



RESERVOIR GROUP

Scale: 5" / 100'
Measured Depth Log

Well Name Lion Creek 23-0164B

Location Sec 23 T11N R64W

State Colorado

Country U.S.

API Number 05-123-47385

Rig Number Savanna 802

AFE # 20240D

Geographic Region Rockies

Field Hereford

Spud Date 8/19/2018

Drilling Completed TBD

Surface Coordinates Latitude: 40.912756, Longitude: -104.517319
300 FNL 1320 FWL

Bottom Hole Coordinates Sec: 26 Twp: 11N 64W
240 FFSLL 330 FFWLL

Ground Elevation 5,391.2'

K.B. Elevation 5,411.2'

Logged Interval 8,237' To 18,174'

Total Depth 18,174'

Formation Nio B Chalk

Type of Drilling Fluid Water Based Mud

Operator

Company HighPoint Resources

Address 1099 18th Street, Suite 2300
Denver, CO 80202



HighPoint
RESOURCES

Geologist

Name Aryn Rowe, Ben Burke

Company HighPoint Resources

Address 1099 18th Street, Suite 2300
Denver, CO 80202

HighPoint
RESOURCES

Other

Services Provided 2-Man Logging, ISO Tubes/Jars, Mass Spec, AGS

Loggers: Jonathan Saltz / Reed Pellicore /

Equipment: ML-597

Address Reservoir Group - Empirica
6360 West Sam Houston Pkwy N
Houston, Texas 77041

Service Start Date: 09/03/2018

Service End Date: 09/10/2018

Job #: 1569RK1809

Hole Profile

Casing Records

Size	Wgt	From	To	Test
9.625	-	0	1544	-
7	-	1554	8302.72	-
4.5	-	8302.72	18091	-

Zone Color Coding

Oil

Note

Error

Condensate

Core

Water

GasPressureSeal

Rock

?

UNKNOWN

ANHYDRITE

COAL

CHERT

GYP SUM

MARLSTONE

SALT

CLAYSTONE

CHALK

SHALE

LIMESTONE

SHALE GRAY

DOLomite

SHALE COLOR

Acc

Fossils

F

FOSSIL

GASTROPOD

ARGILLITE GR

ALGAE

OOLITE

B BENTONITE

AMPHIPORA

OSTRACOD

BITUMENOUS

BELWENTITE

PELECYPOD

BRECCIA FRA

BIOTCLASTIC

PELLET

CALCAREOUS

BRACHIOPOD

PISOLITE

CARBONACE

BRYOZOA

PLANT REMAINS

CHTDK

CEPHALOPOD

PLANT SPORES

CHTLT

CORAL

SCAPHOPOD

COAL - THIN B

CRINOID

STROMATOPOROID

DOLOMITIC

ECHINOID

FELDSPAR

FISH

FERRUGINOUS












FORAMINIFERA

ANHYDRITIC




















FERRUGINOUS

Minerals















Rock Types

	SILTSTONE		TUFF
	SANDY SILTSTONE		IGNEOUS
	SANDSTONE		METAMORPHIC
	CONGLOMERATE		CEMENT
	BRECCIA		
	TILL		
	BENTONITE		

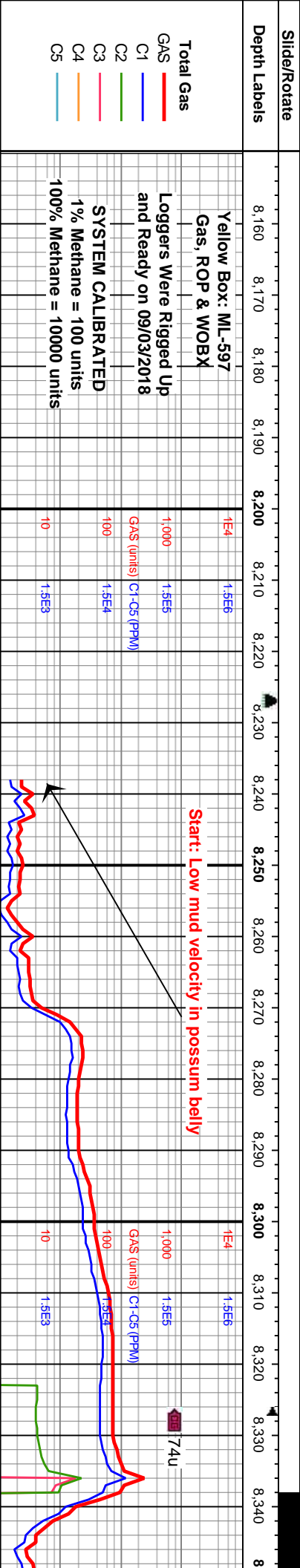
Accessories

	GLAUCONITE		
	GYPSIFEROUS		
Stringer			
	ANHYDRITE STRINGER		
	BENTONITE STRINGER		
	COAL STRINGER		
	DOLOMITE STRINGER		
	GYPSUM STRINGER		
	LIMESTONE STRINGER		
	PYRITE		MARLSTONE (CALC) STRG
	SALT CAST		MARLSTONE (DOL) STRG
	SANDY		SANDSTONE STRINGER
	SILICEOUS		SHALE STRINGER
	SILTY		SILTSTONE STRINGER
	TUFFACEOUS		

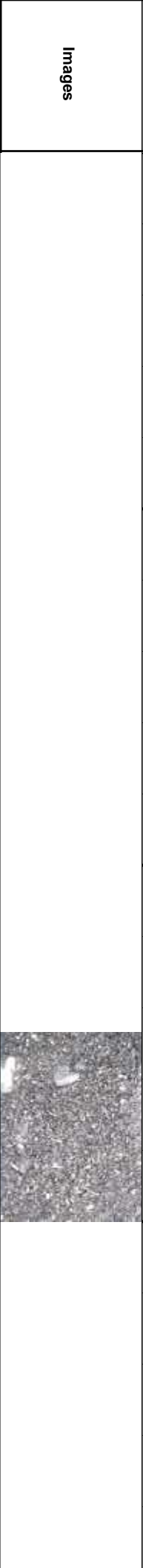
Other Symbols

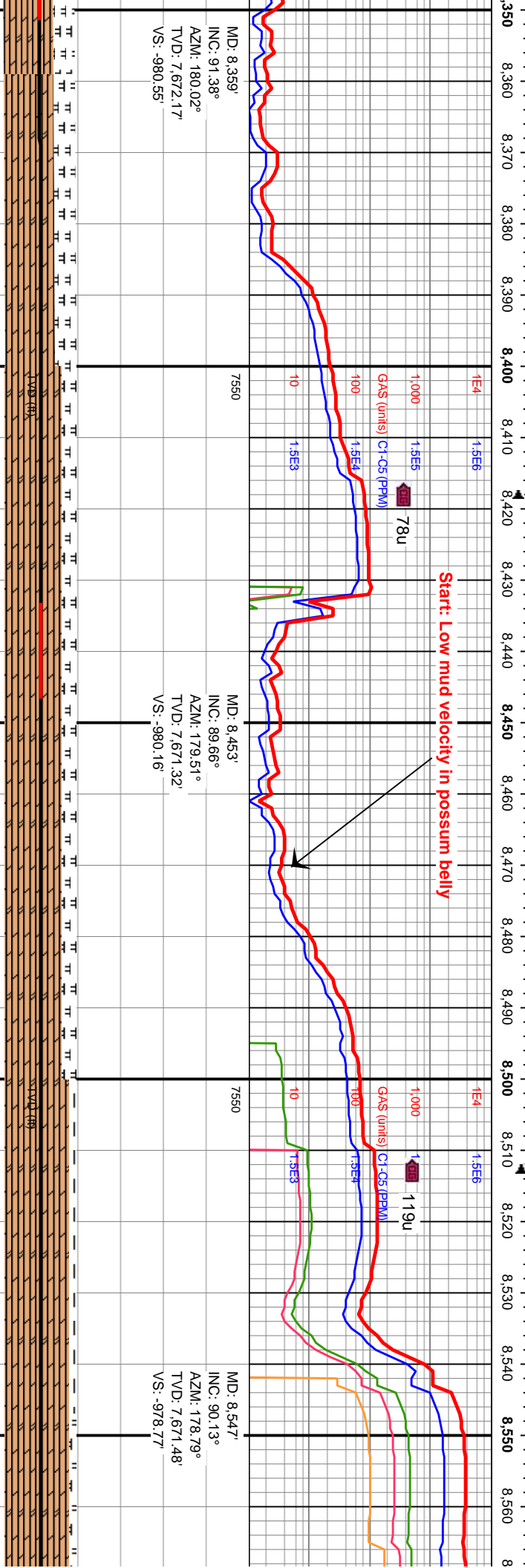
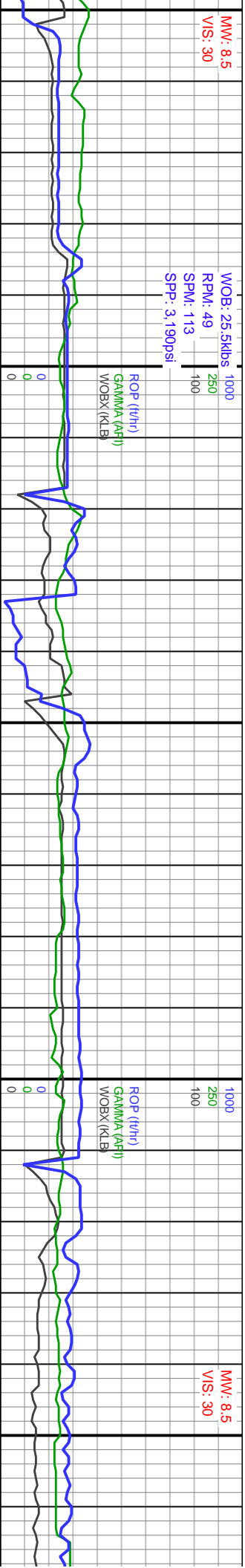
	ORGANIC		FORMATION TOP		LITHOGRAPHIC
	PINPOINT		GAS SHOW		MICROXLN
	DEAD		MINDEPTH MN DEPTH		ANGULAR
	VUGGY		NORMAL FAULT		ROUNDED
	EVEN		OIL SHOW		SUBANG
	QUESTIONABLE	Engineering			SUBANG
	SPOTTED STAINING		OVERTURNED STRATA		SUBANG
	CASING		REVERSE FAULT	Sorting	
Porosity			CONNECTION (LEFT)		TEXTURES
	EARTHY		SIDEWALL CORE (LEFT)		MODERATE
	FENESTRAL		CONNECTION (RIGHT)		BOUNDSTONE
	FRACTURE		SLIDE		CHALKY
	INTERCRYSTALLINE		SURVEY		WELL
	INTERUPT		CORE - LOST		CRYPTOXLN
	MOLDIC		TRIP GAS		EARTHY
	FAULT		WIRELINE TESTED - LEFT		FINELYXLN
	WIRELINE TESTED - RT		GRAINSTONE		

Curve/Survey Data	High Point Resources Lion Creek 23-0164B Weld County, CO Spud Date: 09/03/2018 Surface Casing: 9.625" @ 1,554'	Bit #: 3 Type: TD505FS Size: 6 1/8 Depth In: 8.237' Jets: 5x16 S/N: 5284571	MINIDEPTH 09/07/2018
	ROP (ft/hr) GAMMA (API) WOBX (KLB)	ROP (ft/hr) GAMMA (API) WOBX (KLB)	
2 Man Logging Began on 09/03/2018 20:06hrs MST All Depths Correspond to			
Curve Landed on 08/23/2018 @ 00:48hrs MST x,xxx' TVD xx,xx°Shoe @ 8,302'MD			



Well Bore TVD	TIE IN SURVEY	7550	MD: 8.161' INC: 89.87° AZM: 180.38° TVD: 7.677.93' VS: -978.03'
	<div> <div>8200-8300 60% MRLST: gy lt gy, frm, brit, tab-blky, arg-sily, occ lam; 40% CHK: lt gy gy off wht, frm, brit, tab, xln, sl arg; tr free lt brn-med brn o in sample</div> <div> <div>8200-8300 60% MRLST: gy lt gy, frm, brit, tab-blky, arg-sily, occ lam; 40% CHK: lt gy gy off wht, frm, brit, tab, xln, sl arg; tr free lt brn-med brn o in sample</div> <div>8200-8300 60% MRLST: gy lt gy, frm, brit, tab-blky, arg-sily, occ lam; 40% CHK: lt gy gy off wht, frm, brit, tab, xln, sl arg; tr free lt brn-med brn o in sample</div> </div> </div>	7550	MD: 8.266' INC: 92.69° AZM: 181.3° TVD: 7.675.47' VS: -979.48'
<div> <div>8200-8300 60% MRLST: gy lt gy, frm, brit, tab-blky, arg-sily, occ lam; 40% CHK: lt gy gy off wht, frm, brit, tab, xln, sl arg; tr free lt brn-med brn o in sample</div> <div>8200-8300 60% MRLST: gy lt gy, frm, brit, tab-blky, arg-sily, occ lam; 40% CHK: lt gy gy off wht, frm, brit, tab, xln, sl arg; tr free lt brn-med brn o in sample</div> </div>			
7800			

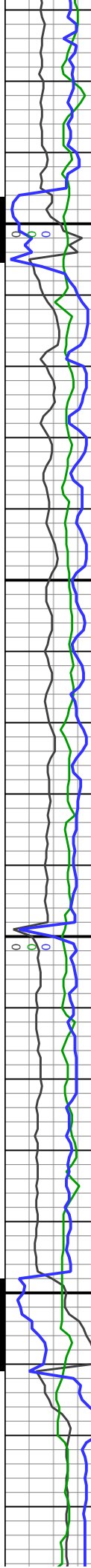




8300-8400 60% CHK: lt gy gy off wht, sft-frm, brit, tab, xln, sl arg; 30% MRLST: gy dk gy, frm, brit, tab-blky, arg-slty; rr free lt brn-med brn o in sample	7800	8400-8500 80% CHK: lt gy gy off wht, sft-frm, brit, tab, xln, sl arg; 20% MRLST: gy dk gy, frm, brit, tab-blky, arg-slty; rr free lt brn-med brn o in sample	7800	8500-8600 80% sft-frm, brit, tab, dk gy, frm, brit, brn-med brn o in sample	7800
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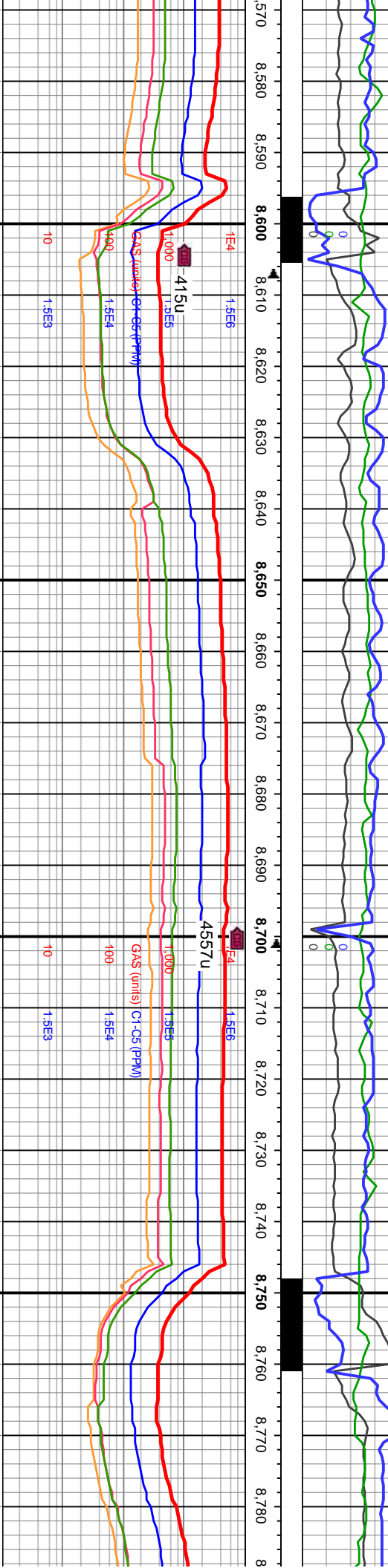
WOB: 19.5kbs
RPM: 0
SPM: 124
SPP: 3,150psi

ROP (t/hr)
GAMMA (API)
MOBX (KLB)



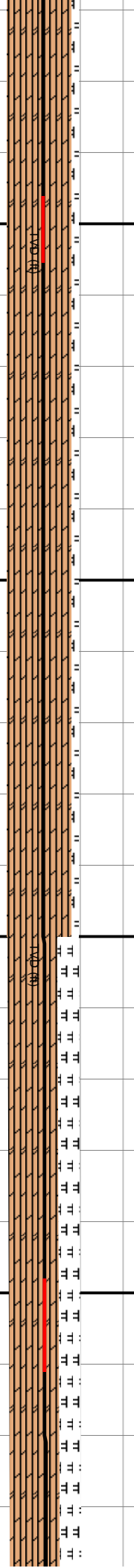
MW: 8.5
VIS: 31

ROP (t/hr)
GAMMA (API)
MOBX (KLB)



