



Scale: 5" / 100'
Measured Depth Log

Well Name Davis 1L-9H-G266

Location Sec. 9 T2N R66W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05123466810000

AFE # 16191030

Geographic Region Rockies

Field Wattenberg

Spud Date 7/24/2018

Drilling Completed 7/27/2018

Surface Coordinates Lat/Long: 40.154392/-104.777928

SHL: Sec: 9 Twp: 2N 66W
Footage: 1978 FNL 1433 FEL

Bottom Hole Coordinates Proposed BHL:
Sec: 4 Twp: 2N 66W
Footage: 460 FNL 201 FWL

Ground Elevation 4,917'

K.B. Elevation 4,940'

Logged Interval 6,500' MD **To** 15,506' MD

Total Depth 15,506' MD

Formation B Chalk

Type of Drilling Fluid Synthetic Oil Based Mud

Operator

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Geologist

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: Byron Pitulski / Mark Gross

Services Provided: 2-Man Mudlogging / Geosteering

Equipment: ML-526

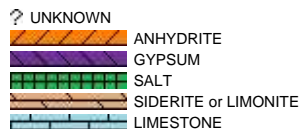
Contractor: Empirica, Reservoir Group
6360 West Sam Houston Pkwy N
Houston, Texas, 77041

Job #: 1440RK1808

Start Date 7/24/2018

Release Date: 7/28/2018

Rock Types



Accessories

Fossils

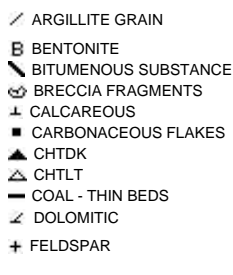


F FOSSIL



Minerals

ARGILLACEOUS



GLAUCONITE



Stringer



FORMATION

FORAMINIFERA

ANHYDRITIC

FERRUGINOUS FEELE

FERRUGINOUS

GIETT

TUFFACEOUS

SLISTONE STRINGER

Other Symbols

Oil Show

DEAD

EVEN

QUESTIONABLE

SPOTTED STAINING

Porosity

E EARTHY

F FENESTRAL

F FRACTURE

X INTERCRYSTALLINE

Q INTEROOLITIC

M MOLDIC

O ORGANIC

P PINPOINT

V VUGGY

Engineering

BIT

CASING

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

MNDEPTH 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

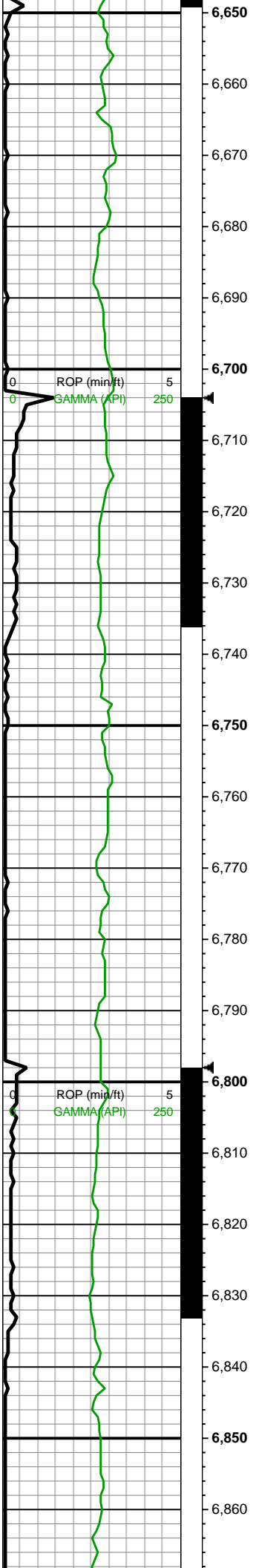
Sorting

M MODERATE

P POOR

W WELL

| ROP ROP GAMMA | Slide/Rotate | Depth Labels | Notes | % Lith | Total Gas | | Lithology Descriptions | Images |
|--|--------------|--------------|-------|--------|-----------|----|------------------------|--------|
| | | | | | GAS | C1 | | |
| Crestone Peak Resources Davis 1L-9H-G266 | | | | | | | | |
| 9 5/8" Surface Casing @ 2,307' | | | | | | | | |
| Spud Date: 07/24/2018 2 man Logging Began: 07/24/2018 @ 6,500' MD | | | | | | | | |
| All Depths Correspond to Driller's Pipe Tally | | | | | | | | |
| ROP (min/ft) GAMMA (API) | | | | | | | | |
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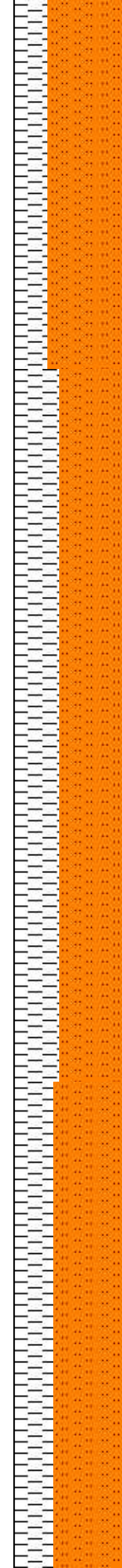
VS: 632.59'

MD: 6,738'
INC: 31.33°
AZM: 249.26°
TVD: 5,946.24'
VS: 639.2'

MW IN: 9.8+
VIS IN: 55
MW OUT: 9.9
VIS OUT: 52

WOB: 32.9klbs
RPM: 59
SPM: 204
SPP: 5,288psi

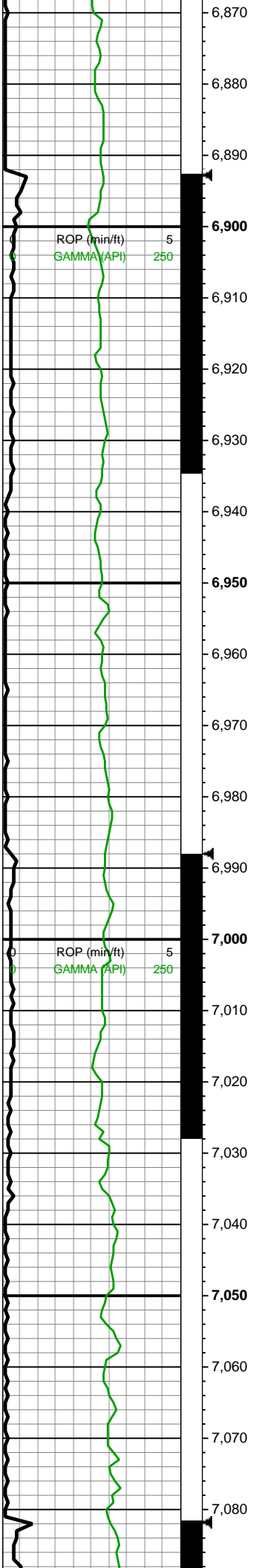
MD: 6,832'
INC: 29.58°
AZM: 248.2°
TVD: 6,027.27'
VS: 645'



6600-6700 SLTST (70%):
med gy-dk gy, blkly,
silty-rgh tex, med frm-sl
sft, non calc; SLTY SH
(30%): med gy-lt gy, sme
gyshbn, frm-sl frm, sb
plty-sb blkly, silty-abrsv tex,
vf lam, calc intbds, com
scatt cal, mod calc

6700-6800 SLTST (60%):
med gy-dk gy, blkly-sb
blkly, rgh-silty tex, med
frm-fri, non calc; SLTY SH
(40%): predy med gy-lt
gy, sme gyshbn, frm-sl
frm, sb plty-sb blkly,
silty-abrsv tex, vf lam, calc
intbds, scatt free cal,
mod calc



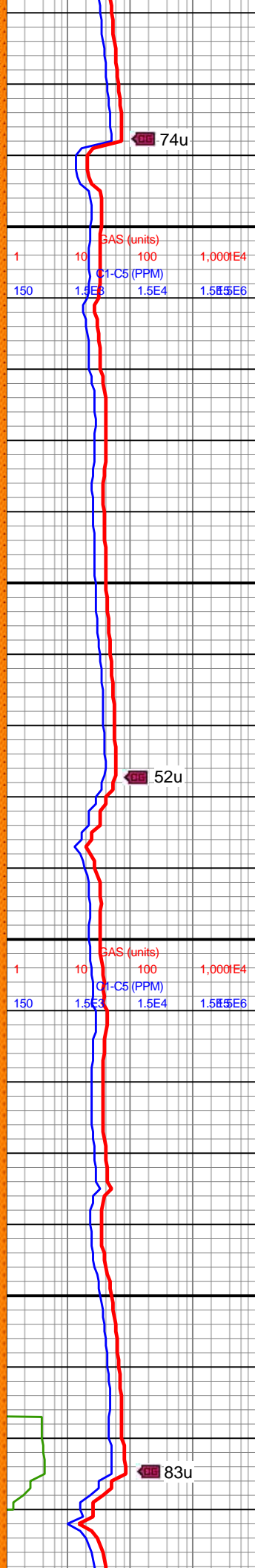
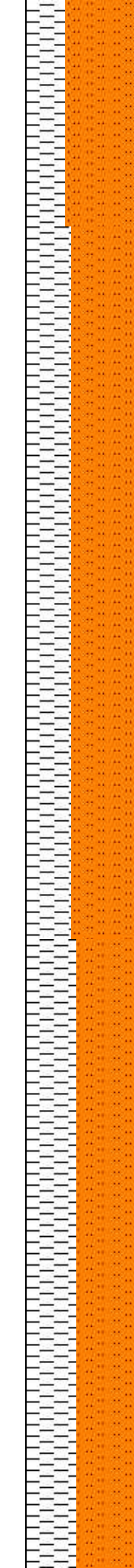


MD: 6,927'
INC: 30.5°
AZM: 247.41°
TVD: 6,109.51'
VS: 650.01'

MW IN: 9.9+
VIS IN: 55
MW OUT: 10
VIS OUT: 50

WOB: 20klbs
RPM: 0
SPM: 203
SPP: 4,716psi

MD: 7,022'
INC: 29.18°
AZM: 251.54°
TVD: 6,191.92'
VS: 656.32'

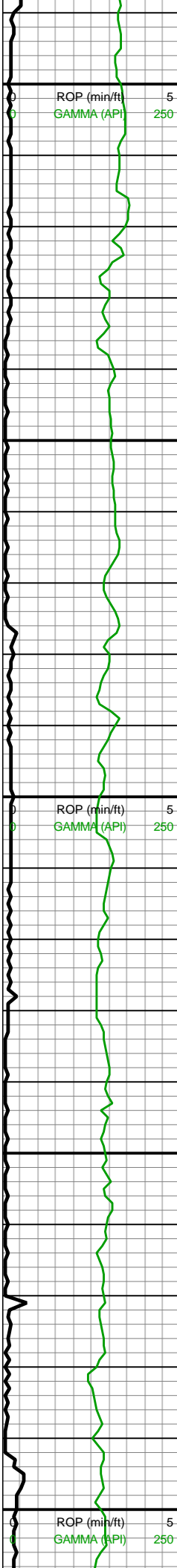


6800-6900 SLTST (65%):
med gy-dk gy, blkyl-sb
blkyl, rgh-sltly tex, med
frm-fri, non calc; SLTY SH
(35%): med gy-lt gy, sme
gyshbn, frm-sl frm, sb
ply-sb blkyl, slty-abrsv tex,
vf lam, calc intbds, com
scatt cal, mod calc

6900-7000 SLTST (60%):
med gy, blkyl, rgh-sltly tex,
med frm-fri, non calc;
SLTY SH (40%): med
gy-lt gy, sme gyshbn,
frm-sl frm, sb ply-sb blkyl,
slty abrsv tex, vf lam, calc
intbds, com scatt cal, wk
calc

7000-7100 SLTST (55%):
dk gy-med gy, blkyl,
rgh-sltly tex, med frm-fri,
non calc; SLTY SH
(45%): med gy-lt gy, sme





MD: 7,116'
INC: 30.41°
AZM: 254.88°
TVD: 6,273.5'
VS: 665.63'

MW IN: 9.9
VIS IN: 54
MW OUT: 9.9+
VIS OUT: 49

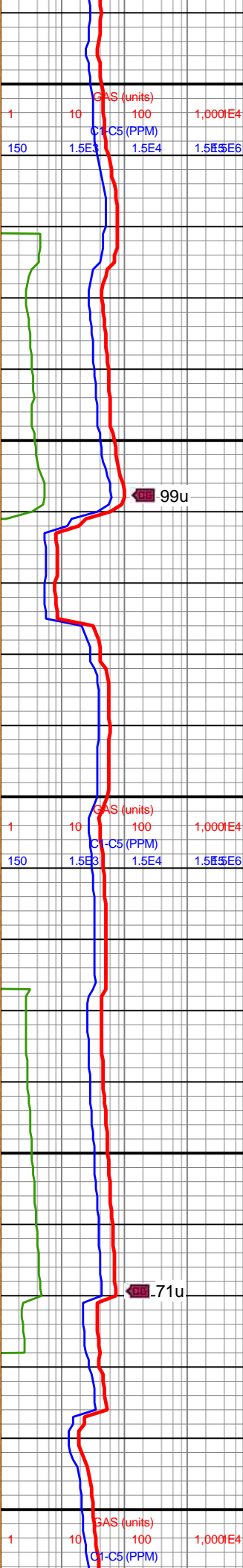
Tepee Buttes
7159 MD/6311 TVD

WOB: 15klbs
RPM: 0
SPM: 204
SPP: 4,825psi

MD: 7,210'
INC: 31.47°
AZM: 259.45°
TVD: 6,354.13'
VS: 678.49'

KOP
7293' MD

MD: 7,304'
INC: 29.97°
AZM: 260.95°
TVD: 6,434.94'

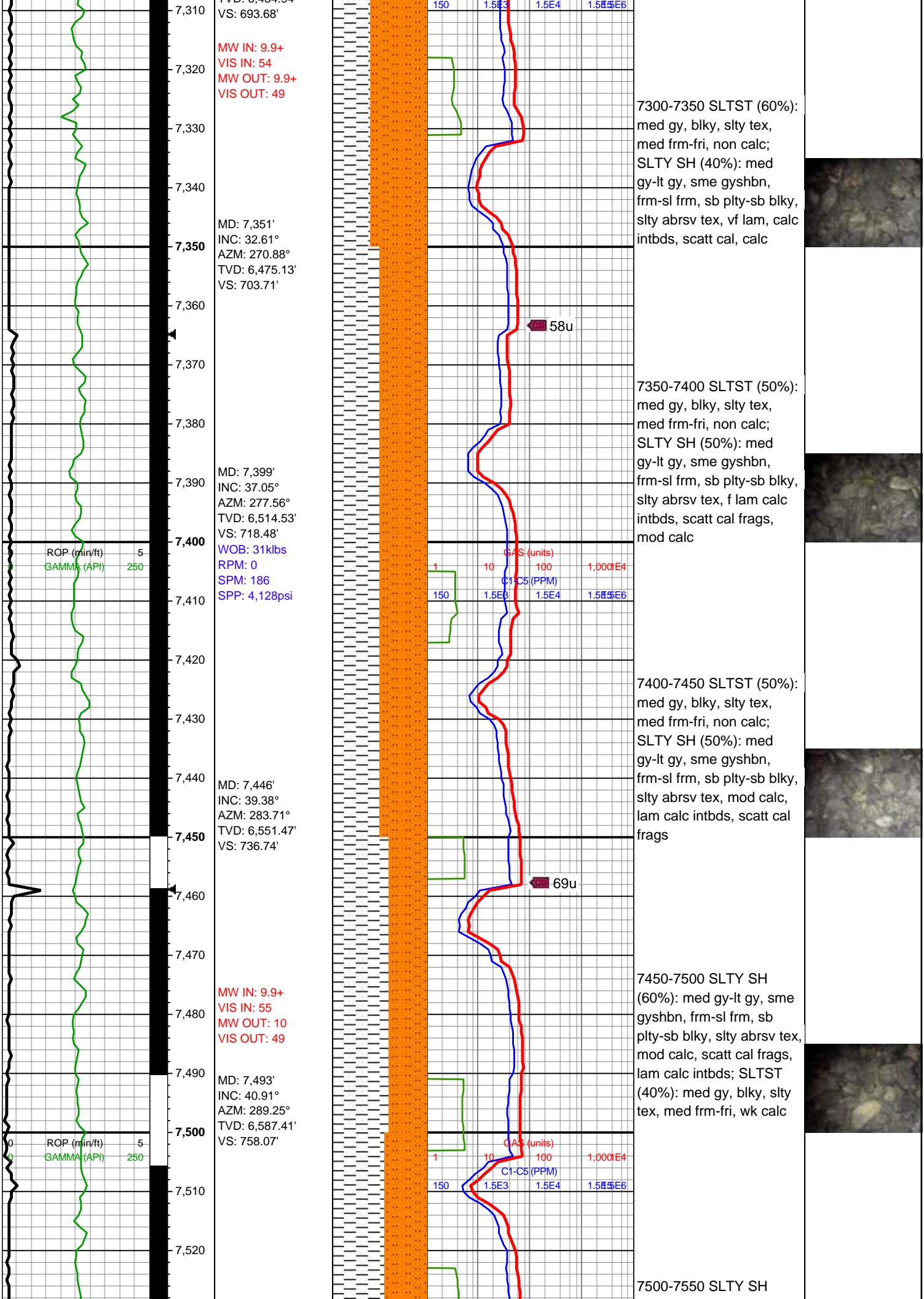


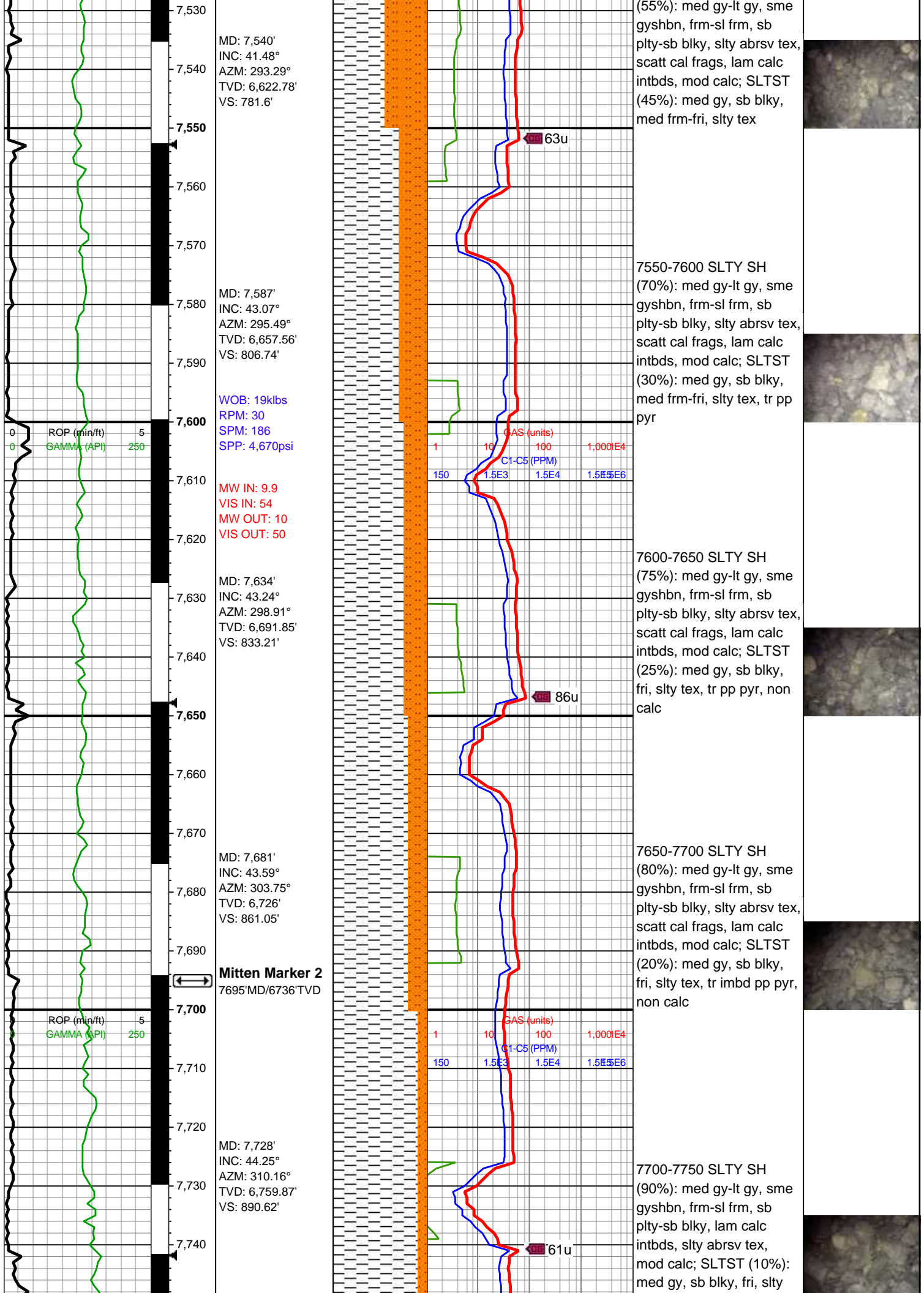
gyshbn, frm-sl frm, sb
plty-sb blk, slty abrsv tex,
vf lam, calc intbds, com
scatt cal, wk calc

