



Scale: 5" / 100'
Measured Depth Log

Well Name Pronghorn D-X-9HNB

Location NWSW Sec 9 T5N R61W

State Colorado

Country USA

API Number 05-123-39286-00

County Weld

Rig Number Cade 22

Field D.J. Basin

Spud Date 7/20/2014

Surface Coordinates 1273 FSL X 220 FWL

Ground Elevation 4637'

K.B. Elevation 4654'

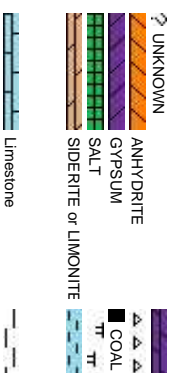
Logged Interval 5600

Formation Niobrara "B"

Type of Drilling Fluid WBM

Company Bonanza Creek Energy
Address 410 17th Street, Suite 100
Denver, CO 80202

Name Leo Carrasco/Chris
Company Decollement Consulting
Address 13300 Braun Road
Golden, CO 80401



Operator

ergy


ite 1500


Geologist


Irwin


ting Inc.


Rock Types


DOLomite


CHERT


MARLSTONE


CLAYSTONE


SHALE


SHALE GRAY


SHALE COLORED


SILTSTONE


SANDSTONE


CONGLOMERATE

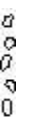
TILL


BENTONITE

TUFF

IGNEOUS


METAMORPHIC


BRECCIA


Chalk


Accessories


Fossils


F FOSSIL


GASTROPOD


ALGAE


AMPHIPORA


BELEMNITE


BIOCLASTIC


BRACHIOPOD


BRYOZOA


CEPHALOPOD


CORAL


CRINOID


ECHINOID


ARGILLACEOUS


ARGILLITE GRAIN


BENTONITE


BITUMENOUS SUBSTANCE


BRECCIA FRAGMENTS


CALCAREOUS


CARBONACEOUS FLAKES


CHERT


COAL - THIN BEDS


DOLOMITIC


FELDSPAR

FISH


FORAMINIFERA


ANHYDRITIC


FERRUGINOUS


TUFFACEOUS

Minerals


FERRUGINOUS PELLET


SILTY


TUFFACEOUS


SILTSTONE STRINGER


Stringer


ANHYDRITE STRINGER


BENTONITE STRINGER


COAL STRINGER


DOLOMITE STRINGER


GYPSUM STRINGER


LIMESTONE STRINGER


MARLSTONE (CALC.) STRG


MARLSTONE (DOL.) STRG


SANDSTONE STRINGER


SHALE STRINGER

MICROXLN

MUDSTONE


ROUNDED


SUBANG


SUBRND


Other Symbols


Oil Show


ORGANIC


PINPOINT


DEAD


EVEN


QUESTIONABLE


SPOTTED STAINING

GAS SHOW


MINDEPTH MN DEPTH


NORMAL FAULT


OIL SHOW


OVERTURNED STRATA


Engineering


BIT


CONNECTION (LEFT)


CONNECTION (RIGHT)


CONNECTION GAS


CORE - LOST


CORE - RECOVERED


INTERCRYSTALLINE


INTEROOLITIC


MOLDIC


REVERSE FAULT


SIDEWALL CORE (LEFT)


SIDEWALL CORE (RIGHT)


