



Scale: 5" / 100'
Measured Depth Log

Well Name BENELLI FEDERAL LC22-765

Location SEC 22 T9N R59W

State COLORADO

Country USA

API Number 05-123-42975

Geographic Region DJ BASIN

Spud Date 2/24/2017

Surface Coordinates Sec 22 T9N R59W
400' FNL x 1612' FWL

County WELD

Rig Number H&P 517

AFE # 200621

Field WILDCAT

Drilling Completed 2/27/2017

Bottom Hole Coordinates PROJECTED 340' FSL x 2056' FWL

Ground Elevation 4916'

K.B. Elevation 4946'

Logged Interval 5300' To 10866'

Total Depth 10866'

Formation NIO A CHALK

Type of Drilling Fluid OBM

Operator

Company Noble Energy, Inc.

Address 1625 Broadway, Suite 2200
Denver, CO 80202



Geologist

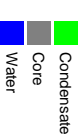
Name JEFF LACY & GARY MYERS

Company Terra Guidance

Address 1298 O Road
Loma CO 81524
(970) 260-5408

























































Zone Color Coding


































Rock Types

	LIMESTONE		SANDSTONE		DOLOMITE		BRECCIA
	Chalk		BENTONITE		CHERT		TILL
	Marl		CEMENT		COAL		TUFF
	SHALE		UNKNOWN		MARLSTONE		IGNEOUS
	Silty Shale		ANHYDRITE		CLAYSTONE		METAMORPHIC
	Siltstone		GYPSUM		SHALE GRAY		
	SILTSTONE		SALT		SHALE COLORED		
	Shaly Sandstone		SIDERITE or LIMONITE		CONGLOMERATE		

Accessories








Fossils		Stringer	
 FOSSIL	 ARGILLACEOUS	 GLAUCONITE	
 GASTROPOD	 ARGILLITE GRAIN	 GYPSIFEROUS	
 ALGAE	 OOLITE	 HEAVY MINERAL	 ANHYDRITE STRINGER
 AMPHIPORA	 OSTRACOD	 KAOLIN	 BENTONITE STRINGER
 BELEMNITE	 PELECYPOD	 MARLSTONE	 COAL STRINGER
 BIOCLASTIC	 PELLET	 MINERAL CRYSTALS	 DOLOMITE STRINGER
 BRACHIOPOD	 PISOLITE	 NODULES	 GYPSUM STRINGER
 BRYOZOA	 PLANT REMAINS	 PHOSPHATE PELLETS	 LIMESTONE STRINGER
 CEPHALOPOD	 PLANT SPORES	 PYRITE	 MARLSTONE (CALC.) STRG
 CORAL	 SCAPHOPOD	 SALT CAST	 MARLSTONE (DOL.) STRG
 CRINOID	 STROMATOPOROID	 SANDY	 SANDSTONE STRINGER
 ECHINOID	 FELDSPAR	 SILICEOUS	 SHALE STRINGER
Minerals		 FERRUGINOUS PELLET	 SILTY
 FISH		 TUFFACEOUS	 SILTSTONE STRINGER
 FORAMINIFERA	 ANHYDRITIC	 FERRUGINOUS	

Other










	ORGANIC		FOOTPRINT
	PINPOINT		GAS SH
	DEAD		MIN DEPTH
	VUGGY		
	EVEN		NORMAL
	QUESTIONABLE		OIL SH
	SPOTTED STAINING		OVERTURN
	BIT		REVERSE
	CASING		
	Porosity		CONNECTION (LEFT)
	EARTH		CONNECTION (DOWN)
	FENESTRAL		SLIDE
	FRACTURE		SURVEY
	INTERCRYSTALLINE		TRIP
	INTEROOLITIC		WIRELINE
	MOLDIC		WIRELINE
	FAULT		

Engineering






Engineering

-  EVEN
-  QUESTIONABLE
-  SPOTTED STAINING
-  BIT
-  NORMAL
-  OIL SLICK
-  OVERTURN

Porosity

- 
Porosity
- 
CASING
- 
CONNECTION (LEFT)
- 
SLIDE
- 
E EARTH
- 
FENESTRAL
- 
FRACTURE
- 
CORE - LOST
- 
SURV

☐ INTEROOLITIC

	WIRELINE		WIRELINE
	FAULT		FAULT
	DST INTERVAL		DST INTERVAL
	MOLDIC		MOLDIC

er Symbols

ORMATION TOP L LITHOGRAPHIC

Rounding

HOW MX MICROXLN

PTH A ANGULAR MS MUDSTONE

L FAULT R ROUNDED PS PACKSTONE

OW B SUBANG WS WACKESTONE

JRNED STRATA T SUBRND

Sorting

SE FAULT

Textures

ALL CORE (LEFT) M MODERATE

ALL CORE (RIGHT) BS BOUNDSTONE P POOR

C CHALKY W WELL

EY CX CRYPTOXLN

EGAS E EARTHY

ConnectionGas(Vert)

NE TESTED - LEFT FX FINELYXLN

NE TESTED - RT BS GRAINSTONE

Curve/Survey Data

ROP
Gamma

Bit #: 2
Type: AT506F
Size: 8.5
Depth In.: 1.910'
ROP (ft/hr): 5X15
Gamma S/N: 7162634

Drilling with OBM

No Gamma Data

132 API

ROP (ft/hr): 5X15
Gamma (API)

No Gamma Data

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

GAS (units)
C1-C4 (PPM)

Begin collecting
50' samples

196u

GAS (units)
C1-C4 (PPM)

83u

Depth

% Lithology

Well Bore
TVD

TERRA GUIDANCE 02/25/17
MANNED 2-PERSON LOGGING WITH
PASON GAS
BEGIN LOGGING CURVE
@ 2158 MST, 02/25/17

TVD (ft)

MD: 5.387'
INC: 9.21°
AZM: 74.09°
TVD: 5.336,77'
VS: -494.59'

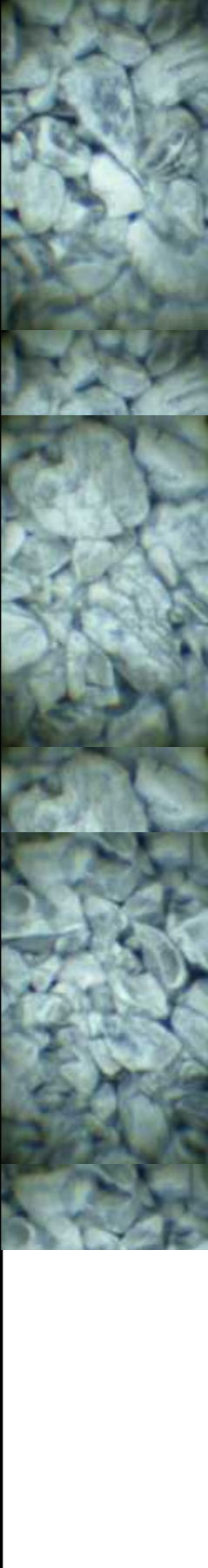
TVD (ft)

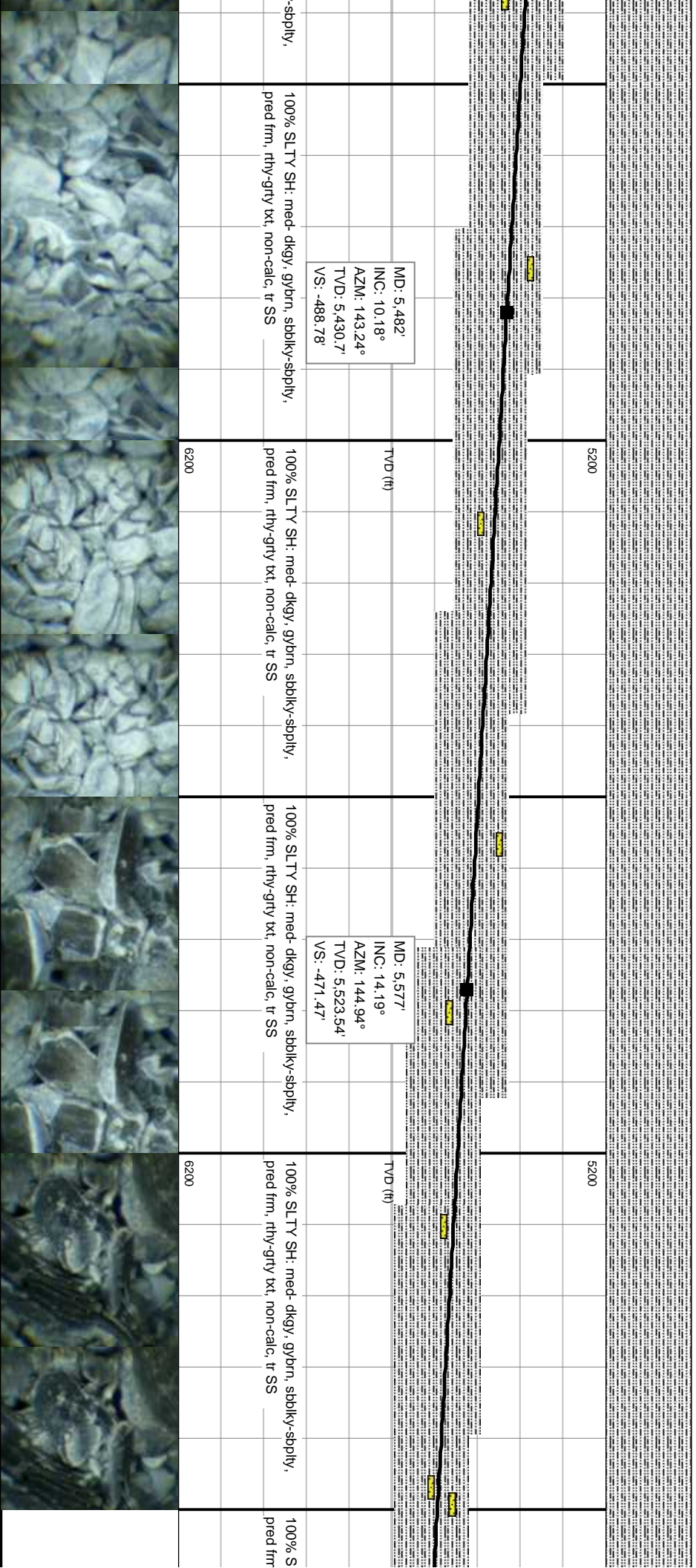
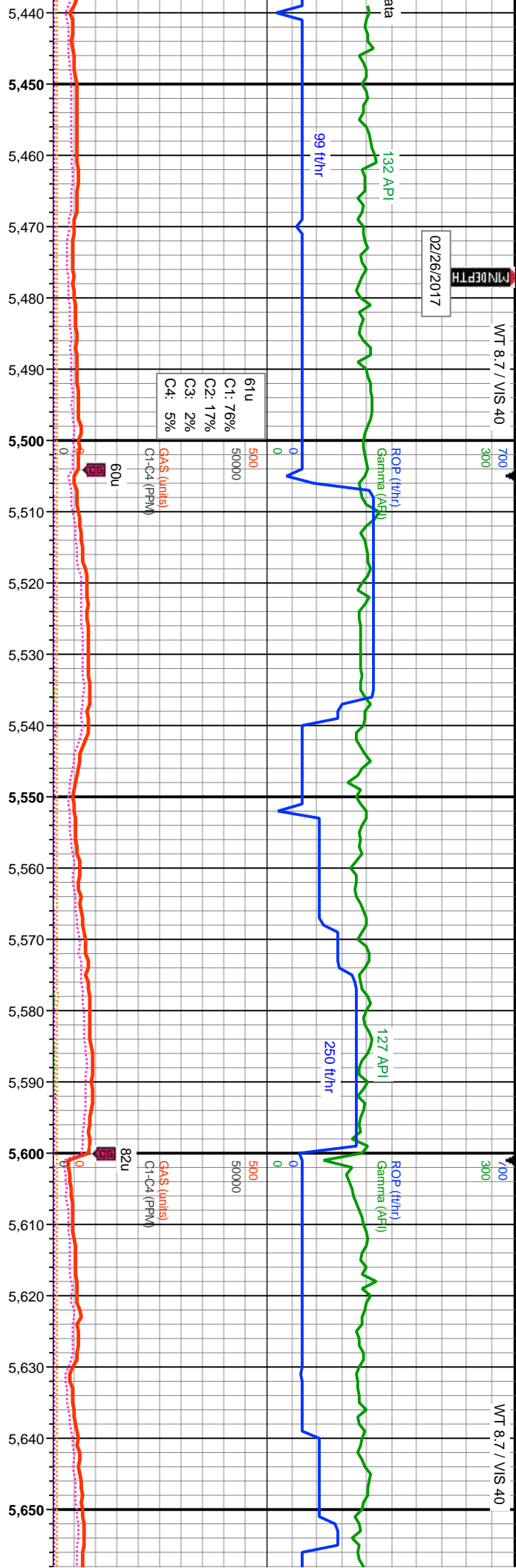
100% SLTY SH: med-dkgy, gybrn, sbblky-sbply,
pred frm, rthy-grty txt, non-calc, tr SS