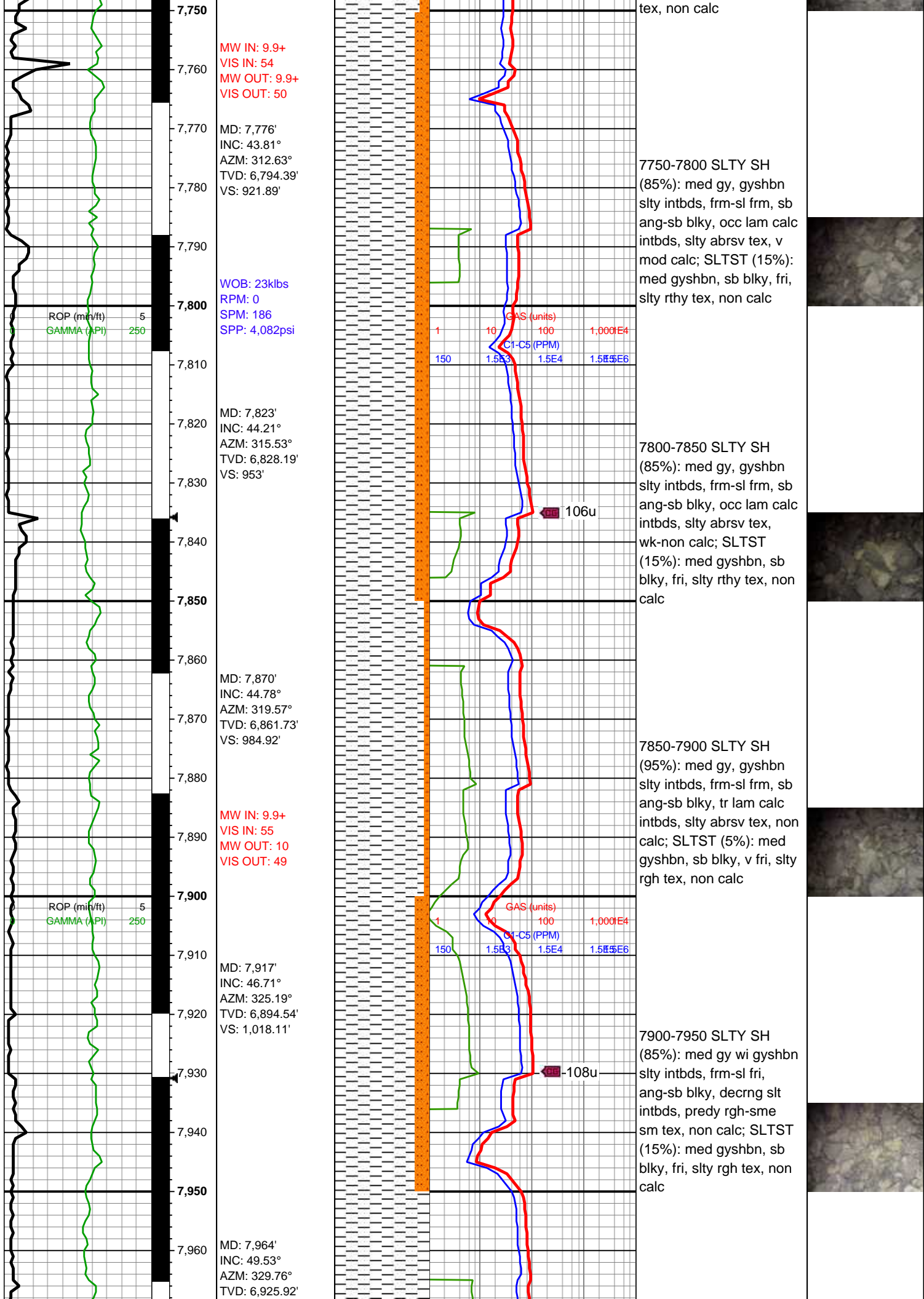
7100-7200 SLTST (60%):
med gy, blk, slty tex,
med frm-fri, non calc;
SLTY SH (40%): med
gy-lt gy, sme gyshbn,
frm-sl frm, sb plty-sb blk,
slty abrsv tex, vf lam, calc
intbds, scatt cal, calc

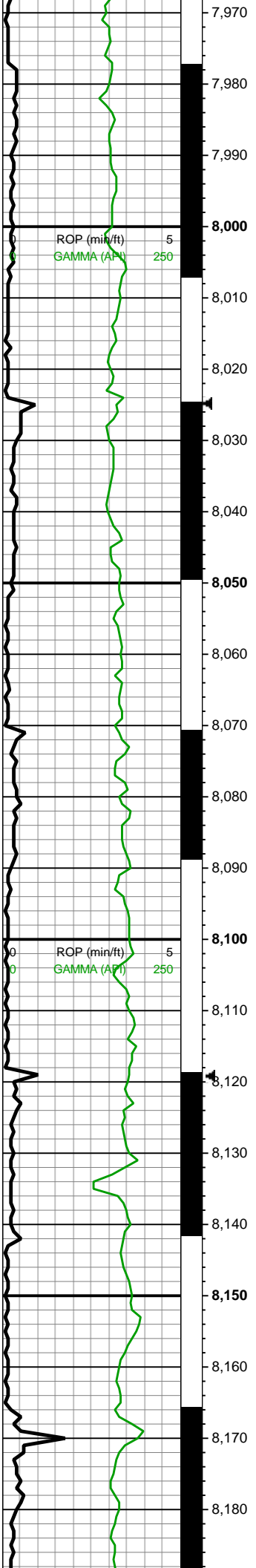
7200-7300 SLTST (55%):
med gy, blk, slty tex,
med frm-fri, non calc;
SLTY SH (45%): med
gy-lt gy, sme gyshbn,
frm-sl frm, sb plty-sb blk,
slty abrsv tex, f lam calc
intbds, scatt cal frags,
mod calc











VS: 1,052.99'

WOB: 31klbs
RPM: 0
SPM: 186
SPP: 4,207psi

MD: 8,011'
INC: 51.37°
AZM: 335.13°
TVD: 6,955.86'
VS: 1,089.2'

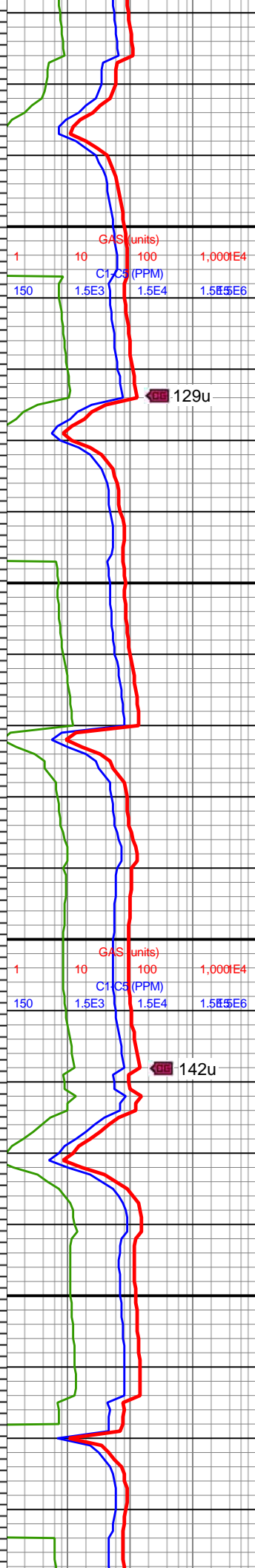
MW IN: 9.9+
VIS IN: 54
MW OUT: 9.9+
VIS OUT: 50

MD: 8,059'
INC: 52.95°
AZM: 339.26°
TVD: 6,985.31'
VS: 1,126.92'

MD: 8,106'
INC: 54.27°
AZM: 340.57°
TVD: 7,013.2'
VS: 1,164.36'

MD: 8,153'
INC: 56.82°
AZM: 343.21°
TVD: 7,039.79'
VS: 1,202.5'

MW IN: 9.9+
VIS IN: 53
MW OUT: 9.9+
VIS OUT: 48



7950-8000 SH (100%):
med-dk gy, sme gyshbn,
sl sm tex, frm-sl hd,
blky-tab ctngs, sme plty,
tr micmica, thnly lam, non
calc

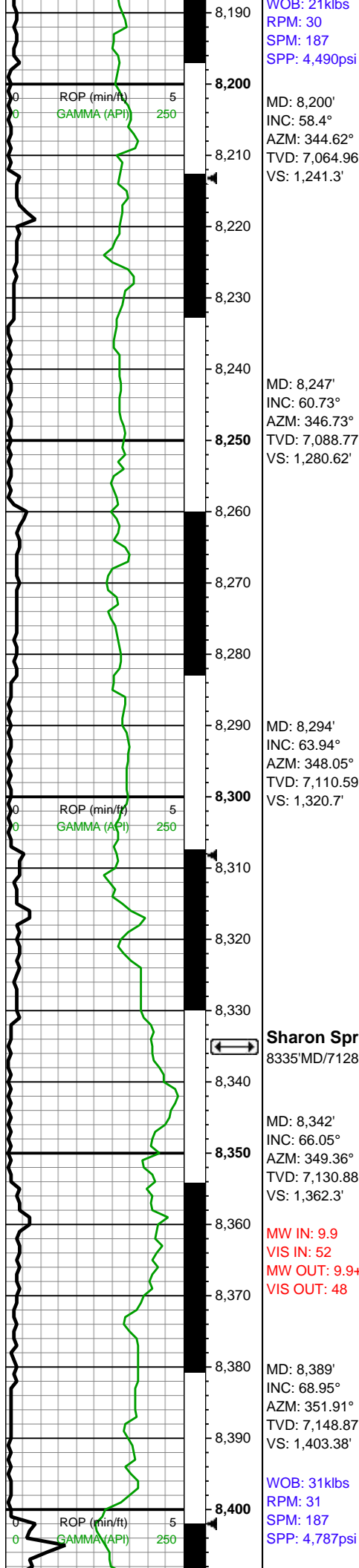
8000-8050 SH (100%):
med-dk gy, sme gyshbn,
sl sm tex, frm-sl hd,
blky-tab ctngs, sme plty,
tr micmica, wk calc

8050-8100 SH (100%):
med-dk gy, sme gyshbn,
sl sm tex, frm-sl hd,
predy blky-tab ctngs, sme
plty, tr micmica, thnly lam,
non calc

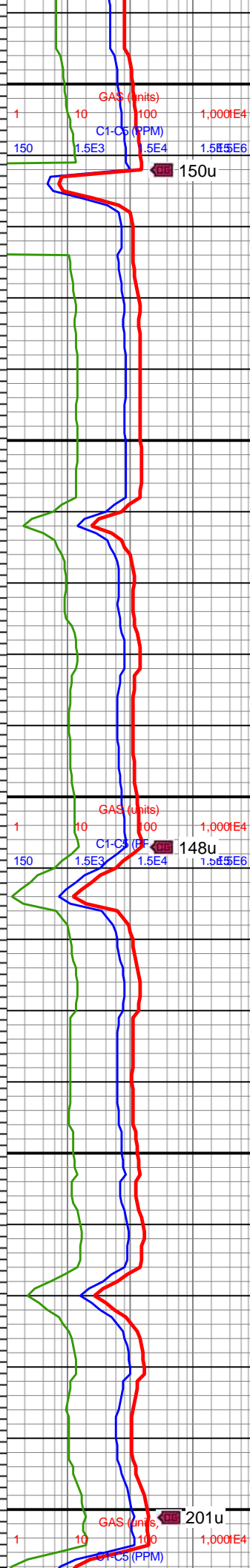
8100-8150 SH (100%):
med-dk gy, sme gyshbn,
sl sm tex, frm-sl hd,
predy blky-tab ctngs, sme
plty, p srt, thnly lam, non
calc

8150-8200 SH (100%):
med-dk gy, tr gyshbn
inhdr, sl sm tex, frm sl





Sharon Springs
8335'MD/7128'TVD



intbds, sl sm tex, frm-sl
hd, predy blkly-tab ctngs,
sme plty, p-mod srt, thnly
lam, non calc

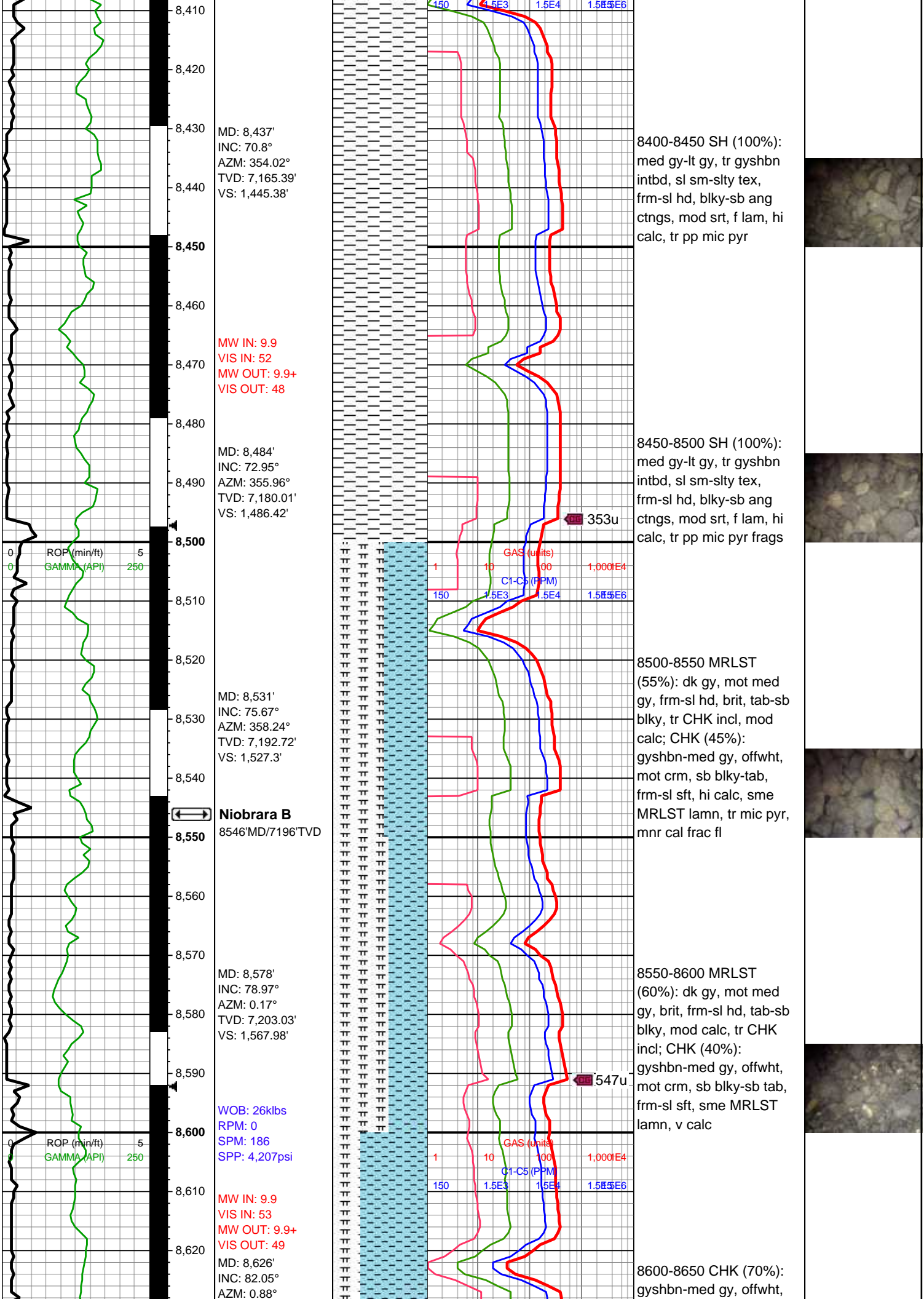
8200-8250 SH (100%):
med-dk gy, tr gyshbn
intbds, sl sm tex, frm-sl
hd, blkly-tab ctngs, sme
plty, p-mod srt, thnly lam,
non calc

