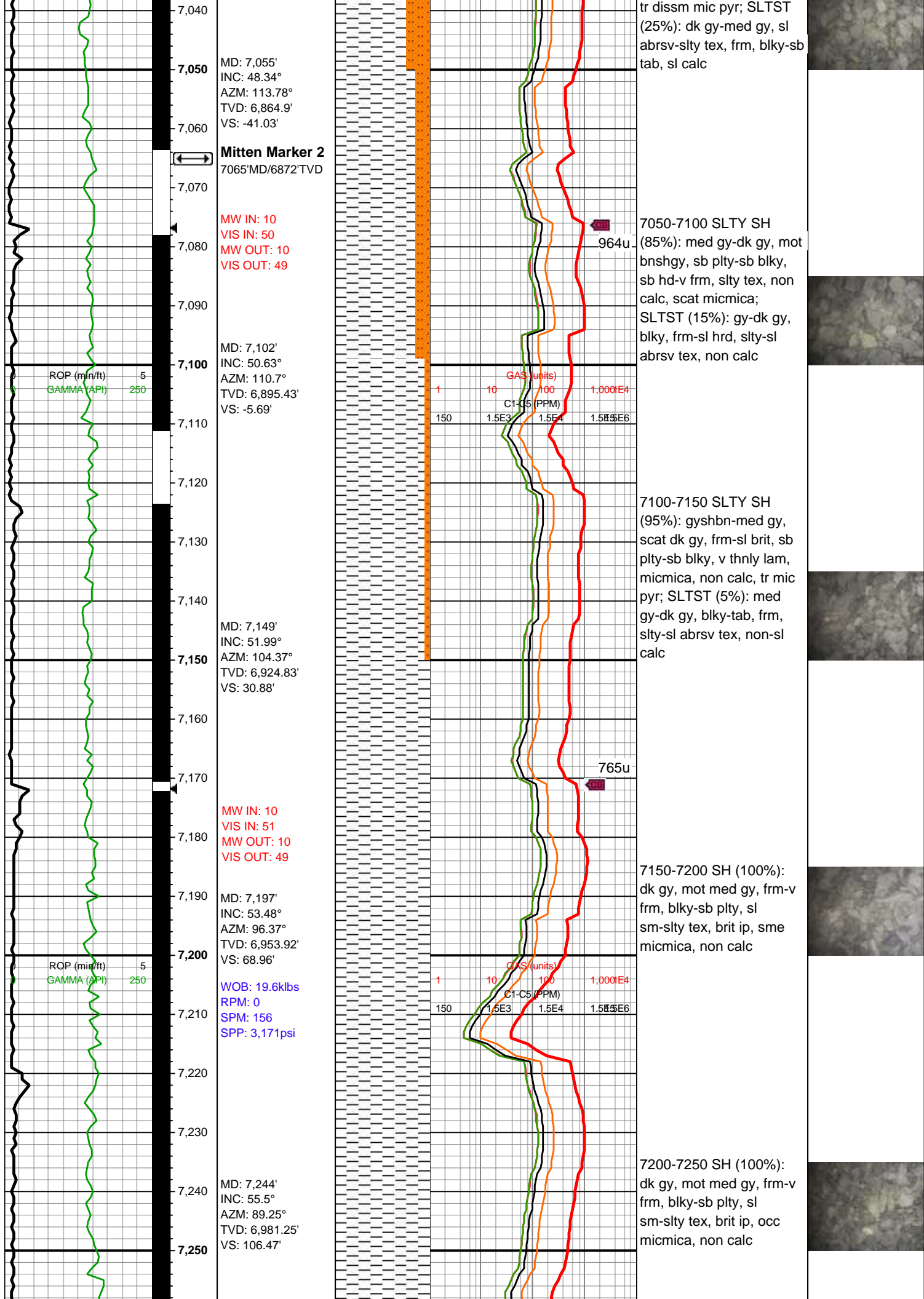
6650-6700 SLTY SH  
(75%): med gy-gyshbn,  
silty-sl sm tex, frm-sl frm,  
sb plty-sb blkly, vf lam,  
micmica, sl calc; SLTST  
(25%): med gy-dk gy,  
mod frm-sl hd, blkly-tab,  
silty-sl abrsv tex, non calc

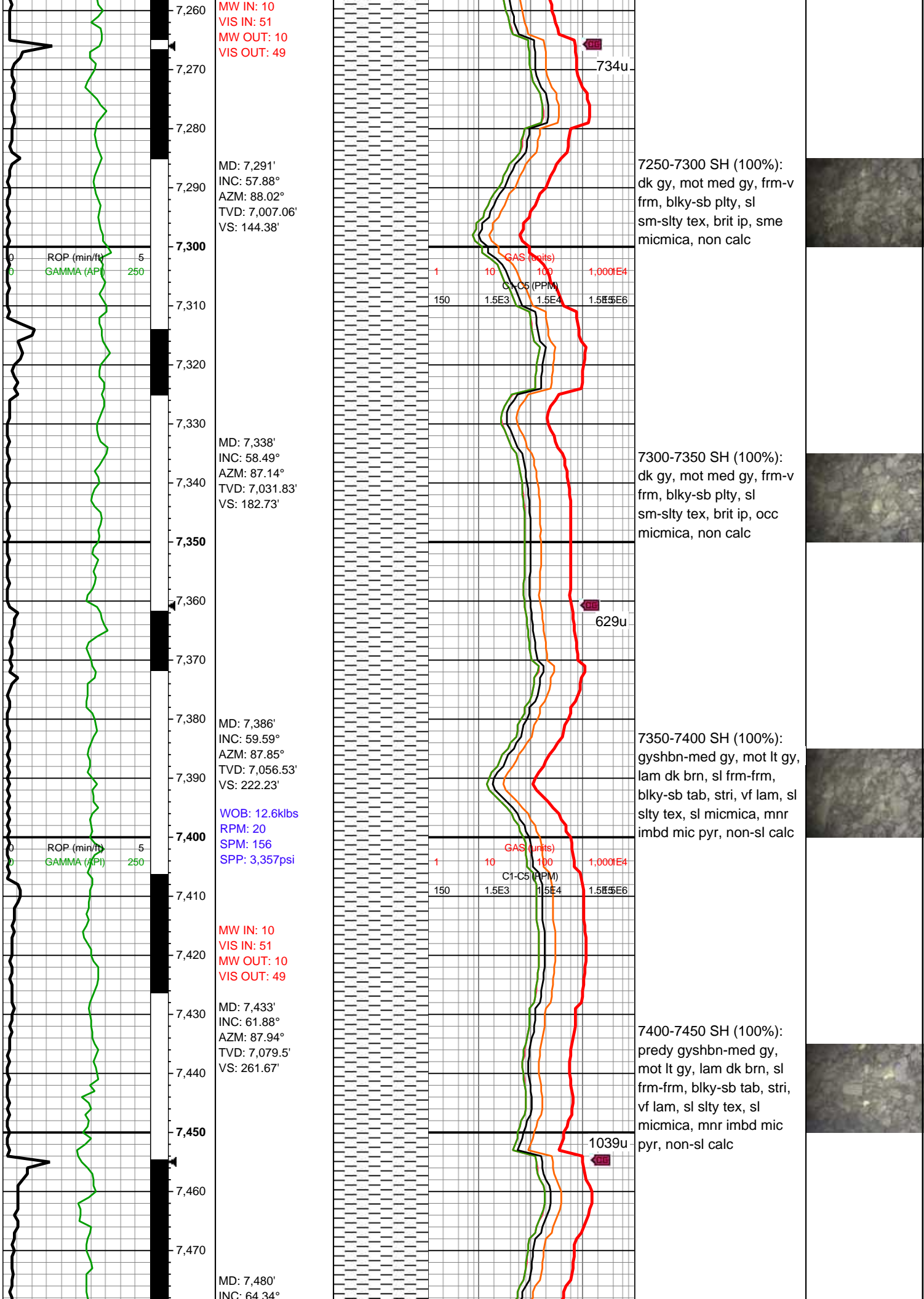
6700-6750 SLTY SH  
(70%): med gy-gyshbn,  
silty-sl sm tex, frm-sl frm,  
sb plty-sb blkly, vf lam,  
micmica, sl calc; SLTST  
(30%): med gy-dk gy,  
mod frm-sl hd, blkly-tab,  
silty-sl abrsv tex, non calc

6750-6800 SLTY SH  
(75%): med gy-gyshbn,  
silty-sl sm tex, frm-sl frm,  
sb plty-sb blkly, vf lam,  
micmica, sl calc; SLTST  
(25%): med gy-dk gy,  
mod frm-sl hd, blkly-tab,  
silty-sl abrsv tex, non calc

