



Scale: 5" / 100'
Measured Depth Log

Well Name DOUTHIT 41C-27HZ

Location SENE 26 3N 68W 6 PM

State Colorado

County WELD

Country USA

Rig Number Extreme 8

API Number 05-123-39501

AFE # 2095343

Region DJ BASIN

Field Wattenberg

Drilling Completed 10/7/2014

Surface Coordinates 1500 FNL 339 FEL

Ground Elevation 4942'

Logged Interval 6700 To 12950

Total Depth 129502095343

Formation CODELL

Type of Drilling Fluid FRESH WATER

Operator

Company ANADARKO PETROLEUM INC
Address 1099 18th St, Suite 1800
Denver , CO 80202

Geologist

Name Gabriel Rubio, Ted Stockwell
Company COLUMBINE LOGGING, INC.
Address 2385 S. Lipan St.
Denver, CO 80223

Zone Color Coding

Oil
Note
Error

Condensate
Core
Water

C
F
S

Rock Types

? UNKNOWN
ANHYDRITE
BENTONITE
BRECCIA
CHALK
CEMENT
CHERT
CLAY CHOKE SAND
CLAYSTONE

COAL
CONGLOMERATE
DOLOMITE
DOLOMITIC LIMESTONE
GRANITE
GYPSUM
IGNEOUS
SIDERITE or LIMONITE
LIMESTONE

TT TT TT
MARLSTONE
METAMORPH
NO SAMPLE
SALT
SANDSTONE
SALT-PEPPER
SHALE
SHALE COL
SHALE GRA

Accessories

Fossils			
GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	
INOCERAMUS	B BENTONITE	K KAOLIN	
ALGAE	BITUMENOUS SUBSTANCE	M MARCASITE	
AMPHIPORA	BRECCIA FRAGMENTS	T MARLSTONE	ANHYDRITE STRINGER
BELEMNITE	CALCAREOUS	U MICACEOUS	BENTONITE STRINGER
BIOCLASTIC	CARBONACEOUS FLAKES	M MINERAL CRYSTALS	COAL STRINGER
BRACHIOPOD	CHERT	N NODULES	DOLOMITE STRINGER
BRYOZOA	COAL - THIN BEDS	P PHOSPHATE PELLETS	GYPSUM STRINGER
CEPHALOPOD	D DOLOMITIC	P PYRITE	LIMESTONE STRINGER
CORAL	F FELDSPAR	S SALT CAST	MARLSTONE (CALC) STRG
CRINOID	F FERRUGINOUS PELLET	S SANDY	MARLSTONE (DOL) STRG
ECHINOID	F FERTUGINOUS PELLET	S SIDERITE	SANDSTONE STRINGER
FISH	F FERTUGINOUS PELLET	S SILICEOUS	SHALE STRINGER
FORAMINIFERA	F FERTUGINOUS PELLET	S SILTY	
F FOSSIL	F FERTUGINOUS PELLET	T TUFFACEOUS	SILTSTONE STRINGER
	ARGILLACEOUS		

Other Symbols

Oil Show			
PINPOINT	DST INTERVAL	WIRELINE TESTED - LEFT	E EARTHY
VUGGY	FAULT	WIRELINE TESTED - RT	F FINELYXLN
Engineering			
DEAD	FORMATION TOP	DRILL STEM TEST	G GRAINSTONE
EVEN	GAS SHOW	MIN DEPTH	L LITHOGRAPHIC
QUESTIONABLE	OIL SHOW		M MICROXLN
BIT			
SPOTTED STAINING	CONNECTION (UP)		M MUDSTONE
Porosity			
CONNECTION (DOWN)	MN DEPTH (DOWN)	A ANGULAR	P PACKSTONE
E EARTHY	CONNECTION GAS	N NORMAL FAULT	W WACKESTONE
FENESTRAL	CONNECTION GAS (LEFT)	O OVERTURNED STRATA	S SUBANG
F FRACTURE	TRIP GAS	R REVERSE FAULT	S SUBRAND
	TRIP GAS (LEFT)	C CASING	
INTERCRYSTALLINE	DOWN TIME GAS	SIDEWALL CORE (LEFT)	
INTEROOLITIC	DOWN TIME GAS (LEFT)	SIDEWALL CORE (RIGHT)	
MOLDIC	CORE - LOST	S SLIDE	
ORGANIC	CORE - RECOVERED	S SURVEY	
		C CRYPTOXLN	
Textures			
		B BOUNDSTONE	P POOR
		C CHALKY	W WELL
		C CRYPTOXLN	
Sorting			
		M MODERATE	

Fossils

GASTROPOD	INOCERAMUS	O OOLITE	O OSTRACOD	BELEMNITE	BIOCLASTIC	BRACHIOPOD	BRYOZOA	CEPHALOPOD	CORAL	CRINOID	ECHINOID	FISH	FORAMINIFERA	F FOSSIL
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Minerals

ANHYDRITIC	ARGILLACEOUS
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HEAVY MINERAL	K KAOLIN	M MARCASITE	T MARLSTONE	U MICACEOUS	M MINERAL CRYSTALS	N NODULES	P PHOSPHATE PELLETS	P PYRITE	S SALT CAST	S SANDY	S SIDERITE	S SILICEOUS	S SILTY	T TUFFACEOUS
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Stringer

