



Scale: 5" / 100'
Measured Depth Log

Well Name Rio LC 12-366HNX

Location SECTION 6, T1S, R67W

State COLORADO

County ADAMS

Country UNITED STATES

Rig Number PRECISION 460

API Number 0500110467

AFF # 19DC0167

Geographic Region DJ BASIN

Field WATTENBERG

Ground Elevation 5068.4'

K.B. Elevation 5088.4'

Logged Interval 6000' MD To 17780' MD

Total Depth 17780' MD

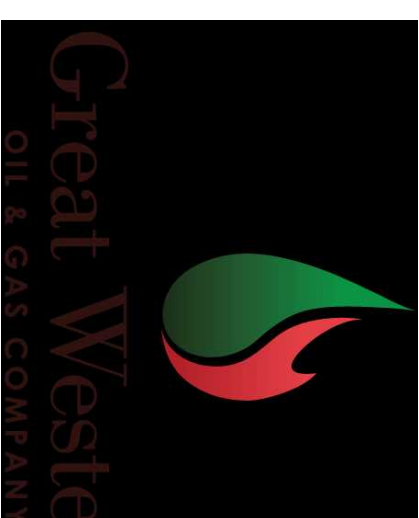
Formation NIOBRARA A CHALK

Type of Drilling Fluid OIL BASED MUD

Operator

Company Great Western Operating Company, LLC

Address 1001 17th Street, Suite 2000
Denver, CO 80202



Geologist

Name Joey Luce, Zac Olds, Hunter Newman

Company Terra Guidance

Address 67 W. Floyd Ave. Ste 105
Englewood, CO 80110
(970) 260-5408

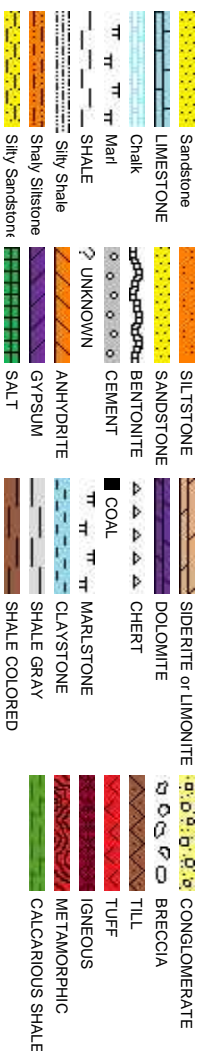


Other

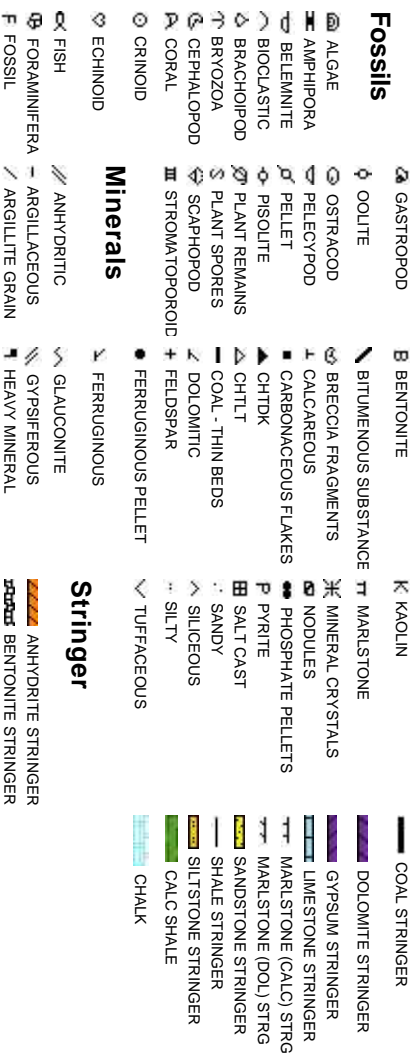
MUDLOG START DATE 09/03/2019

MUDLOG END DATE 09/05/2019

Rock Types



Accessories



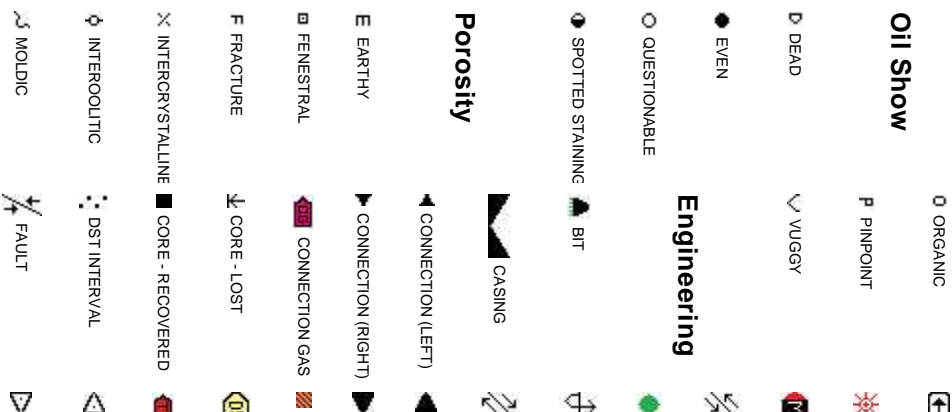
Minerals

Stringer

Porosity

Engineering

Oil Show






Other Symbols

 FORMATION TOP L LITHOGRAPHIC


Rounding

GAS SHOW  MICROXLN

 MIN DEPTH  ANGULAR  MUDSTONE

NORMAL FAULT  ROUNDED  PACKSTONE

OIL SHOW  SUBANG  WACKESTONE

OVERTURNED STRATA  SUBRND

Sorting

REVERSE FAULT

Textures

SIDEWALL CORE (LEFT)  MODERATE


SIDEWALL CORE (RIGHT)  BOUNDSTONE  POOR

SLIDE  CHALKY  WELL


 SURVEY  CRYPTOXLN

CALCARIUOS SHALE

 TRIP GAS  EARTHY

WIRELINE TESTED - LEFT  FINELYXLN

CALCARIOUS SHALE

WIRELINE TESTED - RT  GRAINSTONE

TERRA GUIDANCE
BEGAN LOGGING @ 08:20 MDT 09/03/2019
BLOODHOUND GAS CHROMATOGRAPH #5927
100' Sample Collection

ROP
ROP
Gamma

GAPS IN GAMMA DATA DUE
TO HIGH RATES OF PENETRATION

Gas Scale
0 - 2000 Units

Total Gas & Chromatograph

GAS
C1
C2
C3
C4
CO2

BG: BACKGROUND GAS
TG: TRIP GAS
DTG: DOWNTIME GAS
MG: MAX GAS

Depth

5,960
5,970
5,980
5,990
6,000
6,010
6,020
6,030
6,040
6,050
6,060
6,070
6,080
6,090
6,100
6,110
6,120
6,130

Images



% Lithology

TVD Scale
5700' - 8500'

MD: 6,006'
INC: 26.84°
AZM: 280.62°
TVD: 5,796.1'
VS: 6.71'

MD: 6,095'
INC: 27.39°
AZM: 279.42°
TVD: 5,875.32'
VS: 6.97'

Well Bore
TVD

Bit #: 1
Size: 8.5"
Make: Baker
Model: ATD505T
S/N: 5300913
Jets: 5x15
Depth In: 1,790

TVD (ft)

TVD (ft)

100% SHY SLTST: ltgy, sme medgy, lt gysbhn, sft, ip frm-fri, sb blkly-plty, com fis,
arg, slty, rthy, mod cly rch mtX, sl calc

100% SHY SLTST: ltgy, sme r
arg, slty, rthy, mod cly rch mtX

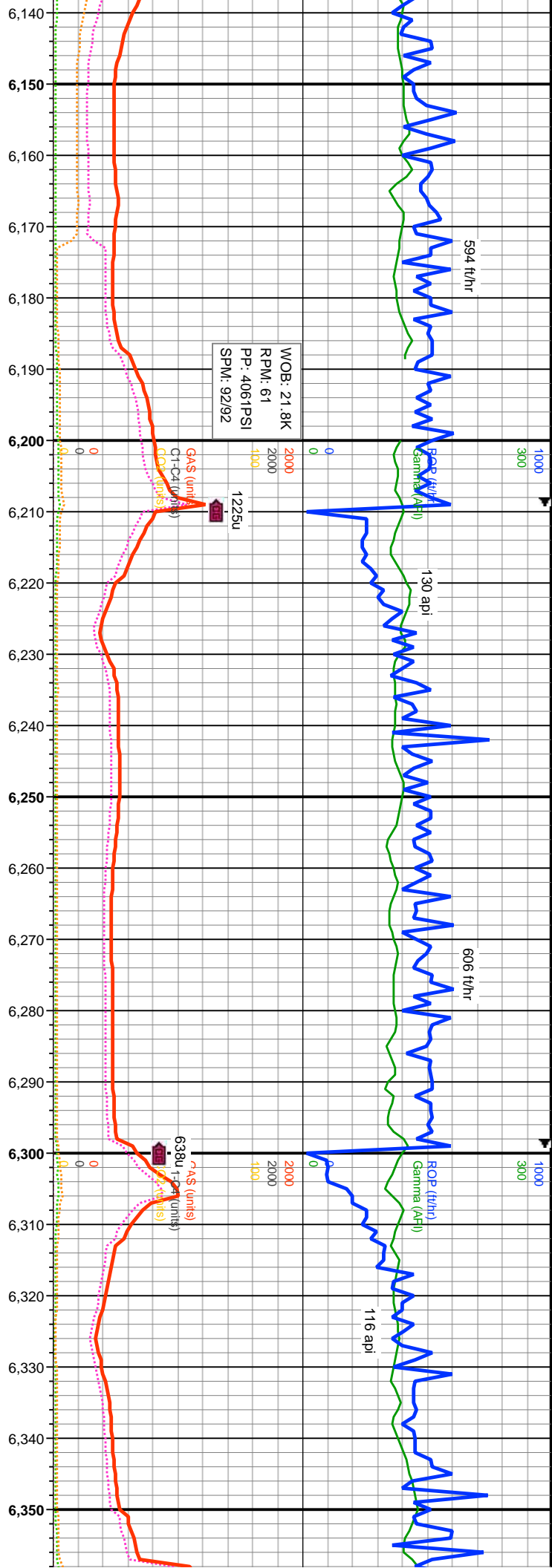
124 api

732 ft/hr

102 api

1023u

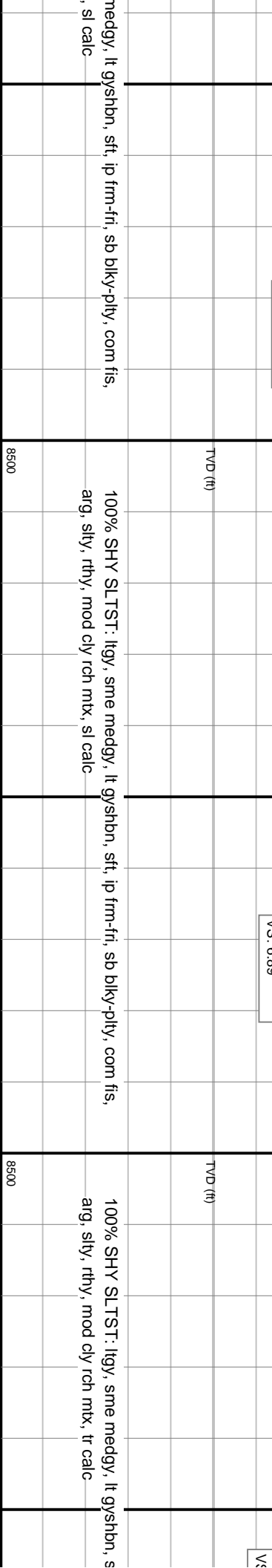
431u

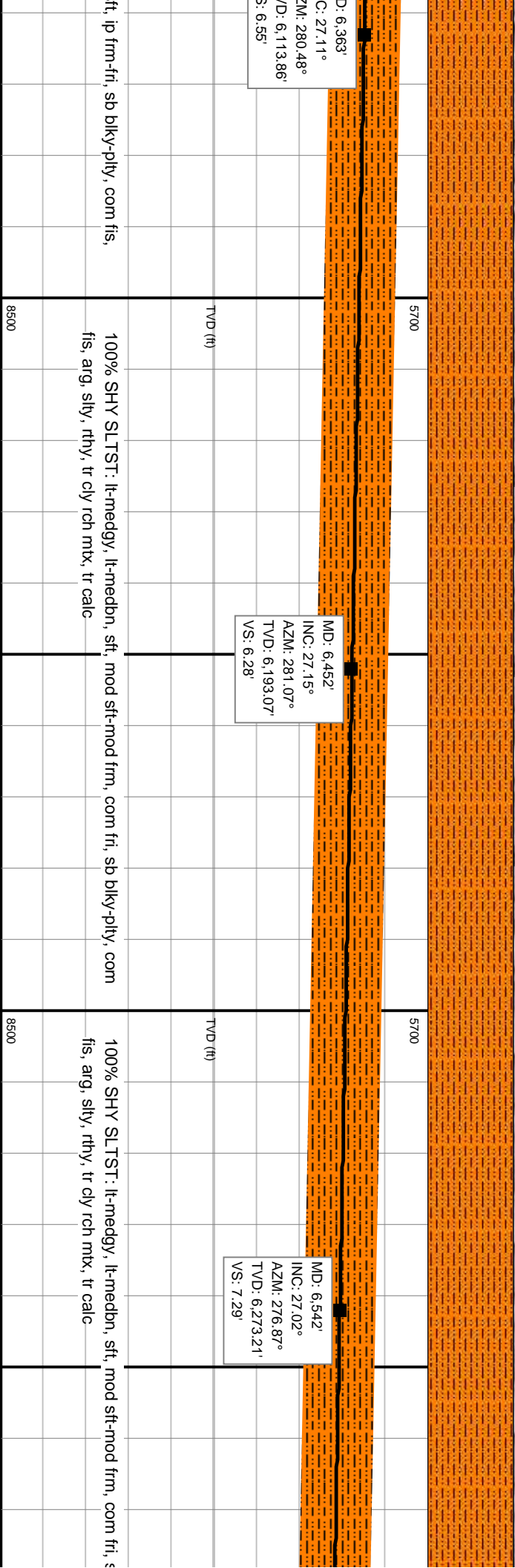
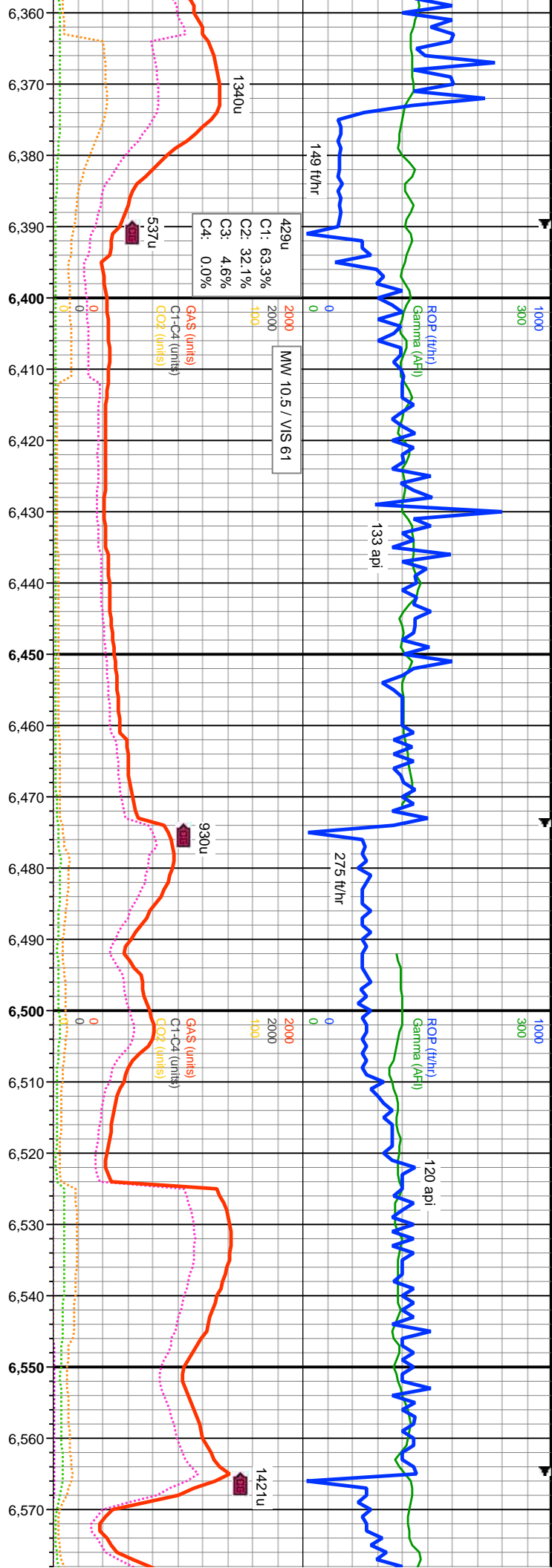


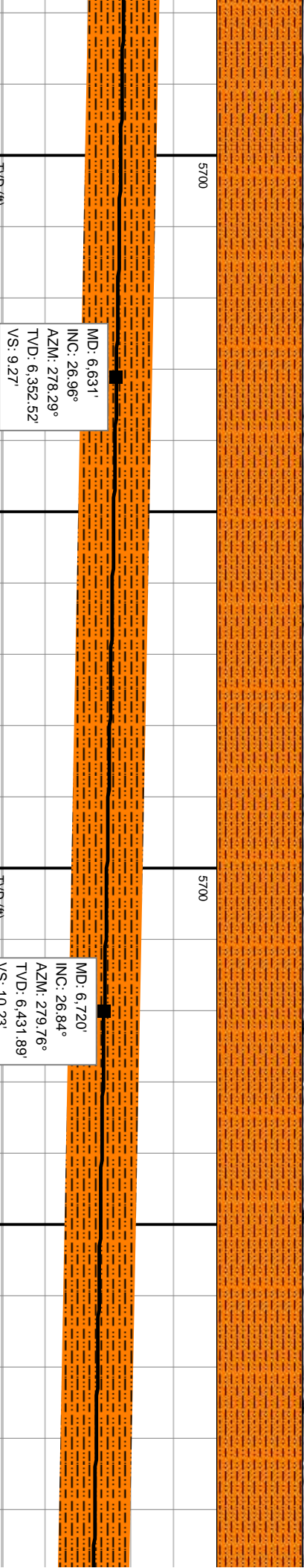
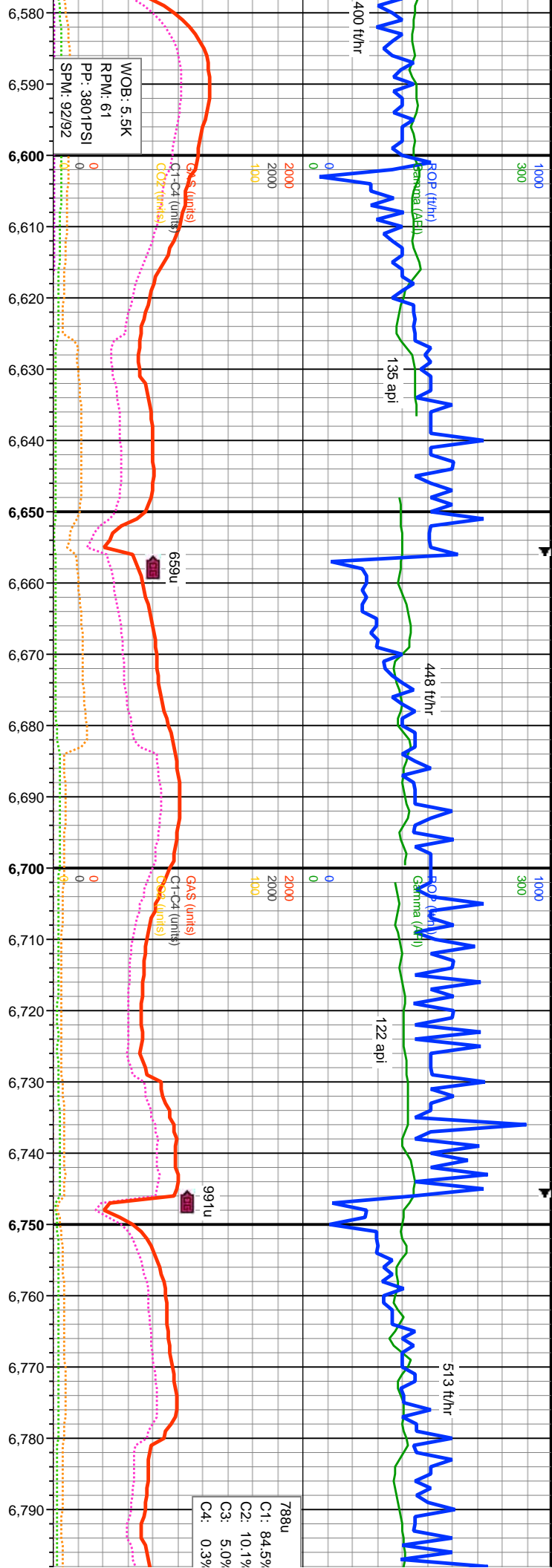
MD: 6,185'
INC: 27.14°
AZM: 280.58°
TVD: 5,955.32'
VS: 7.26'