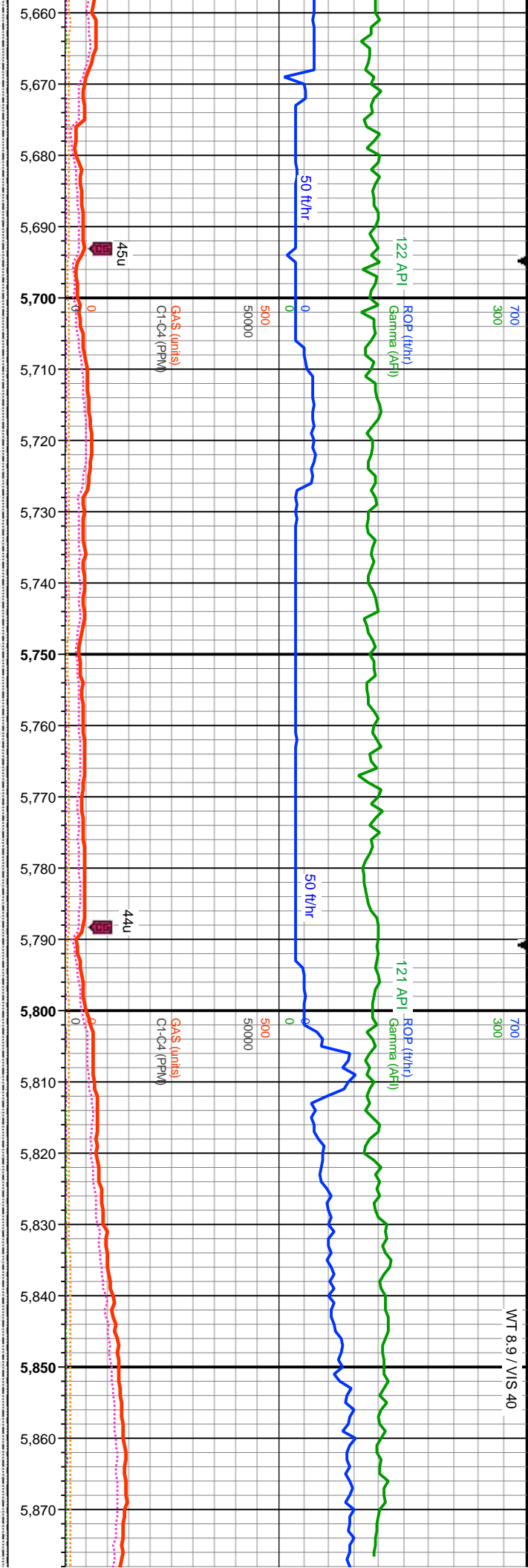
100% SLTY SH: med-dkgy, gybrn, sbblky-sbply,
pred frm, rthy-grty txt, non-calc, tr SS

100% SLTY SH: med-dkgy, gybrn, sbblky-sbply,
pred frm, rthy-grty txt, non-calc, tr SS

Images



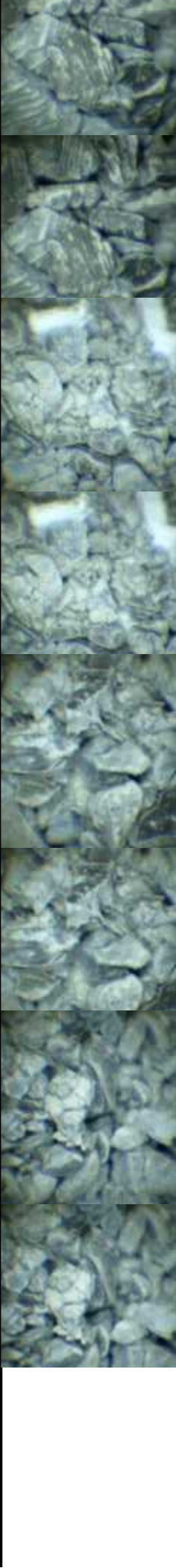
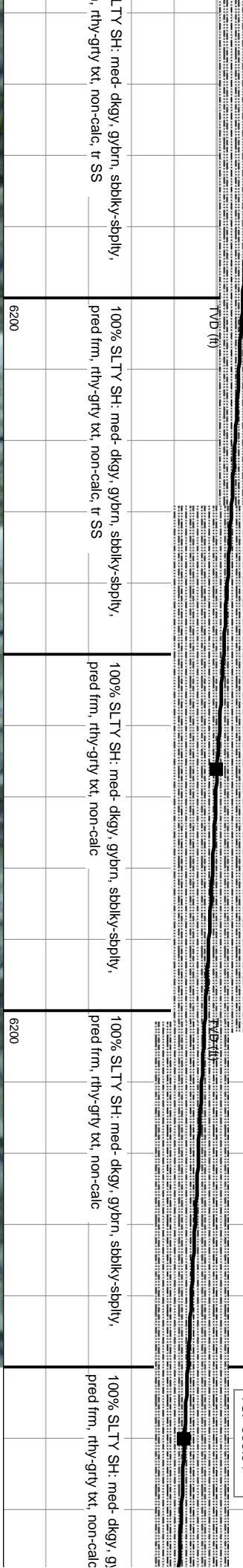


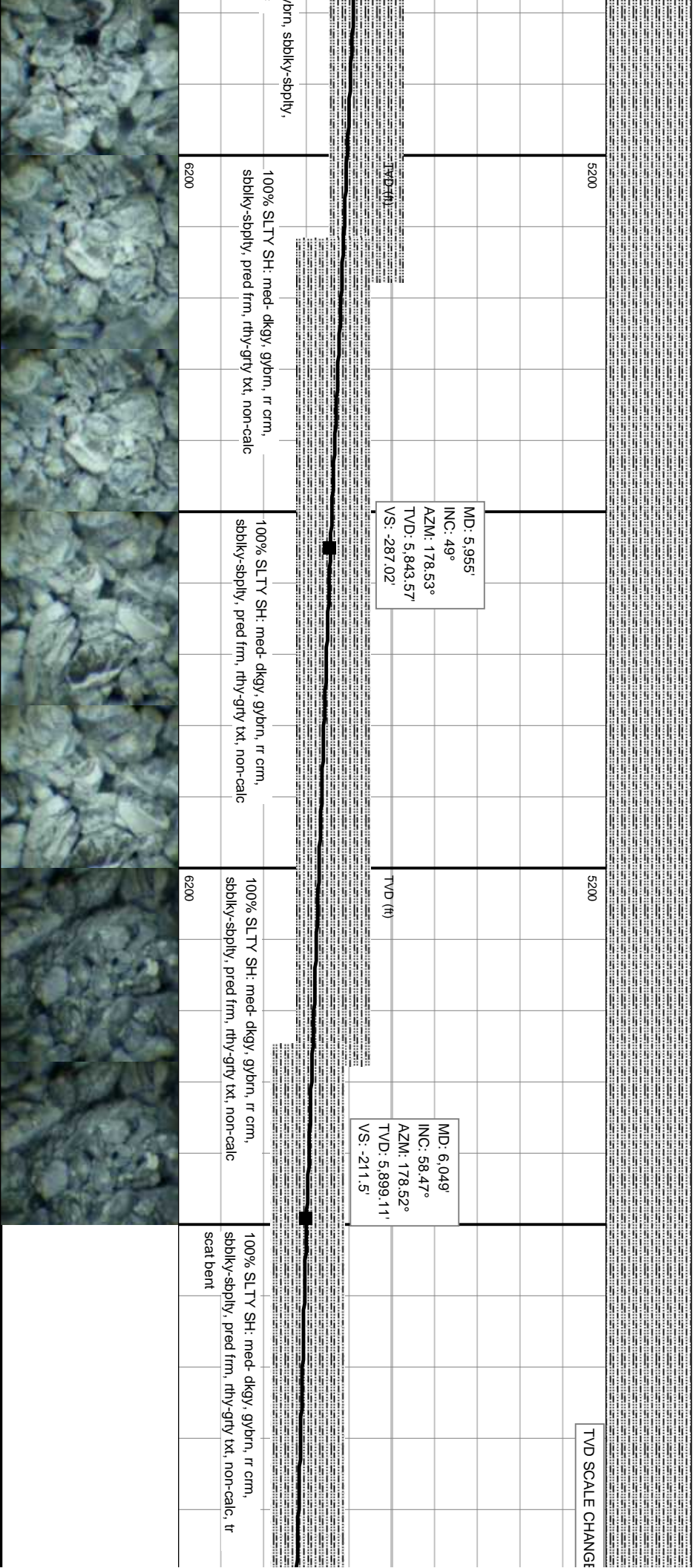


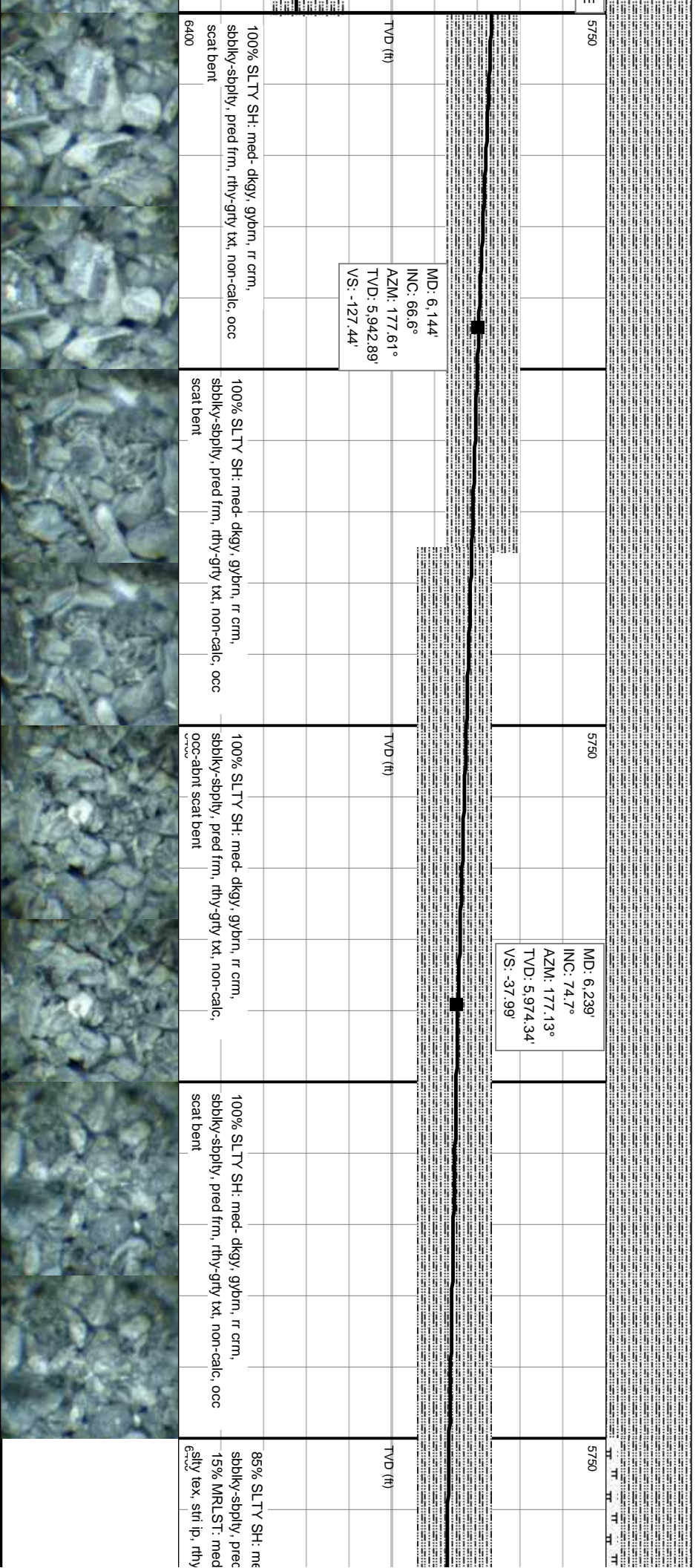
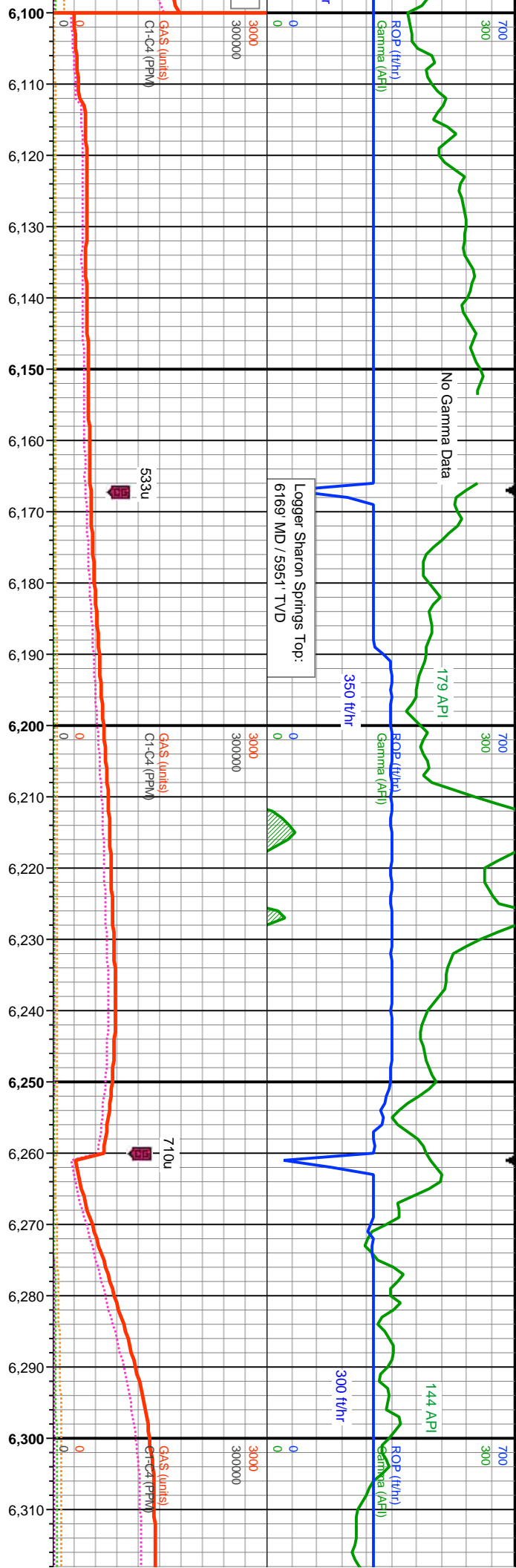
MD: 5.671'
INC: 20.03°
AZM: 152.81°
TVD: 5.613.36'
VS: -446.47'