ANHYDRITE STRINGER	BENTONITE STRINGER	COAL STRINGER	DOLOMITE STRINGER	GYPSUM STRINGER	LIMESTONE STRINGER	MARLSTONE (CALC) STRG	MARLSTONE (DOL) STRG	SANDSTONE STRINGER	SHALE STRINGER	SILTSTONE STRINGER
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Oil Show

PINPOINT	VUGGY
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Engineering

DEAD	EVEN	QUESTIONABLE	BIT	SPOTTED STAINING	CONNECTION (UP)
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Rounding

DST INTERVAL	FAULT	WIRELINE TESTED - LEFT	E EARTHY
FORMATION TOP	GAS SHOW	OIL SHOW	
MN DEPTH	MN DEPTH UP	MN DEPTH (DOWN)	A ANGULAR
WIRELINE TESTED - RT	F FINELYXLN		

Porosity

CONNECTION (DOWN)

E EARTHY	FENESTRAL	F FRACTURE	INTERCRYSTALLINE	INTEROOLITIC	MOLDIC	ORGANIC
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N NORMAL FAULT	O OVERTURNED STRATA	R REVERSE FAULT	C CASING	SIDEWALL CORE (LEFT)	SIDEWALL CORE (RIGHT)	S SLIDE	S SURVEY
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Textures

B BOUNDSTONE	C CHALKY	C CRYPTOXLN
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Sorting

M MODERATE	P POOR	W WELL
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SHALY SANDSTONE	SHALY SILTSTONE	SILTY SHALE	SILTSTONE	TILL	TUFF	WELDED TUFF
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Slide/Rotate

ROP
ROP (min/ft)
GAMMA (API)