MD: 6,274'
INC: 26.96°
AZM: 281.25°
TVD: 6,034.59'
VS: 6.89'

MD: 6,274'
INC: 26.96°
AZM: 281.25°
TVD: 6,034.59'
VS: 6.89'

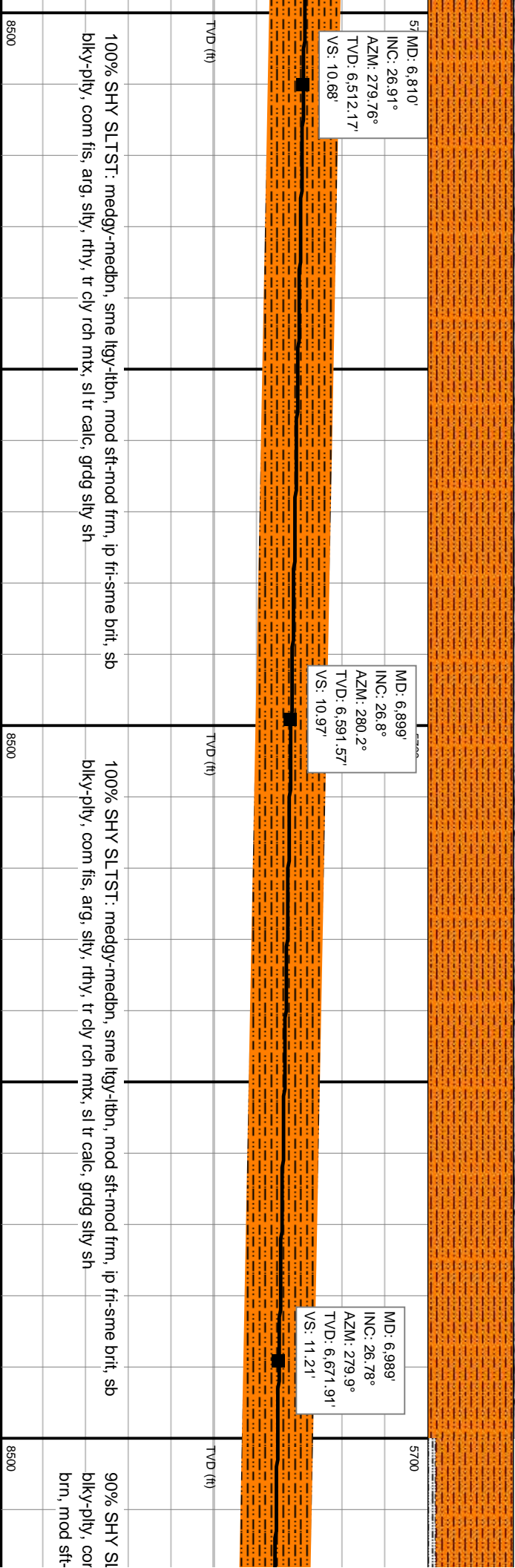
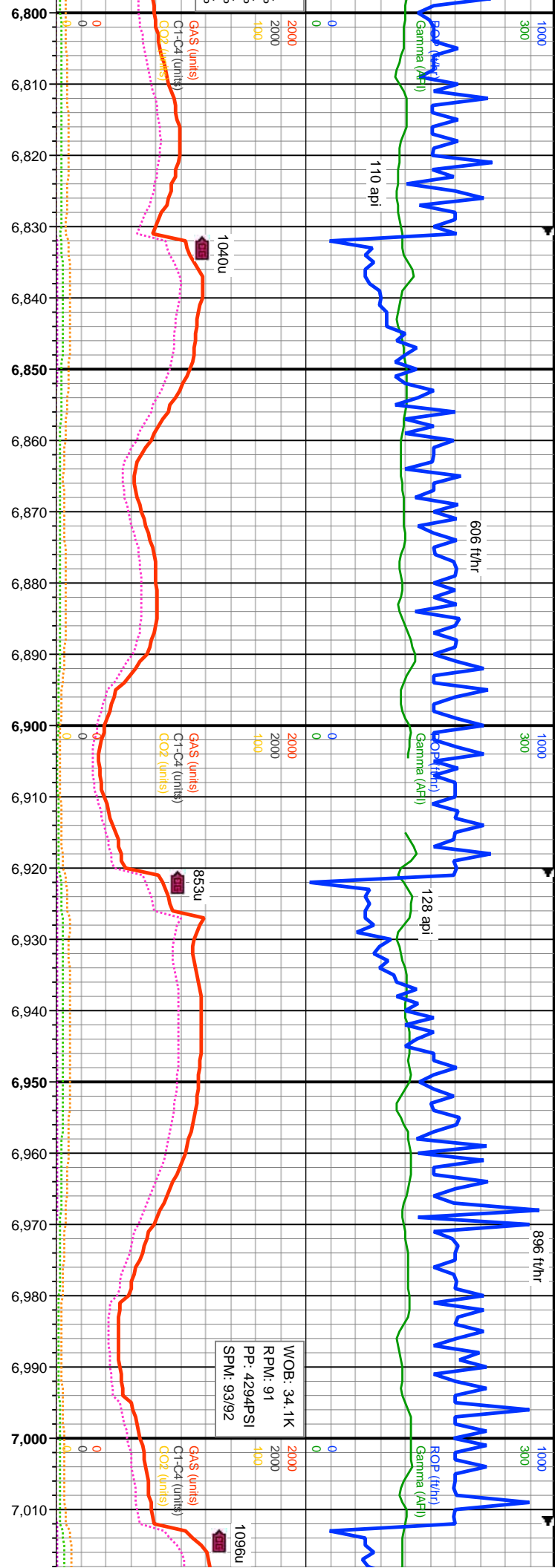


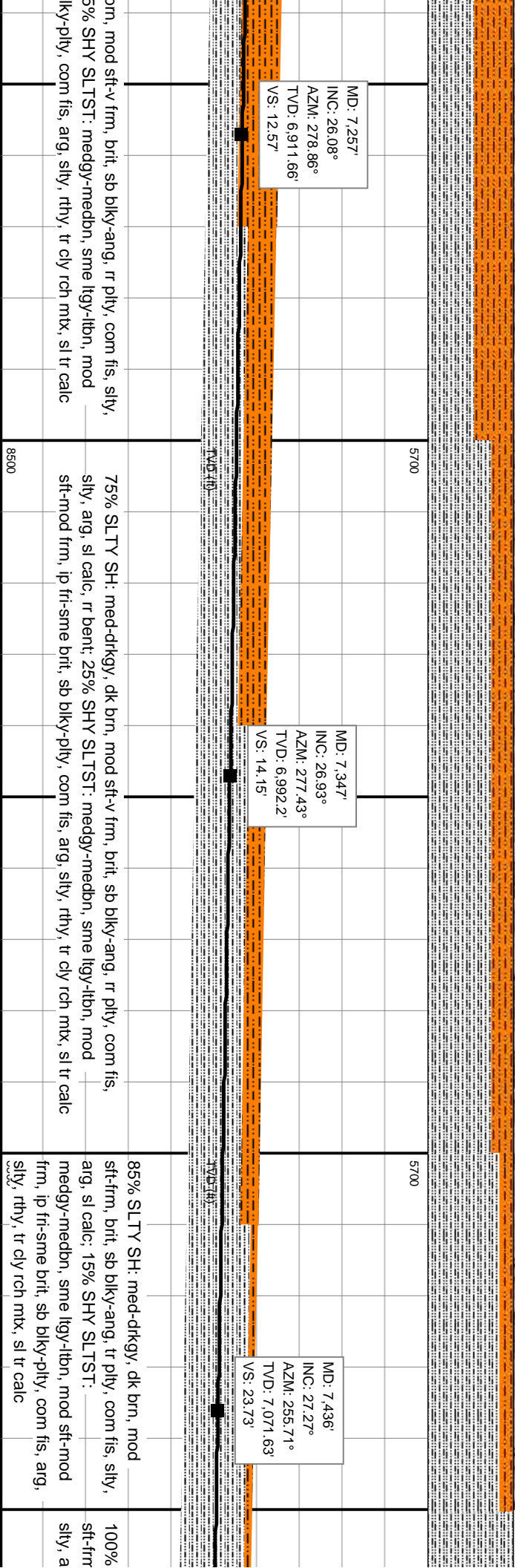
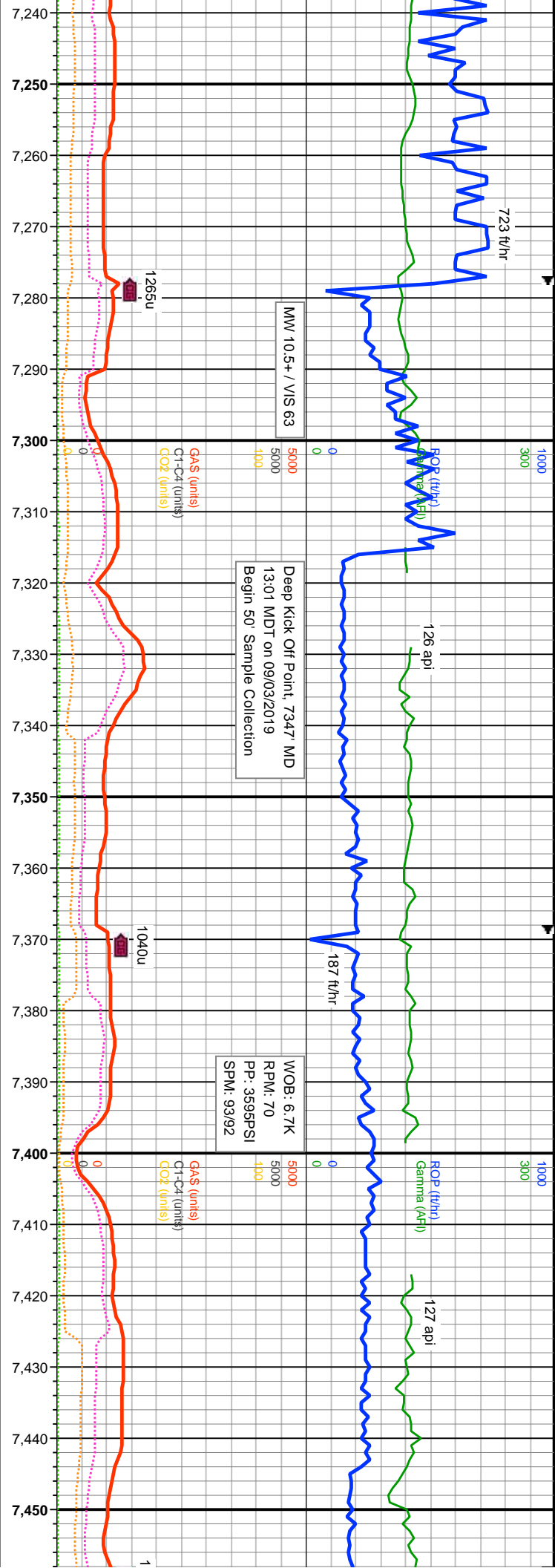


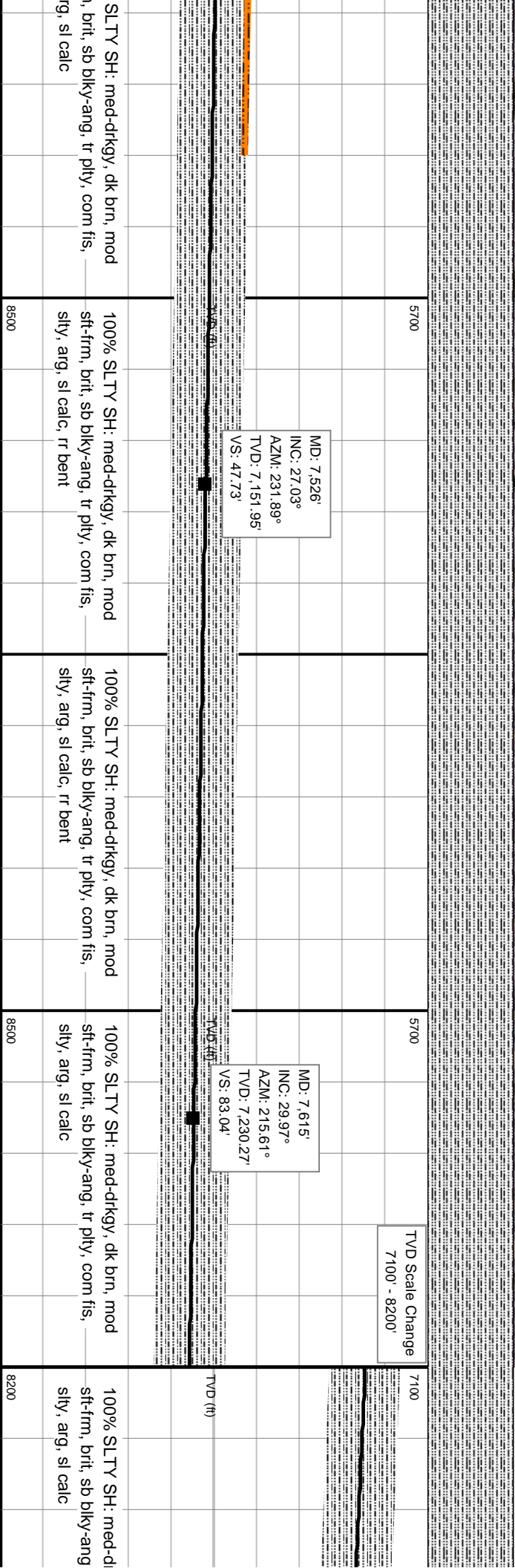
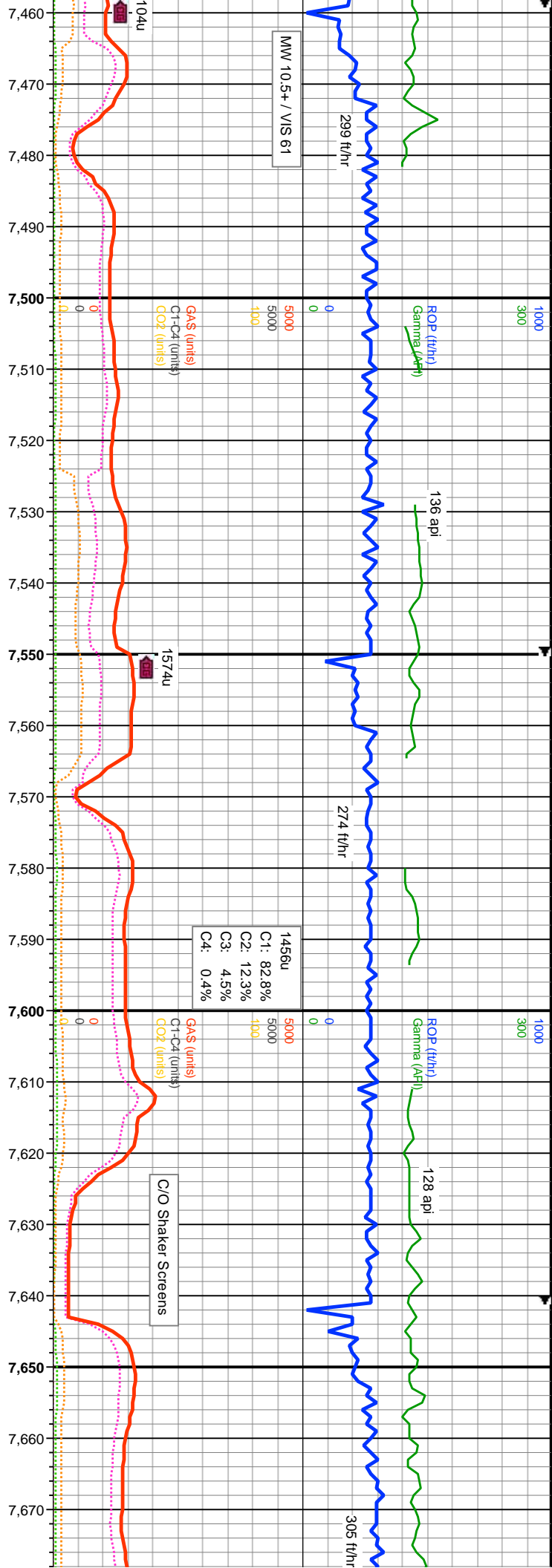


