



Empirica

Scale: 5" / 100'
Measured Depth Log

Well Name Trout 2

Location S 32 T2N R67W

State Colorado

Country USA

API Number 05-123-41432

Region DJ Basin

Spud Date 9/4/2015

County Weld

Rig Number Savanna 802

Field Wattenberg

Drilling Completed 9/9/2015

Surface Coordinates Lat: 40° 5' 20.634"N

Long: 104° 54' 31.734"W

Bottom Hole Coordinates

Lat: 40° 6' 59.169"N
Long: 104° 54' 22.697"W

Ground Elevation 5,079'

K.B. Elevation 5,094'

Logged Interval 7,100' To 18,150'

Total Depth 18,150'

Formation Codell

Type of Drilling Fluid Invert

Operator

Company Extraction Oil & Gas

Address 1888 Sherman St., Suite 200
Denver, CO 80203

Geologist

Name Jared Rouse

Company Extraction Oil & Gas

Address 1888 Sherman St., Suite 200
Denver, CO 80203



Other

Equipment ML 197

Comments Start: 9-4-15
TD: 9-9-15

Services Provided 2-man Logging

Logger Names

Brian Ferwerda / Mark G

Address

Empirica, LLC.

6360 W Sam Houston Pk
Suite 100
Houston, TX 77041

Zone Color Coding

Oil

Note

Error

Condensate

Core

Water

Gas

Pressure

Seal

Rock Types

UNKNOWN

ANHYDRITE

GYPSUM

SALT

CHALK

LIMESTONE

DOLOMITE

CHERT

COAL

MARLSTONE

CLAYSTONE

SHALE

SHALE GRAY

SHALE COLORED

SILTSTONE

SANDSTONE

CONGLOMERATE

BRECCIA

TILL

BENTONITE

TUFF

IGNEOUS

METAMORPHIC

CEMENT

Accessories

F FOSSIL

GASTROPOD

ALGAE

AMPHIPORA

BELEMNITE

BIOCLASTIC

BRACHIOPOD

BRYOZOA

CEPHALOPOD

CORAL

CRINOID

ECHINOID

FISH

FORAMINIFERA

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLET

PYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

TUFFACEOUS

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 Syn

ORGANIC

PINPOINT

DEAD

EVEN

QUESTIONABLE

SPOTTED STAINING

FORM

GAS SHOW

VUGGY

NORMAL F

OIL SHOW

OVERTURN

Engineering

CASING

REVERSE

Porosity

E EARTHY

F FENESTRAL

F FRACTURE

X INTERCRYSTALLINE

Ø INTEROOLITIC

M MOLDIC

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

SIDEWALL

SLIDE

SURVEY

TRIP GAS

WIRELINE

WIRELINE

mbols

ATION TOP L LITHOGRAPHIC

Rounding

MX MICROXLN

A ANGULAR **MS** MUDSTONE

R ROUNDED **PS** PACKSTONE

S SUBANG **WS** WAKESTONE

F SUBRND

Sorting

Textures

M MODERATE

B BOUNDSTONE **P** POOR

C CHALKY **W** WELL

CX CRYPTOXLN

E EARTHY

FX FINELYXLN

GS GRAINSTONE

ROP
ROP
GAMMA
GAS

Extraction OG
Weld County, CO
Spud Date: 9-4-15
Surface Casing @ 1,546'
2-man logging began 9-4-15
100 units = 1% methane
Depths Correspond to Driller's Pipe Tally

Troudt 2

4
250
400

ROP (mbl/h)
GAMMA (units)
GAS (units)

84u

MW 8.35
VIS 48

ROP (mbl/h)
GAMMA (units)
GAS (units)

Slide/Rotate

Depth Labels

7,060 7,070 7,080 7,090 7,100 7,110 7,120 7,130 7,140 7,150 7,160 7,170 7,180 7,190 7,200 7,210 7,220 7,230

AVG BGG: 42u

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

GAS (units) C1-C4 (PPM)
1E4 1E5
10 1,000

GAS (units) C1-C4 (PPM)
1E4 1E5
10 1,000

7000

7000

MD: 7,103'
TVD: 7,035.47'
Inclination: 7.06°
Azimuth: 139.44°
VS: -607.03'

MD: 7,197'
TVD: 7,128.66'
Inclination: 9.33°
Azimuth: 79.38°
VS: -609.18'

Well Bore
TVD

Bit #: 1
Size: 7.88
Depth In: 1,546'
Depth Out: 12,178'
Hours: 24 hrs
Avg Ft/Hr: 443 '/hr
Jets: 7x10

WOB: 18.3Klbs
Rotary: 0RPM
Strokes: 200SPM
Pump Rate: 613GPM

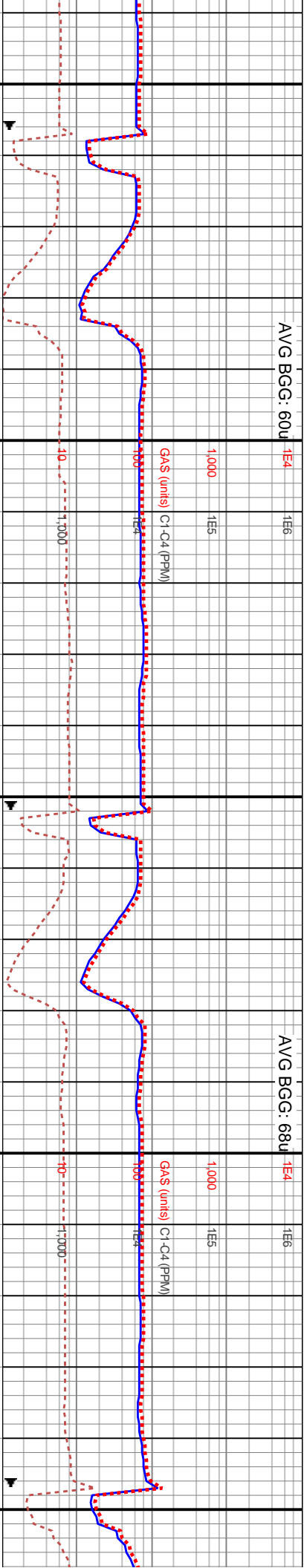
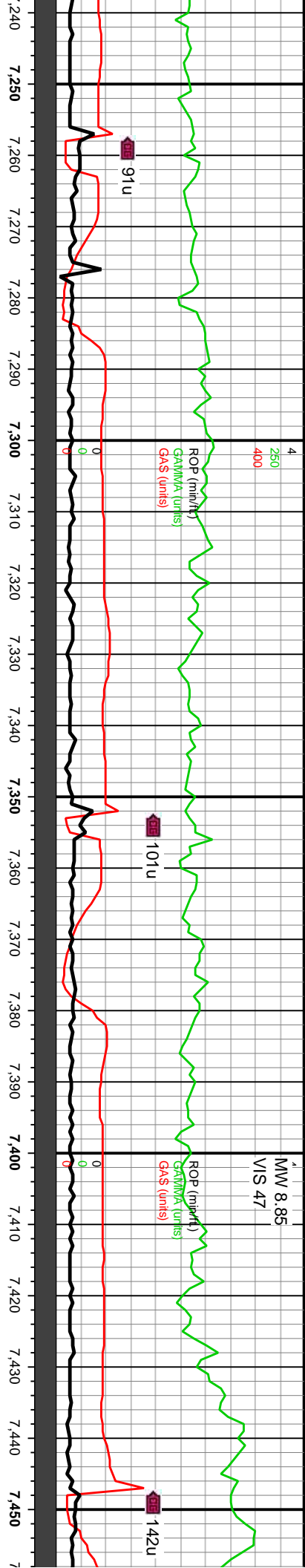
7100-7160 SH (60%): dk gy-med gy, pred
pty-sb pty, silty ip, sl rgh tex, non-v sl calc, tr
pp pyr, SLTST(40%): pred med gy-sl dk gy,
frm-sl hrd, pred pty, occ blkly, sm-sl rgh tex, tr
micnica, non calc

7160-7220 SH (65%): med gy-dk gy, sme
gyshbn, frm-sl hrd, pty-sb blkly, scat micnica,
sm-sl silty tex, tr scat mic pyr, tr-v sl calc;
SLTST (35%): med gy-dk gy, frm, blkly, silty-grty
tex, non calc

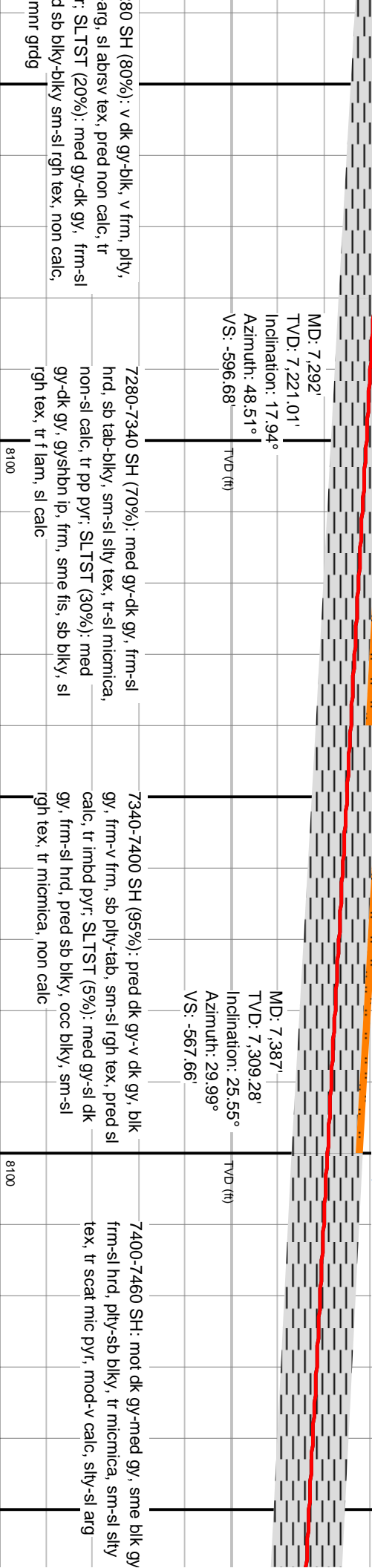
7220-72
occ silty-
imbd py
hrd, pre
tr f lam;

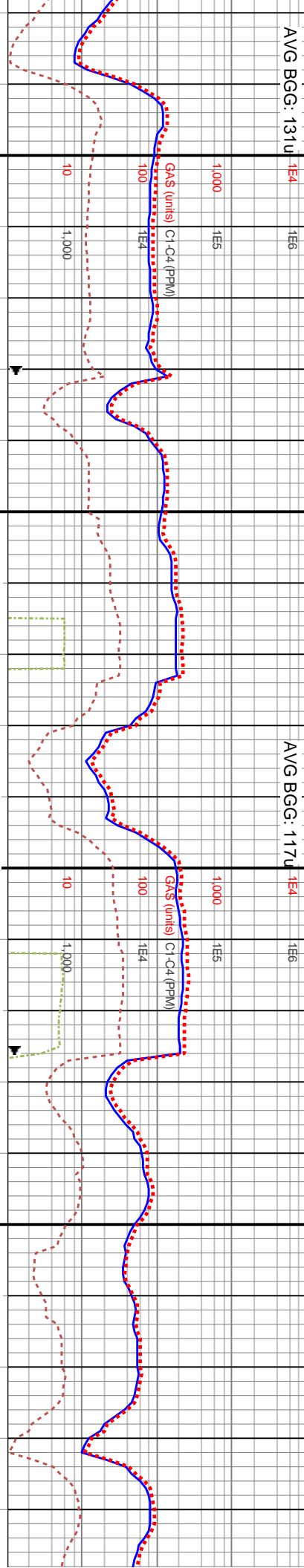
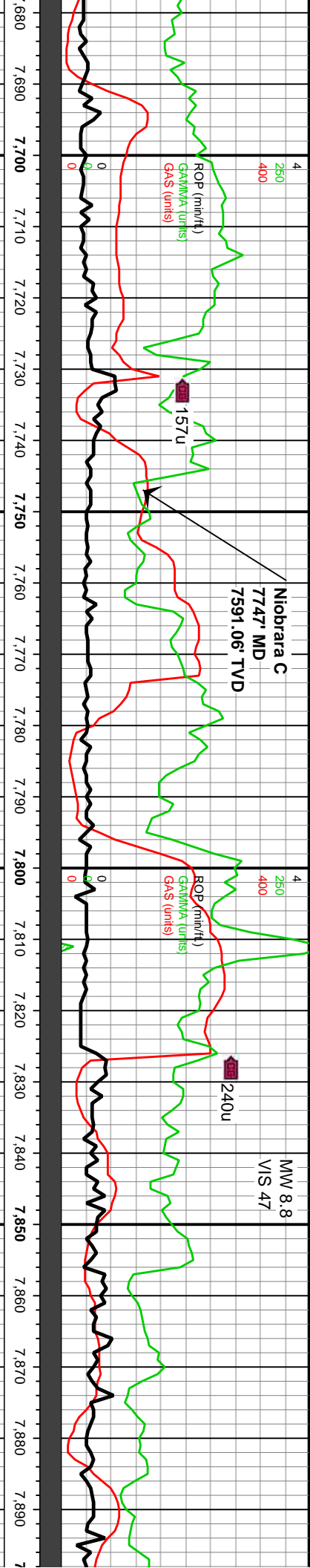
Images





WOB: 17Klbs	
Rotary: 0RPM	
Strokes: 200SPM	
Pump Rate: 612GPM	



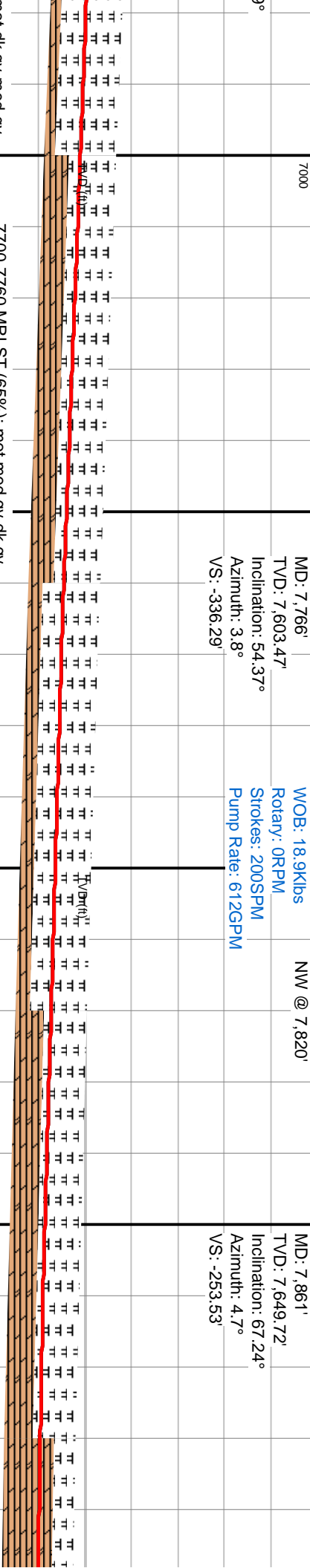


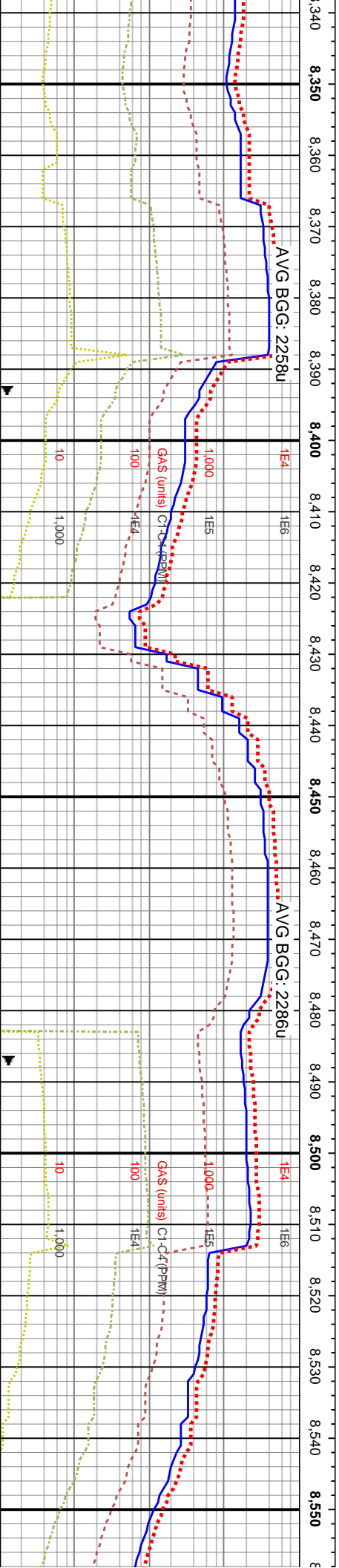
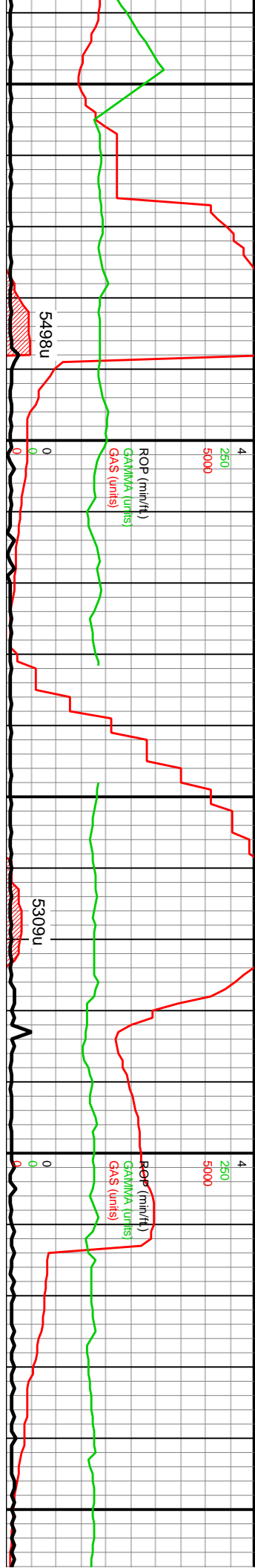
MD: 7,766'
TVD: 7,603.47'
Inclination: 54.37°
Azimuth: 3.8°
VS: -336.29'

WOB: 18.9klbs
Rotary: 0RPM
Strokes: 200SPM
Pump Rate: 612GPM

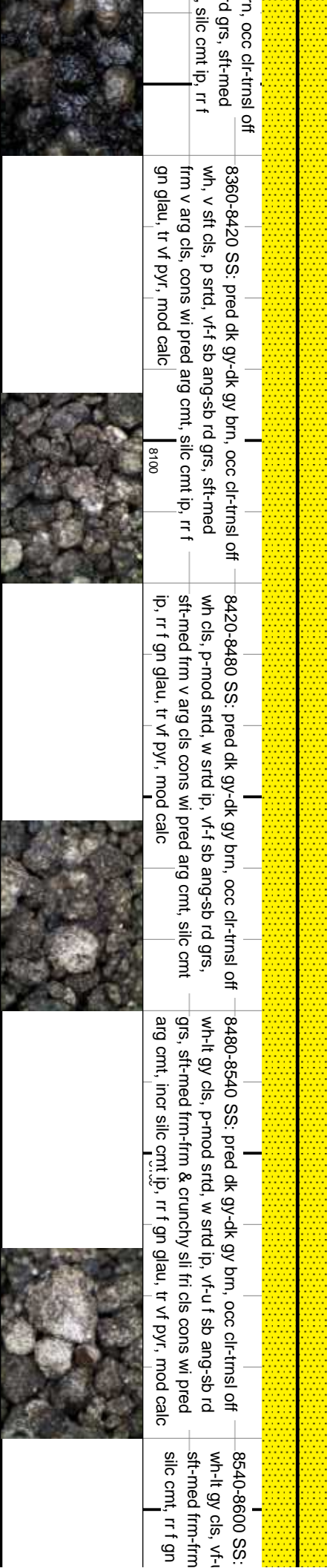
NW @ 7,820'

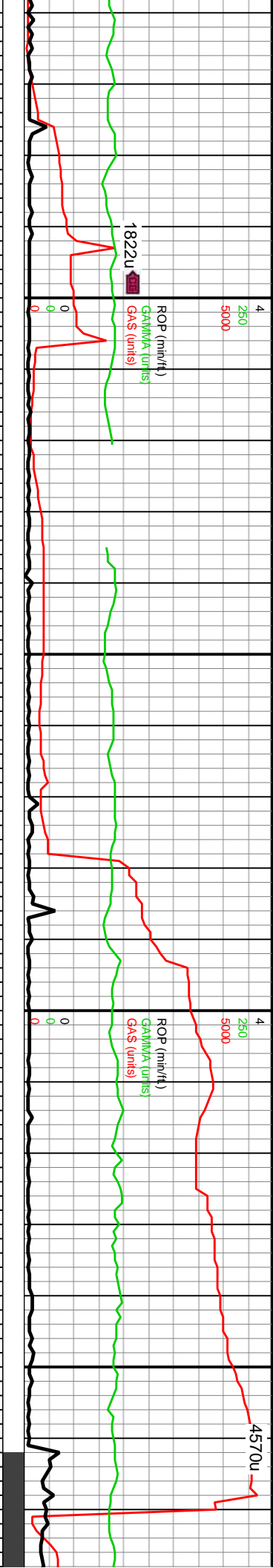
MD: 7,861'
TVD: 7,649.72'
Inclination: 67.24°
Azimuth: 4.7°
VS: -253.53'





5'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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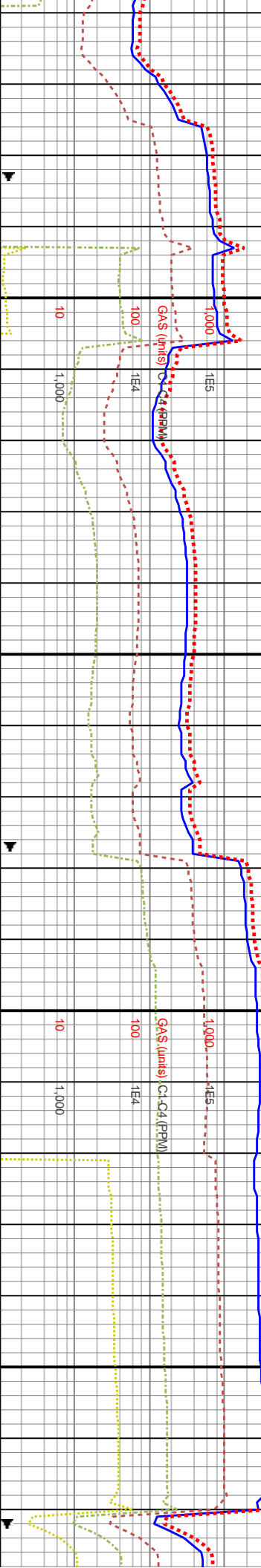




AVG BGC: 1029u

AVG BGC: 495u

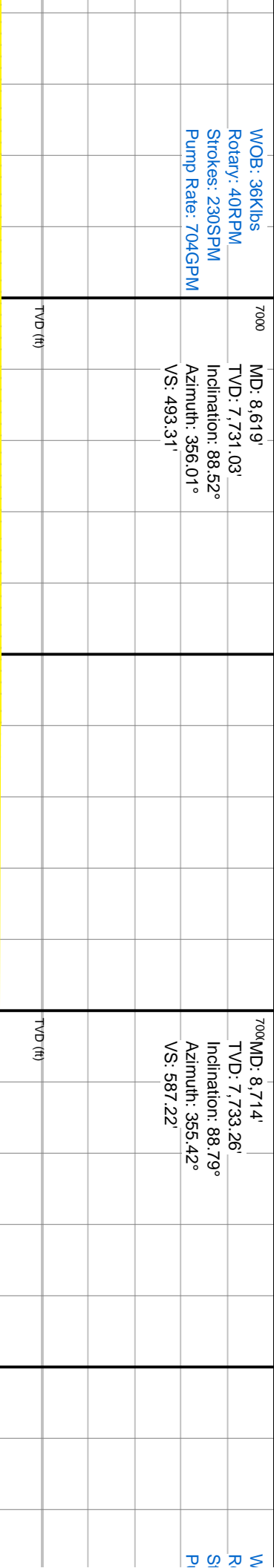
AVG BGC: 3535u



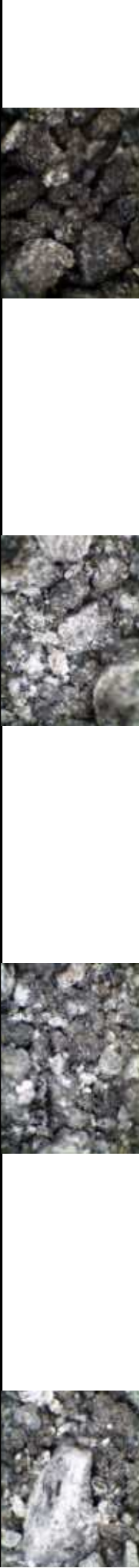
WOB: 36Klbs
Rotary: 40RPM
Strokes: 230SPM
Pump Rate: 704GPM