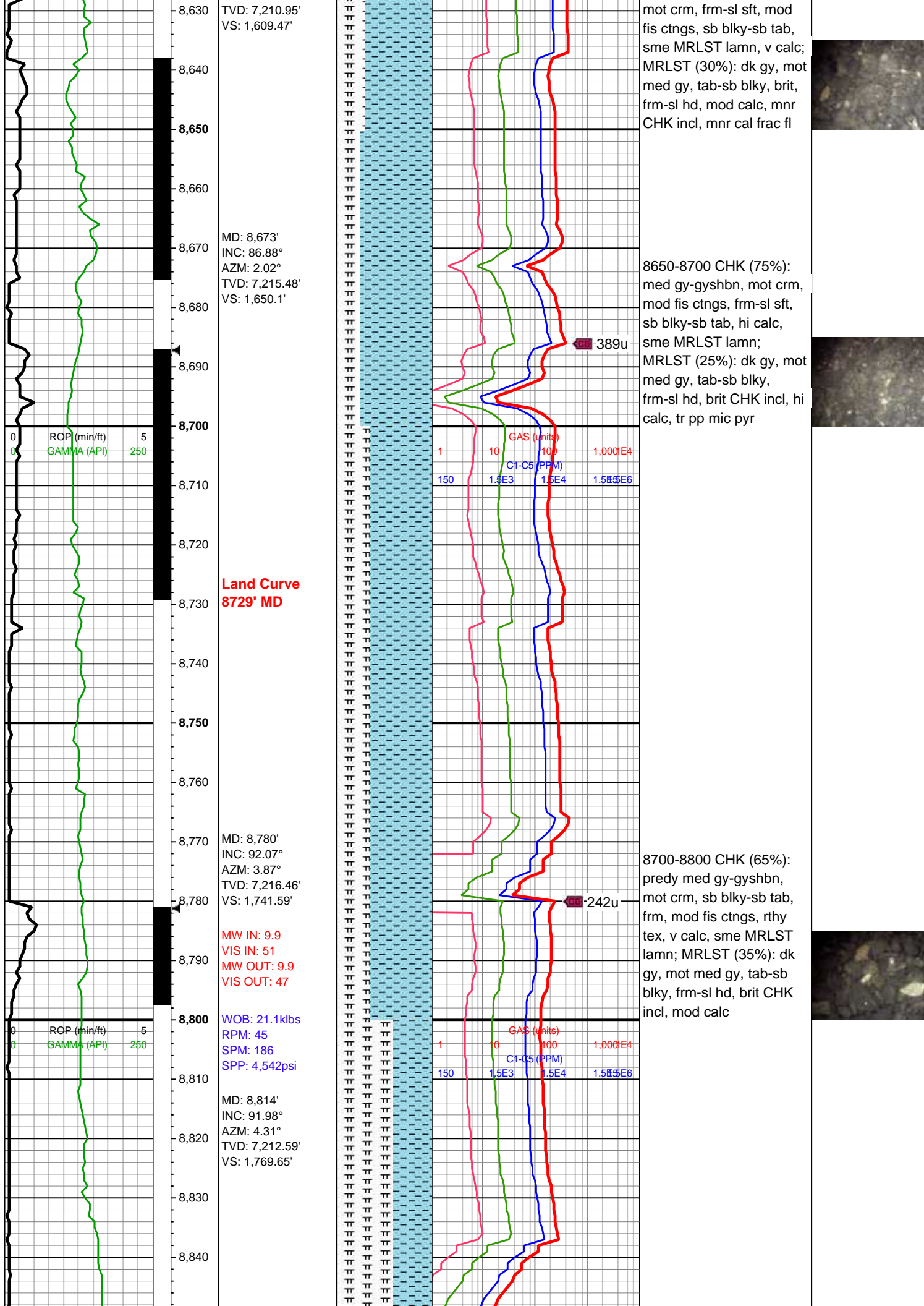
8250-8300 SH (100%):
med-dk gy, tr gyshbn
intbds, sl sm tex, frm-sl
hd, blkly-tab ctngs, sme
plty, p-mod srt, f lam,
mod calc

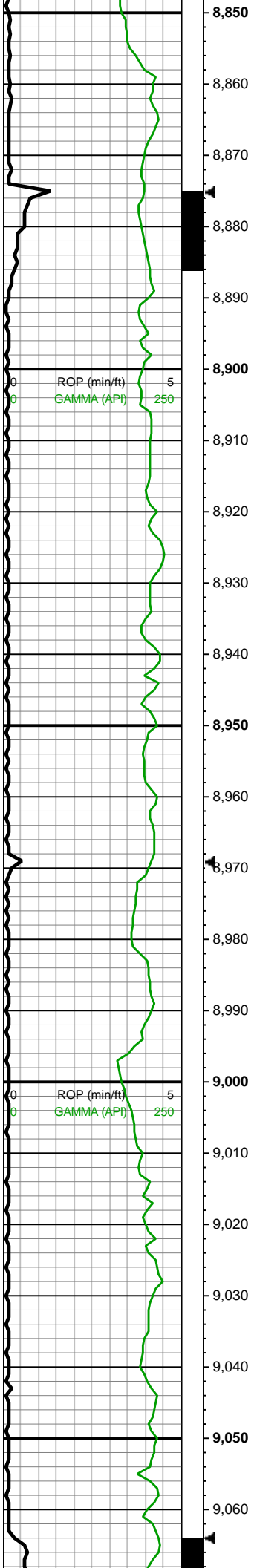
8300-8350 SH (100%):
predy med gy-lt gy, tr
gyshbn intbd, sl sm-slty
tex, frm-sl hd, blkly-sb ang
ctngs, mod srt, f lam,
incrg calc

8350-8400 SH (100%):
predy med gy-lt gy, tr
gyshbn intbd, sl sm-slty
tex, frm-sl hd, blkly-sb ang
ctngs, mod srt, f lam,
incrg calc, tr pp mic pyr
frags







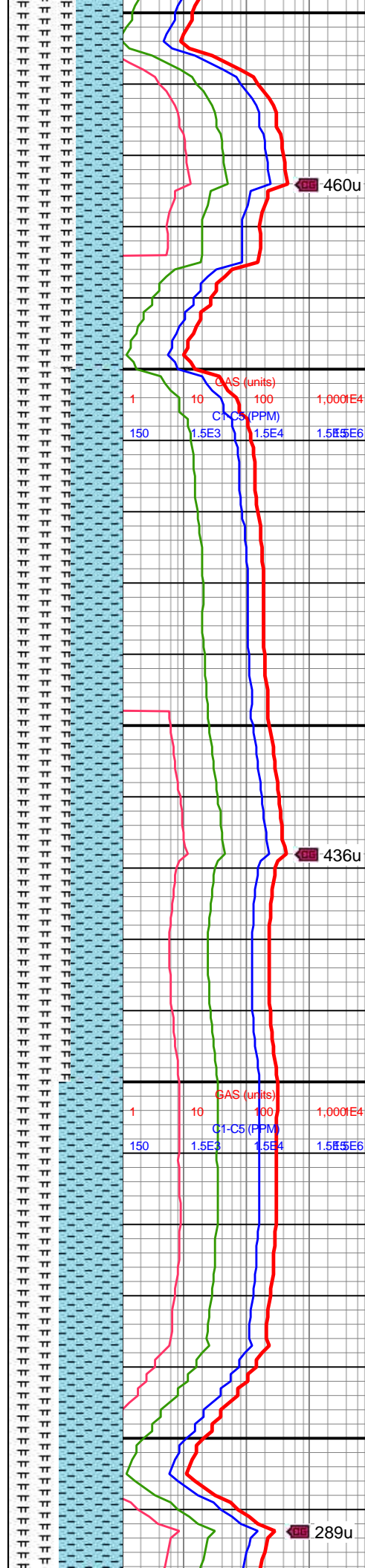


MD: 8,909'
INC: 90.09°
AZM: 3.95°
TVD: 7,210.87'
VS: 1,849.86'

WOB: 36.4klbs
RPM: 60
SPM: 202
SPP: 5,491psi

MD: 9,003'
INC: 90.35°
AZM: 3.78°
TVD: 7,210.51'
VS: 1,929.48'

MW IN: 9.9
VIS IN: 51
MW OUT: 9.9+
VIS OUT: 47

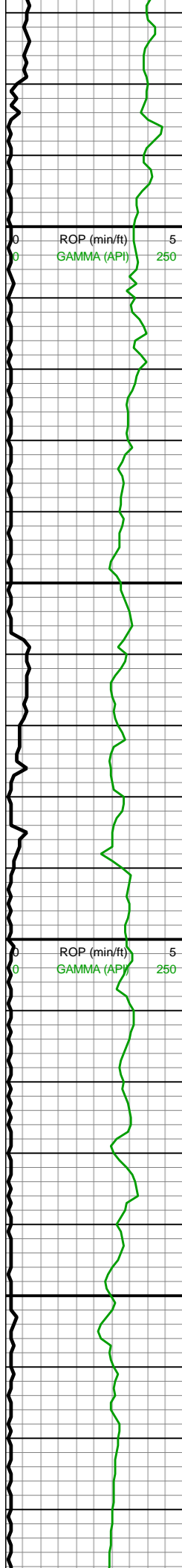


460u
8800-8900 MRLST (60%): dk gy, mot med gy, frm-sl hd, tab-sb blk, brit, tr CHK incl, mod calc; CHK (40%): gyshbn, med gy, mot crm, frm-sl sft, sb blk-sb tab, sme MRLST lamn, tr diss mic pyr clus, hi calc

436u
8900-9000 MRLST (55%): dk gy, mot med gy, tab-sb blk, frm-sl hd, mn CHK incl, brit, mod calc; CHK (45%): gyshbn-med gy, offwht, mot crm, frm-sl sft, sb blk-sb tab, sme MRLST lamn, mn free CHK, v calc, mn imbd pyr cls/pyrc nod

289u
9000-9100 CHK (55%):





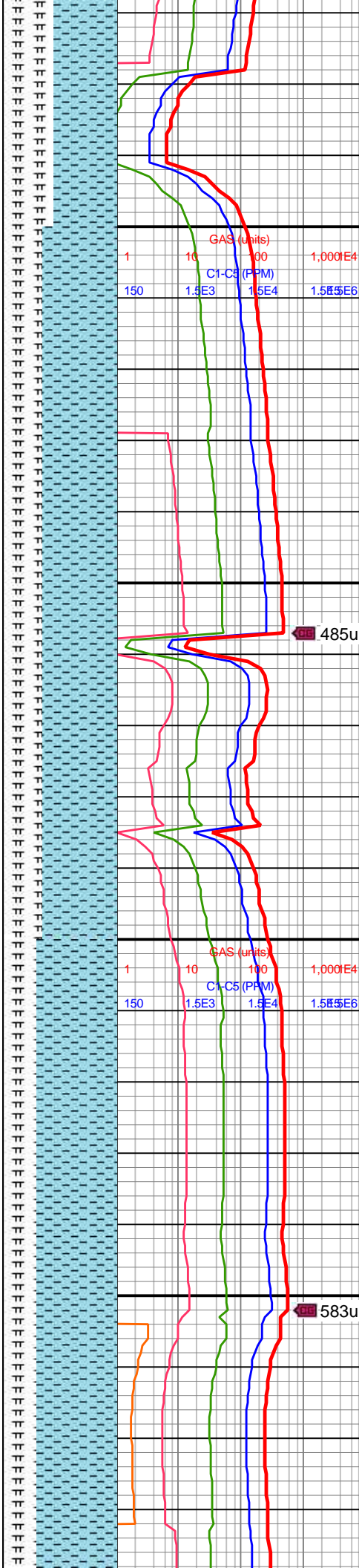
MD: 9,098'
INC: 89.91°
AZM: 3.34°
TVD: 7,210.3'
VS: 2,010.21'

MD: 9,192'
INC: 89.6°
AZM: 0.88°
TVD: 7,210.7'
VS: 2,091.31'

WOB: 27.8klbs
RPM: 60
SPM: 202
SPP: 5,418psi

MW IN: 10
VIS IN: 53
MW OUT: 9.9+
VIS OUT: 49

MD: 9,287'
INC: 89.6°
AZM: 1.58°

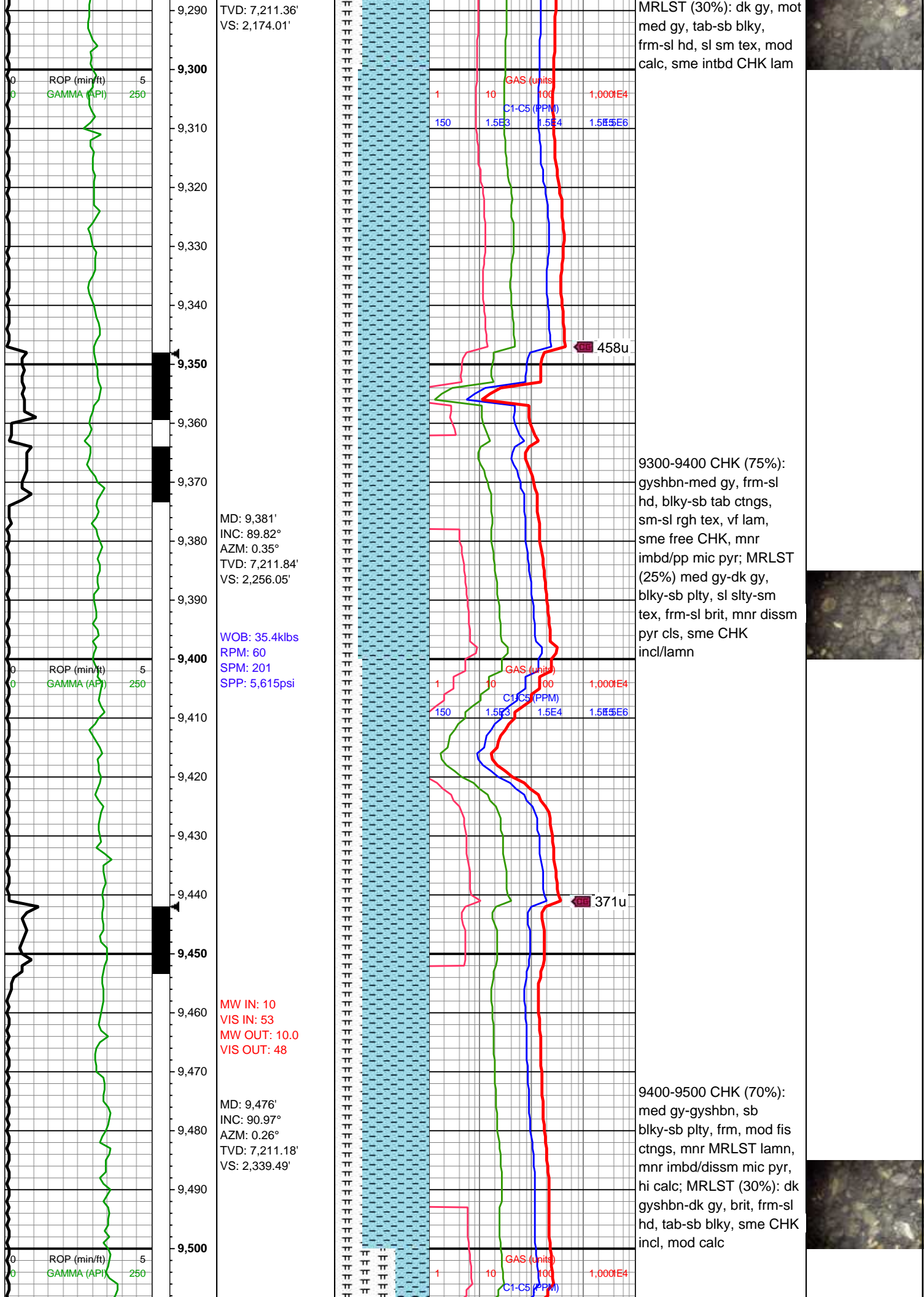


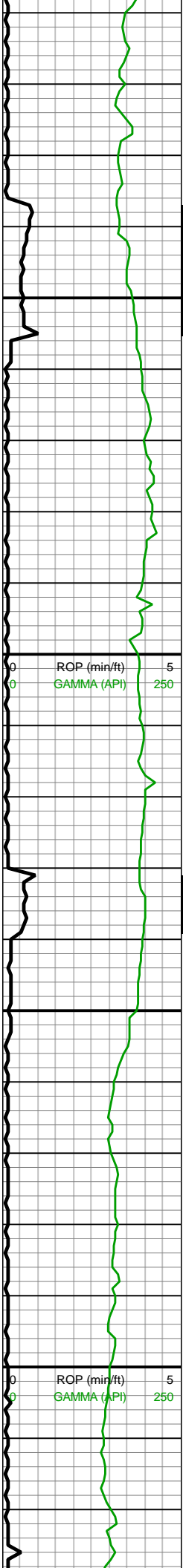
med gy-gyshbn, mot crm,
frm-sl sft, mod fis ctngs,
sb blkyl-sb tab, sme
MRLST lamn, mnr diss
mic pyr cls/dissm pyrc
clus, hi calc; MRLST
(45%): dk gy, mot med
gy, brit, frm-sl hd, tab-sb
blkyl, tr CHK incl, hi-mod
calc

9100-9200 CHK (65%):
predy gyshbn, med gy,
mot crm, sb blkyl-sb tab,
frm-sl frm, mod fis ctngs,
rthy tex, v calc, sme
MRLST lamn, mnr diss
pyrc cls; MRLST (35%):
dk gy, mot med gy, frm-sl
hd, tab-sb blkyl, mod calc,
brit CHK incl, tr cal frac fl

9200-9300 CHK (70%):
med gy-gyshbn, mot crm,
sb blkyl-sb tab, frm, mod
fis ctngs, rthy tex, sme
MRLST lamn, hi calc;





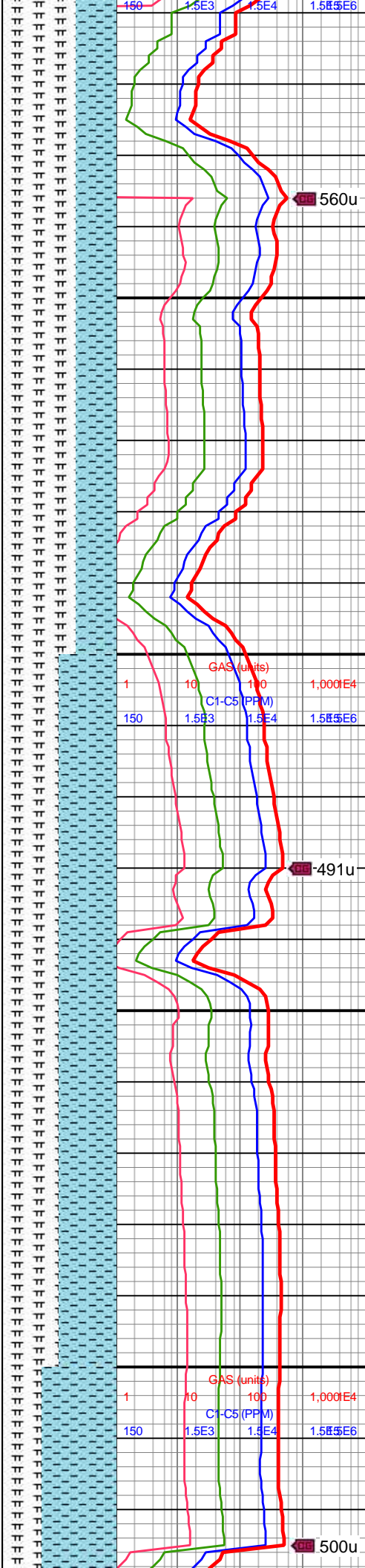


MD: 9,571'
INC: 91.76°
AZM: 360°
TVD: 7,208.92'
VS: 2,423.05'

WOB: 33.7klbs
RPM: 60
SPM: 201
SPP: 5,606psi

MD: 9,665'
INC: 91.49°
AZM: 359.21°
TVD: 7,206.25'
VS: 2,506.12'