COLUMBINE LOGGING 2 MANRIGGED UP @
14:00 HRS 10/02/2014 BEGAN LOGGING @ 00:30
HRS 10/03/2014

ROP & GAS DATA PROVIDED BY PASON
GAMMA & SURVEY DATA PROVIDED BY
BAKER HUGHES

Total Gas & Chromatograph
GAS

Depth Labels

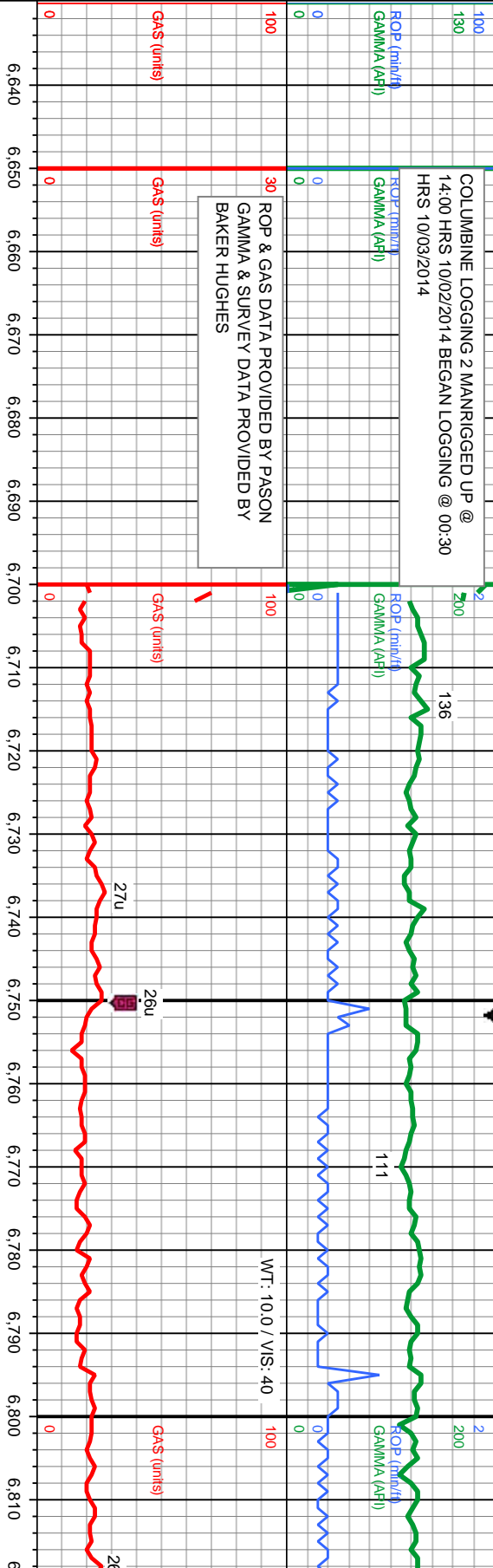
% Lith

Well Bore
TVD

Oil Show

Images

E
G
M
F
T
S



DRILLING IN
SUSSEX FM

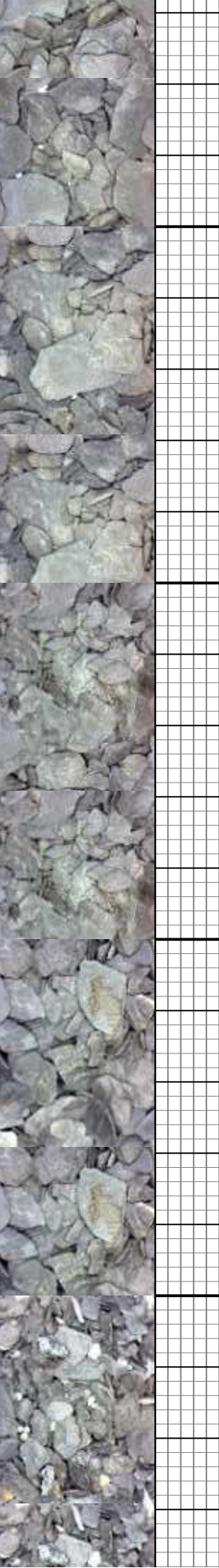
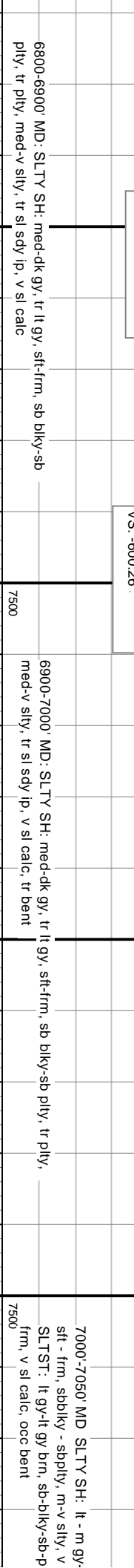
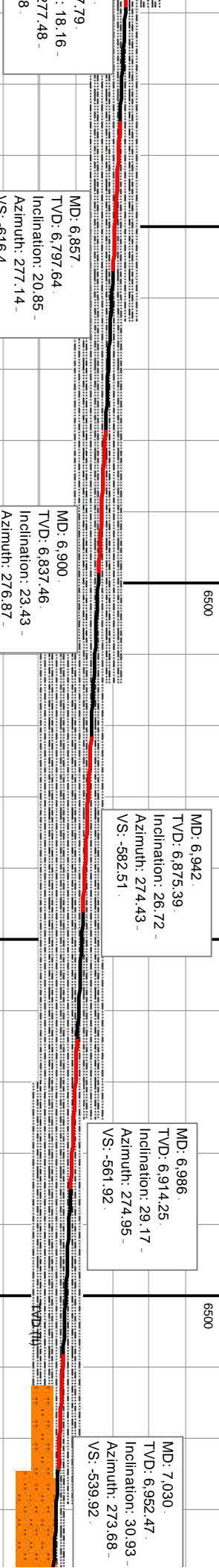
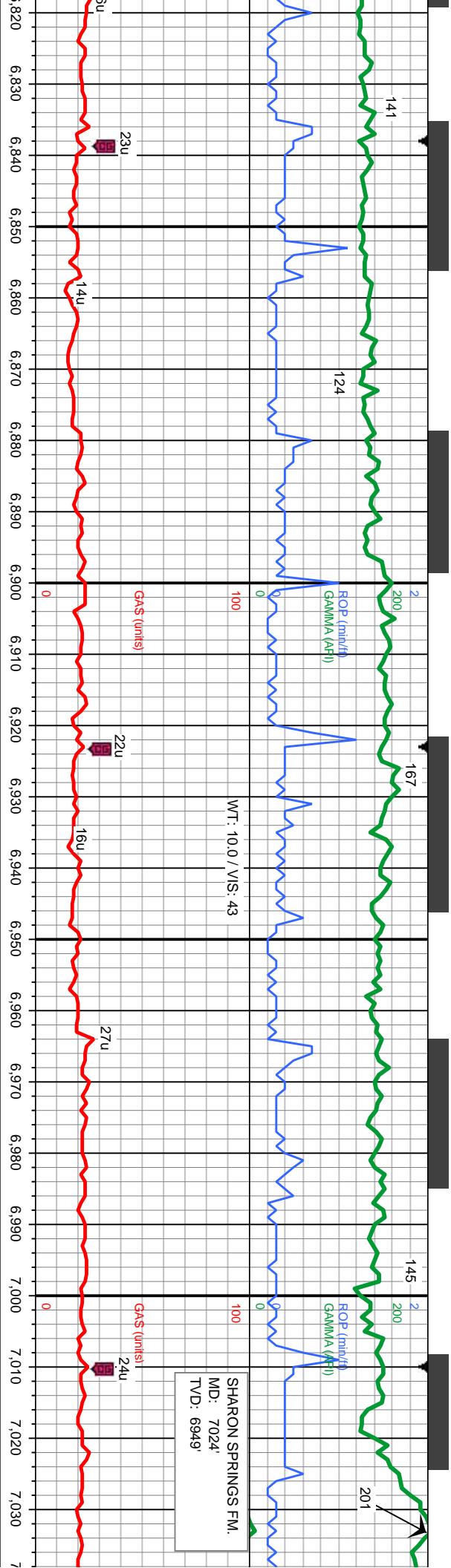
MD: 6,729.
TVD: 6,674.94
Inclination: 6.63
Azimuth: 276.84
VS: -648.95