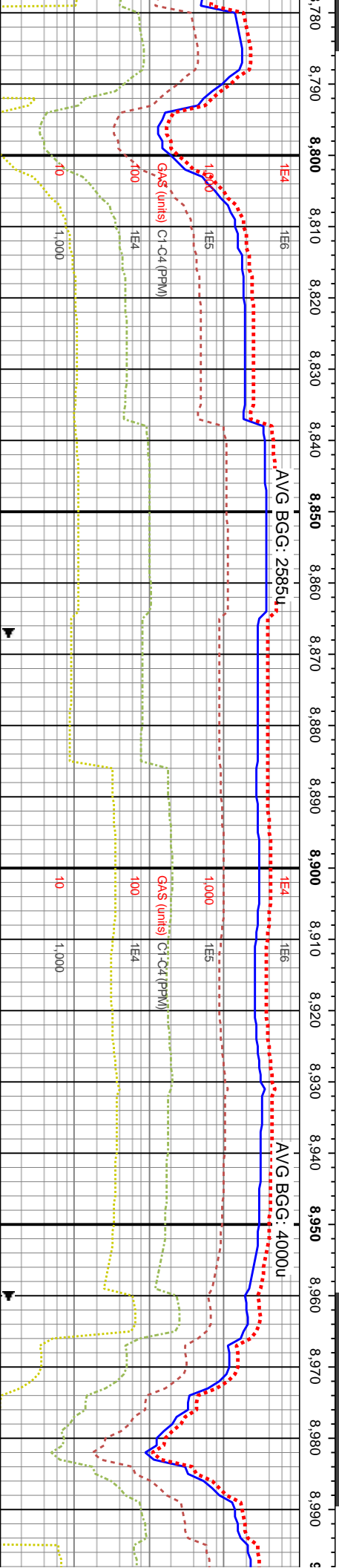
MD: 8.619'
TVD: 7.731.03'
Inclination: 88.52°
Azimuth: 356.01°
V/S: 493.31'

MD: 8.714'
TVD: 7.733.26'
Inclination: 88.79°
Azimuth: 355.42°
V/S: 587.22'



pred dk gy-dk gy brn, occ cfr-trnsf off	8600-8660 SS: off wh-v lt gy-gy-dk gy brn, occ	8660-8720 SS: cfr-trnsf off wh-v lt gy, comgy-dk	8720-8780 SS: pred trnsf gy-off wh-lt gy, occ dk gy-gy
cl f sb ang-sb rd grs, p-mod w-w strd,	clfr, p-wstrd, vf-u f sb ang-sb rd grs, sft-med frm-frm	gy-dk gy brn, p-mod w strd, vf-u f sb ang-sb rd grs,	brn-dk gy brn, pred p strd, mod strd ip, f-u f sb
& cunchy sil fri cls cons wi arg &	cls cons wi silic & dolc cmt, com arg ip, sl fri ip, rr f gn	sft-med frm-frm sl arg cls cons wi silic & dolc cmt,	ang-sb rd grs, pred gr sup cls cons wi silic & dolc
glau, tr vf pyr, mod calc	glau, tr vf pyr, mod calc	pred gr sup cls, unconsl ip, tr vf pyr, mod calc	cmt, cfr-gy-brn intbds, tr vf pyr, mod calc
8100	8100	8100	





OB: 26Klbs
Rotary: 60RPM
Strokes: 231SPM
Pump Rate: 710GPM

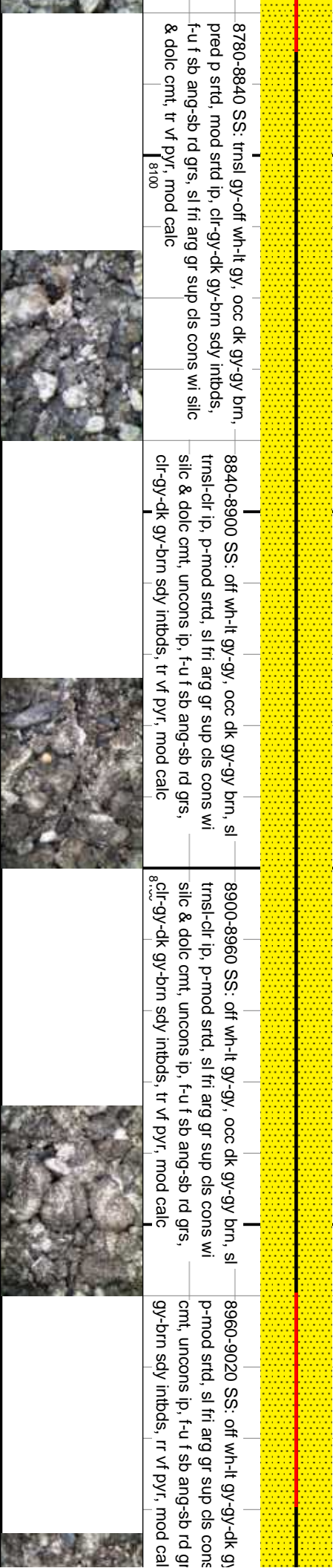
MD: 8,808'
TVD: 7,734.94'
Inclination: 89.16°
Azimuth: 358.52°
VS: 680.43'

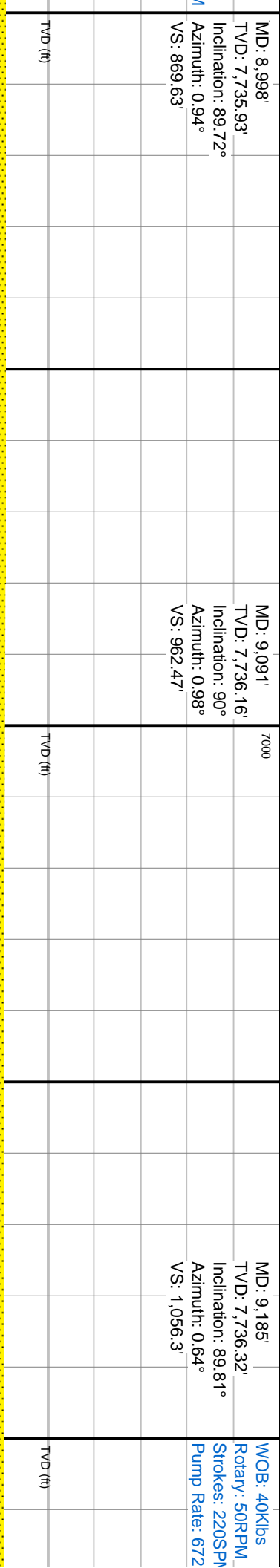
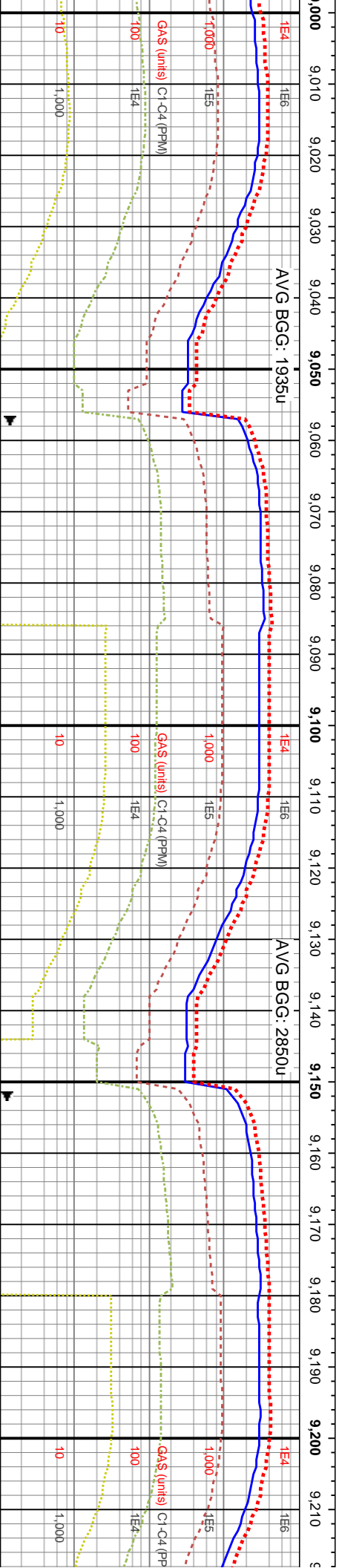
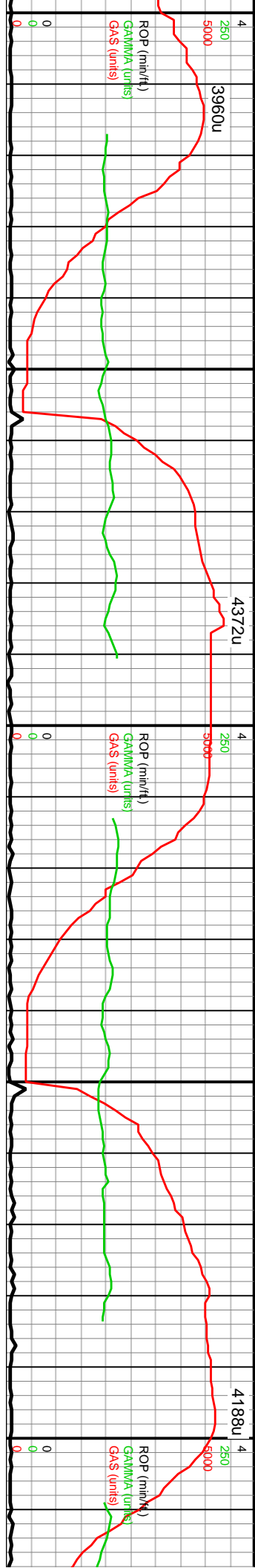
8780-8840 SS: trnsl-gy-off-wh-lt-gy, occ-dk-gy-gy-brn, pried p-srd, mod-srd ip, clr-gy-dk-gy-brn-sdy-intbds, f-u f-sb ang-sb rd-grs, sl fri arg-gr sup-cis-cons w/ silc & dolc cmt, tr vf-pyr, mod-calc

8840-8900 SS: off-wh-lt-gy-gy, occ-dk-gy-gy-brn, sl trnsl-clr-ip, p-mod-srd, sl fri arg-gr sup-cis-cons w/ silc & dolc cmt, unconsl ip, f-u f-sb ang-sb rd-grs, clr-gy-dk-gy-brn-sdy-intbds, tr vf-pyr, mod-calc

8900-8960 SS: off-wh-lt-gy-gy, occ-dk-gy-gy-brn, sl trnsl-clr-ip, p-mod-srd, sl fri arg-gr sup-cis-cons w/ silc & dolc cmt, unconsl ip, f-u f-sb ang-sb rd-grs, clr-gy-dk-gy-brn-sdy-intbds, tr vf-pyr, mod-calc

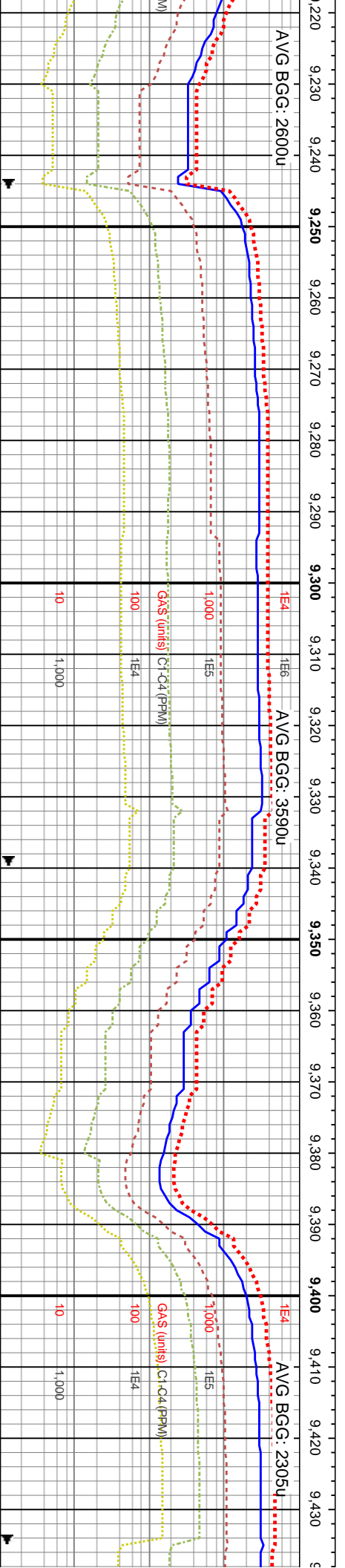
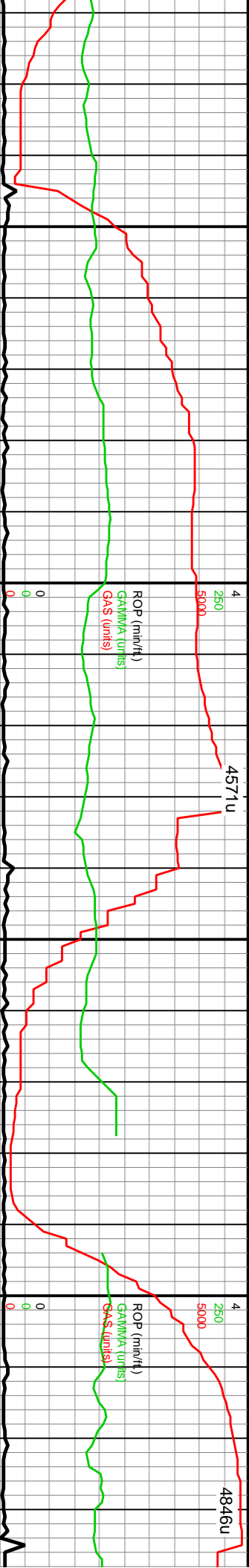
8960-9020 SS: off-wh-lt-gy-gy-dk-gy, p-mod-srd, sl fri arg-gr sup-cis-cons cmt, unconsl ip, f-u f-sb ang-sb rd-gr gy-brn-sdy-intbds, tr vf-pyr, mod-calc





MD: 8.998'		MD: 9.091'		MD: 9.185'	
TVD: 7,735.93'		TVD: 7,736.16'		TVD: 7,736.32'	
Inclination: 89.72°		Inclination: 90°		Inclination: 89.81°	
Azimuth: 0.94°		Azimuth: 0.98°		Azimuth: 0.64°	
VS: 869.63'		VS: 962.47'		VS: 1,056.3'	
TVD (ft)		TVD (ft)		TVD (ft)	
9020-9080 SS: off wh-it gy-gy-dk gy, gy brn-brn ip, p-mod strd, sl fri arg gr sup cls cons wi silic & dolc cnt, unconc ip, f-u f sb ang-sb rd grs, clr-gy-dk gy-brn sdy intbds, rr vf pyr, mod calc					
9080-9140 SS: pred dk gy, com gy, occ off wh-it gy, gy brn-brn ip, p-mod strd, sl fri gr sup cls cons wi arg & silic cnt,f-u f sb ang-sb rd grs, com dolc grs, clr-gy-dk gy-brn sdy intbds, occ vf pyr, mod calc					
9140-9200 SS: pred dk gy, com gy, occ off wh-it gy, gy brn-brn ip, p-mod strd, sl fri gr sup cls cons wi arg & silic cnt,f-u f sb ang-sb rd grs, com dolc grs, clr-gy-dk gy-brn sdy intbds, occ vf pyr, mod calc					
9200-9260 SS: gy brn-brn ip, p-mod strd, sl fri arg gr sup cls cons wi arg & silic cnt,f-u f sb ang-sb rd grs, com dolc grs, clr-gy-dk gy-brn sdy intbds, occ vf pyr, mod calc					





AVG BGG: 2600u		AVG BGG: 3590u		AVG BGG: 2305u	
MD: 9,280'		MD: 9,375'		MD: 9,440'	
TVD: 7,736.45'		TVD: 7,736.56'		TVD: 7,736.56'	
Inclination: 90.03°		Inclination: 89.84°		Inclination: 89.84°	
Azimuth: 0.34°		Azimuth: 359.46°		Azimuth: 359.46°	
VS: 1,151.09'		VS: 1,245.82'		VS: 1,245.82'	
9260-9320 SS: pred dk gy, com gy, occ off wh-lt gy, gy brn-brn ip, p-mod strd, f-u f sb ang-sb rd grs, sl fri gr sup cls cons wi arg & silc cnt, mtx sup ip, occ uncons, com dolc grs, clr-gy-dk gy-brn sdy intbds, occ vf pyr, mod calc		9320-9380 SS: pred dk gy, com gy, occ off wh-lt gy, gy brn-brn ip, p-mod strd, f-u f sb ang-sb rd grs, sl fri gr sup cls cons wi arg & silc cnt, mtx sup ip, occ uncons, com dolc grs, clr-gy-dk gy-brn sdy intbds, occ vf pyr, mod calc		9380-9440 SS: dk gy, com gy, incr off wh-lt gy, p-mod strd, f-u f sb ang-sb rd grs, sl fri gr-mix sup cls cons wi arg & silc cnt, dolc ip, occ uncons, clr-gy-dk gy-brn sdy intbds, occ vf pyr, r, pty sly cigs, mod calc	

pred dk gy, com gy, occ off wh-lt gy, mod strd, f-u f sb ang-sb rd grs, sl fri wi arg & silc cnt, com dolc grs, sdy intbds, occ vf pyr, mod calc

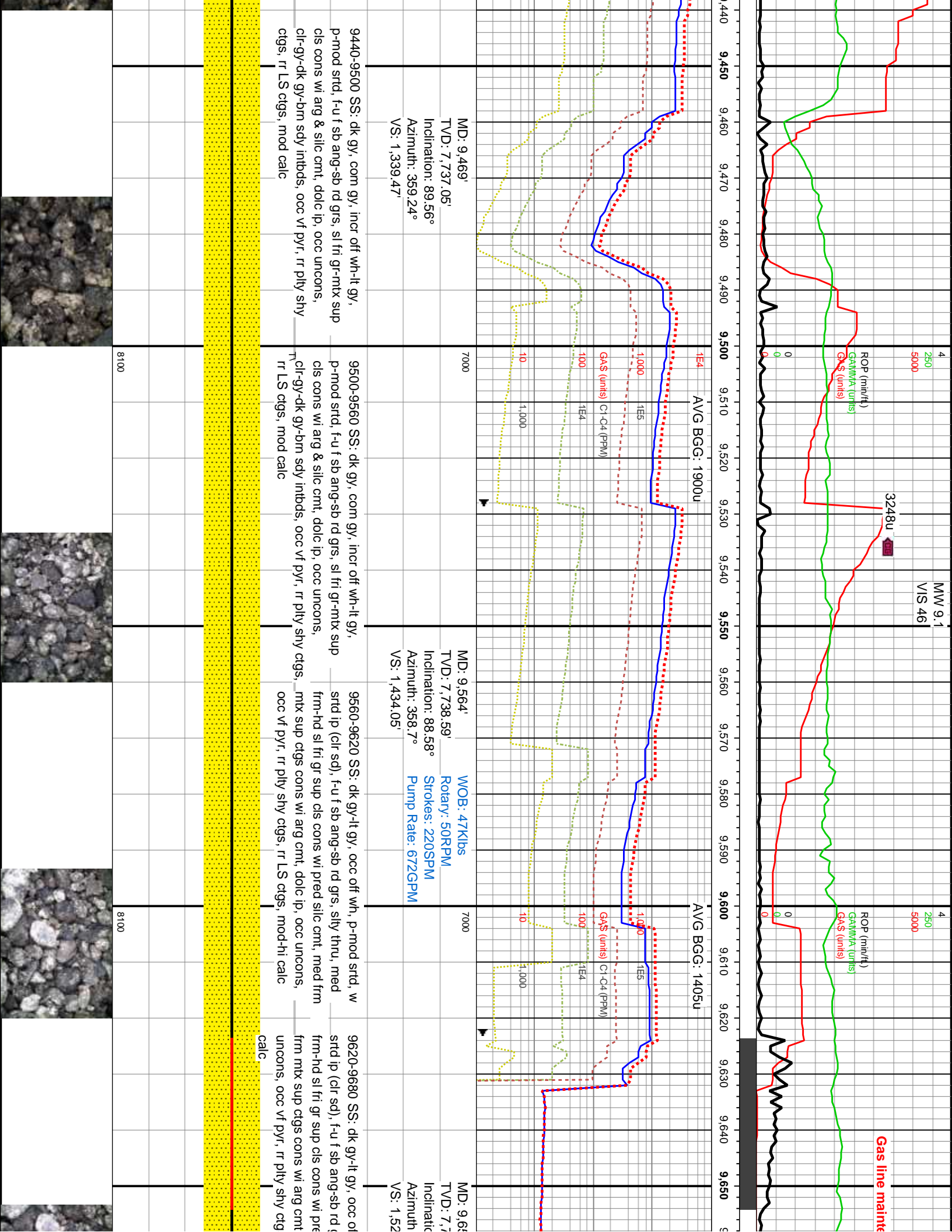
8100

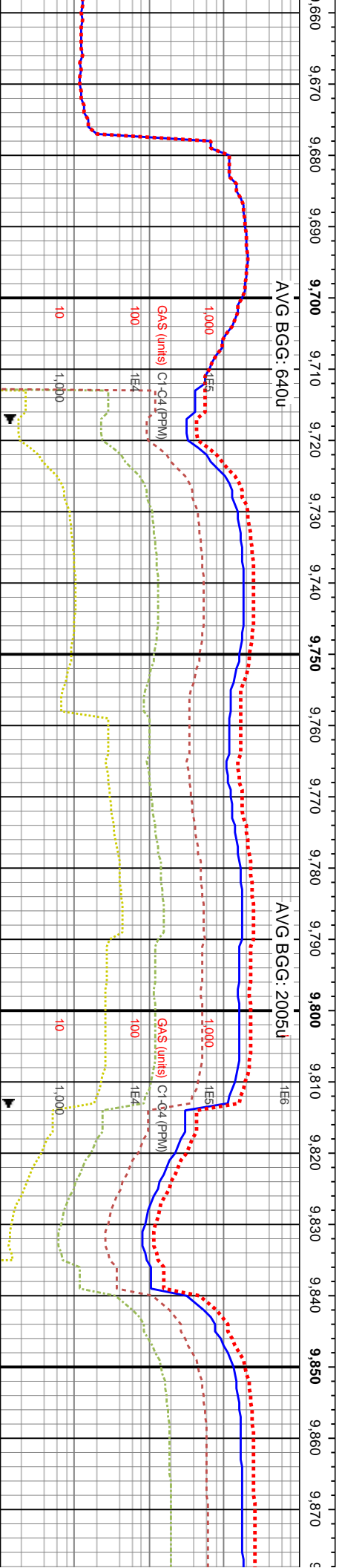
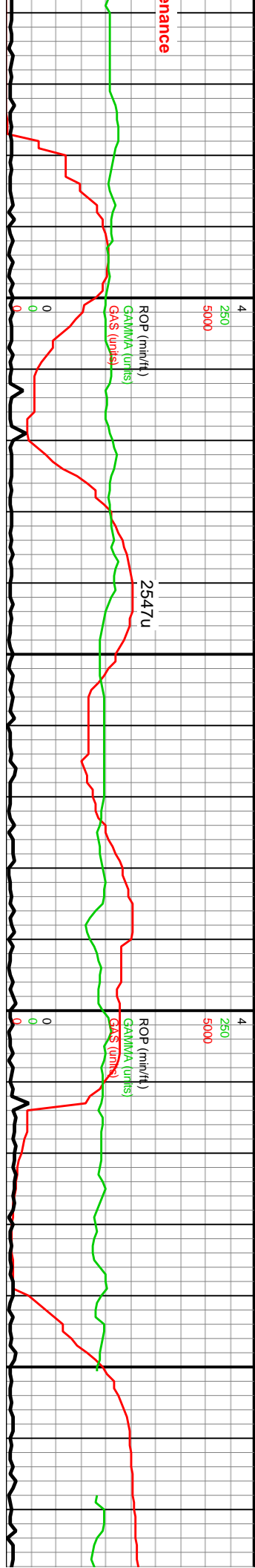
pred dk gy, com gy, occ off wh-lt gy, mod strd, f-u f sb ang-sb rd grs, sl fri wi arg & silc cnt, com dolc grs, sdy intbds, occ vf pyr, mod calc