SLIDE

SURVEY


TRIP GAS


WIRELINE TESTED - LEFT


WIRELINE TESTED - RT


FORMATION TOP


Textures


BOUNDSTONE


CHALKY


CRYPTOXLN


EARTHY


FINELYXLN


GRAINSTONE


LITHOGRAPHIC

MICROXLN


MUDSTONE


ROUNDED


SUBANG


SUBRND

Sorting


MODERATE


POOR


WELL


CMT


Rounding


MICROXLN


MUDSTONE


ROUNDED


SUBANG


SUBRND

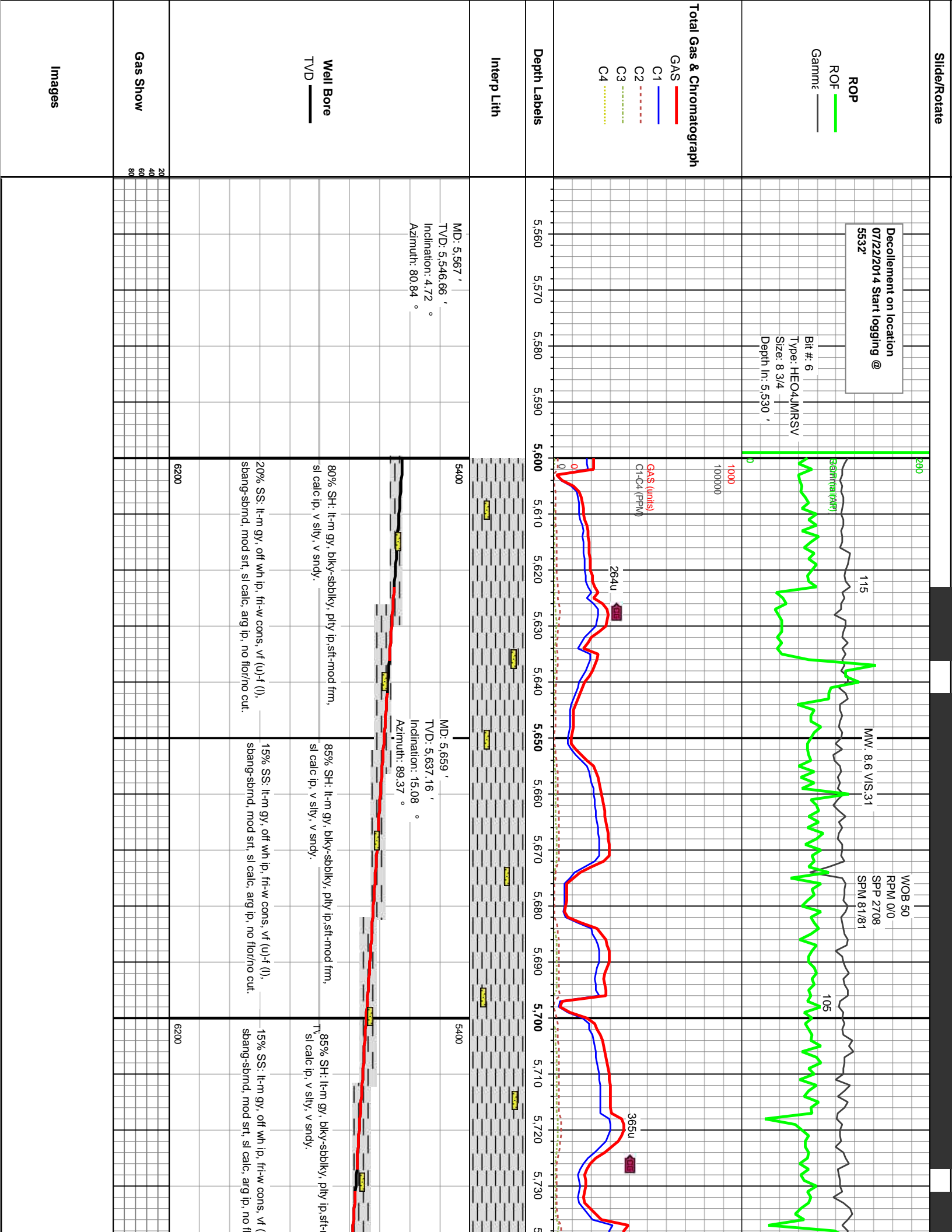
MICROXLN

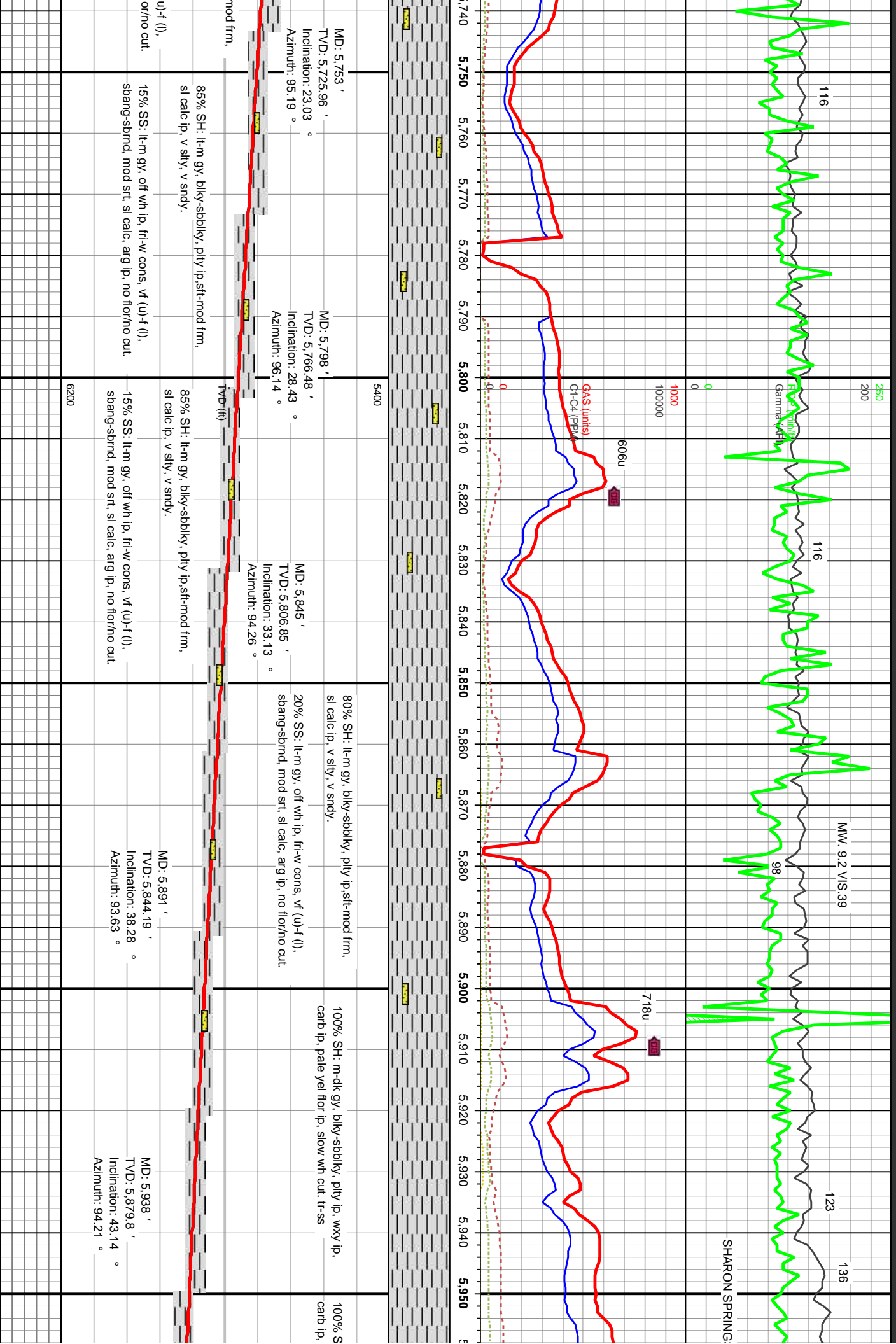
MUDSTONE

ROUNDED

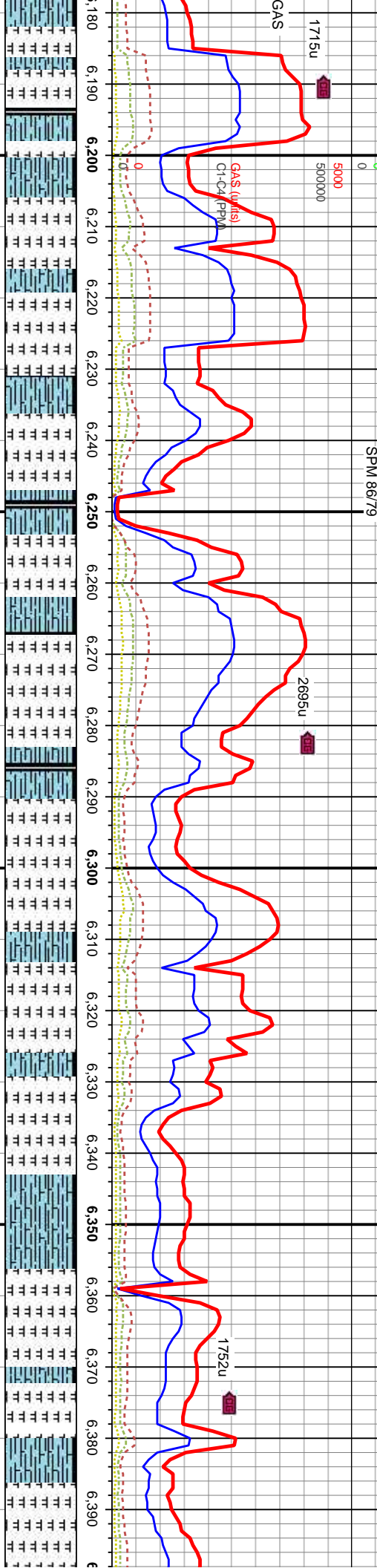
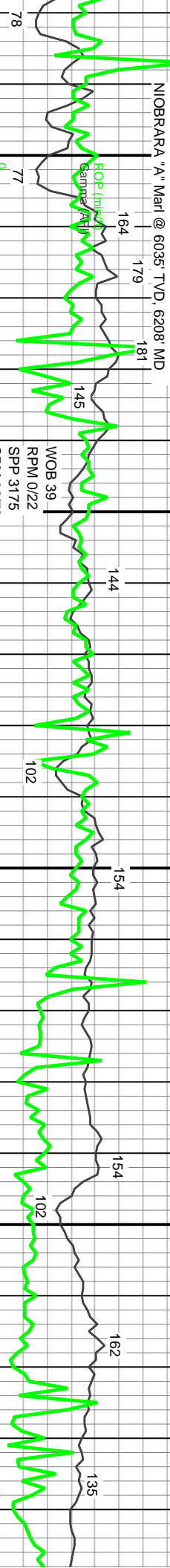
SUBANG