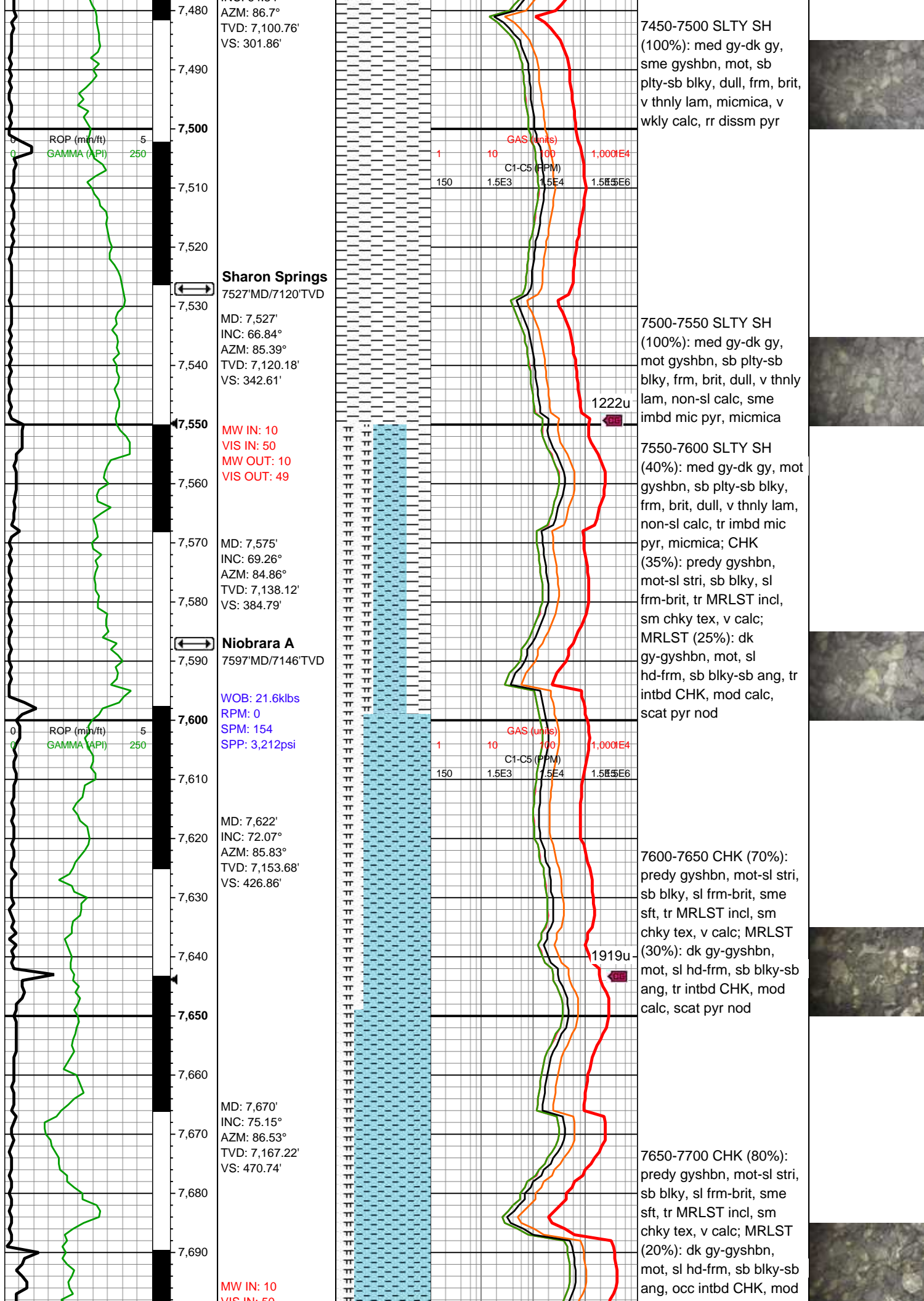


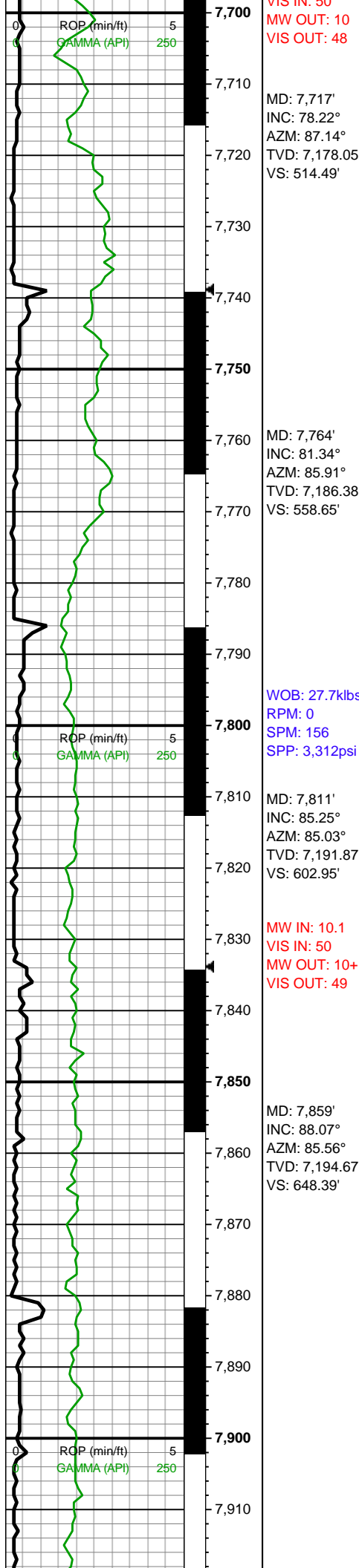






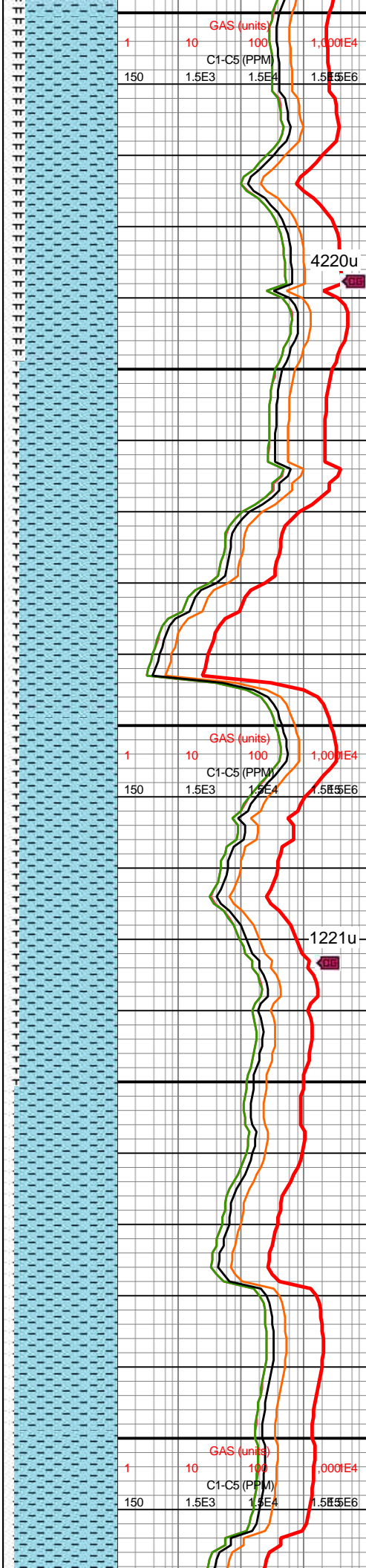






VIS IN: 50  
MW OUT: 10  
VIS OUT: 48

MW IN: 10.1  
VIS IN: 50  
MW OUT: 10+  
VIS OUT: 49



calc, scat pyr nod

7700-7750 CHK (80%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, sme  
sft, tr MRLST incl, sm  
chky tex, v calc; MRLST  
(20%): dk gy-gyshbn,  
mot, sl hd-frm, sb blk-sb  
ang, tr intbd CHK, mod  
calc, occ pyr nod

7750-7800 (85%): predy  
gyshbn, mot-sl stri, sb  
blk, sl frm-brit, tr MRLST  
incl, sm chky tex, v calc;  
MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc,  
sme pyr nod

7800-7850 (85%): predy  
gyshbn, mot-sl stri, sb  
blk, sl frm-brit, tr MRLST  
incl, sm chky tex, v calc;  
MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc, tr  
pyr nod

7850-7900 CHK (90%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (10%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc





**Curve Landed  
@ 7,928 MD**

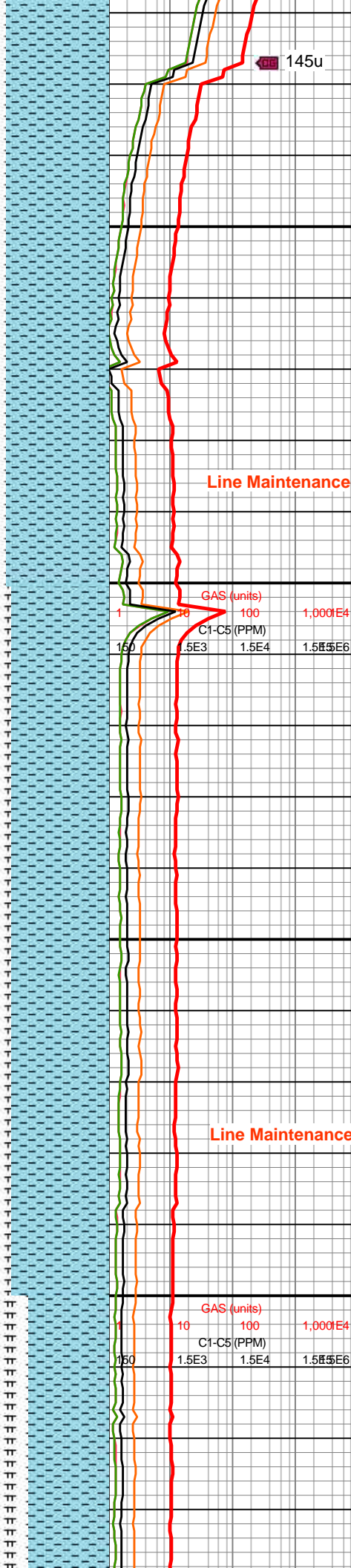
MW IN: 10.1  
VIS IN: 49  
MW OUT: 10.1  
VIS OUT: 48

MD: 7,953'  
INC: 90.97°  
AZM: 86.88°  
TVD: 7,195.45'  
VS: 737.99'

WOB: 31klbs  
RPM: 30  
SPM: 187  
SPP: 4,529psi

MD: 8,048'  
INC: 91.58°  
AZM: 86.7°  
TVD: 7,193.34'  
VS: 828.82'

MD: 8,142'



**Line Maintenance**

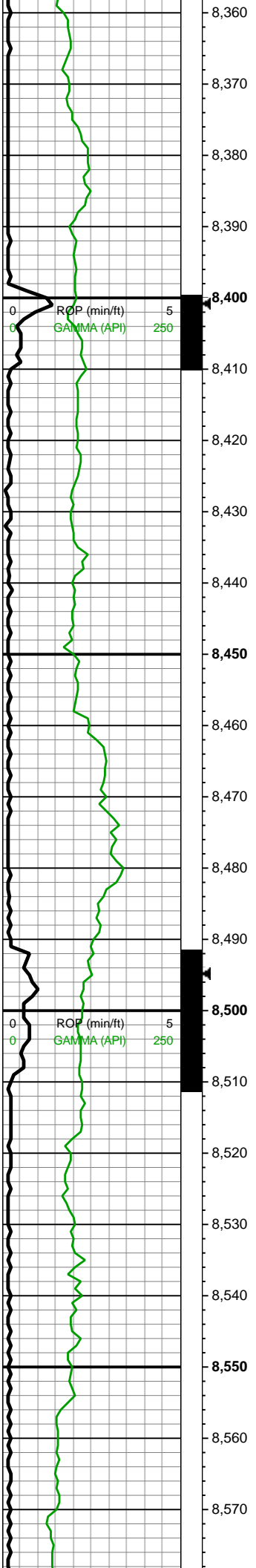
**Line Maintenance**

7900-8000 CHK (90%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (10%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang,  
occ intbd CHK, mod calc