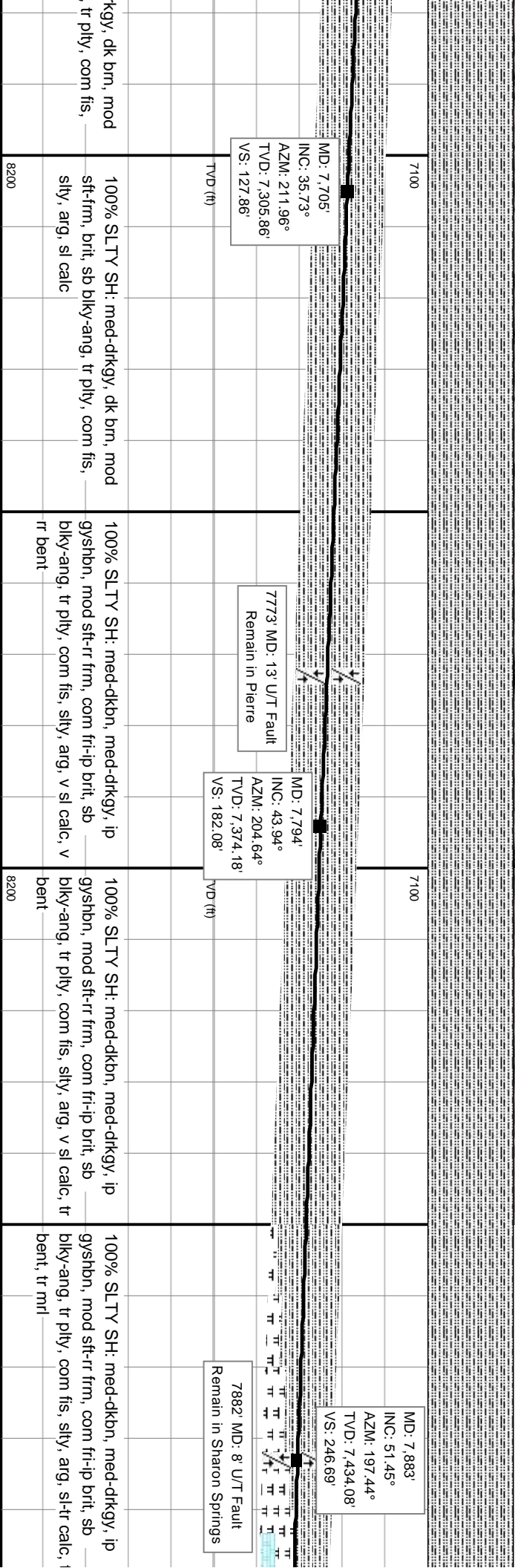
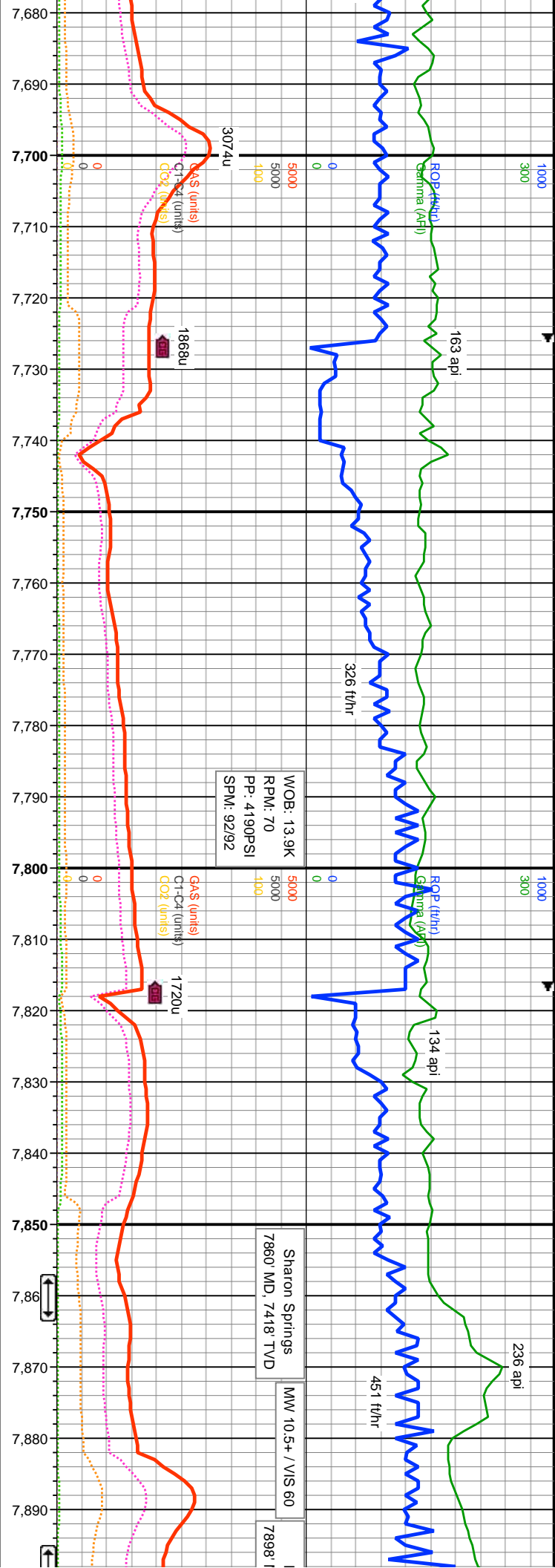
100% SHY SLTST: lt-medgy, lt-medbn, sft, mod sft-mod frm, com fri, sb blkly-plty, com
fis, arg, silty, rthy, tr cly rch mtb, tr calc

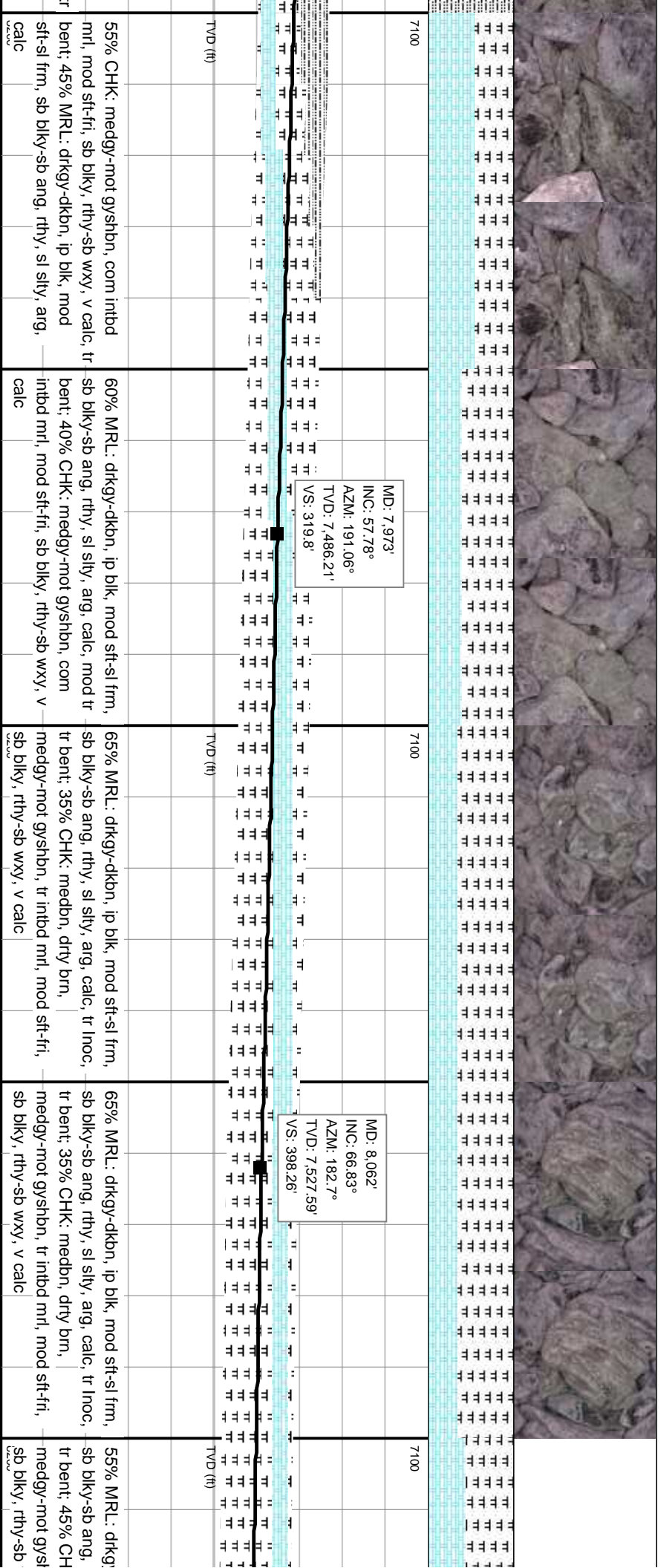
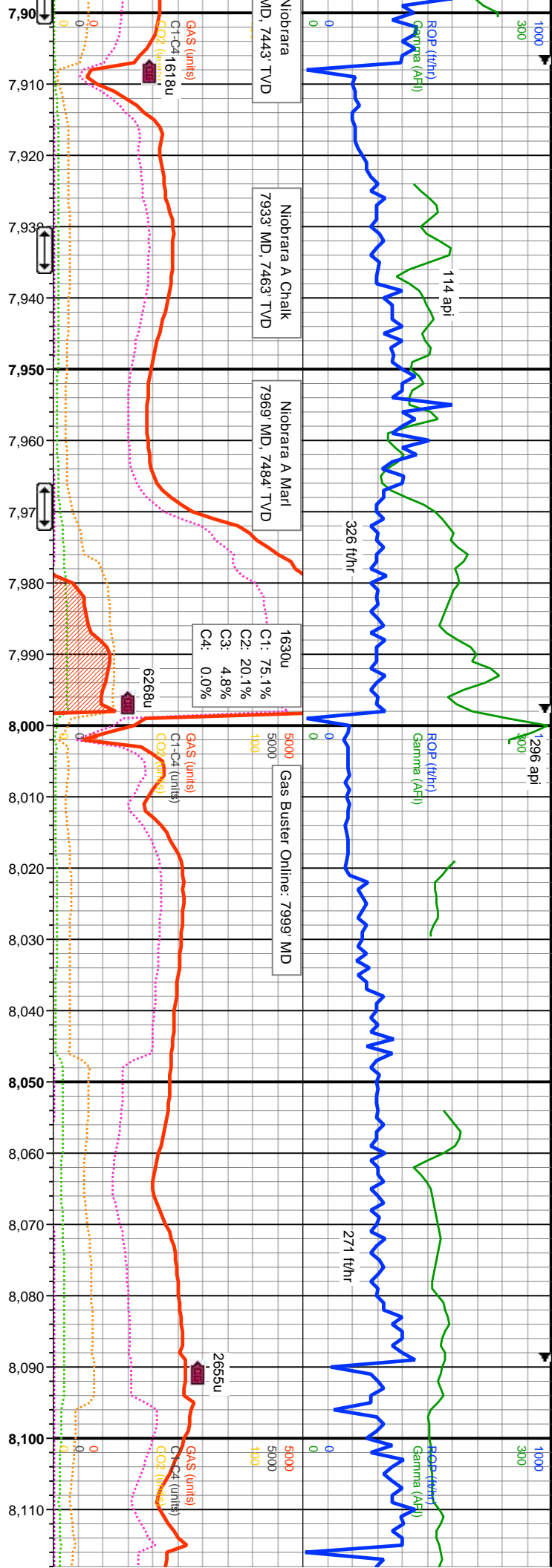
100% SHY SLTST: medgy-medbn, sme lgy-ltbn, mod sft-mod frm, ip fri-sme brit, sb
blkly-plty, com fis, arg, silty, rthy, tr cly rch mtb, sl tr calc

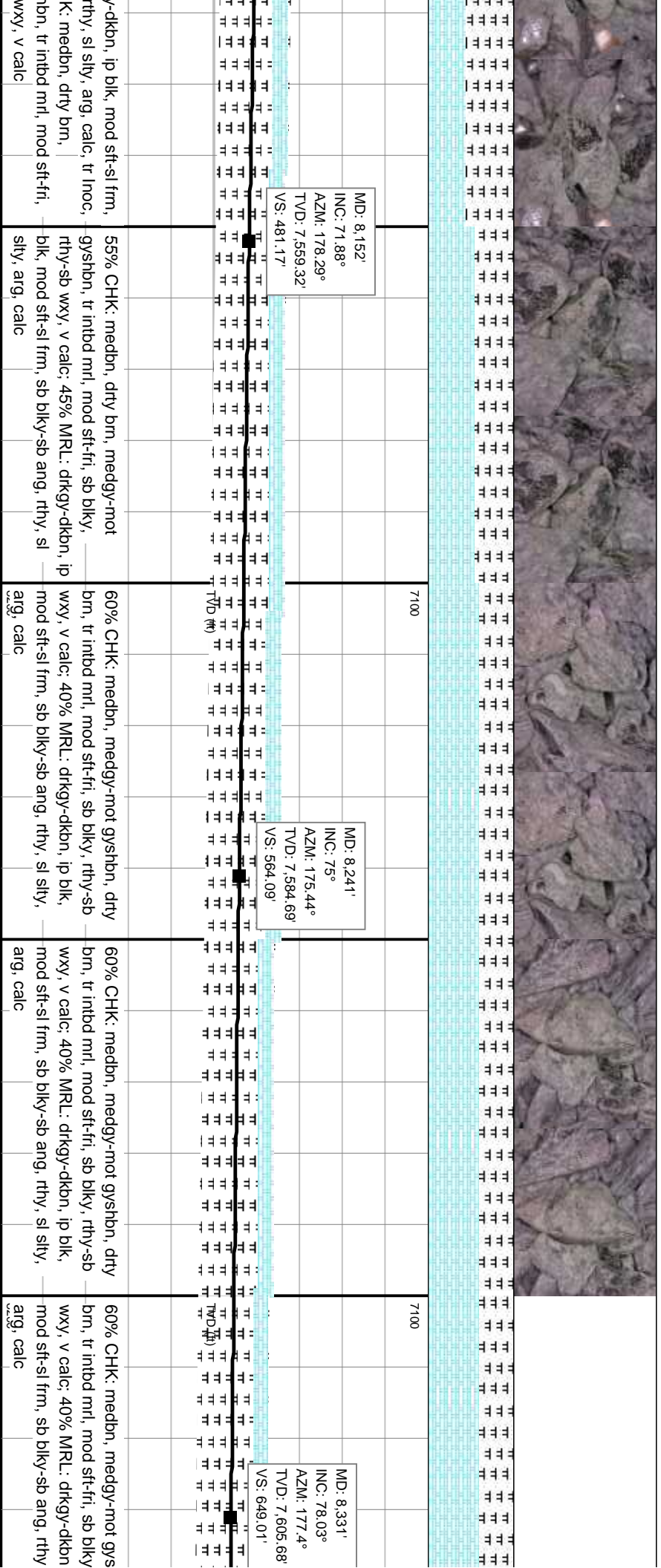
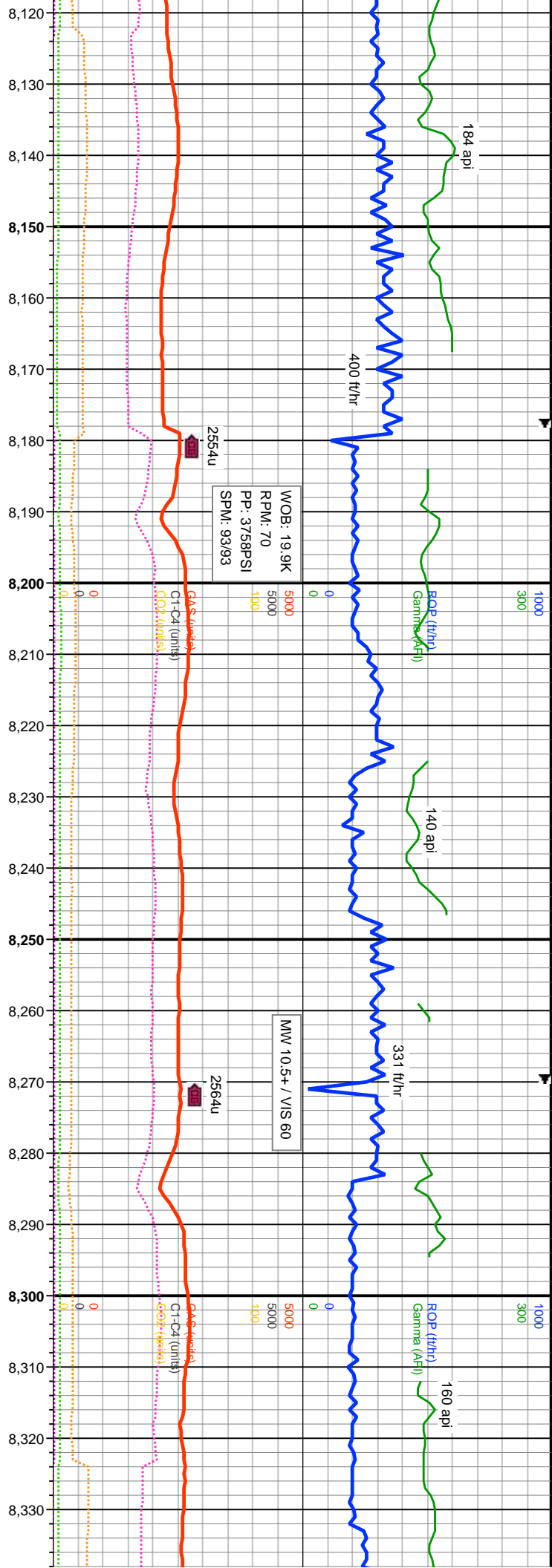


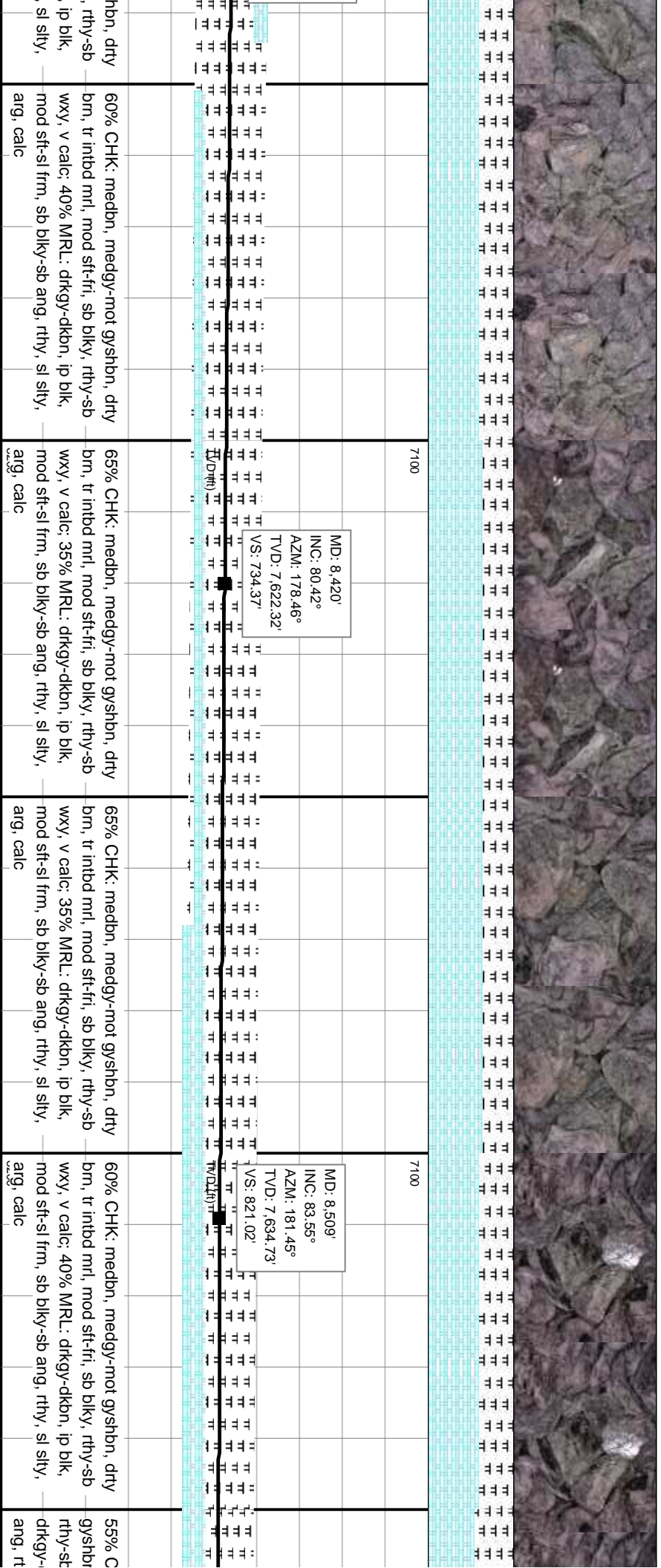
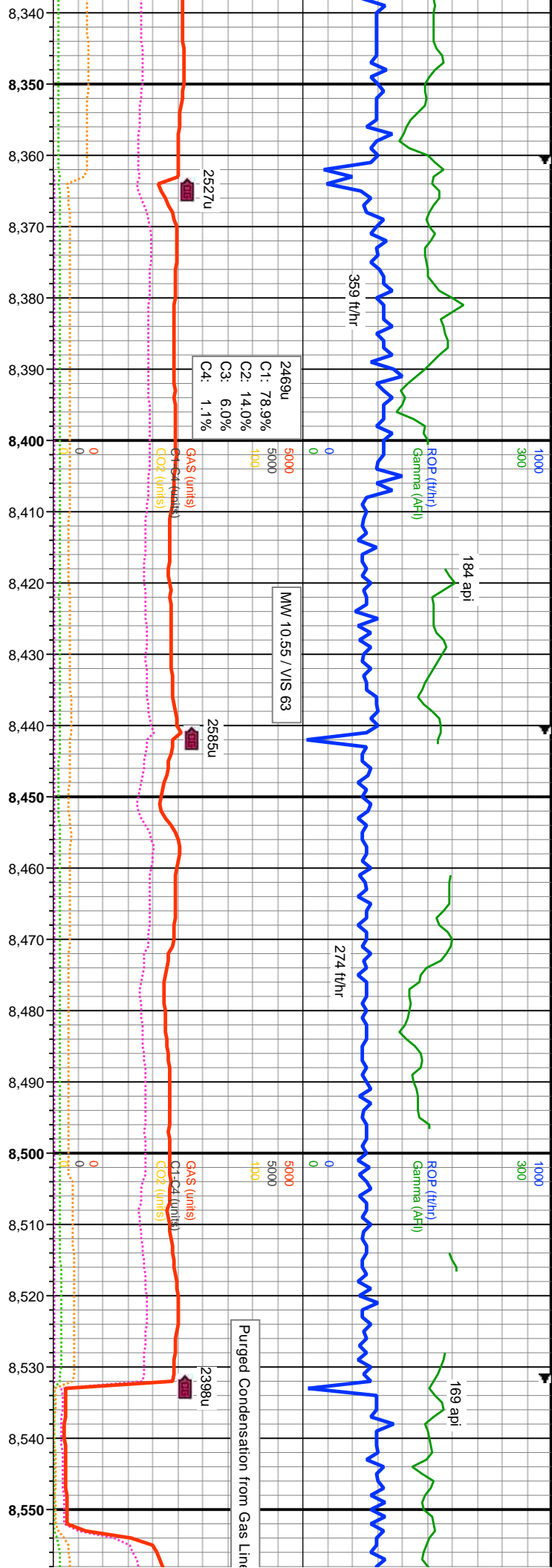