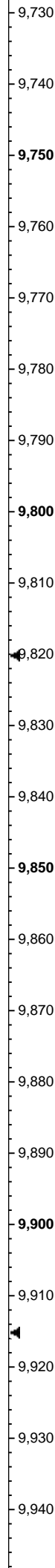
MW IN: 10
VIS IN: 53
MW OUT: 10.0
VIS OUT: 49



9500-9600 MRLST
(65%): dk gyshbn-dk gy,
frm-sl hd, brit, tab-sb
blky, mnr CHK incl/lamn,
mod calc; CHK (35%):
med gy-gyshbn, sb
blky-sb plty, frm-fri,
chky-sm tex, mnr MRLST
lamn, hi calc, tr diss
mic pyr/ pyr nod

9600-9700 MRLST
(50%): dk gyshbn-dk gy,
brit, frm-sl hd, tab-sb
blky, sl slty tex, mod calc,
mnr CHK incl/lamn; CHK
(50%): med gy-gyshbn,
chky tex, frm-fri, sb
blky-sb plty, mnr imbd
mic pyr/dissm pyr nod, hi
calc, mnr MRLST lamn

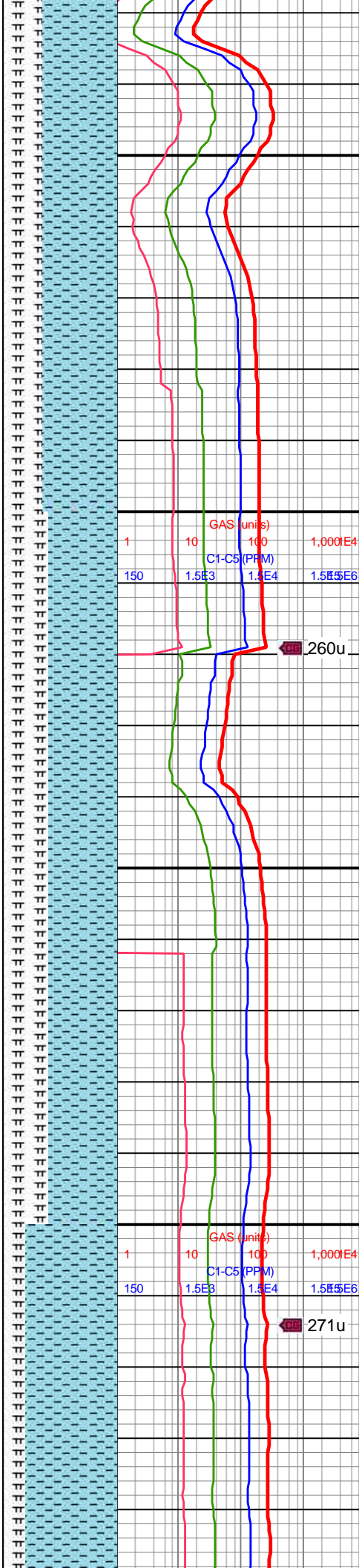




WOB: 35.7klbs
RPM: 60
SPM: 200
SPP: 5,713psi

MD: 9,854'
INC: 92.55°
AZM: 358.94°
TVD: 7,199.08'
VS: 2,674.28'

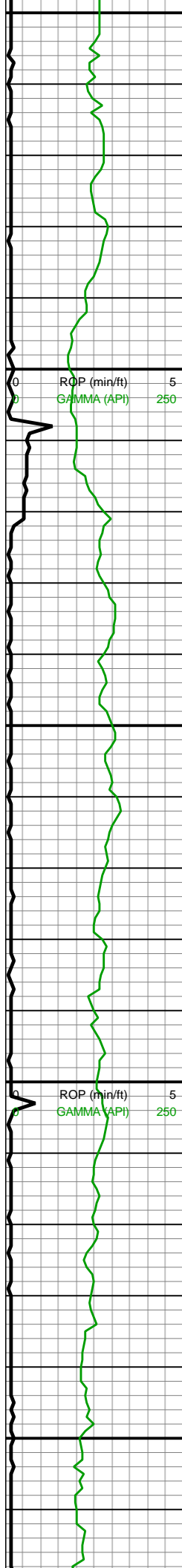
MD: 9,948'
INC: 93.16°
AZM: 258.07°



9800-9900 CHK (65%): med gy-gyshbn, sme crm, frm-sft, mod fis, sb blk-y-sb plty, tr imbd mic pyr, hi calc, mnr MRLST lamn; MRLST (35%): dk gyshbn-dk gy, brit, frm-sl hd, tab-sb blk-y, mnr CHK incl. mod calc. tr cal frac fl

9900-10000 CHK (60%):
med gy-gyshbn, mot crm,
frm-sl sft, sb blkly-sb plty,
mnr free CHK, mnr
MRLST lamn, tr imbd mic
pyr cls, hi calc; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blkly, brit, frm-sl
hd, tr CHK incl, tr frac fl,
mod calc





9,950
9,960
9,970
9,980
9,990
10,000
10,010
10,020
10,030
10,040
10,050
10,060
10,070
10,080
10,090
10,100
10,110
10,120
10,130
10,140
10,150
10,160

AZIM: 356.07
TVD: 7,194.4'
VS: 2,758.11'

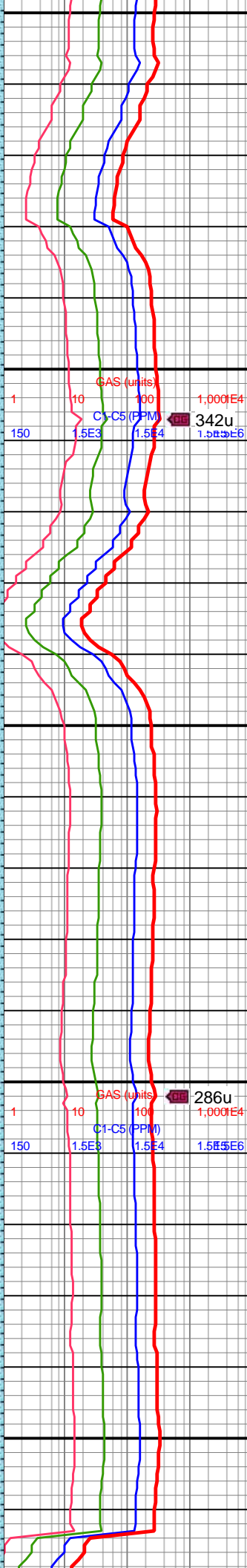
WOB: 35.6klbs
RPM: 60
SPM: 201
SPP: 5,668psi

MINDEPTH 7/26/2018

MD: 10,042'
INC: 92.64°
AZM: 357.8°
TVD: 7,189.65'
VS: 2,842.35'

MW IN: 10
VIS IN: 52
MW OUT: 10.0
VIS OUT: 48

MD: 10,136'
INC: 92.51°
AZM: 357.71°
TVD: 7,185.42'
VS: 2,926.75'

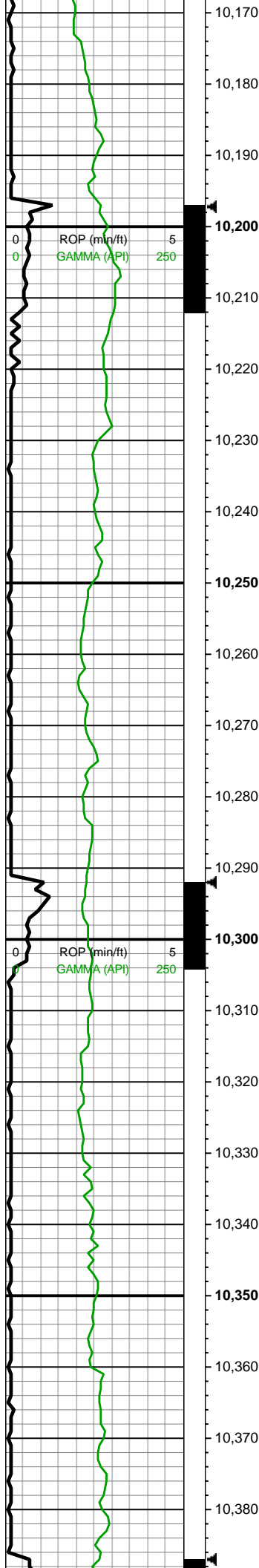


9900-10000 CHK (80%):
med gy-gyshbn, mot crm,
frm-sft, sb blkyl-sb plty,
mod fis, tr imbd/pp mic
pyr cls, hi calc, mnr free
CHK frags, mnr MRLST
lamn; MRLST (20%): dk
gy, mot med gy, tab-blky,
brit, frm-sl hd, mod calc,
mnr CHK incl, tr lt brn cal
frac fl



10000-10100 CHK
(60%): med gy-gyshbn,
mot crm, frm-sl sft,
blkyl-sb plty, mnr free
CHK frags, mnr MRLST
lamn, hi calc, tr pp mic
pyr/imbd pyrc clus;
MRLST (40%): dk
gyshbn-dk gy, frm-sl hd,
tab-sb blkyl, brit, mnr CHK
incl, mod calc



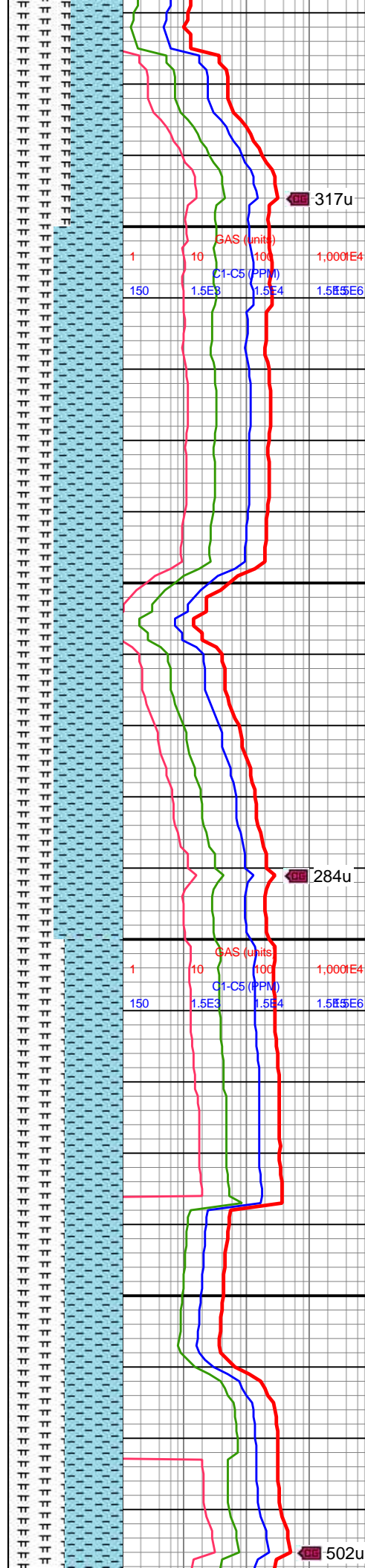


WOB: 33.3klbs
RPM: 0
SPM: 196
SPP: 4,998psi

MD: 10,231'
INC: 91.45°
AZM: 359.12°
TVD: 7,182.14'
VS: 3,011.59'

MW IN: 10
VIS IN: 53
MW OUT: 10.0+
VIS OUT: 49

MD: 10,326'
INC: 91.32°
AZM: 359.56°
TVD: 7,179.85'
VS: 3,095.76'

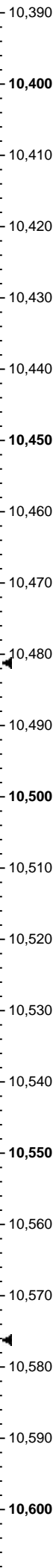
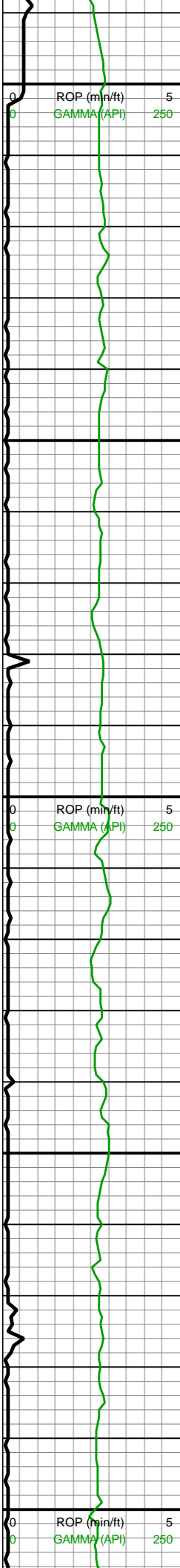


10100-10200 MRLST
(55%): dk gy-v dk gy, mot,
sl slty tex, frm-sl hd,
tab-blky, brit, tr CHK incl,
mod calc, tr cal frac fl;
CHK (45%): med
gy-gyshbn, frm-fri, mod
fis, sb blky-sb plty, tr
dissm mic pyr/ pyr nod,
mnr MRLST lamn, hi calc

10200-10300 CHK
(60%): gyshbn-med gy, tr
crm, mot, fri-sl frm, sm
chky tex, tab-sb blky, tr
intbd MRLST, v calc;
MRLST (40%): dk
gyshbn-dk gy, blky-tab, sl
sm-rgh tex, frm-sl hd,
com intbd CHK, mnr
imbd mic pyr, mod calc, tr
cal frac fl

10300-10400 CHK
(50%): med gy-gyshbn,
mot crm, frm-sft, chky tex,
sb blky-sb plty, mod fis, tr
imbd mic pyr, mnr
MRLST lamn, hi calc;





WOB: 35.7klbs
RPM: 0
SPM: 198
SPP: 5,104psi

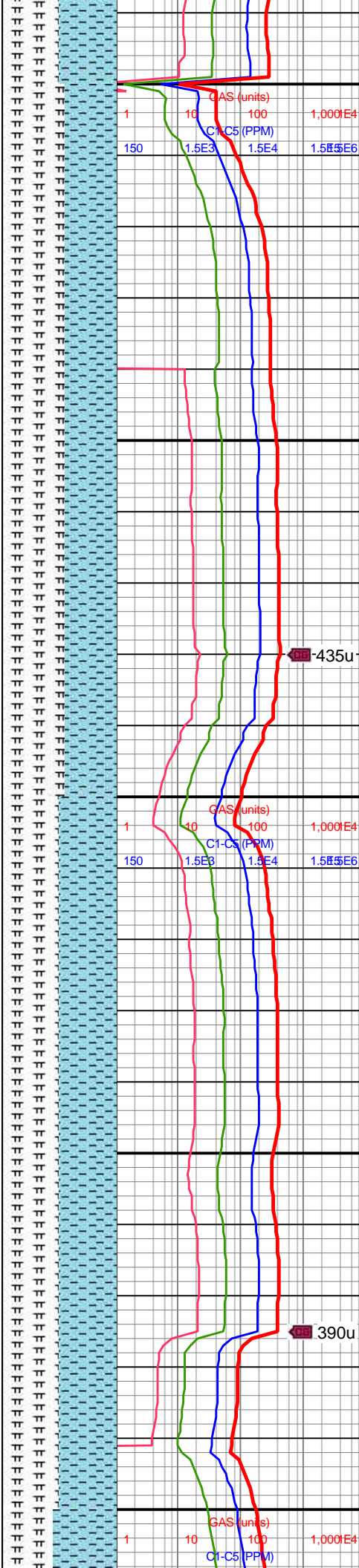
MD: 10,421'
INC: 89.78°
AZM: 0.26°
TVD: 7,178.93'
VS: 3,179.51'

MD: 10,515'
INC: 90°
AZM: 0.44°
TVD: 7,179.11'
VS: 3,262.04'

MW IN: 10
VIS IN: 53
MW OUT: 10.1
VIS OUT: 50

WOB: 35.7klbs
RPM: 60
SPM: 196
SPP: 5,566psi

MD: 10,609'
INC: 89.91°

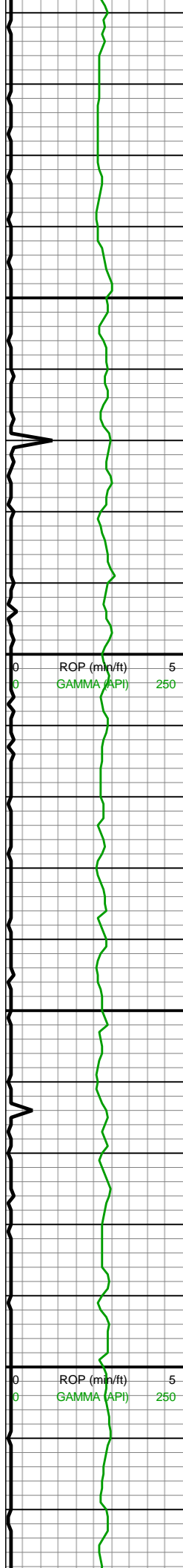


MRLST (50%): dk gy, mot
med gy, brit, sl slty tex,
frm-sl hd, tab-sb blkly,
mod calc, tr CHK incl

10400-10500 MRLST
(55%): dk gy-med gy,
mot, sl slty tex, sb
blkly-ang ctngs, sl hd-frm,
sme CHK intbds, mod
calc; CHK (45%): predy
gyshbn, mot, sb blkly
ctngs, sl frm-brit, sm chky
tex, tr free CHK, v calc

10600-10700 MRLST
(50%): dk gy-med gy,
mot, sb blkly-sb ang
ctngs, sl slty tex, sl
hd-frm, mod calc, sme
CHK intbds; CHK (50%):
predy gyshbn-med gy,
mot lt brn, sb blkly ctngs,
sm chky tex, sl frm-brit, v
calc, sme free CHK, mnr
pp/imbd mic pyr cls



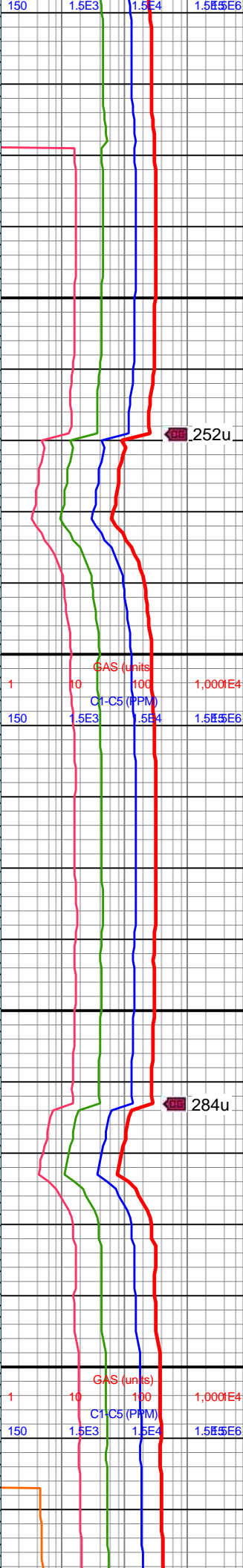
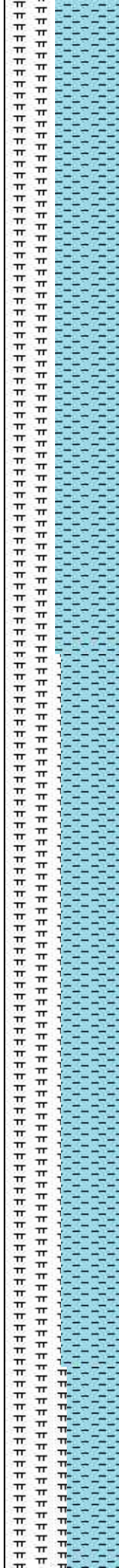