8000-8100 CHK (85%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc





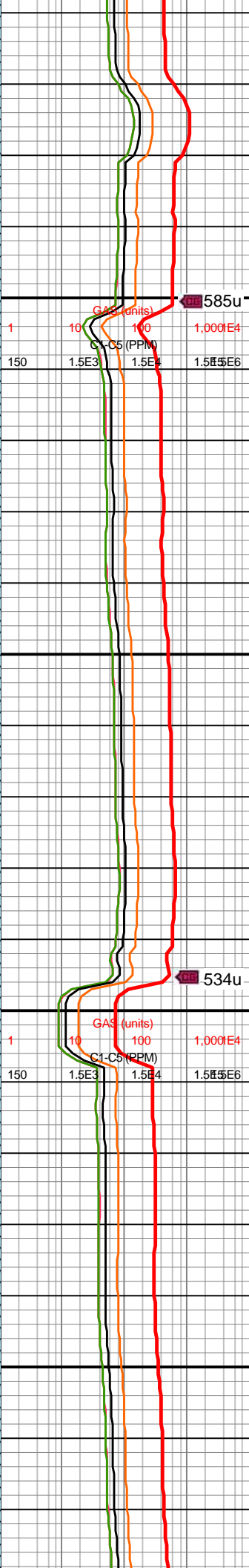
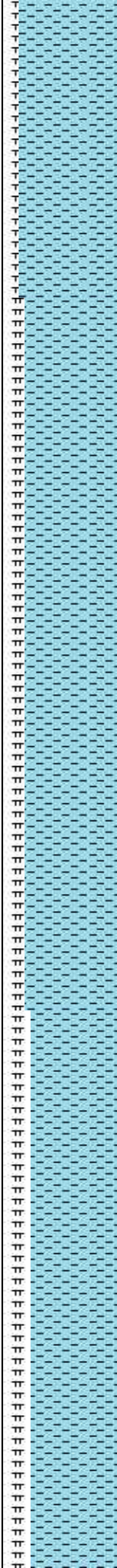


WOB: 35.1klbs  
RPM: 60  
SPM: 186  
SPP: 4,749psi

MD: 8,426'  
INC: 91.98°  
AZM: 89.08°  
TVD: 7,179.97'  
VS: 1,191.16'

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

MD: 8,520'  
INC: 90.92°  
AZM: 89.52°  
TVD: 7,177.59'  
VS: 1,282.14'



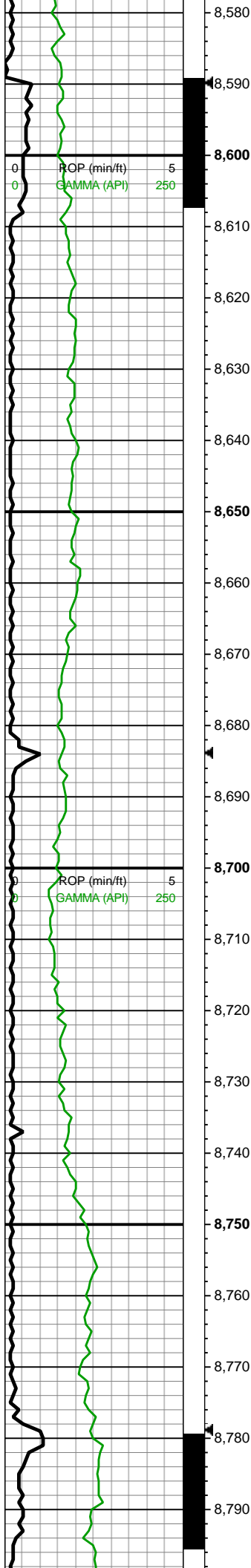
8300-8400 CHK (85%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, occ  
MRLST incl, sm chky tex,  
v calc; MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

8400-8500 CHK (80%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (20%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

8500-8600 CHK (85%):  
predy gyshbn, mot-sl stri,





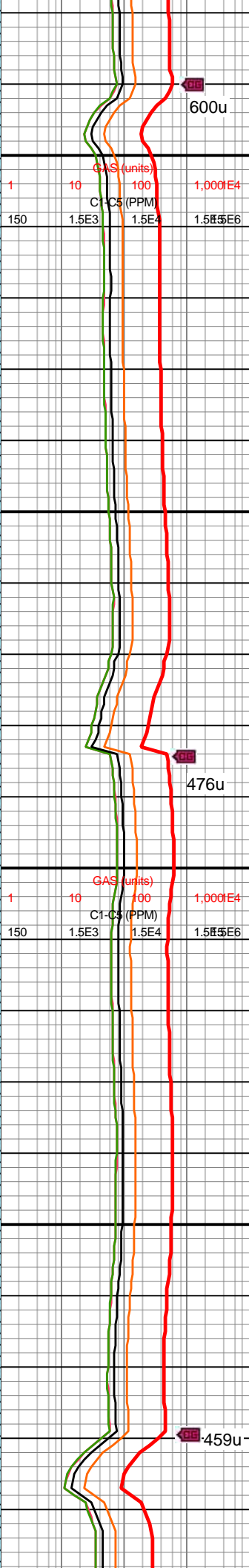
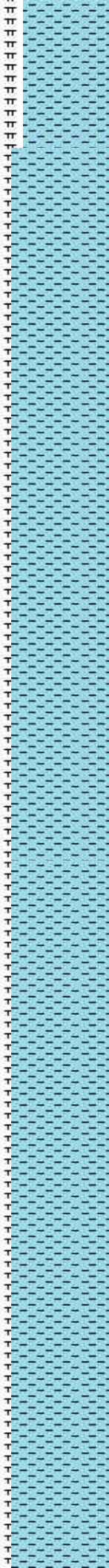


WOB: 43klbs  
RPM: 0  
SPM: 186  
SPP: 4,544psi

MD: 8,615'  
INC: 90.62°  
AZM: 91.01°  
TVD: 7,176.31'  
VS: 1,374.49'

MD: 8,709'  
INC: 91.01°  
AZM: 90.22°  
TVD: 7,174.97'  
VS: 1,466.01'

MW IN: 10.1+  
VIS IN: 51  
MW OUT: 10.2  
VIS OUT: 49  
  
WOB: 36klbs  
RPM: 61  
SPM: 186  
SPP: 4,782psi  
  
MD: 8,803'

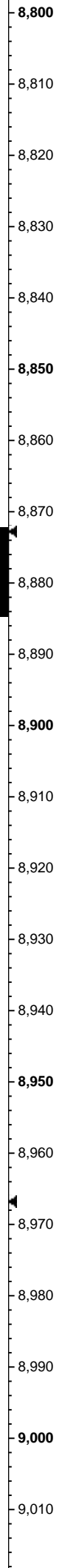
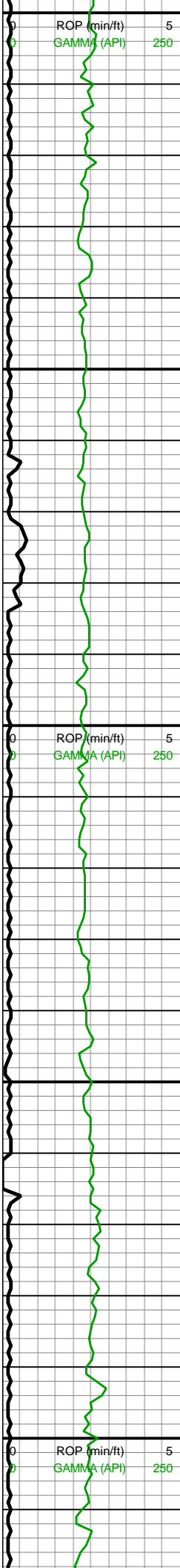


sb blkly, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blkly-sb ang, tr  
intbd CHK, mod calc, tr  
pp pyr

8600-8700 CHK (85%):  
predy gyshbn, mot-sl stri,  
sb blkly, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blkly-sb ang, tr  
intbd CHK, mod calc, occ  
pp pyr

8700-8800 CHK (75%):  
predy gyshbn, mot-sl stri,  
sb blkly, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blkly-sb ang, tr  
intbd CHK, tr pyr, mod  
calc





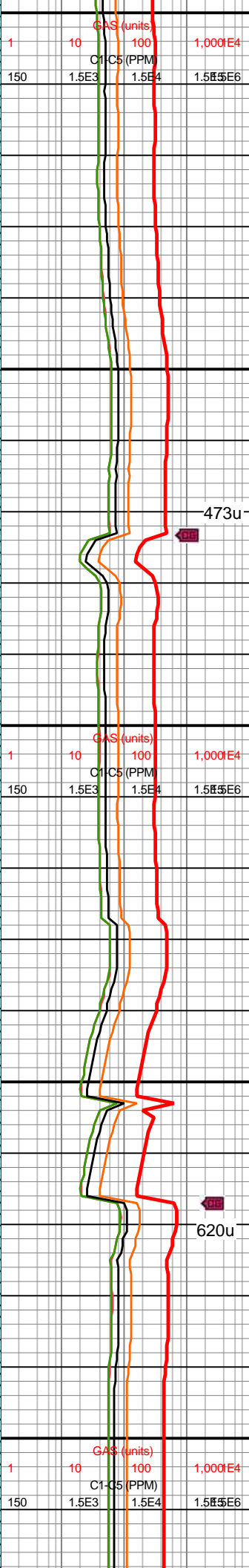
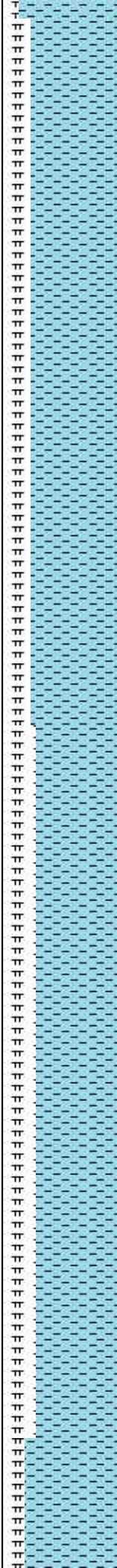
INC: 89.78°  
AZM: 91.71°  
TVD: 7,174.33'  
VS: 1,557.66'

MD: 8,898'  
INC: 88.95°  
AZM: 91.28°  
TVD: 7,175.38'  
VS: 1,650.47'

MW IN: 10.2  
VIS IN: 54  
MW OUT: 10.2  
VIS OUT: 52

MD: 8,992'  
INC: 89.03°  
AZM: 90.92°  
TVD: 7,177.04'  
VS: 1,742.16'

WOB: 33klbs  
RPM: 59  
SPM: 184  
SPP: 4,792psi



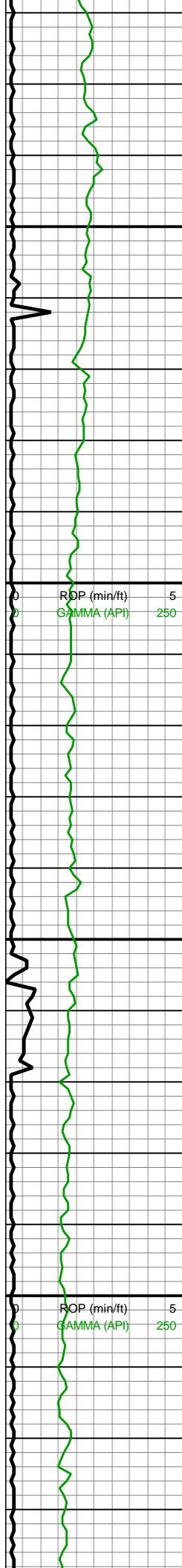
473u

8800-8900 CHK (75%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, tr pyr, mod  
calc