8100

pred dk gy, com gy, occ off wh-lt gy, mod strd, f-u f sb ang-sb rd grs, sl fri wi arg & silc cnt, com dolc grs, sdy intbds, occ vf pyr, mod calc

8100





9660-9740 SS: dk gy-lt gy, occ off wh, p-mod strd, w
std ip (clr sd), f-u f sb ang-sb rd grs, silty thru, med
frm-hd sl fri gr sup cls cons wi pred silic cnt, med frm
dolg ip, occ mntx sup ctgs cons wi arg cnt, dolc ip, occ uncons, occ
s, rr LS ctgs, mod-hi vf pyr, rr ply blk shly ctgs, rr dk gy brn crpxln LS ctgs,
mod-hi calc

MD: 9.753'
TVD: 7,737.07'
Inclination: 91.56°
Azimuth: 1.36°
VS: 1,622.59'

WOB: 39Klbs
Rotary: 55RPM
Strokes: 220SPM
Pump Rate: 673GPM

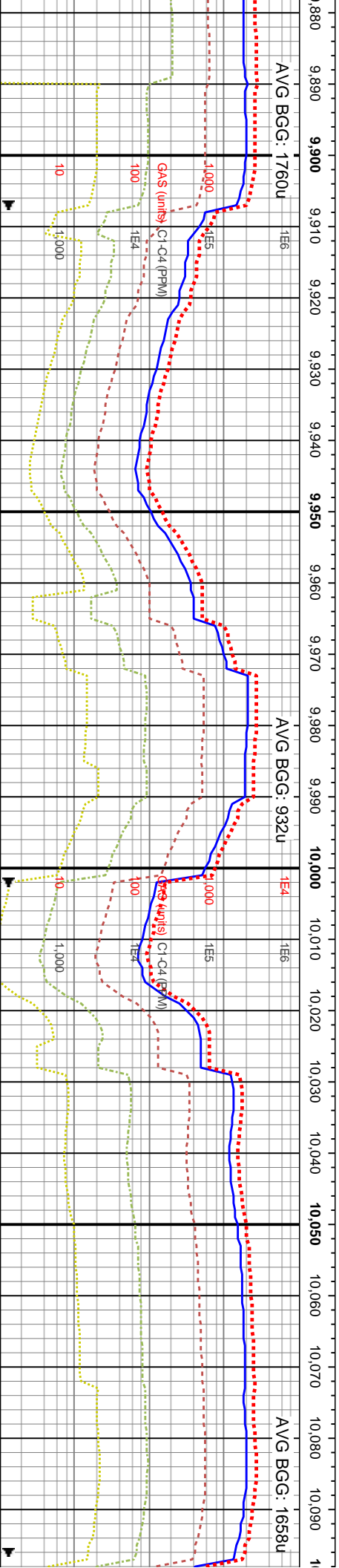
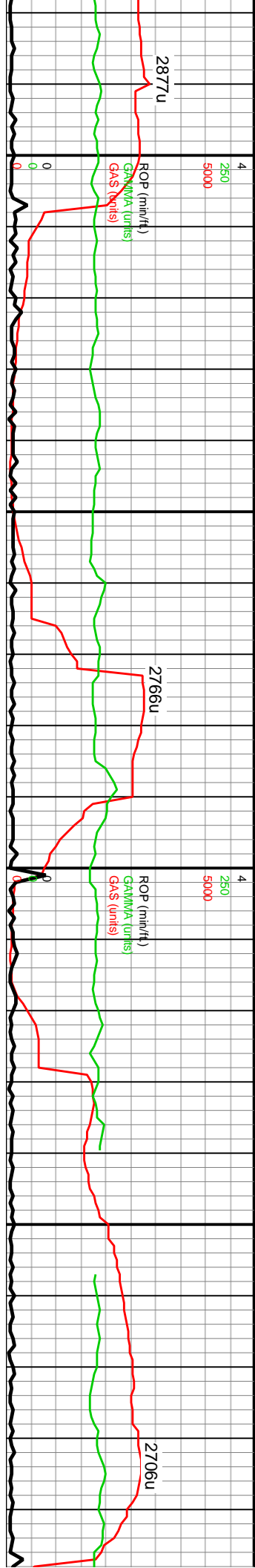
9740-9800 SS: pred dk gy-gy, occ lt gy, rr gy brn,
mod strd, f-u f sb ang-sb rd grs, silty thru, med
frm-hd sl fri gr sup cls cons wi silic & arg cnt, dolc
ip, tr uncons sd, occ vf pyr, rr ply blk shly ctgs, rr dk gy
TVD (ft)

MD: 9.848'
TVD: 7,734.33'
Inclination: 91.75°
Azimuth: 1.38°
VS: 1,717.43'

9800-9860 SS: gy-dk gy, occ lt gy, rr gy brn, mod
strd f-u f sb ang-sb rd grs, silty thru, med frm-hd sl
fri gr sup cls cons wi silic & arg cnt, dolc ip, tr
uncons sd, occ vf pyr, mod calc

9860-9920 SS:
f-u f sb ang-sb
sup cls cons wi
occ vf pyr, mod

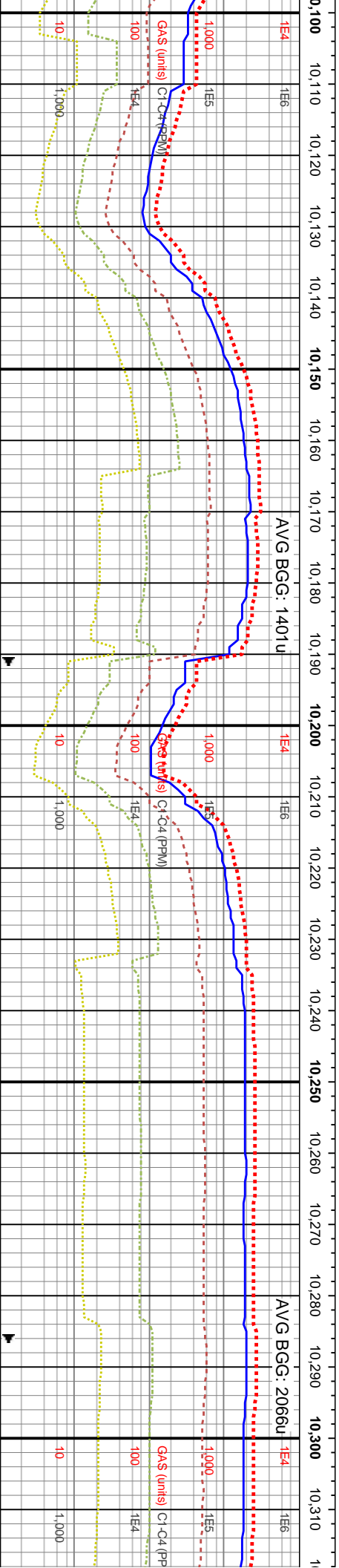
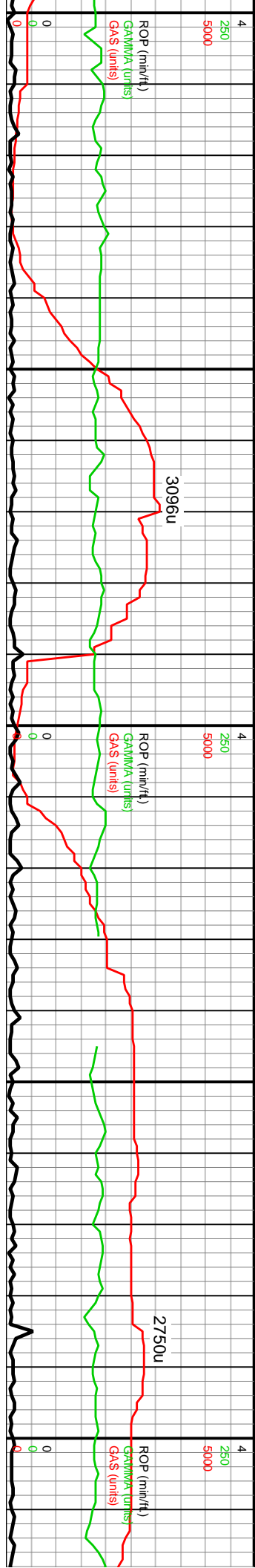




7000	MD: 9,943' TVD: 7,731.88' Inclination: 91.2° Azimuth: 0.21° VS: 1,812.22'	WOB: 15Klbs Rotary: 40RPM Strokes: 220SPM Pump Rate: 673GPM	7000	MD: 10,038' TVD: 7,730.59' Inclination: 90.36° Azimuth: 358.68° VS: 1,906.87'
TVD (ft)			TVD (ft)	

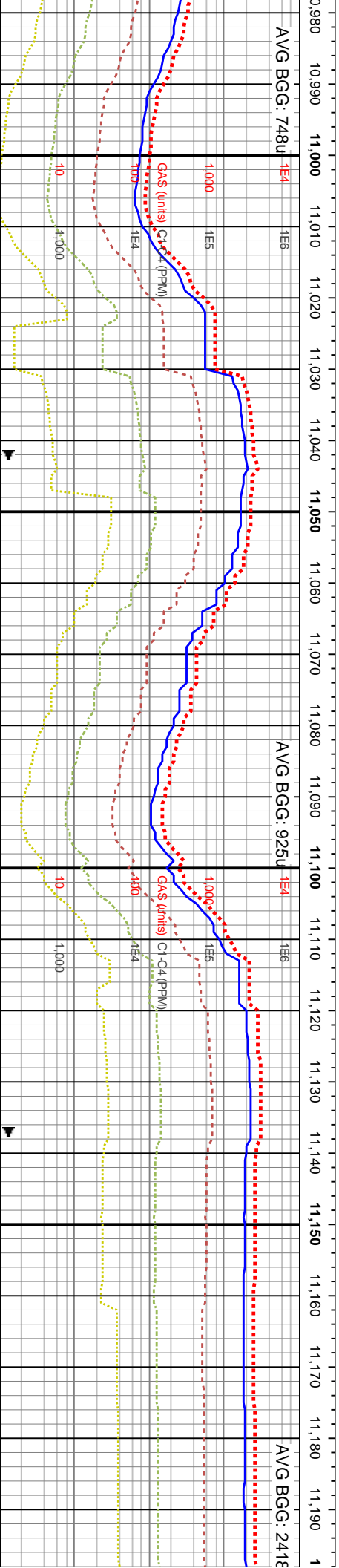
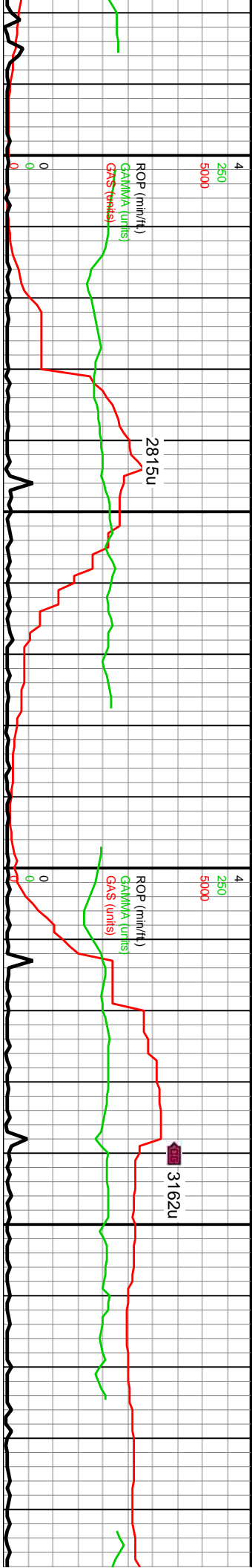
gy-dk gy, occ lt gy, rr gy brn, mod srted grs, silty thru, med frm-hd sl fri gr silc & arg cnt, dolc ip, tr uncons sd, calc	9920-9980 SS: gy-dk gy, occ lt gy, rr gy brn, mod srted f-u f sb ang-sb rd grs, silty thru, med frm-hd sl fri gr sup cls cons wi silc & arg cnt, dolc ip, incr uncons sd, occ vf pyr, mod calc	9980-10040 SS: pred lt gy-gy, occ dk gy, com clr uncons sd, p-mod srted frm fri cls, vf-u f sb ang-rd grs, occ frm-hd gr sup cls cons wi pred silc cnt, arg & dolc ip, mod calc	10040-10100 SS: pred lt gy-gy, occ dk gy, com clr uncons sd, p-mod srted frm fri cls, vf-u f sb ang-rd grs, occ frm-hd gr sup cls cons wi pred silc cnt, arg & dolc ip, mod calc
8100			





7000	MD: 10,132' TVD: 7,730.1' Inclination: 90.24° Azimuth: 358.17° VS: 2,000.38'	WOB: 37Klbs Rotary: 40RPM Strokes: 220SPM Pump Rate: 673GPM	7000	MD: 10,226' TVD: 7,730.26' Inclination: 89.56° Azimuth: 357.58° VS: 2,093.79'	7000	MD: 10,280' TVD: 7,730.26' Inclination: 89.56° Azimuth: 357.58° VS: 2,093.79'
TVD (ft)			TVD (ft)			TVD (ft)

10100-10160 SS: pred lt gy-gy, occ dk gy, com clr uncons sd, p-mod strd frm fri cls, vf-u f sb ang-rd grs, occ frm-hd gr sup cls cons wi pred silc cnt, arg & dolc ip, occ-rr dk silst strg, mod calc	10160-10220 SS: pred lt gy-gy, occ dk gy, occ clr uncons sd, p-mod strd, vf-u f sb ang-rd grs, pred frm sil fri gr sup cls cons wi silc & com dolc cnt, arg ip, occ-rr dk silst strg, mod calc	10220-10280 SS: lt gy-gy-dk gy, occ clr uncons sd, p-mod strd, vf-u f sb ang-rd grs, pred frm sil fri gr sup cls cons wi silc & com dolc cnt, arg ip, occ-rr dk silst strg, mod-hi calc	10280-10340 SS: lt gy-gy-dk sd, p-mod strd, vf-u f sb ang-rd grs, pred frm sil fri gr sup cls cons wi silc & com dolc cnt, arg ip, occ-rr dk silst strg, mod-hi calc

[illegible]



MD: 11,268'
TVD: 7,723.84'
Inclination: 90.95°
Azimuth: 1.5°
VS: 3,133.81'

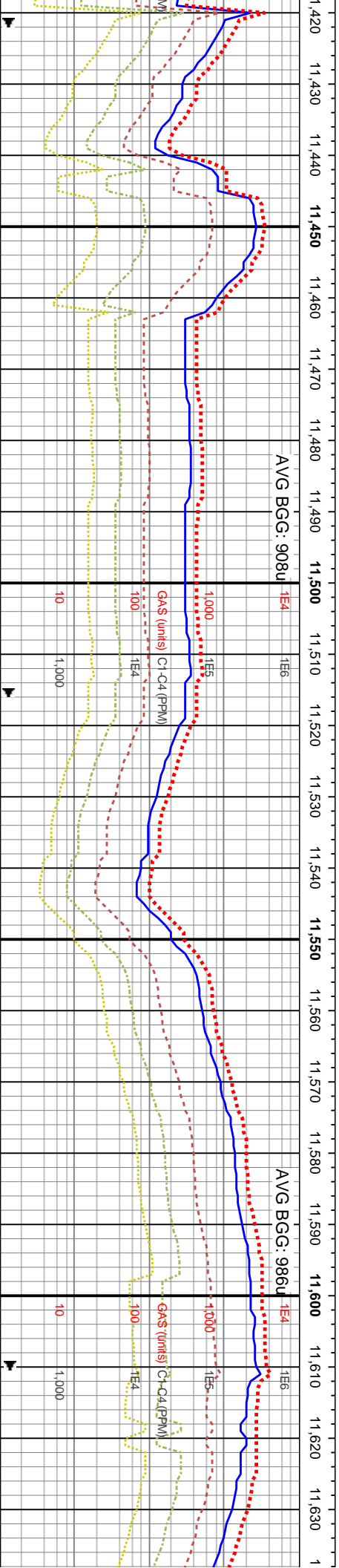
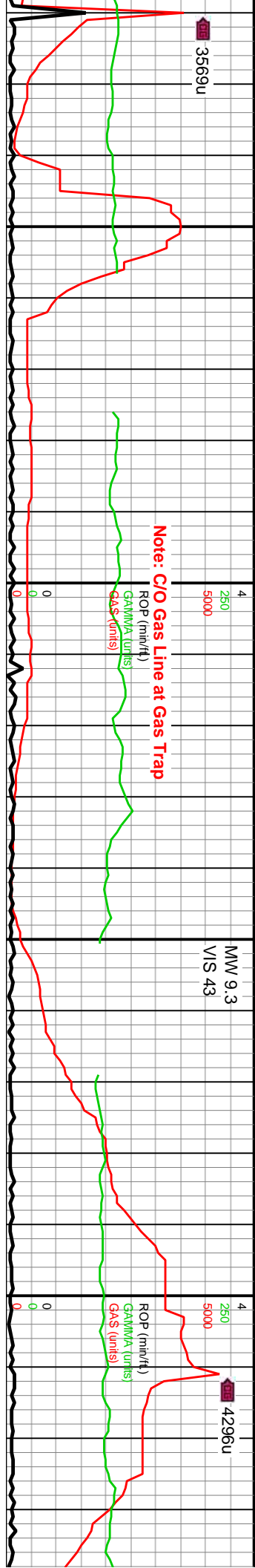
MD: 11,362'
TVD: 7,723.95'
Inclination: 88.92
Azimuth: 359.85
VS: 3,227.61'



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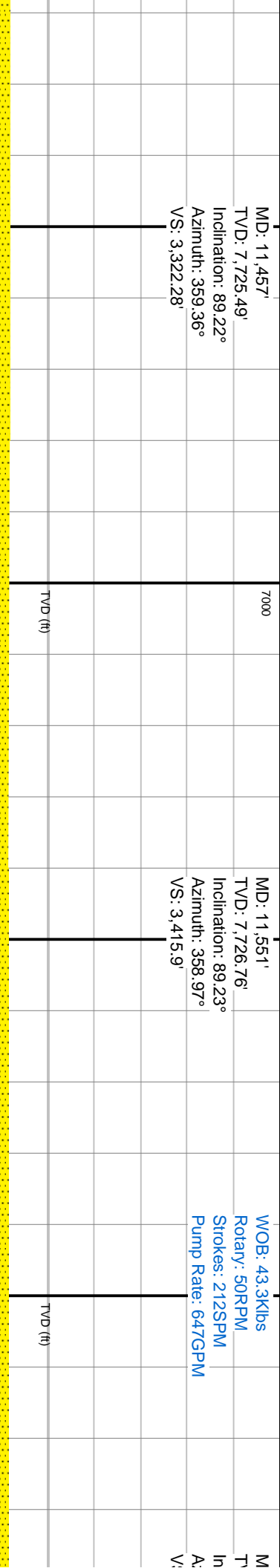




MD: 11,457'
TVD: 7,725.49'
Inclination: 89.22°
Azimuth: 359.36°
VS: 3,322.28'

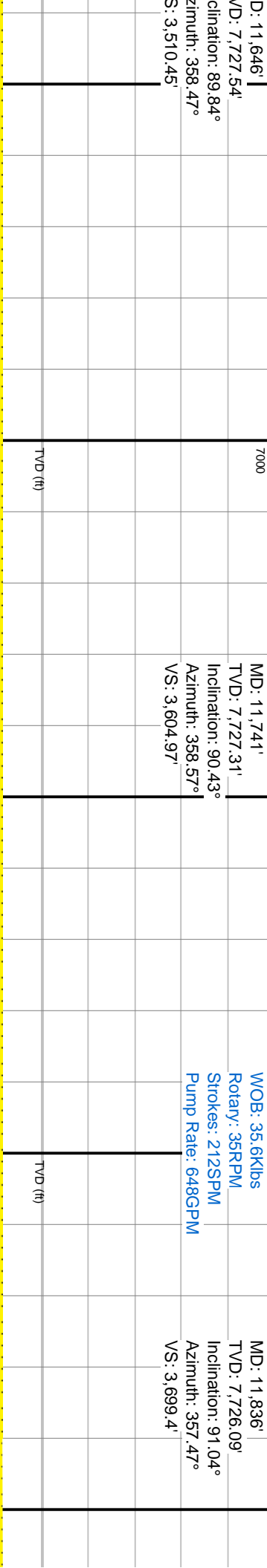
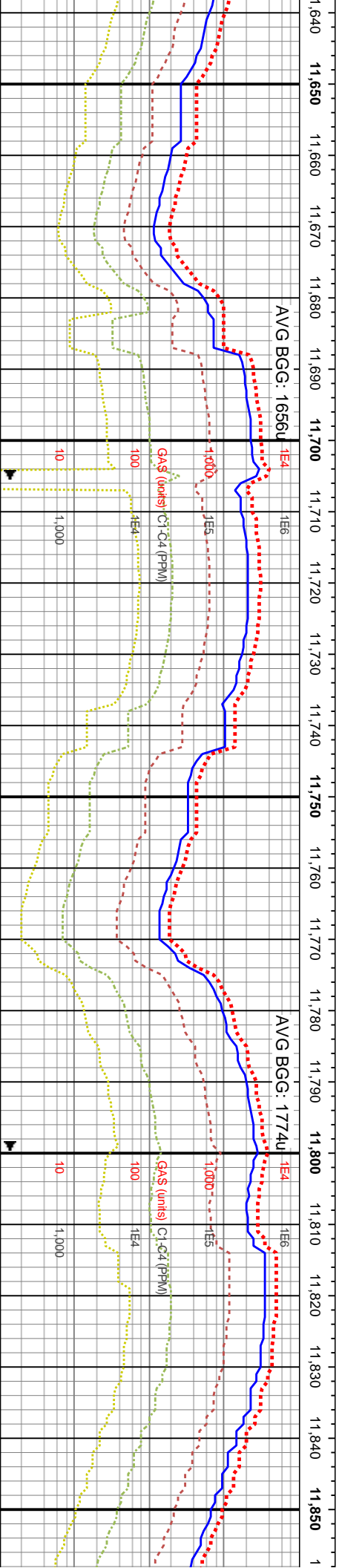
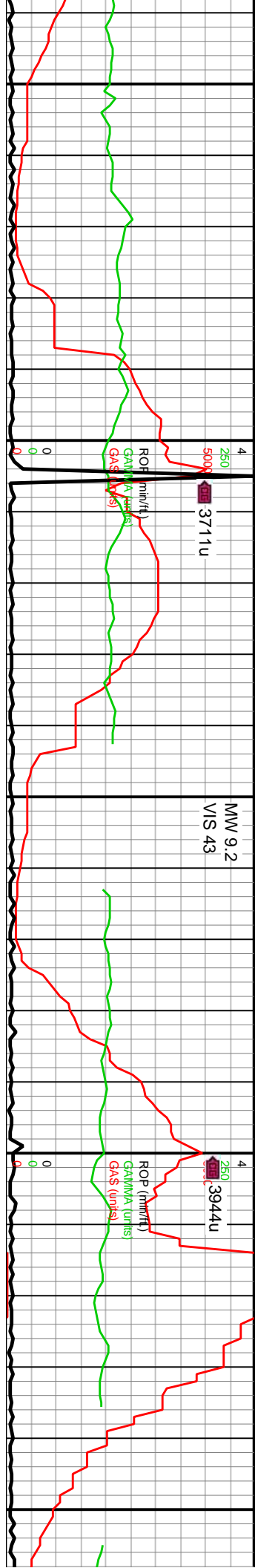
MD: 11,551'
TVD: 7,726.76'
Inclination: 89.23°
Azimuth: 358.97°
VS: 3,415.9'