MD: 8,641'
INC: 89.63°
AZM: 179.25°
TVD: 7,671.67'
VS: -977.16'

MD: 8,735'
INC: 91.17°
AZM: 179.15°
TVD: 7,671.01'
VS: -975.85'

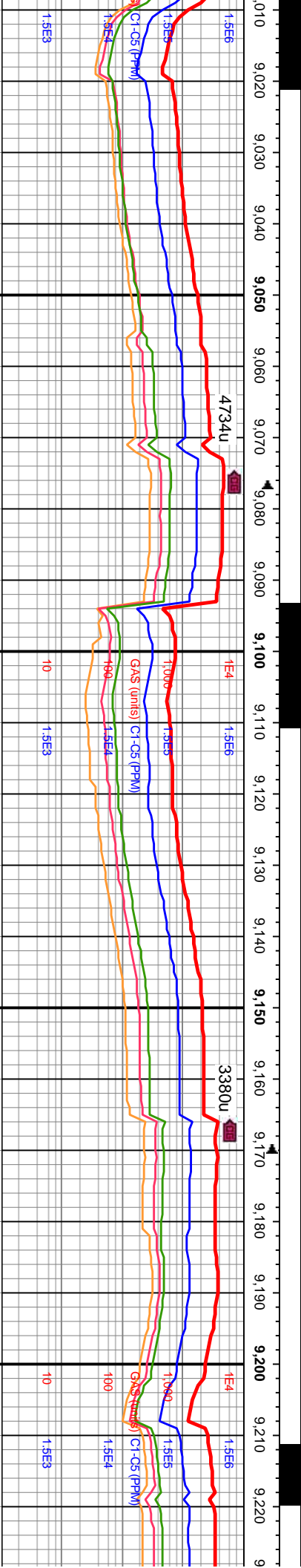
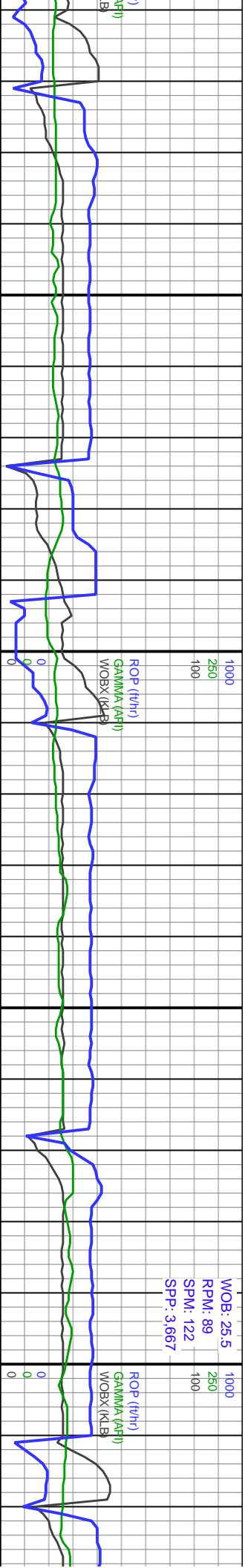


CHK: lt gy gy off wht,
xln, sl arg: 20% MRLST: gy
ab-blky, arg-sltv; rr free lt
sample

8600-8700 80% CHK: lt gy gy off wht,
sft-frn, brit, tab, xln, sl arg: 20% MRLST gy
dk gy, frn, brit, tab-blky, arg-sltv; rr free lt
brn-med brn o in sample

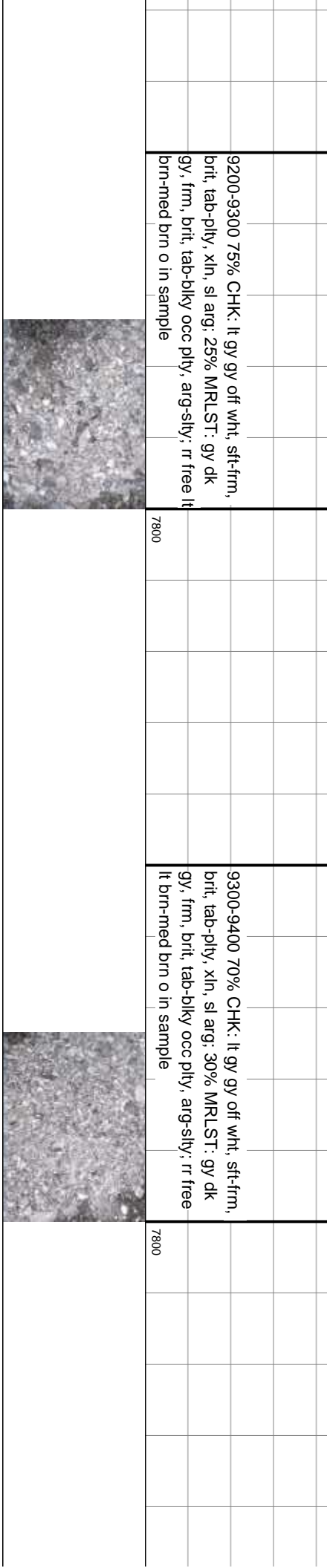
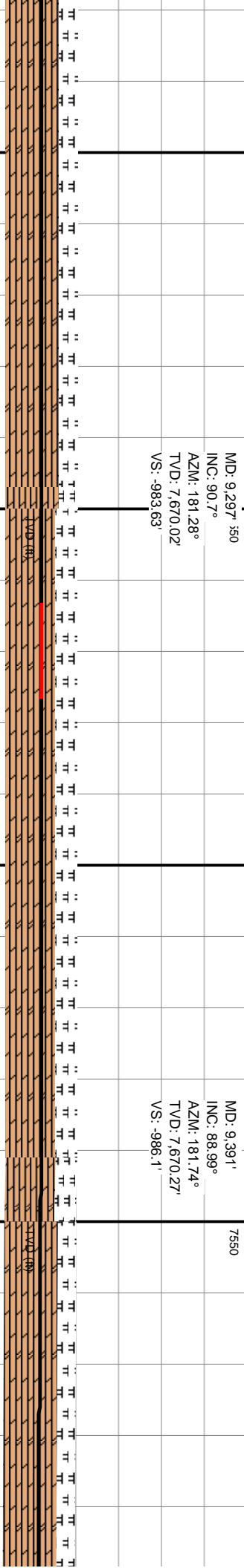
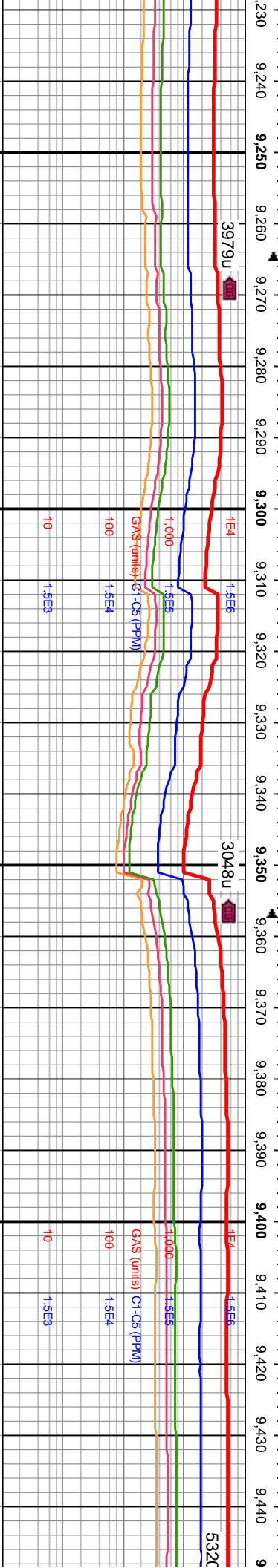
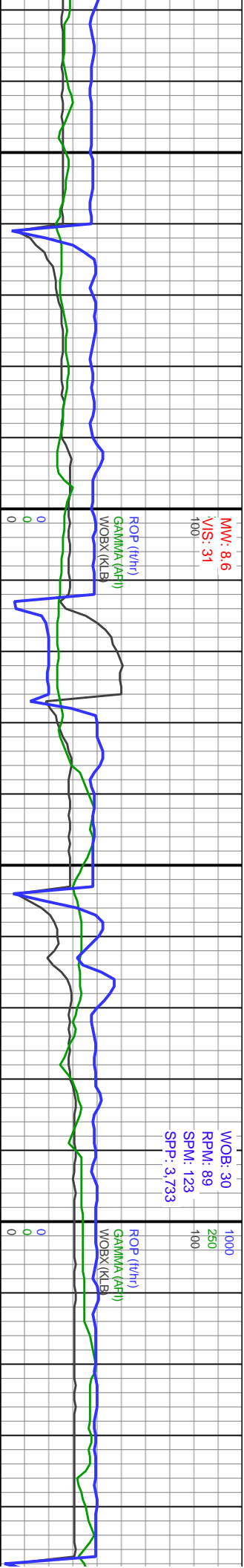
8700-8800 70% CHK: lt gy gy off w
sft-frn, brit, tab, xln, sl arg: 30% MRLST
dk gy, frn, brit, tab-blky, arg-sltv; rr
brn-med brn o in sample

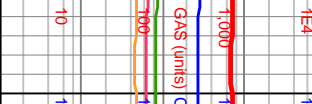


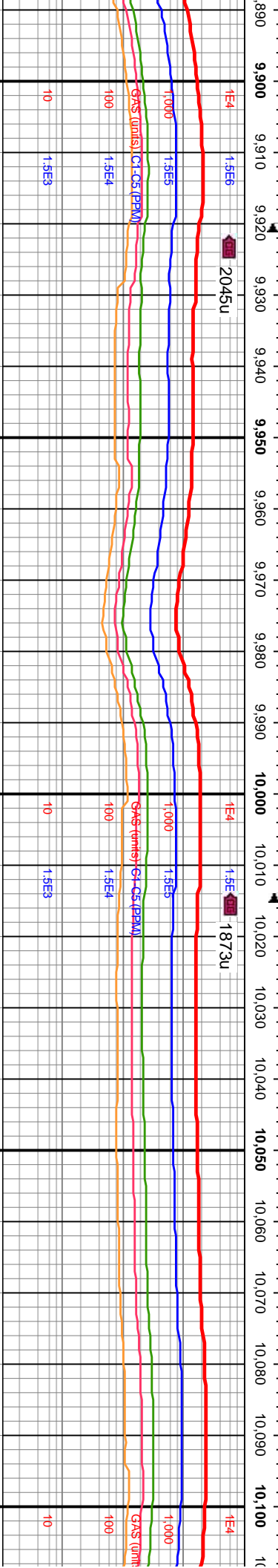
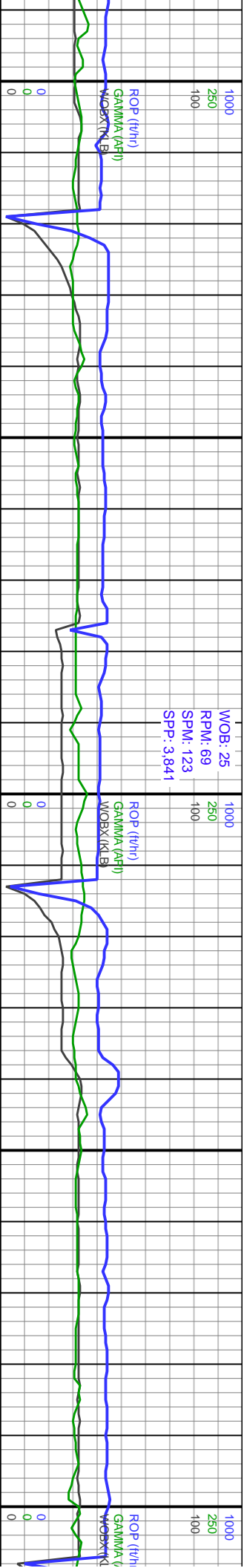


MD: 9.017' INC: 89.7° AZM: 180.48° TVD: 7.668.98' VS: -974.97'		755MD: 9.110' INC: 89.6° AZM: 182.43° TVD: 7.669.55' VS: -977.34'		74MD: 9.204' INC: 89.56° AZM: 182° TVD: 7.670.24' VS: -987.62'	
9000-9100 90% CHK: lt gy gy off wht, sft-frm, brit, tab, xln, sl arg; 10% MRLST: gy dk gy, frm, brit, tab-blky, arg-slty; rr free lt brn-med brn o in sample		9100-9200 80% CHK: lt gy gy off wht, sft-frm, brit, tab-pty, xln, sl arg; 20% MRLST: gy dk gy, frm, brit, tab-blky occ pty, arg-slty; rr free lt brn-med brn o in sample			
7800		7800		7800	



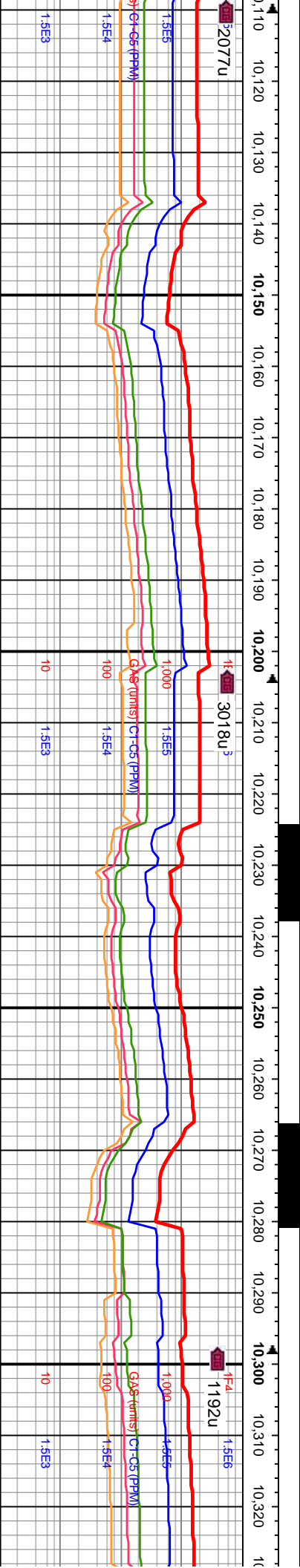
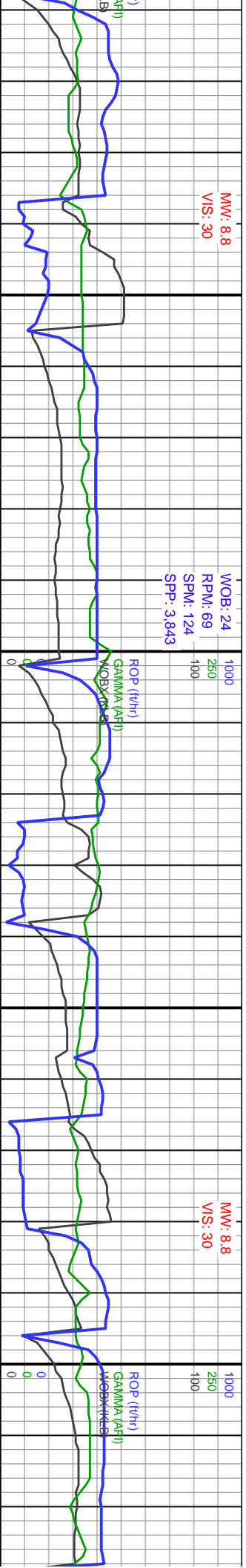