SUBRND

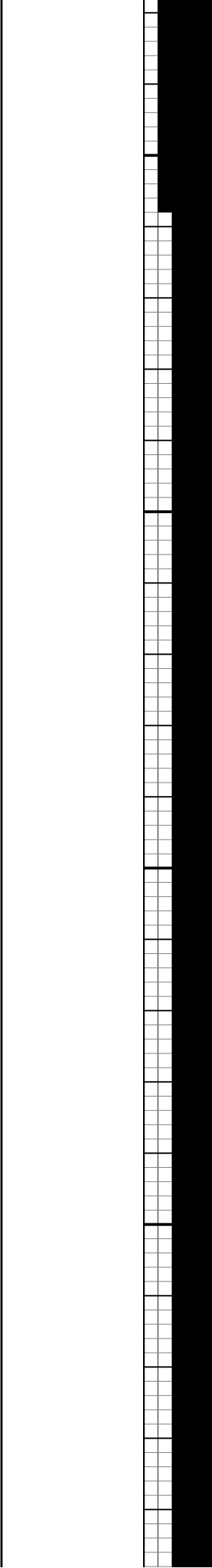


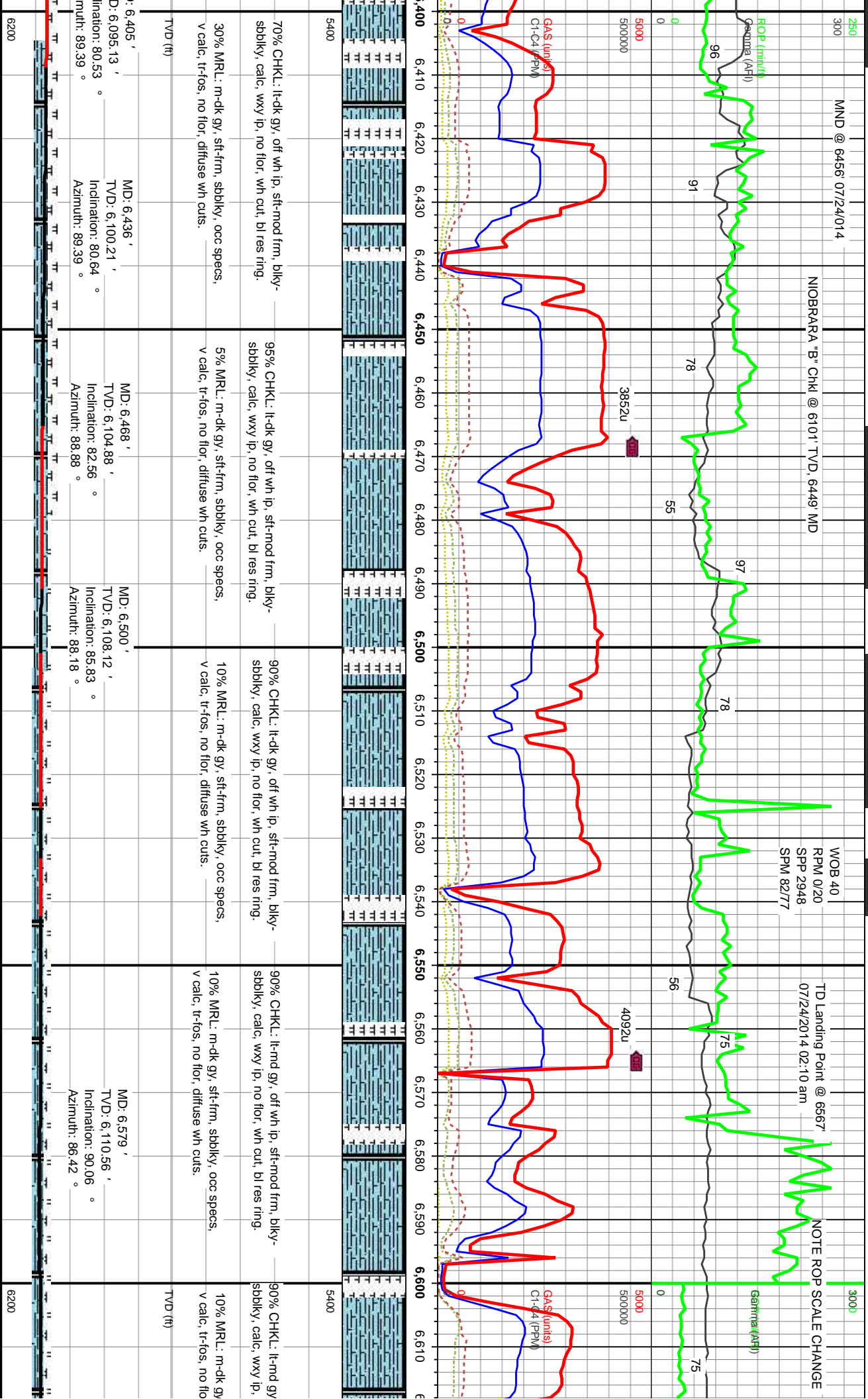


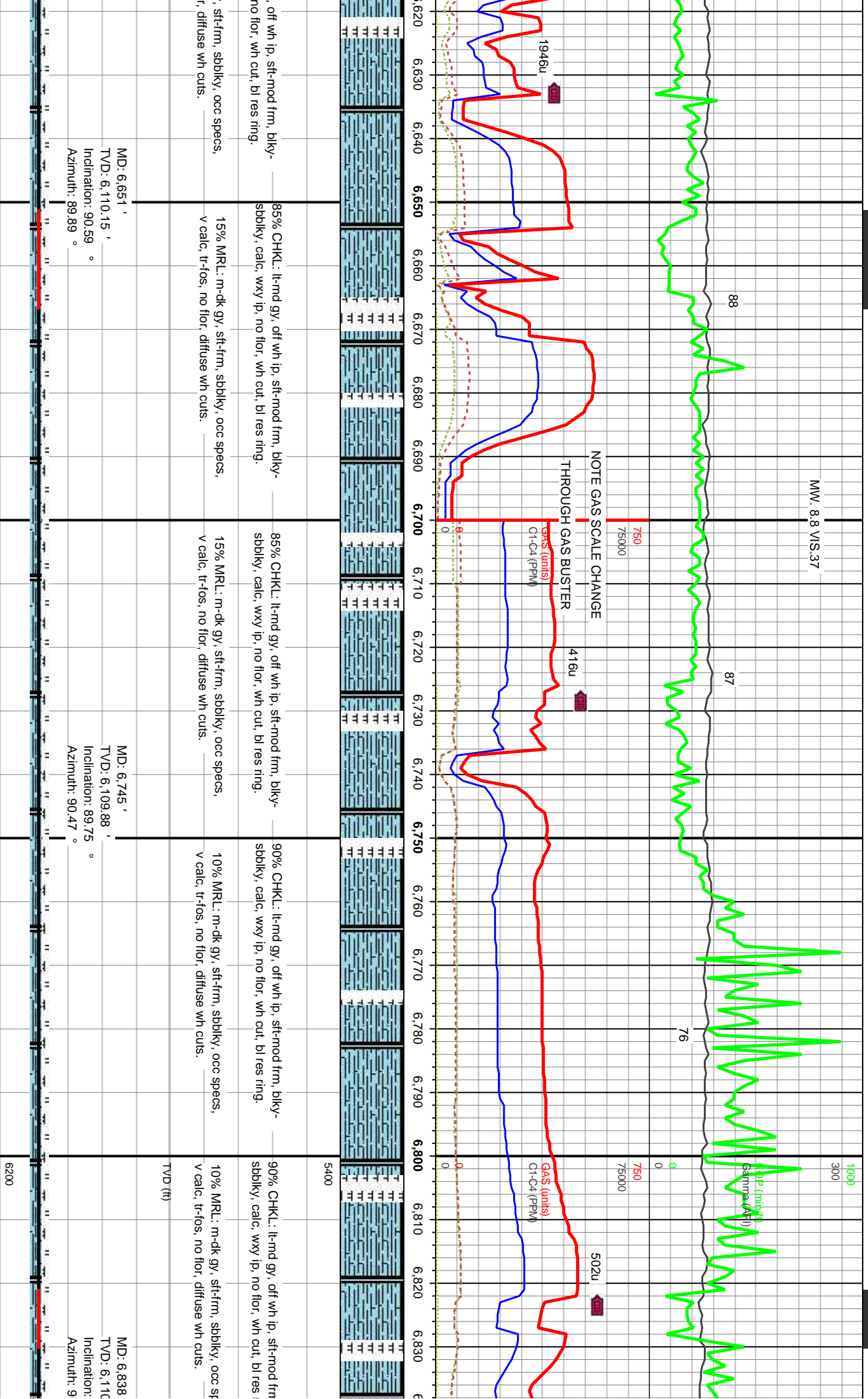
MM: 9.0 VIS: 36



mod frm, blk-y-sbbkly, v calc, tr-fos, no flor, diffuse wh cuts.	85% MRL: m-dk gy, sft-frm, sbbkly, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.	70% MRL: m-dk gy, sft-frm, sbbkly, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.	80% MRL: m-dk gy, sft-frm, sbbkly, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.	70% MRL: m-dk gy, sft-frm, sbbkly, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.