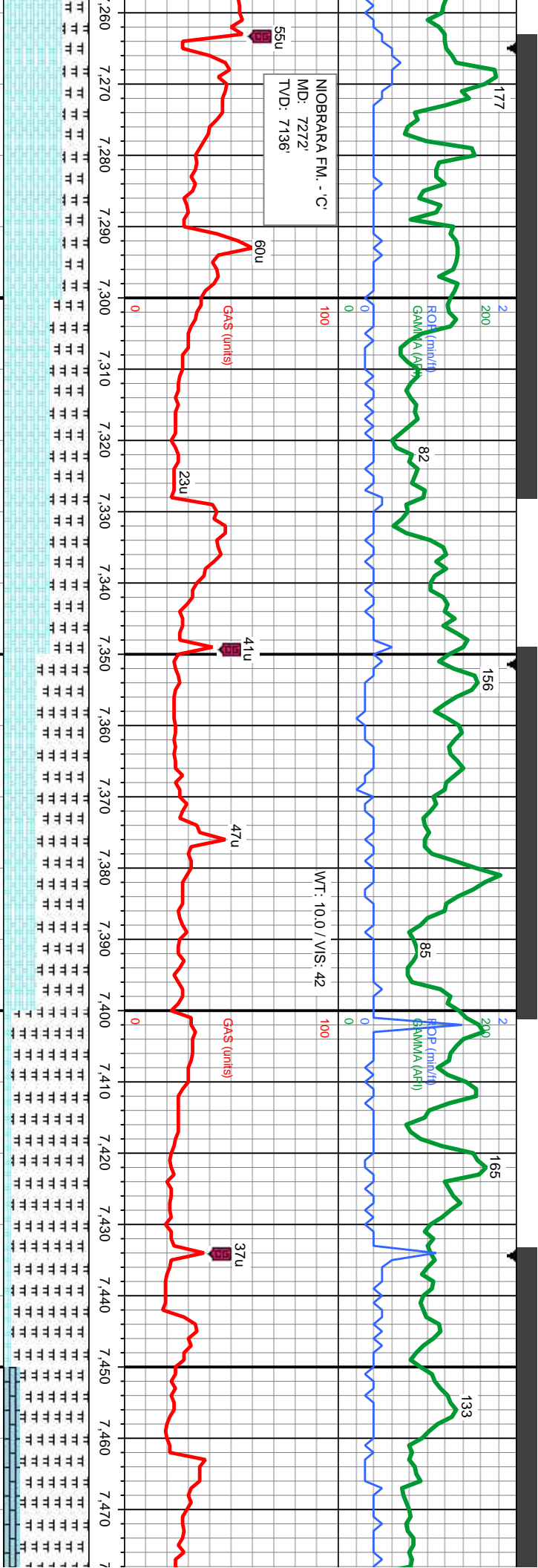
MD: 6,772.
TVD: 6,717.31
Inclination: 12.66
Azimuth: 276.91
VS: -641.78

MD: 6,814
TVD: 6,757.0
Inclination: 2
Azimuth: 276.91
VS: -630.6

6700-6800' MD: SLTY SH: med-dk gy, tr lt gy, sft-fm, sb blk-y-sb
ply, tr ply, med-v sily, tr sl sdy ip, v sl calc







MD: 7,285
TVD: 7,143.91
Inclination: 50.96
Azimuth: 267.46
VS: -373.56

TVD SCALE CHANGE

TVD (ft)