620u

8900-9000 CHK (70%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
magn incl, sm chky tex, v  
calc; MRLST (30%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, tr pyr, mod  
calc

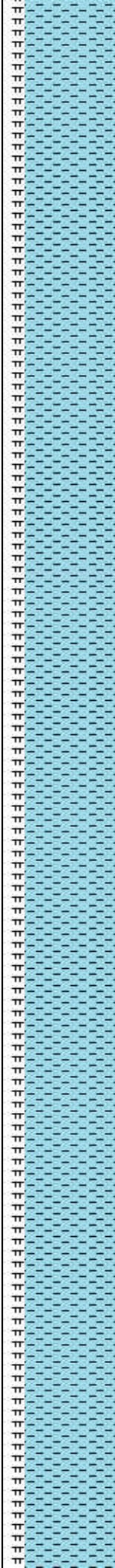




9,020  
9,030  
9,040  
9,050  
9,060  
9,070  
9,080  
9,090  
9,100  
9,110  
9,120  
9,130  
9,140  
9,150  
9,160  
9,170  
9,180  
9,190  
9,200  
9,210  
9,220  
9,230

MD: 9,181'  
INC: 89.6°  
AZM: 89.25°  
TVD: 7,178.96'  
VS: 1,926.12'

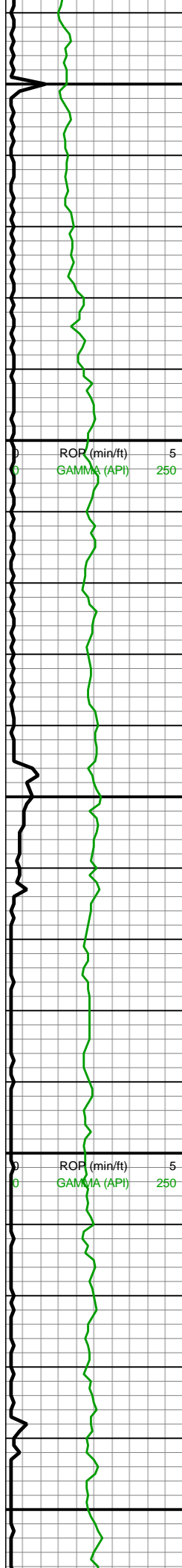
WOB: 35klbs  
RPM: 60  
SPM: 186  
SPP: 4,875psi



9000-9100 CHK (80%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (20%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, tr pyr, mod  
calc

9100-9200 CHK (80%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (20%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc





9,240  
9,250  
9,260  
9,270  
9,280  
9,290  
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

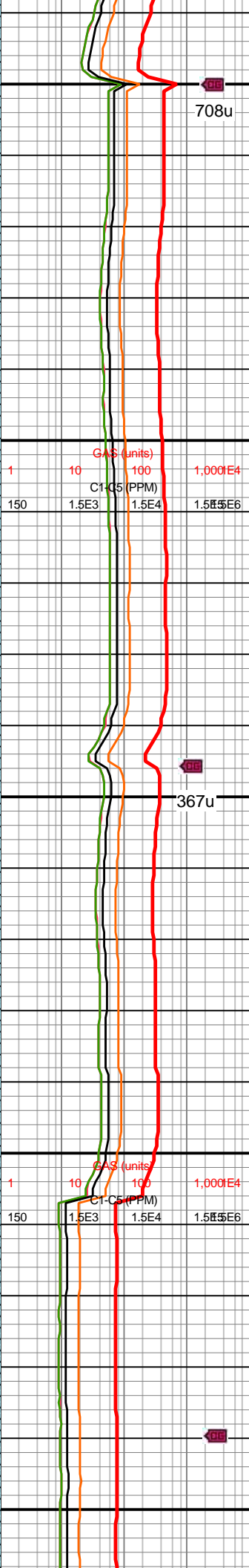
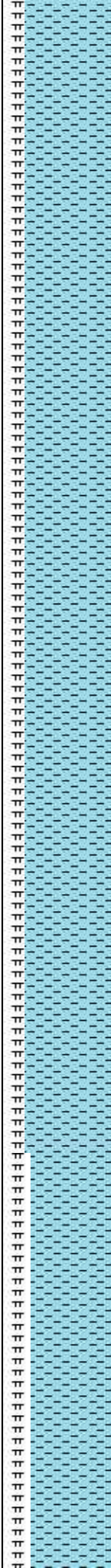
MW IN: 10.2  
VIS IN: 53  
MW OUT: 10.2  
VIS OUT: 51

MD: 9,276'  
INC: 90.75°  
AZM: 90.84°  
TVD: 7,178.67'  
VS: 2,018.39'

MW IN: 10.2  
VIS IN: 52  
MW OUT: 10.2  
VIS OUT: 51

MD: 9,371'  
INC: 89.74°  
AZM: 87.94°  
TVD: 7,178.26'  
VS: 2,110.4'

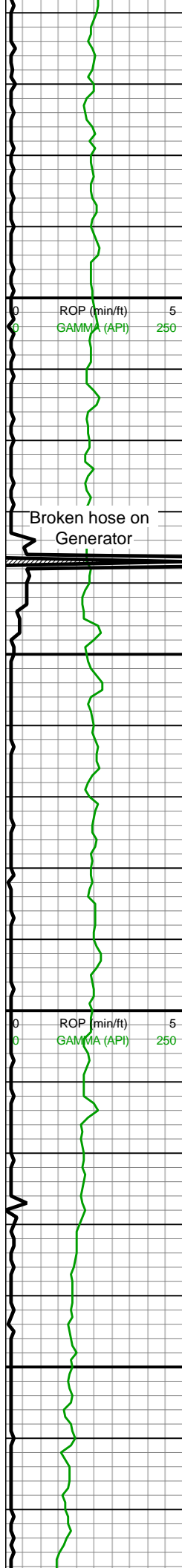
WOB: 34klbs  
RPM: 59  
SPM: 184  
SPP: 4,904psi



9200-9300 CHK (85%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

9300-9400 CHK (80%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (20%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc





MD: 9,465'  
INC: 90.4°  
AZM: 88.9°  
TVD: 7,178.15'  
VS: 2,201.03'

ROP (min/ft) 5  
GAMMA (API) 250

Broken hose on  
Generator

MINDEPTH 11/13/2018

MD: 9,559'  
INC: 89.87°  
AZM: 89.34°  
TVD: 7,177.93'  
VS: 2,291.97'

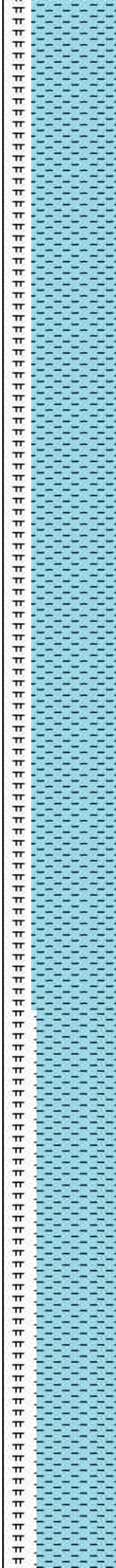
MW IN: 10.3  
VIS IN: 55  
MW OUT: 10.2  
VIS OUT: 52

WOB: 32klbs  
RPM: 59  
SPM: 185  
SPP: 4,967psi

ROP (min/ft) 5  
GAMMA (API) 250

MD: 9,654'  
INC: 90.48°  
AZM: 89.34°  
TVD: 7,177.64'  
VS: 2,383.96'

9,670

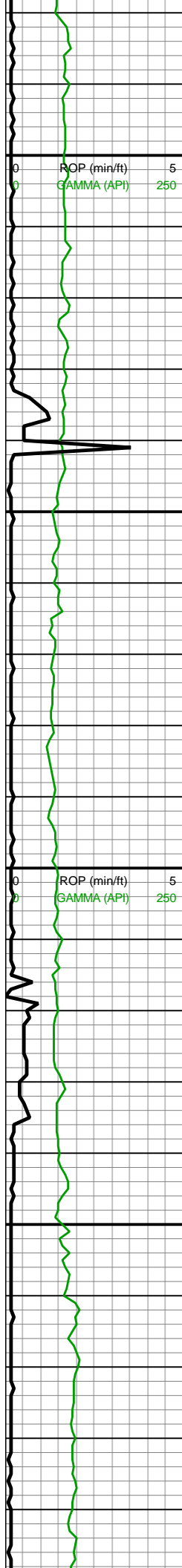


9400-9500 CHK (75%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

9500-9600 CHK (75%):  
predy gyshbn, mot-sl stri,  
sb blk, sl frm-brit, tr  
MRLST incl, sm chky tex,  
v calc; MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

9600-9700 CHK (70%):  
gyshbn-med gy, mot crm,  
chky tex, frm-sl frm, sb  
blk ch tab, ome MRLST





9,680  
9,690  
9,700  
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

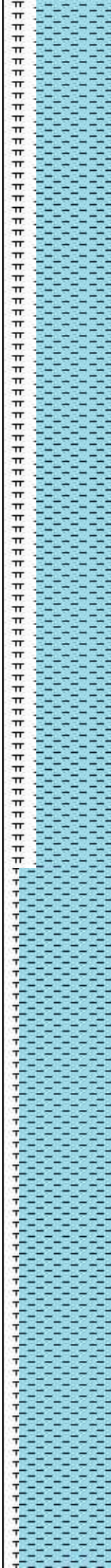
MD: 9,749'  
INC: 90.18°  
AZM: 90.04°  
TVD: 7,177.09'  
VS: 2,476.1'

MW IN: 10.3  
VIS IN: 55  
MW OUT: 10.2+  
VIS OUT: 51

WOB: 29klbs  
RPM: 60  
SPM: 186  
SPP: 5,249psi

MD: 9,843'  
INC: 89.6°  
AZM: 89.25°  
TVD: 7,177.27'  
VS: 2,567.25'