blk-y, occ specs, n cuts, tr-sh	15% CHKL: lt-m gy, off wh, sft-mod frm, blk-y-sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.	30% CHKL: lt-m gy, off wh, sft-mod frm, blk-y-sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.	20% CHKL: lt-m gy, off wh, sft-mod frm, blk-y-sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.	30% CHKL: lt-m gy, off wh, sft-mod frm, blk-y-sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.
TVD (ft)	MD: 6,219 ' TVD: 6,040.18 ' Inclination: 69.35 ° Azimuth: 86.31 °	MD: 6,266 ' TVD: 6,056.37 ' Inclination: 70.35 ° Azimuth: 85.54 °	MD: 6,312 ' TVD: 6,071.7 ' Inclination: 70.7 ° Azimuth: 86.55 °	MD: 6,359 ' TVD: 6,085.48 ' Inclination: 75.22 ° Azimuth: 89.62 °







WOB 10
RPM 0/68
SPP 2406
SPM 0/90

MMV: 8.8 VIS.40

1000

300

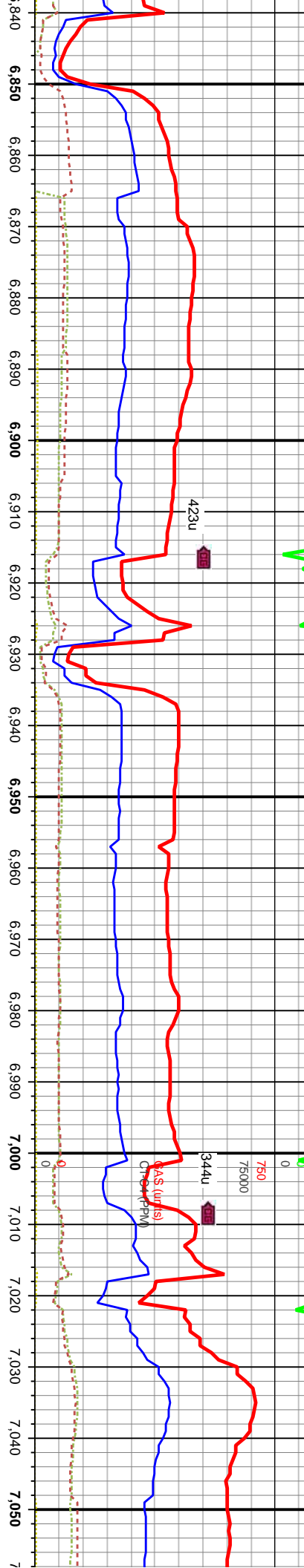
ROP (min/hr)
Gamma (API)

80

76

84

76



90% CHKL: lt-md gy, oft wh ip, sft-mod frm, blk- sbbky, calc, wxy ip, no flor, wh cut, bl res ring.

90% CHKL: lt-md gy, oft wh ip, sft-mod frm, blk- sbbky, calc, wxy ip, no flor, wh cut, bl res ring.

85% CHKL: lt-md gy, oft wh ip, sft-mod frm, blk- sbbky, calc, wxy ip, no flor, wh cut, bl res ring.