MD: 7,371
TVD: 7,192
Inclination: 59.67
Azimuth: 274.22
VS: -302.98

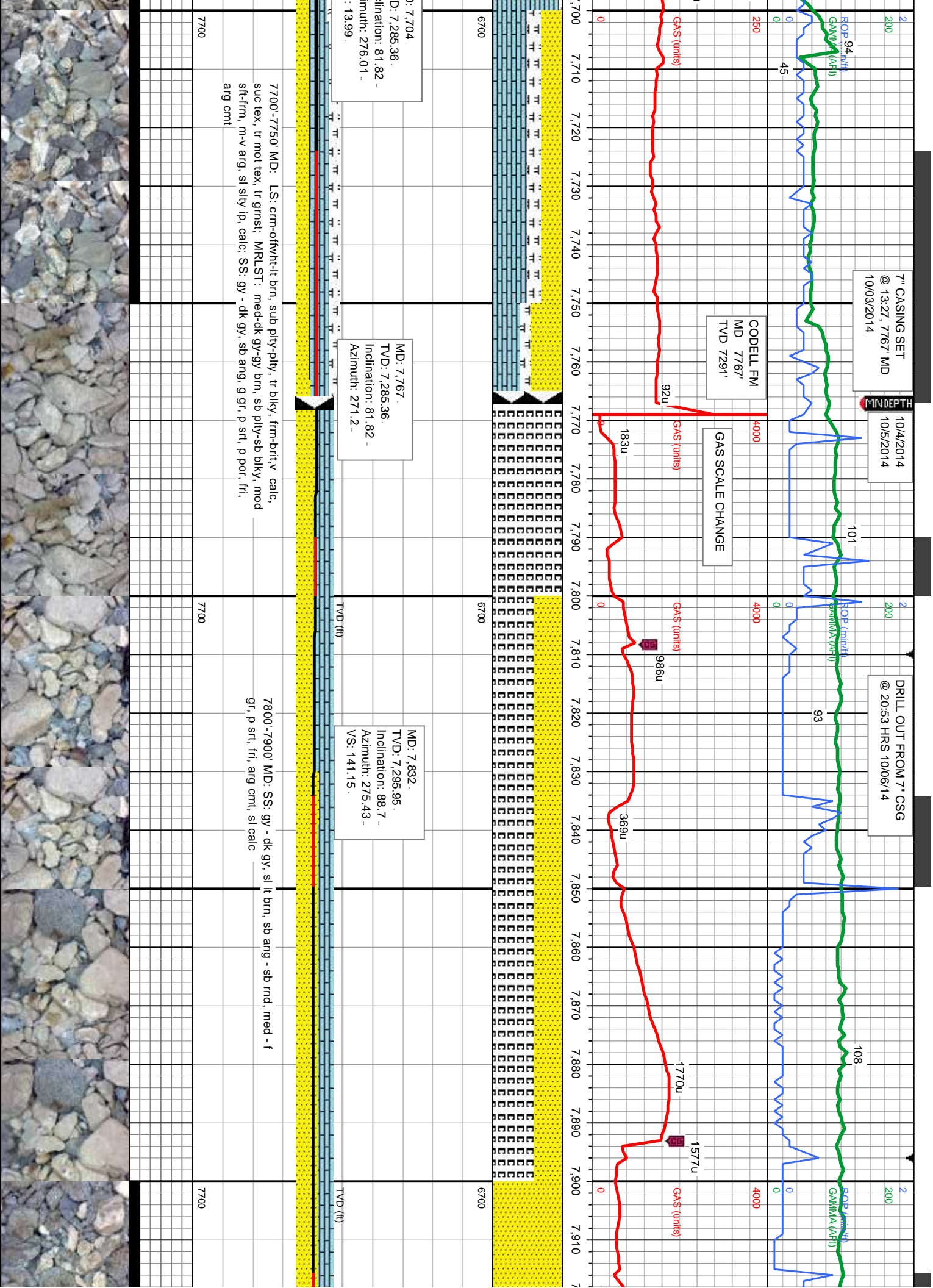
7300'-7350' MD: CHK: lt-med gy, mot, sb
blky-sb pty, sft-sl frm, fri, chky-sb wxy, v
calc, MRLST: med-dk gy-gy brn, sb pty-sb
blky, mod sft-frm, sb arg-sily, calc, tr bent

7350'-7400' MD: MRLST: med-dk gy-gy brn, sb
pty-sb blky, mod sft-frm, sb arg-sily, calc, abnt
bent, CHK: lt-med gy, mot, sb blky-sb pty, sft-sl
frm, fri, chky-sb wxy, v calc

7400'-7450' MD: MRLST: med-dk gy-gy brn,
sb pty-sb blky, mod sft-frm, sb arg-sily, calc,
abnt bent, CHK: lt-med gy, mot, sb blky-sb
pty, sft-sl frm, fri, chky-sb wxy, v calc

MD: 7,456
TVD: 7,229.14
Inclination: 69.06
Azimuth: 275.78
VS: -226.57

7450'-7500' MD: MRLST: r
pty-sb blky, mod sft-frm, sft-sl
abnt bent LS: crn-offwht-lt
blky, frm-brlt, v calc, suc te



10/6/2014

MINDEPTH

2

2

EOP (in ft)

EOP (in ft)

GAMMA (API)

GAMMA (API)

90

89

100

97

WT: 9.3 / VIS: 39

WT: 9.3 / VIS: 42

4000

4000

GAS (units)

GAS (units)

1859u

1917u

310u

1107u

930u

272u

0

508u

6700

6700

MD: 7.930
TVD: 7,296.43
Inclination: 90.74
Azimuth: 275
VS: 238.95

MD: 8.009
TVD: 7,295.01
Inclination: 91.32
Azimuth: 274.01
VS: 317.84

MD: 8.094
TVD: 7,292.72
Inclination: 91.76
Azimuth: 272.81
VS: 402.76

TVD (ft)

7900'-8000' MD: SS: gy - dk gy, sl lt brn, sb ang - sb rnd, med - f
gr, p srt, fri, arg cmt, tr glauc, sl calc, sl tr lt bl flr wi slw halo
cut