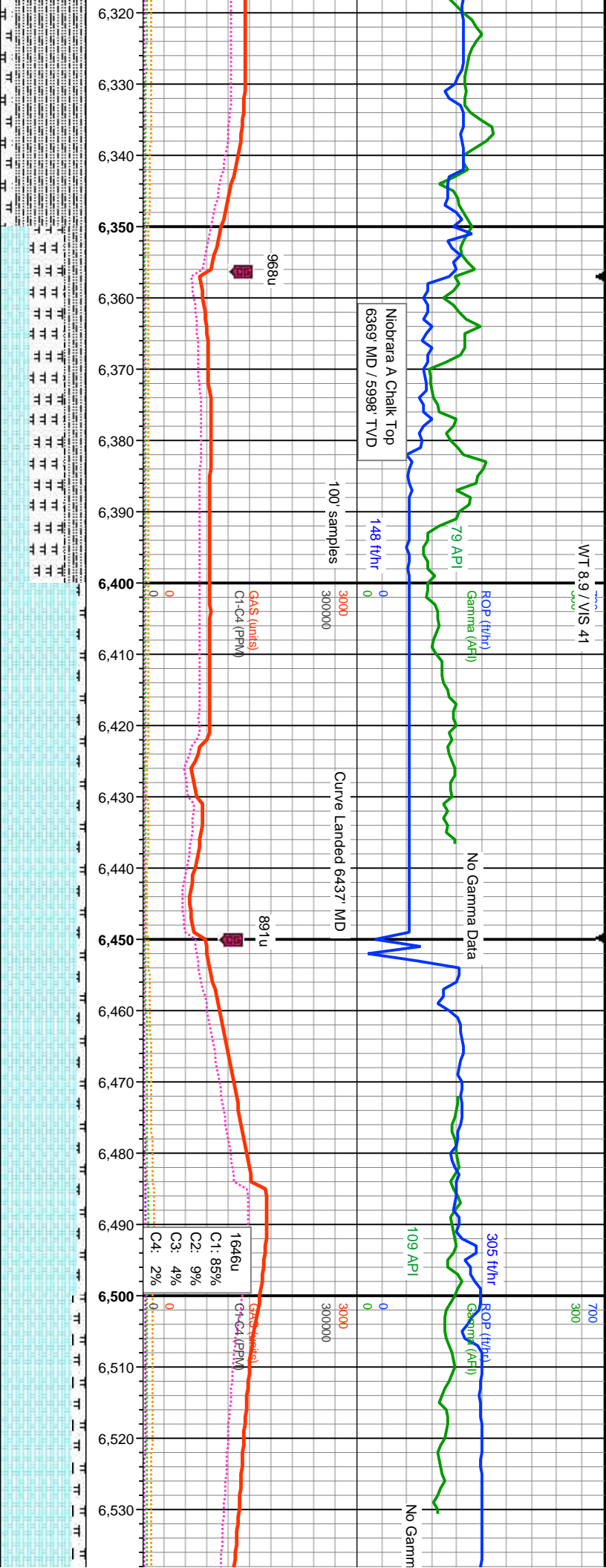
MD: 5.766'
INC: 30.42°
AZM: 165.21°
TVD: 5.699.24'
VS: -407.48'

MD: 5.860'
INC: 40.13°
AZM: 174.69°
TVD: 5.775.94'
VS: -353.54'





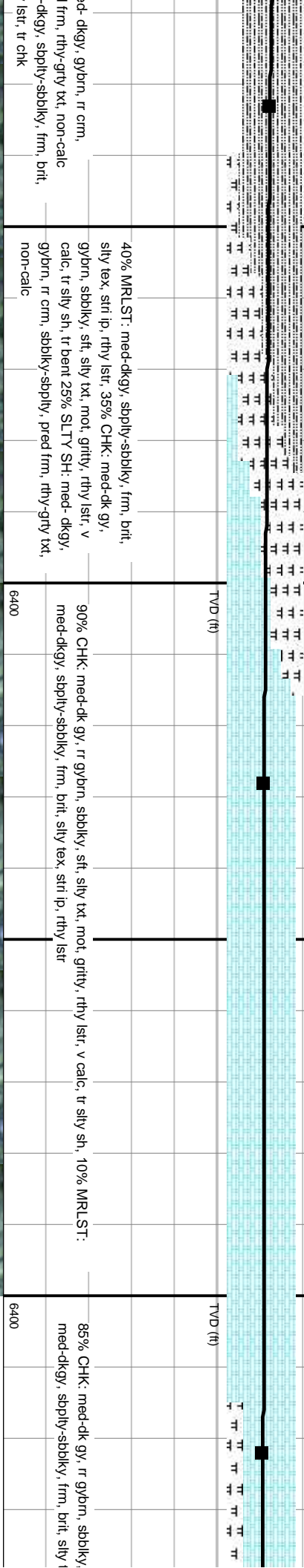


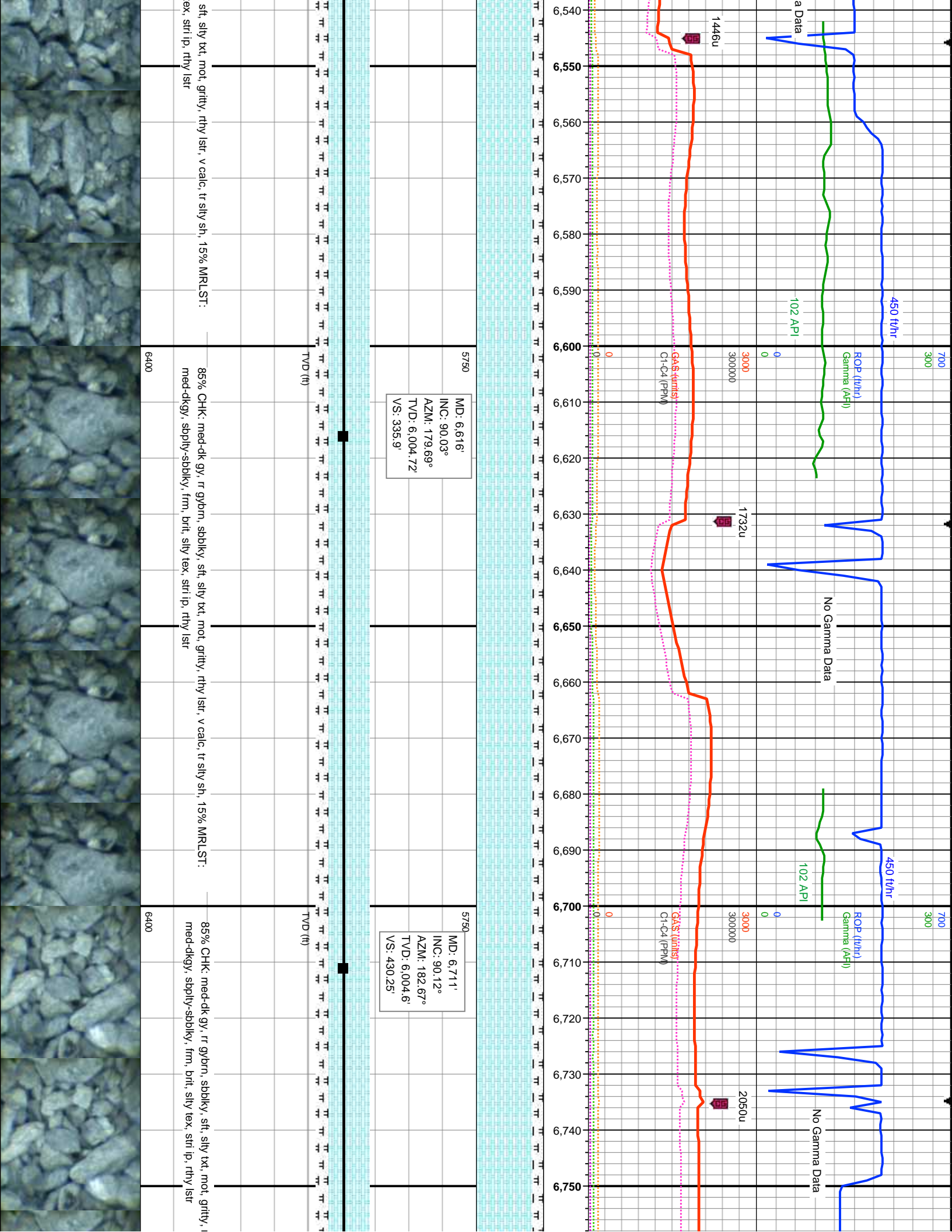


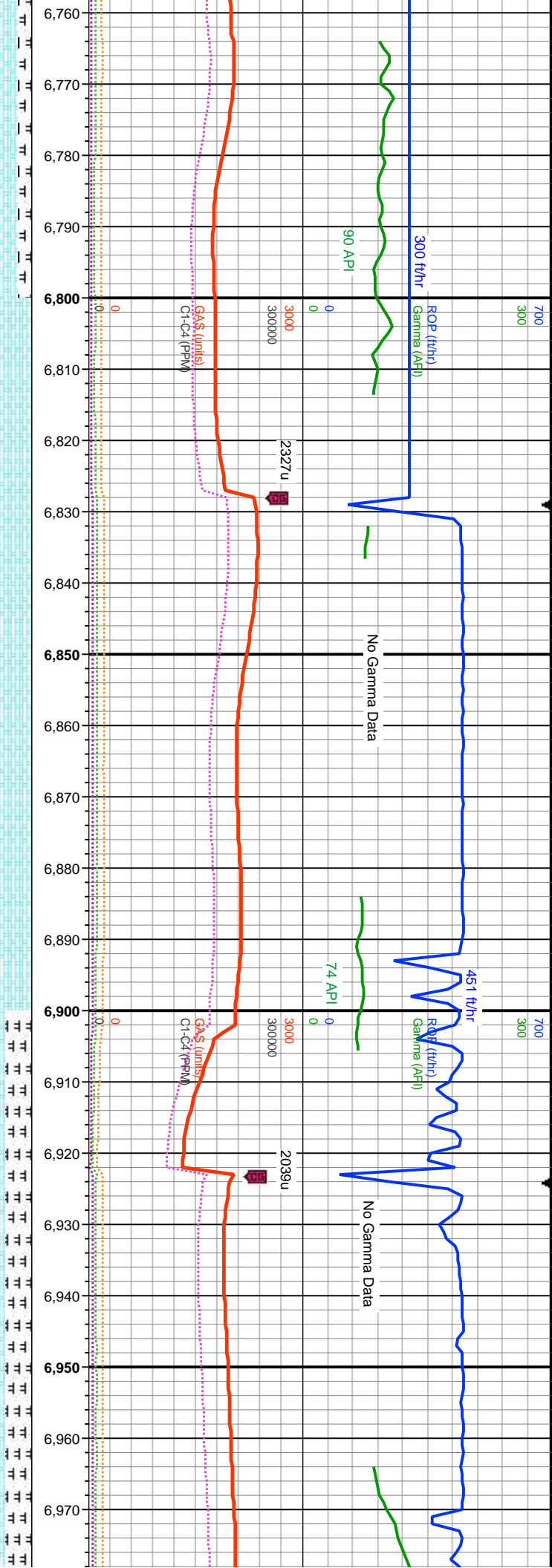
MD: 6.333'
INC: 80.35°
AZM: 176.61°
TVD: 5.994.64'
VS: 53.68'