90% CHKL: lt-md gy, oft wh ip, sft-mod frm, blk- sbbky, calc, wxy ip, no flor, wh cut, bl res ring.

85% CHKL: lt-md gy, oft wh ip, sft-mod frm, blk- sbbky, calc, wxy ip, no flor, wh cut, bl res ring.

10% MRL: m-dk gy, sft-frm, sbbky, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.

10% MRL: m-dk gy, sft-frm, sbbky, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.

15% MRL: m-dk gy, sft-frm, sbbky, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.

10% MRL: m-dk gy, sft-frm, sbbky, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.

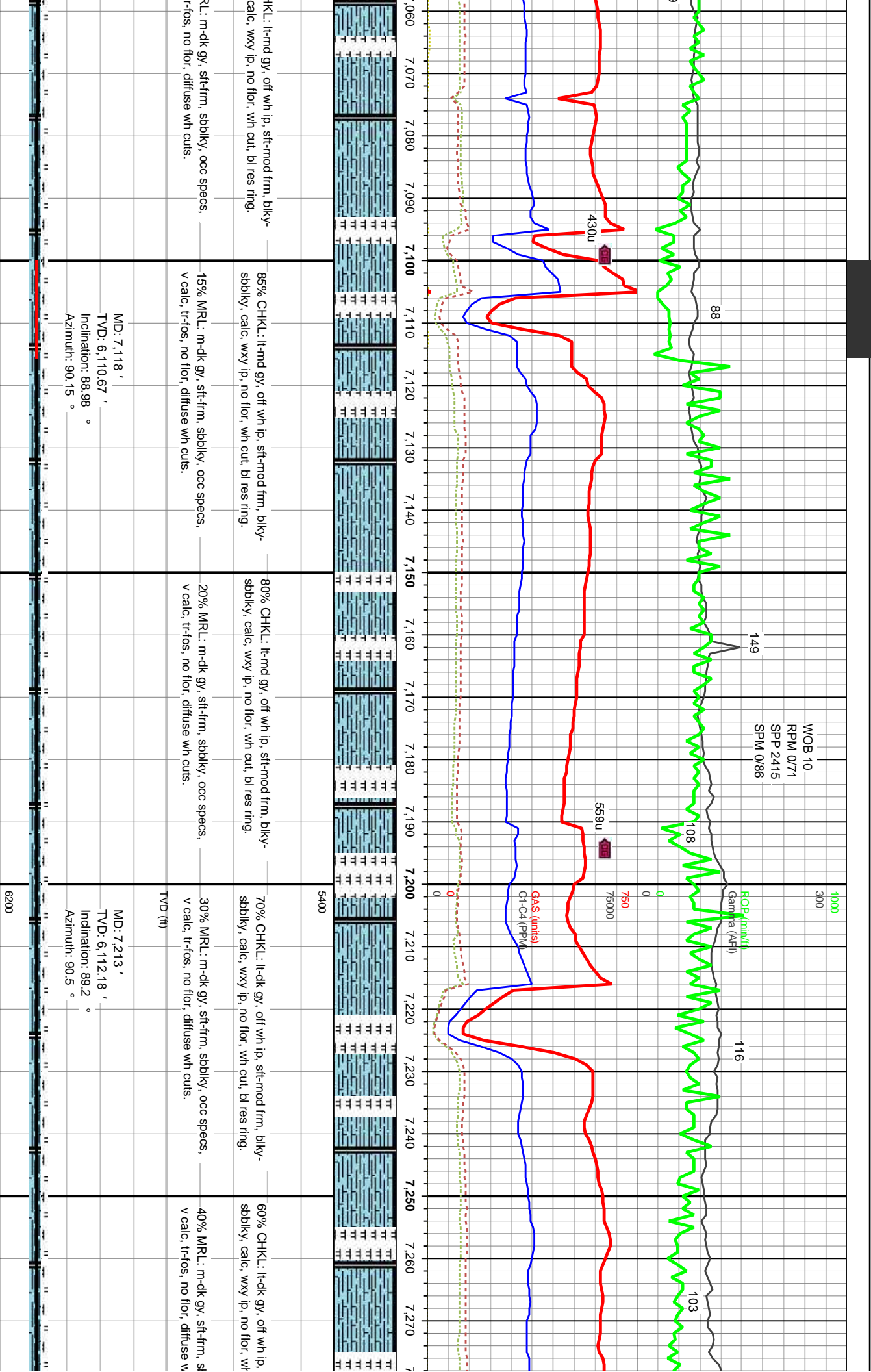
15% MRL: m-dk gy, sft-frm, sbbky, occ specs, v calc, tr-fos, no flor, diffuse wh cuts.