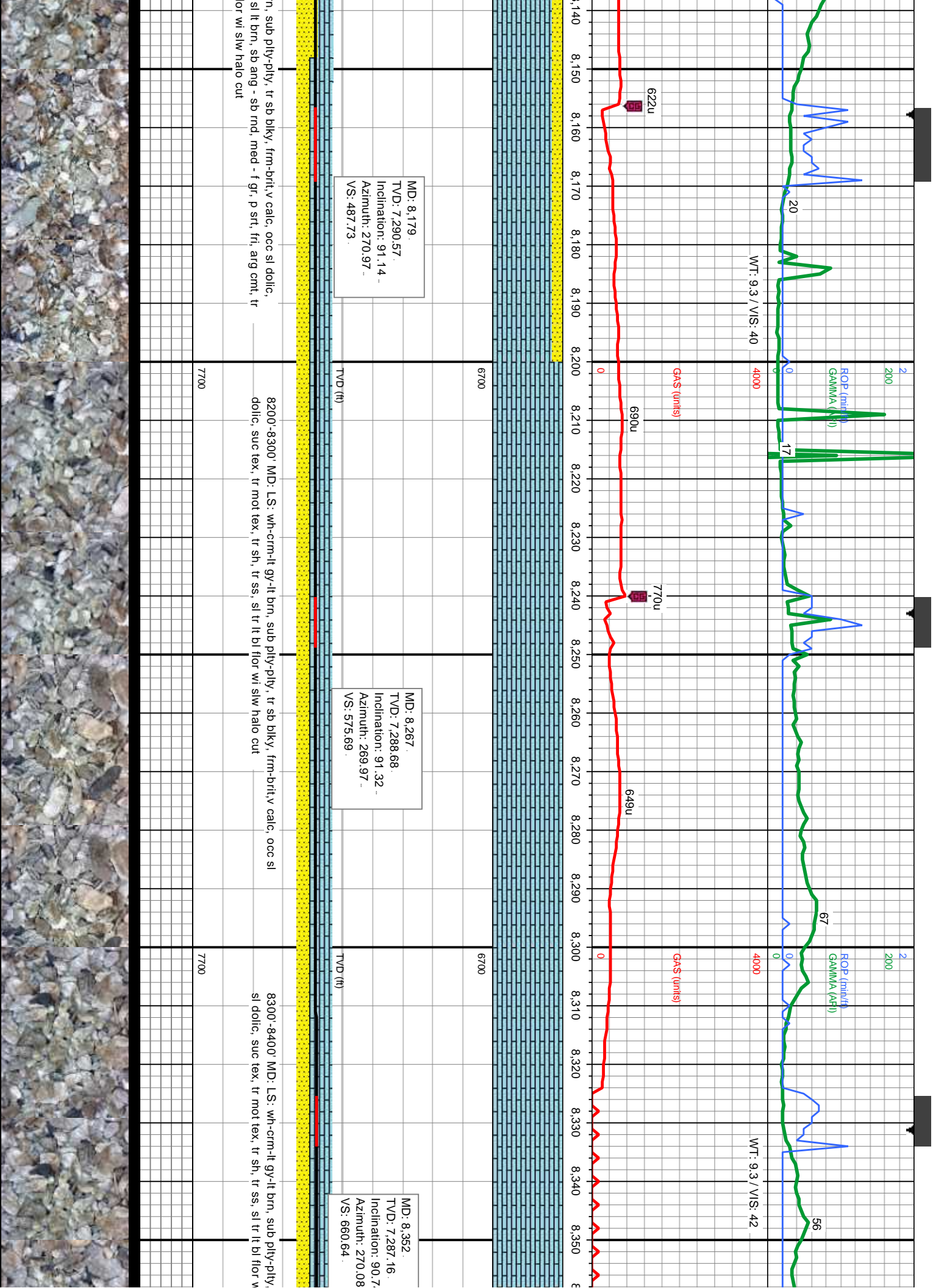
8000'-8100' MD: SS: gy - dk gy, sl lt brn, sb ang - sb rnd, med - f
gr, p srt, fri, arg cmt, tr glauc, sl calc, tr silty sh, sl tr lt bl flr wi
slw halo cut