MW IN: 10.3+  
VIS IN: 55  
MW OUT: 10.3+  
VIS OUT: 50



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

366u

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

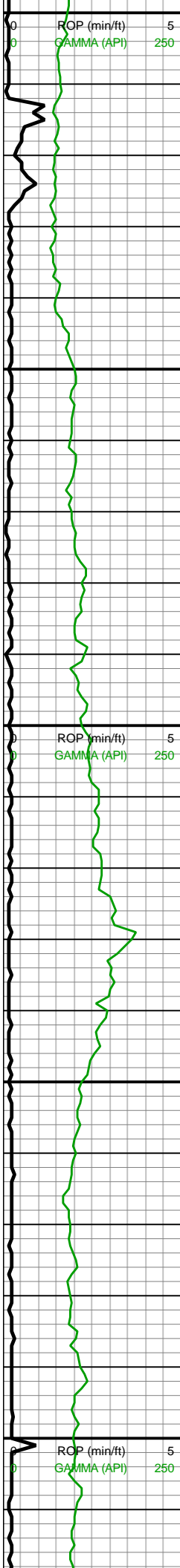
125u

blkyl-sb tab, sme MRLST  
lamn, mod calc; MRLST  
(20%): dk gy, mot med  
gy, frm-sl hd, sl sm tex,  
tab-sb blkyl, mnrlntbd  
CHK lam, mod calc, tr cal  
frac fl

9700-9800 CHK (70%):  
gyshbn-med gy, mot crm,  
chky tex, frm-sl frm, sb  
blkyl-sb tab, sme MRLST  
lamn, mod calc; MRLST  
(20%): dk gy, mot med  
gy, frm-sl hd, sl sm tex,  
tab-sb blkyl, mnrlntbd  
CHK lam, mod calc, tr cal  
frac fl

9800-9900 CHK (85%):  
gyshbn-med gy, mot crm,  
chky tex, frm-sl frm, sb  
blkyl-sb tab, sme MRLST  
lamn, mod calc; MRLST  
(15%): dk gy, mot med  
gy, frm-sl hd, sl sm tex,  
tab-sb blkyl, mnrlntbd  
CHK lam, mod calc, tr cal  
frac fl





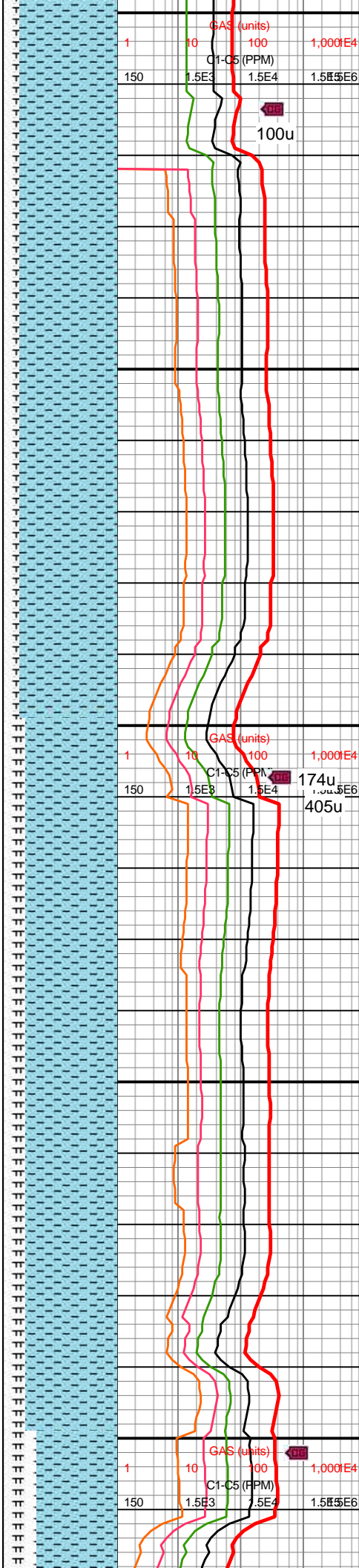
MD: 9,937'  
INC: 89.08°  
AZM: 89.17°  
TVD: 7,178.35'  
VS: 2,658.21'

MW IN: 10.3+  
VIS IN: 55  
MW OUT: 10.3+  
VIS OUT: 50

WOB: 33klbs  
RPM: 60  
SPM: 186  
SPP: 5,144psi

MD: 10,031'  
INC: 88.86°  
AZM: 89.08°  
TVD: 7,180.04'  
VS: 2,749.14'

TY

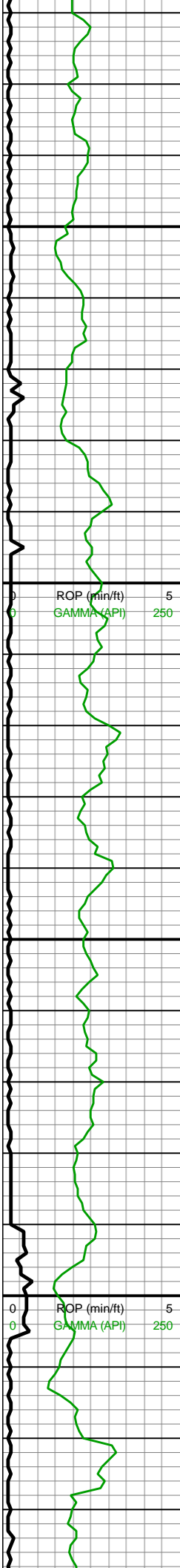


DB  
100u

DB  
174u  
405u

9900-10000 CHK (85%):  
gyshbn-med gy, mot crm,  
chky tex, frm-sl frm, sb  
blky-sb tab, sme MRLST  
lamn, mod calc; MRLST  
(15%): dk gy, mot med  
gy, frm-sl hd, sl sm tex,  
tab-sb blky, mnr intbd  
CHK lam, mod calc, tr cal  
frac fl

10000-10100 CHK  
(80%): gyshbn-med gy,  
mot crm, chky tex, frm-sl  
frm, sb blky-sb tab, sme  
MRLST lamn, mod calc;  
MRLST (20%): dk gy, mot  
med gy, frm-sl hd, sl sm  
tex, tab-sb blky, mnr intbd  
CHK lam, mod calc, tr cal  
frac fl



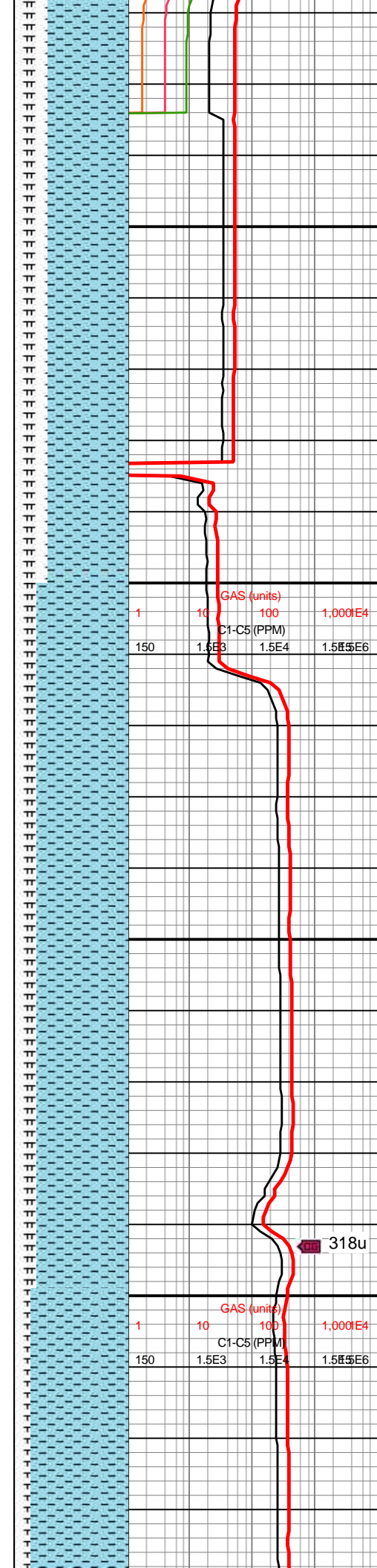
MD: 10,126'  
INC: 88.73°  
AZM: 88.55°  
TVD: 7,182.04'  
VS: 2,840.89'

MW IN: 10.3+  
VIS IN: 55  
MW OUT: 10.3+  
VIS OUT: 50

WOB: 29.4klbs  
RPM: 60  
SPM: 187  
SPP: 5,079psi

MD: 10,220'  
INC: 88.76°  
AZM: 88.37°  
TVD: 7,184.1'  
VS: 2,931.52'

MD: 10,314'  
INC: 86.7°  
AZM: 90.22°  
TVD: 7,187.82'  
VS: 3,022.45'

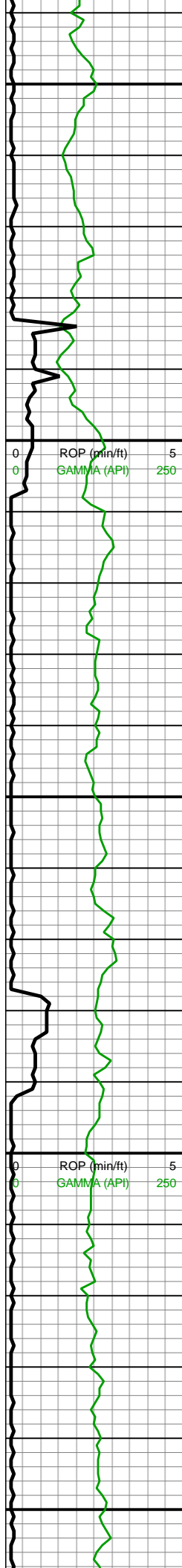


10100-10200 CHK  
(70%): gyshbn-med gy,  
mot crm, chky tex, frm-sl  
frm, sb blkyl-sb tab, sme  
MRLST lamn, mod calc;  
MRLST (30%): dk gy, mot  
med gy, frm-sl hd, sl sm  
tex, tab-sb blkyl, mnrl intbd  
CHK lam, mod calc, tr cal  
frac fl

10200-10300 CHK  
(80%): predy gyshbn,  
mot-sl stri, sb blkyl, sl  
frm-brit, tr MRLST incl,  
sm chky tex, v calc;  
MRLST (20%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blkyl-sb ang, tr  
intbd CHK, mod calc