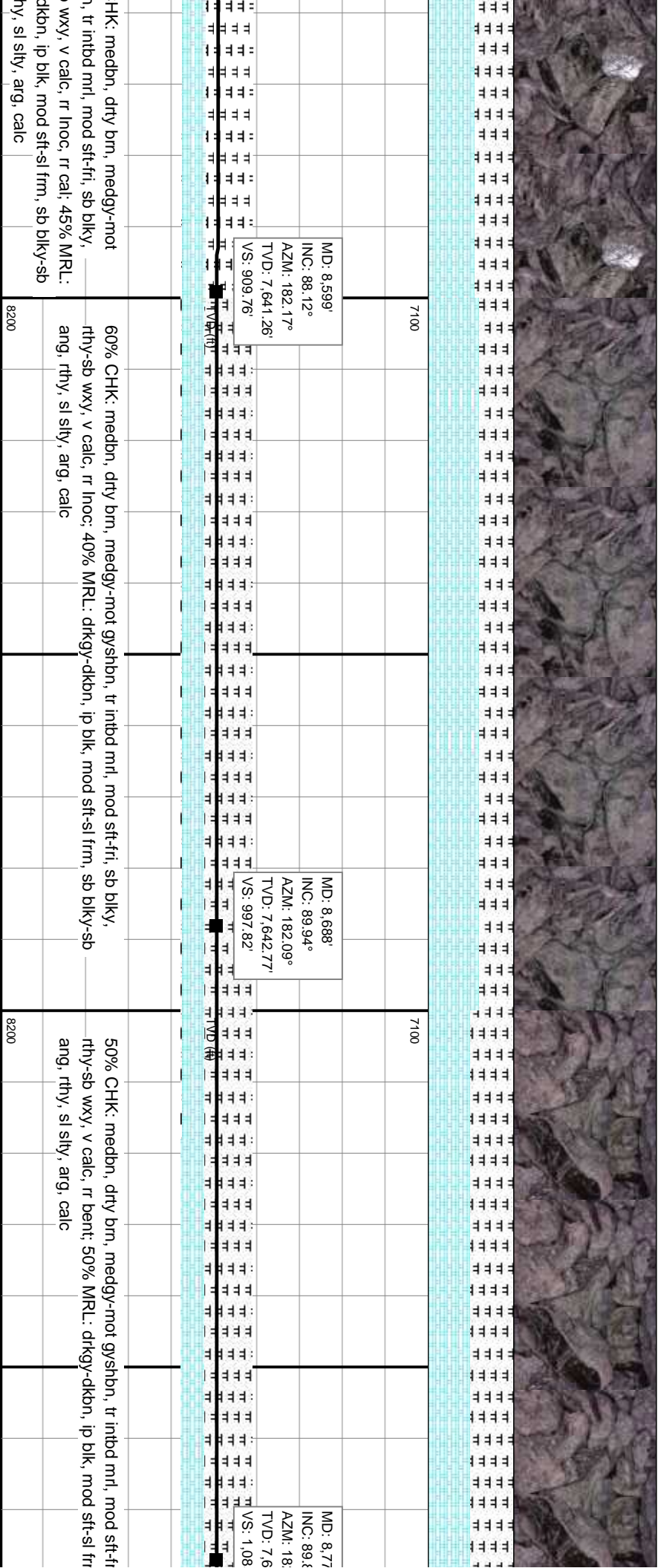
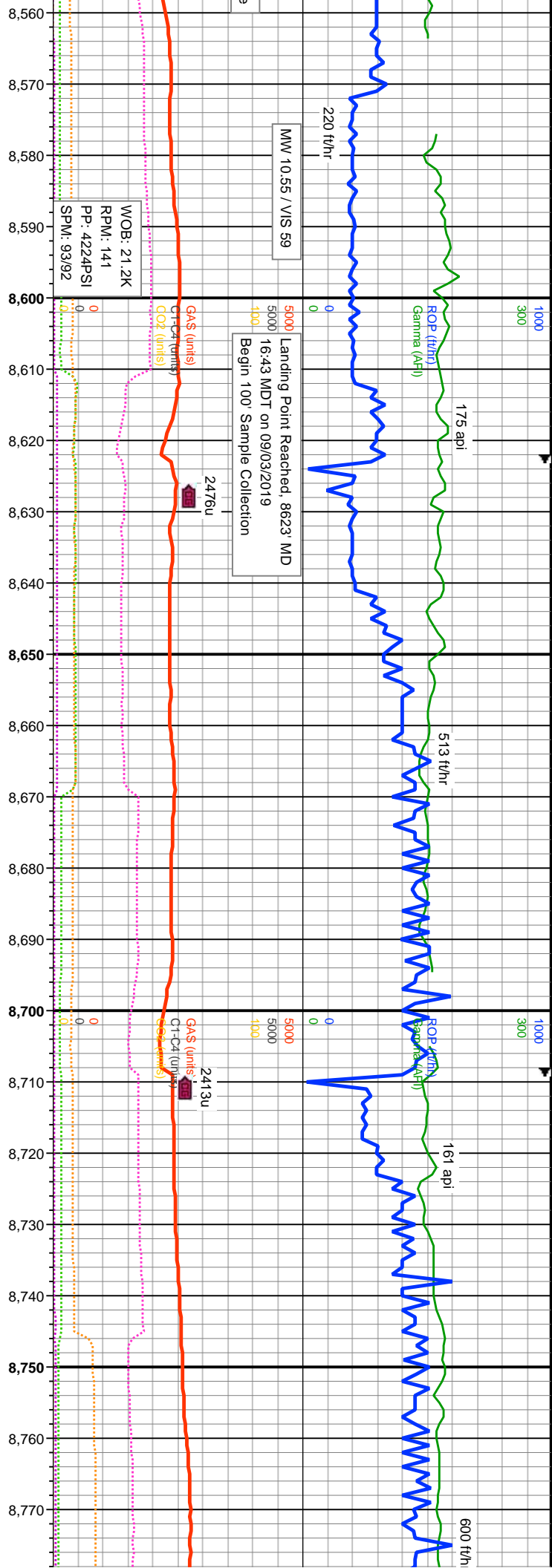


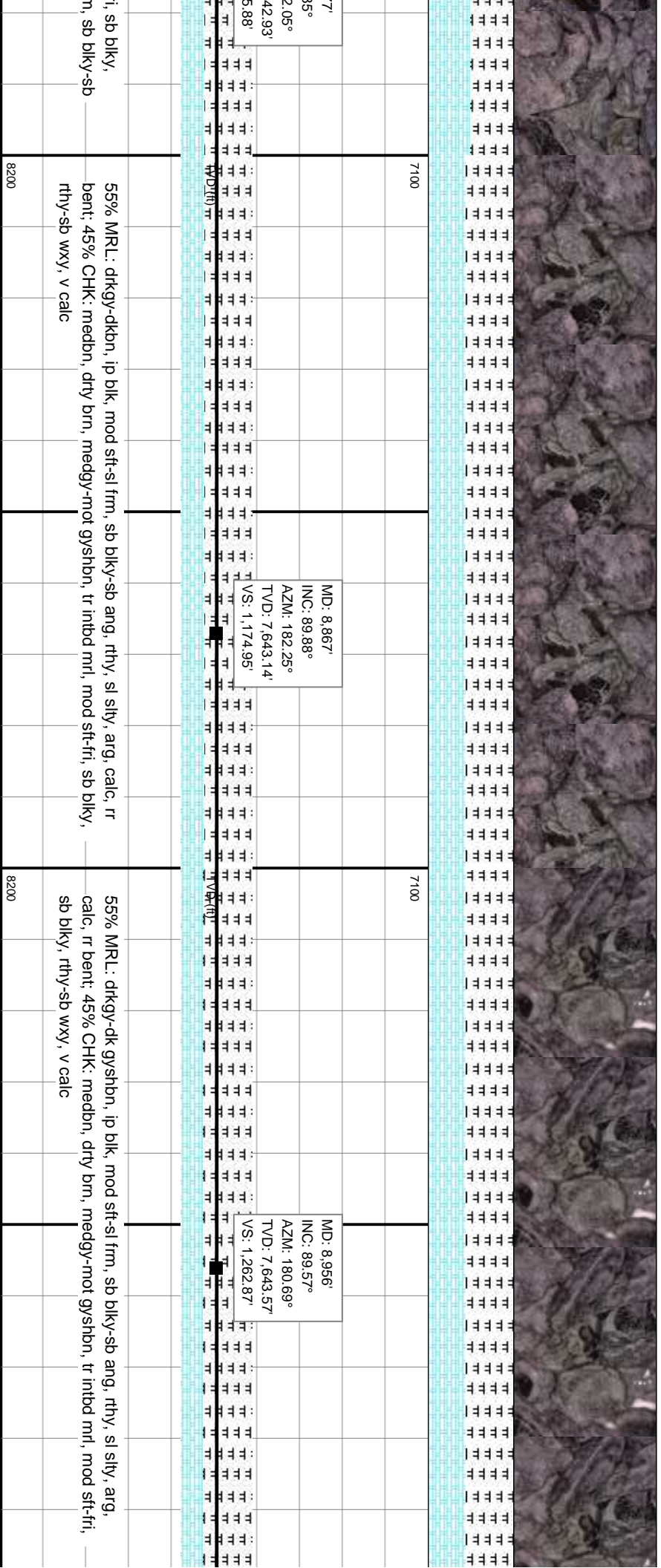
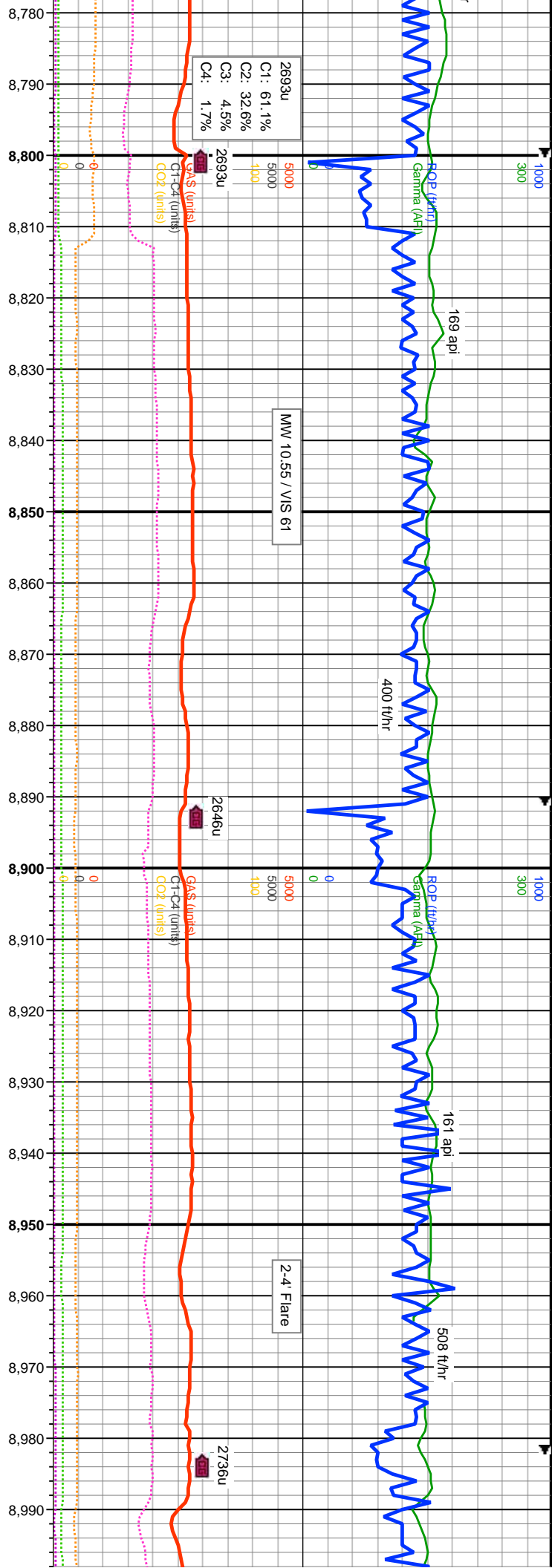


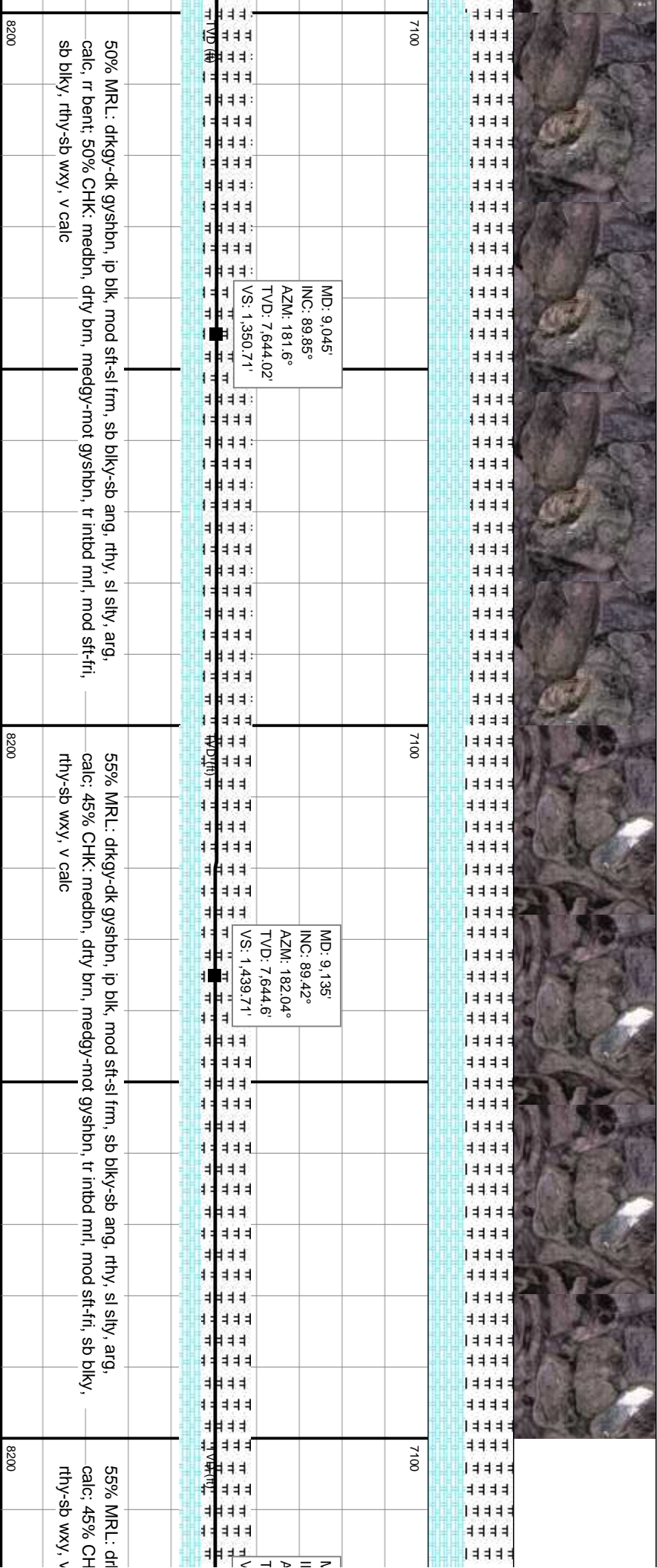
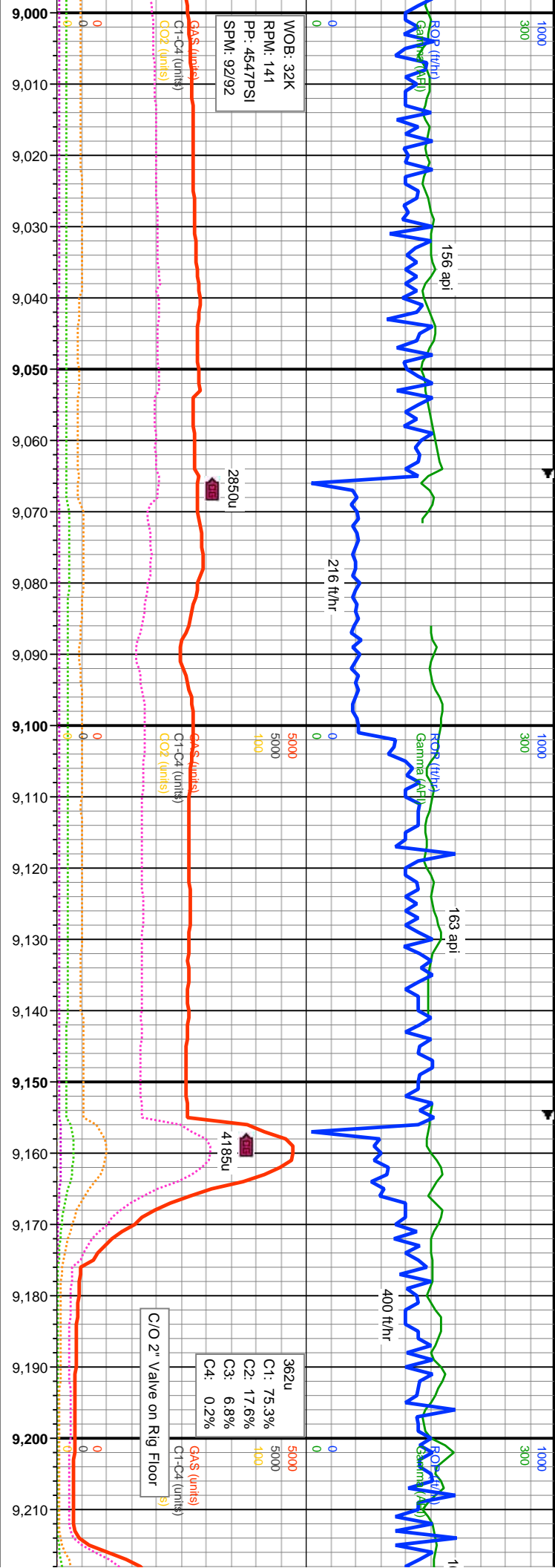