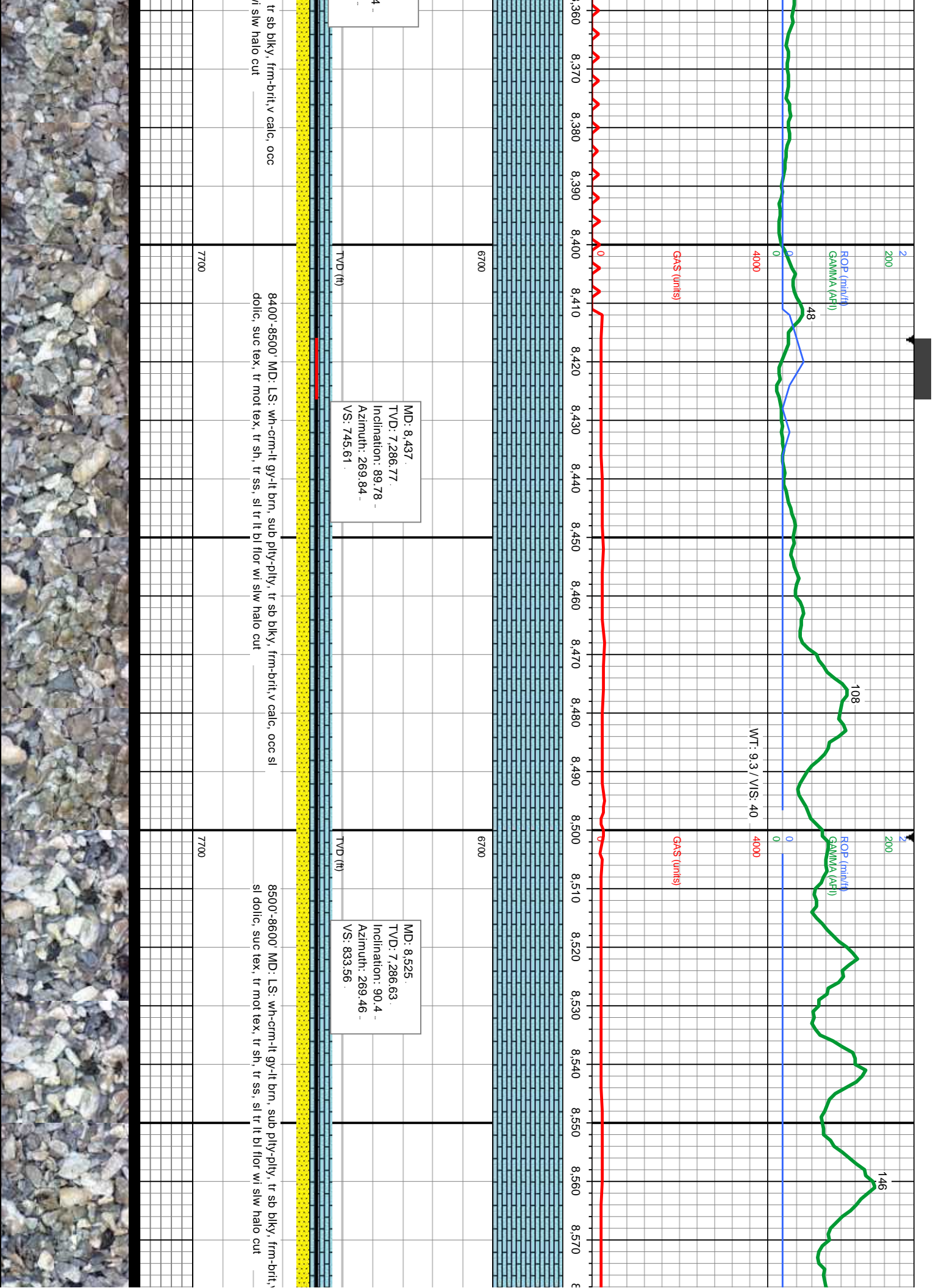
8100'-8200' MD: LS: crm-lt gy-lt br
suc tex, tr mot tex, SS: gy - dk gy,
glauc, sl calc, tr silty sh, sl tr lt bl f