WOB: 43.3klbs
Rotary: 50RPM
Strokes: 212SPM
Pump Rate: 647GPM

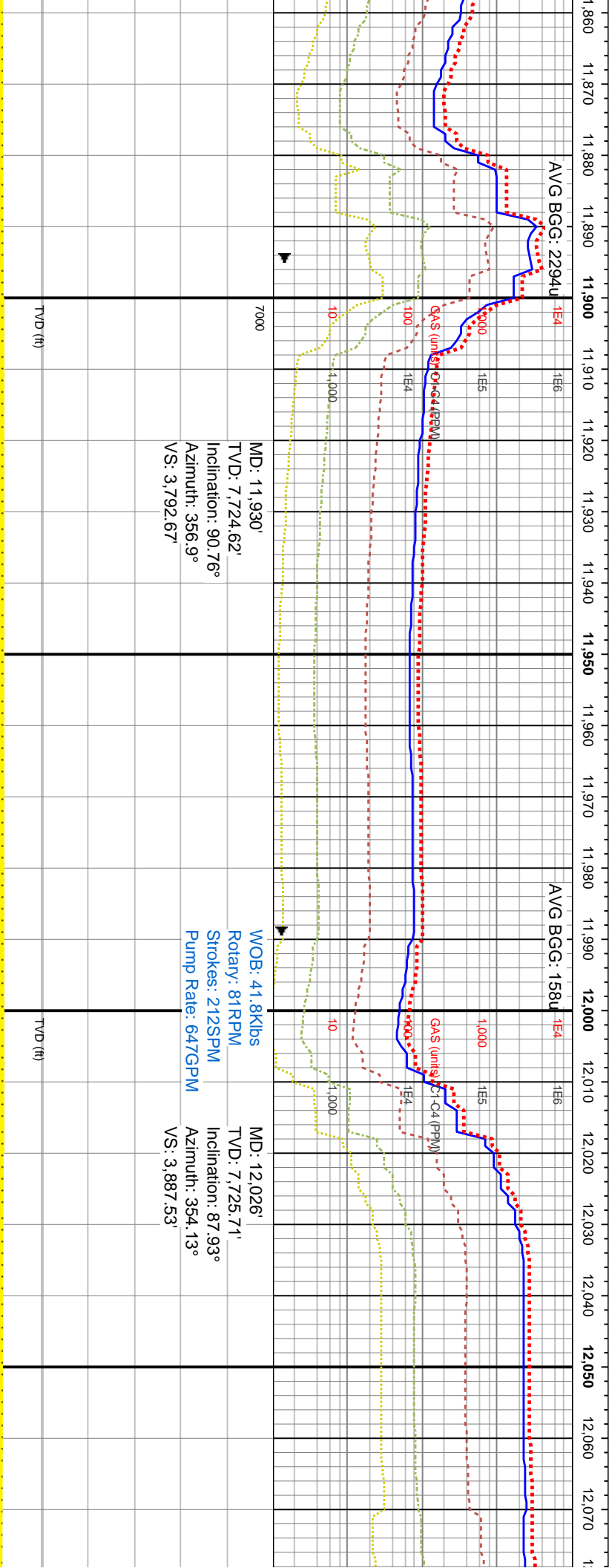
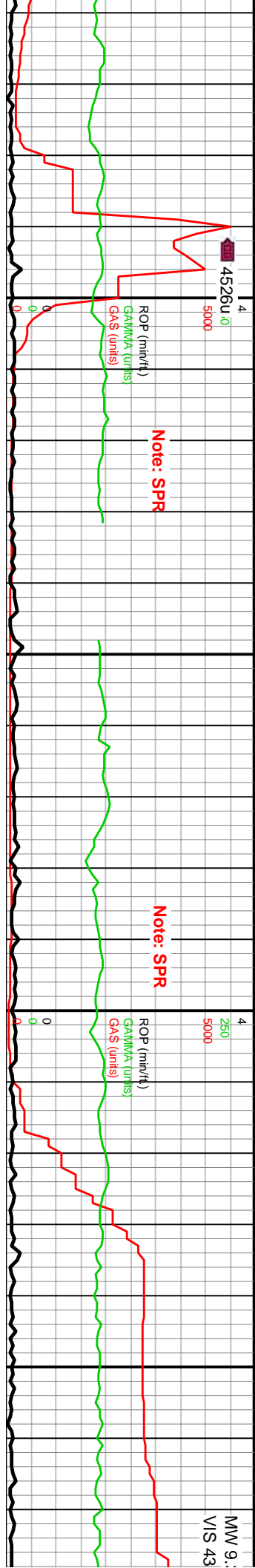


11420-11480 SS: dk gy-med gysbhn, offwht-lt brn, vf-f grs, mod strd, sl fri-hrd, pred sb ang-sb rd, clr abnt unconss sd, gr sup cls, cons wi arg/silic cnt, dul yelgn flor, mod mky cut, mod yelgn resdl ring	11480-11540 SS: med gy-gysbhn, dk gysbhn, clr-op, mod strd, pred sb ang-sb rd, vf-f grs, fri gr sup cls, cons wi arg/silic cnt, sl calc, dul yelgn flor, mod mky cut, mod yelgn resdl ring	11540-11600 SS: pred gysbhn-med gy, occ clr grs, mod strd, sb ang-sb rd, vf-uf grs, sb ang qtz grs thru, p-mod cntld, fri gr sup cls, cons wi arg-silic cnt, sl calc ip, dul yelgn flor, mod mky cut, mod yelgn resdl ring	11600-11660 SS: gysbhn-r-f vf-f grs, mod strd, pred sb ang-silic cnt, fri gr sup cls, s flor, mod mky cut, mod yelgn resdl ring
8100	8100	8100	8100

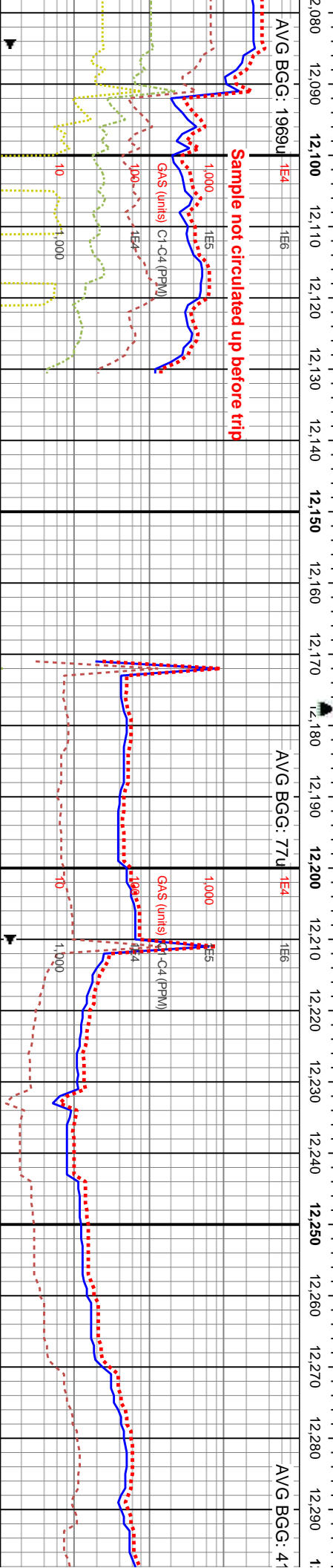
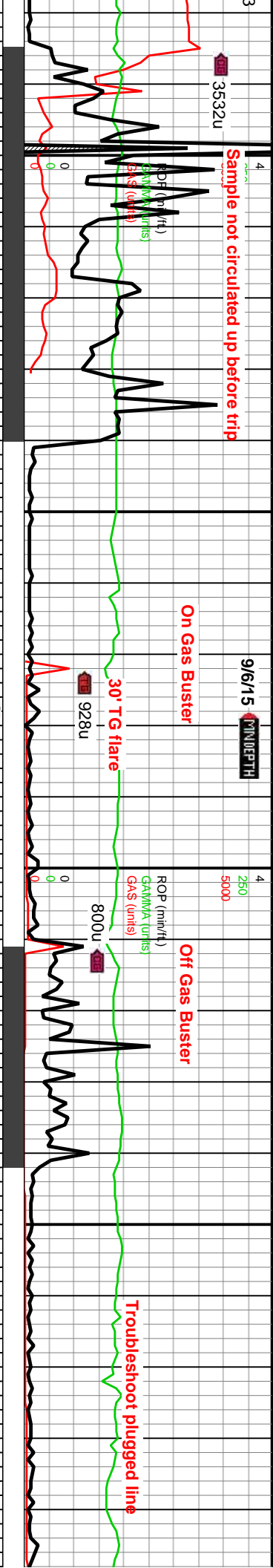




med gy, dk gy/shbn, ang-sb rd, cons wi l calc, dul yelgn resd ring	11660-11720 SS: pred med gy-gy/shbn, dk gy, sb ang-sb rd, vf-f grs, occ op-clr grs, mod strd, mod w cntd, gr sup cls, cons wi arg-silc cnt, sl calc, dul yelgn flr, mod mky cut, mod yelgn resd ring	11720-11780 SS: pred med gy-gy/shbn, trmsl grs thru, vf-uf grs, sb ang-sb rd, mod w strd, sb ang-sb rd grs, fri gr sup cls, cons wi arg-silc cnt, sl calc, dul yelgn flr, mod mky cut, mod yelgn resd ring	11780-11840 SS: pred lt gy-gy/shbn, med gy, trmsl grs thru, vf-uf grs, mod strd, sb ang-sb rd, fri gr sup cls, cons wi arg-silc cnt, sl calc ip, dul yelgn flr, mod mky cut, mod yelgn resd ring	11840-11840-1 clt-op lvs, strd, gr s, pred nor, mod yel
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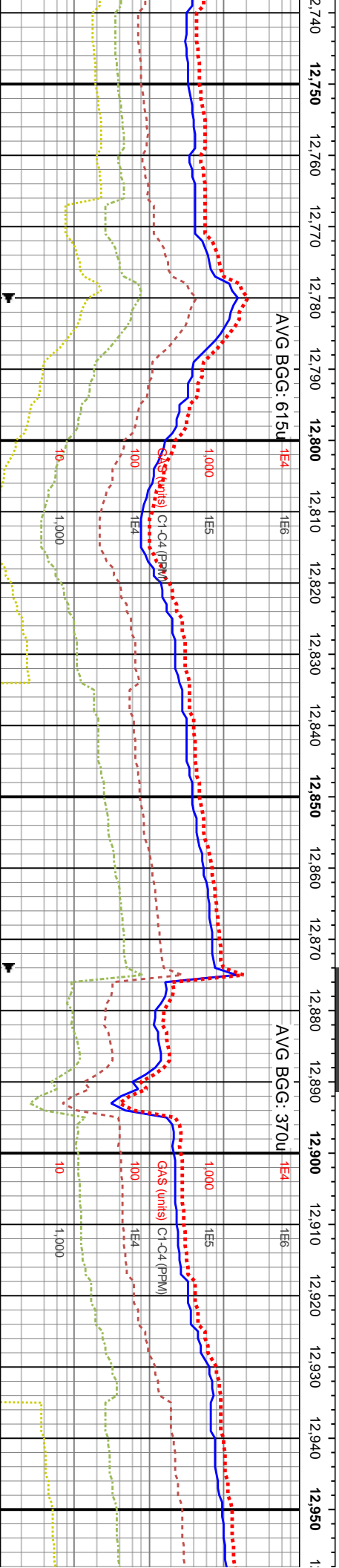
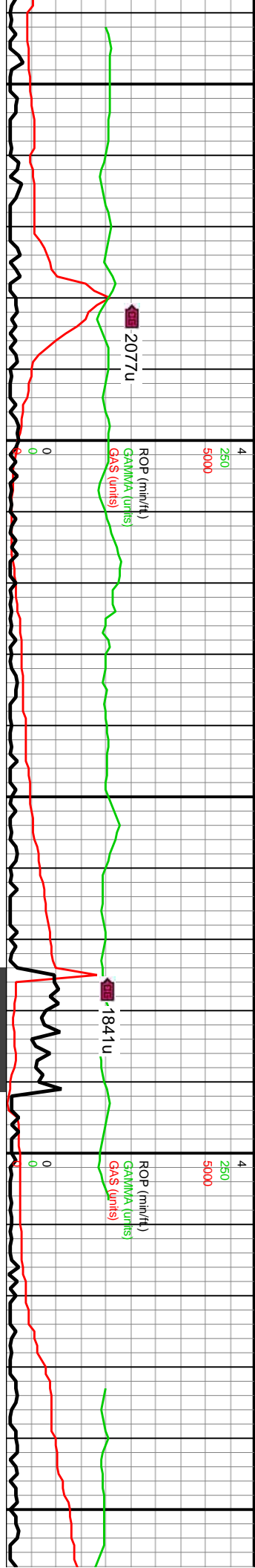


11900 SS: lt gy-gyshbn, med gy, abnt e grs, pred sb ang-sb rd, vf-f grs, mod sup cfs, cons wi arg/silic cmt, tr pyr, n-si calc, dul yelgn flor, mod mky cut, mky resdl ring	11900-11960 SS: predy med gy-gyshbn, lt gy-offwht, sb ang-sb rd, vf-f grs, mod srt, op grs thru, com lse grs, sl calc ip, sl hrd gr sup cfs, cons wi arg/silic cmt, dul yelgn flor, mod mky cut, mod yelgn resdl ring	11960-12020 SS: gyshbn-med gy, lt gy, vf-f grs, pred sb ang-sb rd, mod srt, fri gr sup cfs, cons wi arg/silic cmt, sl calc, dul yelgn flor, mod mky cut, mod yelgn resdl ring	12020-12080 SS: pred med gy-gyshbn, vf-f grs, sb ang-sb rd, gr sup cfs, cons wi arg/silic cmt, mod srt, sme uncons ang-sb ang qtz grns, mod srt, dul yelgn flor, mod mky cut, mod yelgn resdl ring



7000	MD: 12,121' TVD: 7,727.61' Inclination: 89.78° Azimuth: 355.57° VS: 3,981.22'	MD: 12,152' TVD: 7,727.33' Inclination: 91.26° Azimuth: 356.62° VS: 4,011.9'	NW @ 12,180'	WOB: 34klbs Rotary: 50RPM Strokes: 180SPM Pump Rate: 550GPM	MD: 12,246' TVD: 7,725.31' Inclination: 91.2° Azimuth: 357.07° VS: 4,105.09'
Sample not circulated up before trip			Note: TOH for New Bit and Motor		
TVD (ft)	Type: E516-B27 Size: 7.88 Depth In: 12,174' Depth Out: 12,495' Hours: 1.7 hrs Avg Ft/Hr: 188.8 'hr Jets: 7x10 S/N: A196175			TVD (ft)	
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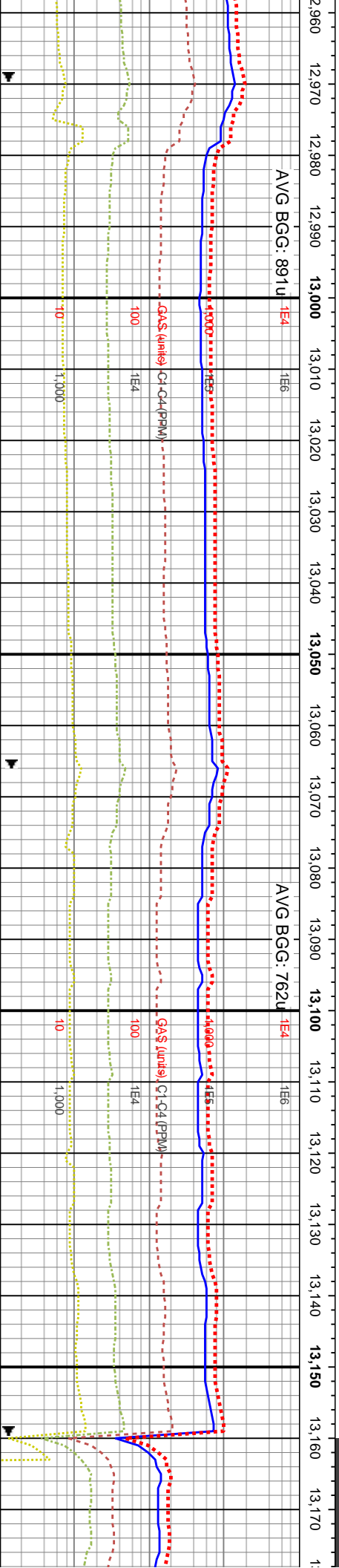
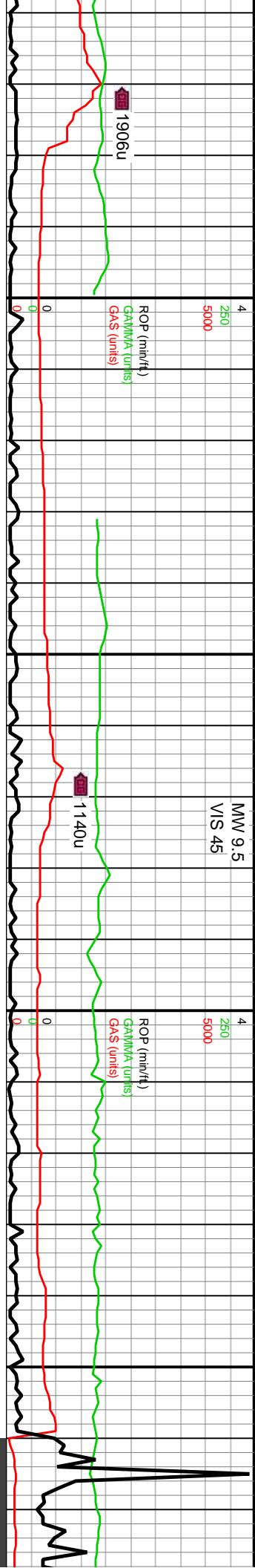


WOB: 29.7Klbs '000
Rotary: 60RPM
Strokes: 180SPM
Pump Rate: 551GPM
MD: 12.815'
TVD: 7,719.82'
Inclination: 92.64°
Azimuth: 2.46°
VS: 4,672.03'

MD: 12.911'
TVD: 7,716.62'
Inclination: 91.17°
Azimuth: 2.61°
VS: 4,767.93'