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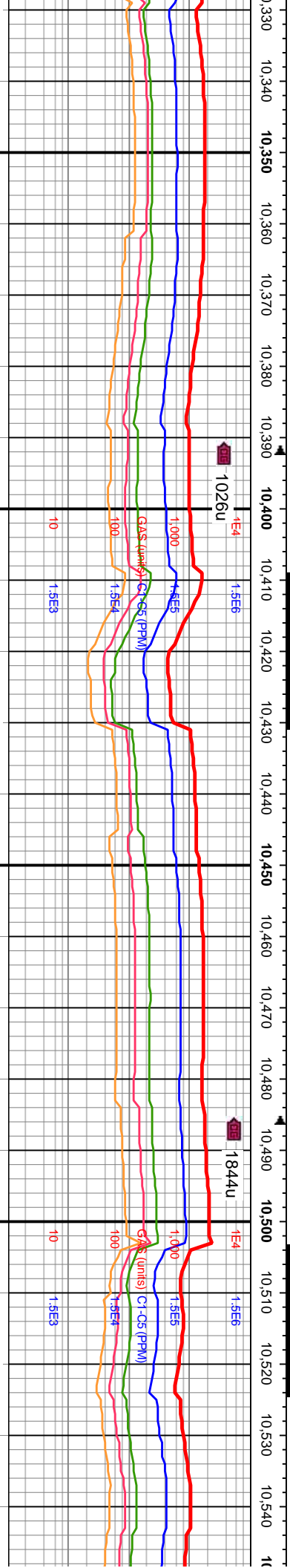
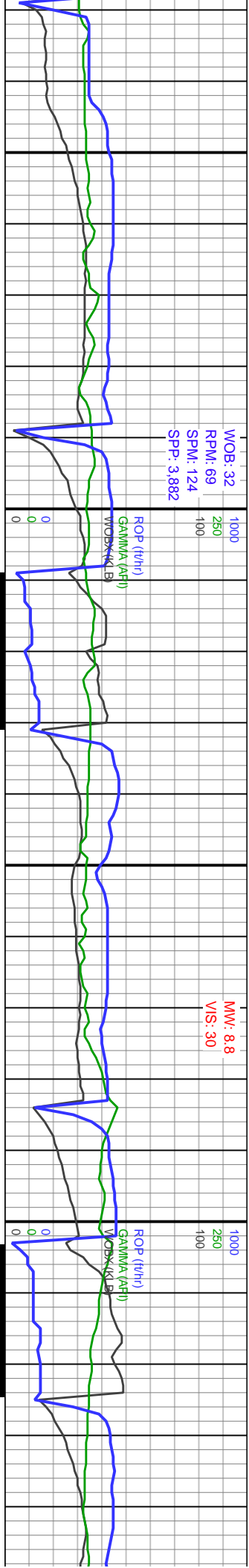
7550	MD: 9.955' INC: 89.93° AZM: 181.02° TVD: 7,683.8' VS: -1,003.57'	7550	MD: 10,050' INC: 89.83° AZM: 178.62° TVD: 7,684' VS: -1,003.27'	7550
9900-10000 60% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; 40% MRLST: med blk gy, frm-hd ip, sb ply-sb blkgy, rthy tex-rgn tex, com intbdd CHK lamn & incl; tr free CHK, rr free lt brn-med brn o in sample				
10000-10100 60% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; 40% MRLST: med blk gy, frm, sb ply-sb blkgy, rthy tex-rgn tex, com intbdd CHK lamn & incl; tr free CHK, rr free lt brn-med brn o in sample				





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ID: 10.332'
INC: 90.97°
ZM: 178.91°
VD: 7,680.31'
S: -992.85'

7550

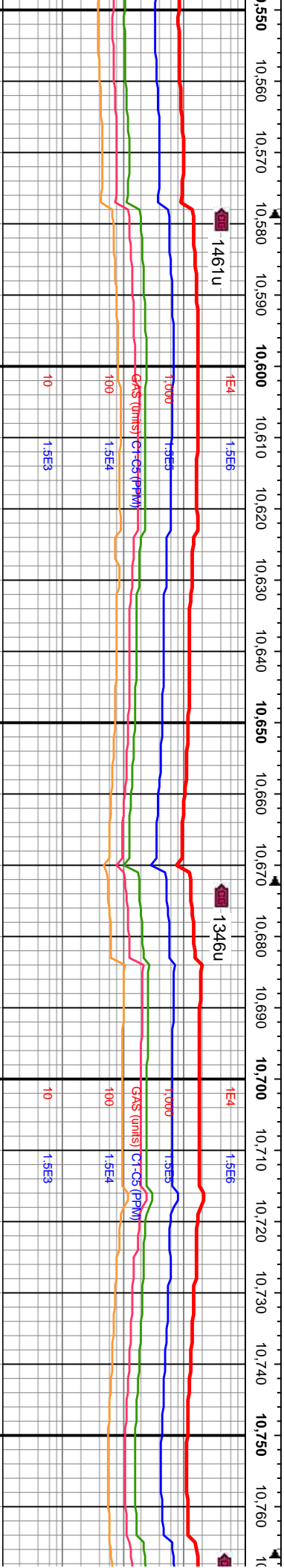
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TVD: 7,680.67'
VS: -991.58'

7550

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AZM: 181.76°
TVD: 7,682.87'
VS: -992.63'

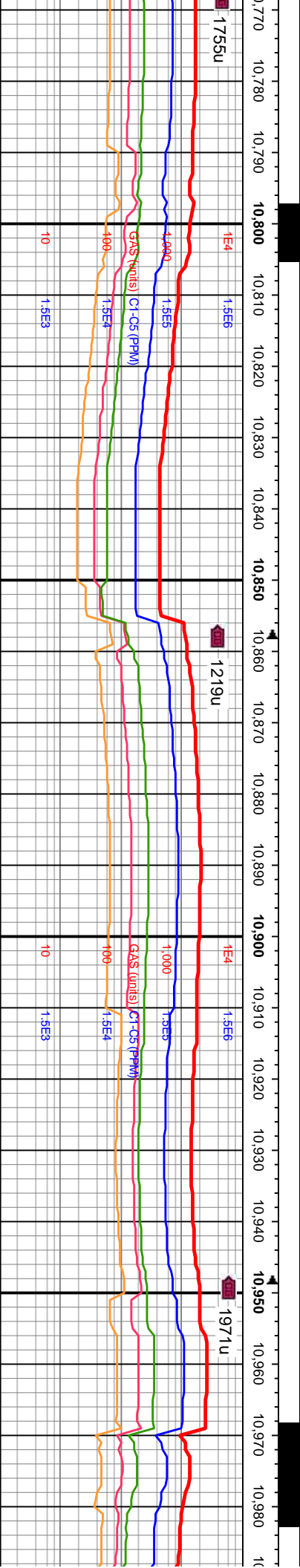
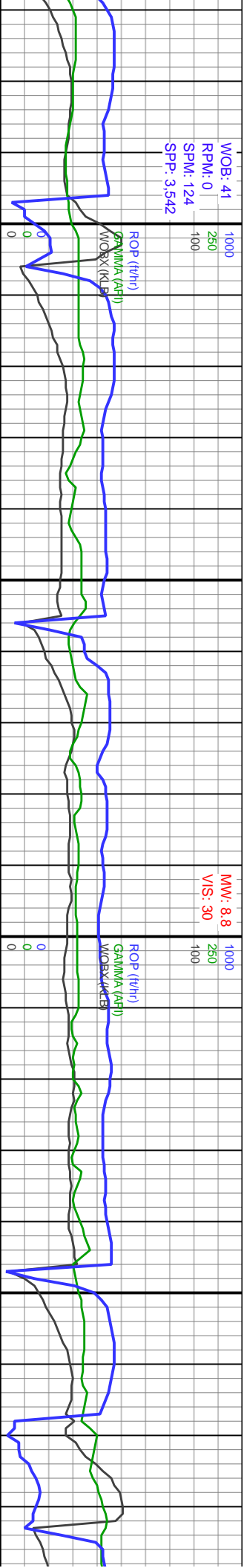
10300-10400 65% CHK: off wh-crm, v sft-sft ip, blk-sb md, rthy tex, abnt intbdd MRLST; 35% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex-rgn tex, abnt intbdd CHK lamn & incl; rr free CHK	7800	10400-10500 50% CHK: off wh, v sft-sft ip, blk-sb md, rthy tex, abnt intbdd MRLST; 50% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex-rgn tex, abnt intbdd CHK lamn & incl; rr free CHK; occ free lt brn-med brn o in sample	7800
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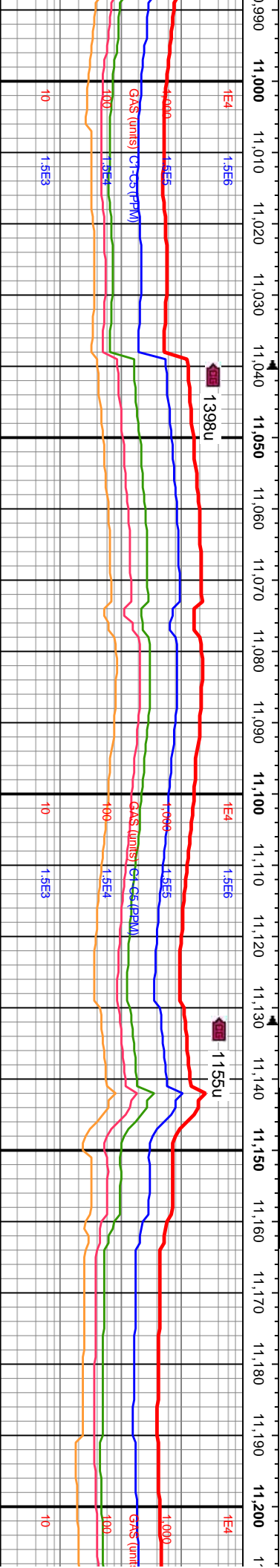
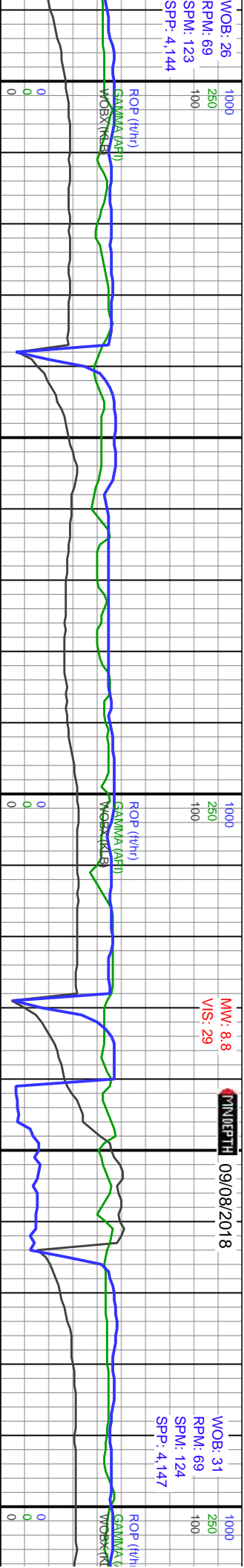
10500-10600 50% CHK: off wh, v sft-sft ip, blk-sb rnd, rthy tex, abnt intbdd MRLST; 50% MRLST: dk bl gy, frm-hd ip, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamn & incl; rr free CHK; abnt free lt brn-med brn o in sample	7800	10600-10700 50% CHK: off wh, v sft, blk-sb rnd, rthy tex, rr intbdd MRLST; 50% MRLST: dk bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamn & incl; rr free CHK; abnt free lt brn-med brn o in sample	7800	10700-10800 80% pily-sb blkly, rthy CHK lamn & incl wh, v sft, blkly-st MRLST; abnt fr sample
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10770-10790	% MRLST: dk bl gy, frm, sb tex-rgn tex, abnt inbddd ; rr free CHK: 15% CHK: off md, rthy tex, rr inbddd ee lt brn-med brn o in	7800
10800-10900	80% MRLST: dk bl gy, frm, sb ply-sb blkly, rthy tex-rgn tex, abnt inbddd CHK lamn & inci; v tr free CHK: 20% CHK: off wh, v sft, blkly-sb rnd, rthy tex, rr inbddd MRLST: abnt free lt brn-med brn o in sample	7800
10900-11000	75% MRLST: dk bl g ip, sb ply-sb blkly, rthy tex-rgn tex, inbddd CHK lamn & inci; v tr free C CHK: off wh, v sft, blkly-sb rnd, rthy inbddd MRLST: abnt free lt brn-me in sample	7800





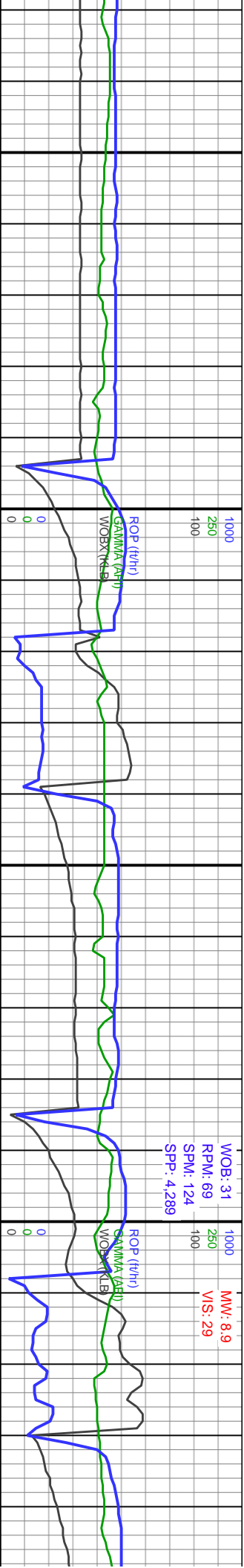
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AZM: 179.96°
TVD: 7.680.37'
VS: -1.003.66'

MD: 11.162'
INC: 90.23°
AZM: 181.78°
TVD: 7.680.45'
VS: -1.005.04'

11000-11100 70% MRLST: dk bl gy, frm, sb
ply-sb blkly, rthy tex-rgn tex, abnt intbdd
CHK lamm & incl; v tr free CHK: 30% CHK:
off wh, v sft, blkly-sb rnd, rthy tex, rr intbdd
MRLST: abnt free lt brn-med brn o in
sample

11100-11200 70% MRLST: dk bl gy, frm, sb
ply-sb blkly, rthy tex-rgn tex, abnt intbdd
CHK lamm & incl; v tr free CHK: 30% CHK:
off wh, v sft, blkly-sb rnd, rthy tex, rr intbdd
MRLST: abnt free lt brn-med brn o in
sample





430 11,440 11,450 11,460 11,470 11,480 11,490 11,500 11,510 11,520 11,530 11,540 11,550 11,560 11,570 11,580 11,590 11,600 11,610 11,620 11,630 11,640 11,650

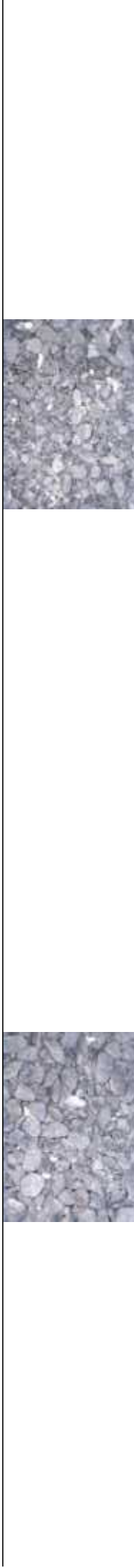


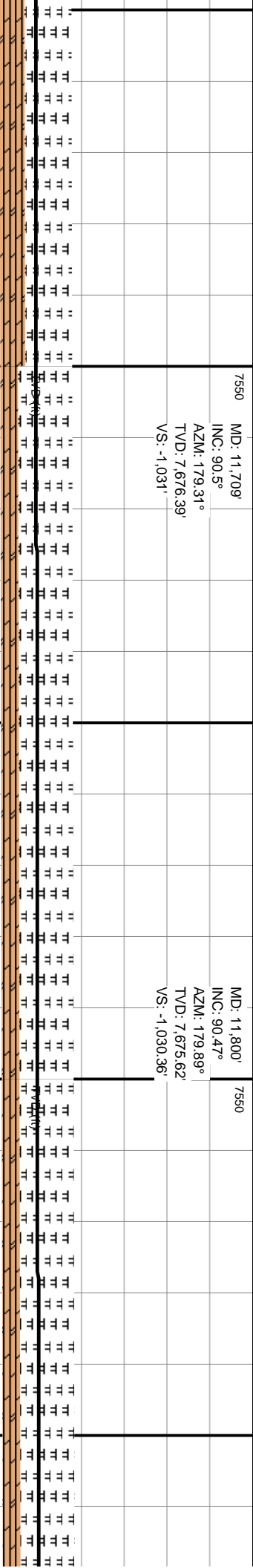
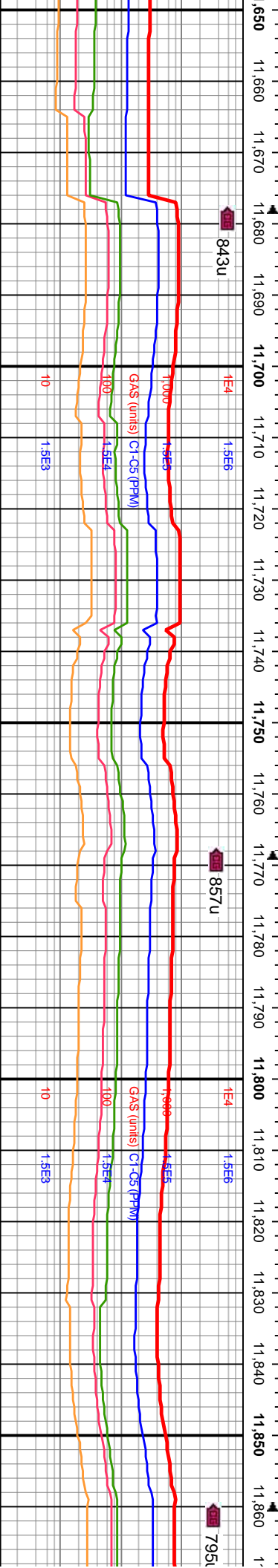
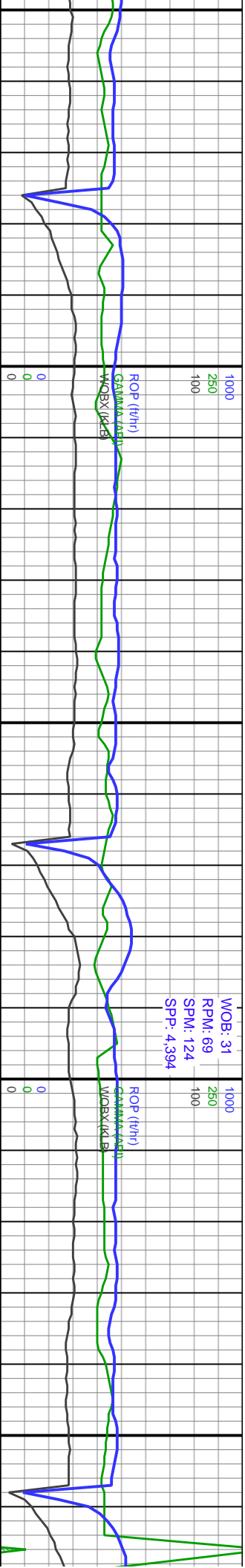
MD: 11.436' INC: 90.34° AZM: 184.18° TVD: 7.679.4' VS: -1.018.75'