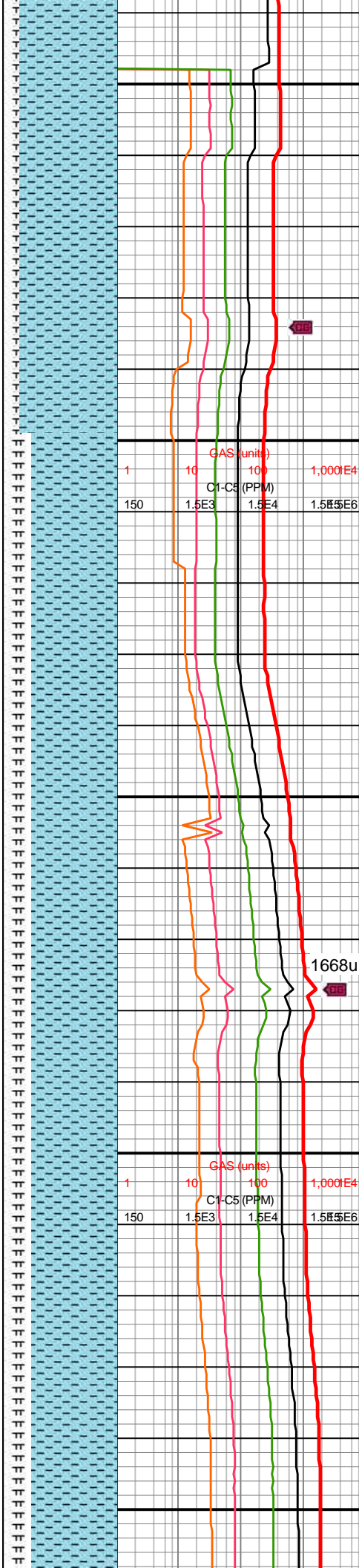
MW IN: 10.4  
VIS IN: 56  
MW OUT: 10.4  
VIS OUT: 51

WOB: 49klbs  
RPM: 0  
SPM: 185  
SPP: 4,869psi

MD: 10,408'  
INC: 88.51°  
AZM: 90.66°  
TVD: 7,191.75'  
VS: 3,113.83'

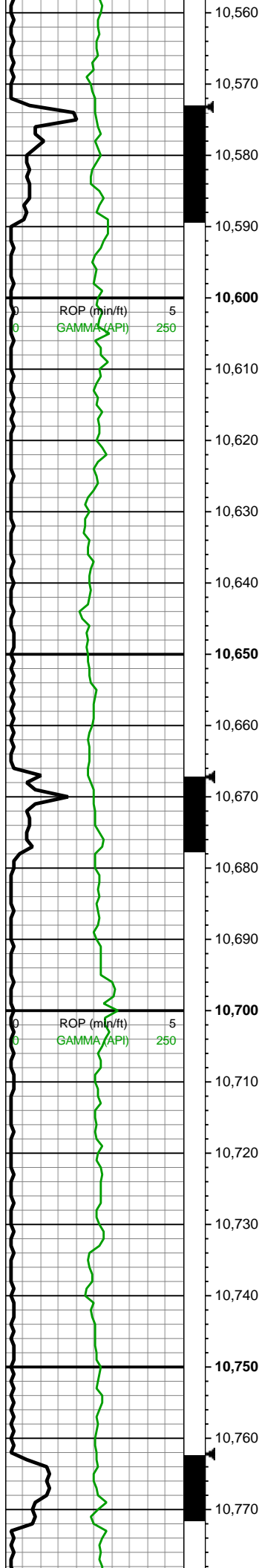
MW IN: 10.3+  
VIS IN: 57  
MW OUT: 10.4  
VIS OUT: 52

MD: 10,503'  
INC: 89.82°  
AZM: 91.1°  
TVD: 7,193.13'  
VS: 3,206.41'



10300-10400 CHK  
(85%): predy gyshbn,  
mot-sl stri, sb blky, sl  
frm-brit, tr MRLST incl,  
sm chky tex, v calc;  
MRLST (15%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blky-sb ang, tr  
intbd CHK, mod calc

10400-10500 CHK  
(75%): predy gyshbn,  
mot-sl stri, sb blky, sl  
frm-brit, tr MRLST incl,  
sm chky tex, v calc;  
MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blky-sb ang, tr  
intbd CHK, mod calc

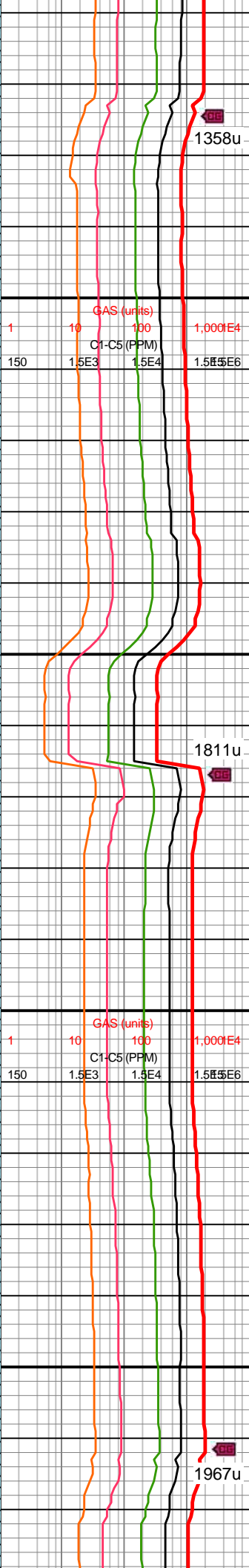
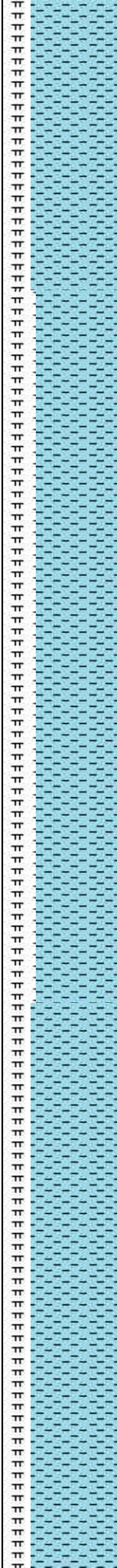


MD: 10,598'  
INC: 92.02°  
AZM: 90.84°  
TVD: 7,191.61'  
VS: 3,299.03'

WOB: 35.4klbs  
RPM: 60  
SPM: 186  
SPP: 5,267psi

MW IN: 10.4  
VIS IN: 55  
MW OUT: 10.4  
VIS OUT: 50

MD: 10,692'  
INC: 92.77°  
AZM: 89.87°  
TVD: 7,187.68'  
VS: 3,390.37'



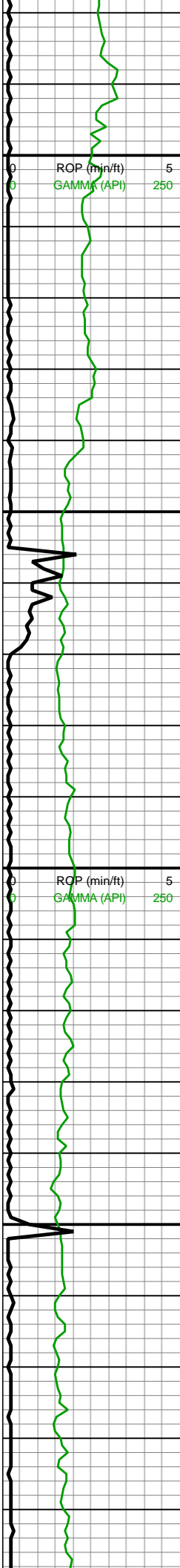
10500-10600 CHK  
(75%): predy gyshbn,  
mot-sl stri, sb blk, sl  
frm-brit, tr MRLST incl,  
sm chky tex, v calc;  
MRLST (25%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc

10600-10700 CHK  
(70%): predy gyshbn,  
mot-sl stri, sb blk, sl  
frm-brit, tr MRLST incl,  
sm chky tex, v calc;  
MRLST (30%): dk  
gy-gyshbn, mot, sl  
hd-frm, sb blk-sb ang, tr  
intbd CHK, mod calc, tr  
pyr

10700-10800 CHK  
(75%): gyshbn-med gy,  
mot crm, chky tex, frm-sl







MD: 10,787'  
INC: 92.02°  
AZM: 88.29°  
TVD: 7,183.71'  
VS: 3,482.17'

WOB: 35.7klbs  
RPM: 60  
SPM: 188  
SPP: 5,339psi

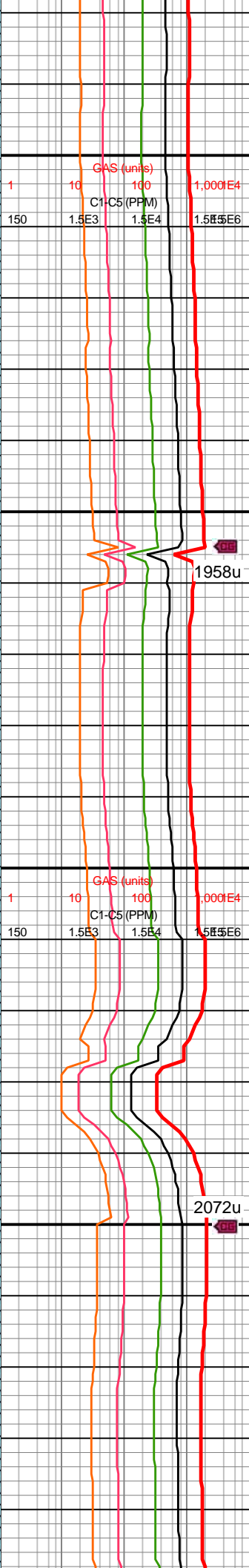
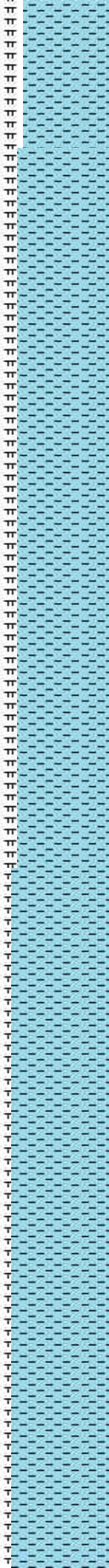
MW IN: 10.4  
VIS IN: 56  
MW OUT: 10.4+  
VIS OUT: 51

MD: 10,881'  
INC: 90.22°  
AZM: 88.9°  
TVD: 7,181.87'  
VS: 3,572.87'

MW IN: 10.4  
VIS IN: 54  
MW OUT: 10.5  
VIS OUT: 51

MD: 10,976'  
INC: 91.06°  
AZM: 88.37°  
TVD: 7,180.81'  
VS: 3,664.56'

WOB: 37.1klbs

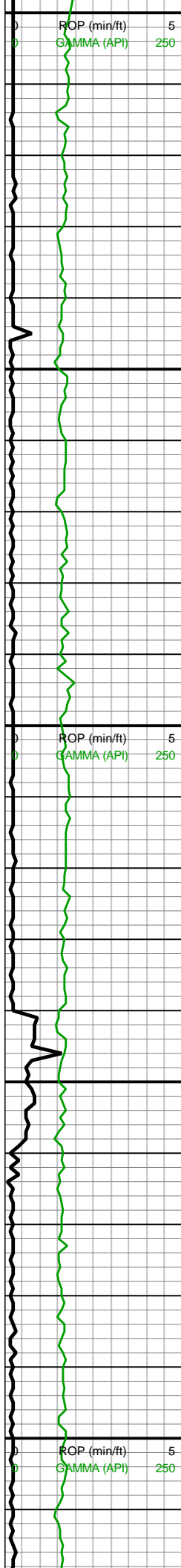


frm, sb blkyl-sb tab, sme  
MRLST lamn, mod calc;  
MRLST (25%): dk gy, mot  
med gy, frm-sl hd, sl sm  
tex, tab-sb blkyl, mnr intbd  
CHK lam, mod calc, tr cal  
frac fl