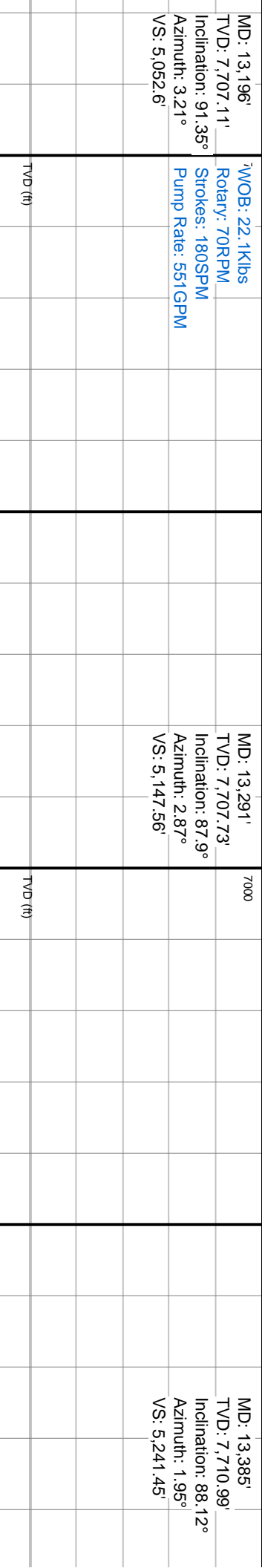
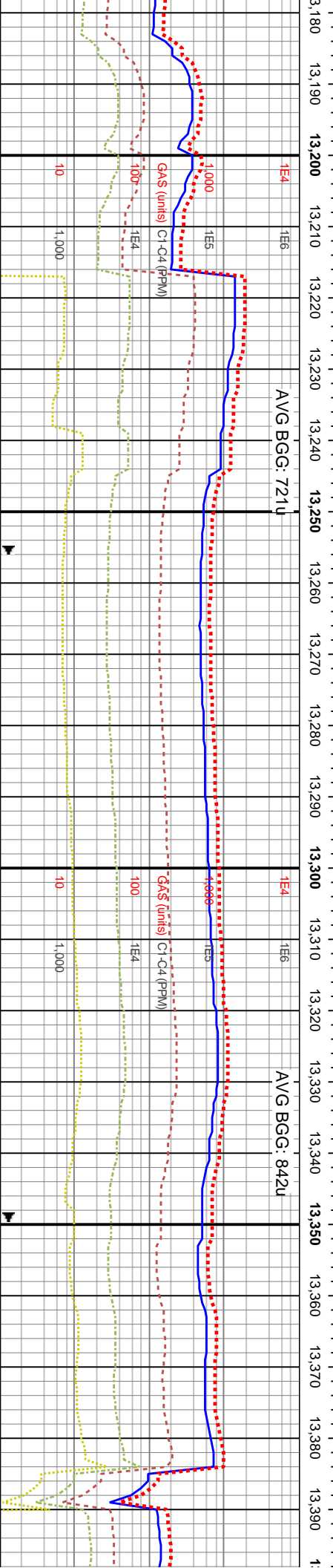
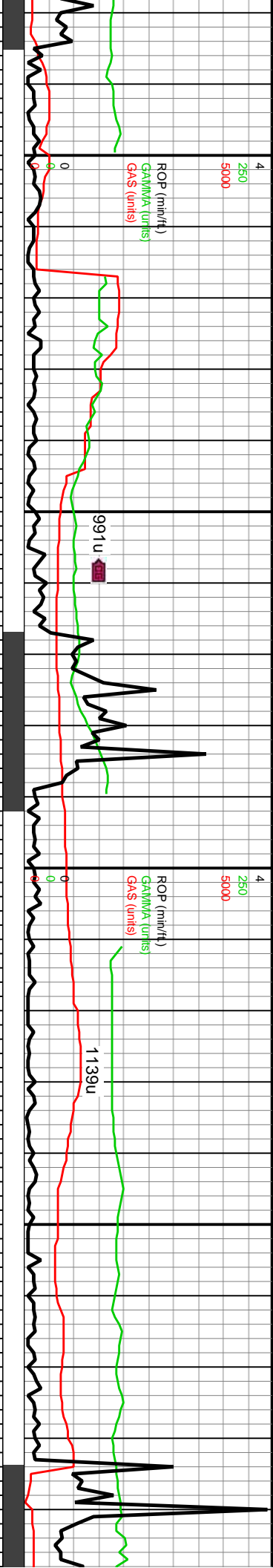
12780 SS: med gy-gyshbn, lt brn clus, b ang-sb rd, mod strd, frm-sl fri, cons cmt, abnt lse f sb ang qtz grs, gr pred non-sl calc, dul yelgn flor, mod mod yelgn resdl ring	12780-12840 SS: priedy med gy-gyshbn, lt gy, op grs thru, vř-uf grs, sb ang-sb rd, mod strd, cons wi arg-silic cmt, com lse grs, sl calc ip, fri gr sup cls, dul yelgn flor, mod mky cut, mod yelgn resdl ring	12840-12900 SS: pried med gy, occly gyshbn, trnsł grs thru, vř-uf grs, mod w strd, sb ang-sb rd, sb ang-sb rd grs, cons wi arg-silic cmt, sl calc, fri gr sup cls, dul yelgn flor, mod mky cut, mod yelgn resdl ring	12900-12960 SS: pried med gy-gyshbn, lt gy, clr grs, sb ang-sb rd, mod w strd, ang-sb rd grs, vř-uf grs, uncongs grs, fri gr sup cls, cons wi arg-silic cmt, sl calc ip, dul yelgn flor, mod mky cut, mod yelgn resdl ring
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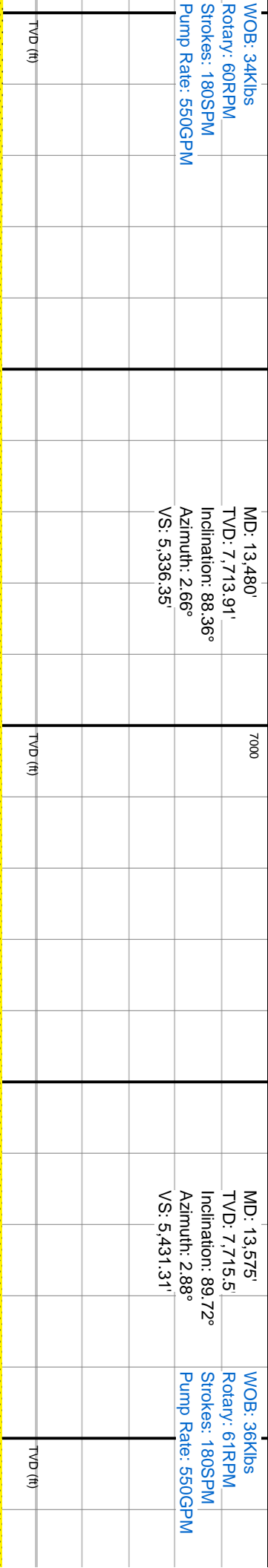
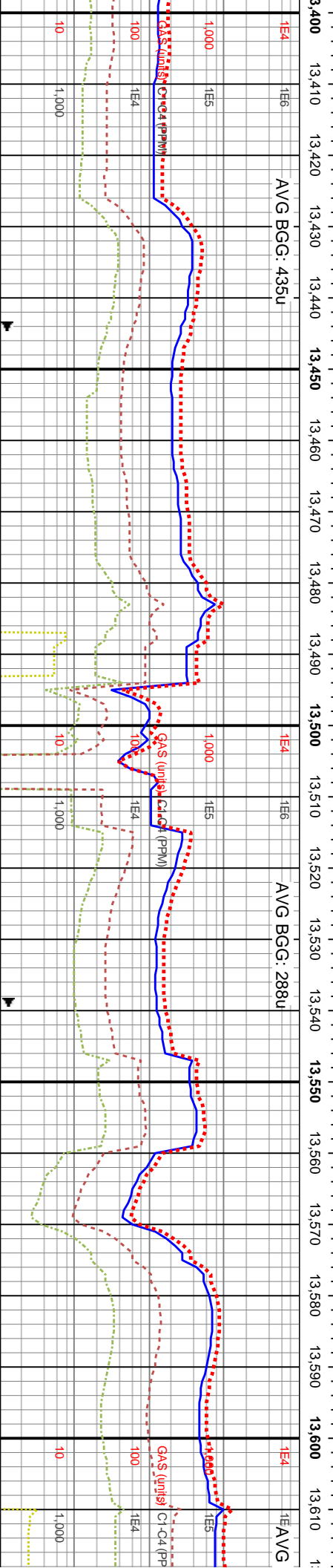
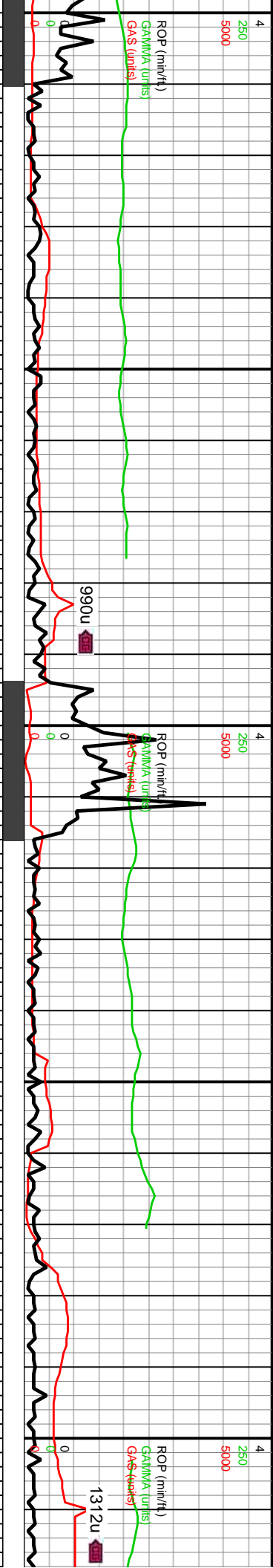
WOB: 34.4Klbs Rotary: 60RPM Strokes: 180SPM Pump Rate: 550GPM	7MD: 13,006'	TVD (ft)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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12960-13020 SS: pred med gy-gyshbn, offwht-lt gy, vf-f grs, pred sb ang-sb rd, mod strd, cons wi arg-silic cmt, sme sl calc, com lse grs, dul yelgn flor, mod mky cut, mod yelgn resdl ring	13020-13080 SS: predy med gy-gyshbn, lt gy, op grs thru, vf-uf grs, sb ang-sb rd, mod strd, cons wi arg/silic cmt, com lse grs, sl calc ip, fri gr sup cls, dul yelgn flor, mod mky cut, mod yelgn resdl ring	13080-13140 SS: pred med gy-gyshbn, dk gy brn, trns, vf-uf grs, sb ang-sb rd, p strd, sb ang qtz grs, hrd-sl fri, sl calc, gr sup cls, cons wi arg/silic cmt, dul yelgn flor, mod mky cut, mod yelgn resdl ring	13140-13200 SS: pred lt gy, gy, com off wh dolc cmt ip, grs, sb ang-sb rd-rd grs, firm plus cons wi silic cmt, arg &
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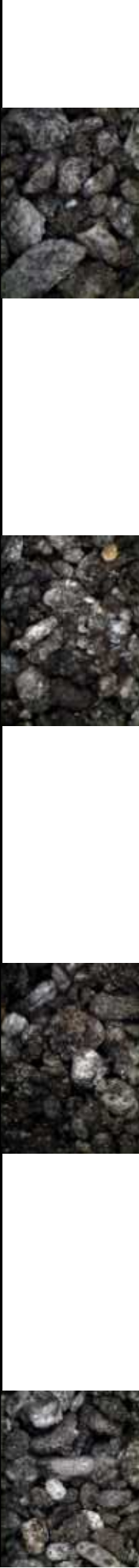


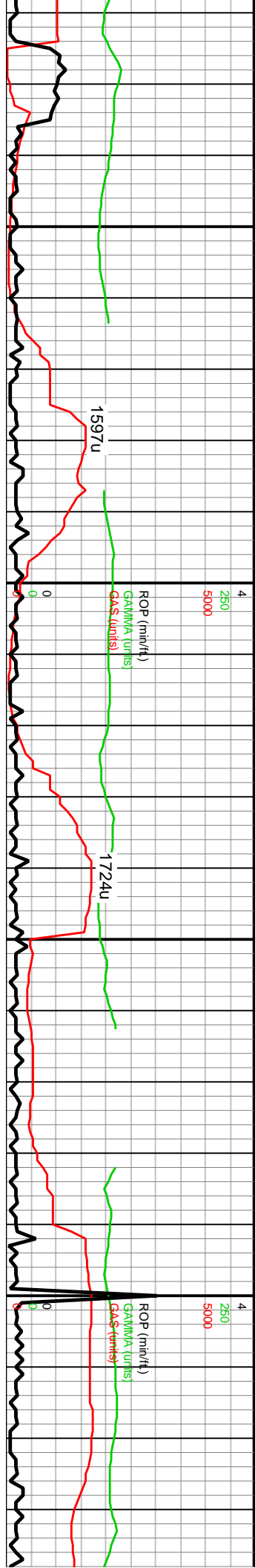
MD: 13.196' TVD: 7,707.11' Inclination: 91.35° Azimuth: 3.21° VS: 5,052.6'	WOB: 22.1Klbs Rotary: 70RPM Strokes: 180SPM Pump Rate: 551GPM	MD: 13.291' TVD: 7,707.73' Inclination: 87.9° Azimuth: 2.87° VS: 5,147.56'	MD: 13.385' TVD: 7,710.99' Inclination: 88.12° Azimuth: 1.95° VS: 5,241.45'
13200-13260 SS: lt gy-lt gy brn-gy-occ dk gy, com off wh dolc cnt ip, p-mod strd vf-u f sb ang-sb rd-rdgrs, frm-hd sil fri clus cons wi pred silc cnt, arg ip, tr gn glau, tr vf pyr, sl-hi calc	13260-13320 SS: pred gy, lt gy-lt gy brn-gy-occ dk gy, occ clr-off wh,p-mod strd vf-u f grs grdg down to silt, sb ang-sb rd-rd grs, frm-hd sb rd-rd sil fri clus cons wi silc cnt, arg & silty thru, occ off wh dolc ip, sl-hi calc	13320-13380 SS: gy-com lt gy-lt gy brn-gy-occ dk gy, occ clr-off wh, p-mod strd vf-u f grs grdg down to silt, sb ang-sb rd-rd grs, frm-hd sb rd-rd sil fri clus cons wi silc cnt, arg & silty thru, occ off wh dolc ip, sl-hi calc	13380-13440 SS: clr-off wh, p-mod strd vf-u f grs grdg down to silt, sb ang-sb rd-rd grs, frm-hd sb rd-rd sil fri clus cons wi silc cnt, arg & silty thru, occ off wh dolc ip, sl-hi calc





13440-13440 SS: gy-lt gy-lt gy bm, occ dk gy	13440-13500 SS: pred gy, lt gy-lt gy bm-gy-occ dk gy, occ cl-off wh, p-mod strd vf-u f grs grdg down to silt, sb ang-sb rd-rd grs, frm-hd sb rd-rd sli fri clus cons wi silic cnt, arg & stly thru, occ off wh dolc ip, tr gn glauc, sl-hi calc	13500-13560 SS: gy-lt gy-lt gy bm, occ dk gy cl-off wh wi dolc strg, p-mod strd sb ang-sb rd-rd grs, vf-u f grs grdg down to silt, frm-hd sb rd-rd sli fri clus cons wi silic cnt, arg & stly thru, tr gn glauc, sl-hi calc	13560-13620 SS: pred gy, lt gy-lt gy bm-gy-occ dk gy, occ cl-off wh, p-mod strd vf-u f grs grdg down to silt, sb ang-sb rd-rd grs, frm-hd sb rd-rd sli fri clus cons wi silic cnt, arg & stly thru, occ off wh dolc ip, tr gn glauc, sl-hi calc
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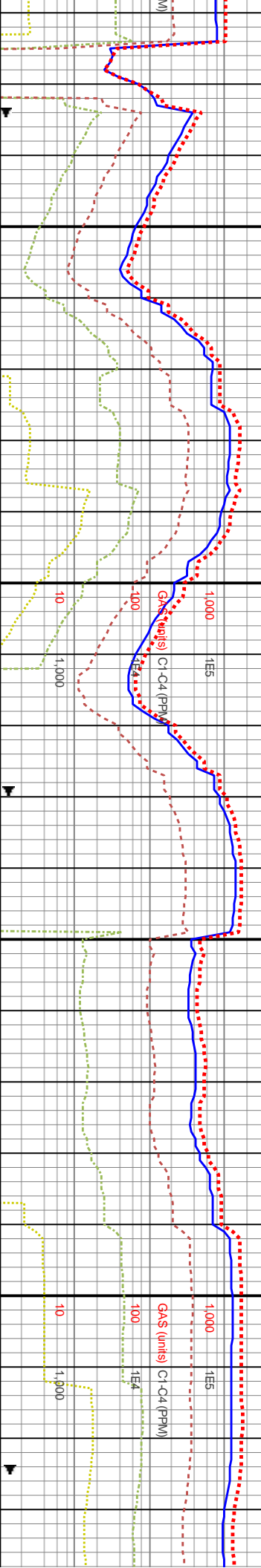




BGG: 542u

1E4 AVG BGG: 532u

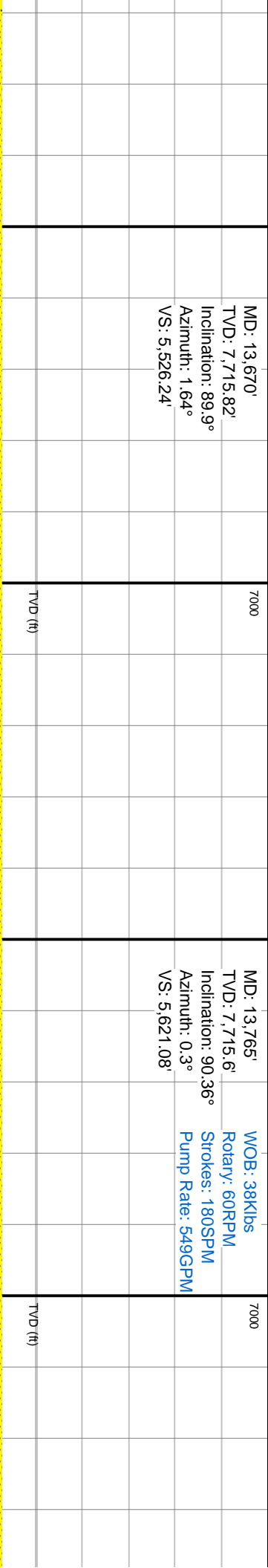
1E4 AVG BGG: 1175u



MD: 13,670'
TVD: 7,715.82'
Inclination: 89.9°
Azimuth: 1.64°
VS: 5,526.24'

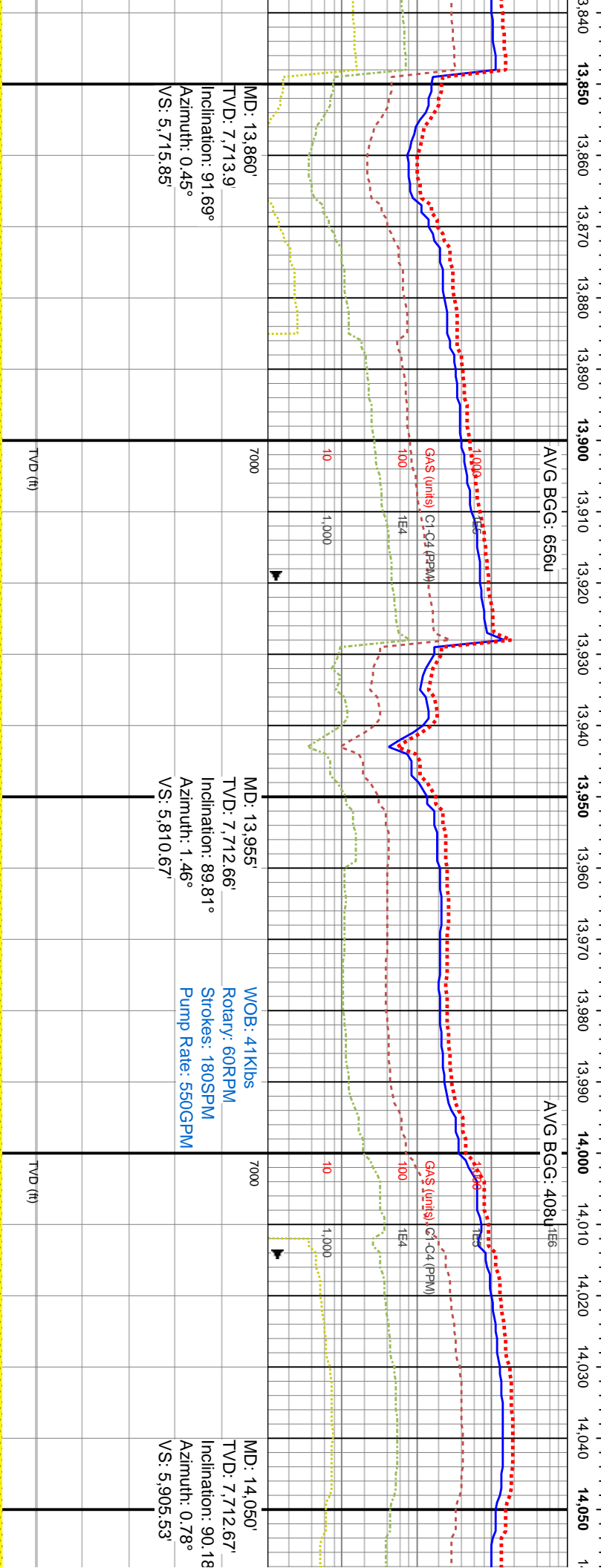
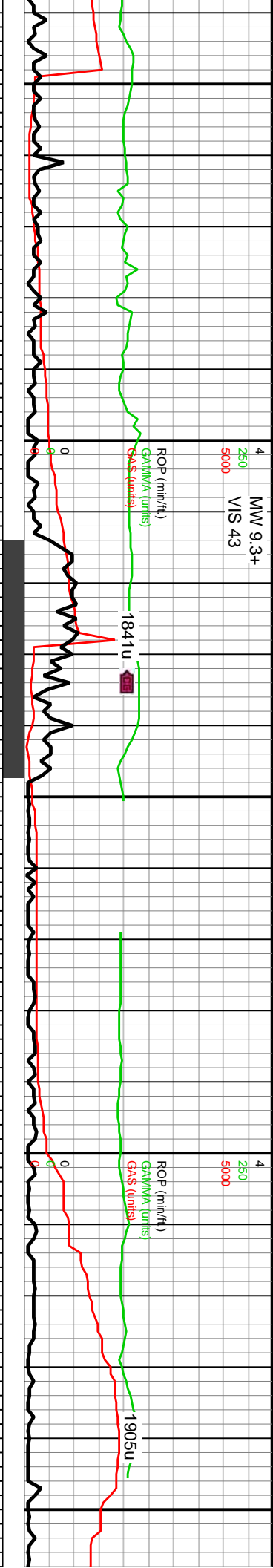
MD: 13,765'
TVD: 7,715.6'
Inclination: 90.36°
Azimuth: 0.3°
VS: 5,621.08'

WOB: 38Klbs
Rotary: 60RPM
Strokes: 180SPM
Pump Rate: 549GPM



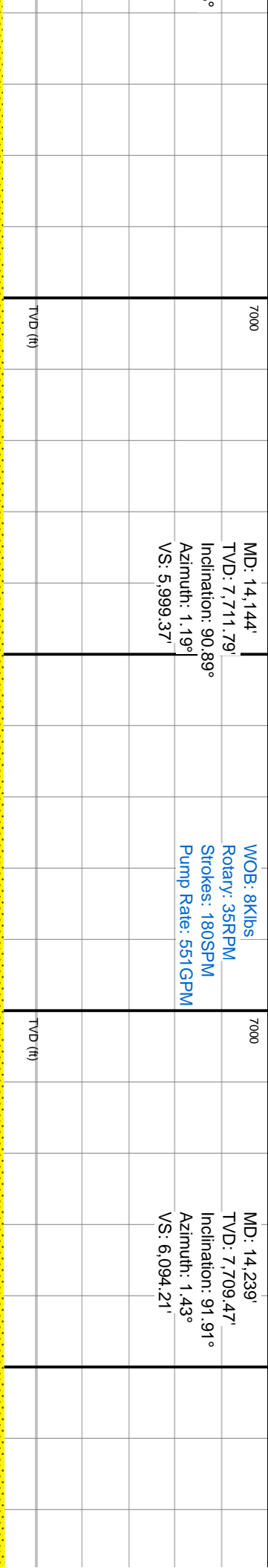
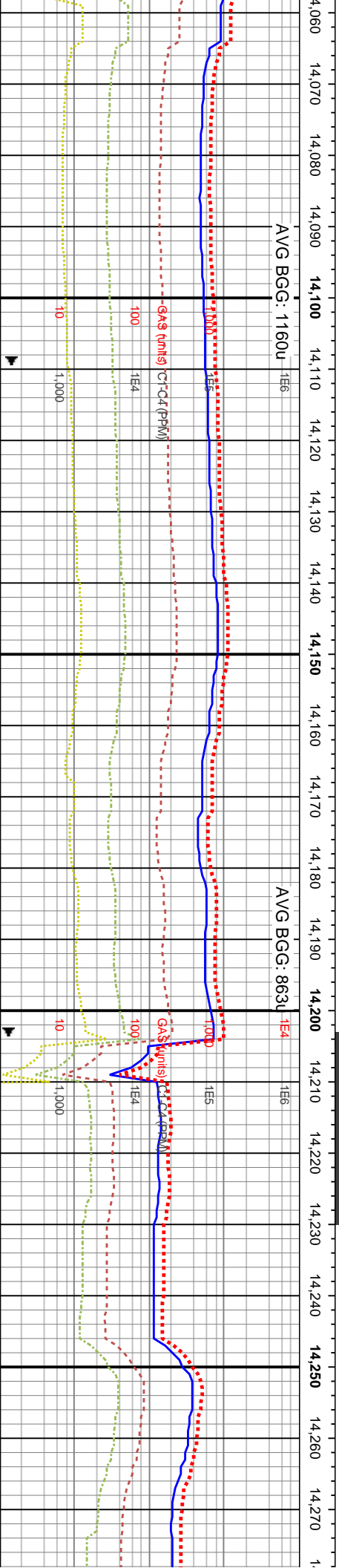
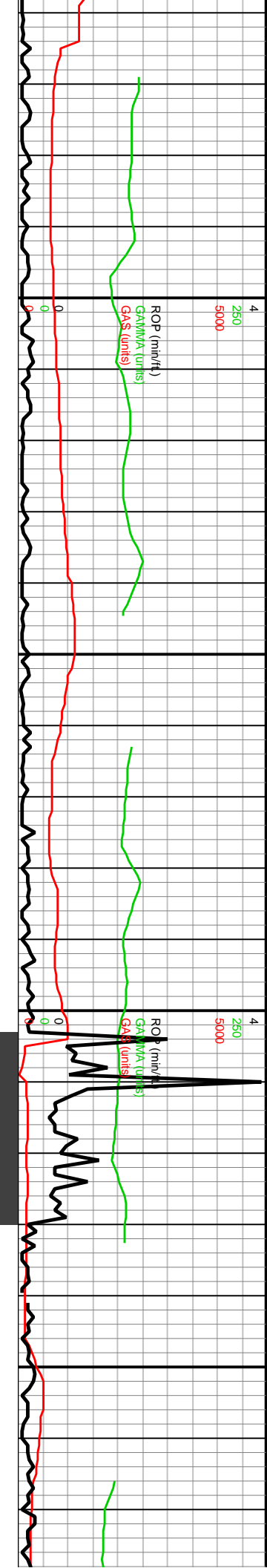
13620-13680 SS: pred dk gy, lt gy-lt gy brn ip, occ clr intbds, p-mod strd vf-u f grs grdg down to silt, pred sb rd-rd grs, sily thru wi occ siltst intbds, frm-hd sb rd-rd sli fri clus cons wi silc cnt, arg & sily thru, occ off wh dolc ip, tr gn glauc, sl-hi calc	13680-13740 SS: pred dk gy, lt gy-lt gy brn ip, occ clr intbds, occ siltst intbds, p-mod strd vf-u f sb rd-rd grs grdg down to silt, frm-hd sb rd-rd sli fri clus cons wi silc cnt, occ off wh dolc cnt ip, tr gn glauc, sl-hi calc	13740-13800 SS: pred dk gy, lt gy-lt gy brn ip, occ clr intbds, p-mod strd vf-u f grs grdg down to silt, pred sb rd-rd grs, sily thru wi occ siltst intbds, frm-hd sb rd-rd sli fri clus cons wi silc cnt, arg & sily thru, occ off wh dolc ip, tr gn glauc, sl-hi calc	13800-13860 SS: pred dk rr clr sdy intbds, p-mod strd down to silt, pred sb rd-rd g siltst intbds, frm-hd sb rd-rd sli silc cnt, occ off wh dolc ip,
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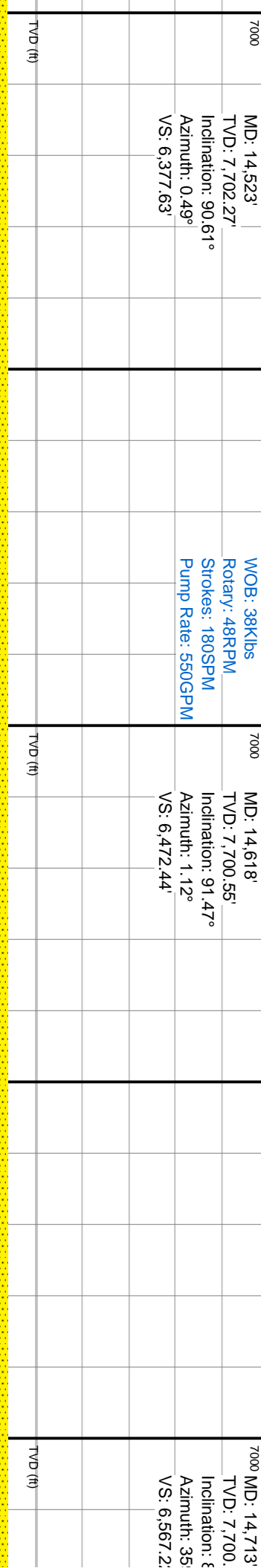
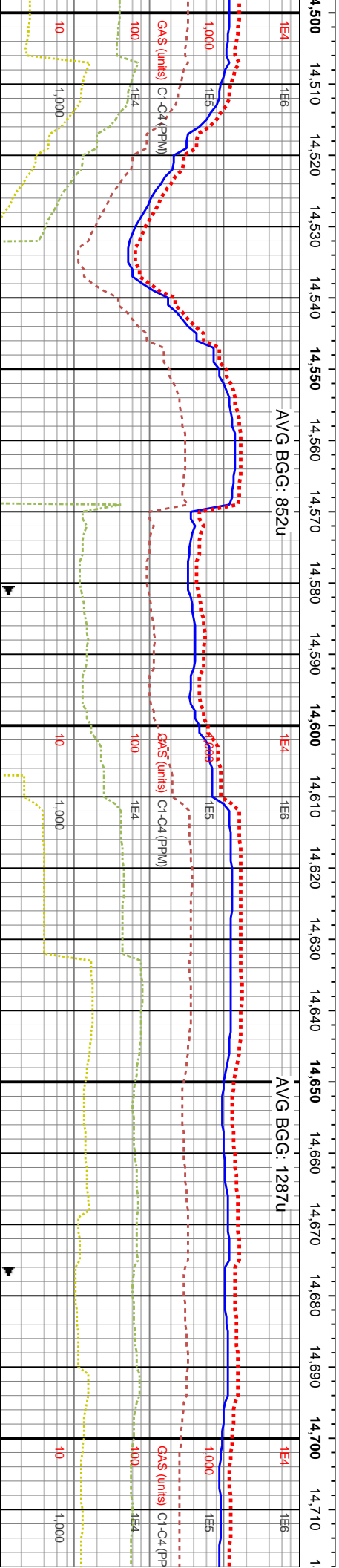
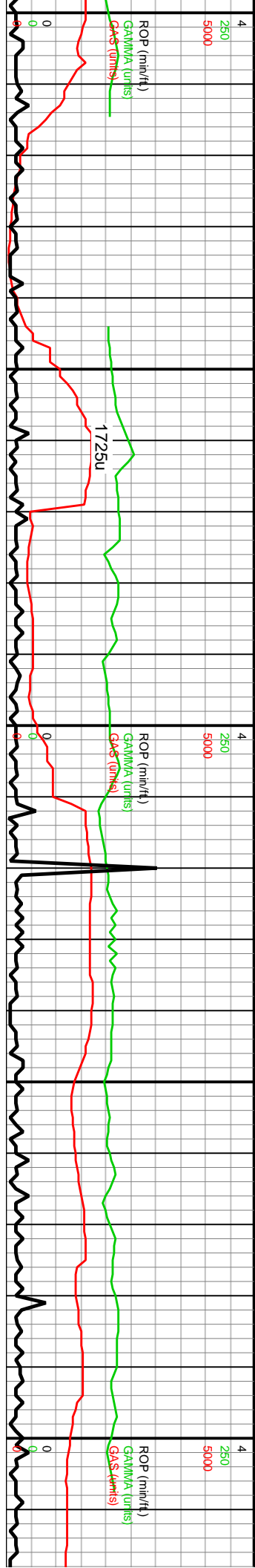