MD: 6.428'
INC: 88.83°
AZM: 175.04°
TVD: 6.003.59'
VS: 148.14'

MD: 6.522'
INC: 89.88°
AZM: 176.66°
TVD: 6.004.65'
VS: 242.11'



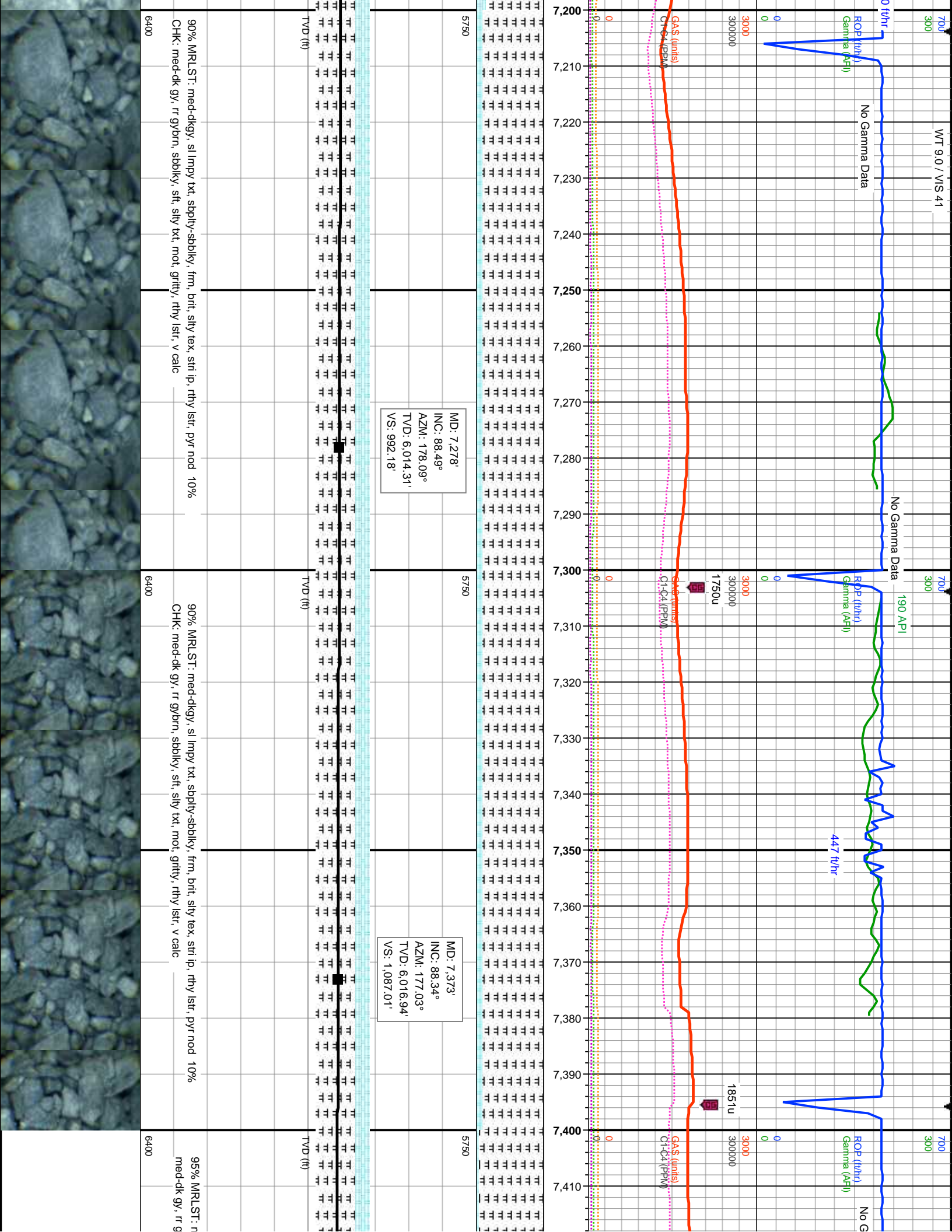


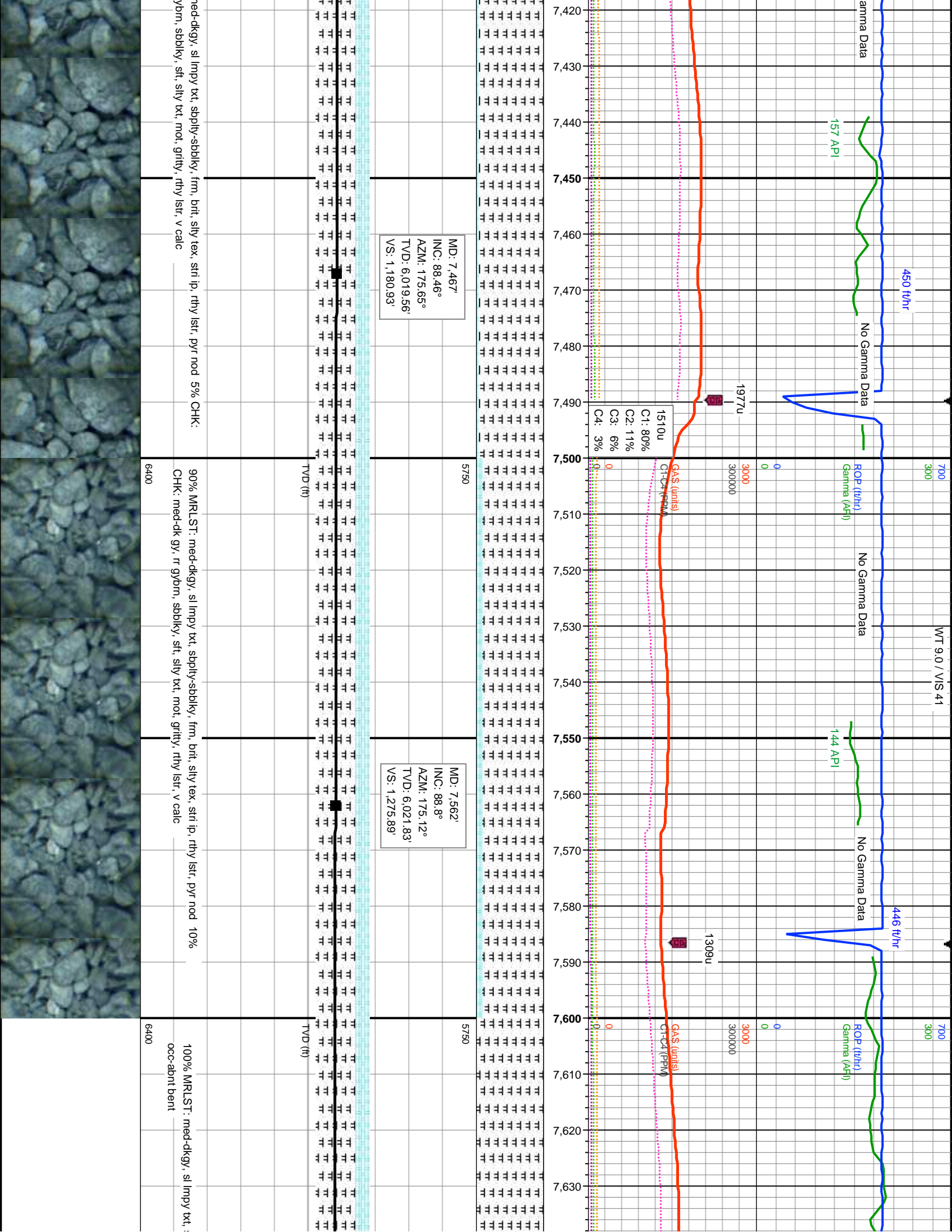


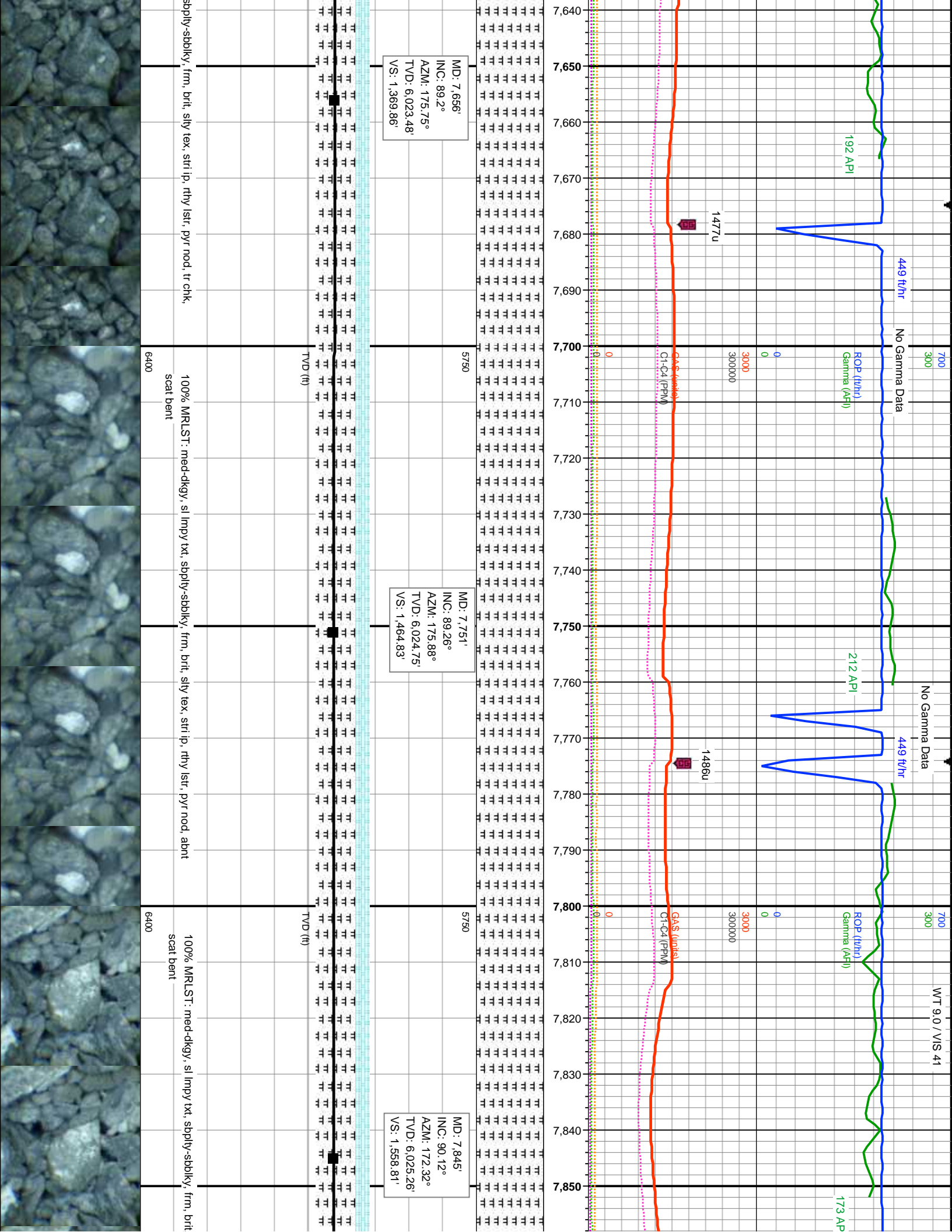
MD: 6,806'
INC: 89.57°
AZM: 184.96°
TVD: 6,004.85'
VS: 524'