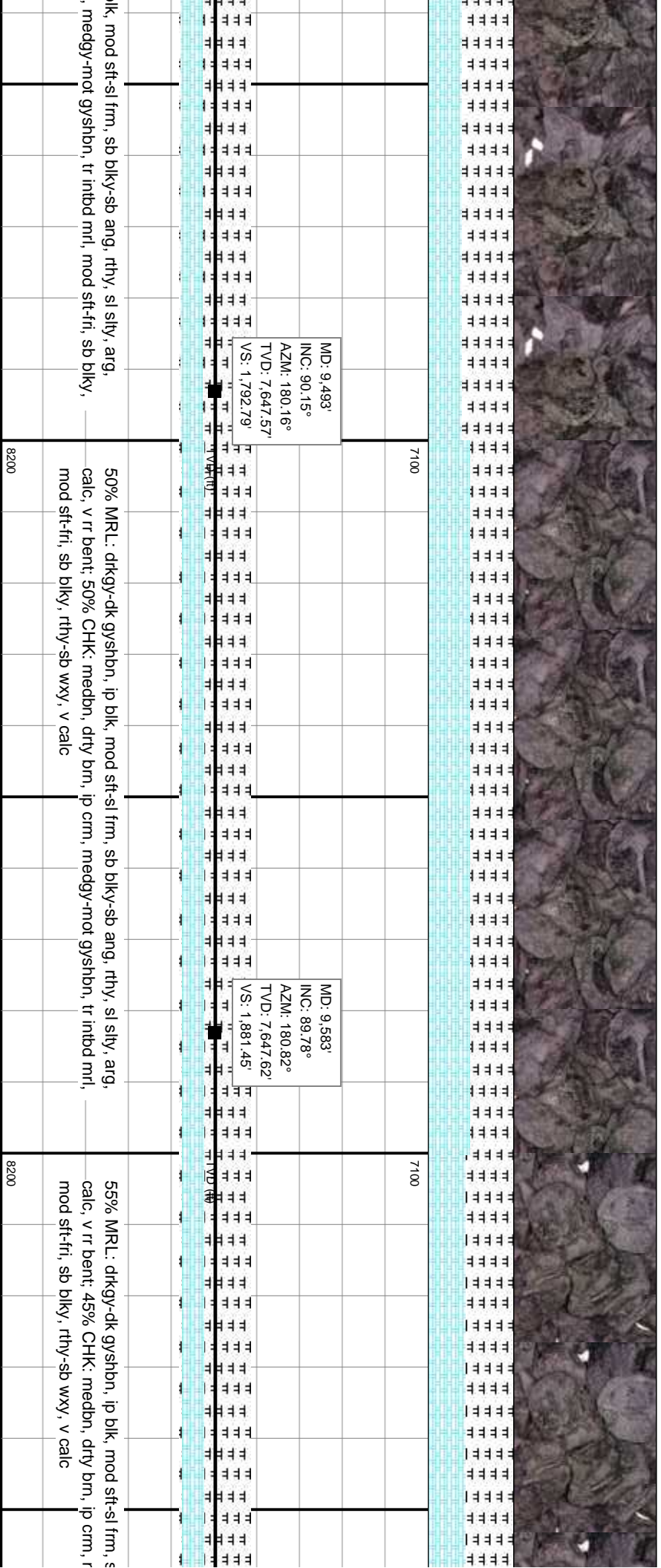
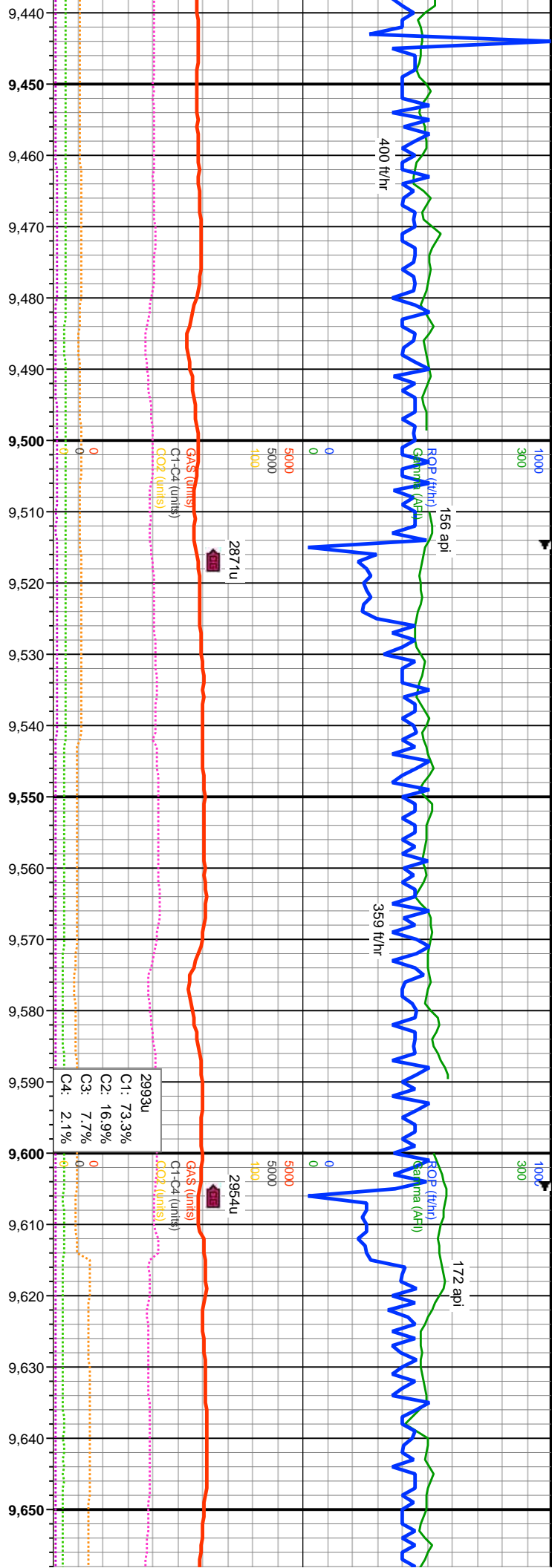


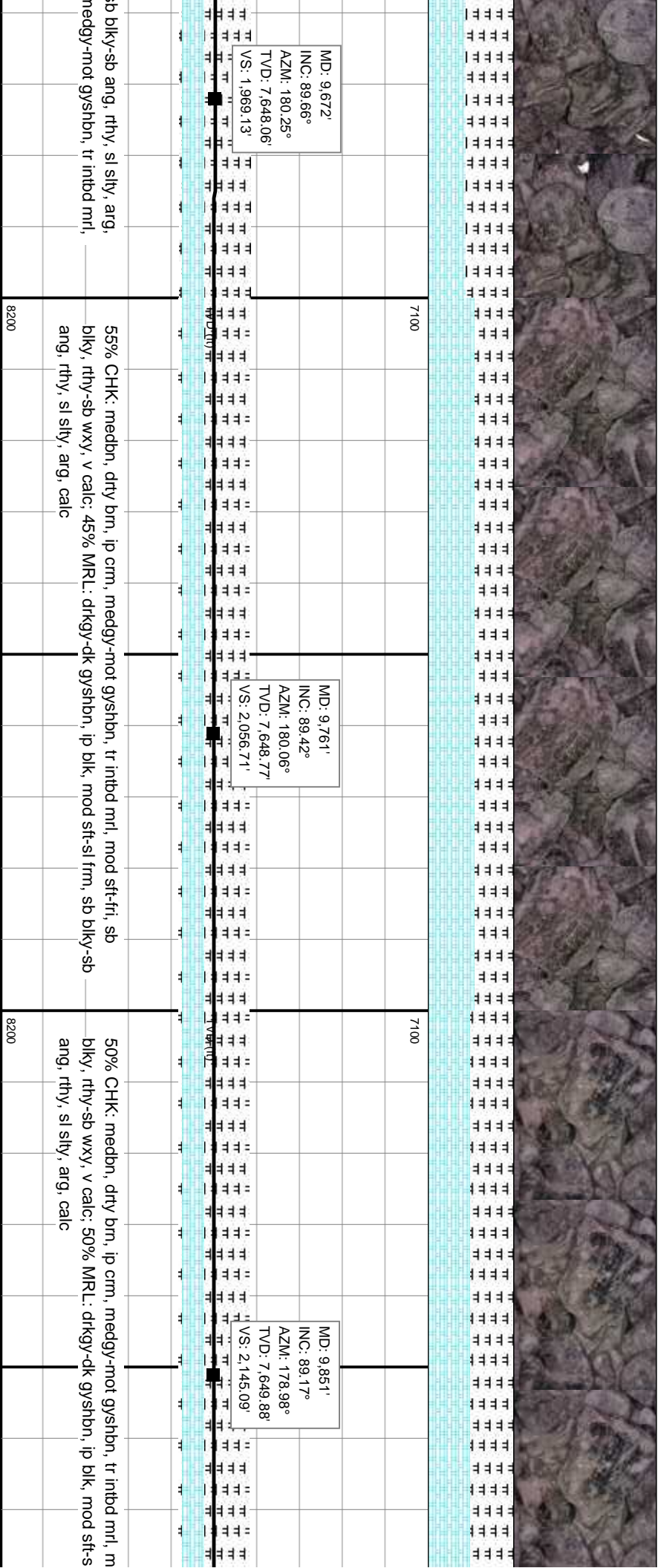
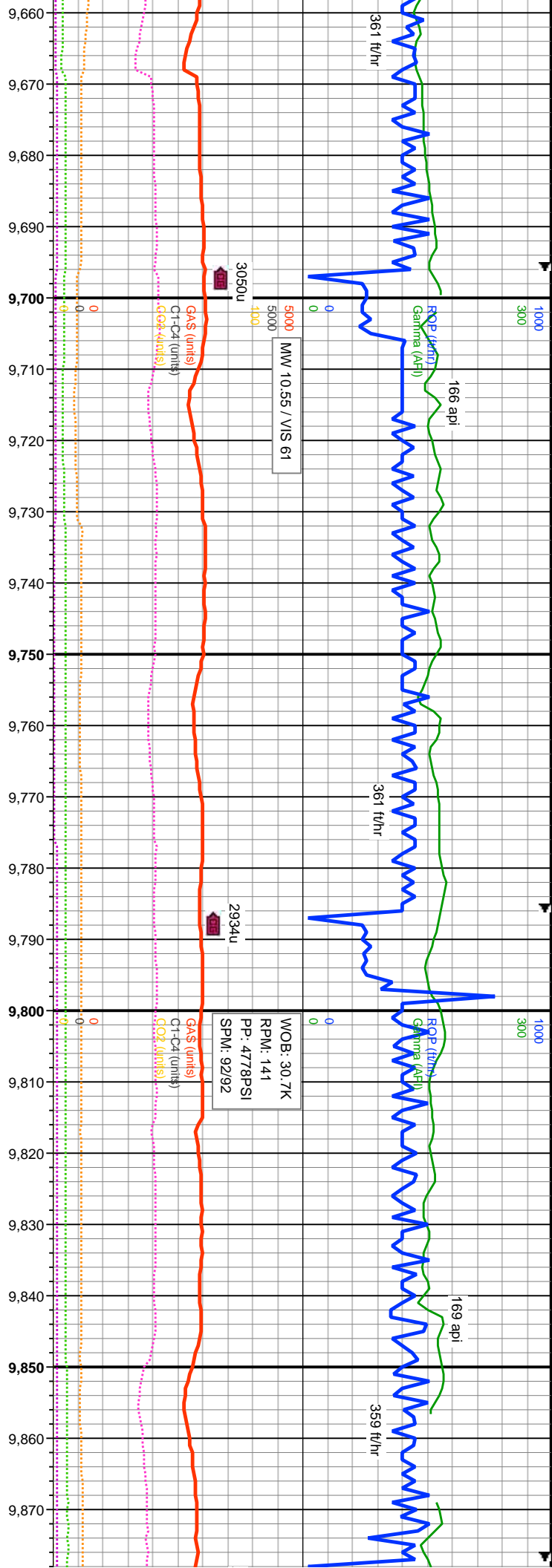


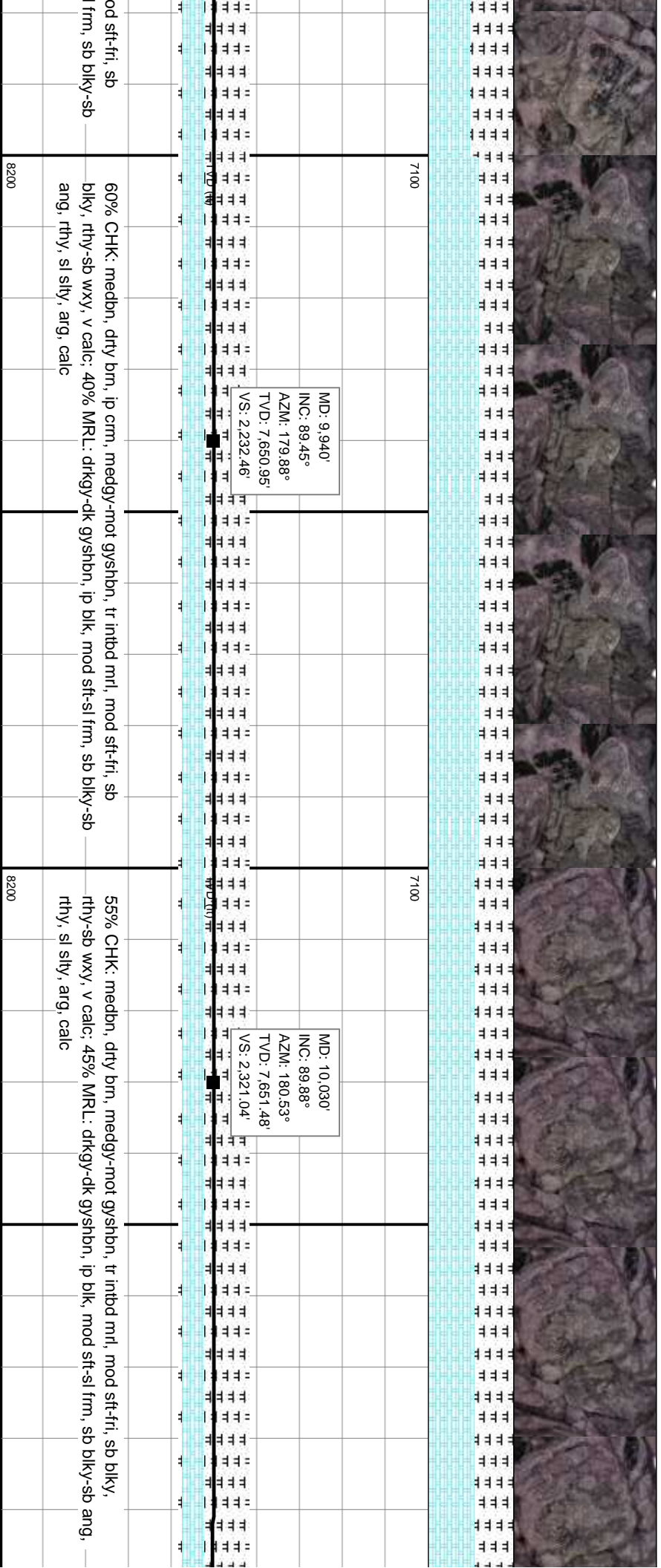
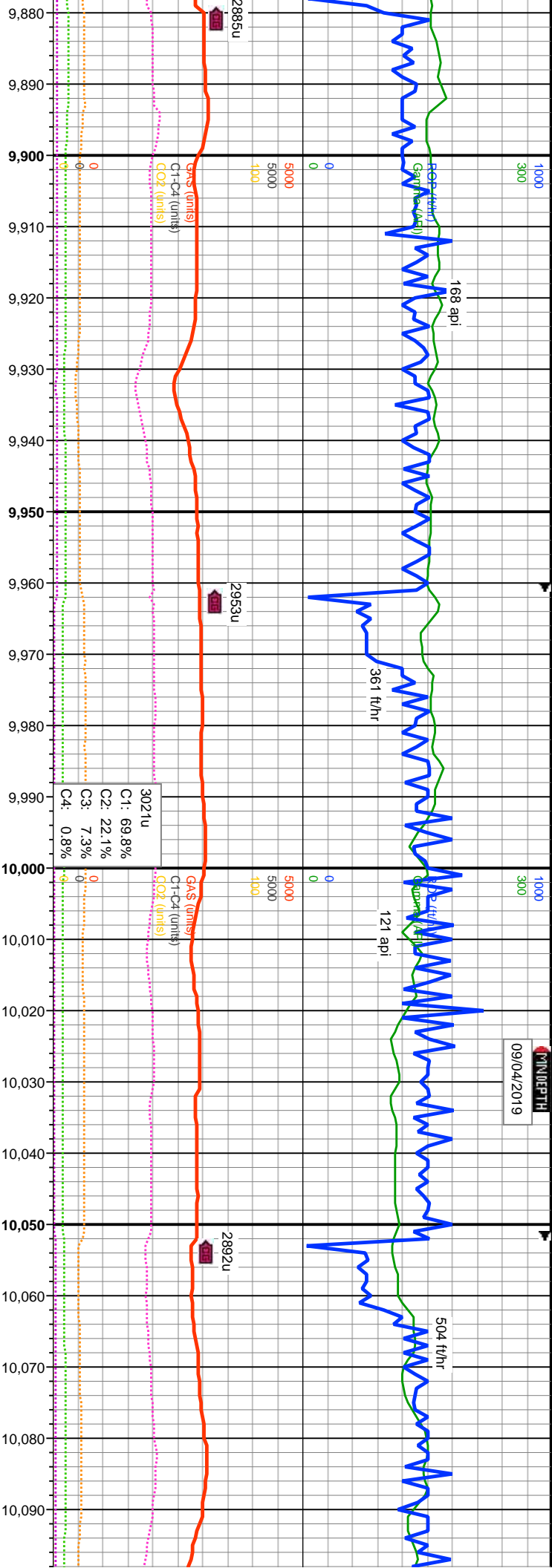