AZM: 0.53°
TVD: 7,179.19'
VS: 3,344.47'

MD: 10,704'
INC: 89.87°
AZM: 0.26°
TVD: 7,179.37'
VS: 3,427.84'

MD: 10,798'
INC: 90.09°
AZM: 0.44°
TVD: 7,179.4'
VS: 3,510.37'
WOB: 33.6klbs
RPM: 60
SPM: 196
SPP: 5,626psi

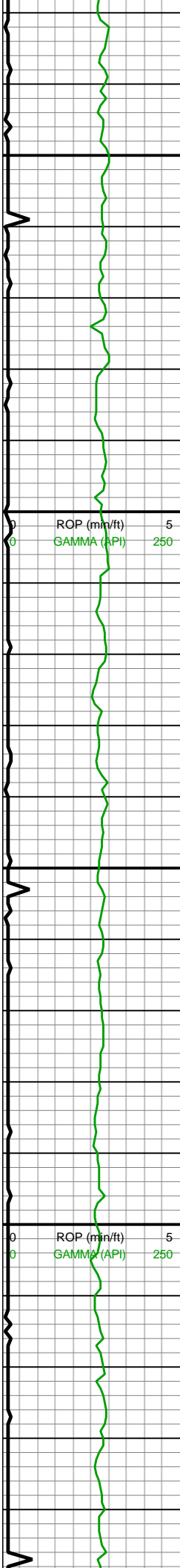
MW IN: 10.0+
VIS IN: 53
MW OUT: 10.1
VIS OUT: 49



10700-10800 CHK
(55%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, mod fis, mnr
MRLST lamn, hi calc, tr
imbd/dissm mic pyr;
MRLST (45%): dk
gyshbn-dk gy, brit, tab-sb
blky, frm-sl hd, tr CHK
incl, mod calc

10700-10800 MRLST
(50%): dk gy-med gy,
mot, sb blky-tab ctngs, sl
silty tex, sl hd-frm, sme
CHK intbds, mod calc,
mnr pyrc clus/pp mic pyr;
CHK (50%): predy
gyshbn, mot, sb blky
ctngs, sl frm-brit, sm chky
tex, tr free CHK, v calc



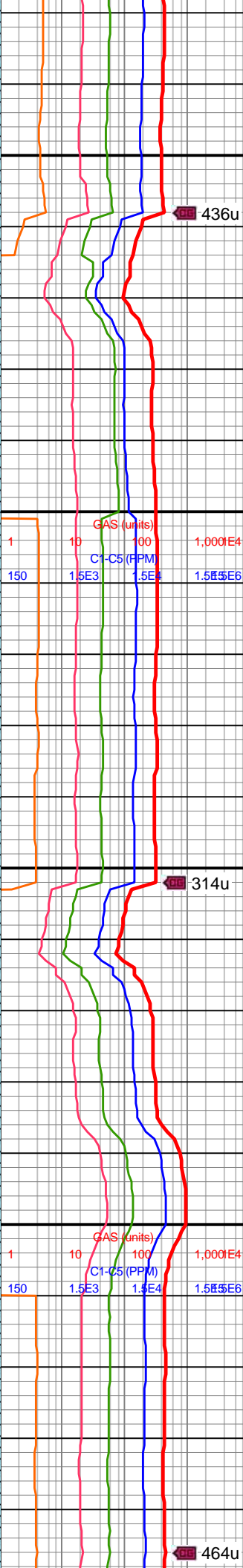
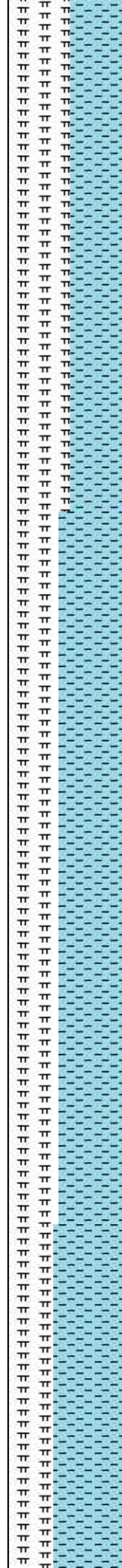


10,830
10,840
10,850
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010
11,020
11,030
11,040

MD: 10,892'
INC: 89.52°
AZM: 0.61°
TVD: 7,179.72'
VS: 3,592.76'

MD: 10,987'
INC: 90.09°
AZM: 0.79°
TVD: 7,180.05'
VS: 3,675.89'

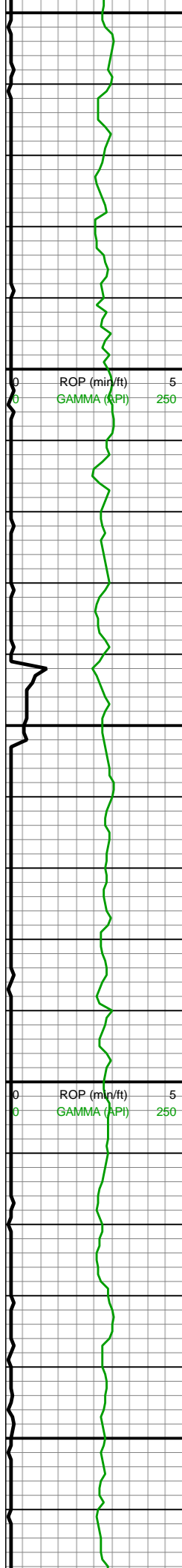
WOB: 34.4klbs
RPM: 59
SPM: 194
SPP: 5,565psi



10800-10900 MRLST
(55%): dk gyshbn-dk gy,
tab-sb blk, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac
fl; CHK (45%): med
gy-gyshbn, sme wht-crm,
frm-sft, sb blk-sb plty,
mnr MRLST lamn, tr
imbd/dissm mic pyr, hi
calc

10900-11000 CHK
(55%): med gy-gyshbn,
sme wht-crm, frm-sft, sb
blk-sb plty, mnr MRLST
lamn, tr imbd/dissm mic
pyr, hi calc; MRLST
(45%): dk gyshbn-dk gy,
tab-sb blk, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac fl





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
11,220
11,230
11,240
11,250
11,260

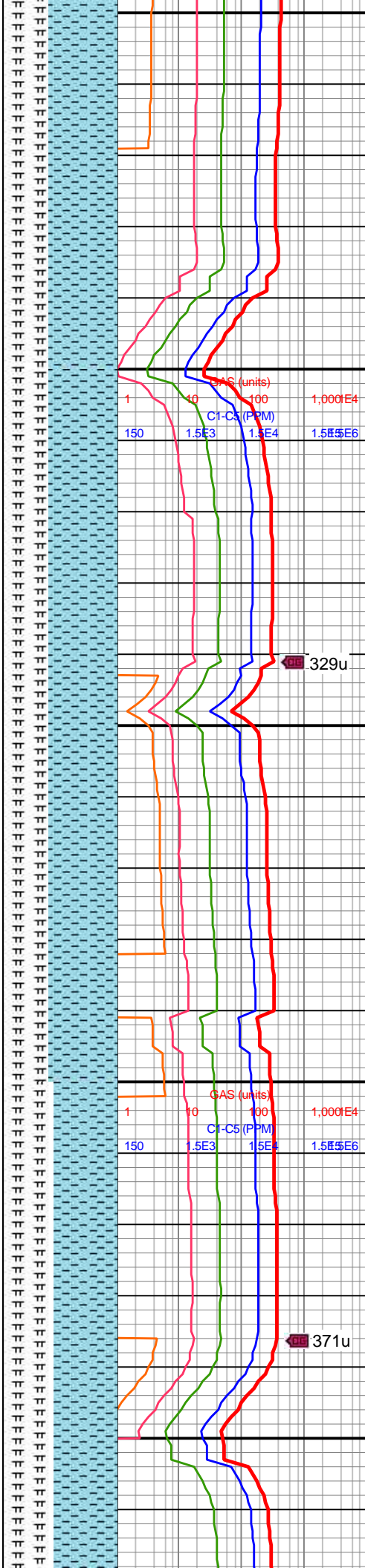
MD: 11,081'
INC: 89.69°
AZM: 1.05°
TVD: 7,180.23'
VS: 3,757.97'

MW IN: 10
VIS IN: 54
MW OUT: 10.1
VIS OUT: 49

MD: 11,176'
INC: 90.04°
AZM: 359.65°
TVD: 7,180.45'
VS: 3,841.37'

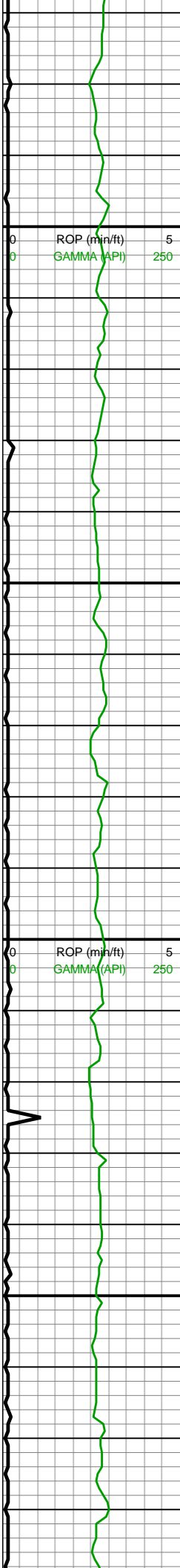
WOB: 36.5klbs
RPM: 60
SPM: 192
SPP: 5,535psi

MD: 11,270'



11000-11100 CHK
(60%): med gy-gyshbn,
sme wht-crm, frm-sft, sb
blky-sb plty, mnr MRLST
lamn, hi calc; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blky, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac
fl, tr imbd/dissm mic pyr

11100-11200 CHK
(60%): med gy-gyshbn,
sme wht-crm, frm-sft, sb
blky-sb plty, mnr MRLST
lamn, hi calc; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blky, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac
fl



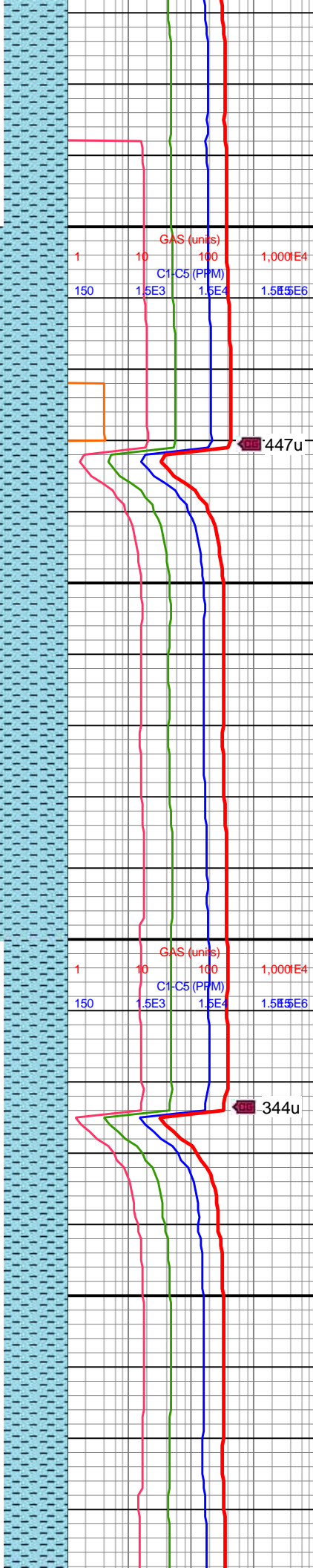
INC: 90.13°
AZM: 359.82°
TVD: 7,180.31'
VS: 3,924.38'

MD: 11,365'
INC: 89.91°
AZM: 360°
TVD: 7,180.28'
VS: 4,008.14'

MW IN: 10.1
VIS IN: 55
MW OUT: 10.1+
VIS OUT: 52

WOB: 34klbs
RPM: 60
SPM: 192
SPP: 5,608psi

MD: 11,459'
INC: 90.13°
AZM: 0.17°
TVD: 7,180.25'
VS: 4,090.87'

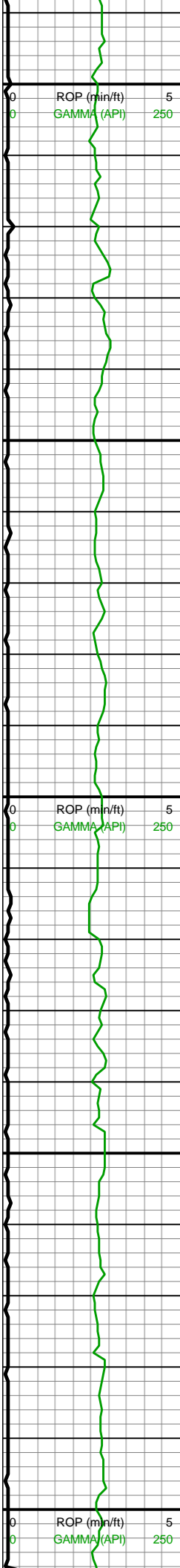


11200-11300 CHK
(55%): gyshbn, sme
wht-crm, frm-sft, sb
blky-sb plty, mnr MRLST
lamn, calc; MRLST
(45%): dk gyshbn-dk gy,
tab-sb blky, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac fl

11300-11400 CHK
(60%): gyshbn, sme
wht-crm, frm-sft, sb
blky-sb plty, mnr MRLST
lamn, calc; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blky, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, tr cal frac fl, mod calc

11400-11500 CHK
(55%): gyshbn, sme
wht-crm, frm-sft, sb
blky-sb plty, mnr MRLST
lamn, calc; MRLST
(45%): dk gyshbn-dk gy,
tab-sb blky, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, mod calc, tr cal frac fl



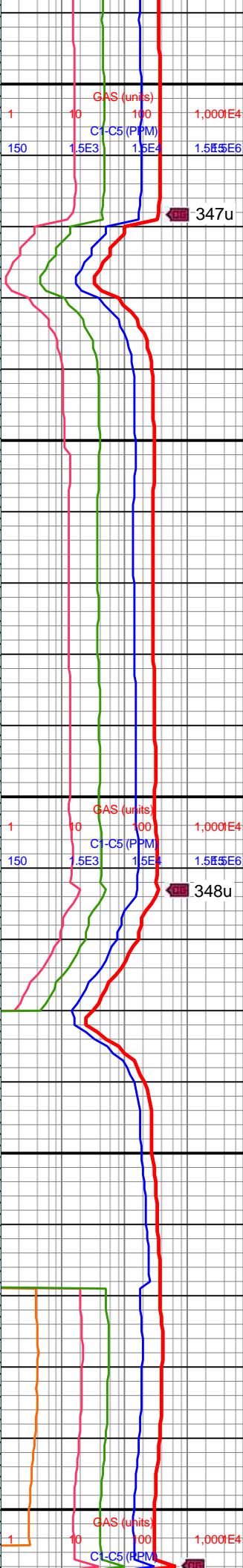
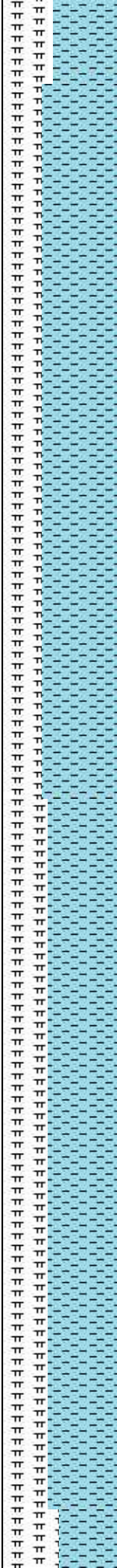


11,490
11,500
11,510
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
11,600
11,610
11,620
11,630
11,640
11,650
11,660
11,670
11,680
11,690
11,700

MD: 11,553'
INC: 89.78°
AZM: 0.44°
TVD: 7,180.32'
VS: 4,173.44'

WOB: 35klbs
RPM: 60
SPM: 190
SPP: 5,579psi

MD: 11,648'
INC: 89.91°
AZM: 0.53°
TVD: 7,180.58'
VS: 4,256.74'

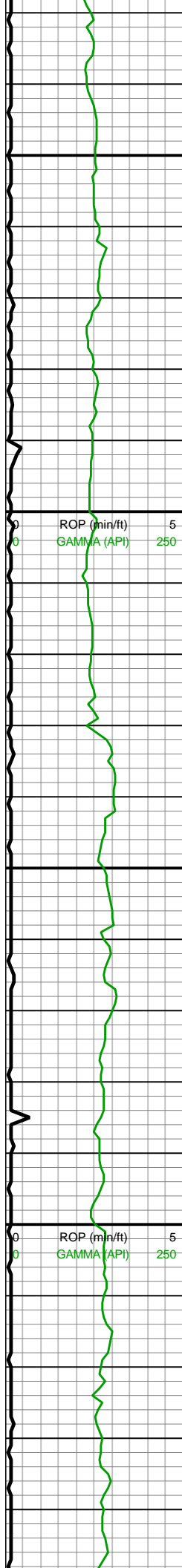


tab-sb blk, sl slty tex,
brit, frm-sl hd, mnr CHK
incl, com cal frac fl, mod
calc

11500-11600 CHK
(65%): gyshbn, sme
wht-crm frags, frm-sft, sb
blk-sb plty, mnr MRLST
lamn, mod calc; MRLST
(35%): dk gyshbn-dk gy,
tab-sb blk, sl slty tex,
brit, frm-sl hd, mnr CHK
intbd, com cal frac fl, hi
calc

11600-11700 CHK
(60%): gyshbn, sme
wht-crm frags, frm-sft, sb
blk-sb plty, mnr MRLST
lamn, mod calc; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blk, hd-frm, mnr
slty tex, mnr CHK intbd,
com cal frac fl, hi calc