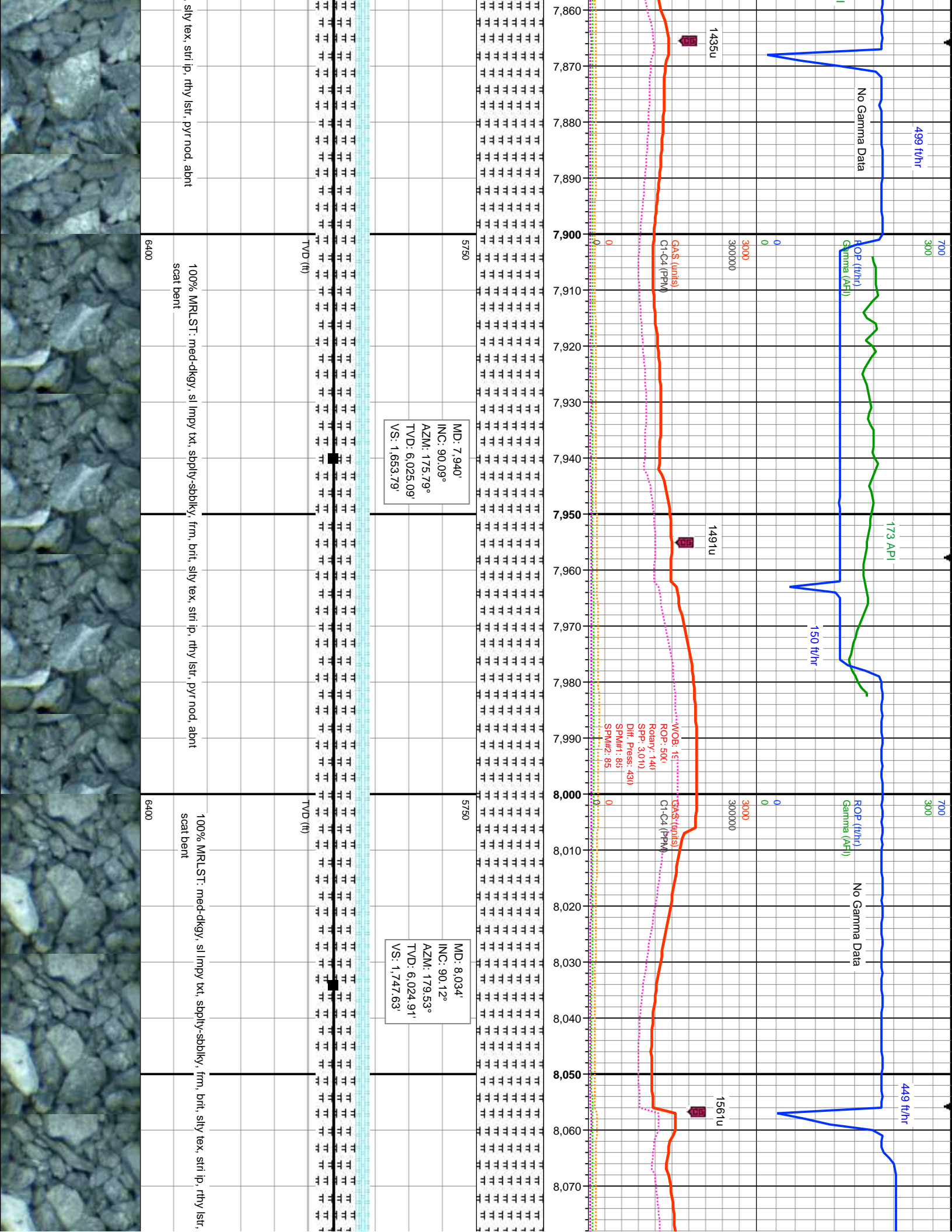
MD: 6,900'
INC: 89.88°
AZM: 184.44°
TVD: 6,005.3'
VS: 616.52'