MD: 11.527' INC: 90.84° AZM: 184.3° TVD: 7.678.47' VS: -1.025.48'

MD: 11.618' INC: 90.64° AZM: 181.67° TVD: 7.677.3' VS: -1.030.22'

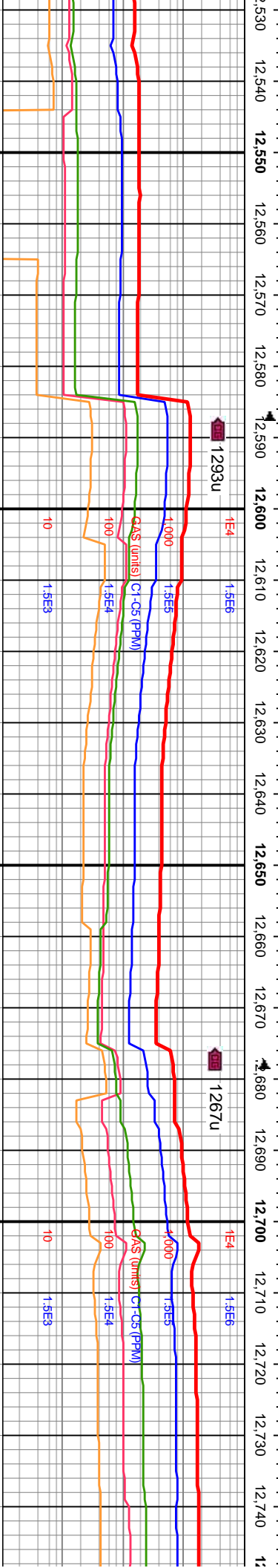
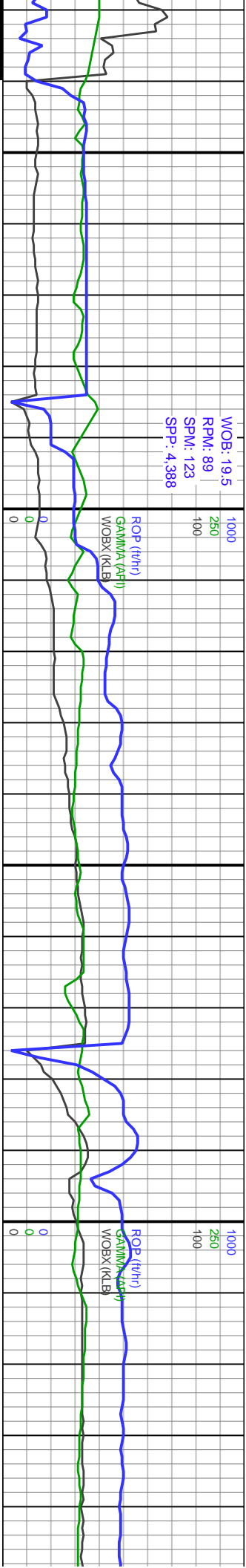
11400-11500 70% MRLST: dk bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamn & incl; tr free CHK; 30% CHK: off wh, v sft, blkly-sb md, rthy tex, rr intbdd MRLST; abnt free lt brn-med brn o in sample	7800
11500-11600 85% MRLST: dk bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamn & incl; tr free CHK; 15% CHK: off wh, v sft, blkly-sb md, rthy tex, rr intbdd MRLST; v tr free lt brn-med brn o in sample	7800





11600-11700 65% MRLST: dk-med bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamm & incl; tr free CHK; 35% CHK: off wh, v sft, blkly-sb rnd, rthy tex, rr intbdd MRLST; v tr free lt brn-med brn o in sample		11700-11800 75% MRLST: dk-med bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, occ intbdd CHK lamm & incl; tr free CHK; 25% CHK: off wh, v sft, blkly-sb rnd, rthy tex, rr intbdd MRLST; v tr free lt brn-med brn o in sample		11800-11900 75 MRLST: dk-med bl gy, frm, sb pily-sb blkly, rthy tex-rgh tex, abnt intbdd CHK lamm & incl; tr free CHK; 35% CHK: off wh, v sft, blkly-sb rnd, rthy tex, rr intbdd MRLST; v tr free lt brn-med brn o in sample	
7800		7800		7800	





5.27'
86°
78.31°
669.25'
149.38'

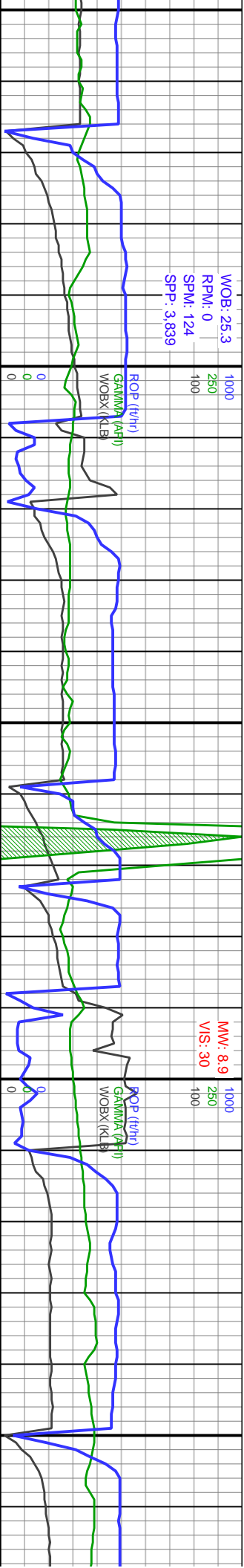
7550

MD: 12.618'
INC: 89.16°
AZM: 177.58°
TVD: 7,670.82'
VS: -1,046.11'

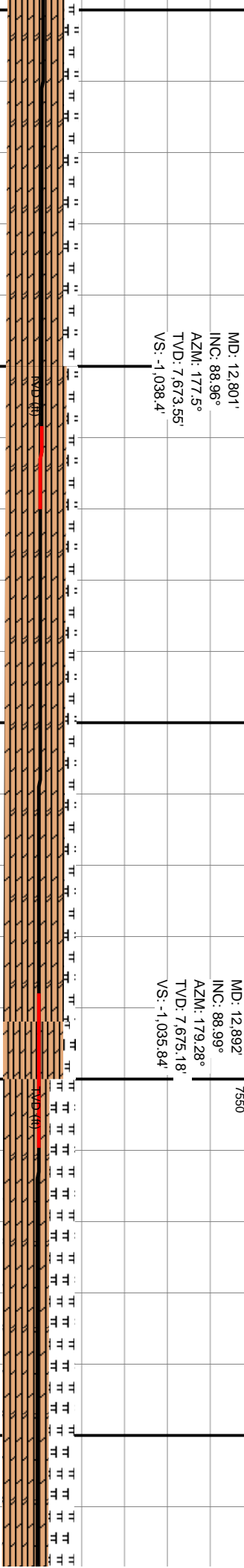
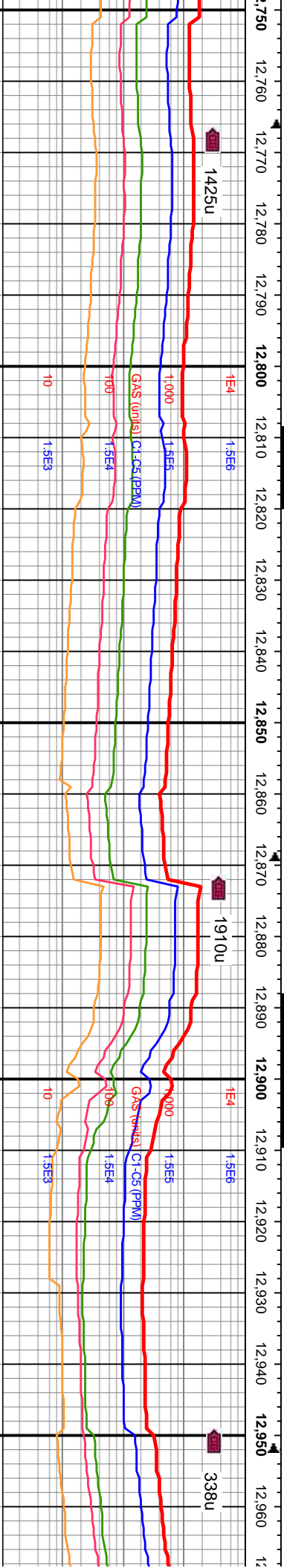
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AZM: 177.64°
TVD: 7,672.1'
VS: -1,042.31'

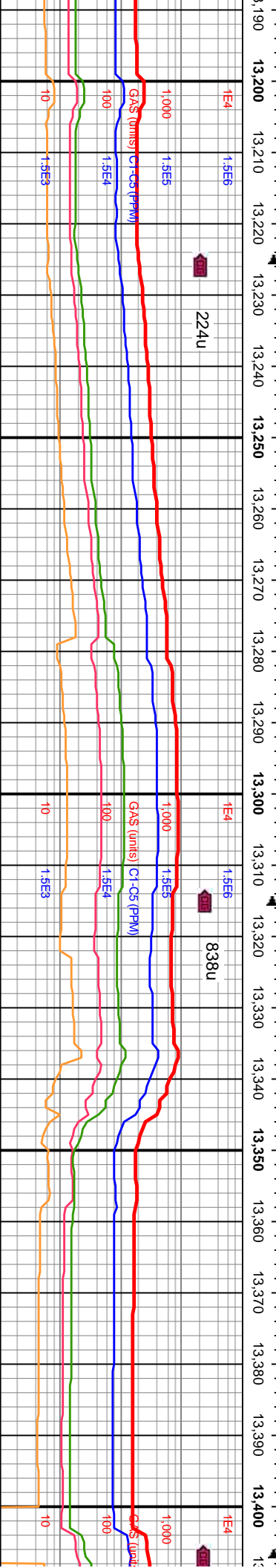
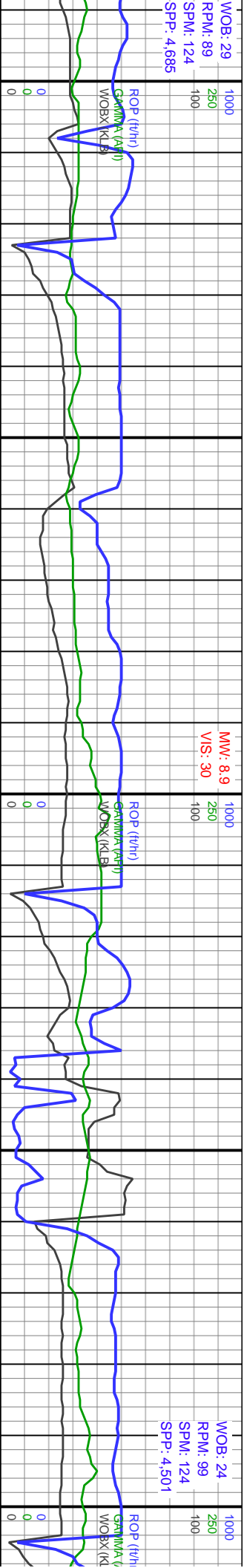
12500-12600 70% CHK: off wht lt gy, frm, brit, tab-blky, lam, w occ intbdd MRLST; 30% MRLST: dk gy gy, frm, tab sub-blky, silty, sm-sily tx, occ intbdd CHK, lam; o over shks, fnt o od	7800
12600-12700 60% CHK: off wht lt gy, frm, brit, tab-blky, lam, w occ intbdd MRLST; 40% MRLST: dk gy gy, frm, tab sub-blky, silty, sm-sily tx, occ intbdd CHK, lam; o over shks, fnt o od	7800





MW: 8.9
VIS: 30





7550

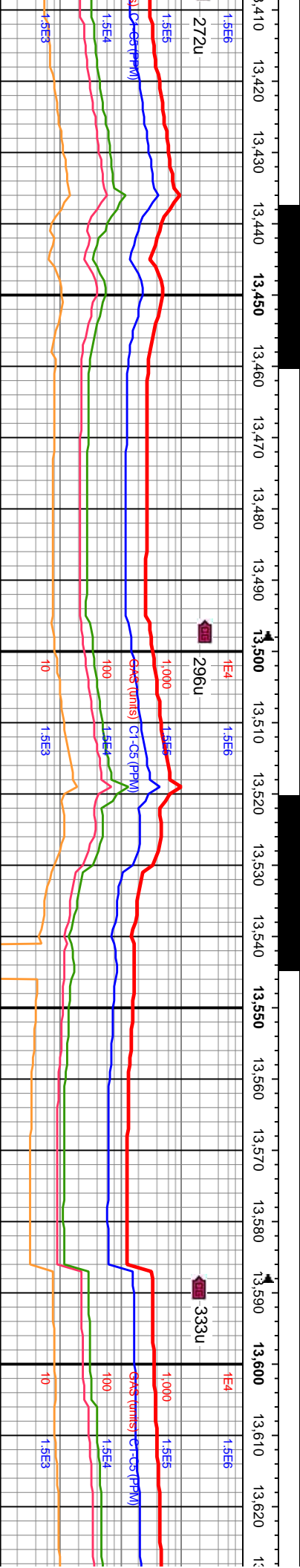
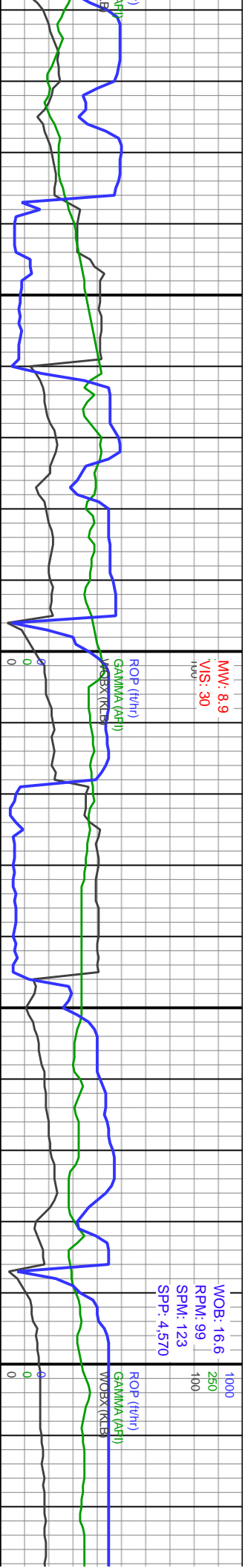
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AZM: 180.18°
TVD: 7,673.25'
VS: -1,034.75'

7550

MD: 13.346
INC: 92.11°
AZM: 181.26°
TVD: 7,670.27'
VS: -1,035.9'

13,190-13,200 90% CHK: off wht lt gy, frm, brit, tab-biky, lam, w occ intbdd MRLST; 10% MRLST: dk gy gy, frm, tab sub-biky, silty, sm-silty tx, occ intbdd CHK, lam; o over shkrs, fnt o od	7800
13,300-13,400 85% CHK: off wht lt gy, frm, brit, tab-biky, lam, w occ intbdd MRLST; 15% MRLST: dk gy gy, frm, tab sub-biky, silty, sm-silty tx, occ intbdd CHK, lam; o over shkrs, fnt o od	7800