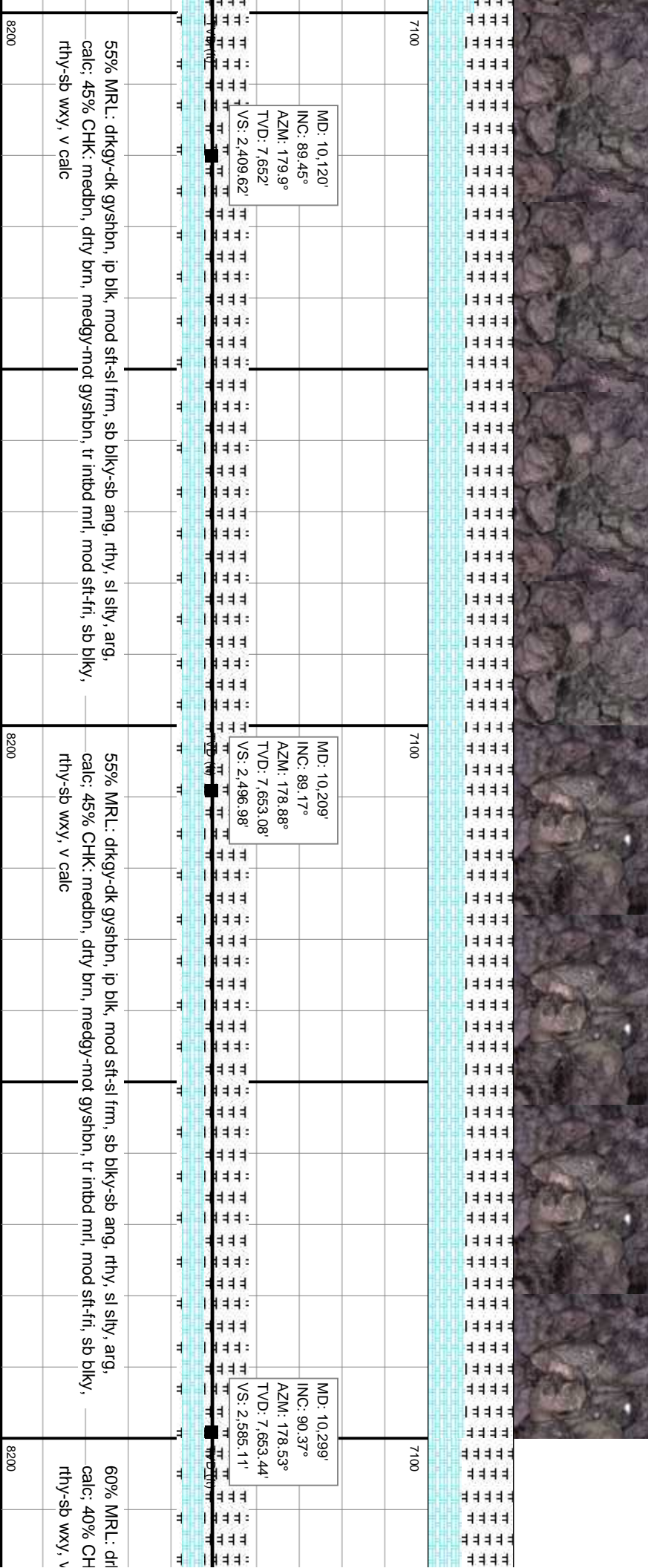
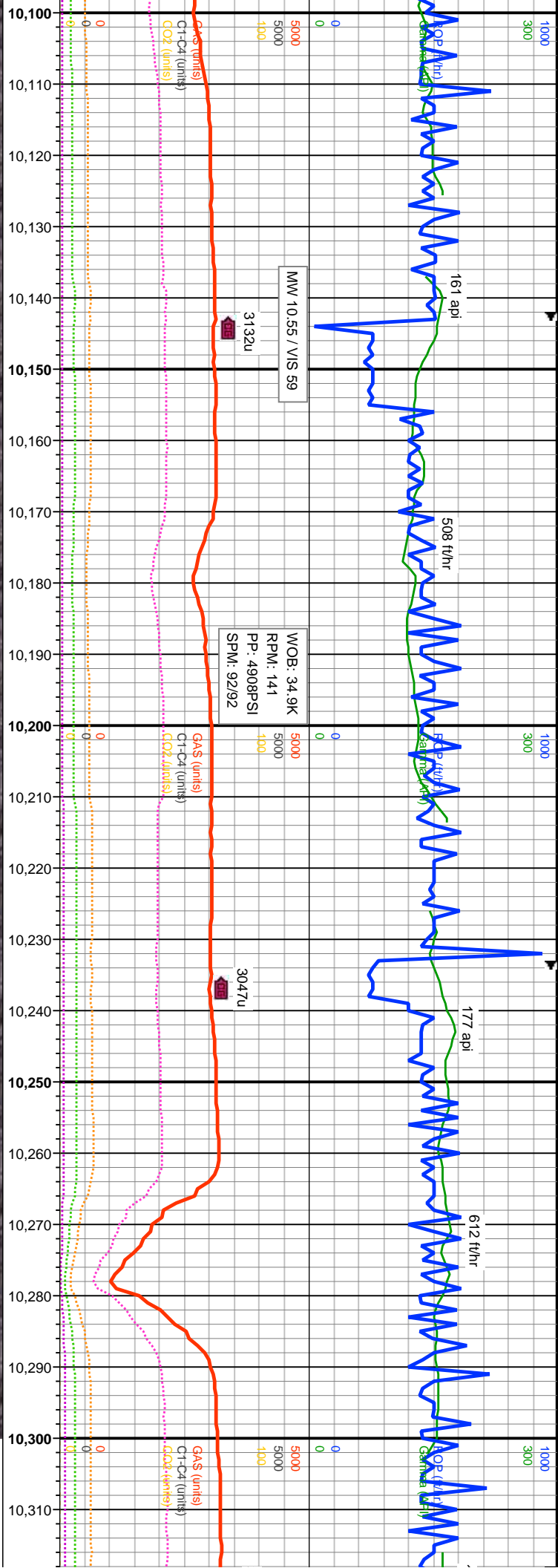


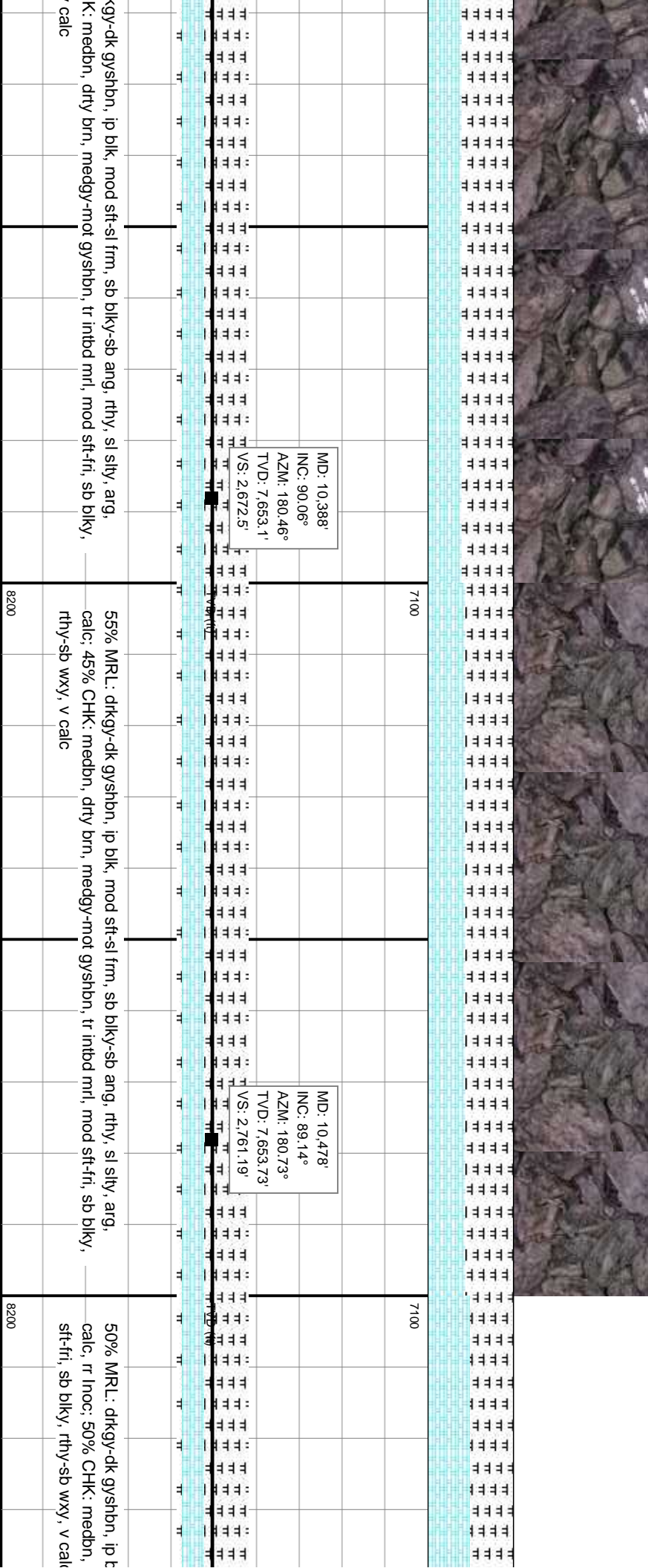
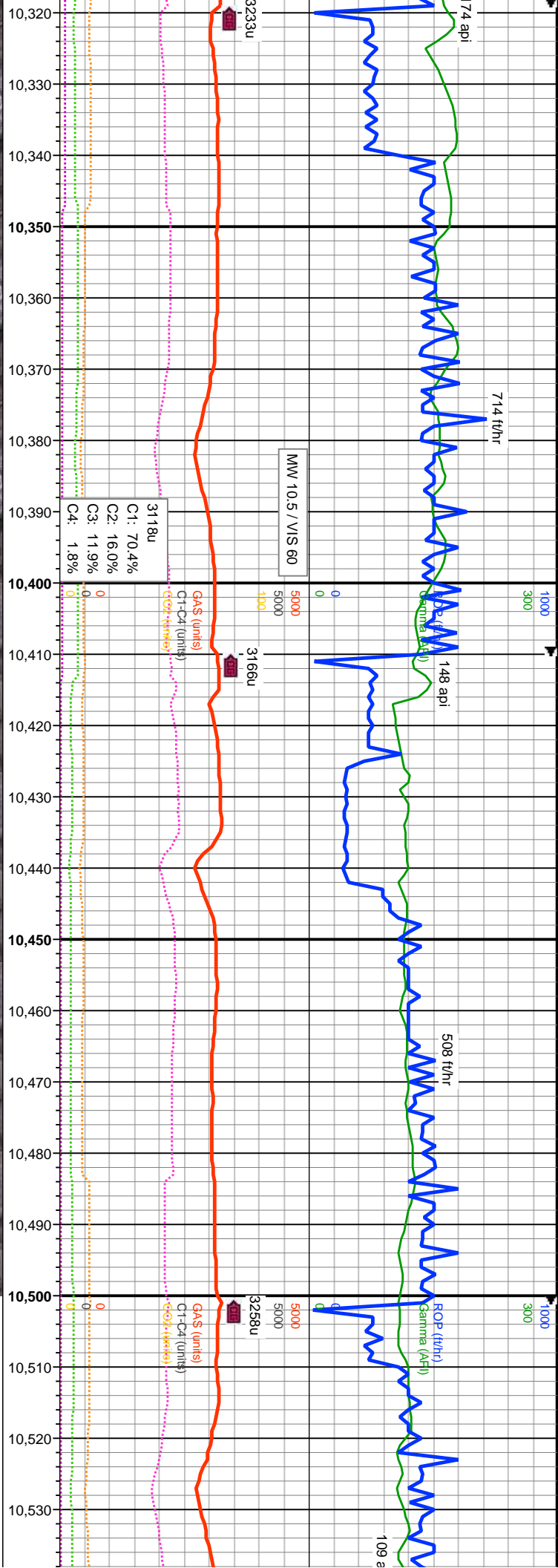


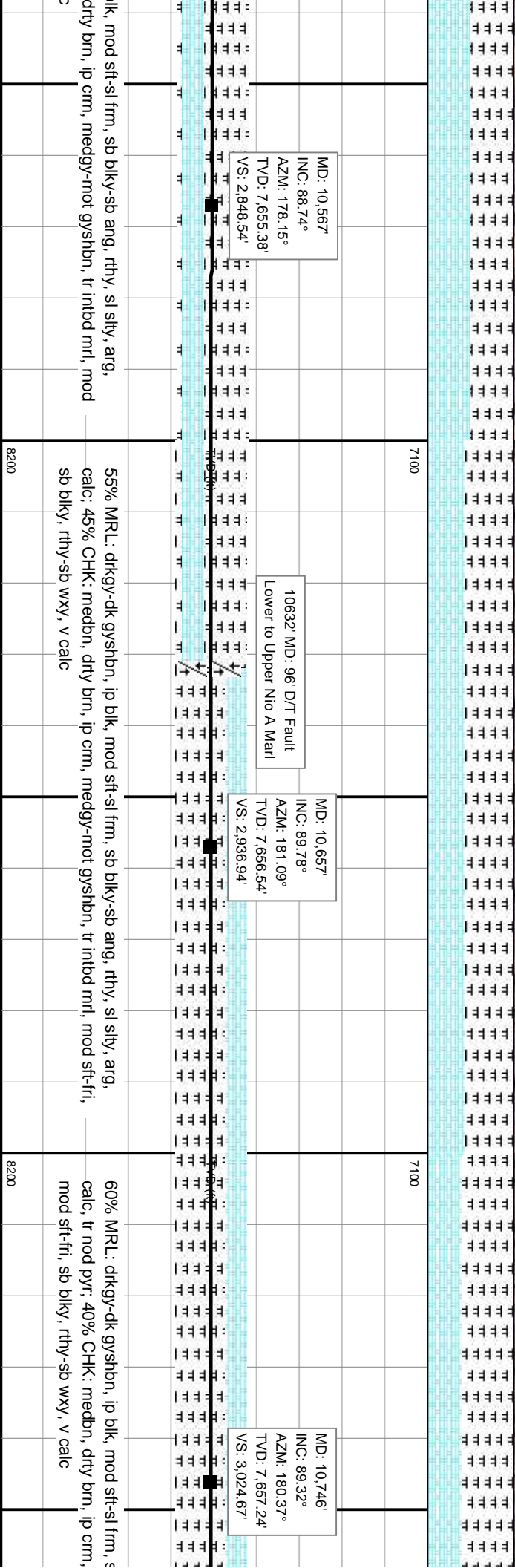


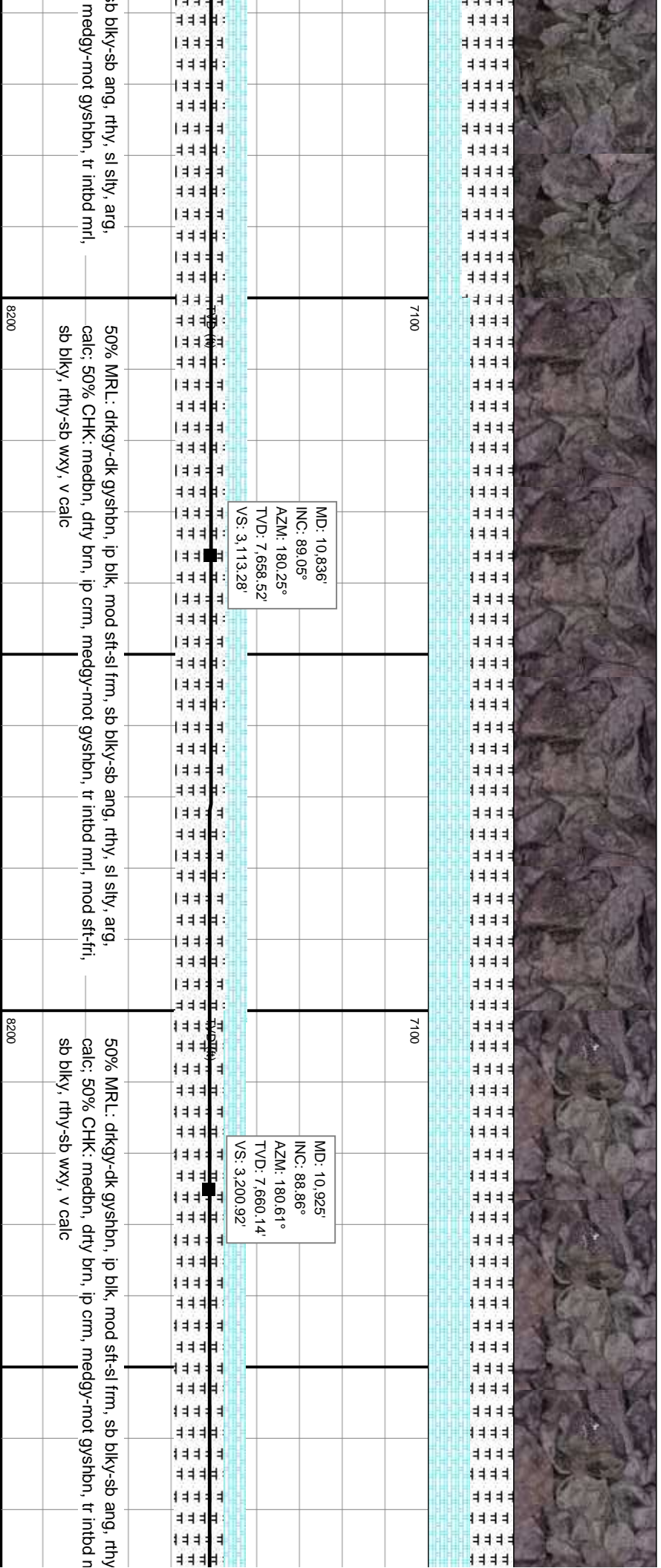
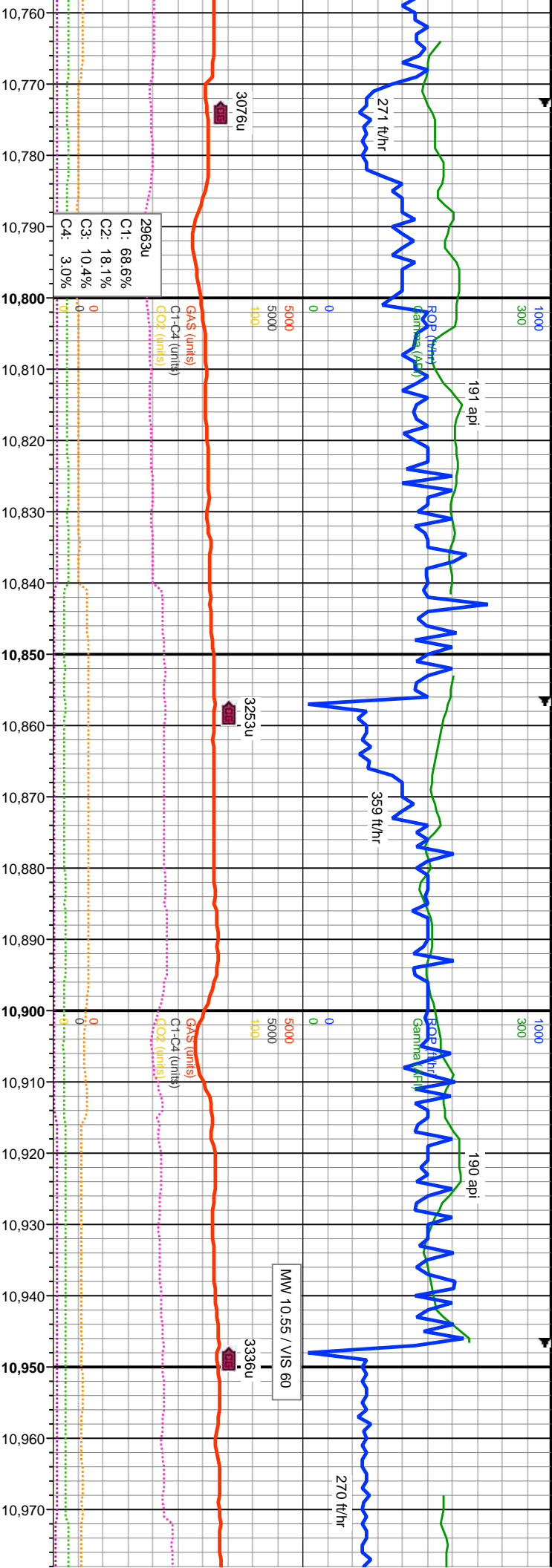