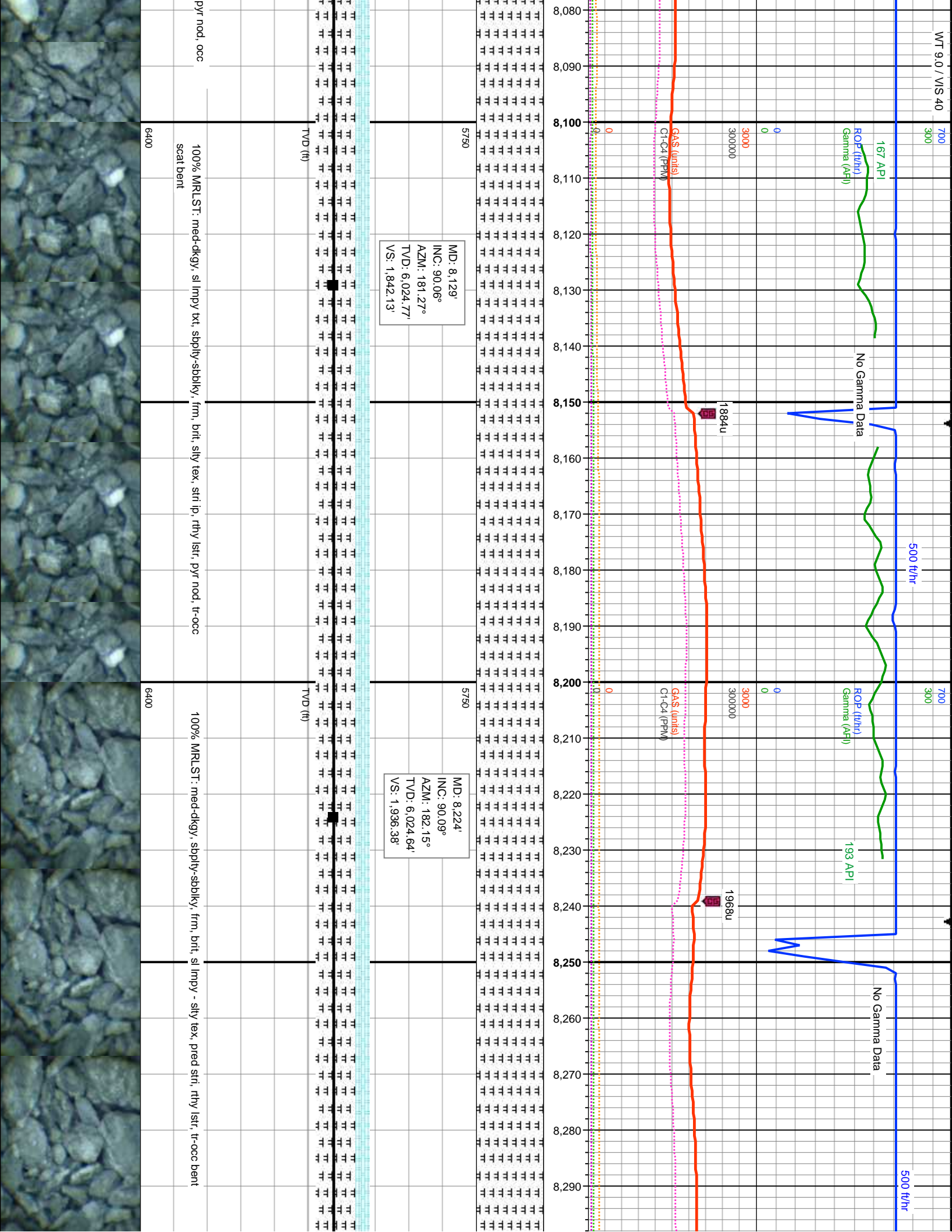


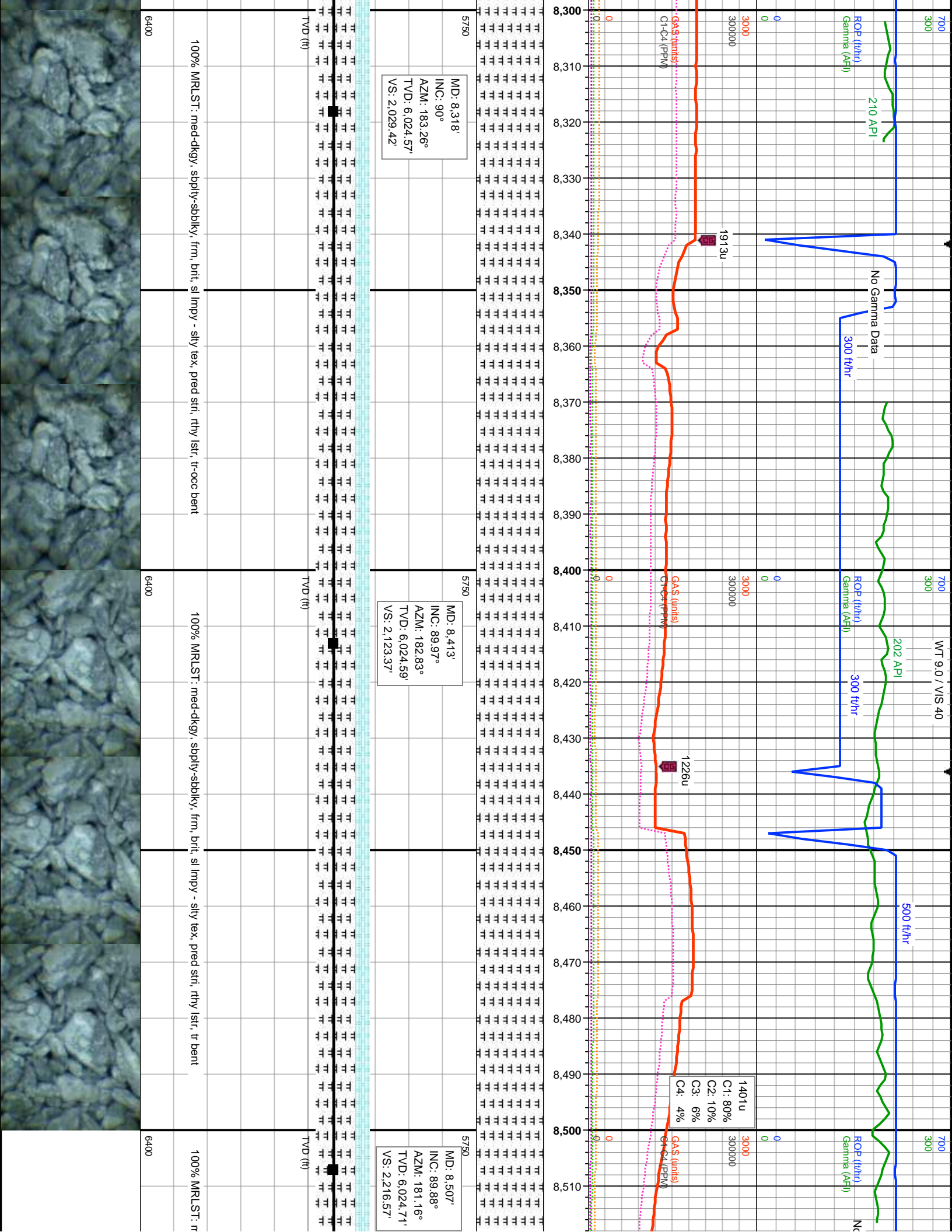


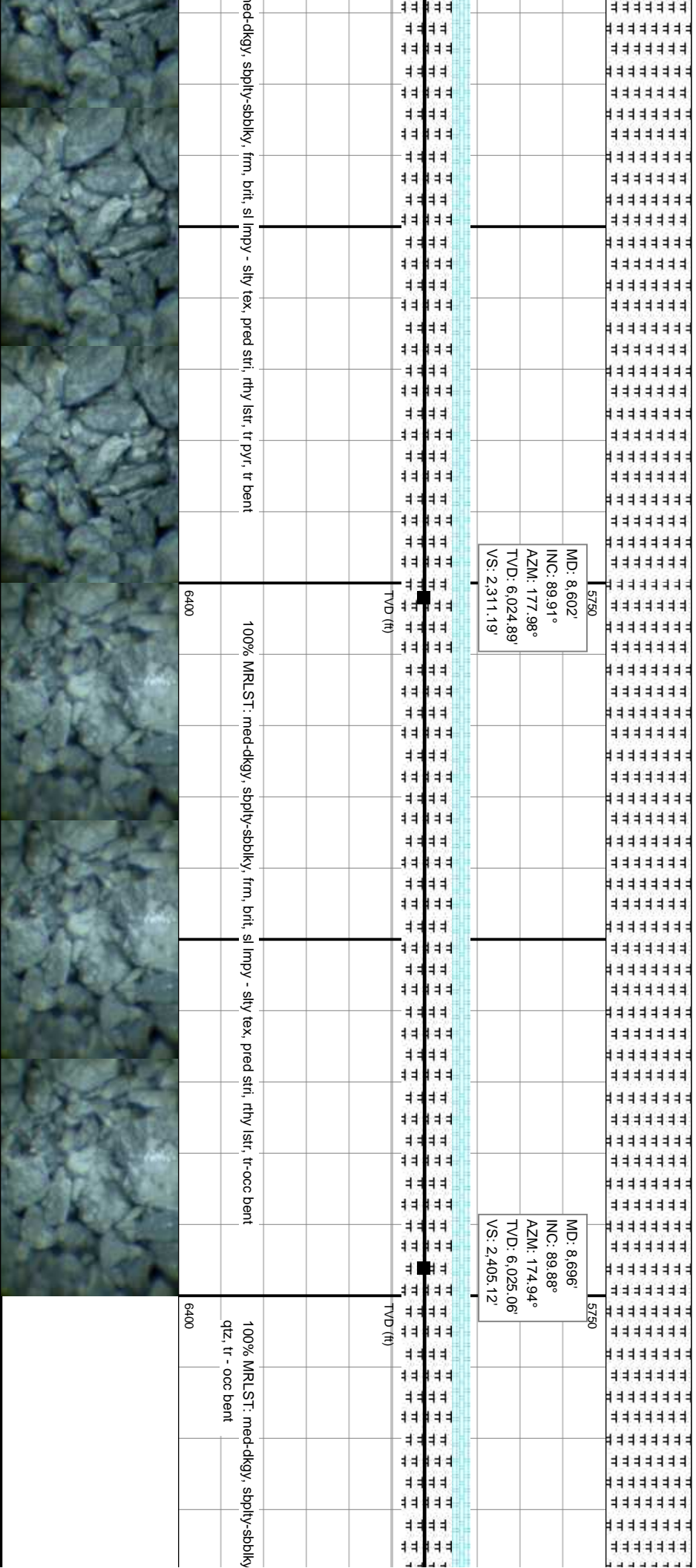


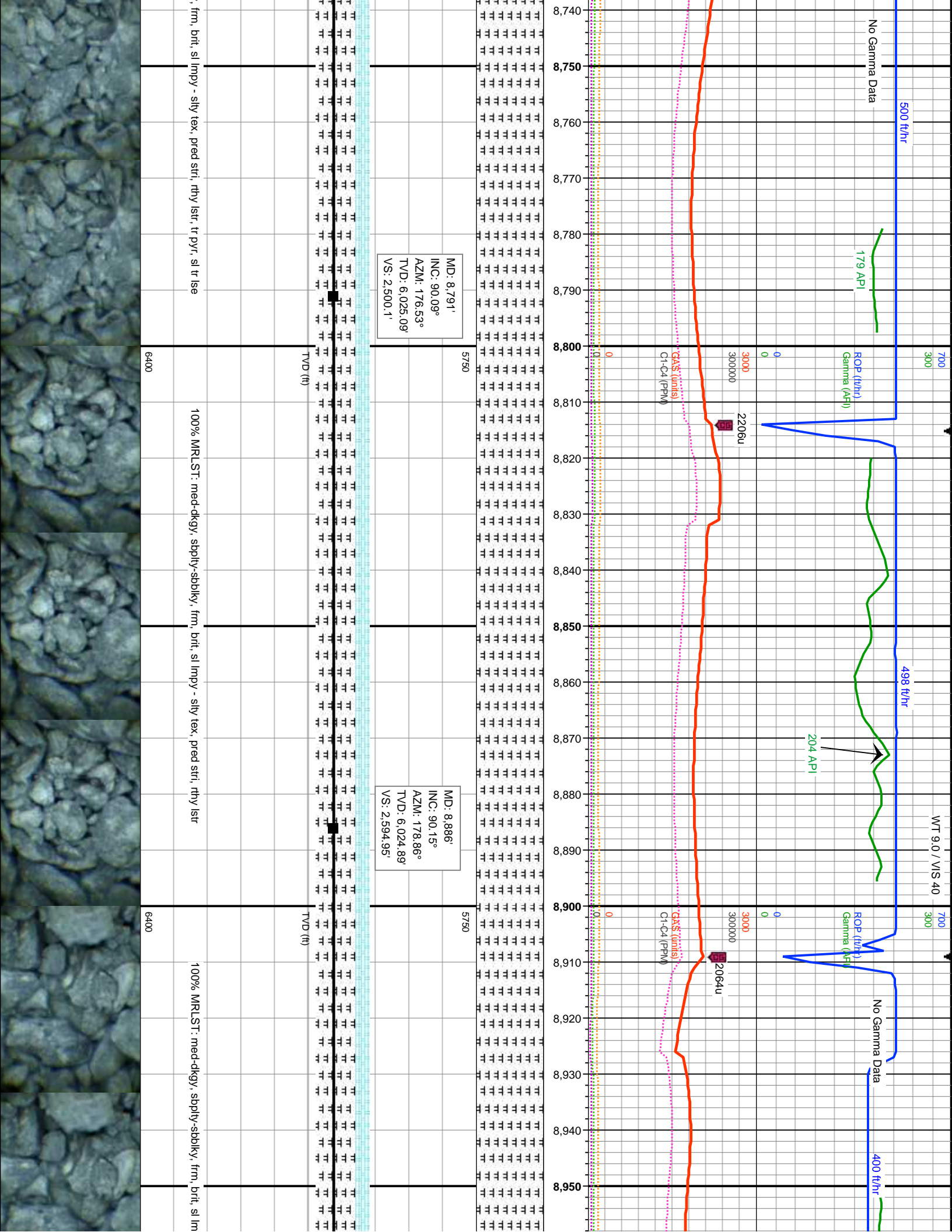


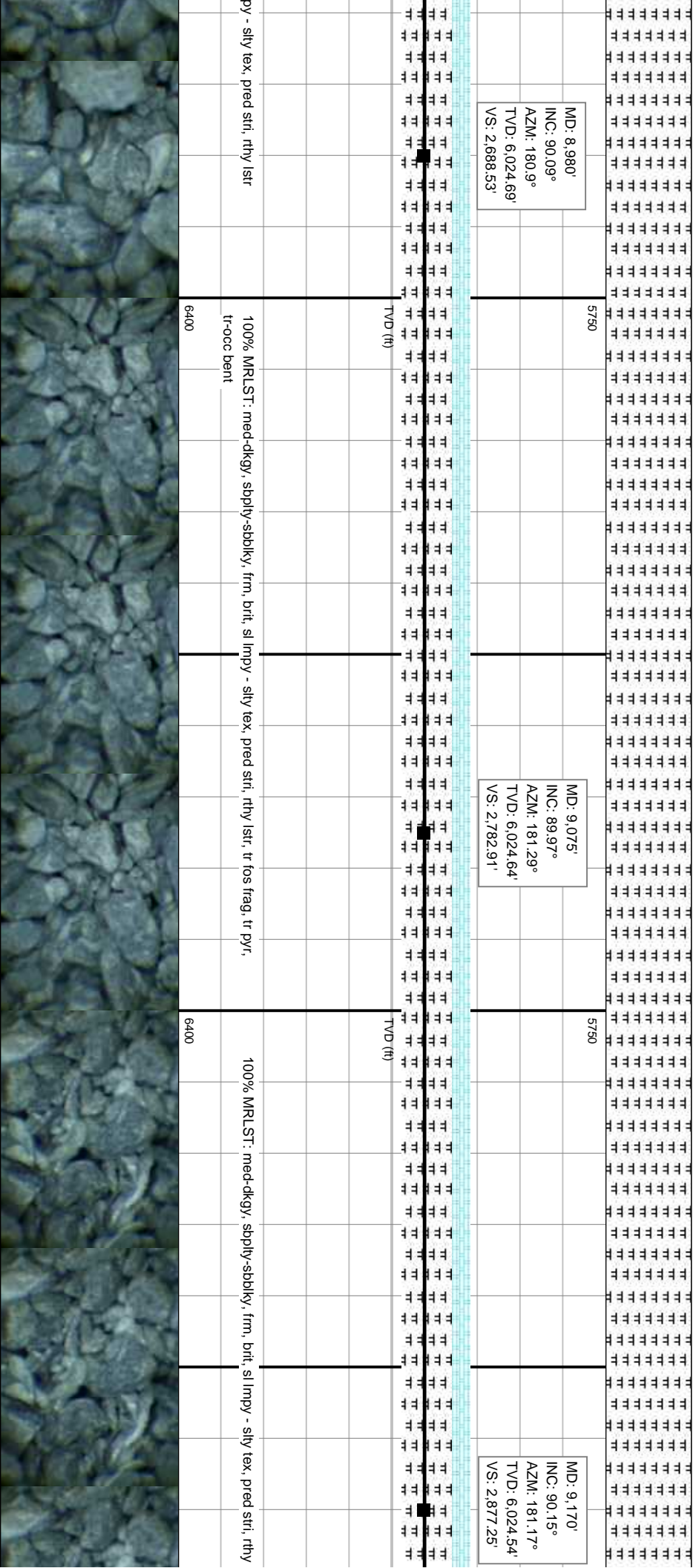


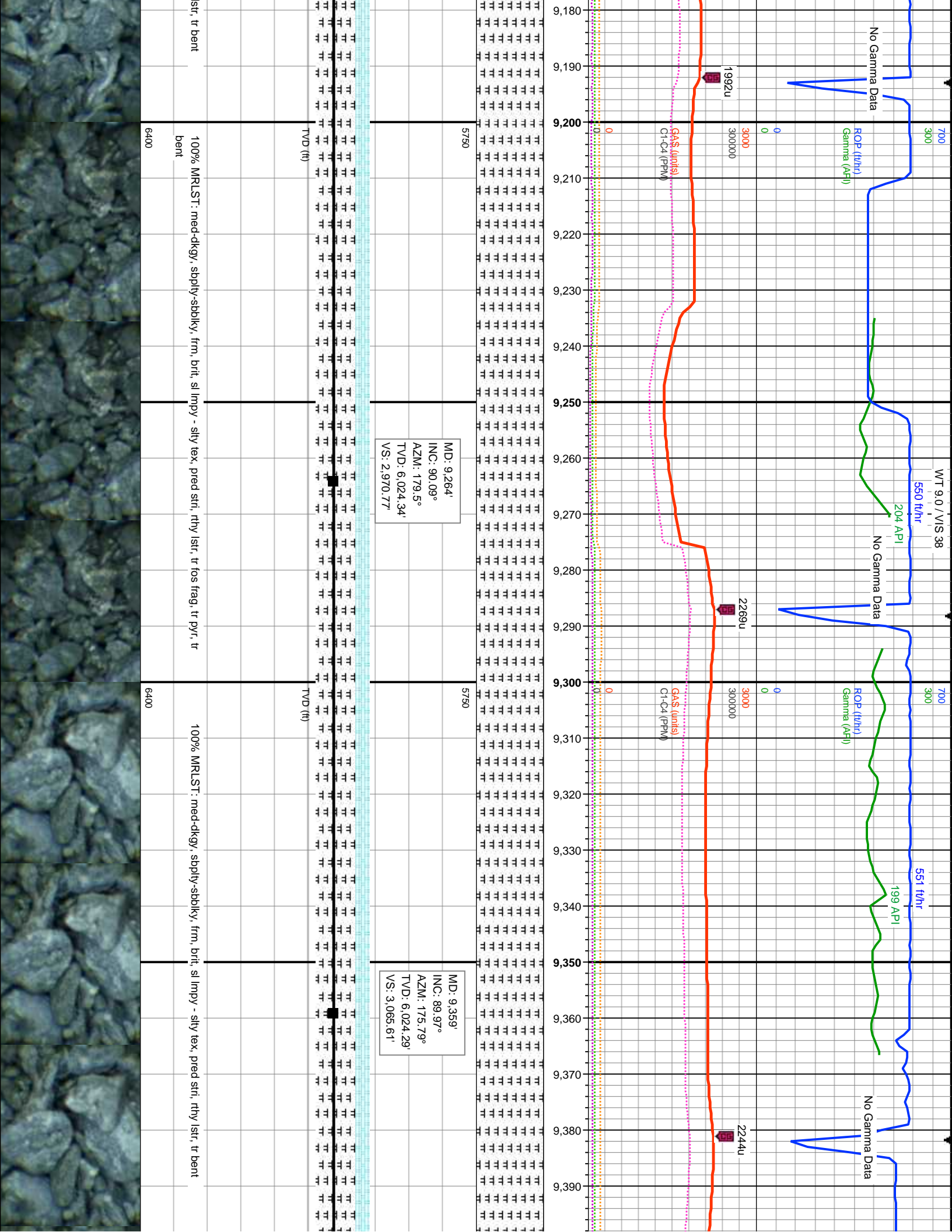


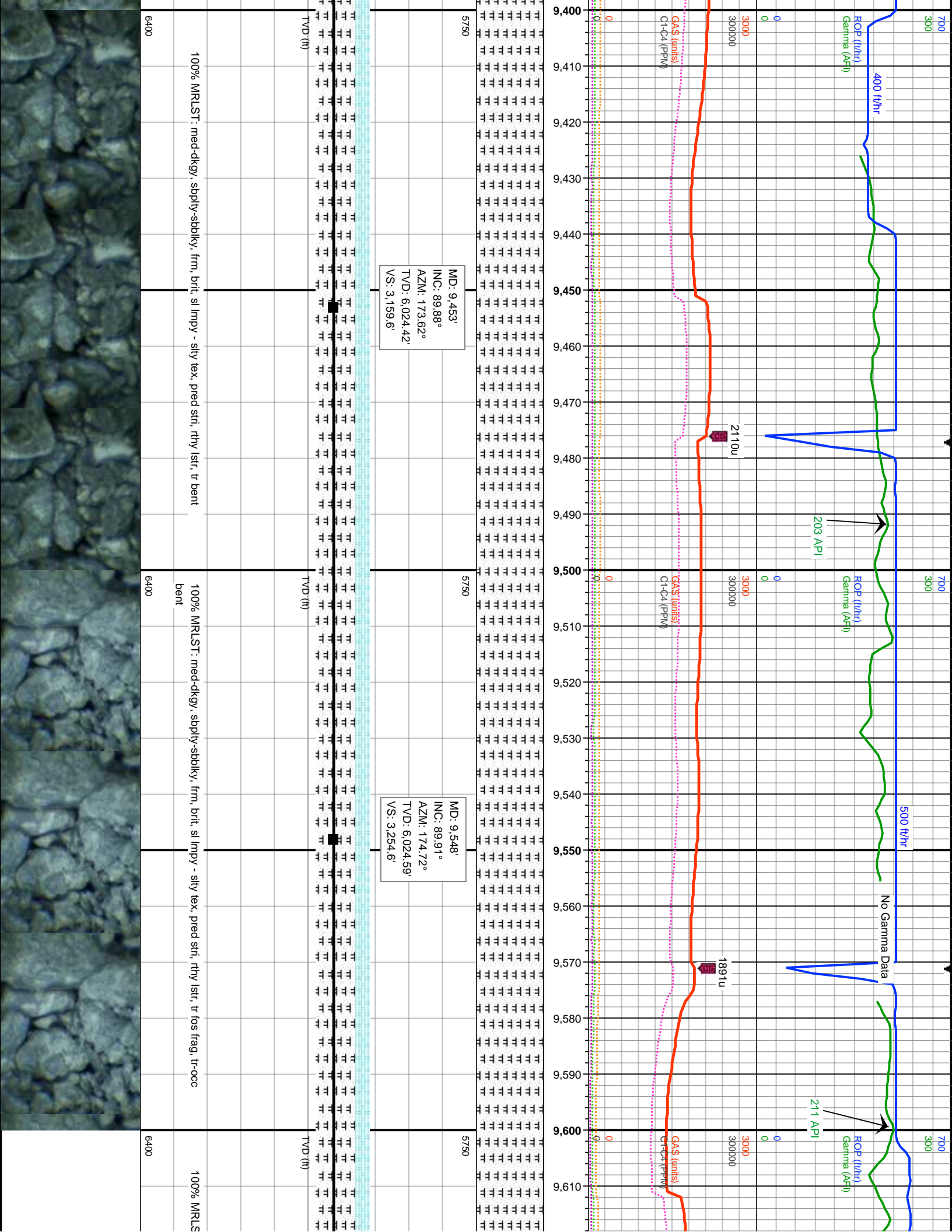


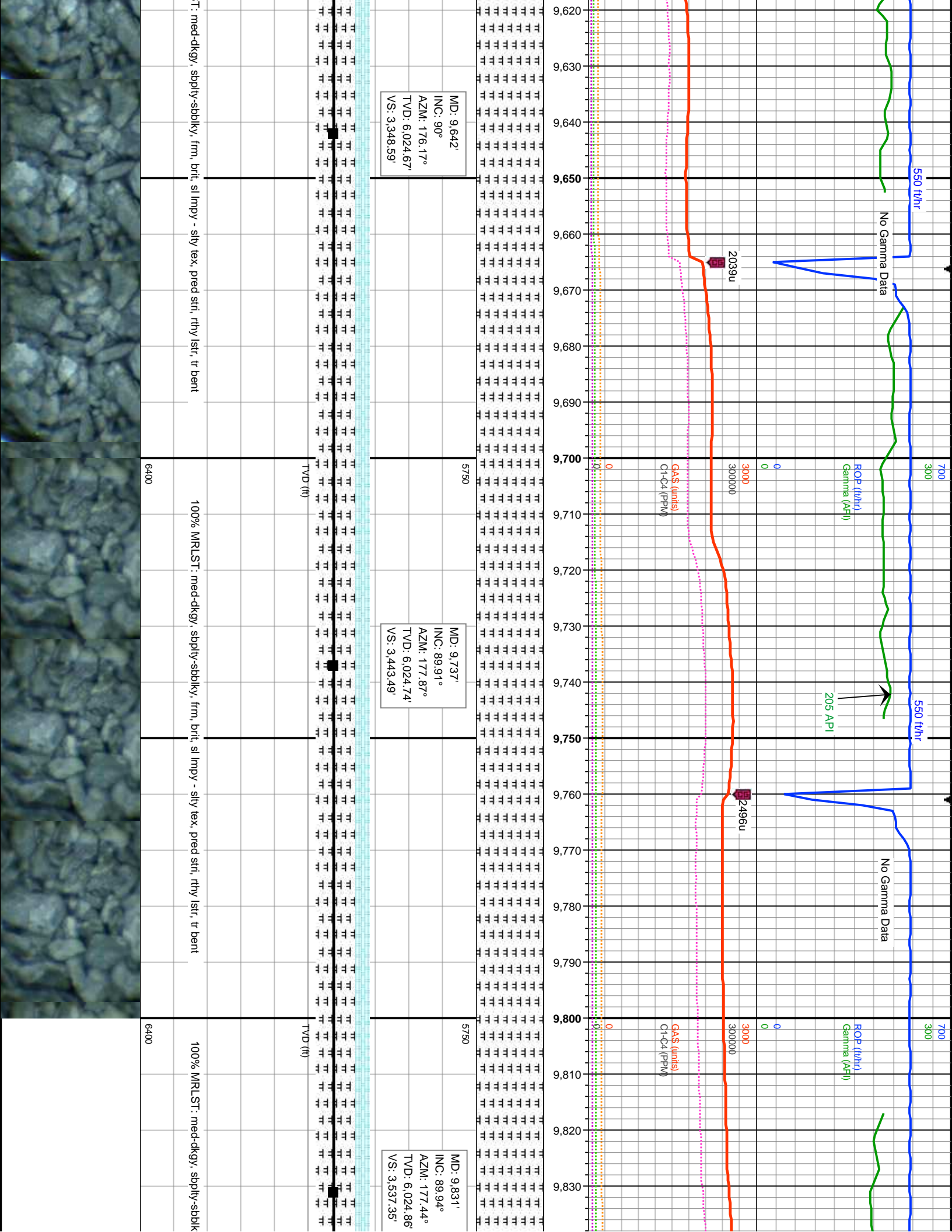


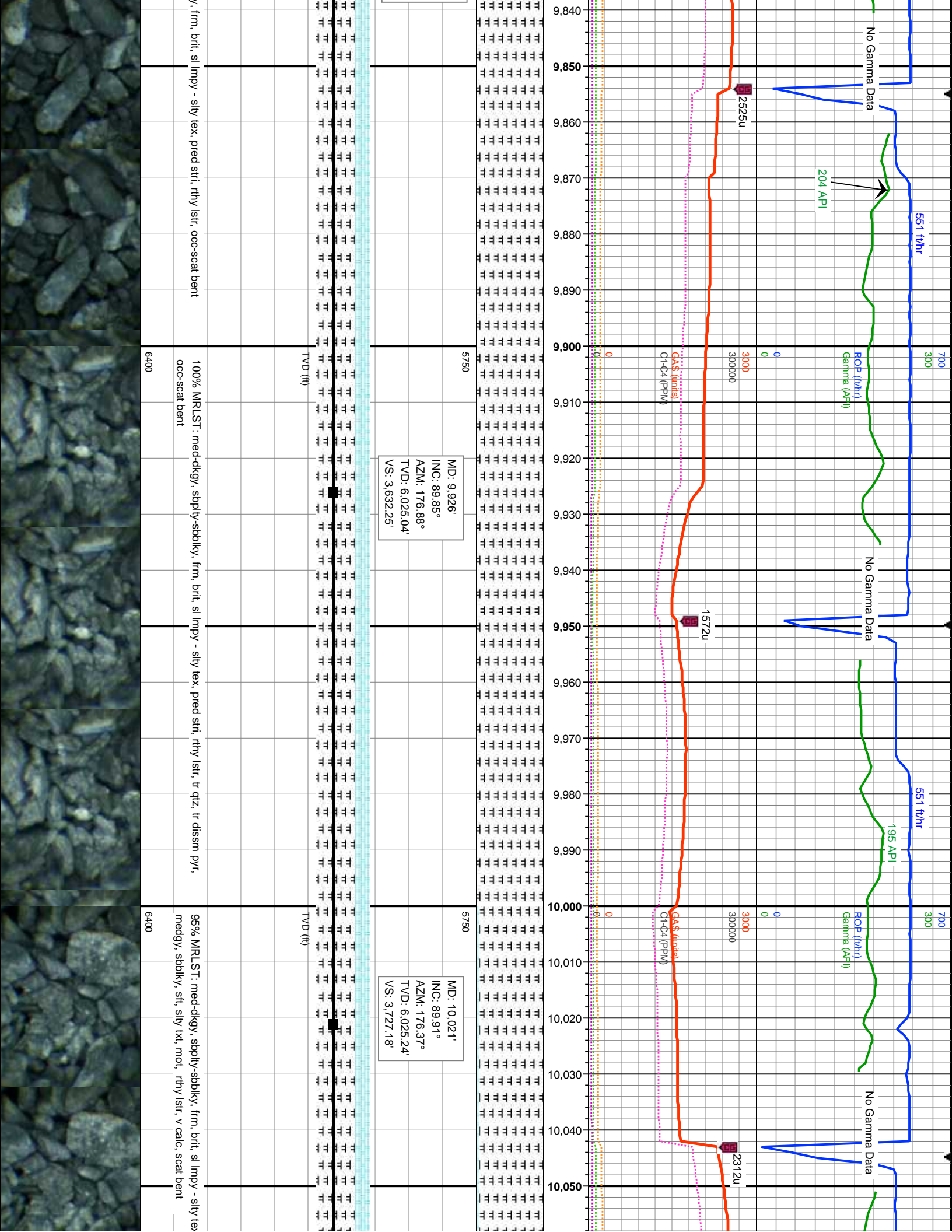