10800-10900 CHK  
(80%): gyshbn-med gy,  
scatt mot crm, chky tex,  
frm-sl frm, sb blkyl-sb tab,  
sme MRLST lamn, mod  
calc; MRLST (20%): dk  
gy, mot med gy, frm-sl  
hd, sl sm tex, tab-sb blkyl,  
mnr intbd CHK lam, mod  
calc, tr cal frac fl

10900-11000 CHK  
(85%): gyshbn-med gy,  
occ mot crm, chky tex,  
frm-sl frm, sb blkyl-sb tab,  
sme MRLST lamn, mod  
calc; MRLST (15%): dk  
gy, mot med gy, frm-sl  
hd, sl sm tex, tab-sb blkyl,  
mnr intbd CHK lam, mod  
calc, tr cal frac fl





11,000  
11,010  
11,020  
11,030  
11,040  
11,050  
11,060  
11,070  
11,080  
11,090  
11,100  
11,110  
11,120  
11,130  
11,140  
11,150  
11,160  
11,170  
11,180  
11,190  
11,200  
11,210

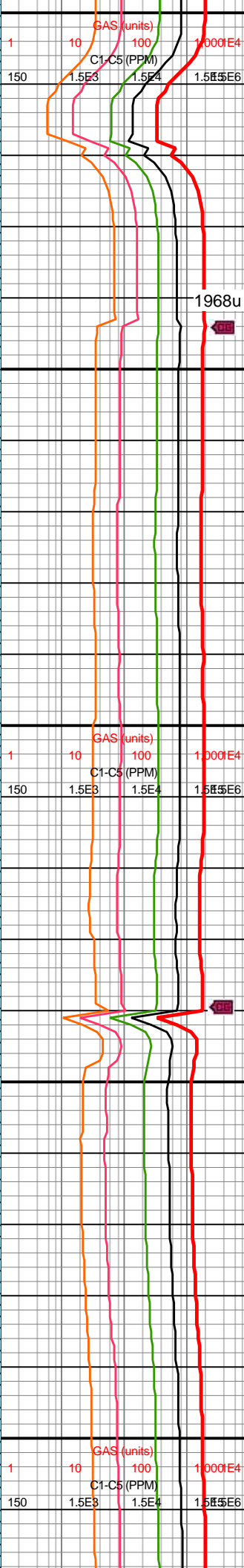
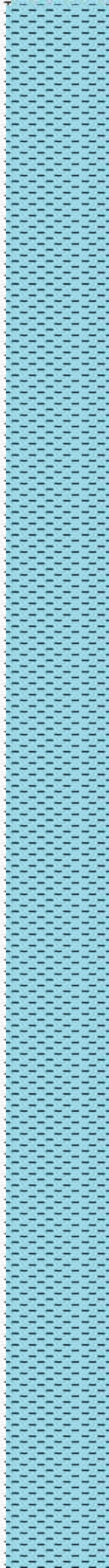
RPM: 59  
SPM: 188  
SPP: 5,404psi

MD: 11,070'  
INC: 90.31°  
AZM: 86.27°  
TVD: 7,179.69'  
VS: 3,754.69'

MW IN: 10.4+  
VIS IN: 54  
MW OUT: 10.5  
VIS OUT: 50

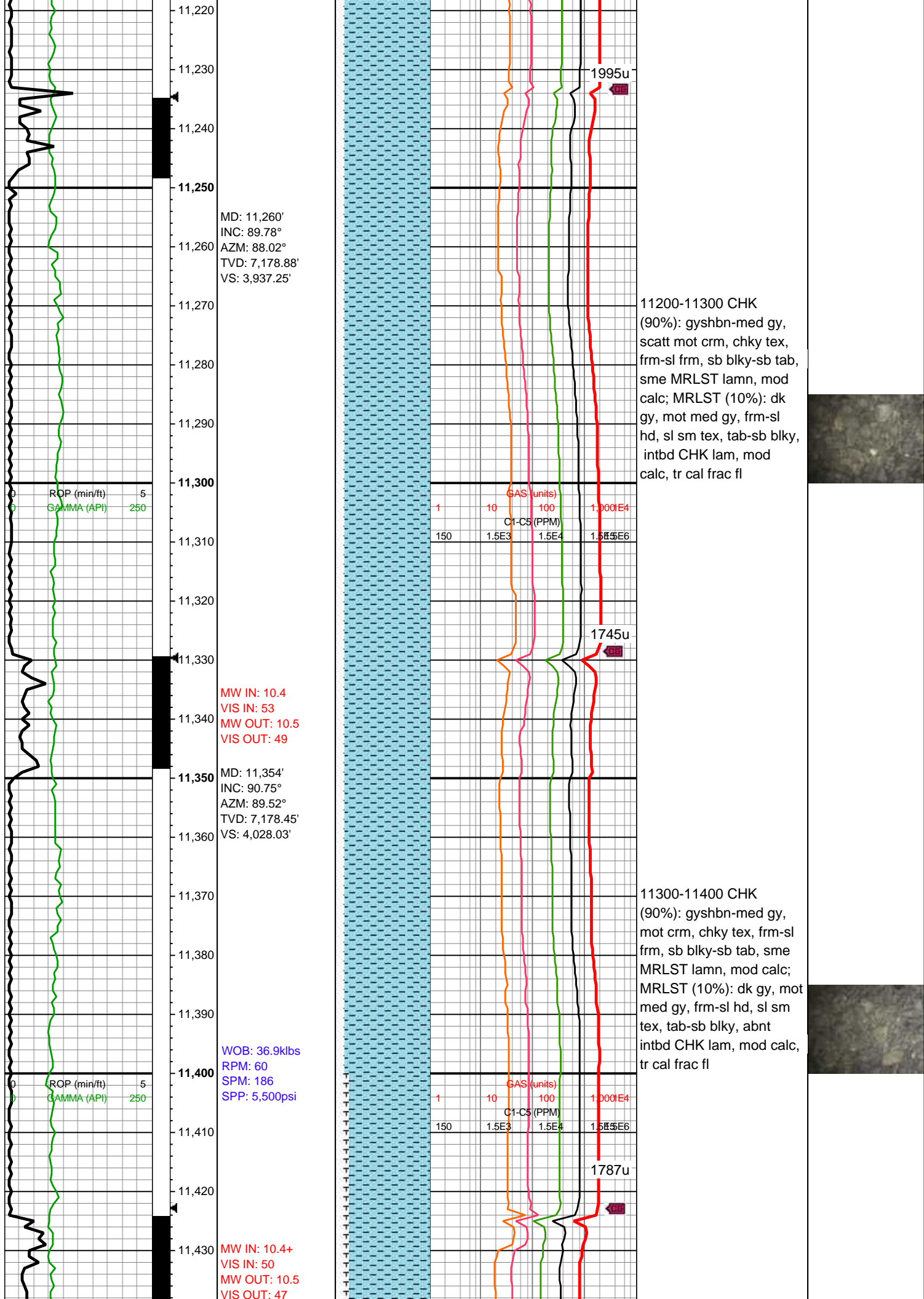
MD: 11,165'  
INC: 90.44°  
AZM: 88.29°  
TVD: 7,179.07'  
VS: 3,845.76'

WOB: 34.2klbs  
RPM: 60  
SPM: 187  
SPP: 5,443psi

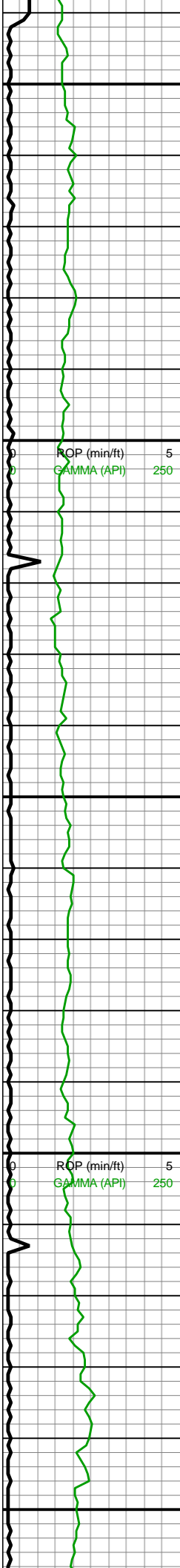


11000-11100 CHK  
(90%): predy  
gyshbn-med gy, mot crm,  
chky tex, frm-sl frm, sb  
blky-sb tab, sme MRLST  
lamn, mod calc; MRLST  
(10%): dk gy, mot med  
gy, frm-sl hd, sl sm tex,  
tab-sb blky, com intbd  
CHK lam, mod calc, tr cal  
frac fl

11100-11200 CHK  
(90%): gyshbn-med gy,  
com mot crm, chky tex,  
frm-sl frm, sb blky-sb tab,  
sme MRLST lamn, mod  
calc; MRLST (10%): dk  
gy, mot med gy, frm-sl  
hd, sl sm tex, tab-sb blky,  
mnr intbd CHK lam, mod  
calc, tr cal frac fl







11,440  
11,450  
11,460  
11,470  
11,480  
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

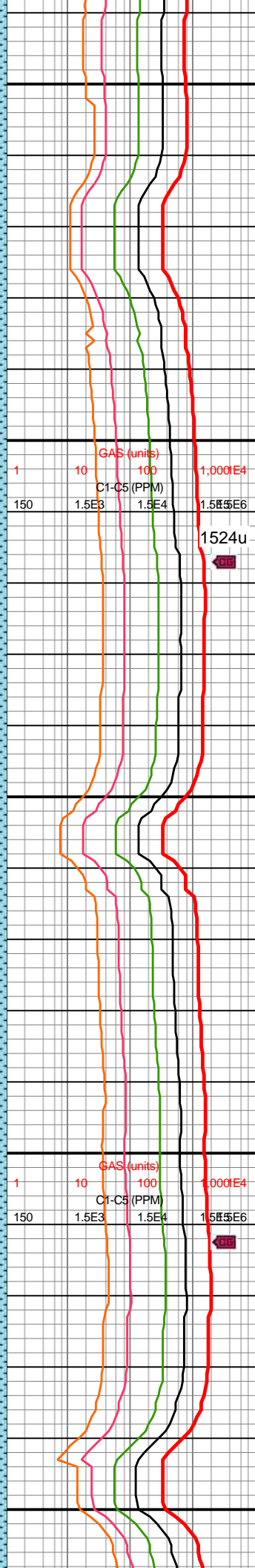
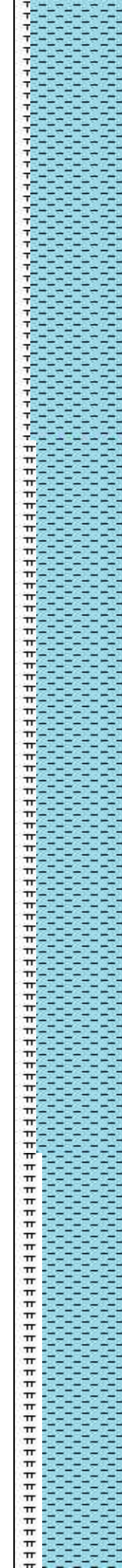
MD: 11,448'  
INC: 90.04°  
AZM: 90.31°  
TVD: 7,177.8'  
VS: 4,119.29'