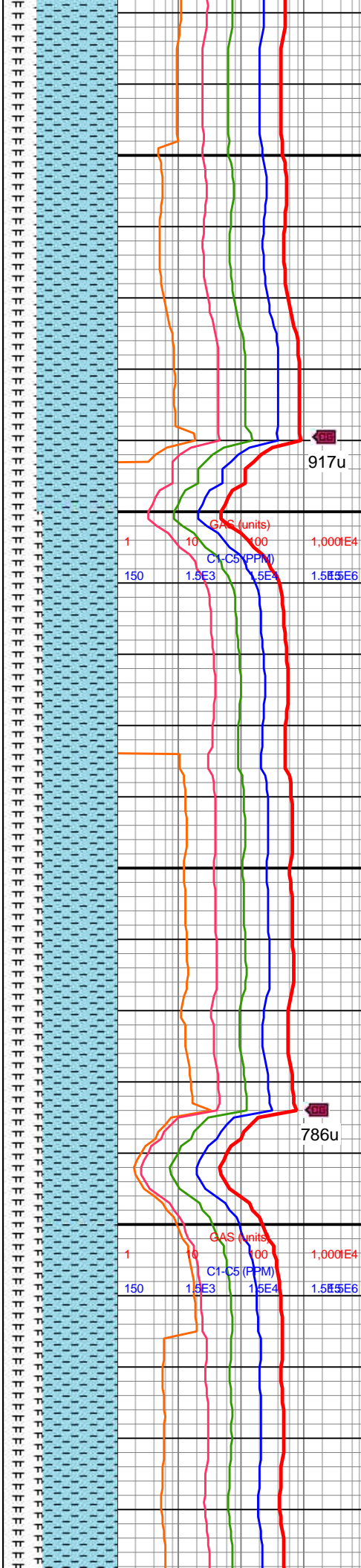


INC: 90.79°
AZM: 359.91°
TVD: 7,178.34'
VS: 4,504.42'

WOB: 33klbs
RPM: 59
SPM: 188
SPP: 5,447psi

MD: 12,024'
INC: 91.27°
AZM: 359.47°
TVD: 7,176.66'
VS: 4,587.45'

MD: 12,119'
INC: 91.32°
AZM: 359.3°
TVD: 7,174.51'
VS: 4,671.59'

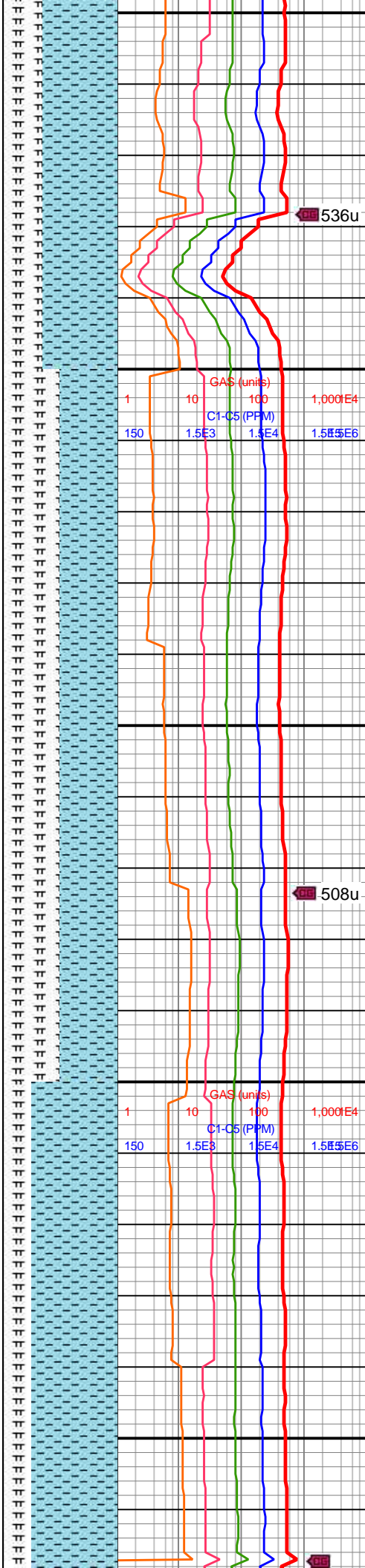
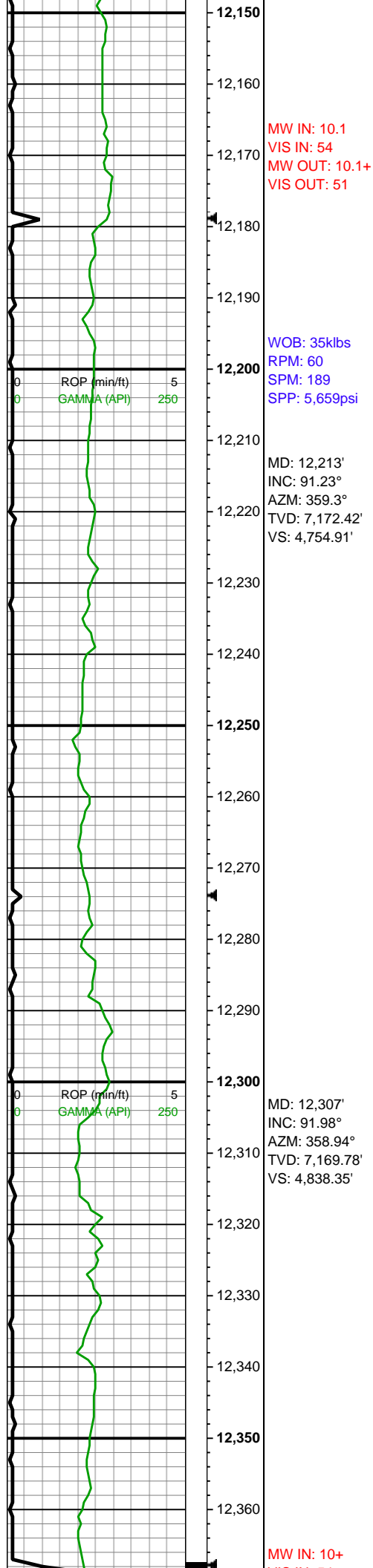


11900-12000 CHK
(70%): predy gyshbn-lt
gy, sme mot wht-crm,
frm-sft, sb blkyl-sb plty,
rthy tex, mnr MRLST
lamn, mod calc; MRLST
(30%): dk gyshbn-dk gy,
sb tab-sb blkyl, hd-frm,
mnr slty tex, mnr CHK
intbd, com cal frac fl, calc



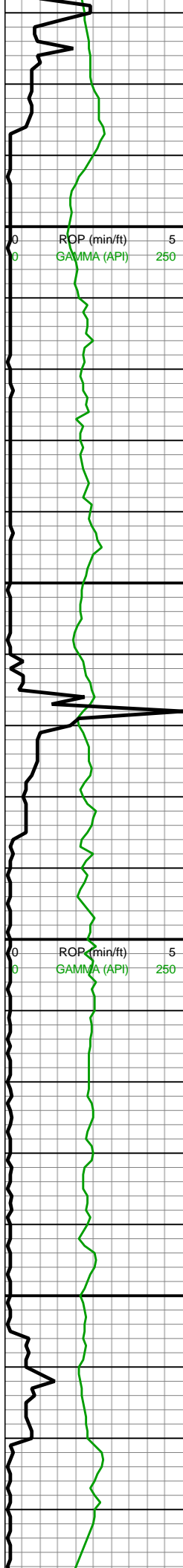
12000-12100 CHK
(65%): predy gyshbn-lt
gy, sme mot wht-crm,
frm-sft, sb blkyl-sb plty,
rthy tex, mnr MRLST
lamn, mod calc; MRLST
(35%): dk gyshbn-dk gy,
sb tab-sb blkyl, hd-frm,
mnr slty tex, mnr CHK
intbd, com cal frac fl, calc,
tr lrg pyr frags





12100-12200 CHK
(65%): predy gyshbhn-lt
gy, sme mot wht-crm,
frm-sft, sb bkly-sb plty,
rthy tex, mnr MRLST
lamn, mod calc; MRLST
(35%): dk gyshbhn-dk gy,
sb tab-sb bkly, hd-frm,
mnr slty tex, mnr CHK
intbnd, calc, tr lrg pyr frags,
tr cal frac fl

12200-12300 CHK
(50%): predy gyshbn-lt
gy, sme mot wht-crm,
frm-sft, sb blk-y-sb plty,
rthy tex, mnr MRLST
lamn, mod calc; MRLST
(50%): dk gyshbn-dk gy,
sb tab-sb blk-y, hd-frm,
mnr slty tex, mnr CHK
intbd, hi calc, tr cal frac fl



VIS IN: 54
MW OUT: 10.1+
VIS OUT: 52

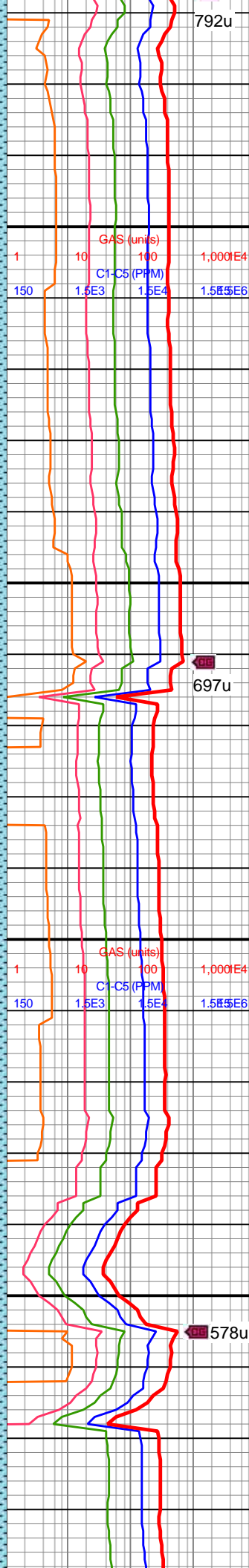
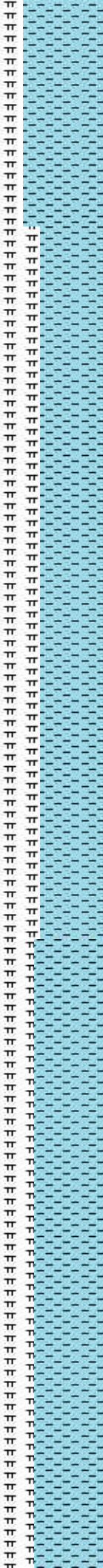
WOB: 34klbs
RPM: 60
SPM: 189
SPP: 5,572psi

MD: 12,401'
INC: 91.32°
AZM: 359.56°
TVD: 7,167.08'
VS: 4,921.7'

MW IN: 10+
VIS IN: 54
MW OUT: 10.1
VIS OUT: 49

MD: 12,495'
INC: 90.18°
AZM: 358.86°
TVD: 7,165.85'
VS: 5,005.1'

MD: 12,590'
INC: 88.59°
AZM: 357.89°
TVD: 7,166.87'



792u

12300-12400 CHK
(75%): lt gy-gyshbn, occ mot wht-crm, frm-sft, sb blk-y-sb plty, mnr MRLST lamn, rthy tex, mod calc; MRLST (25%): dk gyshbn-dk gy, sb tab-sb blk-y, hd-frm, sme slty tex, mnr CHK incl, hi calc, tr cal frac fl

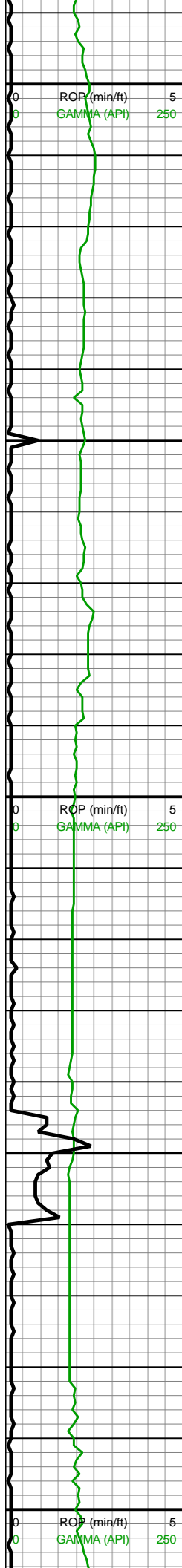
697u

12400-12500 CHK
(60%): lt gy-gyshbn, occ mot wht-crm, frm-sft, sb blk-y-sb plty, rthy tex, mnr MRLST lamn, mod calc; MRLST (40%): dk gyshbn-dk gy, sb tab-sb blk-y, hd-frm, sme slty tex, mnr CHK incl, tr cal frac fl, hi calc

578u

12500-12600 CHK
(65%): lt gy, sme gyshbn, occ mot wht-crm, fri-frm, sb blk-y-sb plty, rthy tex, mnr MRLST lamn, med calc; MRLST (35%): dk





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
12,790
12,800

VS: 5,090.02'

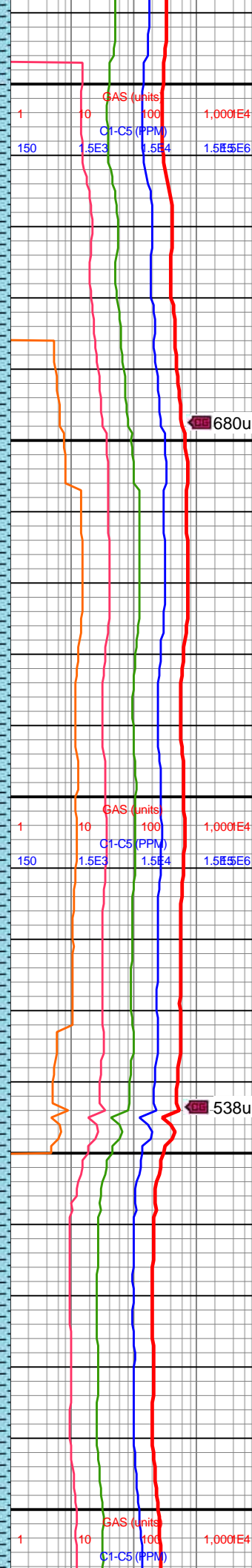
WOB: 33klbs
RPM: 60
SPM: 190
SPP: 5,600psi

MW IN: 10+
VIS IN: 53
MW OUT: 10.1
VIS OUT: 49

MD: 12,685'
INC: 88.77°
AZM: 357.8°
TVD: 7,169.05'
VS: 5,175.31'

MD: 12,779'
INC: 90.62°
AZM: 360°
TVD: 7,169.56'
VS: 5,258.94'

WOB: 34klbs
RPM: 60
SPM: 189
SPP: 5,655psi

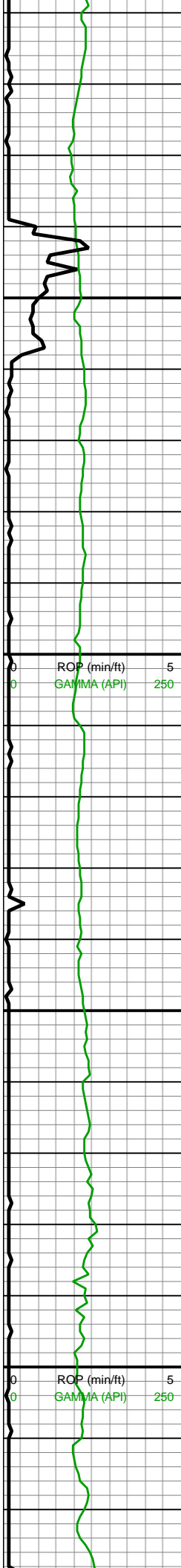


gyshbn-dk gy, sb tab-sb
blky, hd-frm, sme slty tex,
mnr CHK incl, tr cal frac
fl, mod-hi calc

12600-12700 CHK
(70%): lt gy, sme gyshbn,
occ mot wht-crm, fri-frm,
sb blky-sb plty, rthy tex,
mnr MRLST lamn, med
calc; MRLST (30%): dk
gyshbn-dk gy, sb tab-sb
blky, hd-frm, sme slty tex,
tr cal frac fl, mnr CHK
incl, tr imbd pp pyr, hi
calc

12700-12800 CHK
(70%): lt gy, sme gyshbn,
occ mot wht-crm, fri-frm,
sb blky-sb plty, rthy tex,
mnr MRLST lamn, med
calc; MRLST (30%): dk
gyshbn-dk gy, sb tab-sb
blky, hd-frm, sme slty tex,
tr cal frac fl, mnr CHK
incl, hi calc, tr imbd pp
pyr





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
13,010
13,020

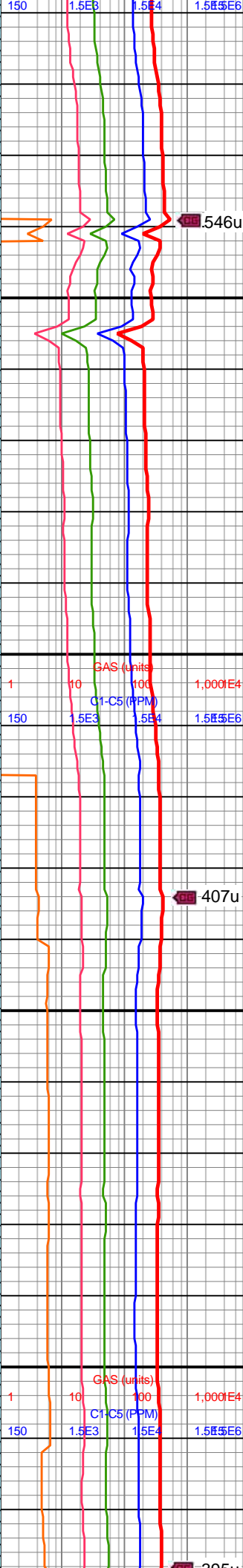
MW IN: 10
VIS IN: 52
MW OUT: 10.1
VIS OUT: 49

MD: 12,874'
INC: 89.78°
AZM: 1.05°
TVD: 7,169.22'
VS: 5,342.21'

MD: 12,968'
INC: 90.57°
AZM: 0.88°
TVD: 7,168.94'
VS: 5,424.25'

WOB: 35klbs
RPM: 60
SPM: 186
SPP: 5,588psi

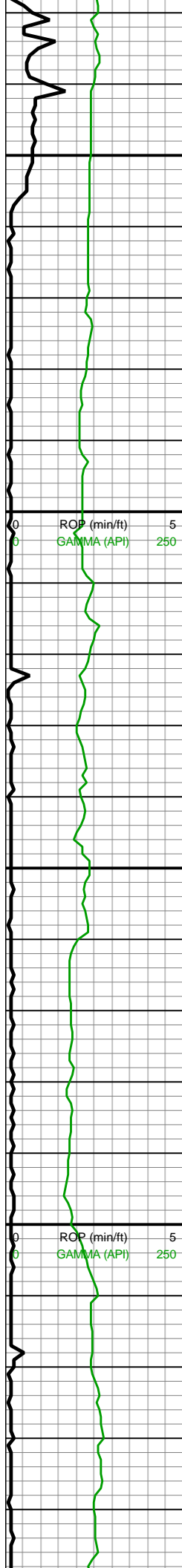
MW IN: 10



12800-12900 CHK
(65%): lt gy, sme gyshbn,
occ mot wht-crm, fri-frm,
sb blk-y-sb plty, rthy tex,
mnr MRLST lamn, med
calc, tr imbd pp pyr;
MRLST (35%): dk
gyshbn-dk gy, sb tab-sb
blk-y, hd-frm, sme slty tex,
tr cal frac fl, mnr CHK
incl, hi calc

12900-13000 CHK
(70%): lt gy, sme gyshbn,
occ mot wht-crm, fri-frm,
sb blk-y-sb plty, rthy tex,
mnr MRLST lamn, med
calc, tr imbd pp pyr;
MRLST (30%): dk
gyshbn-dk gy, sb tab-sb
blk-y, hd-frm, tr cal frac fl,
mnr CHK incl, hi calc