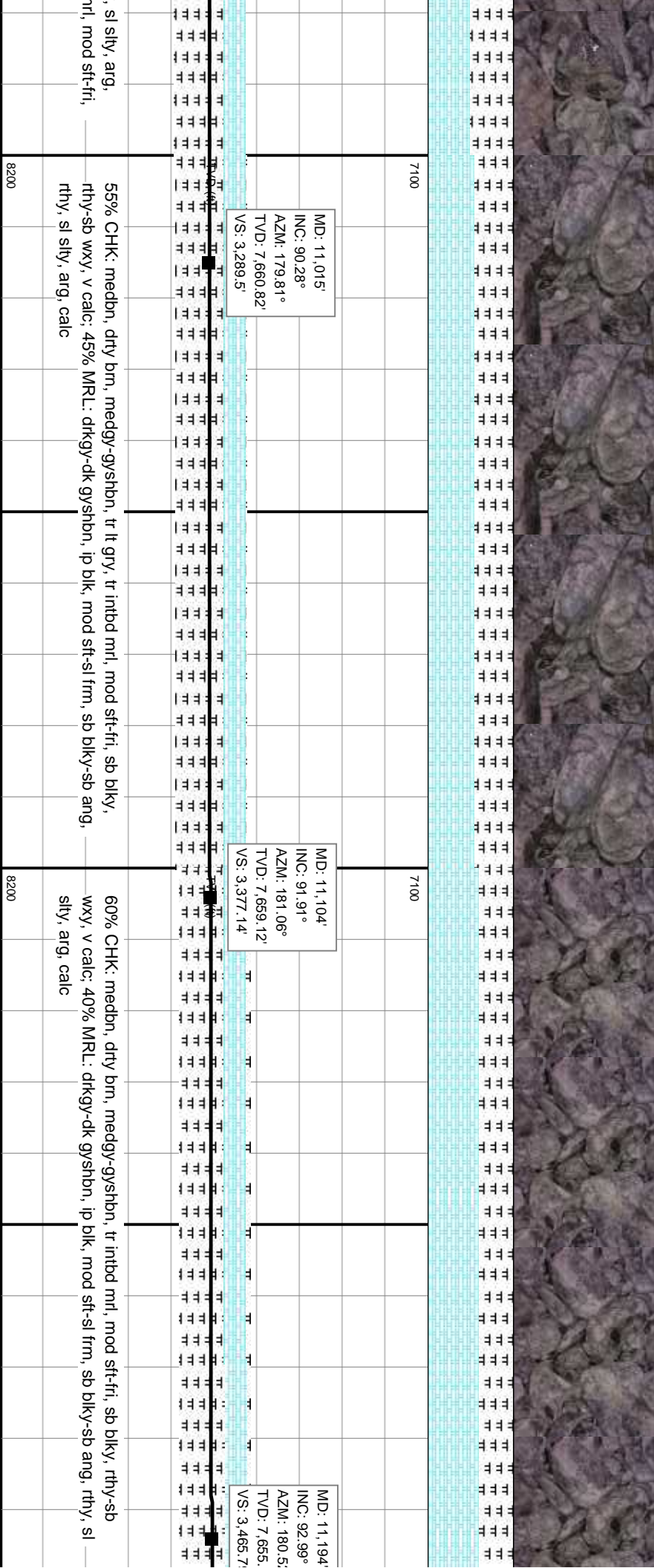
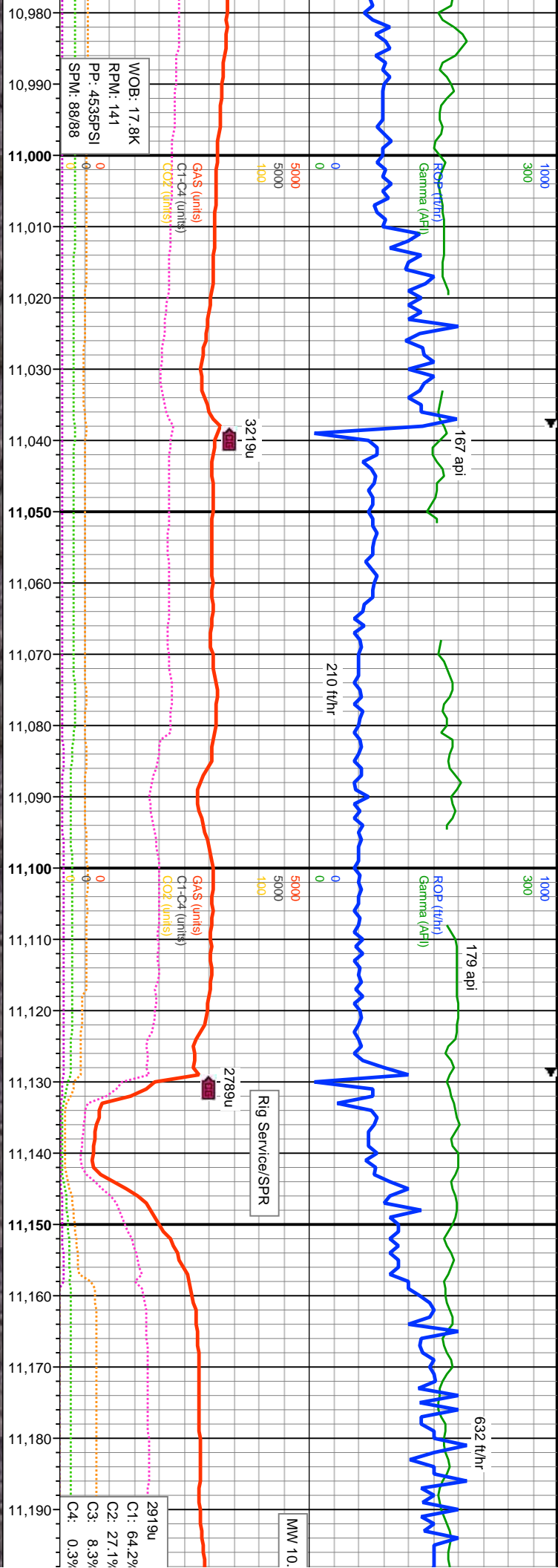


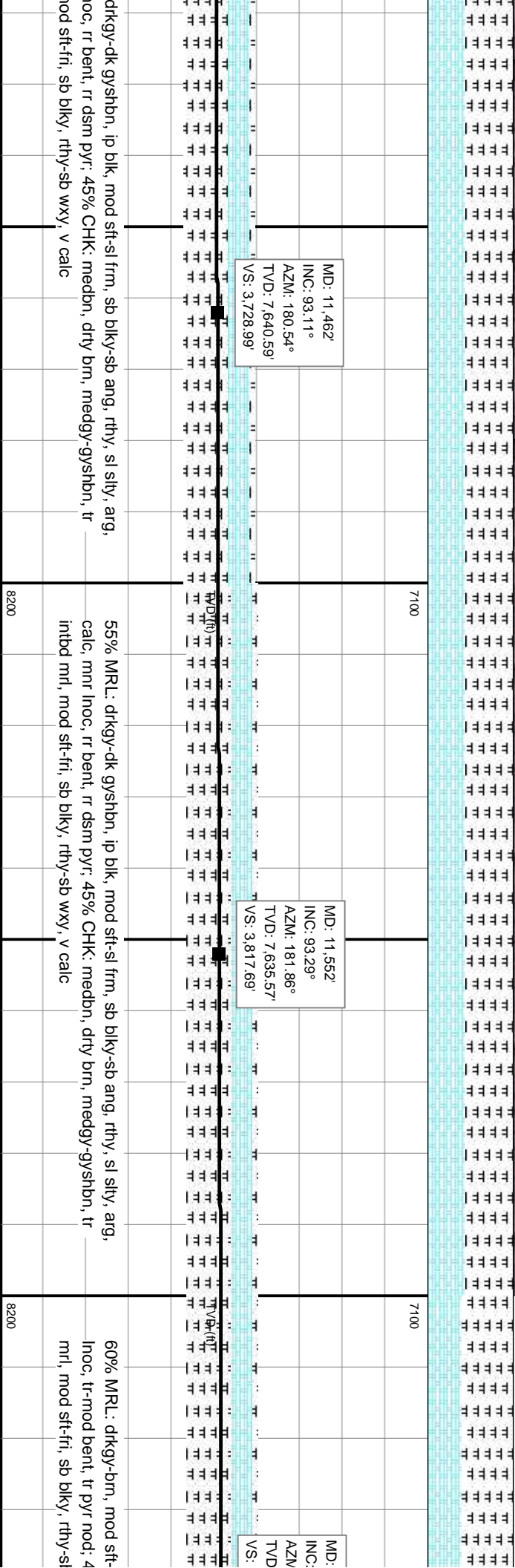
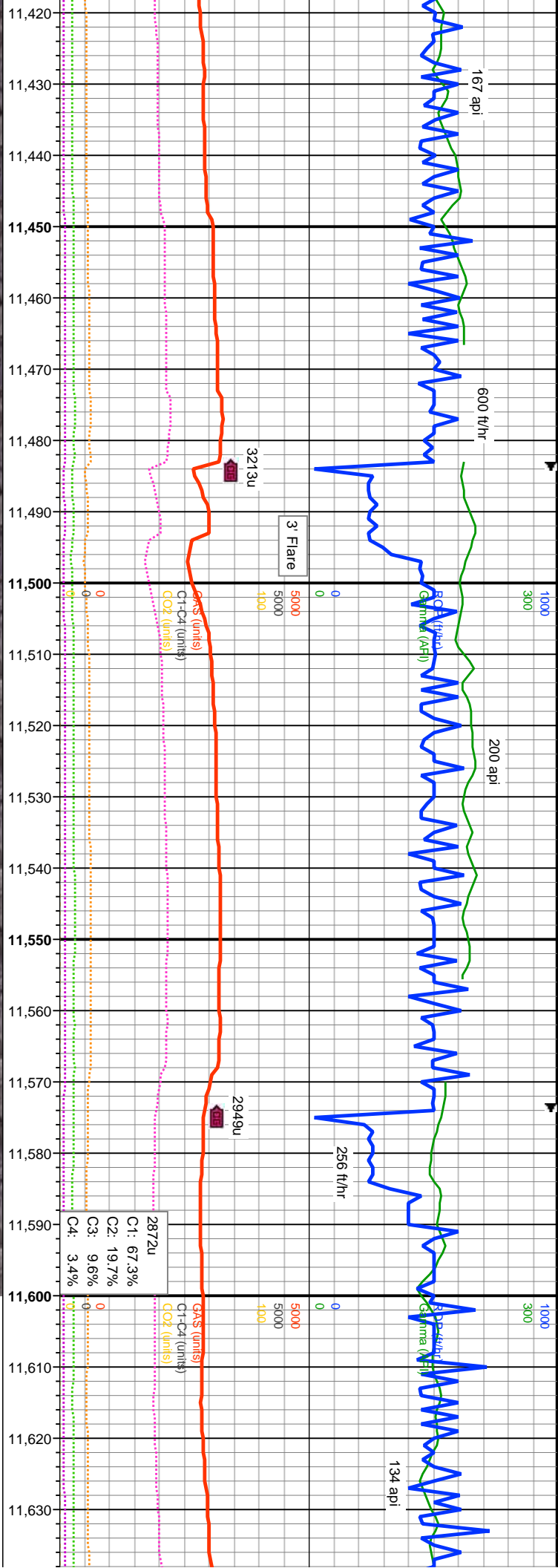


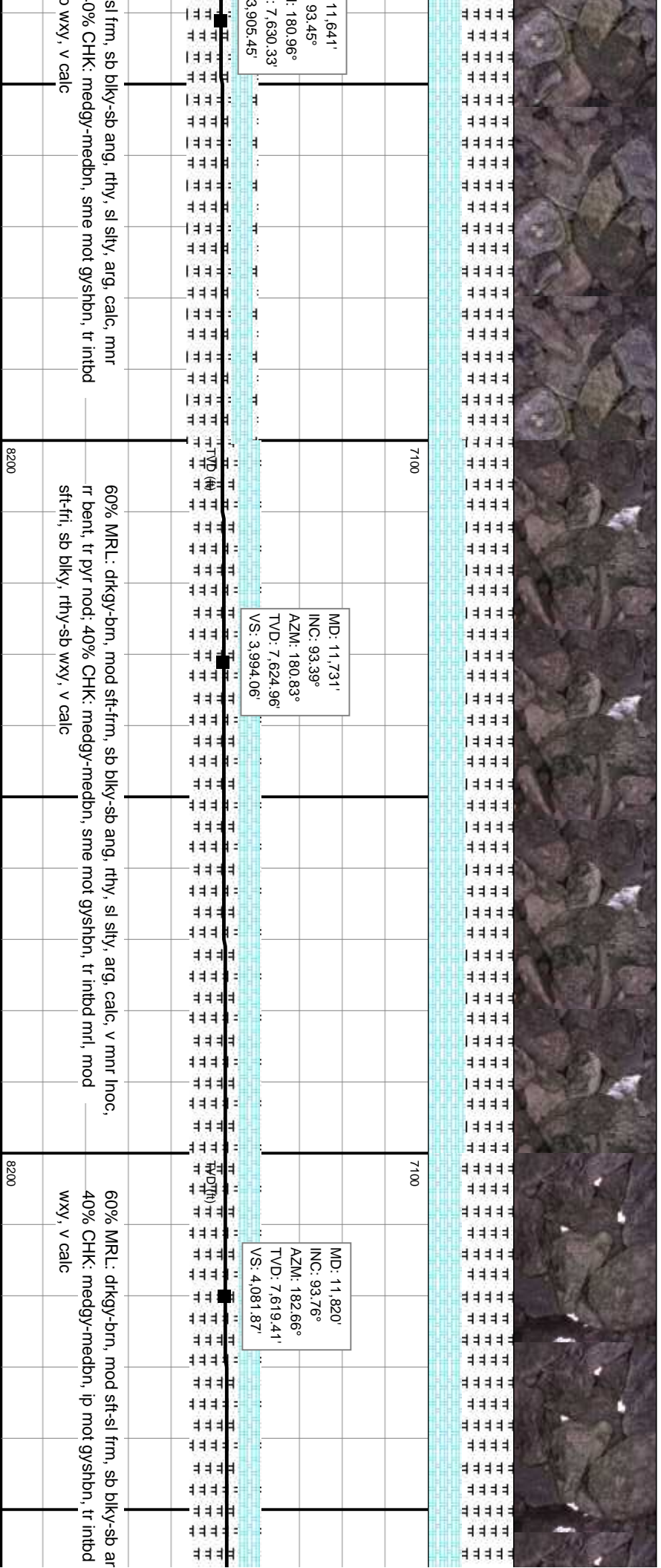
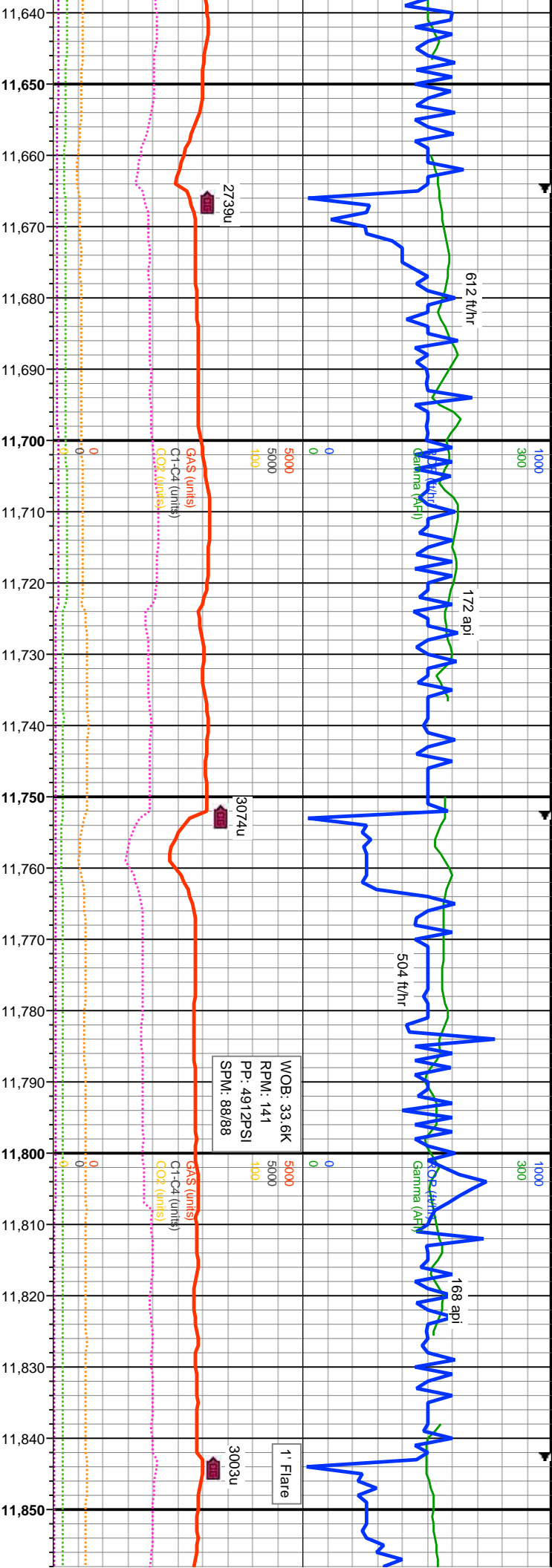


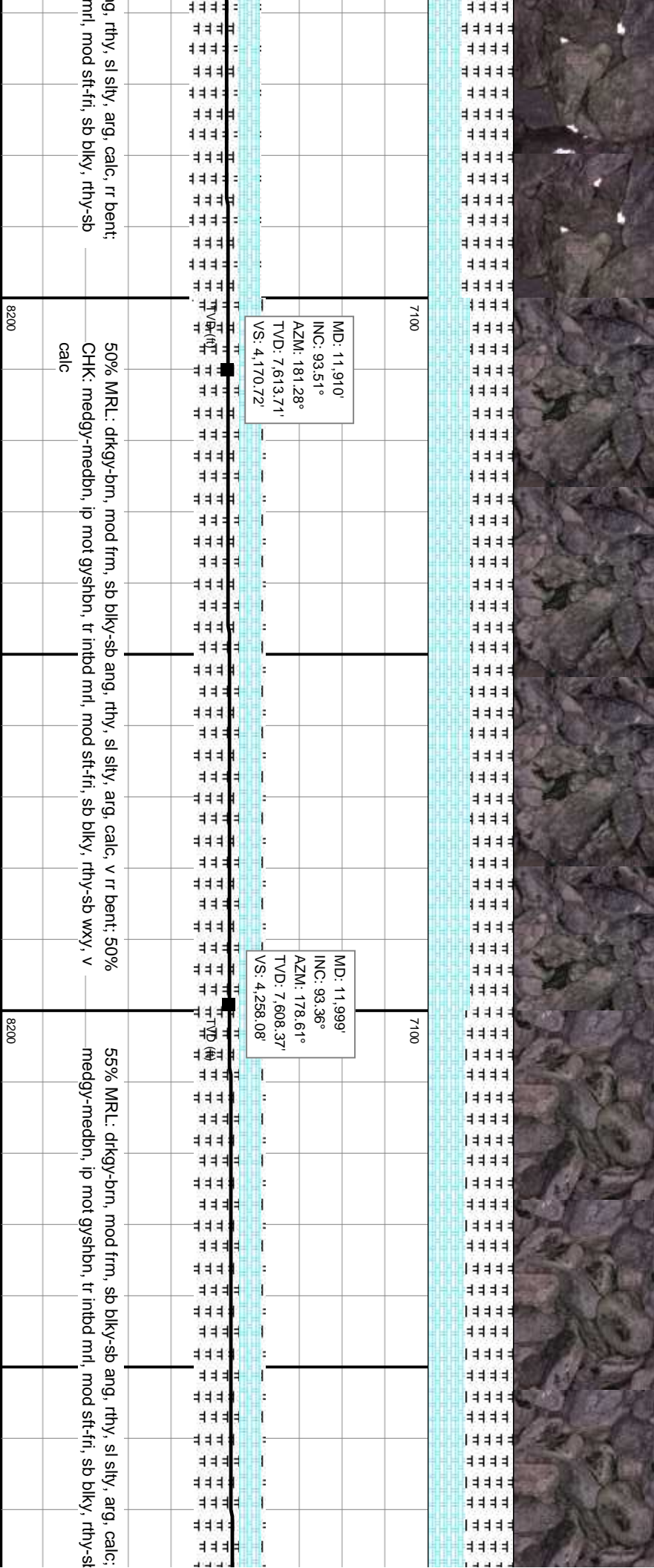
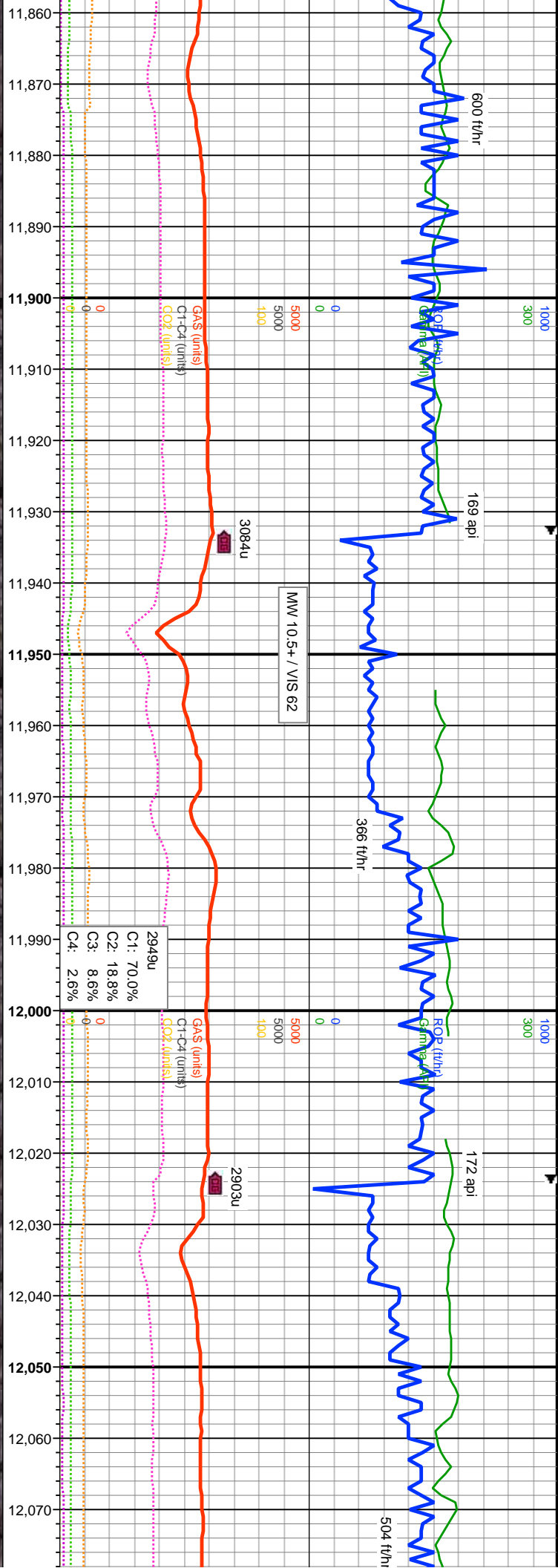