MD: 6,931 '
TVD: 6,110.31 '
Inclination: 89.78 °
Azimuth: 91.77 °

MD: 7,024 '
TVD: 6,110.16 '
Inclination: 90.4 °
Azimuth: 90.42 °



6200



MMW 8.8 VIS.48

146

131

139

114

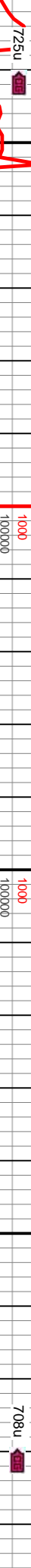
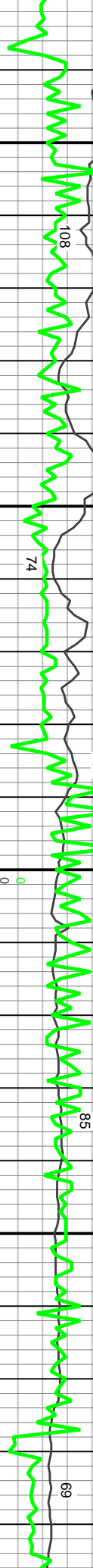
102

85

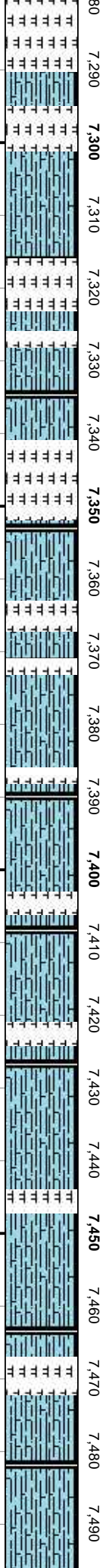
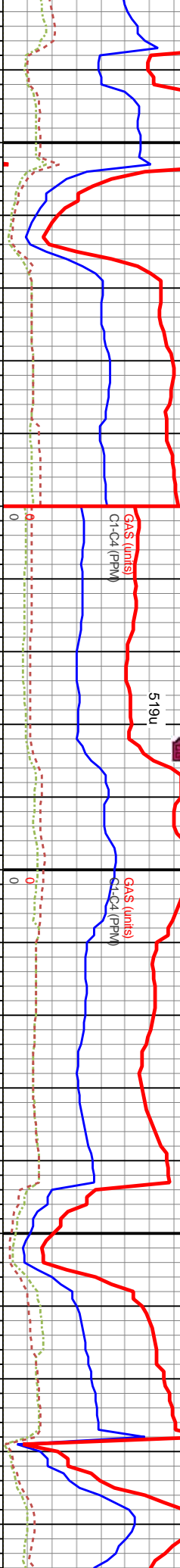
69

ROP (min/hr)
Gamma (API)

MOB 17
RPM 0/71
SPM 2004
SPM 0/83



NOTE SCALE CHANGE GAS



70% CHKL: lt-dk gy, off wh ip, sft-mod frm, blk-
sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.

30% MRL: m-dk gy, sft-frm, sbbkly, occ specs,
v calc, tr-fos, no flor, diffuse wh cuts.

80% CHKL: lt-dk gy, off wh ip, sft-mod frm, blk-
sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.

20% MRL: m-dk gy, sft-frm, sbbkly, occ specs,
v calc, tr-fos, no flor, diffuse wh cuts.

85% CHKL: md-dk gy, off wh ip, sft-mod frm, blk-
sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.

15% MRL: m-dk gy, sft-frm, sbbkly, occ specs,
v calc, tr-fos, no flor, diffuse wh cuts.

90% CHKL: md-dk gy, off wh ip, sft-mod frm, blk-
sbbkly, calc, wxy ip, no flor, wh cut, bl res ring.

10% MRL: m-dk gy, sft-frm, sbbkly, occ specs,
v calc, tr-fos, no flor, diffuse wh cuts.

MD: 7.308 '
TVD: 6.113.59 '
Inclination: 89.1 °
Azimuth: 90.98 °

MD: 7.403 '
TVD: 6.115.12 '
Inclination: 89.05 °
Azimuth: 91.33 °

MD: 7.498 '
TVD: 6.115.15 '
Inclination: 89.05 °
Azimuth: 91.33 °

6200

5400