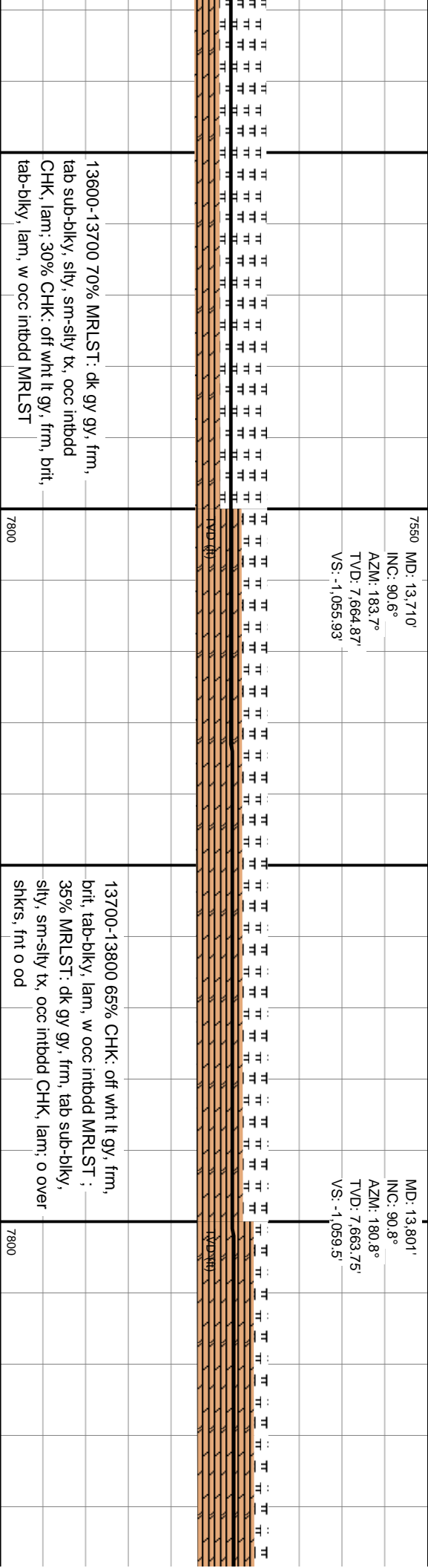
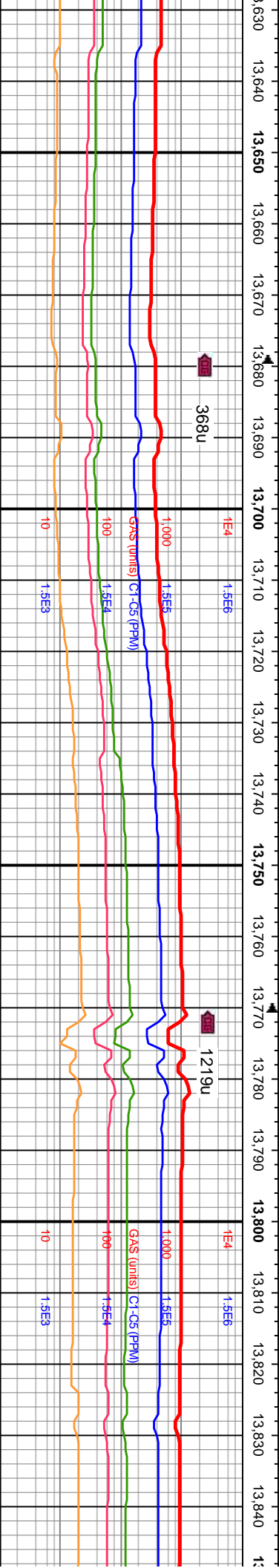
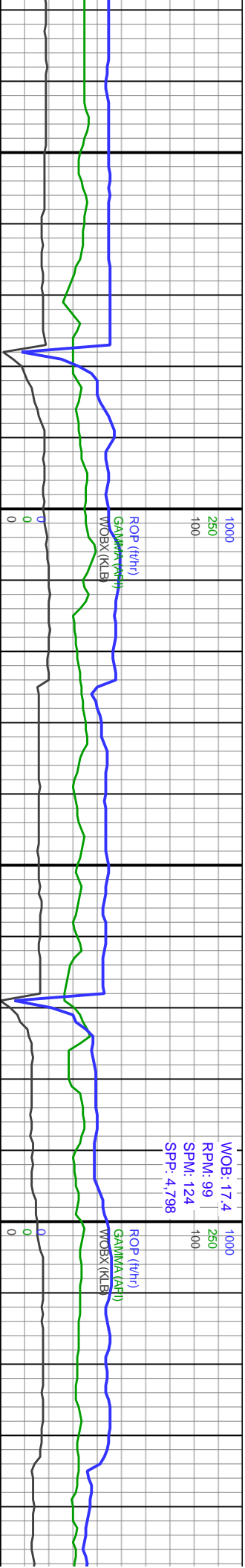
MD: 13,437'
INC: 91.51°
AZM: 181.16°
TVD: 7,667.4'
VS: -1,037.82'

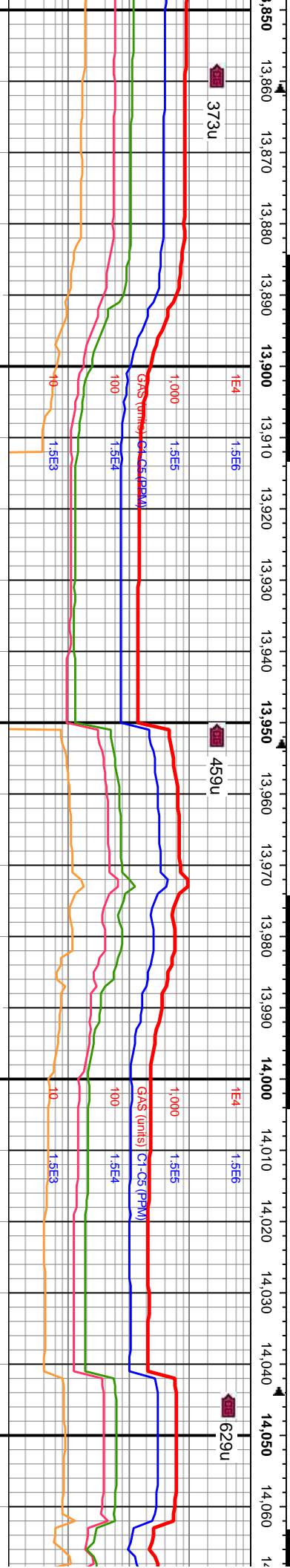
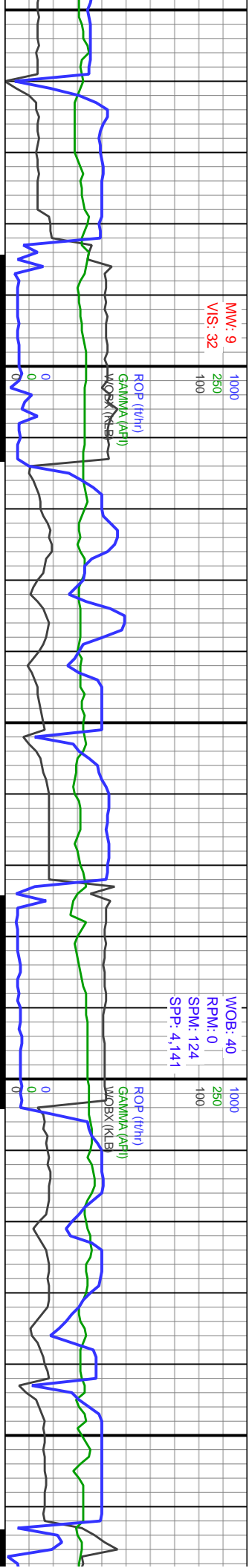
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INC: 90.47°
AZM: 184.58°
TVD: 7,665.83'
VS: -1,042.37'

MD: 13,619'
INC: 90.07°
AZM: 184.41°
TVD: 7,665.4'
VS: 5,399.89'

13400-13500 60% MRLST: dk gy gy, frm, tab sub-bkly, silty, sm-silty tx, occ intbdd CHK, lam, 40% CHK: off wht lt gy, frm, brit, tab-bkly, lam, w occ intbdd MRLST	7800	13500-13600 60% CHK: off wht lt gy, frm, brit, tab-bkly, lam, w occ intbdd MRLST; 40% MRLST: dk gy gy, frm, tab sub-bkly, silty, sm-silty tx, occ intbdd CHK, lam; o over shtrs, fnt o od	7800
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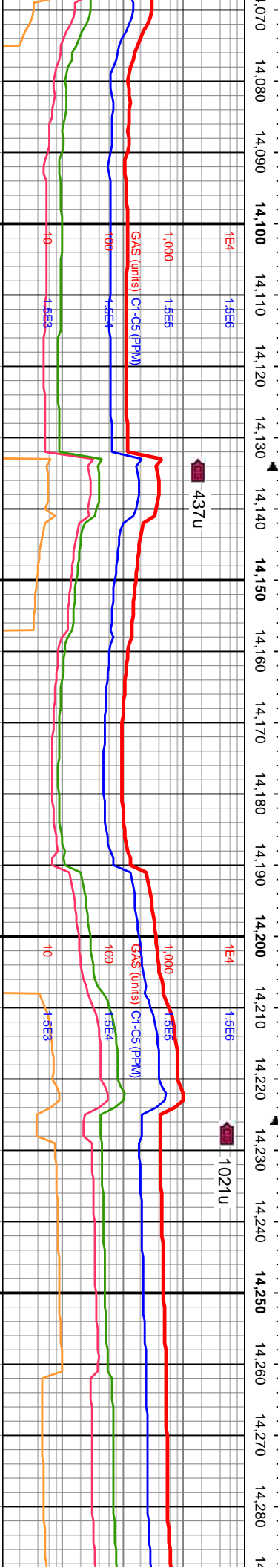
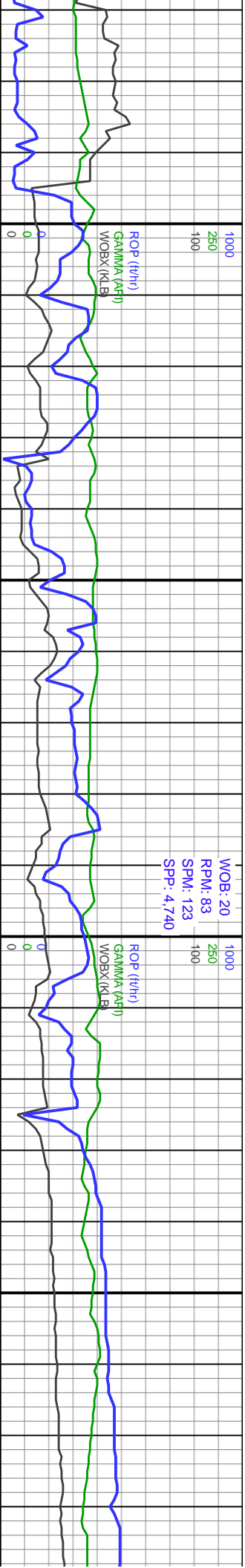






13800-13900 80% CHK: off wht lt gy, frm, brit, tab-biky, lam, w occ intbdd MRLST: 20% MRLST: dk gy gy, frm, tab sub-biky, slty, sm-slty tx, occ intbdd CHK, lam; o over shkts, fnt o od	7800
13900-14000 60% CHK: off wht lt gy, frm, brit, tab-biky, lam, w occ intbdd MRLST: 40% MRLST: dk gy gy, frm, tab sub-biky, slty, sm-slty tx, occ intbdd CHK, lam; o over shkts, fnt o od	7800
14000-14100 5% blk-sb md, rthy free CHK; 45% sb ply-sb biky, CHK lamm & inc	

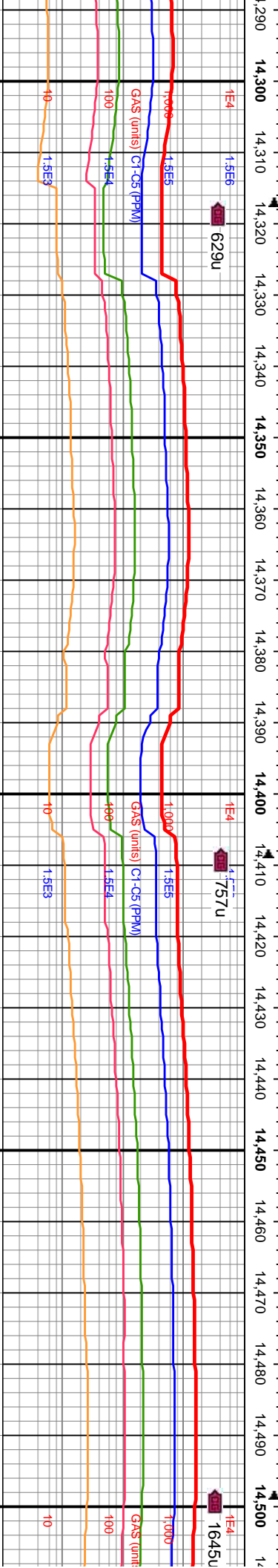
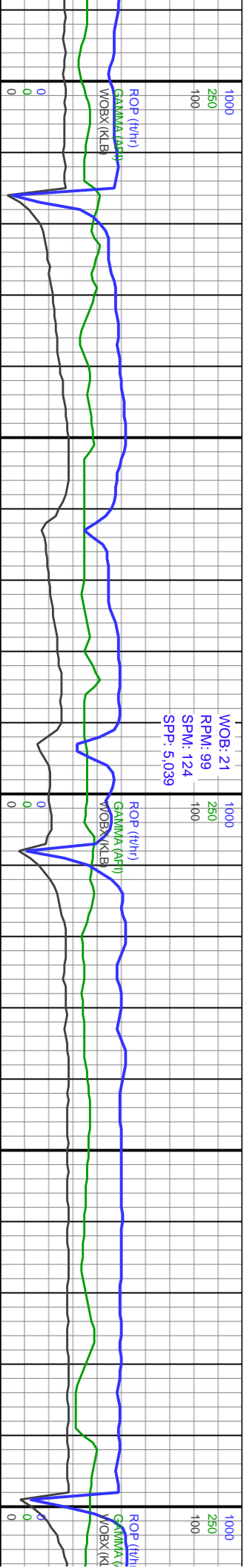




MD: 14.074° INC: 89.56° AZM: 183.41° TVD: 7,663.18' VS: -1,065.07'	7550	MD: 14.166° INC: 90.77° AZM: 185.54° TVD: 7,662.91' VS: -1,072.24'	7550	MD: 14.257° INC: 89.6° AZM: 182.6° TVD: 7,662.62' VS: -1,078.7'
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14100-14200 55% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, occ intbdd MRLST; com free CHK: 45% MRLST: dk bl gy, frm hd ip, sb ply-sb blk, rthy tex-rgn tex, com intbdd CHK lamm & incl	7800	14200-14300 65% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, com intbdd MRLST: dk bl gy, frm hd ip, sb ply-sb blk, rthy tex-rgn tex, com intbdd CHK lamm & incl	7800
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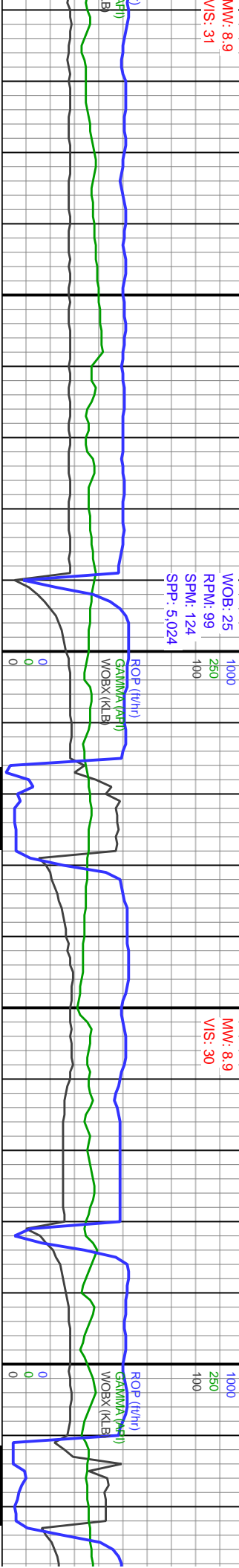
7550	MD: 14.348' INC: 89.83° AZM: 181.98° TVD: 7,663.07' VS: -1,082.33'	14300-14400 50% CHK: off wh-crm, v v sft, blk-sb md, rthy tex, com intbdd MRLST; abnt free CHK: 50% MRLST: dk bl gy, frm hd ip, sb pily-sb blkly, rthy tex-rgh tex, occ intbdd CHK larmn & incl	7800
7550	MD: 14.439' INC: 90.2° AZM: 182° TVD: 7,663.04' VS: -1,085.49'	14400-14500 60% CHK: off wh-crm, sft, blk-sb md, rthy tex, com intbdd MRLST; abnt free CHK: 40% MRLST: dk bl gy, frm hd ip, sb pily-sb blkly, rthy tex-rgh tex, com intbdd CHK larmn & incl	7800