13860-13920 SS: lt gy-gy-gy brn-dk gy, occ off wh intbds, occ silty intbds, p-mod w srtld vf-u f sb rd-rd grs grdg down to silt, frm-hd sb rd-rd sli fri clus cons wi silic cnt, occ off wh wi dolc cnt ip, sl-hi calc		13920-13980 SS: off wh-lt gy-gy-gy brn-dk gy, occ silty intbds, p-mod w srtld sb rd-rd sli fri sd clus, vf-u f sb rd-rd grs grdg down to silt, cons wi silic cnt, occ off wh wi dolc cnt ip, sl-hi calc		13980-14040 SS: lt gy-gy-gy brn-dk gy, occ off wh intbds, occ silty intbds, p-mod w srtld vf-u f sb rd-rd grs grdg down to silt, frm-hd sb rd-rd sli fri clus cons wi silic cnt, occ off wh wi dolc cnt ip, sl-hi calc		14040-14050 clt-off v srtld vf-u f srtld intbds cons w	
8100		8100		8100		8100	



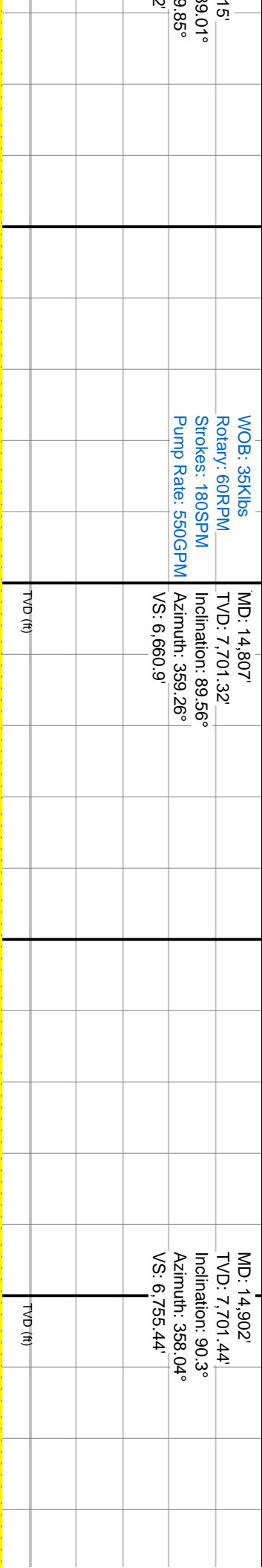
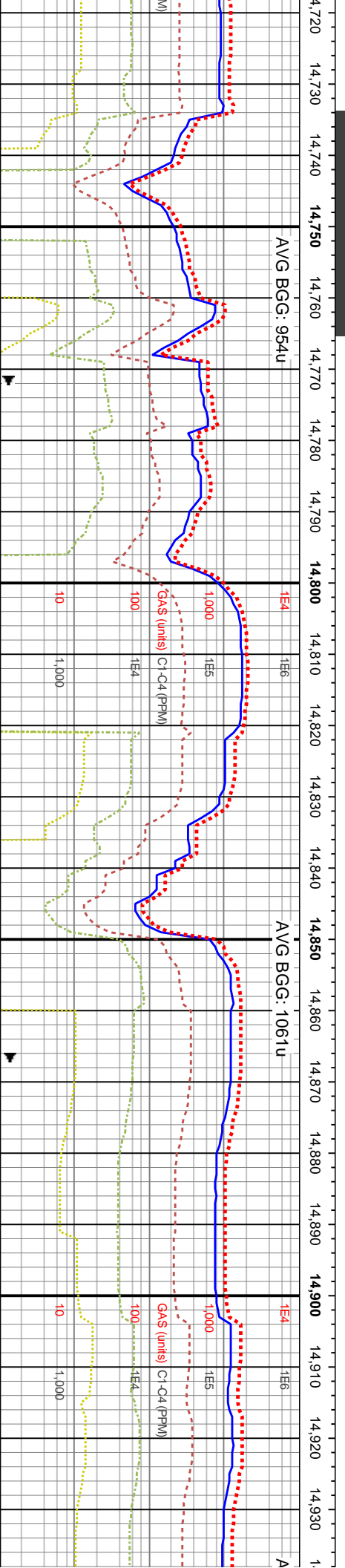
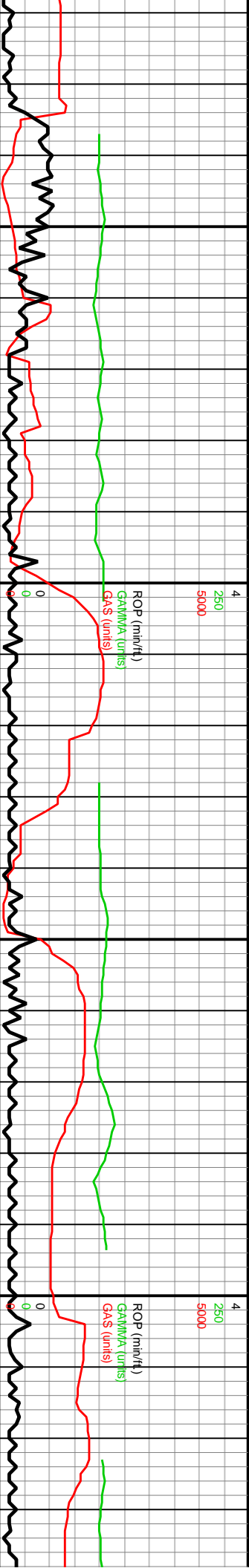


14100 SS: lt gy-gy-gy brn-dk gy, rr-occ wh inbds, occ slist inbds, p-mod w u f sb rd-rd grs grdg down to silt, v w bds ip, frm-hd sb rd-rd sli fri clus i silic cmt, tr dolc, mod calc	14100-14160 SS: lt gy-gy-gy brn-dk gy, rr-occ clr-off wh inbds, occ slist inbds, p-mod w srd vf-u f sb rd-rd grs grdg down to silt, v w srd inbds ip, frm-hd sb rd-rd sli fri clus cons wi silic cmt, tr dolc, mod calc	14160-14220 SS: lt gy-gy-dk gy-gy brn, occ clr-off wh w srd inbds, occ slist inbds, p-mod w srd vf-u f sb rd-rd grs grdg down to silt, frm-hd sb rd-rd sli fri clus cons wi silic cmt, tr dolc, mod calc	14220-14280 SS: lt gy-gy-gy brn-dk gy, rr clr-off wh inbds, rr slist inbds, p-mod w srd vf-u f sb rd-rd grs grdg down to silt, v w srd inbds ip, frm-hd sb rd-rd sli fri clus cons wi silic cmt, mod calc
8100	8100	8100	

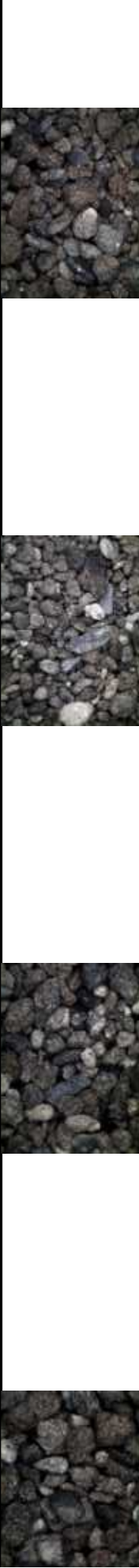


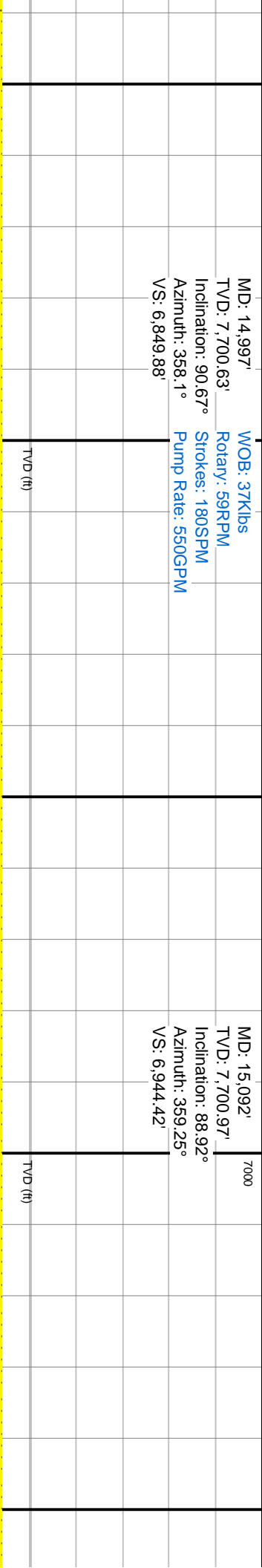
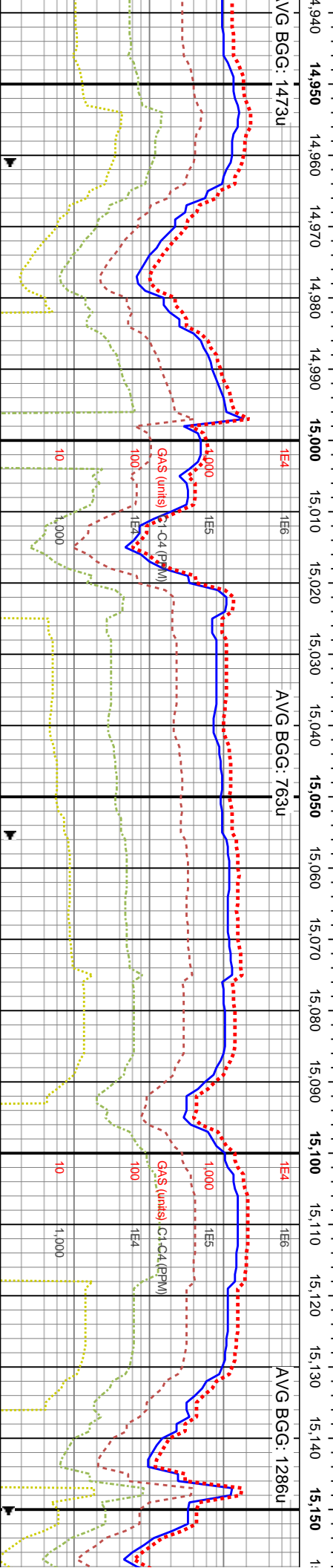
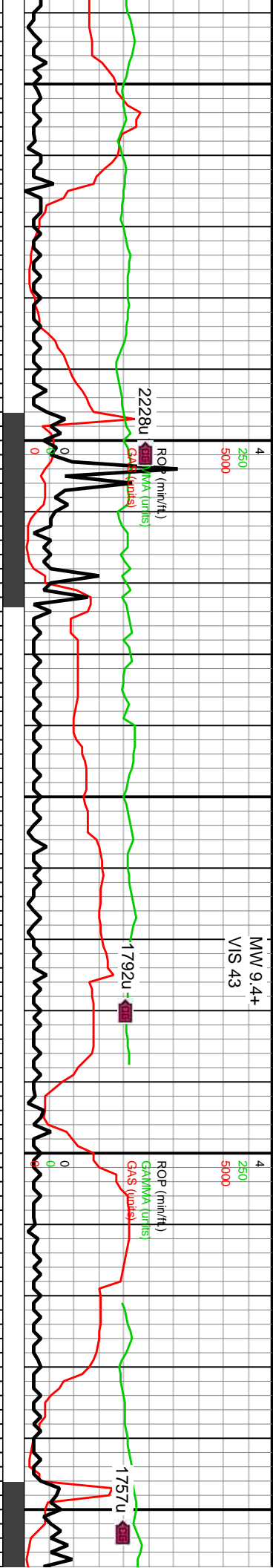
14520-14580 SS: pred dk gy, lt gy-lt gy brn ip, rr clr sdy intbds, mod srtid vf-f grs grdg down to silt ip, pred sb rd-rd grs, silty thru, frm-hd sb rd-rd silt fri clus cons wi silic cnt, sl-hi calc	14580-14640 SS: pred dk gy, gy-gy brn-lt gy ip, rr clr sdy intbds, mod srtid vf-f grs grdg down to silt ip, pred sb rd-rd grs, silty thru, frm-hd sb rd-rd silt fri clus cons wi silic cnt, com silty intbds, mod calc	14640-14700 SS: pred dk gy, gy-gy brn-lt gy ip, rr clr-off wh sdy intbds, mod srtid, vf-f sb rd-rd grs grdg down to silt ip, com silty intbds, frm-hd sb rd-rd silt fri clus cons wi silic cnt, mod calc	14700-14710 SS: pred dk gy, lt gy-lt gy brn ip, rr clr sdy intbds, mod srtid vf-f grs grdg down to silt ip, pred sb rd-rd grs, silty thru, frm-hd sb rd-rd silt fri clus cons wi silic cnt, sl-hi calc
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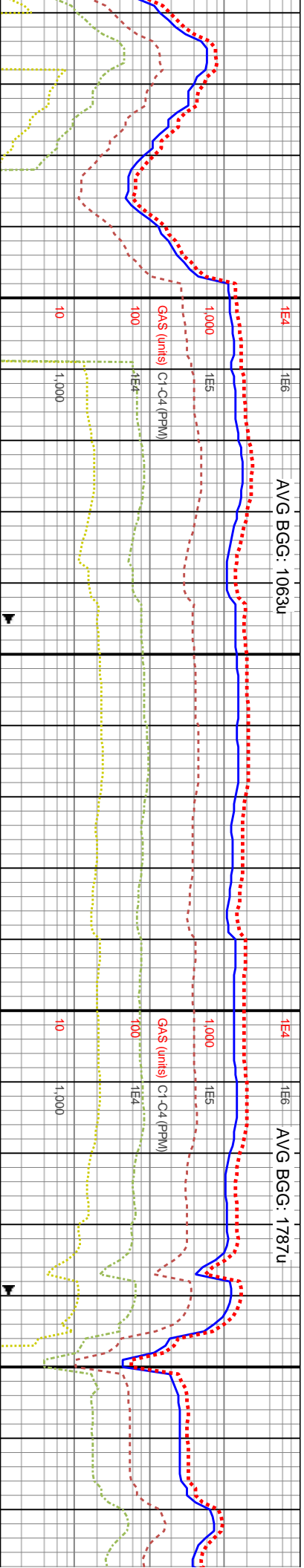
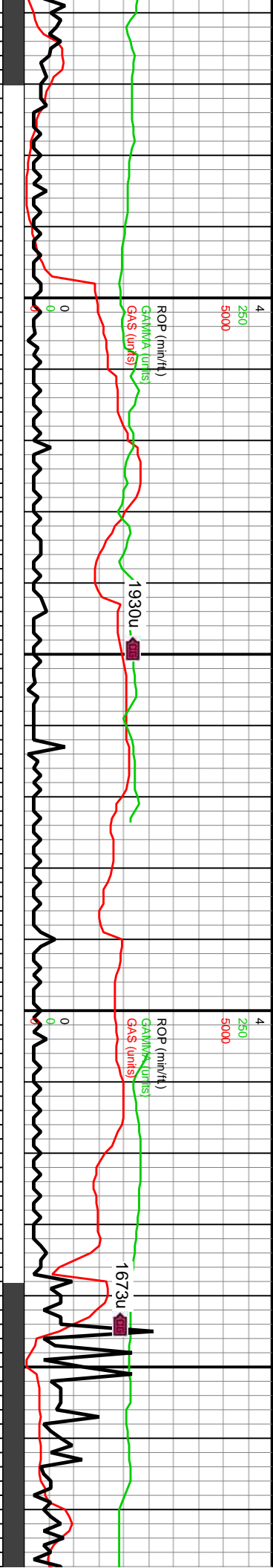
14760-14760 SS: pred dk gy, gy-gy brn-lt gy	14760-14820 SS:lt gy-gy-dk gy, occ gy brn, r	14820-14880 SS: lt gy-gy-dk gy, occ gy brn, r	14880-14940 SS: lt gy-gy-dk gy, occ gy brn, oc
clr sdv inbds, mod srtf vf-f grs grdg	clr-off wh sdv mtz sup silc inbds, mod srtf,	clr-off wh inbds ip, mod srtf vf-f sb rd-rd grs	clr-off wh inbds ip, mod srtf vf-f sb rd-rd grs
to slit ip, pred sb rd-rd grs, silty thru,	vf-f sb rd-rd grs grdg down to slit ip, com silty	grdg down to slit ip, com silty inbds, frm-hd sb	grdg down to slit ip, frm-hd sb rd-rd sli fri gr sup
inbds, frm-hd sb rd-rd sli fri clus cons wi silc cmt,	inbds, frm-hd sb rd-rd sli fri clus cons wi silc	rd-rd sli fri gr sup clus cons wi silc cmt, rr mtz	clus cons wi silc cmt, rr mtz sup cls cons wi
inbds, mod calc	cmt, mod calc	sup cls cons wi silc cmt, mod calc	silc cmt, mod calc





14940-15000 SS: off wh-it gy-gy brn-dk gy, rr dk gy silty intbds, tr clr-off wh intbds ip, mod srt'd vf-f sb rd-rd grs grdg down to silt ip, frm-hd sb rd-rd sli fri gr sup clus cons wi silic cnt, rr mtx sup cls cons wi silic cnt, mod calc	
15000-15060 SS: off wh-it gy-gy brn-dk gy, rr dk gy silty intbds, tr clr-off wh intbds ip, mod srt'd vf-f sb rd-rd grs grdg down to silt ip, frm-hd sb rd-rd sli fri gr sup clus cons wi silic cnt, rr mtx sup cls cons wi silic cnt, sl-mod calc	
15060-15120 SS: off wh-it gy-gy brn-dk gy, rr dk gy silty intbds, tr clr-off wh intbds ip, mod srt'd vf-f sb rd-rd grs grdg down to silt ip, frm-hd sb rd-rd sli fri gr sup clus cons wi silic cnt, rr mtx sup cls cons wi silic cnt, sl-mod calc	
15120-15180 SS: lt gy-gy-gy wh, rr dk gy silty intbds, tr clr-off wh intbds ip, mod srt'd vf-f sb rd-rd grs grdg down to silt ip, frm-hd sb rd-rd sli fri gr sup clus cons wi silic cnt, rr mtx sup cls cons wi silic cnt, mod calc	





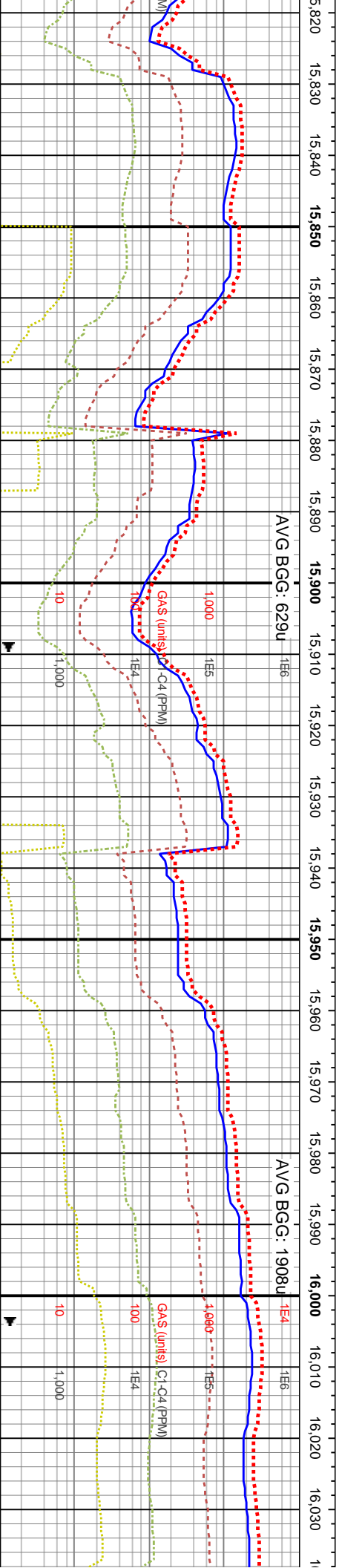
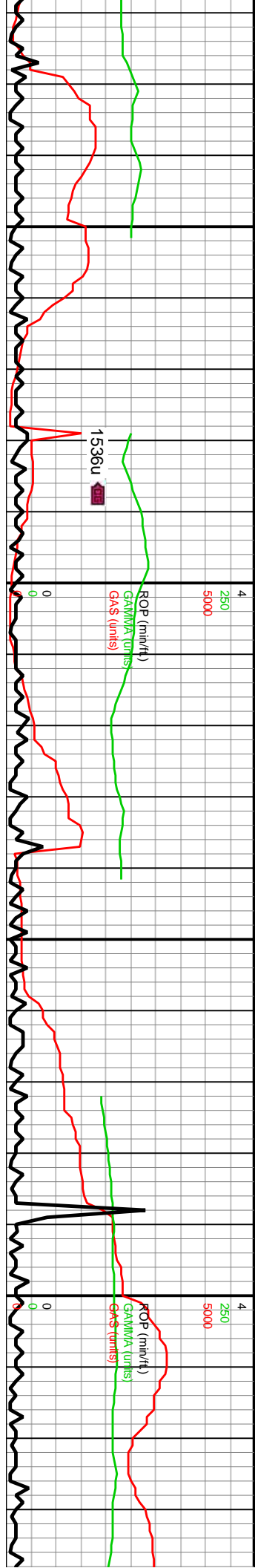
MD: 15,186'
TVD: 7,702.32'
Inclination: 89.44°
Azimuth: 359.02°
VS: 7,038.03'