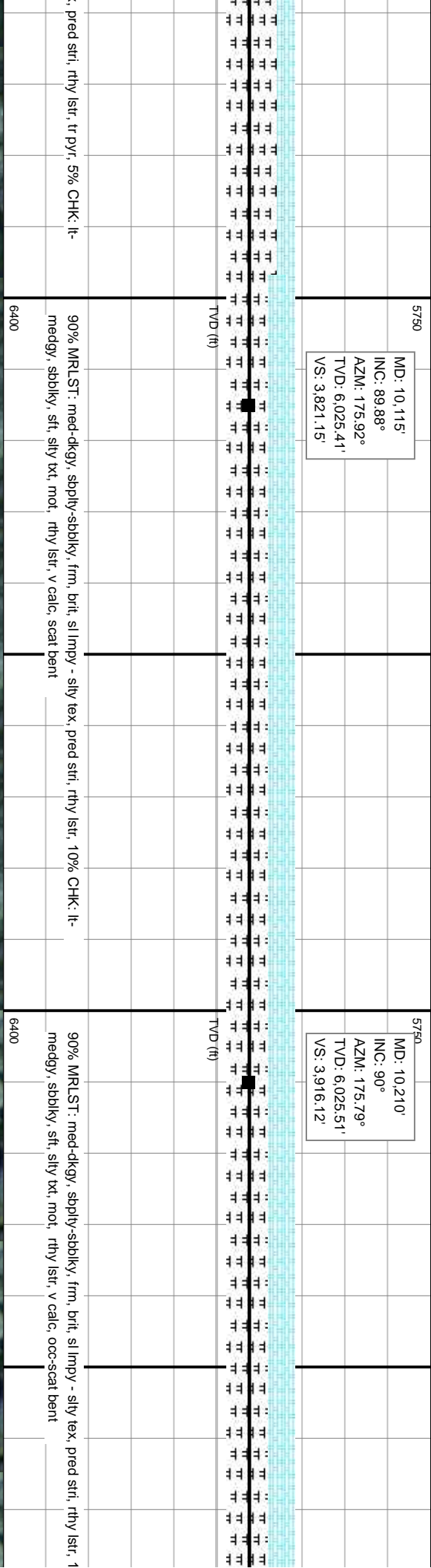


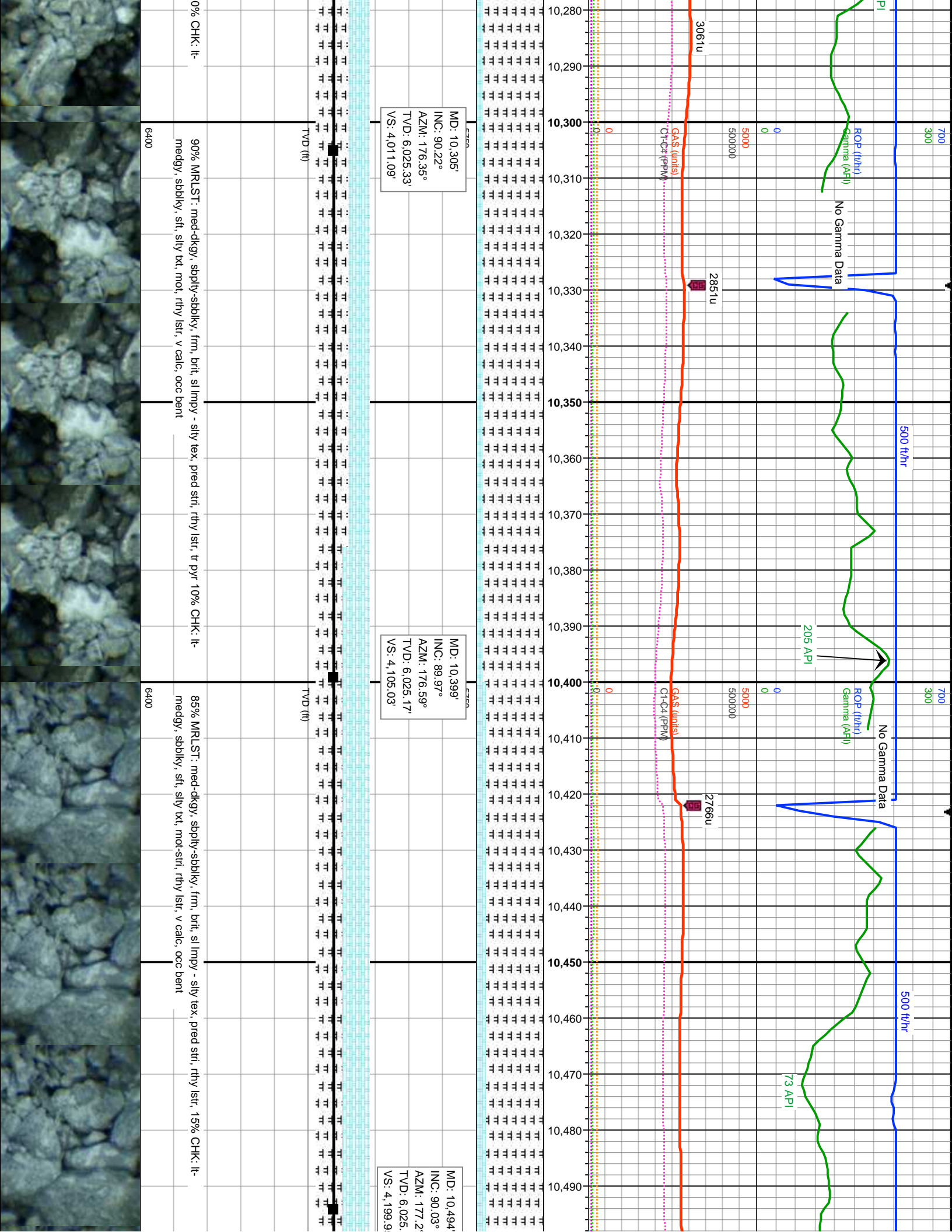


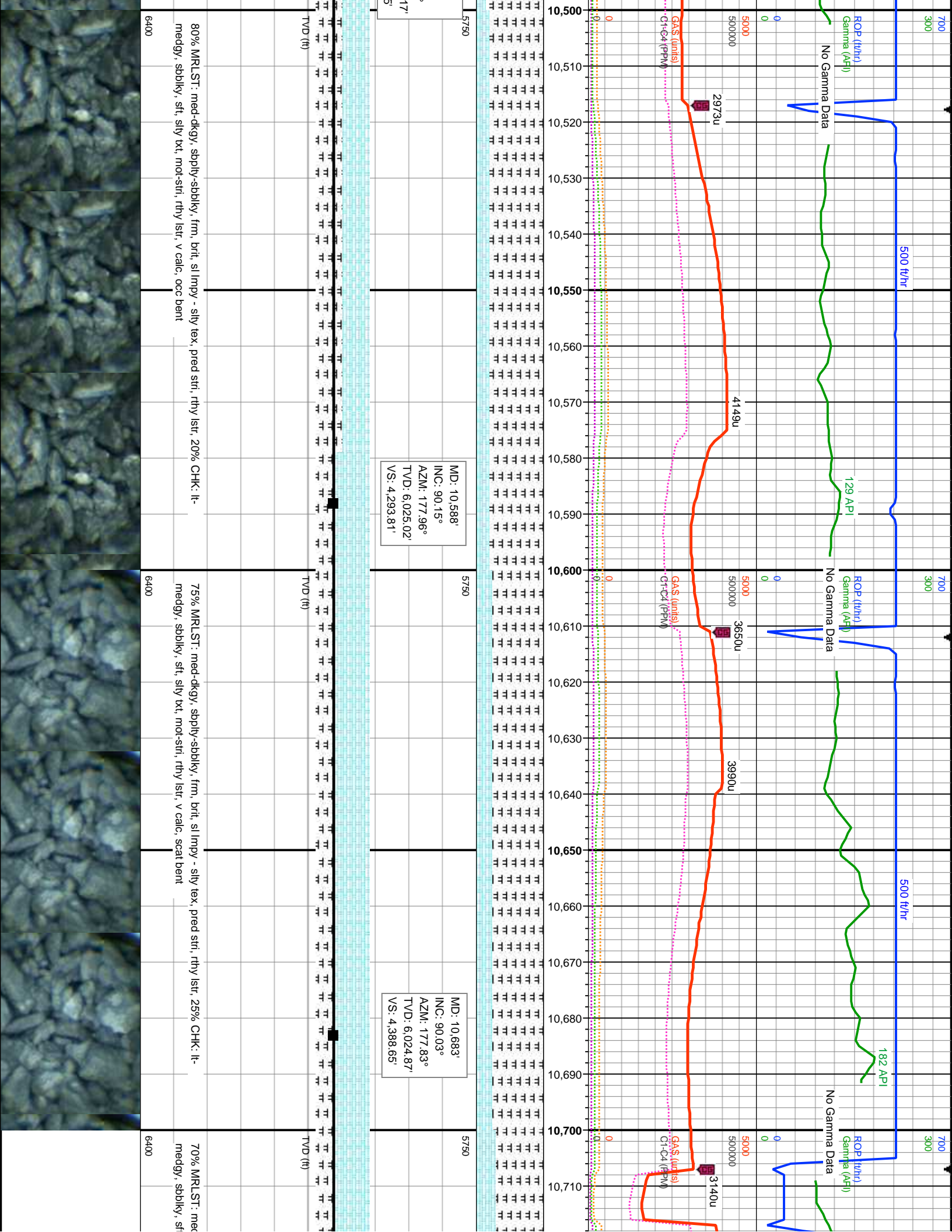


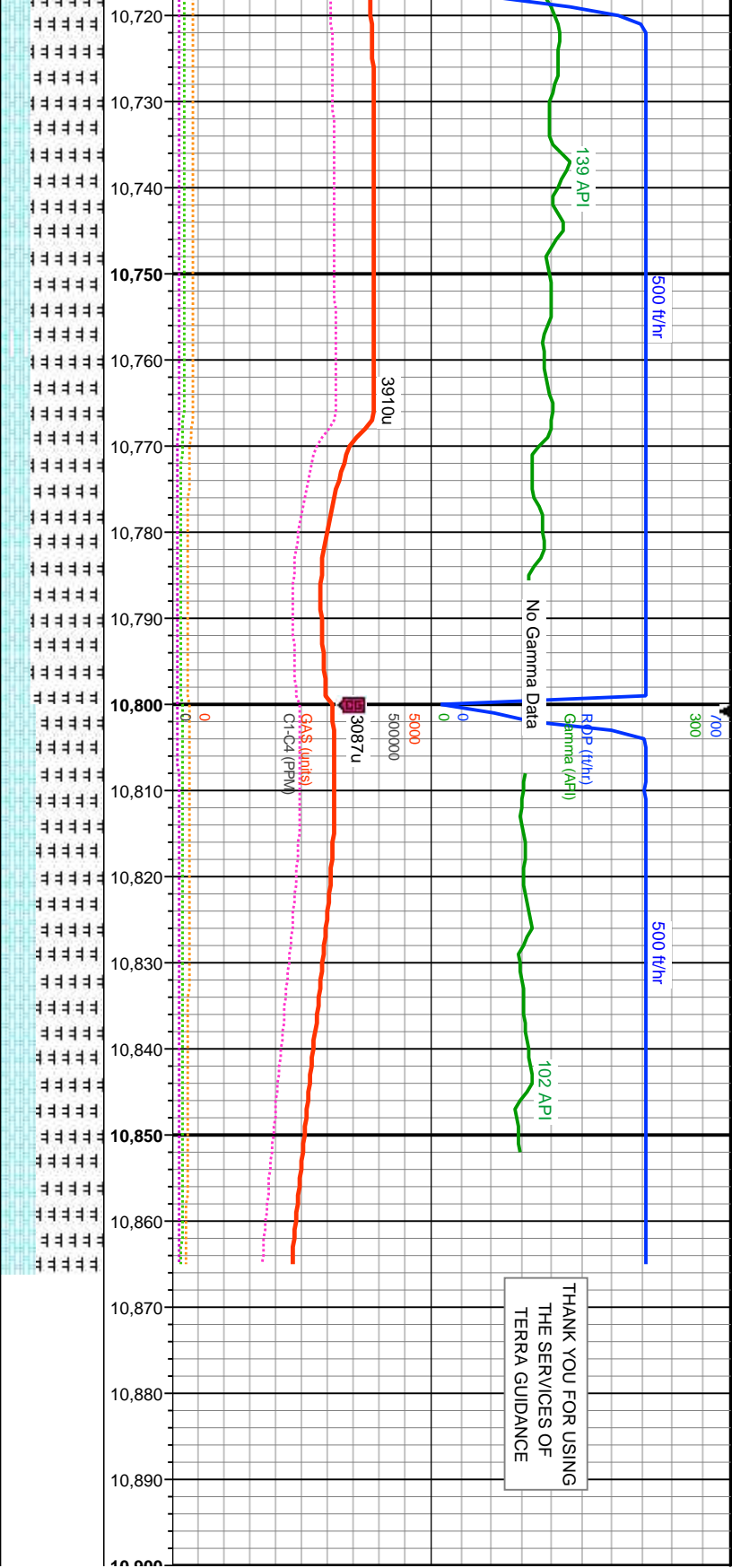












MD: 10,777 INC: 88.55° AZM: 177.62° TVD: 6,026.04' VS: 4,482.49'		5730	MD: 10,842 INC: 88.4° AZM: 178.24° TVD: 6,027.77' VS: 4,547.35'		PROJECTION TO BIT MD: 10,866' INC: 88.4° AZM: 178.24° TVD: 6,028.44'	
65% MRI ST: med-dkgy, spbly-sbbkly, frm, brlt, sl lmpy - sily tex, pred stri, rthy lstr, 35% CHK: lt-medgy, sbbkly, sft, sily txt, mot-stri, rthy lstr, v calc, scat bent		6400	65% MRI ST: med-dkgy, spbly-sbbkly, frm, brlt, sl lmpy - sily tex, pred stri, rthy lstr, 35% CHK: lt-medgy, sbbkly, sft, sily txt, mot-stri, rthy lstr, v calc, scat bent		TD 10866' MD 00:12 MST, 2/27/17	