MMV: 8.9
VIS: 31

WOB: 25
RPM: 99
SPM: 124
SPP: 5.024

MMV: 8.9
VIS: 30



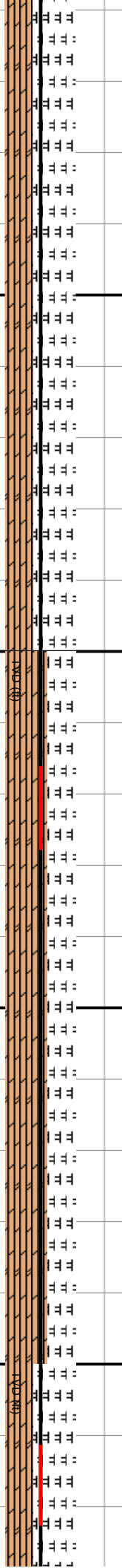
14,510 14,520 14,530 14,540 14,550 14,560 14,570 14,580 14,590 14,600 14,610 14,620 14,630 14,640 14,650 14,660 14,670 14,680 14,690 14,700 14,710 14,720



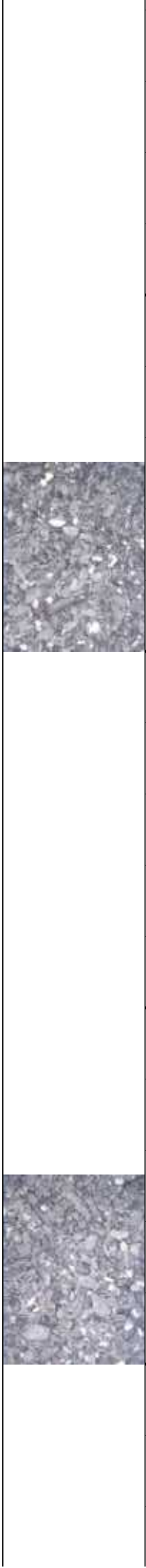
MD: 14,530'
INC: 90.13°
AZM: 182.17°
TVD: 7,662.78'
VS: -1,088.8'

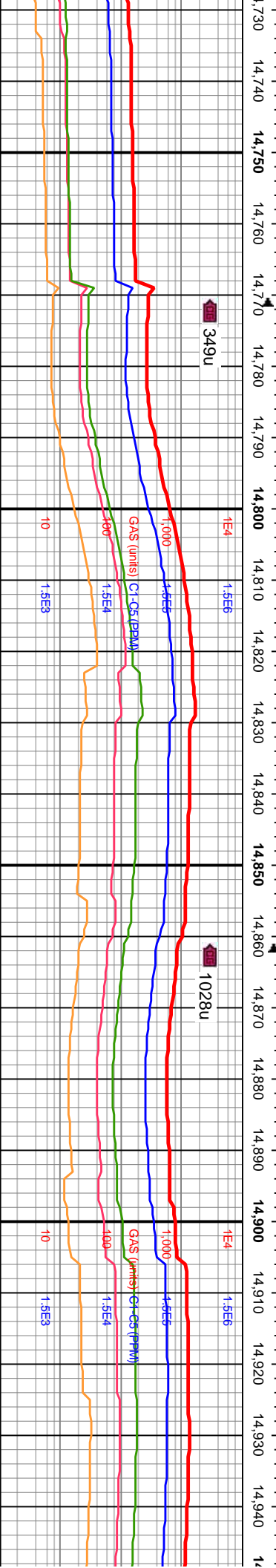
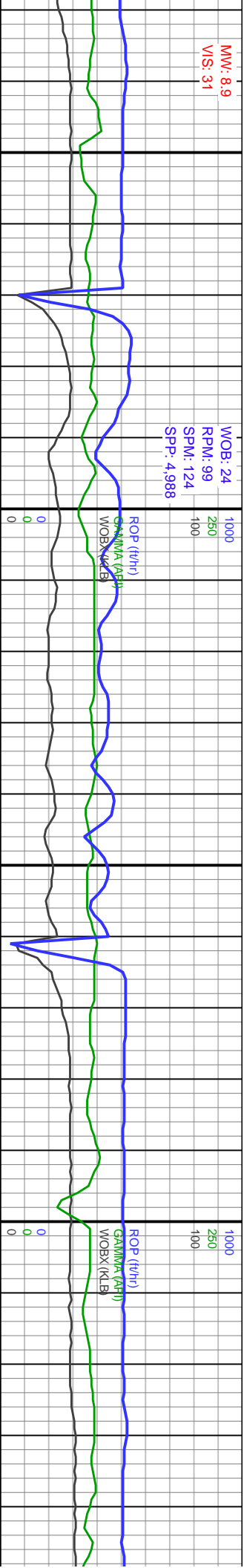
MD: 14,620'
INC: 89.97°
AZM: 181.5°
TVD: 7,662.7'
VS: -1,091.67'

MD: 14,711'
INC: 89.97°
AZM: 180.16°
TVD: 7,662.75'
VS: -1,092.99'



14500-14600 60% CHK: off wh-crm, sft, blk-sb rmd, rthy tex, com intbdd MRLST; abt free CHK: 40% MRLST: dk bl gy, frm hd ip, sb pty-sb blkly, rthy tex-rgh tex, com intbdd CHK lamm & incl	7800
14600-14700 40% MRLST: dk bl gy, frm-hd ip, sb pty-sb blkly, rthy tex-rgh tex, abt intbdd CHK lamm & incl; 60% CHK: off wh-crm, sft, blk-sb rmd, rthy tex, com intbdd MRLST; occ free CHK	7800



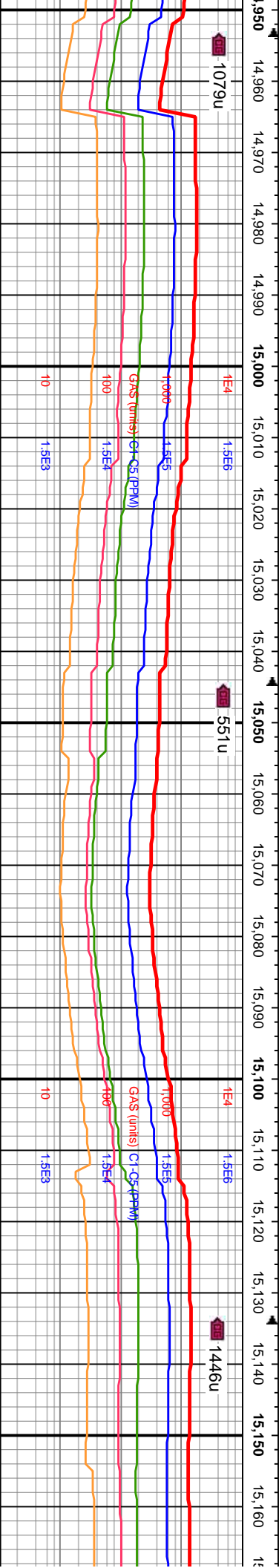
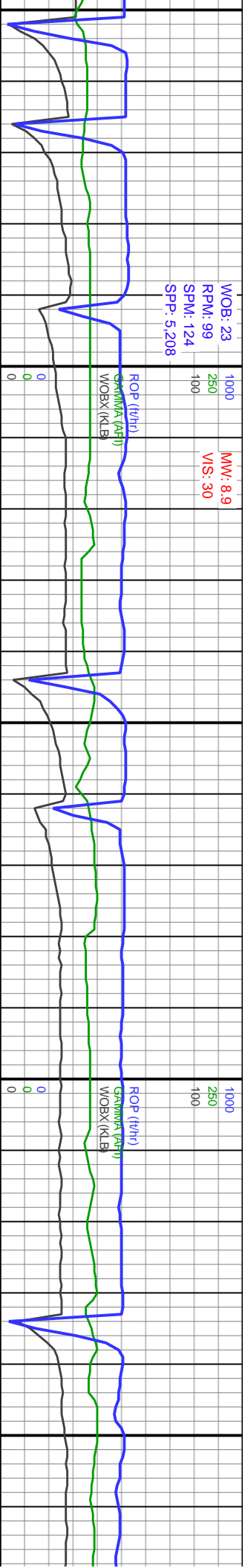


MD: 14,802' 0
INC: 89.9°
AZM: 179.53°
TVD: 7,662.86'
VS: -1,092.75'

MD: 14,893
INC: 90.03°
AZM: 179.69°
TVD: 7,662.91'
VS: -1,092.12'

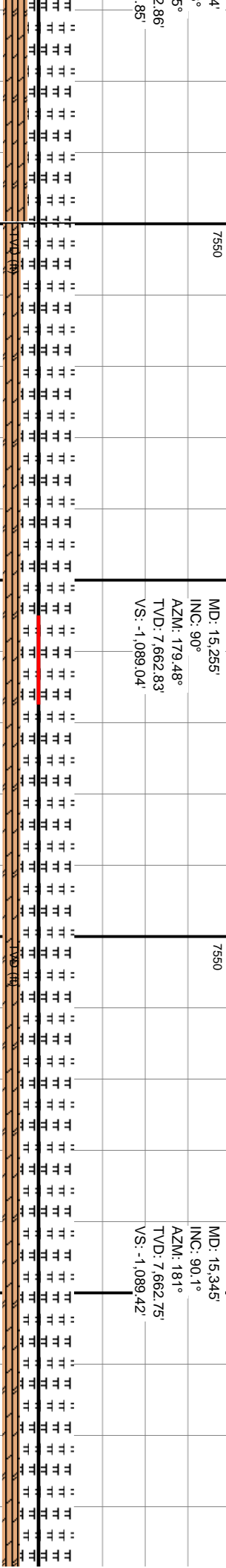
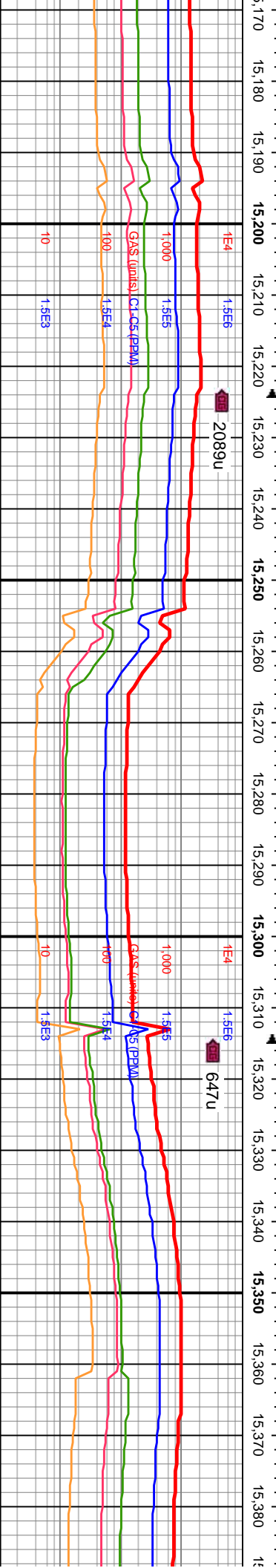
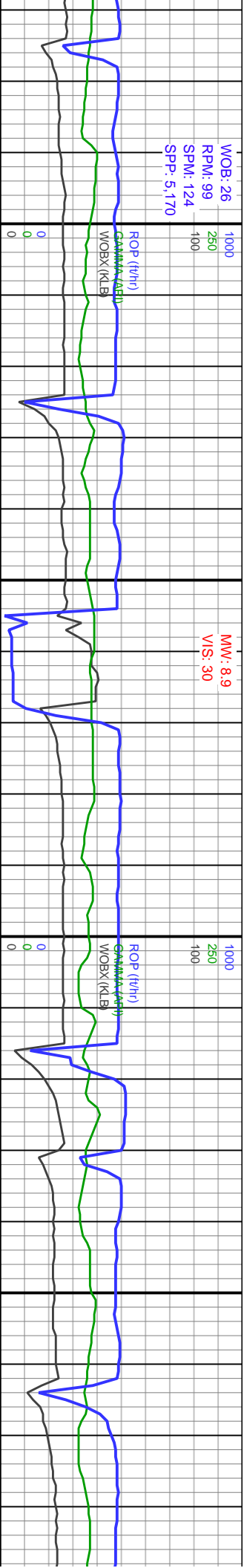
14700-14800 60% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex-rgn tex, abnt intbdd CHK lamm & incl: 40% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, com intbdd MRLST; occ free CHK	7800
14800-14900 60% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex-rgn tex, abnt intbdd CHK lamm & incl: 40% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, com intbdd MRLST; occ free CHK	7800





14900-15000 65% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex+gh tex, abnt intbdd CHK lamm & incl; 35% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; occ free CHK	7800	14900-15000 65% MRLST: dk bl gy, frm-hd ip, sb pty-sb blk, rthy tex-rgh tex, rr intbdd CHK lamm & incl; 35% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; rr free CHK	7800	15100-15200 6 ip, sb pty-sb bli CHK lamm & inc blk-sb rnd, rthy free CHK



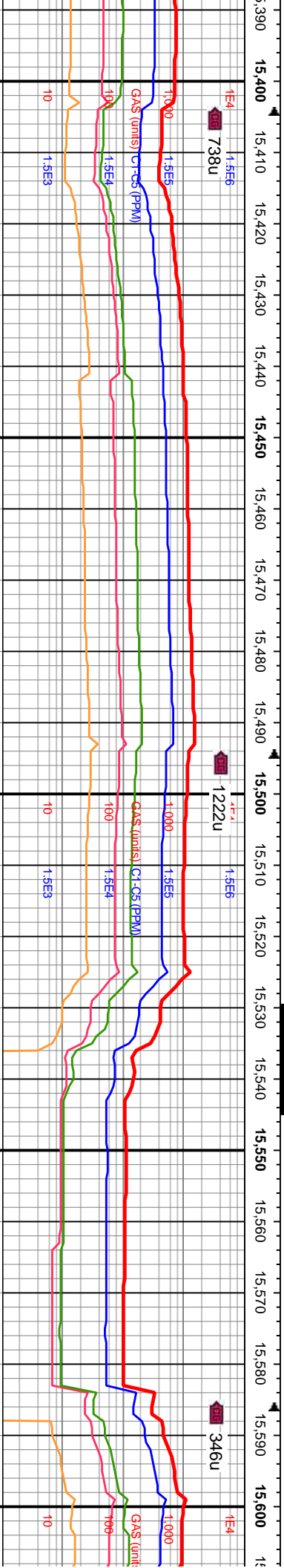
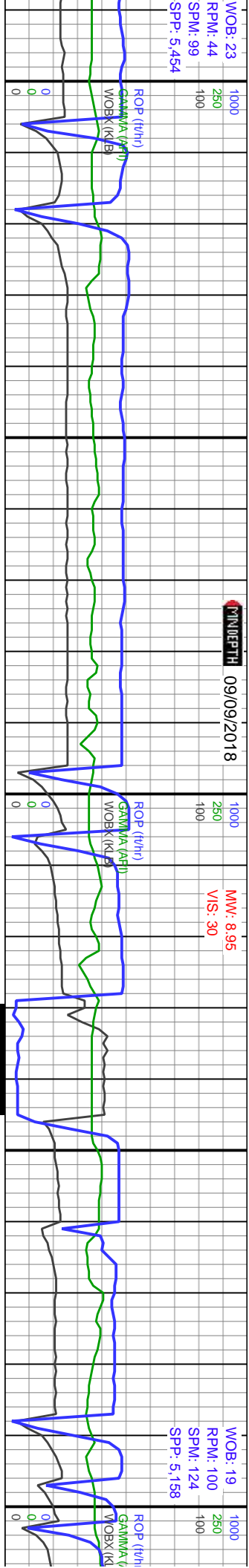


5% MRLST: dk bl gy, frm-hd
ry, rthy tex-rgh tex, r intbdd
i; 35% CHK: off wh-crm, sft,
tex, abnt intbdd MRLST; r

15200-15300 75% MRLST: dk blk gy,
frm-hd ip, sb ply-sb blk, rthy tex-rgh tex,
occ intbdd CHK lamm & incl; 25% CHK: off
wh-crm, sft, blk-sb md, rthy tex, abnt intbdd
MRLST; r free CHK