WOB: 40Klbs
Rotary: 60RPM
Strokes: 180SPM
Pump Rate: 549GPM

MD: 15,281'
TVD: 7,704.75'
Inclination: 87.62°
Azimuth: 0.98°
VS: 7,132.73'

MD: 15,37'
TVD: 7,70'
Inclination
Azimuth: 1
VS: 7,227'

brn-dk gy, occ off	15180-15240 SS: off wh-lt gy-gy-brn-dk gy, rr	15240-15300 SS: off wh-lt gy-gy-brn-dk gy, rr	15300-15360 SS: pred lt gy-gy, occ dk gy-clr, rr	15360-15420 S
off wh inbds ip,	dk gy silty inbds, tr clr-off wh inbds ip, mod srted	dk gy silty inbds, tr clr-off wh inbds ip, mod srted	dk gy silty inbds, tr clr-off wh inbds ip, p-mod	silty inbds, tr cl
vf-f sb rd-rd grs grdg down to slt ip, frm-hd sb	vf-f sb rd-rd grs grdg down to slt ip, frm-hd sb	vf-f sb rd-rd grs grdg down to slt ip, frm-hd sb	srted vf-f sb rd-rd grs grdg down to slt ip, frm-hd	rd-rd grs grdg to
rd-rd sil fri gr sup clus cons wi silc cnt, rr mtx	rd-rd sil fri gr sup clus cons wi silc cnt, rr mtx	rd-rd sil fri gr sup clus cons wi silc cnt, rr mtx	sb rd-rd sil fri-gr sup clus cons wi silc cnt, rr	clus cons wi silc
sup cns wi silc	sup cns wi silc	sup cns wi silc	sup cns wi silc	clus cons wi silc
cmt, sl-mod calc	sup cns wi silc cnt, sl-mod calc	sup cns wi silc cnt, sl-mod calc	mtx sup cns wi silc cnt, pred sl calc	occ uncons clr



MD: 15,851'
TVD: 7,706.34'
Inclination: 91.75°
Azimuth: 2.31°
VS: 7,702.36'

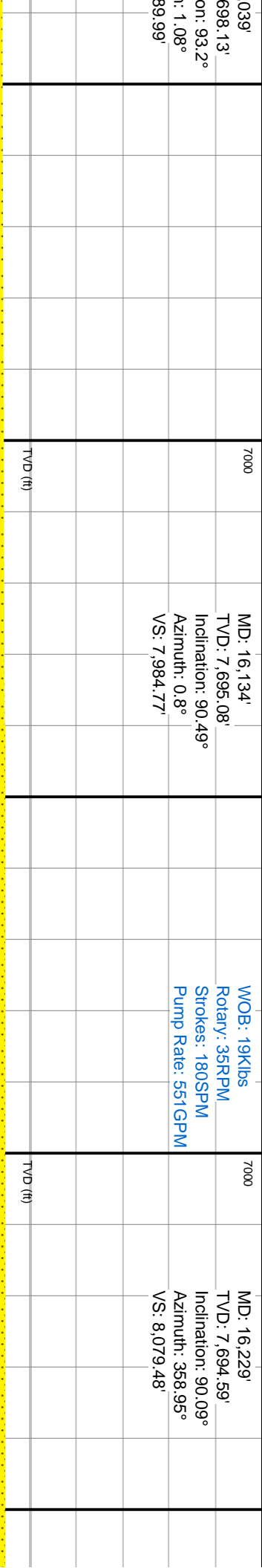
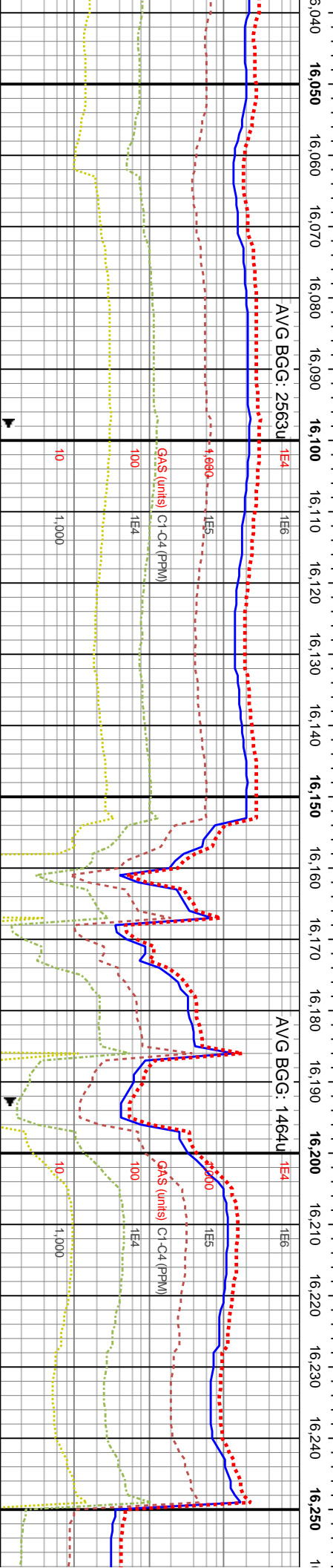
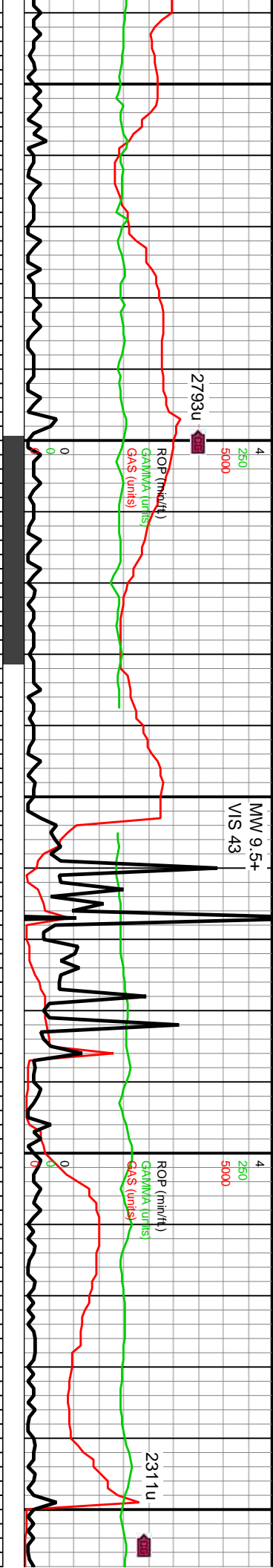
MD: 15,944'
TVD: 7,702.87'
Inclination: 92.52°
Azimuth: 1.81°
VS: 7,795.22'

WOB: 22Klbs
Rotary: 35RPM
Strokes: 180SPM
Pump Rate: 550GPM

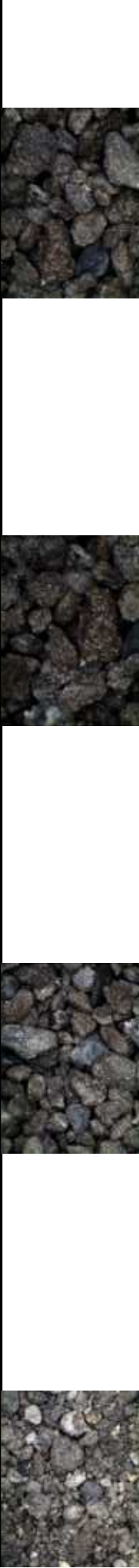
MD: 16,080'
TVD: 7,702.87'
Inclination: 92.52°
Azimuth: 1.81°
VS: 7,795.22'

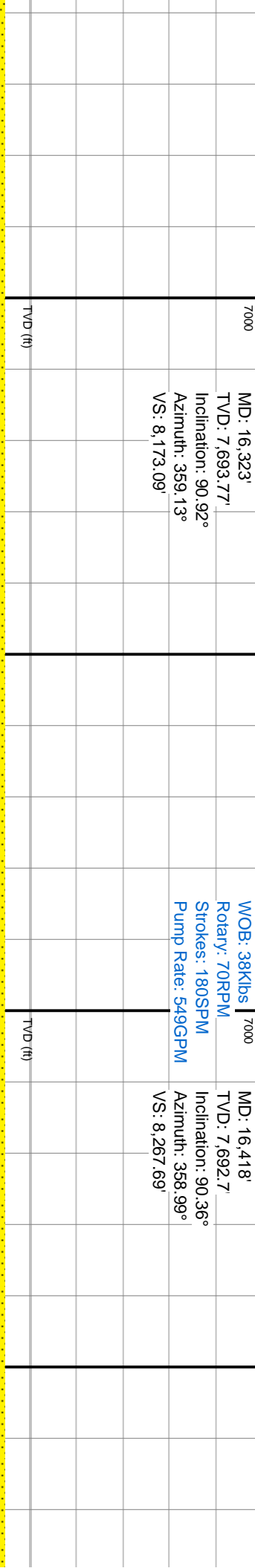
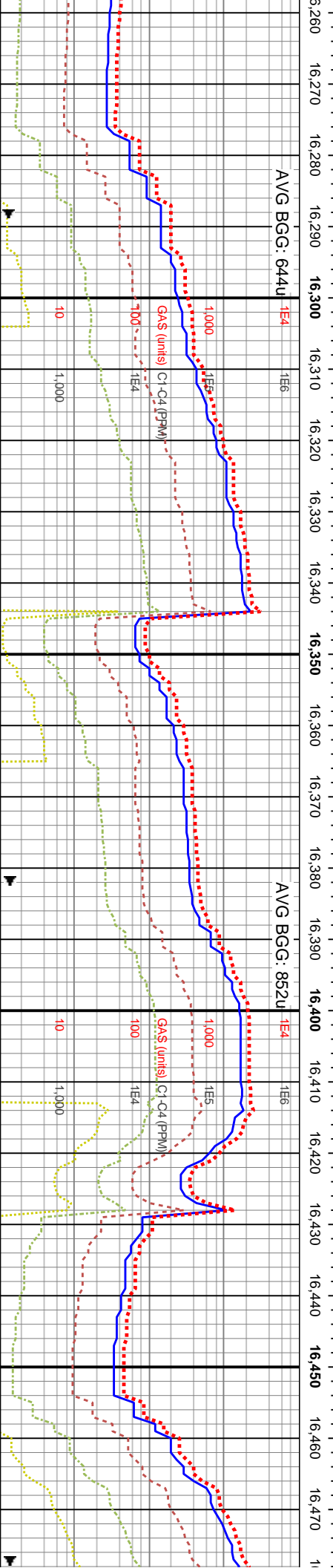
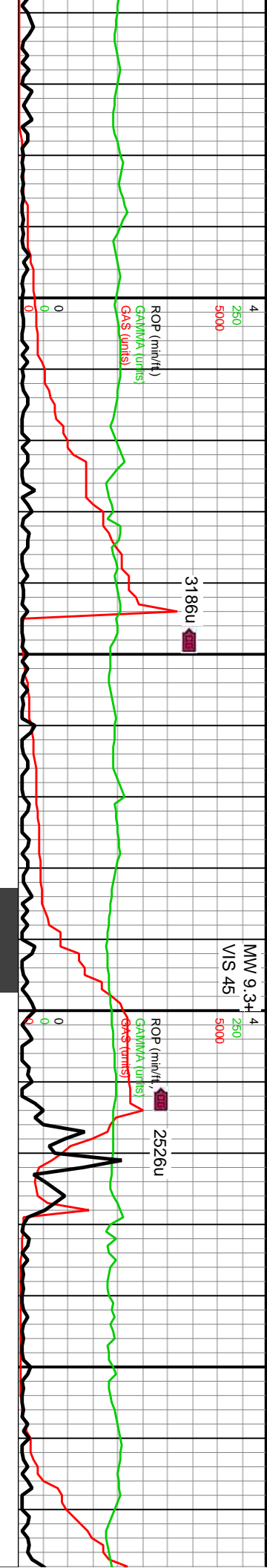
15840-15900 SS: pred gy-dk gy, rr lt gy-gy brn, occ clr	15900-15960 SS: pred gy-dk gy, rr lt gy-gy brn, occ clr	15960-16020 SS: pred gy-dk gy, rr lt gy-gy brn, occ clr	16020-16080 : pred gy-dk gy, rr lt gy-gy brn, occ clr
uncons sd, occ dk gy silty inbds, p-mod srtf vf-f sb	uncons sd, occ dk gy silty inbds, p-mod srtf vf-f sb	uncons sd, occ dk gy silty inbds, p-mod srtf vf-f sb	uncons sd, occ dk gy silty inbds, p-mod srtf vf-f sb
rd-rd grs grdg down to silt ip, frm-hd sli fri gr sup cls	rd-rd grs grdg down to silt ip, frm-hd sli fri gr sup cls	rd-rd grs grdg down to silt ip, frm-hd sli fri gr sup cls	rd-rd grs grdg down to silt ip, frm-hd sli fri gr sup cls
cons wi silc cnt, rr mtz sup cls cons wi silc cnt, pred	cons wi silc cnt, rr mtz sup cls cons wi silc cnt, pred	cons wi silc cnt, rr mtz sup cls cons wi silc cnt, pred	cons wi silc cnt, rr mtz sup cls cons wi silc cnt, pred
sl calc, rr med-hi calc	sl calc, rr med-hi calc	sl calc, rr med-hi calc	sl calc, rr med-hi calc





SS: lt gy-gy-dk gy-gy brn, occ cfr	16080-16140 SS: lt gy-gy-dk gy-gy brn, occ cfr	16140-16200 SS: lt gy-gy-dk gy-gy brn, occ dk	16200-16260 SS: pred dk gy-med gy, gysbhn
c dk gy silty intbds, p-mod strd vf-f sb	uncons sd, occ dk gy silty intbds, p-mod strd vf-f sb	gy silty intbds, p-mod strd, vf-f sb rd-rd grs, occ	offwht-trnsi, vf-f grs, pred sb ang-sb rd, mod
down to silt ip, frm-hd sli fri gr sup cls	rd-rd grs grdg down to silt ip, frm-hd sli fri gr sup cls	silty, frm-hd sli fri gr sup cls cons wi silic cnt, rr	strd, cons wi ang/silic cnt, abnt lse grs, gr sup
mtx sup cls cons wi silic cnt,	cons wi silic cnt, rr mtz sup cls cons wi silic cnt,	mtx sup cls cons wi silic cnt, sl-mod calc	cls, du yelgn flor, mod mky cut, mod yelgn
med-hi calc	sl-mod calc		resd ring
	8100	8100	





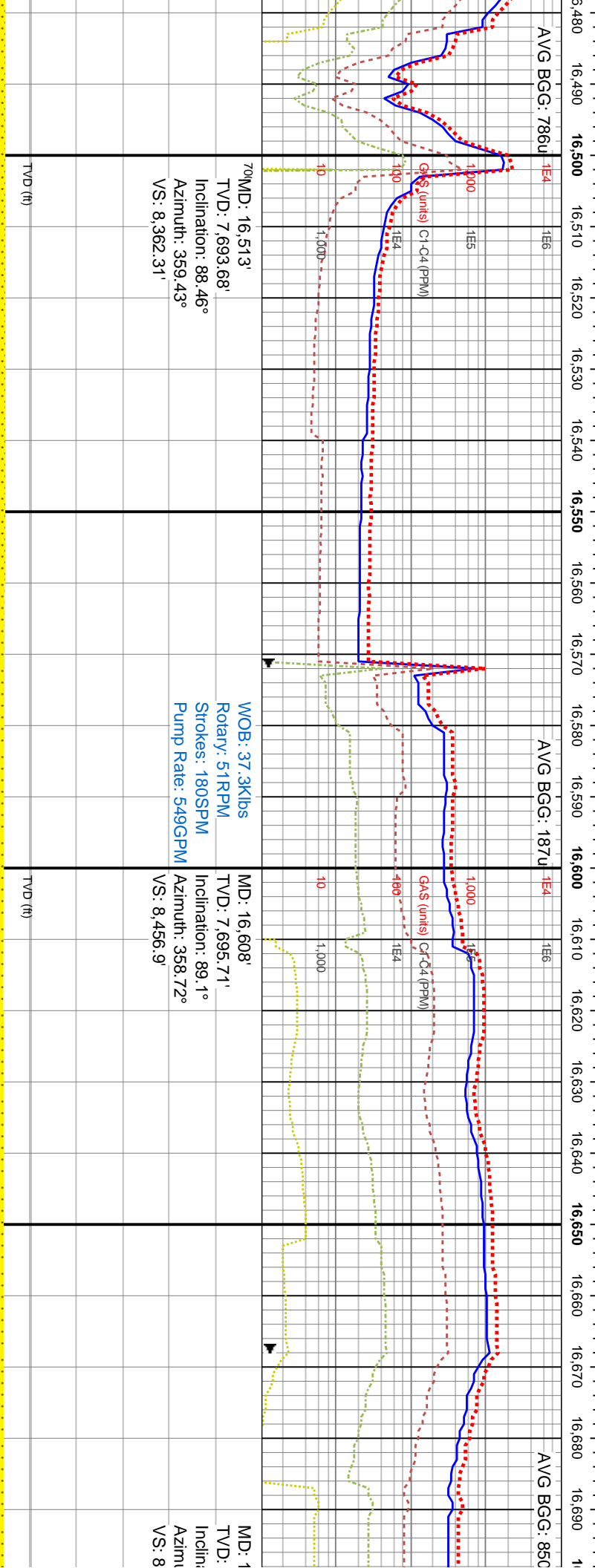
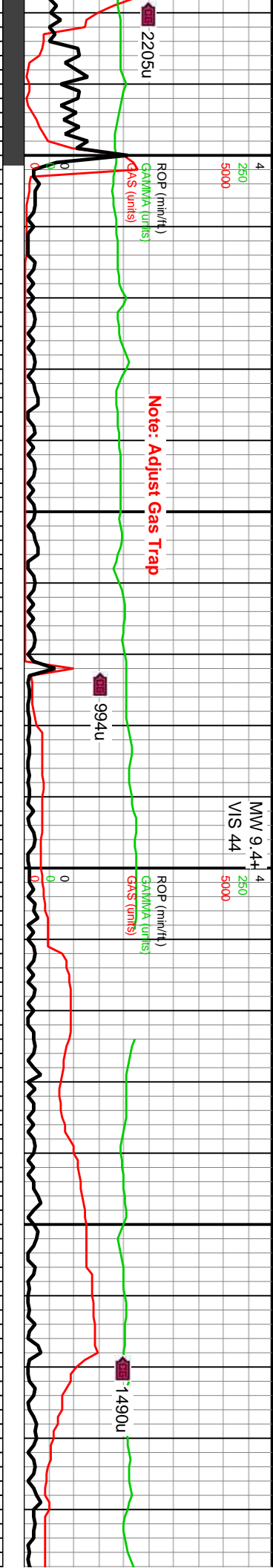
16260-16320 SS: pred med gy-dk gy, dk gysbhn-it brn, clr uncons grs, mod w strd, sb ang-sb rd, vf-uf grs, sb ang-sb rd grs, fr gr sup cls, cons wi arg/silic cmt, sme sl calc, dul yelgn flor, mod mky cut, mod yelgn resd ring	16320-16380 SS: dk gy-dk gysbhn, sme lt brn, vf-f grs, mod strd, pred sb ang-sb rd, com lse grs, cons wi arg/silic cmt, sme sl calc, dul yelgn flor, mod mky cut, mod yelgn resd ring	16380-16440 SS: med gy-dk gysbhn, dk gy, vf-f grs, sb ang-sb rd, mod strd, pred gr sup cls, abnt lse grs, cons wi arg/silic cmt, tr pyr, pred sl calc, dul yelgn flor, mod mky cut, mod yelgn resd ring	16440-16500 SS: pred dk gy, offwht-trns, vf-f grs, pred sl strd, abnt lse grs, gr sup cls cmt, dul yelgn flor, mod mky resd ring
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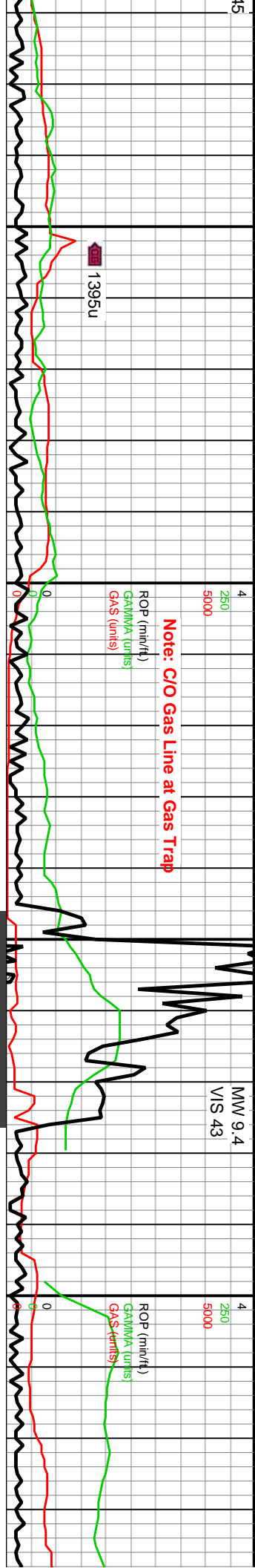
MD: 16,323'
TVD: 7,693.77'
Inclination: 90.92°
Azimuth: 359.13°
VS: 8,173.09'

WOB: 38Klbs
Rotary: 70RPM
Strokes: 180SPM
Pump Rate: 549GPM

MD: 16,418'
TVD: 7,692.7'
Inclination: 90.36°
Azimuth: 358.99°
VS: 8,267.69'

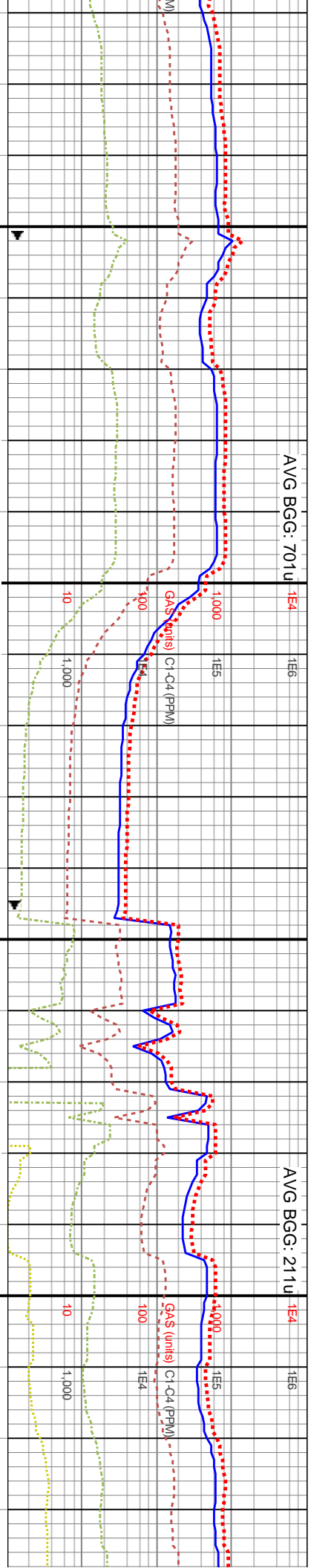


16500-16560 SS: dk gy-med gy, gyshbn-bm, v-f-uf grs, pred sb ang-sb rd, mod strd, fri gr sup cls, cons wi arg/silic cnt, abnt op grs thru, dul yelgn flor, mod mky cut, mod yelgn resdl ring	16560-16620 SS: pred med gy-gyshbn, lt gy-offwht, v-f-f grs, abnt uncons sd, pred sb ang-sb rd, mod strd, sl hrd-frn, sl fri, gr sup cls, cons wi arg/silic cnt, dul yelgn flor, mod mky cut, mod yelgn resdl ring	16620-16680 SS: pred med gy-gyshbn, lt gy-offwht, v-f-f grs, mod strd, op abnt lse sd, pred sb ang-sb rd, sl hrd-frn, sl fri, gr sup cls, cons wi arg/silic cnt, dul yelgn flor, mod mky cut, mod yelgn resdl ring	16680-16740 SS: pred med gy-gyshbn, lt gy-offwht, v-f-f grs, mod strd, op abnt lse sd, pred sb ang-sb rd, sl hrd-frn, sl fri, gr sup cls, cons wi arg/silic cnt, dul yelgn flor, mod mky cut, mod yelgn resdl ring
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MD: 16,986'
TVD: 7,693.5'
Inclination: 91.2°
Azimuth: 358.19°
VS: 8,832.79'