VIS IN: 52
MW OUT: 10+
VIS OUT: 48

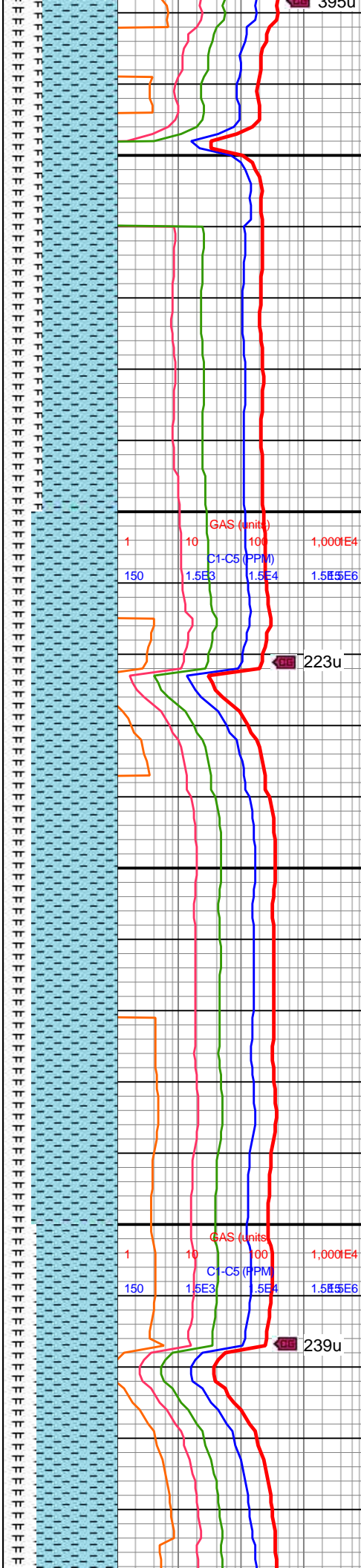
MD: 13,063'
INC: 88.15°
AZM: 0.53°
TVD: 7,170'
VS: 5,507.36'

MD: 13,157'
INC: 88.37°
AZM: 0.09°
TVD: 7,172.85'
VS: 5,589.89'

MW IN: 10.1
VIS IN: 3
MW OUT: 10+
VIS OUT: 49

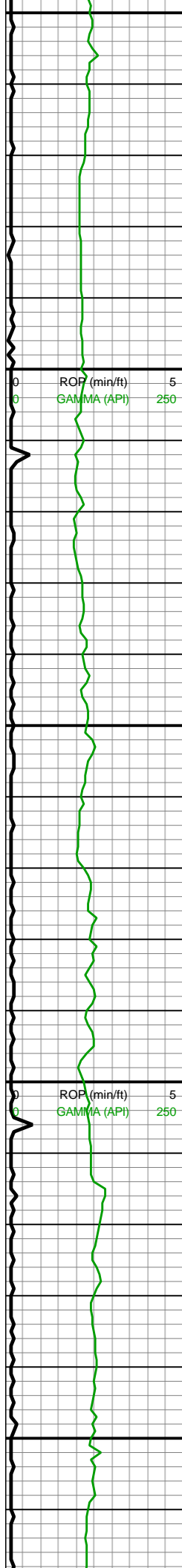
WOB: 35klbs
RPM: 60
SPM: 188
SPP: 5,676psi

MD: 13,251'



13000-13100 CHK
(65%): lt gy, sme gyshbn,
occ mot wht-crm, fri-frn,
sb blk-y-sb plty, rthy tex,
mnr MRLST lamn, med
calc; MRLST (35%): dk
gyshbn-dk gy, sb tab-sb
blk-y, hd-frn, tr cal frac fl,
mnr CHK incl, hi calc, tr
imbd pp pyr

13100-13200 CHK
(75%): predy lt gy, sme
gyshbn, occ mot wht-crm,
fri-frn, sb blk-y-sb plty,
rthy tex, mnr MRLST
lamn, mod calc; MRLST
(25%): dk gyshbn-dk gy,
sb tab-sb blk-y, hd-frn, tr
cal frac fl, mnr CHK incl,
hi calc, tr imbd pp pyr



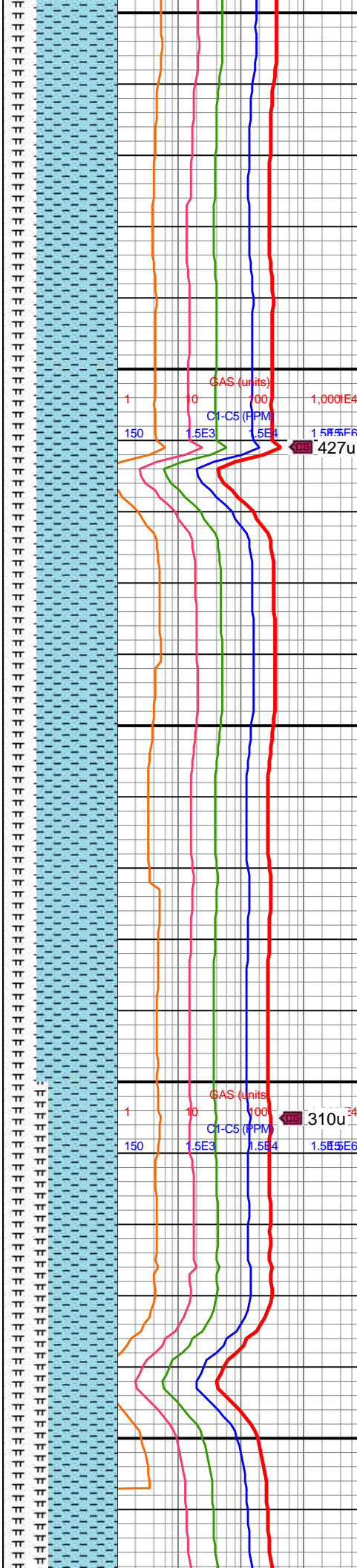
13,250
INC: 88.42°
AZM: 0.09°
TVD: 7,175.48'
VS: 5,672.59'

13,350
MD: 13,346'
INC: 88.55°
AZM: 359.91°
TVD: 7,178'
VS: 5,756.24'

13,400
WOB: 35klbs
RPM: 60
SPM: 186
SPP: 5,718psi

13,420
MW IN: 10.1
VIS IN: 52
MW OUT: 10.1
VIS OUT: 48

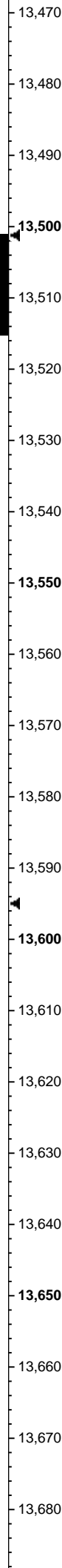
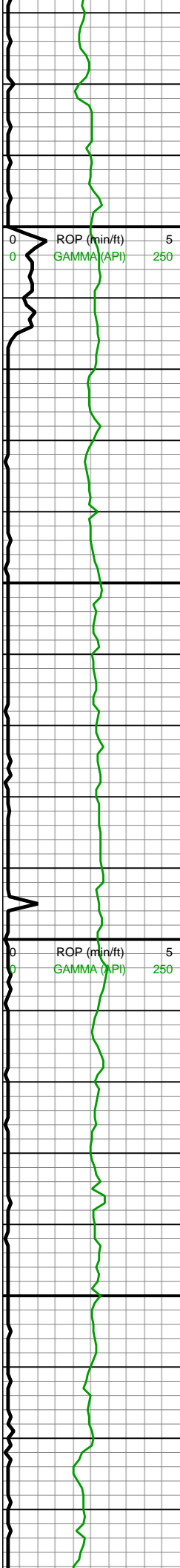
13,450
MD: 13,440'
INC: 88.42°
AZM: 359.38°
TVD: 7,180.48'
VS: 5,839.29'



13200-13300 CHK
(70%): predy lt gy, sme gyshbn, occ mot wht-crm, fri-frm, sb blk-y-sb plty, rthy tex, mnr MRLST lamn, mod calc; MRLST (30%): dk gyshbn-dk gy, sb tab-sb blk-y, hd-frm, tr cal frac fl, mnr CHK incl, tr imbd pp pyr, hi calc

13300-13400 CHK
(70%): lt gy, sme gyshbn, occ mot wht-crm, fri-frm, sb blk-y-sb plty, rthy tex, mnr MRLST lamn, mod calc; MRLST (30%): dk gyshbn-dk gy, sb tab-sb blk-y, hd-frm, tr cal frac fl, mnr CHK incl, tr imbd pp pyr, hi calc



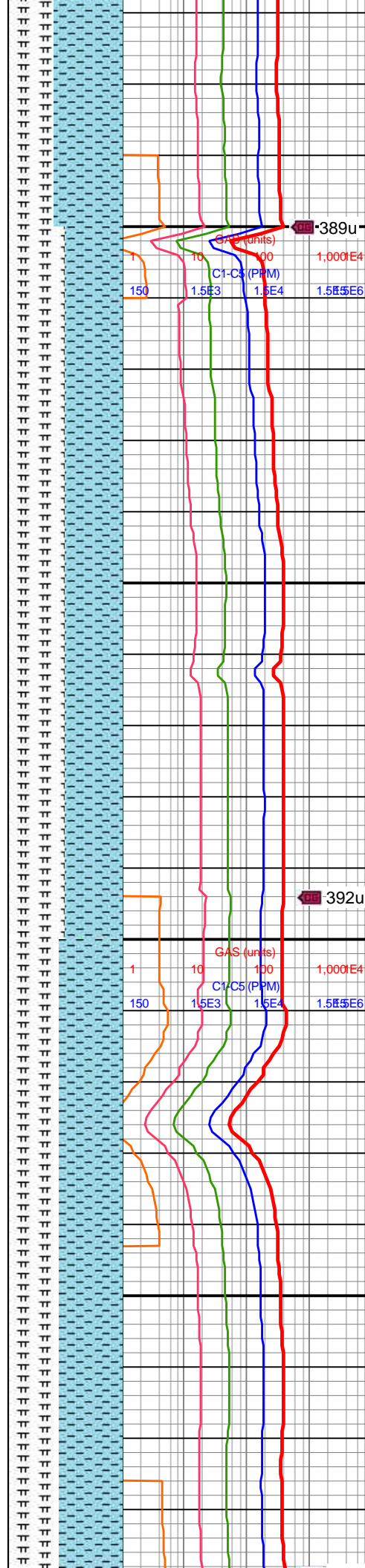


MD: 13,535'
INC: 89.21°
AZM: 0.53°
TVD: 7,182.45'
VS: 5,922.99'

WOB: 33.2klbs
RPM: 59
SPM: 186
SPP: 5,391psi

MD: 13,629'
INC: 89.08°
AZM: 0.44°
TVD: 7,183.85'
VS: 6,005.41'

MW IN: 10.1
VIS IN: 53
MW OUT: 10.2
VIS OUT: 50



13400-13500 CHK
(60%): lt gy, sme gyshbn, occ mot wht-crm, fri-frm, sb blk-ly-sb plty, rthy tex, mnR MRLST lamn, mod calc; MRLST (40%): dk gy-dk gyshbn, sb tab-sb blk-ly, hd-frm, tr cal frac fl, mnR CHK incl, hi calc, tr imbd pp pyr

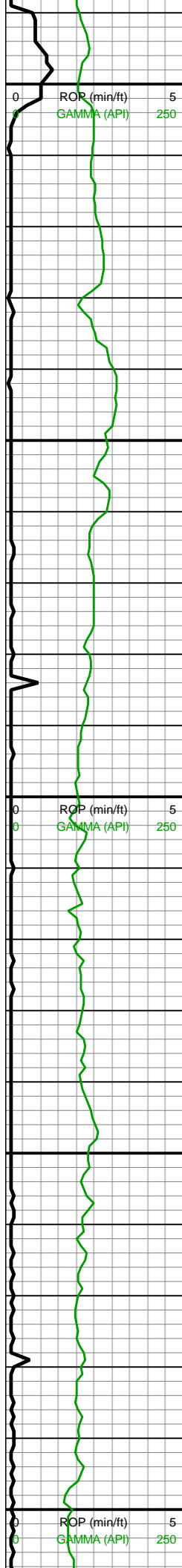


13500-13600 CHK
(50%): med gy-gyshbn, crm, frm-sft, sb blk-ly-sb plty, mod fis, mnR MRLST lamn, hi calc, tr imbd mic pyr; MRLST (50%): dk gyshbn-dk gy, brit, tab-sb blk-ly, frm-sl hd, mod calc, tr CHK incl, tr pp mic pyr



13600-13700 MRLST
(55%): dk gyshbn-dk gy, frm-sl hd, tab-sb blk-ly, brit, mod calc, tr CHK incl; CHK (45%): med

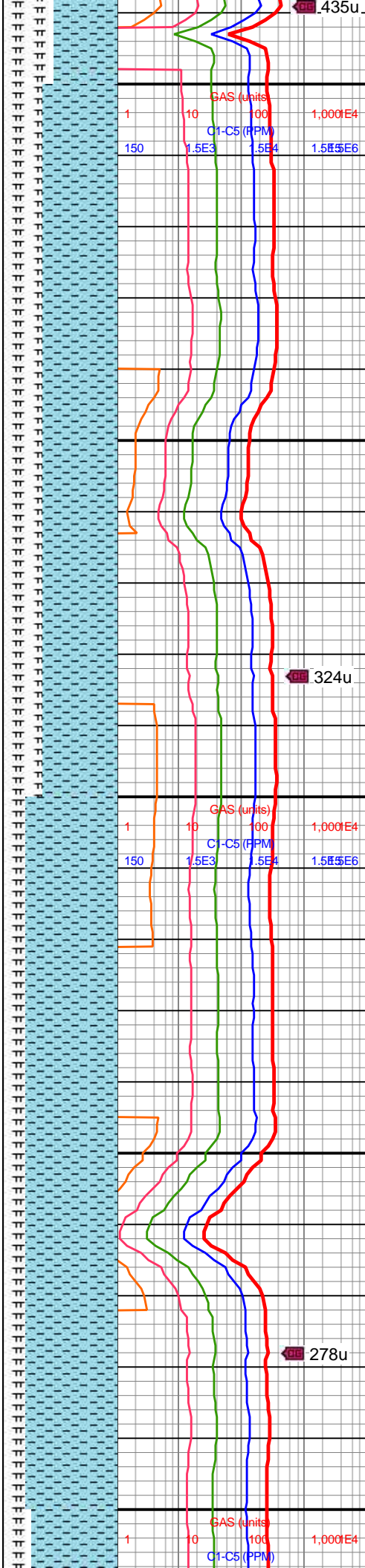




MD: 13,724'
INC: 90.79°
AZM: 0.09°
TVD: 7,183.96'
VS: 6,088.88'

WOB: 35.1klbs
RPM: 60
SPM: 184
SPP: 5,636psi

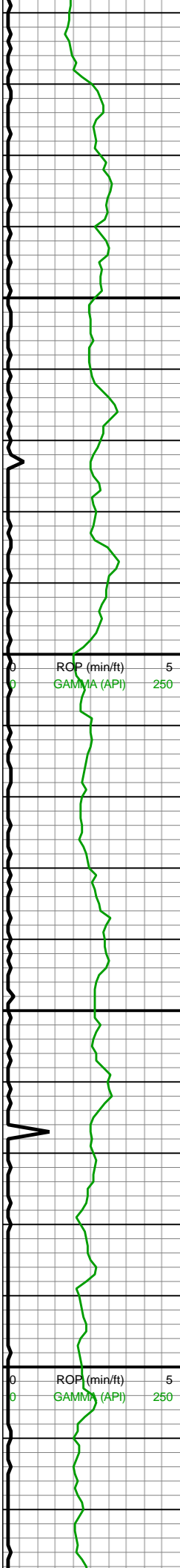
MD: 13,818'
INC: 90.97°
AZM: 0.09°
TVD: 7,182.51'
VS: 6.171.6'



gy-gyshbn, crm, frm-sft,
sb blk-y-sb plty, mod fis, tr
imbd/dissm mic pyr, hi
calc, mnr MRLST lamn

13700-13800 CHK
(65%): med gy-gyshbn,
mot crm, frm-sl sft, sb
blky-tab, mod fis, tr
dissm mic pyr, mnr
MRLST lamn, v calc;
MRLST (35%): dk
gyshbn-dk gy, tab-sb
blky, frm-sl hd, brit, tr
CHK incl, mod calc, tr
imbd pyr cls

13800-13900 CHK
(80%): gyshbn, mot med
gy, frm-sl frm, mod fis, sb
tab-sb plty, tr pyrc cls,
sme MRLST lamn, hi
calc; MRLST (20%): dk
gyshbn-dk gy, frm-sl hd,
mod bri, sl slty-sm tex, tr
CHK incl, mod calc



13,910
AZM: 359.65°
TVD: 7,180.71'
VS: 6,254.49'

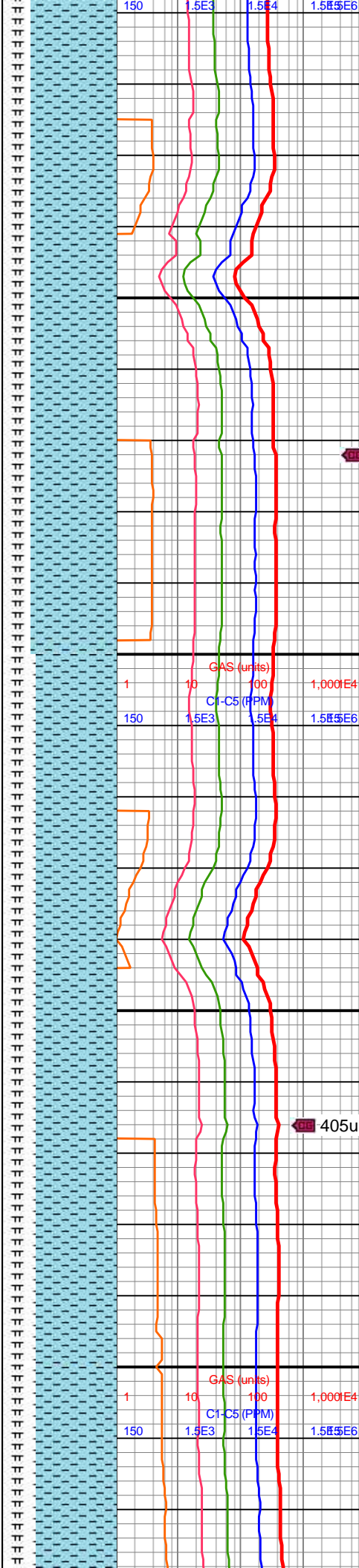
13,950

13,980
MW IN: 10.1
VIS IN: 53
MW OUT: 10.1+
VIS OUT: 49

13,990
WOB: 34klbs
RPM: 60
SPM: 184
SPP: 5,694psi

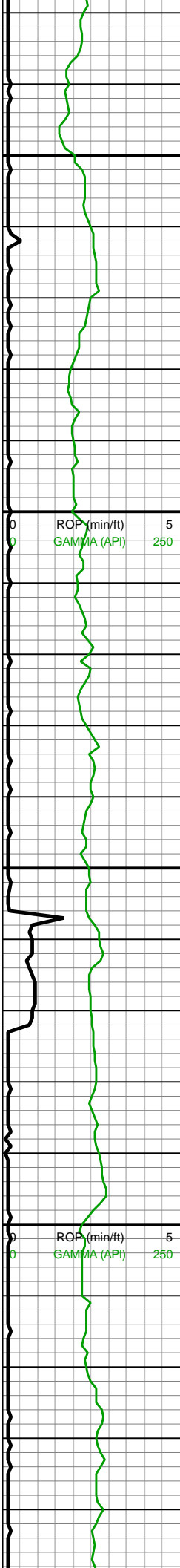
14,000
MD: 14,007'
INC: 90.57°
AZM: 359.38°
TVD: 7,179.22'
VS: 6,338.54'