MD: 11,543'  
INC: 91.06°  
AZM: 89.96°  
TVD: 7,176.89'  
VS: 4,211.59'

WOB: 35.1klbs  
RPM: 61  
SPM: 185  
SPP: 5,446psi

MD: 11,637'  
INC: 91.98°  
AZM: 89.87°  
TVD: 7,174.4'  
VS: 4,302.82'

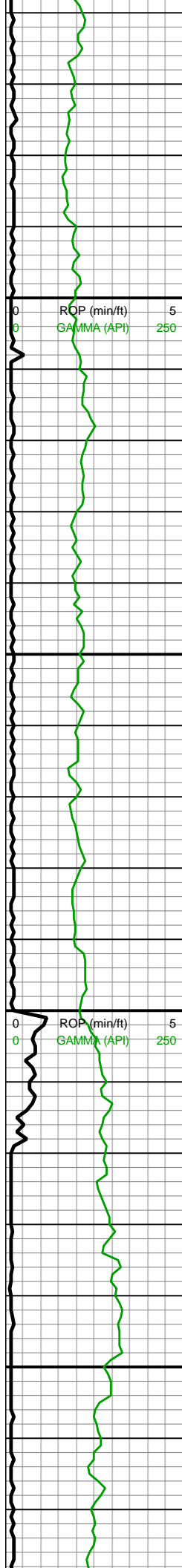
MW IN: 10.4+  
VIS IN: 50  
MW OUT: 10.5  
VIS OUT: 48



11400-11500 CHK  
(85%): gyshbn-med gy,  
mot crm, chky tex, frm-sl  
frm, sb blkyl-sb tab, sme  
MRLST lamn, mod calc;  
MRLST (15%): dk gy, mot  
med gy, frm-sl hd, sl sm  
tex, tab-sb blkyl, com  
intbd CHK lam, mod calc,  
tr cal frac fl

11500-11600 CHK  
(80%): predy gyshbn,  
mot, sb blkyl, sl frm-brit,  
sm chky tex, tr MRLST  
intbds, v calc; MRLST  
(20%): dk gy-gyshbn,  
mot, sl hd-frm, sb blkyl-sb  
ang, abnt CHK intbds,  
mod calc





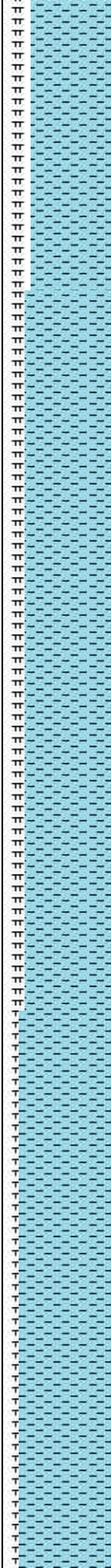
11,660  
11,670  
11,680  
11,690  
11,700  
11,710  
11,720  
11,730  
11,740  
11,750  
11,760  
11,770  
11,780  
11,790  
11,800  
11,810  
11,820  
11,830  
11,840  
11,850  
11,860  
11,870

MD: 11,731'  
INC: 92.64°  
AZM: 89.25°  
TVD: 7,170.61'  
VS: 4,393.86'

WOB: 16klbs  
RPM: 0  
SPM: 186  
SPP: 4,826psi

MD: 11,826'  
INC: 91.63°  
AZM: 89.52°  
TVD: 7,167.07'  
VS: 4,485.81'

MW IN: 10.4  
VIS IN: 52  
MW OUT: 10.5  
VIS OUT: 48



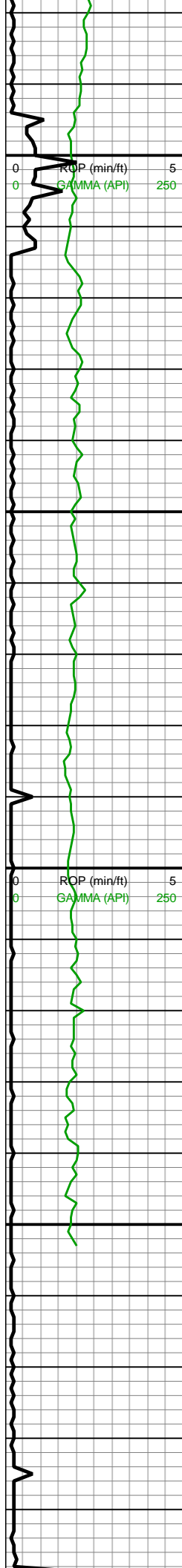
11600-11700 CHK  
(75%): predy gyshbn,  
mot, sb blk, sl frm-brit,  
sm chky tex, tr MRLST  
intbds, v calc; MRLST  
(25%): dk gy-gyshbn,  
mot, sl hd-frm, sb blk-sb  
ang, com CHK intbds,  
mod calc

11700-11800 CHK  
(80%): predy gyshbn,  
mot, sb blk, sl frm-brit,  
sm chky tex, tr MRLST  
intbds, v calc; MRLST  
(20%): dk gy-gyshbn,  
mot, sl hd-frm, sb blk-sb  
ang, occ CHK intbds,  
mod calc

11800-11900 CHK  
(85%): predy gyshbn,  
mot, sb blk, sl frm-brit,  
sm chky tex, tr MRLST  
intbds, v calc; MRLST  
(15%): dk gy-gyshbn,  
mot, sl hd-frm, sb blk-sb  
ang, com CHK intbds,  
mod calc







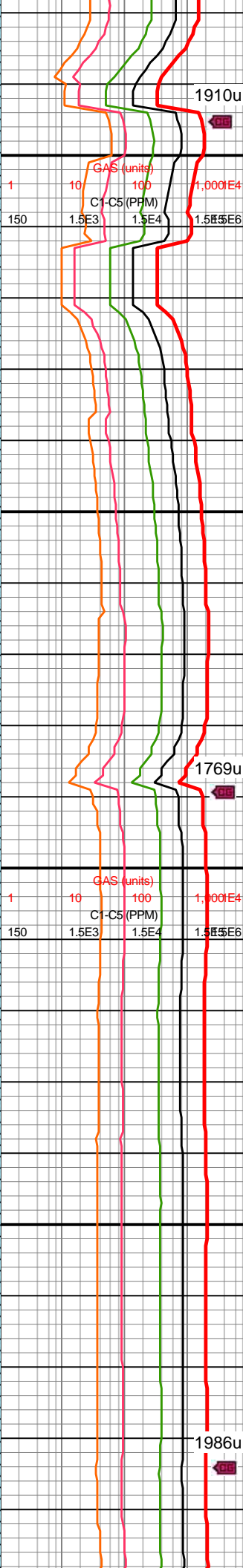
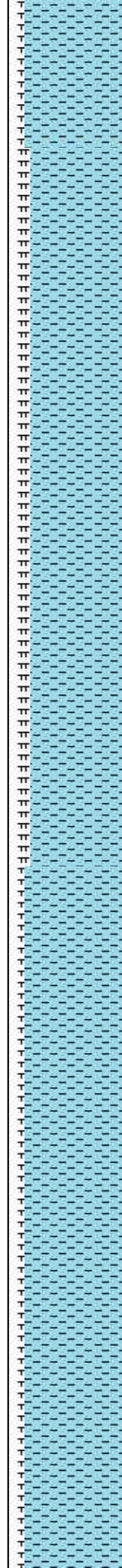
MD: 11,920'  
INC: 90.48°  
AZM: 89.87°  
TVD: 7,165.34'  
VS: 4,576.96'

WOB: 38.1klbs  
RPM: 60  
SPM: 187  
SPP: 5.607psi

MD: 12,014'  
INC: 90.13°  
AZM: 87.5°  
TVD: 7,164.84'  
VS: 4,667.7'

MD: 12,044'  
INC: 90.62°  
AZM: 87.23°  
TVD: 7,164.64'  
VS: 4,696.48'

Projection to Bit:



mot, sb blkly, sl frm-brit, sm chky tex, occ MRLST intbds, v calc; MRLST (15%): dk gy-gyshbn, mot, sl hd-frm, sb blkly-sb ang, com CHK intbds, mod calc

1910u

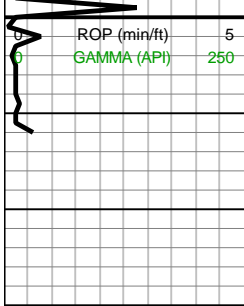
11900-12000 CHK (80%): predy gyshbn, mot, sb blkly, sl frm-brit, sm chky tex, tr MRLST intbds, v calc; MRLST (20%): dk gy-gyshbn, mot, sl hd-frm, sb blkly-sb ang, com CHK intbds, mod calc

1769u

12000-12100 (85%): predy gyshbn, mot-sl stri, sb blkly, sl frm-brit, tr MRLST incl, sm chky tex, v calc; MRLST (15%): dk gy-gyshbn, mot, sl hd-frm, sb blkly-sb ang, tr intbd CHK, mod calc, occ ovr pod

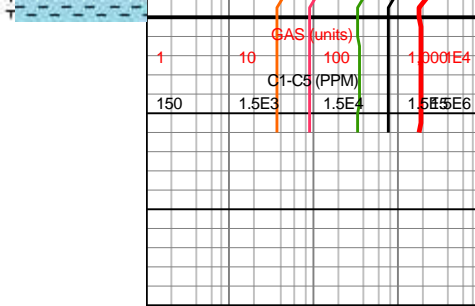
1986u





12,100 MD: 12,113'  
INC: 90.62°  
AZM: 87.23°  
TVD: 7,163.89'  
VS: 4,762.61'

**Total Depth of  
12,113'  
Reached on  
11/13/2018 @  
16:24 MST**



pyr1100