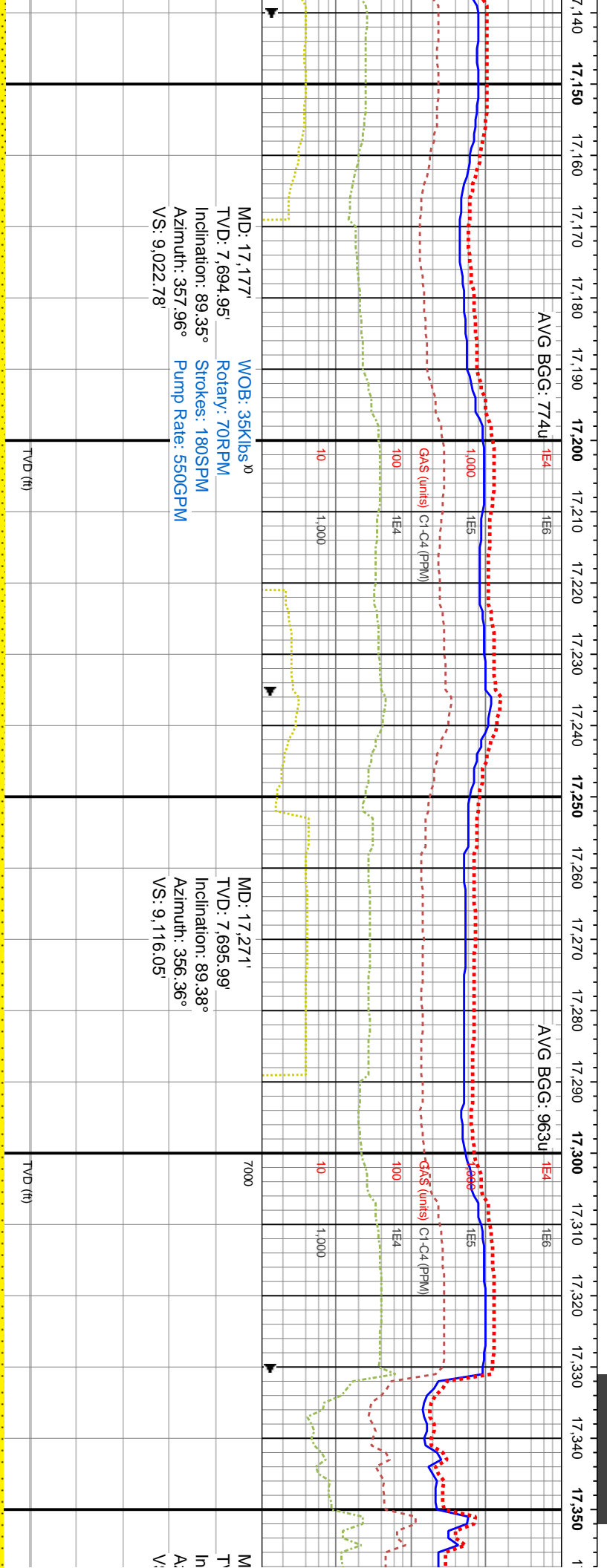
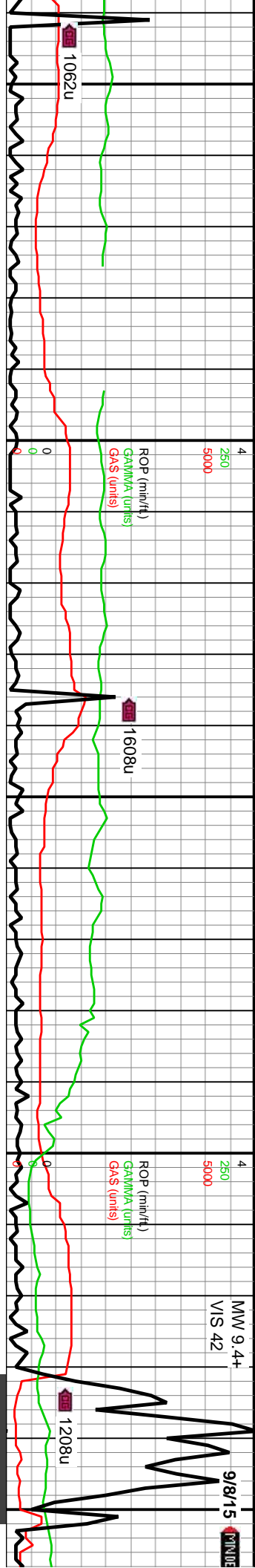
WOB: 39.3Klbs
Rotary: 70RPM
Strokes: 180SPM
Pump Rate: 550GPM



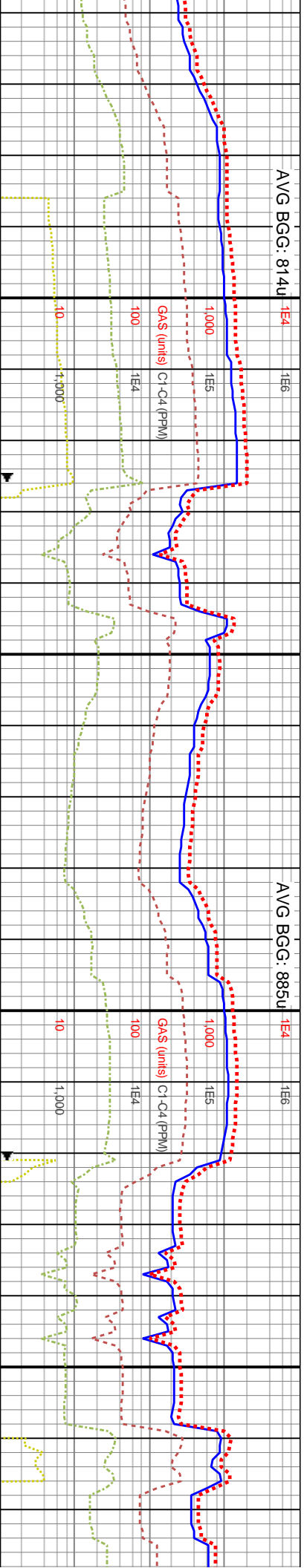
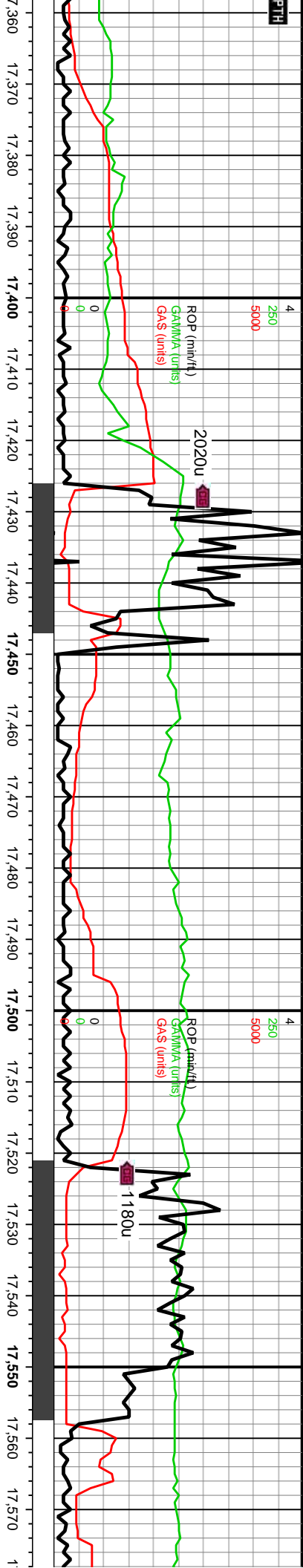
MD: 17,081'
TVD: 7,693.45'
Inclination: 88.86°
Azimuth: 358.76°
VS: 8,927.3'

16920-16980 LMST (95%): mot gysbhn-tn, occ gysbhn-crm, frm-sl hrd, cryptoxln-microxln, wkst-mudst, sb tab-biky ip, pred pily; MRLST (5%): dk gy-v dk gy, occ blk, intbdd wi ls, micmica, v calc, rgh tex, tr pp pyr	16980-17040 LMST (85%): mot gysbhn-crm, tn, frm-sl hrd, cryptoxln-microxln, wkst-mudst, tab-pily, sme biky; MRLST (15%): dk gy-v dk gy, sb pily-tab, intbdd wi ls, micmica, calc, rgh tex, tr pp pyr	17040-17100 LMST (55%): mot bnshgy, biky-elg, microxln, frm-sl hrd, scat mic pyr, SS (30%): gysbhn-med gy, vf-f gr, med frm, pred uncongs grs, ang-sb rd, pred arg-silic cnt; MRLST (15%): dk gy, pily, v calc, abrsv tex	17100-17160 SS (85%): gys uncongs vf-f gr sd, frm-sl hrd, ang-sb rd, vf-f gr, arg-silic cnt (15%): dk gy, pily-sb biky, v intbdd wi lmst
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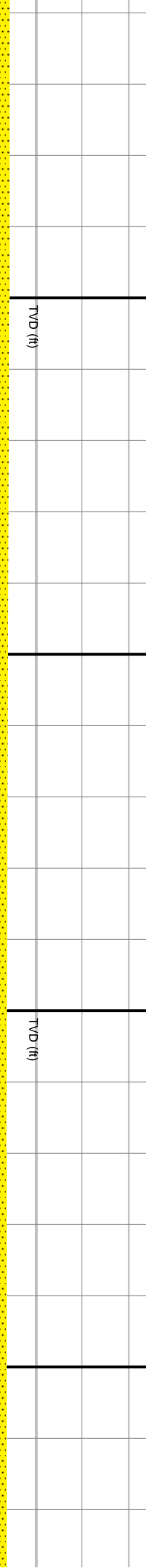




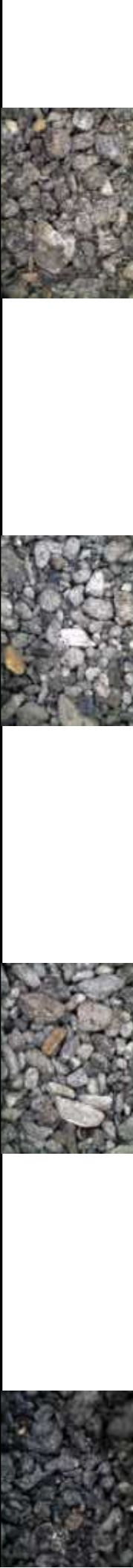
shbn-t gy, abt mod strd, pred sb nt, sl calc: MRLST calc, abrv tex,	17160-17220 SS: med gy-gyshn, lt gy-dk gy, vf-f grs, pred sb ang-sb rd, mod strd, gr sup cls, abnt lse f sb ang qtz grs, cons wi arg/silic cnt, pred non-sl calc, dul yeign flor, mod mky cut, mod yeign resdl ring	17220-17280 LMST (40%): lt brn-th, gy ip, biky-pty, microxln-cryptoxln, frm-sl hrd; MRLST (5%): dk gy, pty, frm, rgh tex, calc; SS (55%): med gy-gyshn, pred sb ang-sb rd, vf-f grs, fri gr sup cls, cons wi arg/silic cnt, sl calc	17280-17340 LMST (65%): med brn-bnshgy, biky-pty, microxln-cryptoxln, frm-sl hrd, mudst; SH (10%): mot med gy-dk gy, pty, frm, v calc, rgh tex; SS (25%): med gy-gyshn cls, occ clr uncons sd, mod strd, pred sb ang-sb rd, vf-f gr	17340-17

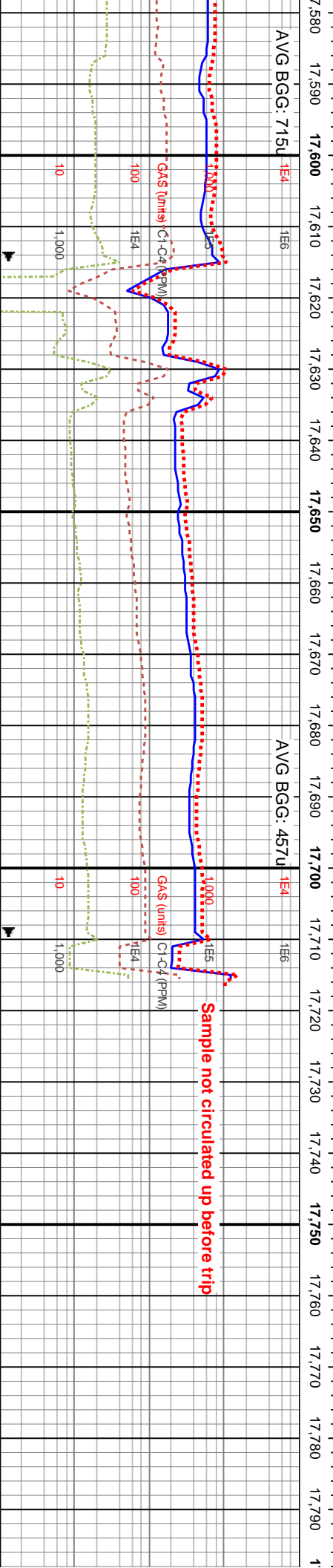
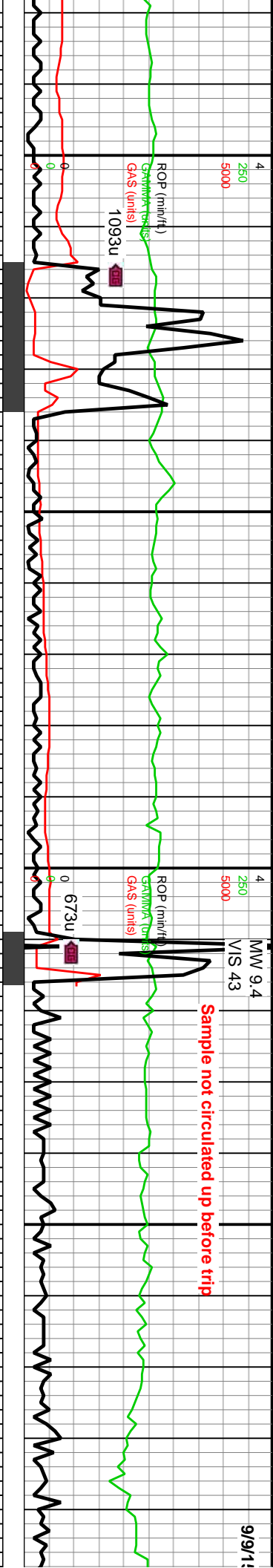


D: 17.366'	WOB: 38.4Klbs	MD: 17.461'
VD: 7.697.43'	Rotary: 71RPM	TVD: 7.700.55'
Inclination: 88.89°	Strokes: 180SPM	Inclination: 87.35°
Plumuth: 356.92°	Pump Rate: 550GPM	Azimuth: 357.25°
S: 9,210.19'		VS: 9,304.39'



400 LMST (55%): mot gysbn-n, microxin-cryptoxin, frm-sl hrd; SS sed gy-gyshbn, mod strd, sb ang-sb s, fri gr sup cls, cons wi arg/silic cmt; 5%): mot dk gy, plty, frm, rgh tex, calc	17400-17460 SS: lt gy-gy-gy brn-dk gy, occ off wh, rr dk gy silty intbds, tr cl-off wh intbds ip, p-mod strd, vf-f sb rd-rd grs grdg down to slit ip, frm-hd sb rd-rd slit fri gr sup clus cons wi silic cmt, rr mtx sup cls cons wi silic cmt, sl-mod calc	17460-17520 SS: lt gy-gy-dk gy-gy brn, rr off wh, rr dk gy silty intbds, tr cl-off wh intbds ip, p-mod strd, vf-f sb rd-rd grs grdg down to slit ip, frm-hd sb rd-rd slit fri gr sup clus cons wi silic cmt, rr mtx sup cls cons wi silic cmt, sl-mod calc	17520-17580 SS: lt gy-gy-dk gy-gy brn, rr off wh, rr dk gy silty intbds, com cl-off wh-trmsl lt gy intbds, p-mod strd, vf-f sb rd-rd grs grdg down to slit ip, frm-hd sb rd-rd slit fri gr sup clus cons wi silic cmt, rr mtx sup cls cons wi silic cmt, sl-mod calc
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WOB: 35.2Klbs
Rotary: 70RPM
Strokes: 180SPM
Pump Rate: 550GPM

MD: 17,650'
TVD: 7,706.53'
Inclination: 88.61°
Azimuth: 0.29°
VS: 9,492.45'

MD: 17,745'
TVD: 7,709.83'
Inclination: 87.41°
Azimuth: 359.95°
VS: 9,587.14'

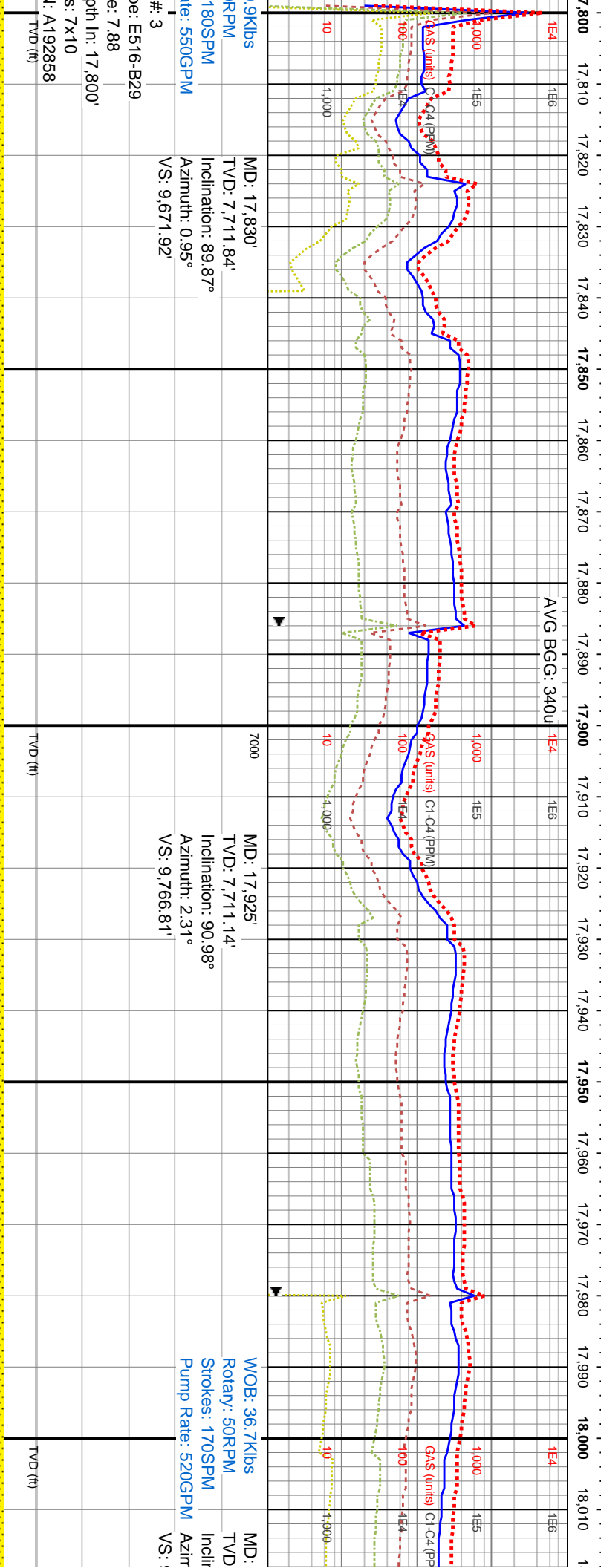
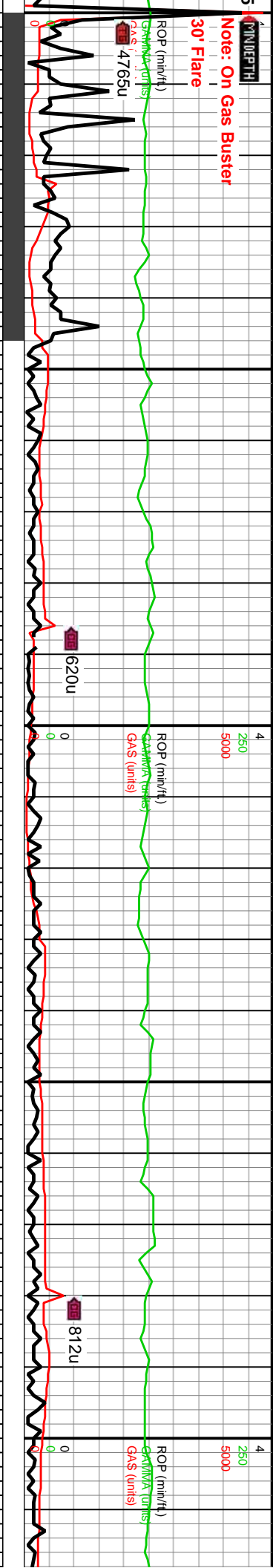
WOB: 19
Rotary: 0
Strokes: 0
Pump Rate: 0

Bit
Type
Size
Del
Jet
S/N

17580-17640 SS: lt gy-gy-dk gy-gy brn, rr off wh, rr dk gy silty intbds, ooc-com grdd sdy intbds, p-mod strd, vf-f sb rd-rd grs grdd down to silt ip, frm-hd sb rd-rd silt frn gr sup clus cons wi silc cnt, sl arg cnt ip, sl-mod calc	17640-17700 SS: lt gy-gy-dk gy-gy brn, rr off wh, rr dk gy silty intbds & com cl-off wh-trns! lt gy intbds, p-mod strd& grdd ip, vf-f sb rd-rd grs grdd down to silt ip, hd sb rd-rd gr sup clus cons wi silc cnt, sl-mod calc	17760-17820 SS: lt gy-gy-dk gy-gy brn, rr off wh, rr dk gy silty intbds & com cl-off wh-trns! lt gy intbds, p-mod strd& grdd ip, vf-f sb rd-rd grs grdd down to silt ip, hd sb rd-rd gr sup clus cons wi silc cnt, sl-mod calc
8100	8100	8100

Sample not circulated up before trip

Sample not circulated up before trip



17820-17880 SS: lt gy-gy-dk gy, occ off wh dolc ip, intsl lt gy intbds, tr cilr-off wh-trmsl lt gy intbds, p-mod srt, vf-f sb rd-rd grs grdg down to slst, hd sb rd-rd gr sup clus cons wi silc cnt, mtx sup ip, abnt slt thru, sl-mod calc	17880-17940 SS: lt gy-gy-dk gy, occ-com dk gy stly intbds, occ off wh-lt gy dolc cnt, tr cilr-off wh-trmsl lt gy intbds, p-mod srt, vf-f sb rd-rd grs grdg down to slst, hd sb rd-rd gr sup clus cons wi silc cnt, mtx sup ip, abnt slt thru, sl-mod calc	17940-18000 SS: pred gy-dk gy-lt gy, tr cilr-off wh-trmsl lt gy intbds, p-mod srt, vf-f sb rd-rd grs grdg down to slst, hd sb rd-rd gr sup clus cons wi silc cnt, mtx sup ip, abnt slt thru, sl-mod calc	18000-18060 SS: lt gy intbds, p-mod srt, vf-f sb rd-rd grs grdg down to slst, hd sb rd-rd gr sup clus cons wi silc cnt, mtx sup ip
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