14,100
MD: 14,102'
INC: 90.44°
AZM: 358.77°
TVD: 7,178.38'
VS: 6,422.94'



13900-14000 CHK
(75%): gyshbn, mot med
gy, sb tab-sb plty, mod
fis, frm-sl frm, sme
MRLST lamn, mnr mic
pyrc cls, v calc; MRLST
(25%): dk gyshbn-dk gy,
mod brit, frm-sl hd, sl
sly-sm tex, mod calc, tr
CHK incl

405u 14000-14100 CHK
(70%): gyshbn-med gy,
crm, mot, sb blk-sb plty,
frm-sft, mod fis ctngs, tr
dissm pyrc cls, hi calc,
mnr MRLST lamn, sme
free CHK frags; MRLST
(30%): dk gyshbn-dk gy,
sl sly-sm tex, brit, frm-sl
hd, tab-sb blk, tr CHK
incl, mod calc

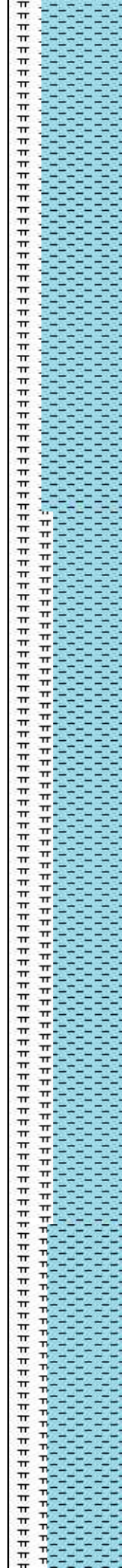


14,130
14,140
14,150
14,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
14,240
14,250
14,260
14,270
14,280
14,290
14,300
14,310
14,320
14,330
14,340

MD: 14,196'
INC: 90.53°
AZM: 358.42°
TVD: 7,177.58'
VS: 6,506.81'
WOB: 32.9klbs
RPM: 60
SPM: 181
SPP: 5,566psi

MW IN: 10.1
VIS IN: 54
MW OUT: 10.1
VIS OUT: 50

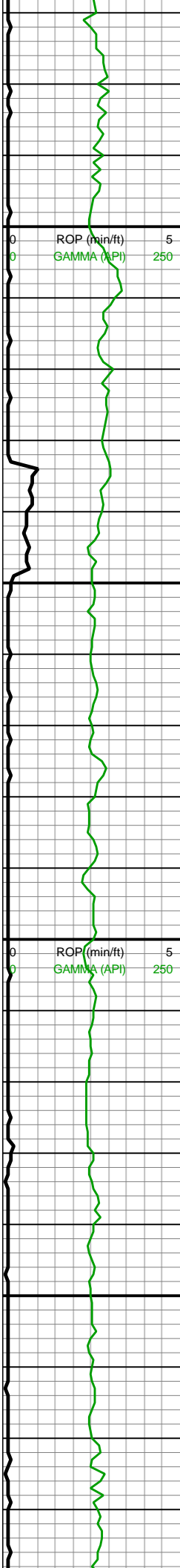
MD: 14,291'
INC: 89.82°
AZM: 359.12°
TVD: 7,177.29'
VS: 6,591.43'



14100-14200 CHK
(65%): gyshbn, mot med
gy, mod fis, sb tab-sb
plty, frm-sl frm, sme
MRLST lamn, hi calc, tr
dissm pyrc cls; MRLST
(35%): dk gy, dk gyshbn,
frm-sl hd, mod brit, sl
slty-sm tex, mod calc, tr
CHK incl

14200-14300 CHK
(60%): gyshbn-med gy,
mot crm, sb blk-sb plty,
sm chky tex, frm-sft, mod
fis, tr imbd/dissm mic
pyr, hi calc, mnr MRLST
lamn; MRLST (40%): dk
gyshbn-dk gy, tab-sb
blk, brit, frm-sl hd, mod
calc, tr CHK incl



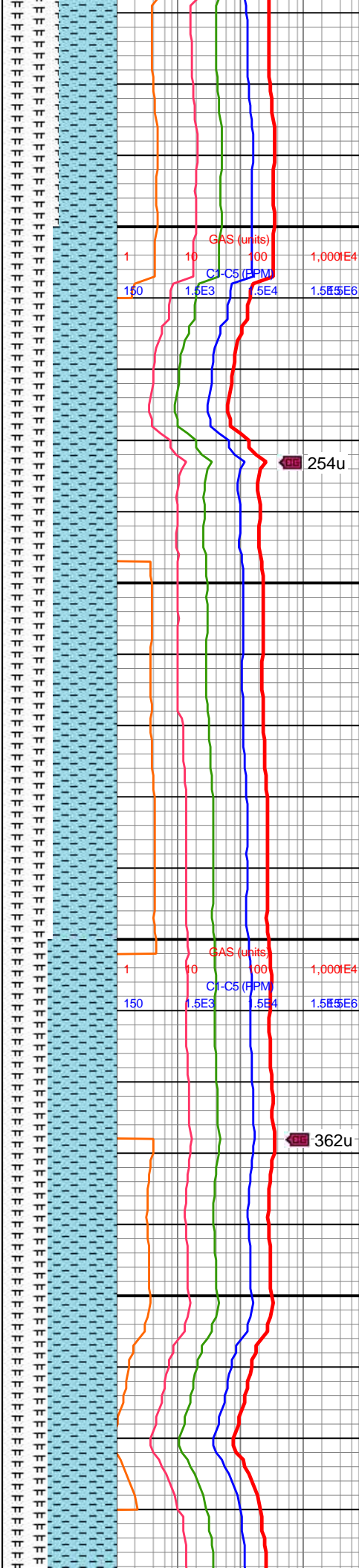


MD: 14,574'
INC: 90.44°
AZM: 359.72°
TVD: 7,177.95'
VS: 6,841.91'

WOB: 33.3klbs
RPM: 60
SPM: 180
SPP: 5,631psi

MD: 14,668'
INC: 90.66°
AZM: 0.88°
TVD: 7,177.04'
VS: 6,924.48'

MD: 14,763'
INC: 90.57°
AZM: 359.03°
TVD: 7,176.02'
VS: 7,008.19'

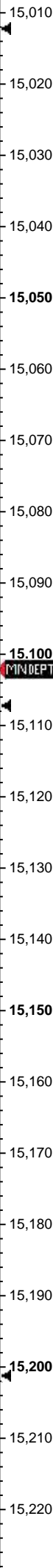
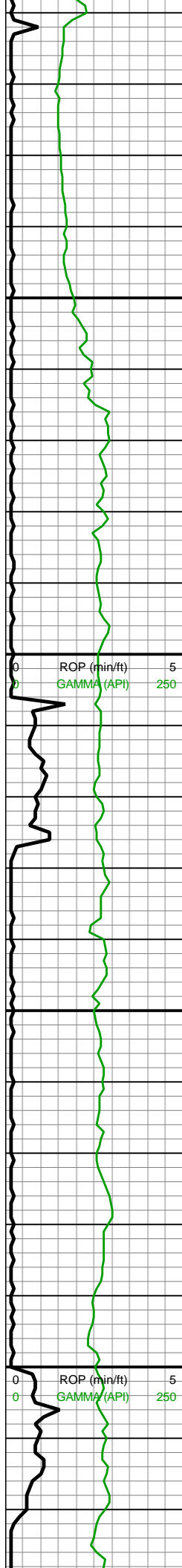


14500-14600 CHK
(50%): gyshbn-med gy, crm, mot, fri-frm, tab-sb blk, sm chky tex, v calc, tr intbd MRLST; MRLST (50%): dk gyshbn-dk gy, frm-sl hd, sb blk-tab, sl sm-rgh tex, com intbd CHK, tr cal frac fl, v calc, mnr imbd pyrc clus

14600-14700 CHK
(55%): gyshbn-med gy, mot lt gy, fri-sl frm, tab-sb blk ctngs, sm chky tex, sme CHK frags, tr intbd MRLST, v calc; MRLST (45%): dk gyshbn-dk gy, frm-sl hd, sb blk-tab, sl sm-rgh tex, mod-hi calc, sme intbd CHK

14700-14800 CHK
(60%): gyshbn-med gy, blk-sb tab, frm-sl hd, vf lam, sm-sl rgh tex, mnr pyrc cls, mnr free CHK;





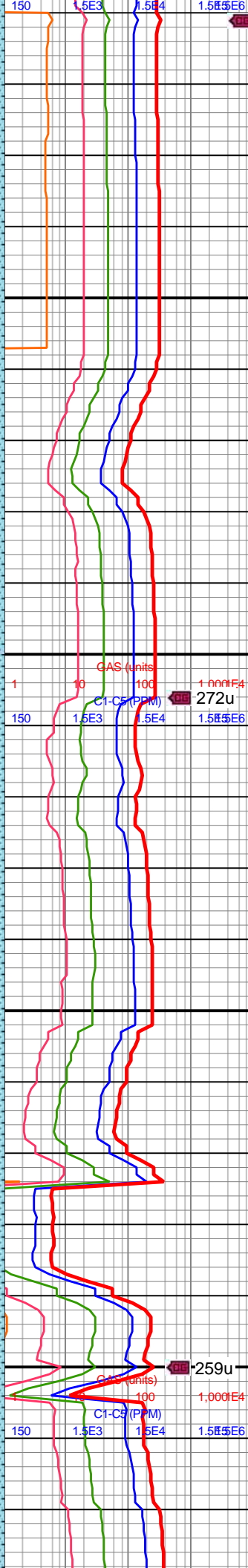
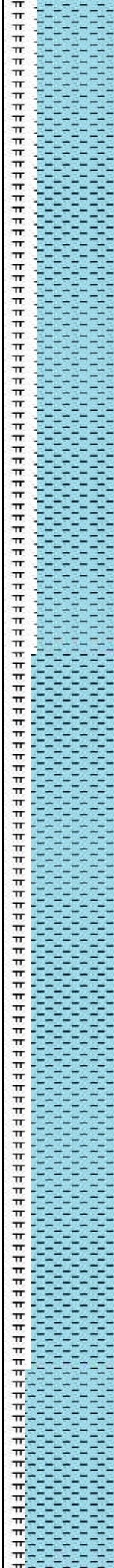
MD: 15,047'
INC: 91.8°
AZM: 1.58°
TVD: 7,168.03'
VS: 7,256.03'

MIN DEPT 7/27/2018

MD: 15,141'
INC: 90.53°
AZM: 2.28°
TVD: 7,166.12'
VS: 7,337.26'

MW IN: 10.1+
VIS IN: 54
MW OUT: 10.1
VIS OUT: 50

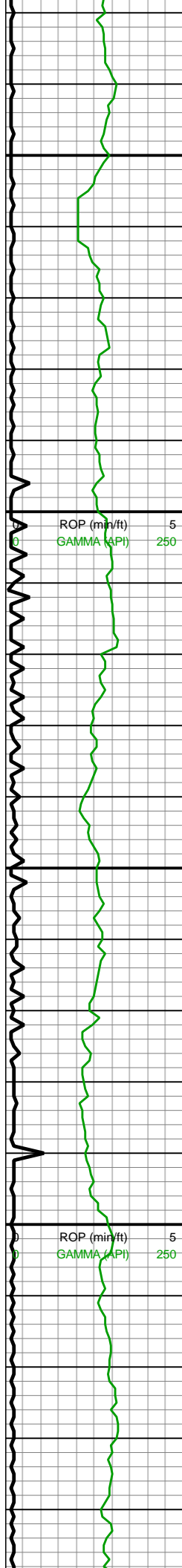
WOB: 34.9klbs
RPM: 60
SPM: 180
SPP: 5,682psi



15000-15100 CHK
(70%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, mnr free
CHK frags, hi calc, mnr
MRLST lamn, tr imbd/pp
mic pyr cls; MRLST
(30%): dk gy-med gy, sl
silty-sm tex, tab-blky, brit,
frm-sl hd, mnr CHK incl,
mod calc

15100-15200 CHK
(80%): gyshbn-med gy,
mot, sb tab-sb plty, frm-sl
frm, mod fis, tr pyrc cls, hi
calc, sme MRLST lamn;
MRLST (20%): dk gy,
med gy, frm-sl hd, sl
silty-sm tex, mod brit, mnr
CHK incl, mod calc, tr pp
mic pyr





MD: 15,235'
INC: 89.03°
AZM: 1.58°
TVD: 7,166.48'
VS: 7,418.52'

15,250

15,260

15,270

15,280

15,290

15,300

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

MD: 15,330'
INC: 88.64°
AZM: 1.41°
TVD: 7,168.42'
VS: 7,500.97'

15,350

15,360

15,370

15,380

15,390

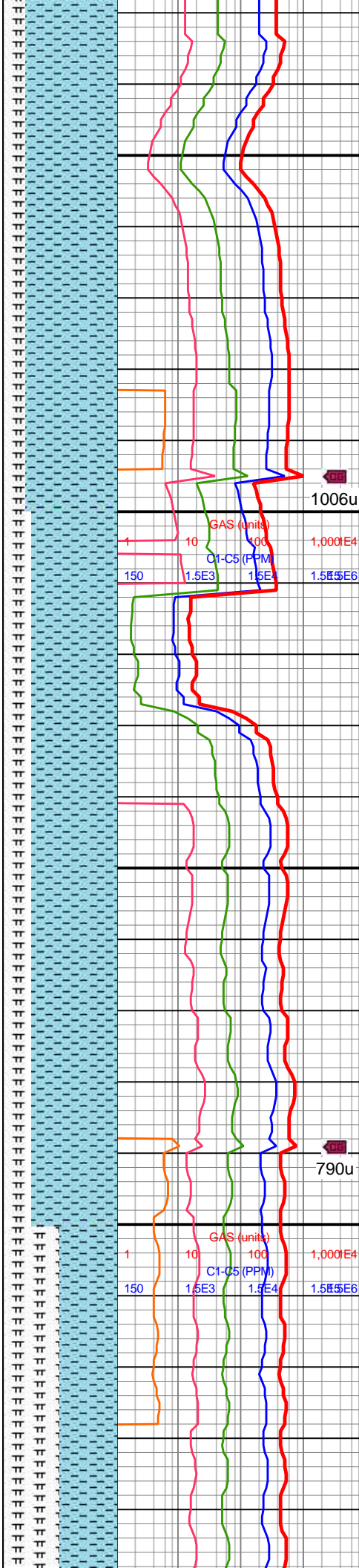
WOB: 31klbs
RPM: 60
SPM: 180
SPP: 5,667psi

15,410

MD: 15,424'
INC: 88.37°
AZM: 1.05°
TVD: 7,170.87'
VS: 7,582.77'

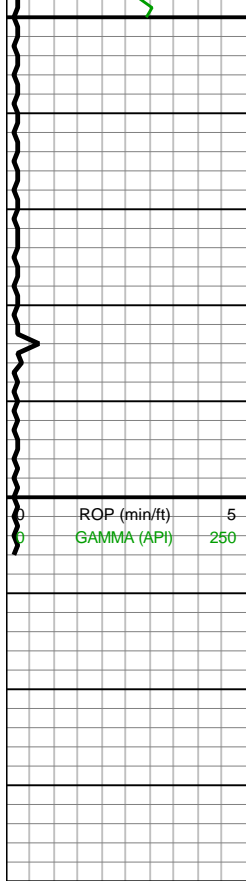
15,440

MD: 15,446'
INC: 88.68°
AZM: 0.79°



15200-15300 CHK
(80%): lt gy-gyshbn, mot
crm, sb blk-y-sb plty,
frm-sft, mnr MRLST
lamn, chky-rthy tex, mod
calc; MRLST (20%): dk
gy, med gy, hd-frm, sme
sly tex, tab-sb blk-y, mnr
CHK incl, hi calc, tr
dissm pyr cls

15300-15400 CHK
(75%): med gy-gyshbn,
sme wht-crm, frm-sft, sb
blk-y-sb plty, v calc, mnr
MRLST lamn; MRLST
(25%): dk gy, tab-sb blk-y,
brit, frm-sl hd, sl sly tex,
mnr CHK incl, mod calc,
tr imbd mic pyr



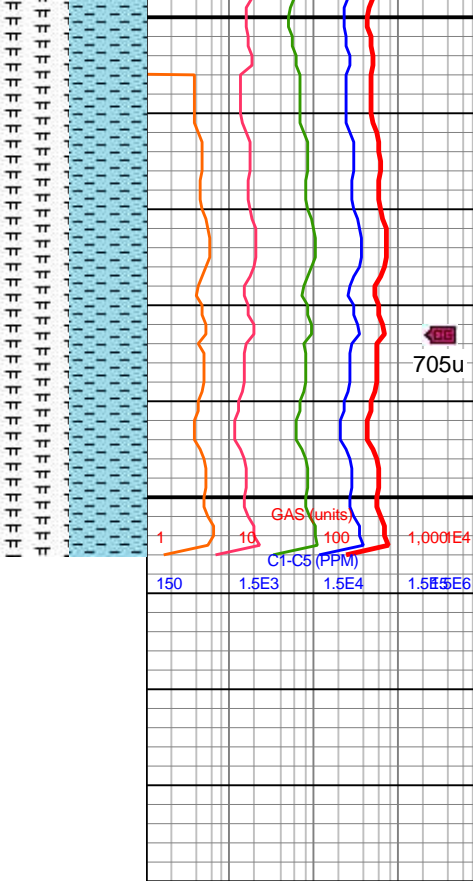
15,450 TVD: 7,171.43'
VS: 7,601.97'

15,480 MW IN: 10.3
VIS IN: 55
MW OUT: 10.2+
VIS OUT: 51

15,490
15,500 Projection to bit:
MD: 15,506'
INC: 88.68°
AZM: 0.79°
TVD: 7,172.82'
VS: 7,654.43'

15,510
15,520 **Note: TD Well @
15,506' MD
(7,173' TVD) on
7/27/2018**

15,530 **End of Vertical
Log**
15,540



15400-15506 MRLST
(50%): dk gy-med gy,
frm-sl hd, brit, tab-sb
blky, sl slty tex, mod calc,
mnr CHK incl; CHK
(50%): med gy-gyshbn,
chky tex, frm-fri, sb
blky-tab, mnr imbd mic
pyr/dissm pyr nod, mnr
MRLST lamn, hi calc