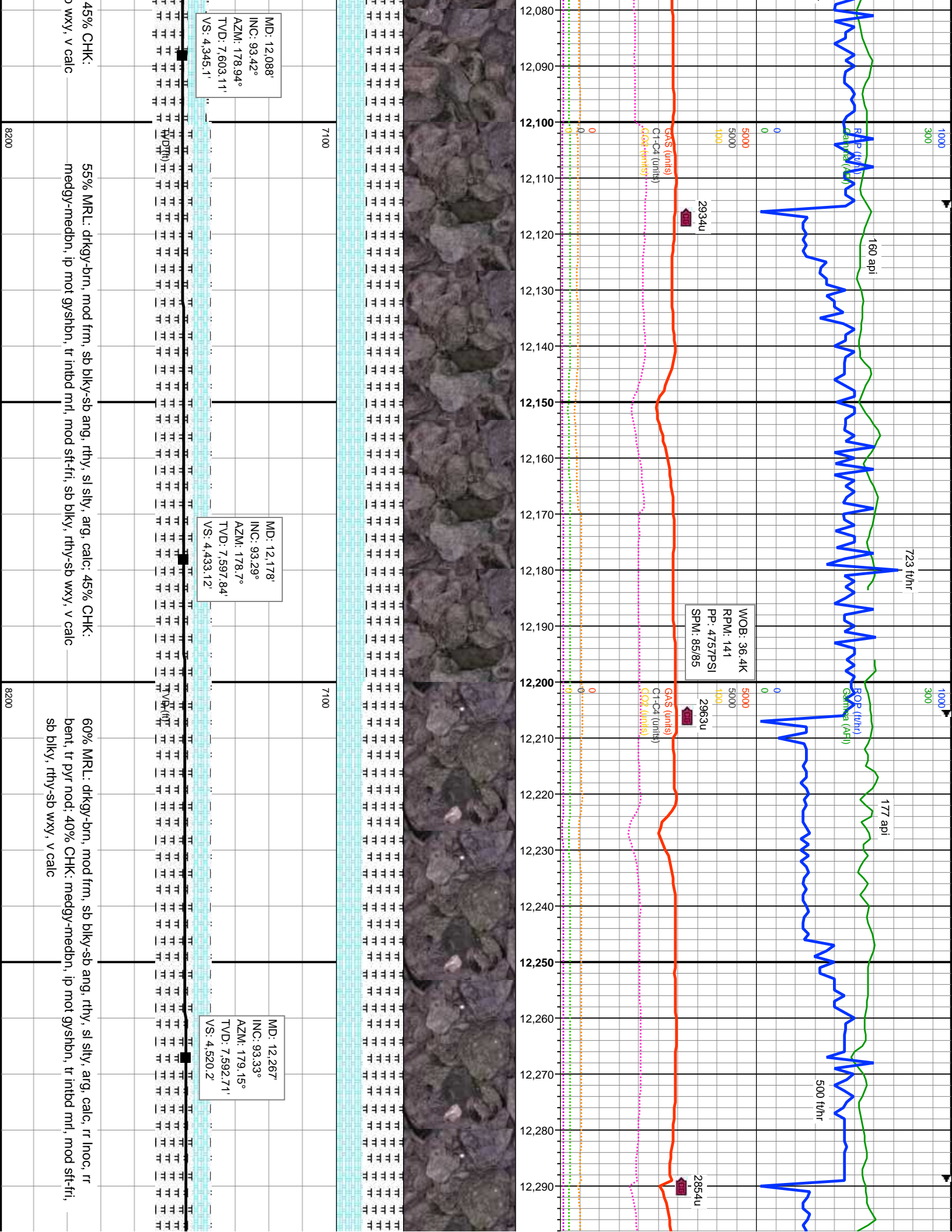


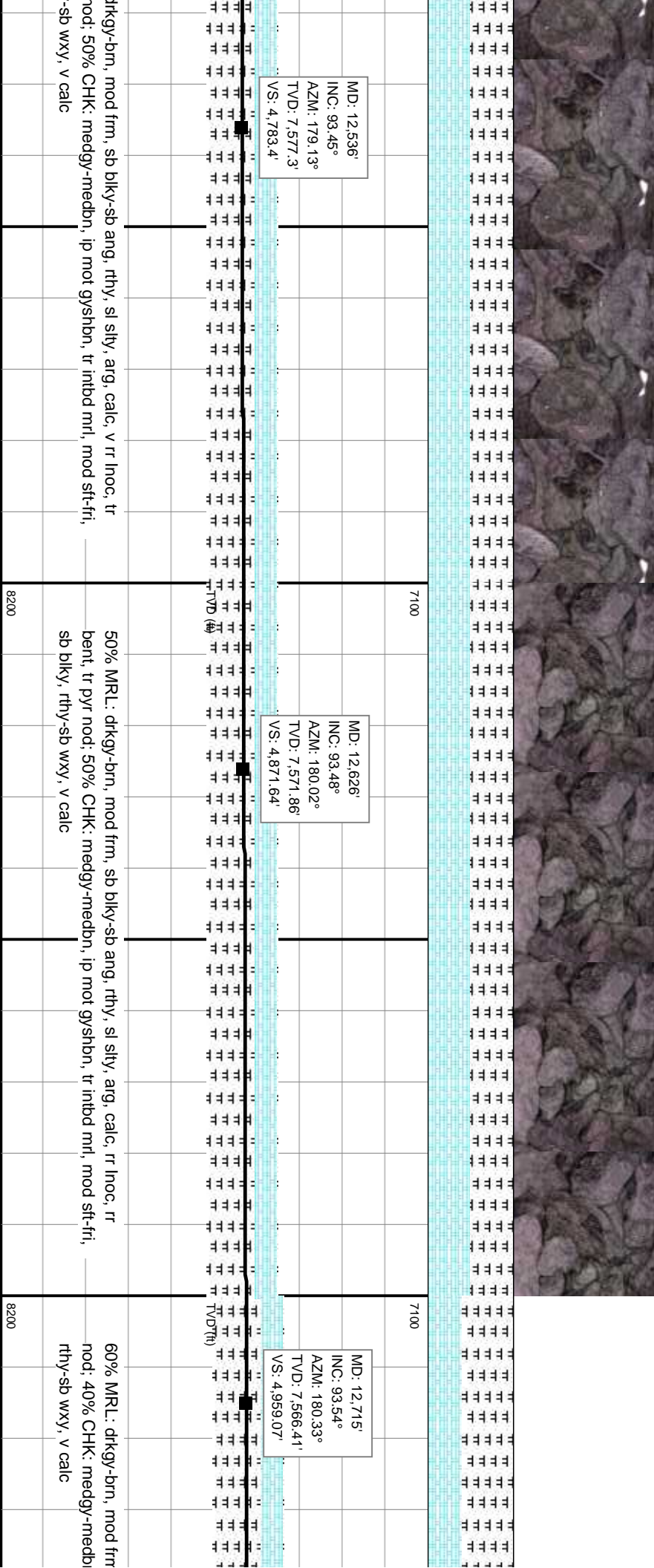
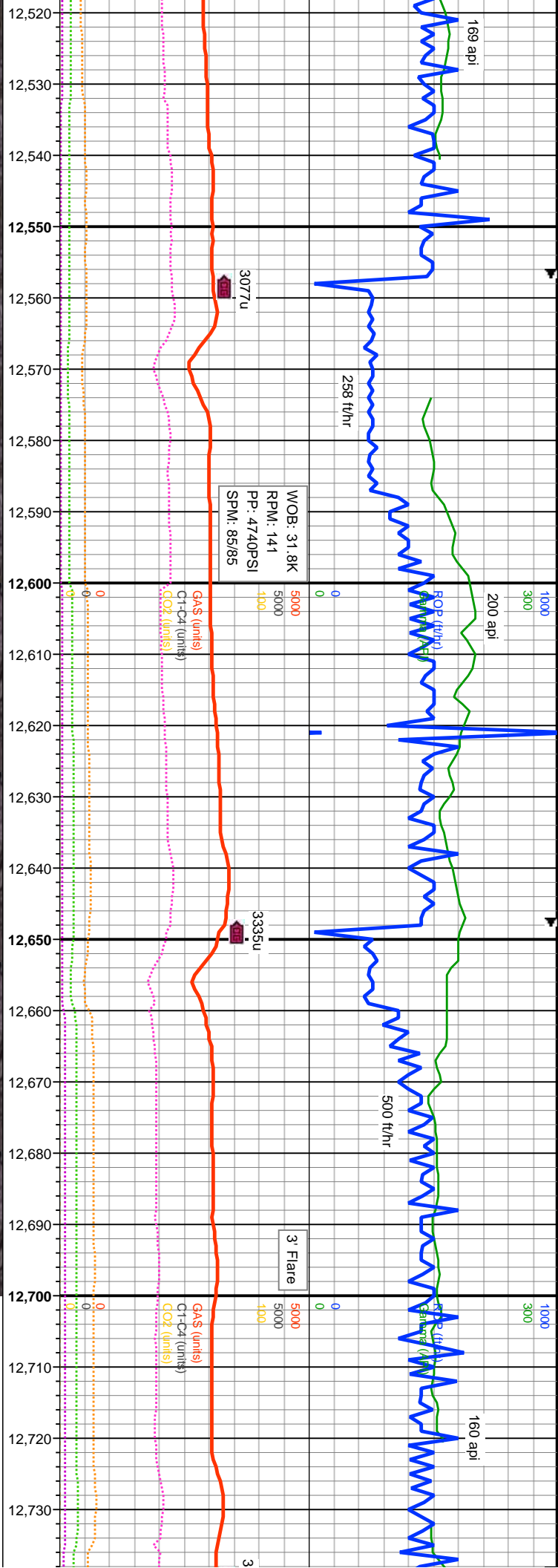


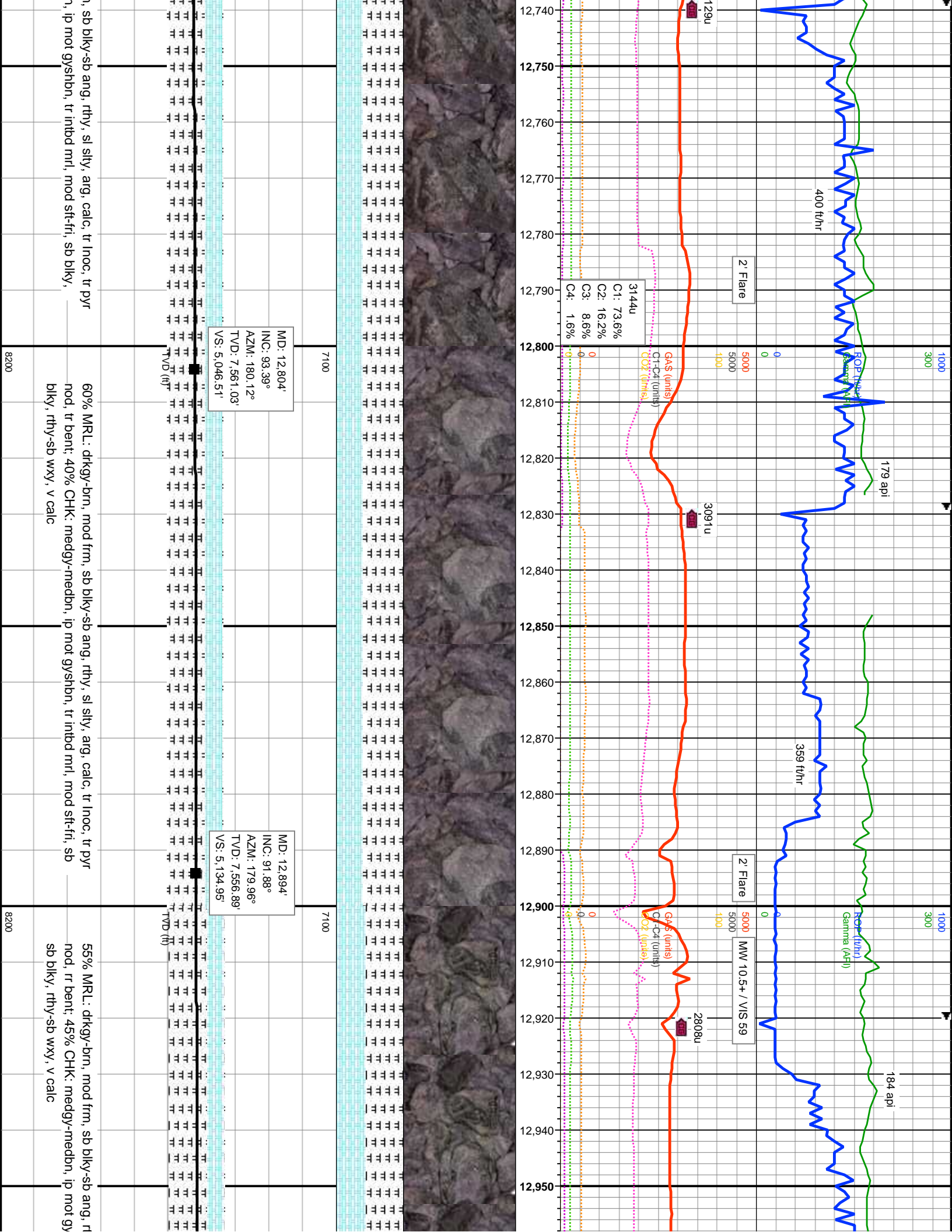


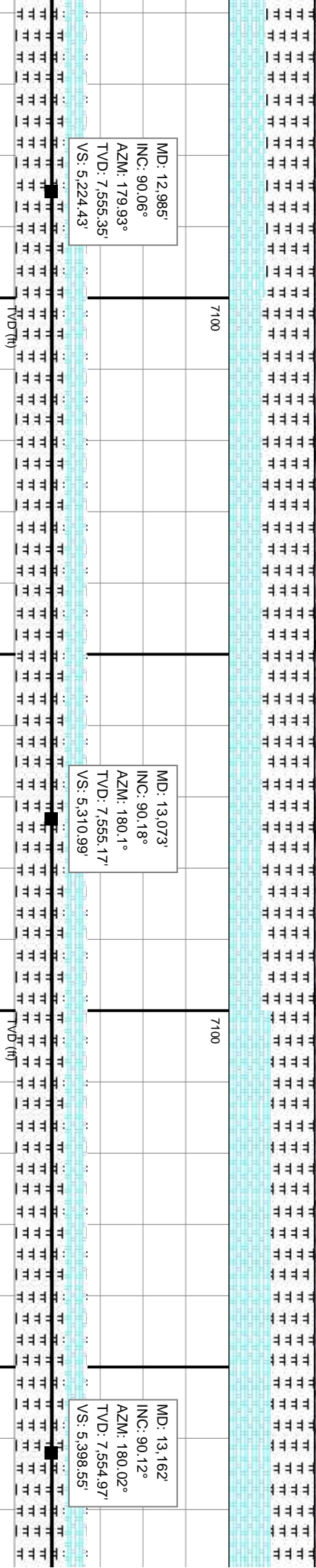
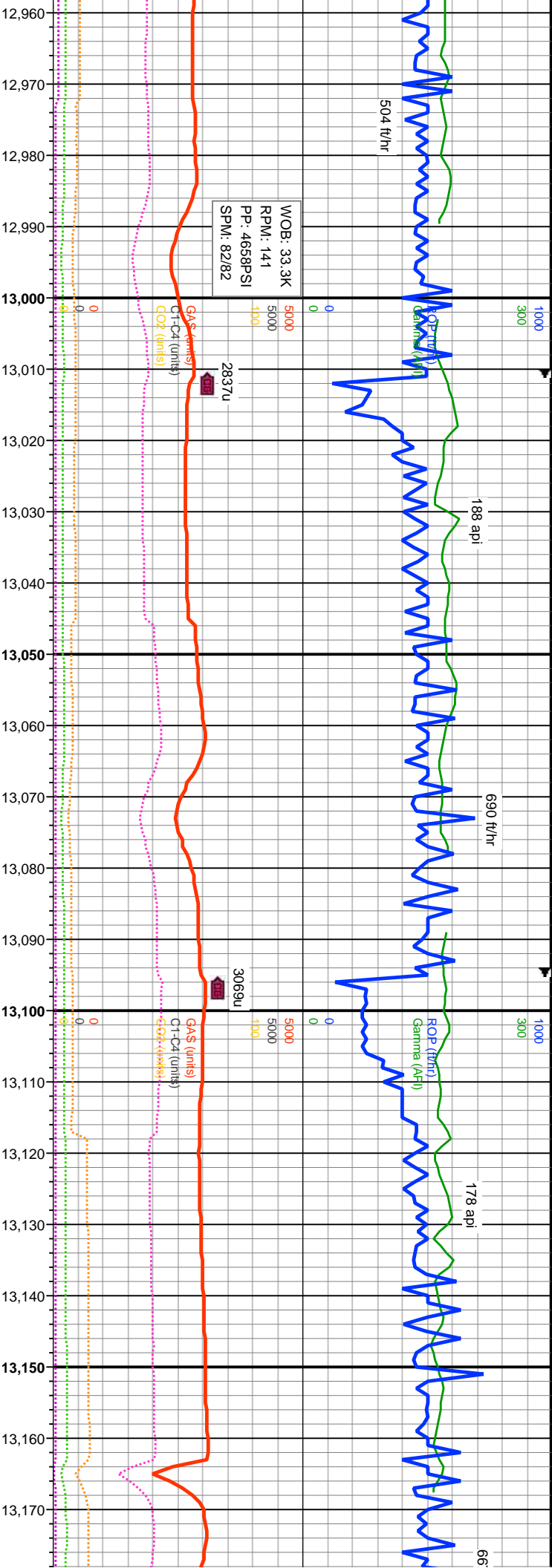












shbn, com intbd mri, mod sft-ri,
sft-ri, sb biky, rthy-sb wxy, v calc

60% MRL: dtkgy-dkbn, mod frm, sb biky-sb ang, rthy, sl sily, arg, calc, r inoc, mod
tr pyr nod, v r bent; 40% CHK: medgy-medbn, ip mot gysbhn, com intbd mri, mod
sft-ri, sb biky, rthy-sb wxy, v calc

50% MRL: dtkgy-dkbn, mod frm, sb biky-sb ang, rthy, sl sily, arg, cal
nod, r bent; 50% CHK: medgy-medbn, ip mot gysbhn, com intbd mri
sb biky, rthy-sb wxy, v calc

8200