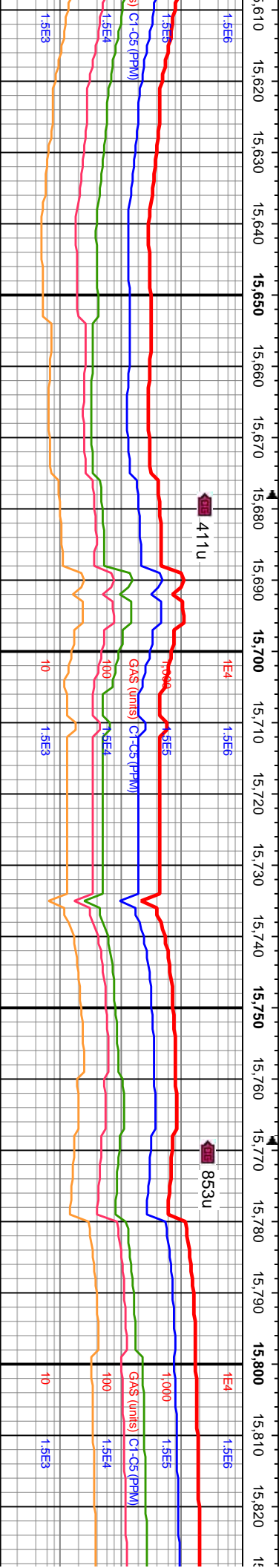
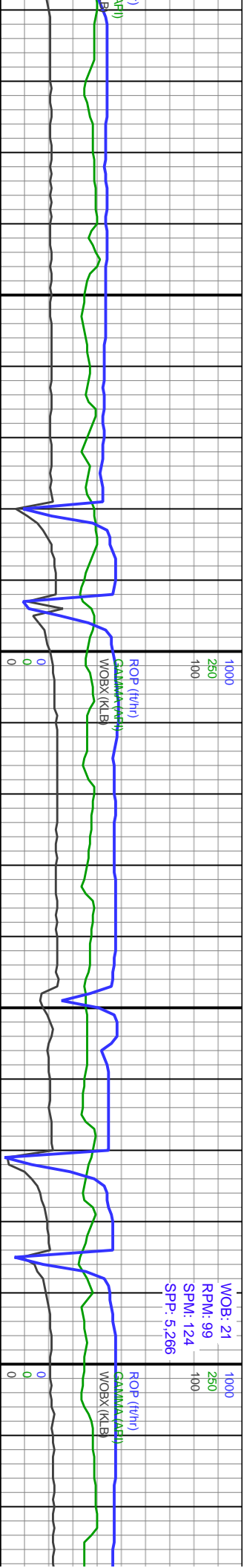
7800
7800
7800





7550	MD: 15.435° INC: 89.66° AZM: 179.95° TVD: 7.662.94' VS: -1.090.16'	7550	MD: 15.526° INC: 89.9° AZM: 180.86° TVD: 7.663.28' VS: -1.090.8'	7550
15400-15500 75% MRLST: dk blk gy, frm-hd ip, sb pty-sb blk, rthy tex-rgt tex, occ intbdd CHK lamm & incl; 25% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: rr free CHK		15400-15600 65% MRLST: dk blk gy, frm-hd ip, sb pty-sb blk, rthy tex-rgt tex, occ intbdd CHK lamm & incl; 35% CHK: off wh-crm, sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: rr free CHK		





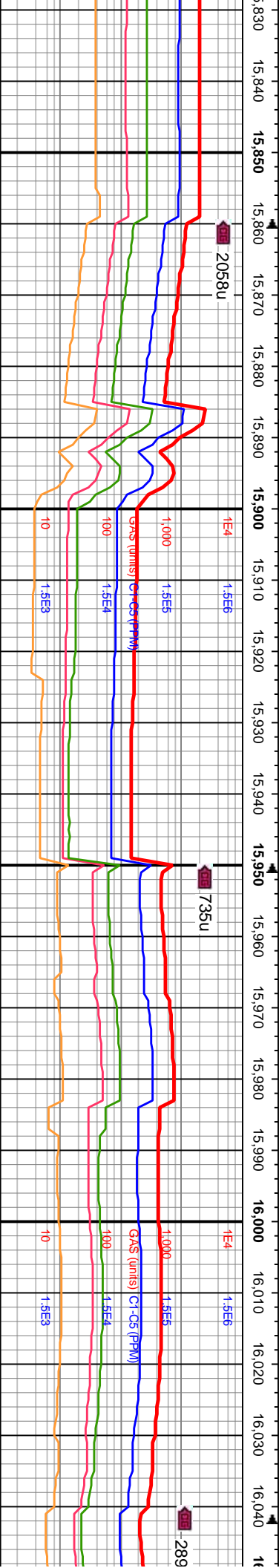
15600-15700 65% MRLST: dk blk gy, frm-hd ip, sb pily-sb blkly, rthy tex-rgh tex, occ intbdd CHK lamm & incl; 35% CHK: off wh-crm, v v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; tr free CHK	7800
15700-15800 65% MRLST: dk blk gy, frm-hd ip, sb pily-sb blkly, rthy tex-rgh tex, occ intbdd CHK lamm & incl; 35% CHK: off wh-crm, v v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST; tr free CHK	7800

MD: 15,618'
INC: 90.07°
AZM: 182.4°
TVD: 7,663.31'
VS: -1,093.41'

MD: 15,709'
INC: 89.93°
AZM: 181.9°
TVD: 7,663.31'
VS: -1,096.82'

MD: 15,800'
INC: 89.77°
AZM: 181.13°
TVD: 7,663.55'
VS: -1,099.23'





MW: 8.9
VIS: 29

1000
250
100

ROP (t/hr)
GAMMA (API)
MOBKX LB

0
0
0

MOB: 20
RPM: 98
SPM: 123
SP: 5.637

1000
250
100

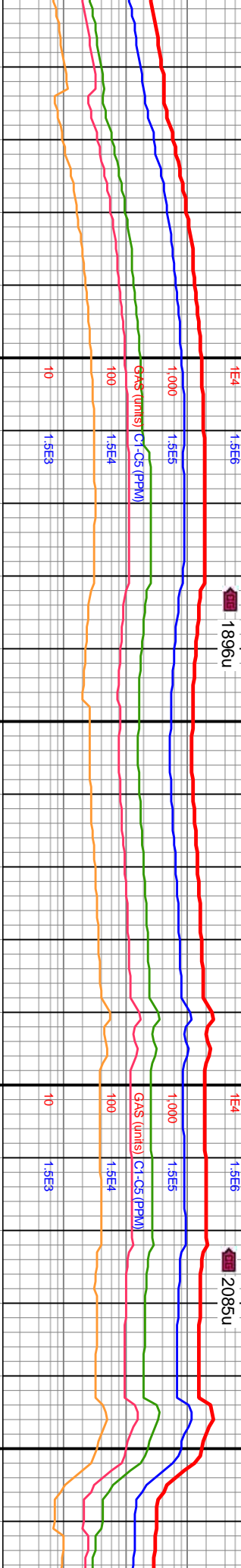
ROP (t/hr)
GAMMA (API)
MOBKX LB

0
0
0

MW: 8.9
VIS: 29

0
0
0

16,050 16,060 16,070 16,080 16,090 16,100 16,110 16,120 16,130 16,140 16,150 16,160 16,170 16,180 16,190 16,200 16,210 16,220 16,230 16,240 16,250 16,260



MD: 16,073'
INC: 89.7°
AZM: 182.72°
TVD: 7,664.56'
VS: -1,110.9'

MD: 16,164'
INC: 89.66°
AZM: 182.89°
TVD: 7,665.07'
VS: -1,115.35'

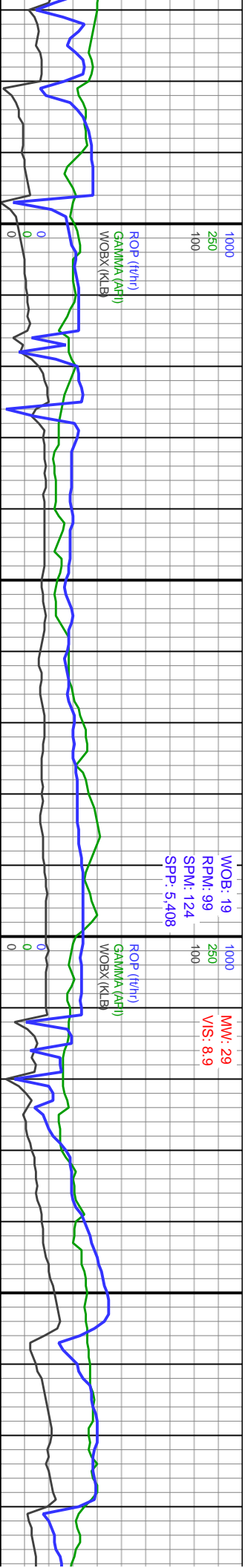
MD: 16,258'
INC: 90.37°
AZM: 183.4°
TVD: 7,665.04'
VS: -1,120.51'

16000-16100 65% MRLST: dk blk gy,
frm-hd ip, sb pty-sb blk, rthy tex-igh tex,
occ intbdd CHK lamn & incl: 35% CHK: off
wh-crm, v v sft, blk-sb rnd, rthy tex, abnt
intbdd MRLST: tr free CHK

16100-16200 65% MRLST: dk blk gy,
frm-hd ip, sb pty-sb blk, rthy tex-igh tex,
occ intbdd CHK lamn & incl: 35% CHK: off
wh-crm, v v sft, blk-sb rnd, rthy tex, abnt
intbdd MRLST: tr free CHK

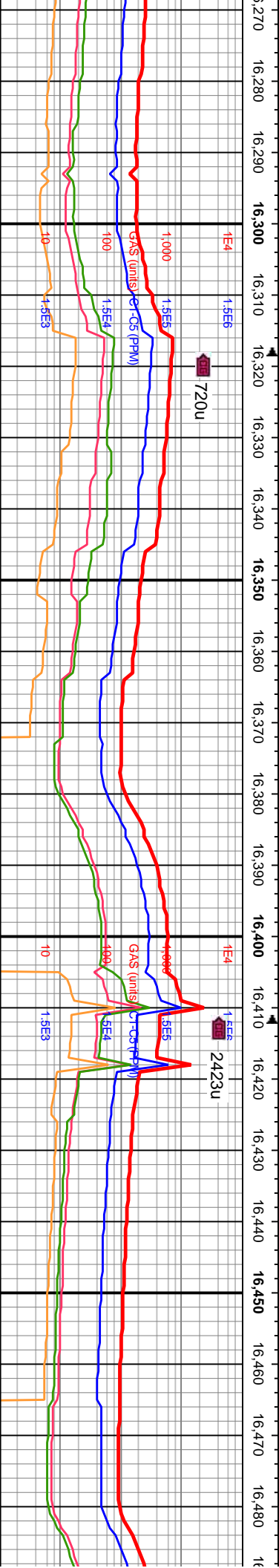
16200-16300 5
frm-hd ip, sb pty-sb blk, rthy tex-igh tex,
occ intbdd CHK lamn & incl: 35% CHK: off
wh-crm, v v sft, blk-sb rnd, rthy tex, abnt
intbdd MRLST: tr free CHK





WOB: 19
RPM: 99
SPM: 124
SP: 5.408

MW: 29
VIS: 8.9

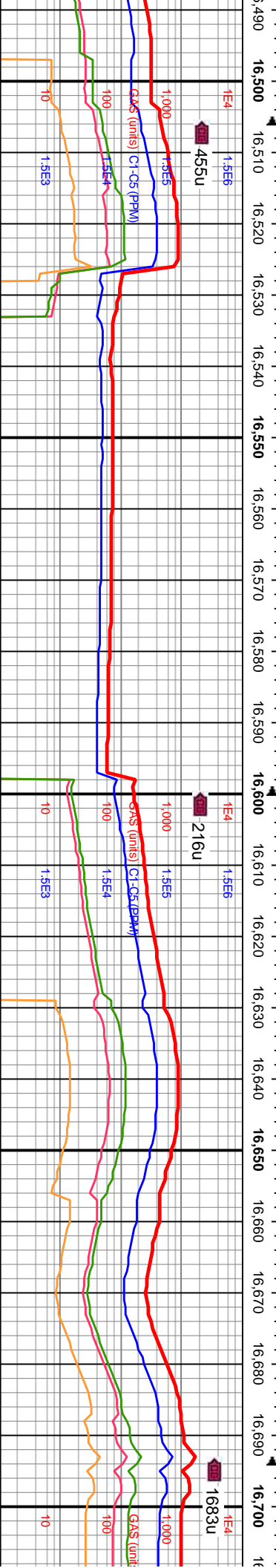
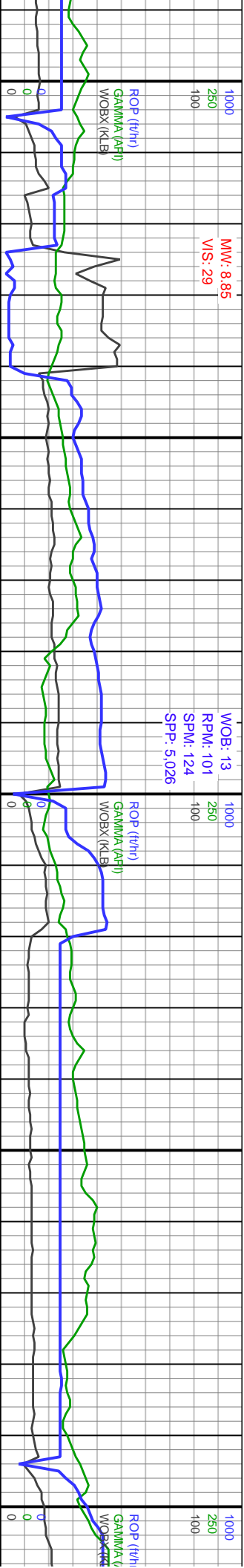


MD: 16,352'
INC: 90.64°
AZM: 182.04°
TVD: 7,664.21'
VS: -1,124.97'

MD: 16,446'
INC: 92.25°
AZM: 182.24°
TVD: 7,661.85'
VS: -1,128.49'

16270	16280	16290	16300	16310	16320	16330	16340	16350	16360	16370	16380	16390	16400	16410	16420	16430	16440	16450	16460	16470	16480
5% MRLST: dk blk gy, y-sb blkgy, rthy tex-rgh tex, < lamn & incl; 45% CHK: t, blk-sb md, rthy tex, abnt occ free CHK																					
7800																					
16300-16400 55% MRLST: dk blk gy, frm-hd ip, sb pily-sb blkgy, rthy tex-rgh tex, abnt intbdd CHK lamn & incl; 45% CHK: off wh-crm, v sft, blk-sb md, rthy tex, abnt intbdd MRLST; occ free CHK																					
7800																					



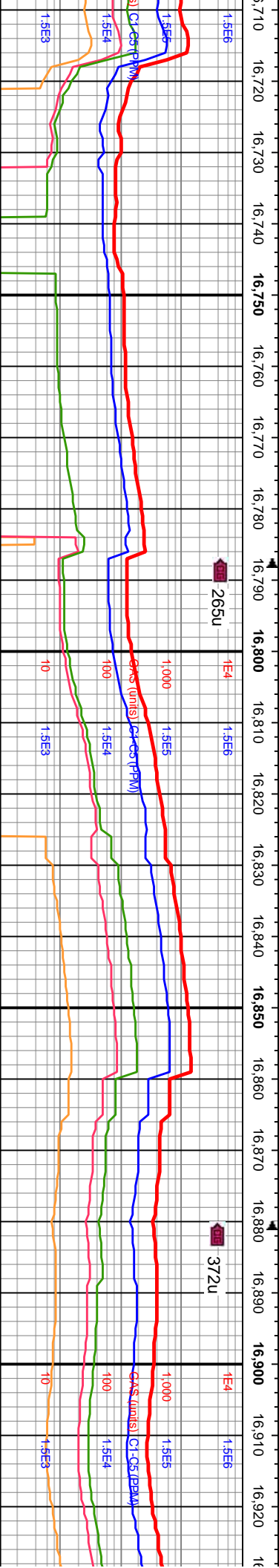
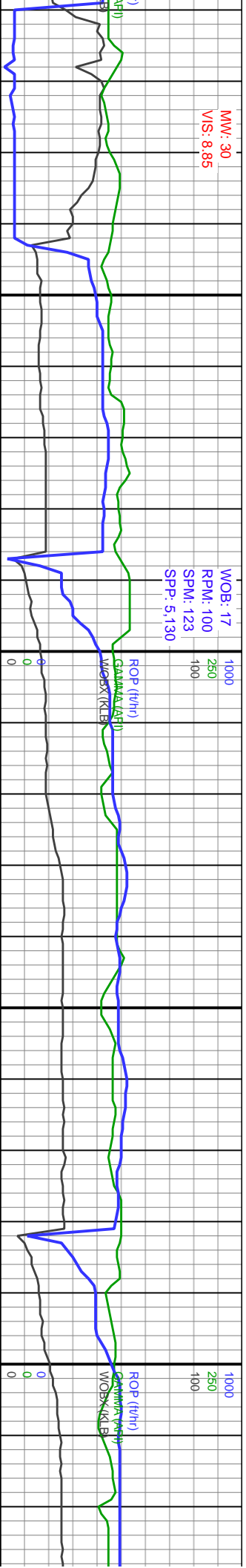


MD: 16,540'
INC: 91.88°
AZM: 180.93°
TVD: 7,658.47'
VS: -1,131.09'

MD: 16,634'
INC: 93.05°
AZM: 181.82°
TVD: 7,654.43'
VS: -1,133.34'

16500-16600 90% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: 10% MRLST: dk blk gy, frm-hd ip, sb pily-sb blkgy, rthy tex-rgh tex, occ intbdd CHK lamm & incl; com free CHK	16600-16700 90% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: 10% MRLST: dk blk gy, frm-hd ip, sb pily-sb blkgy, rthy tex-rgh tex, occ intbdd CHK lamm & incl; com free CHK
7800	7800





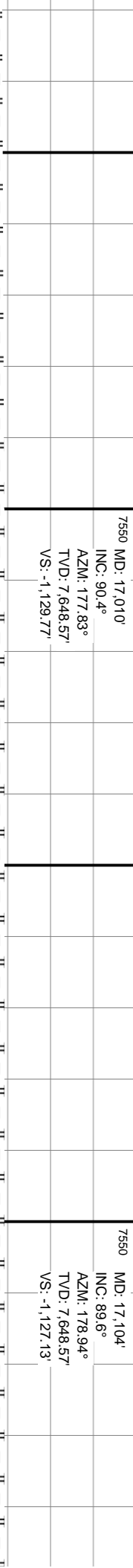
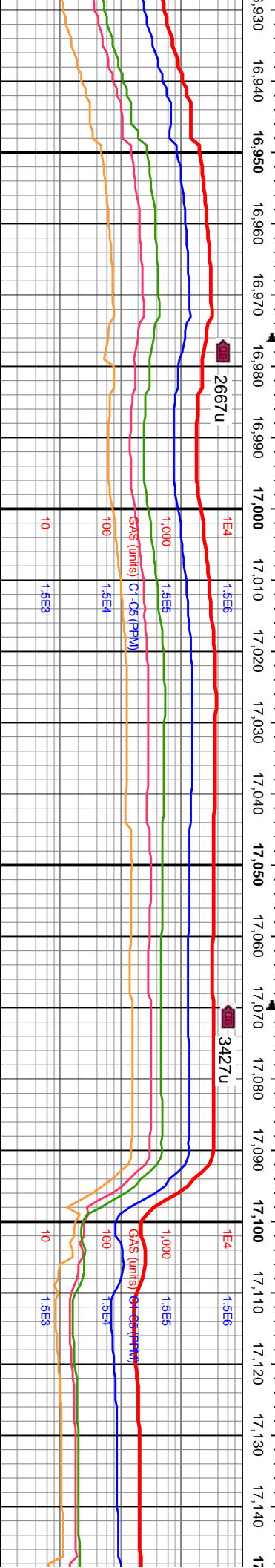
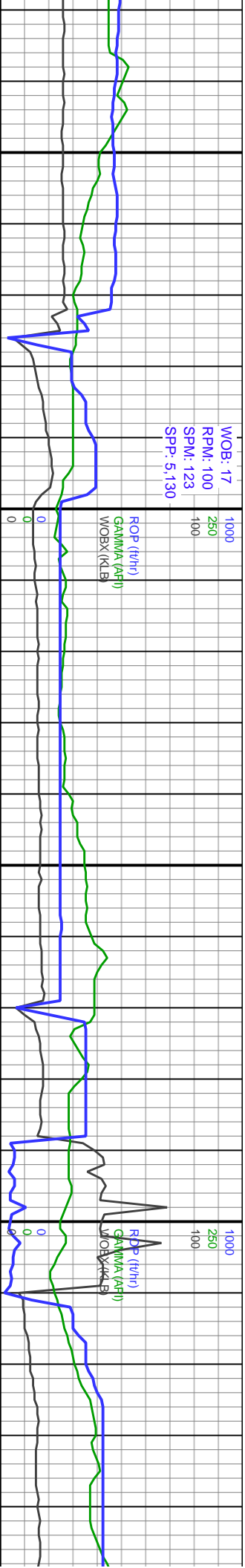
MD: 16,728'
INC: 90.64°
AZM: 179.67°
TVD: 7,661.4'
VS: -1,134.56'

MD: 16,821'
INC: 90.57°
AZM: 179.47°
TVD: 7,650.42'
VS: -1,133.87'

MD: 16,915'
INC: 90.64°
AZM: 178.87°
TVD: 7,649.43'
VS: -1,132.51'

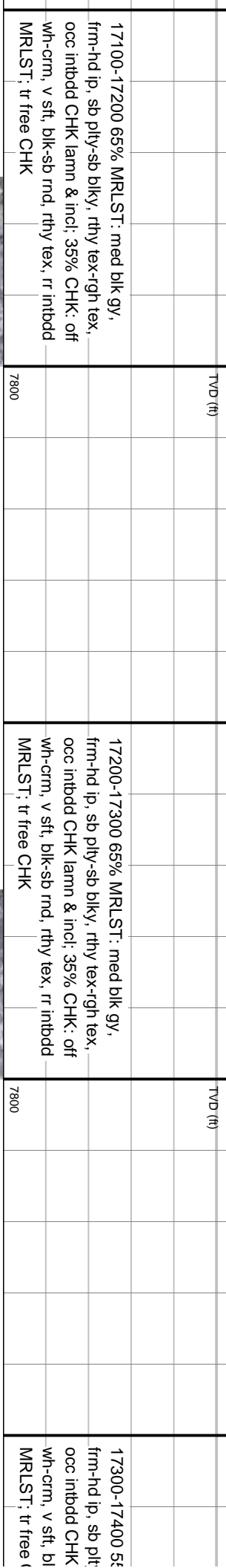
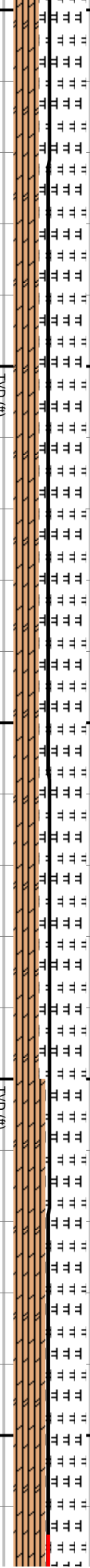
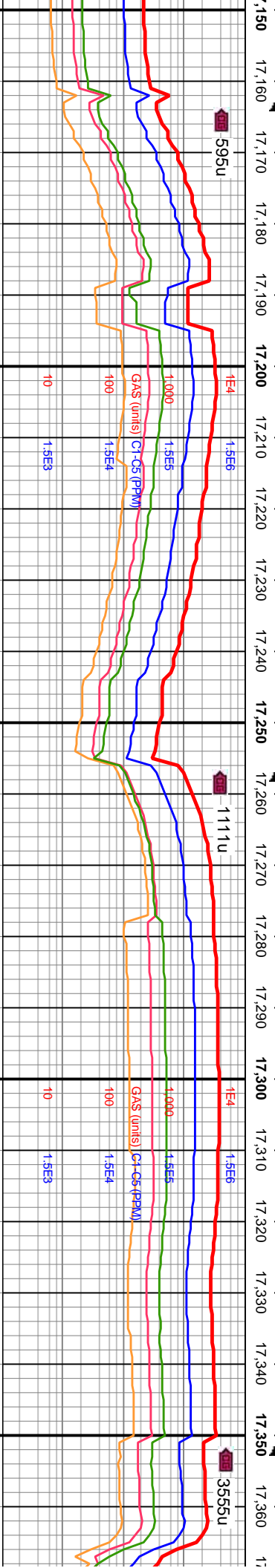
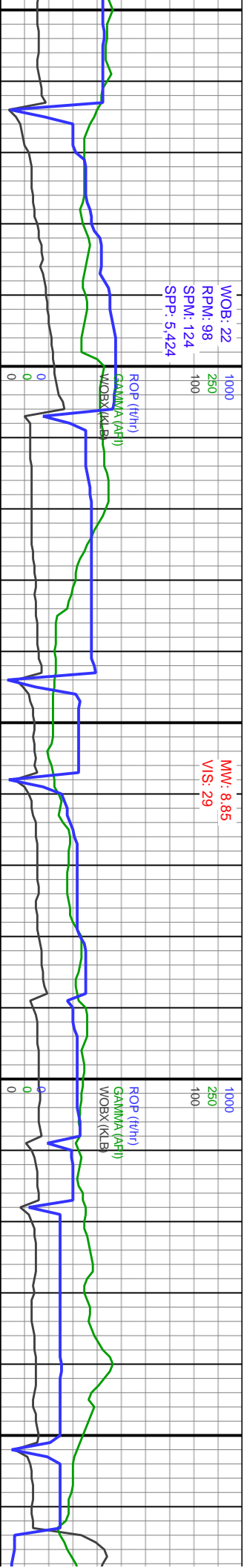
16700-16800 80% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: 20% MRLST: med blk gy, frm-hd ip, sb pty-sb blk, rthy tex-rgh tex, occ intbdd CHK lamn & inci; rr free CHK	TVD (ft)	7800
16800-16900 70% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, abnt intbdd MRLST: 30% MRLST: med blk gy, frm-hd ip, sb pty-sb blk, rthy tex-rgh tex, rr intbdd CHK lamn & inci; com free CHK	TVD (ft)	7800

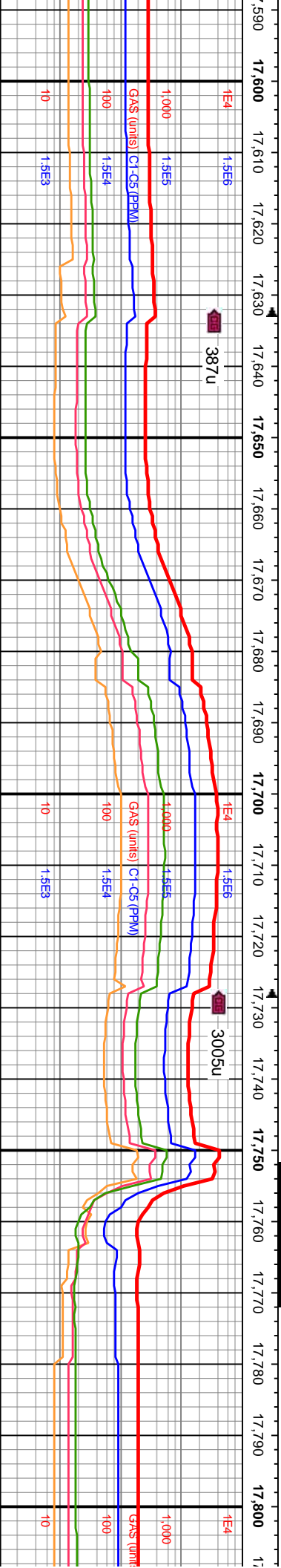
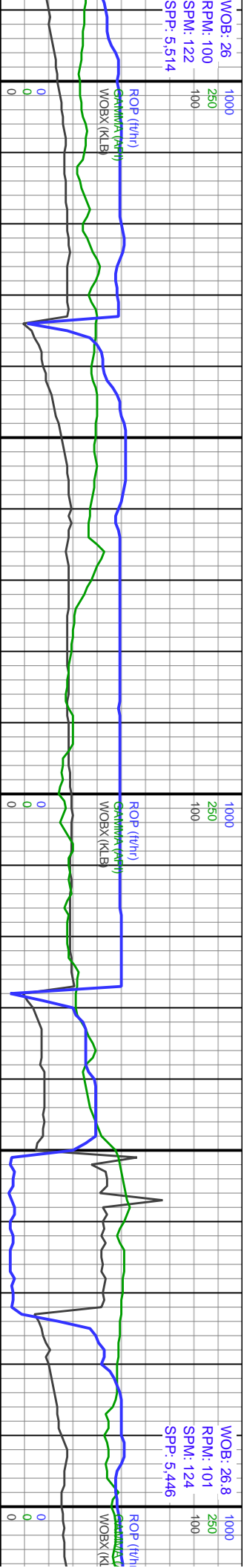




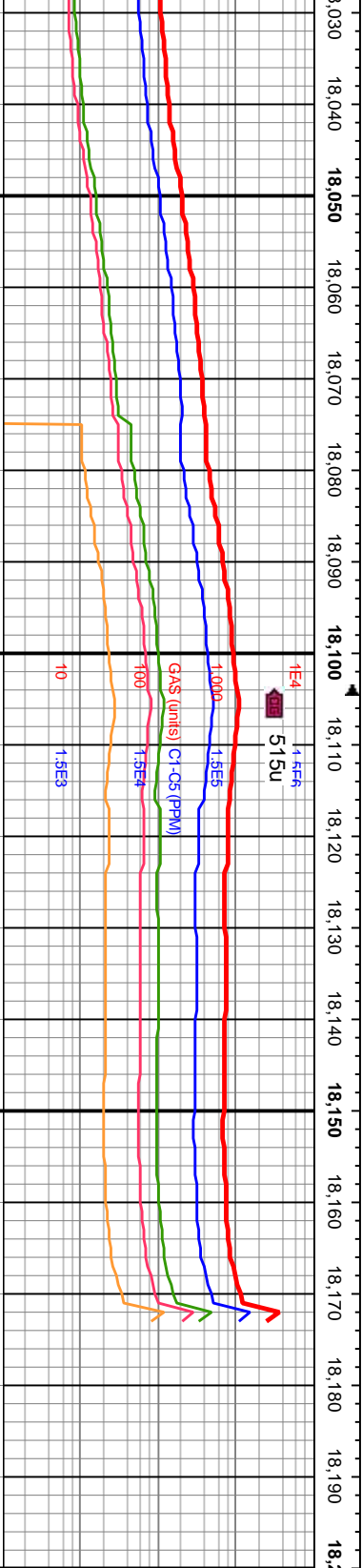
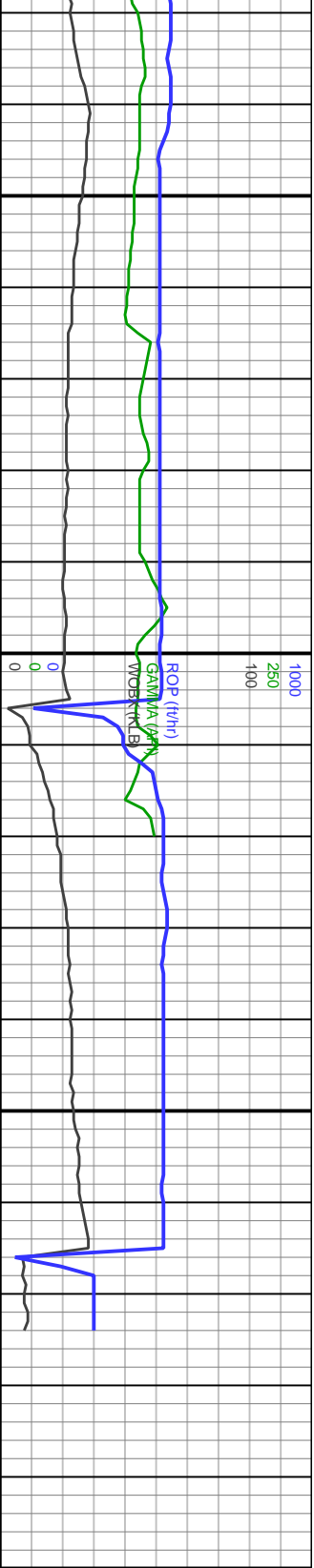
16900-17000 55% MRLST: med blk gy, frm-hd ip, sb pily-sb blkly, rthy tex-rgh tex, com inbddd CHK lamn & inci; 45% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, abnt inbddd MRLST; com free CHK	7800
17000-17100 75% MRLST: med blk gy, frm-hd ip, sb pily-sb blkly, rthy tex-rgh tex, rr inbddd CHK lamn & inci; 25% CHK: off wh-crm, abnt v lt gy, v sft, blk-sb rnd, rthy tex, rr inbddd MRLST; rr free CHK	7800







17600-17700 50% MRLST: med blk gy, frm-hd ip, sb pty-sb blkly, rthy tex-rgh tex, occ intbdd CHK lamm & incl: 50% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, rr intbdd MRLST: rr free CHK	7800
17700-17800 60% MRLST: med blk gy, frm-hd ip, sb pty-sb blkly, rthy tex-rgh tex, occ intbdd CHK lamm & incl: 40% CHK: off wh-crm, v sft, blk-sb rnd, rthy tex, rr intbdd MRLST: rr free CHK	7800



MD: 18,045' INC: 90.37° AZM: 183.48° TVD: 7,644.62' VS: -1,164.98'	MD: 18,115' INC: 90.23° AZM: 182.98° TVD: 7,644.25' VS: -1,168.92'
18000-18100 60% MRLST: med blk gy, frm-hd ip, sb pty-sb blkgy, rthy tex-rgh tex, occ intbdd CHK lamn & incl; 40% CHK: off wh-crm, v sft, blk-sb md, rthy tex, rr intbdd MRLST; rr free CHK	18100-18174 60% MRLST: med blk gy, frm-hd ip, sb pty-sb blkgy, rthy tex-rgh tex, occ intbdd CHK lamn & incl; 40% CHK: off wh-crm, v sft, blk-sb md, rthy tex, rr intbdd MRLST; rr free CHK