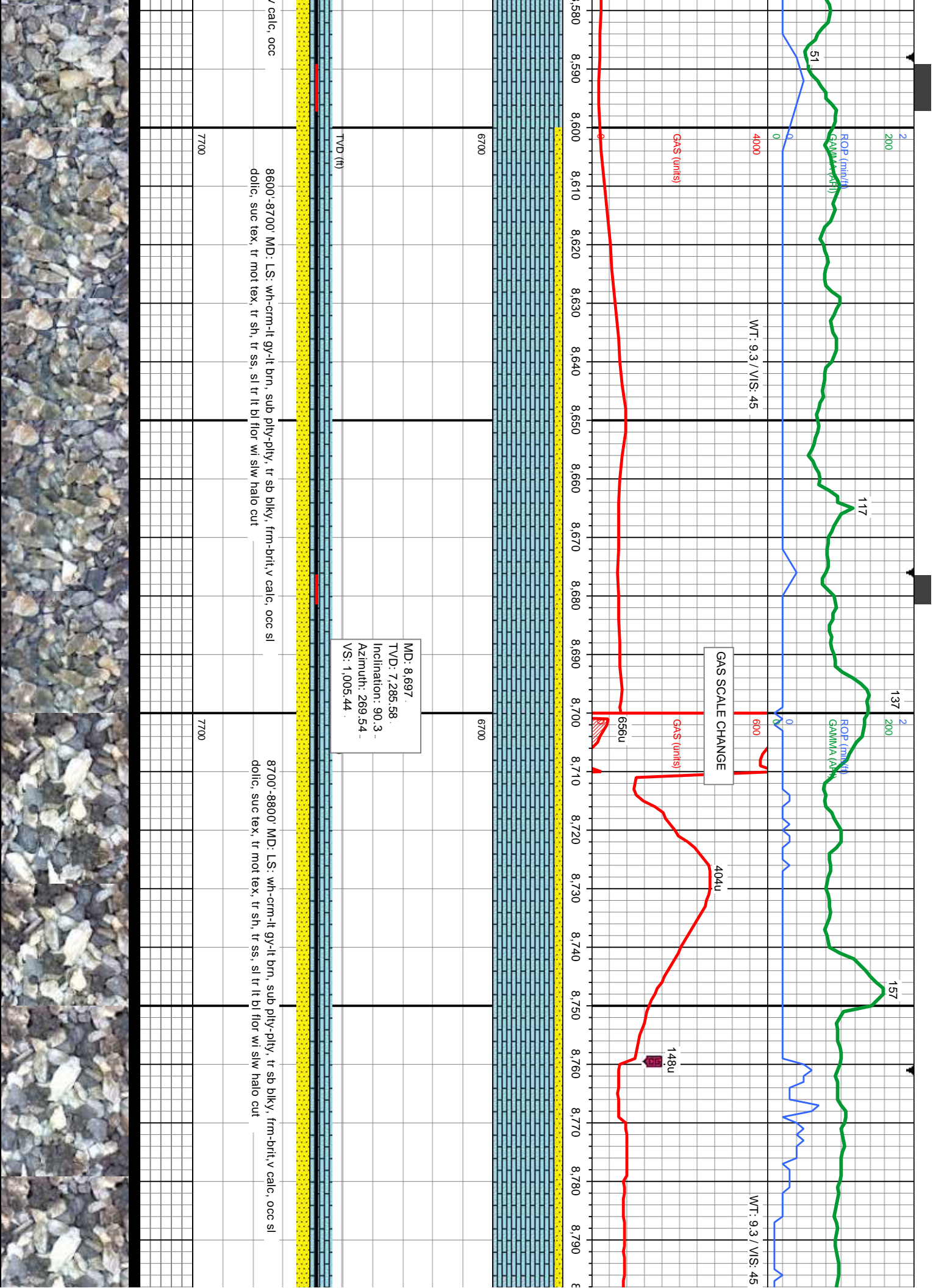
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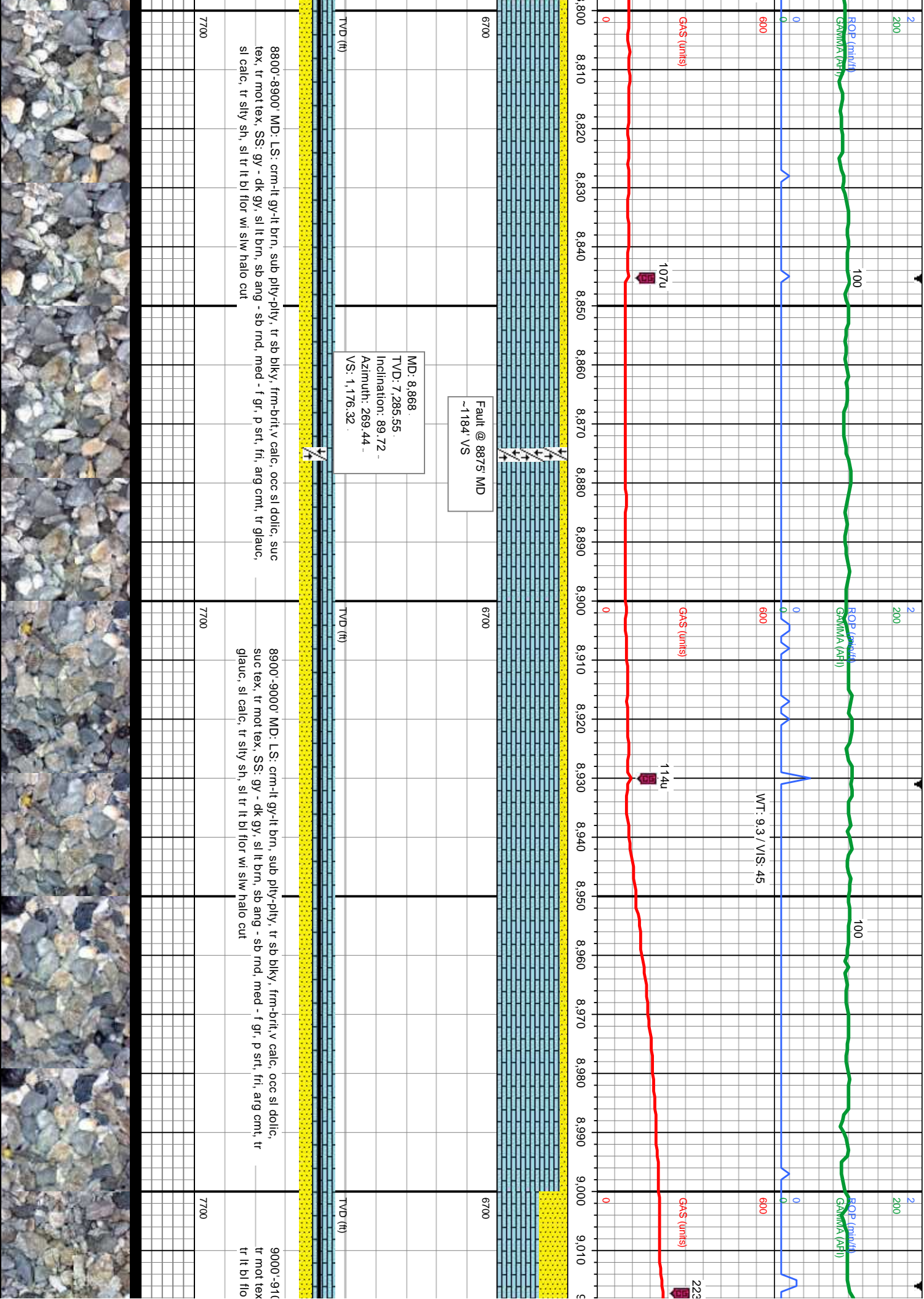
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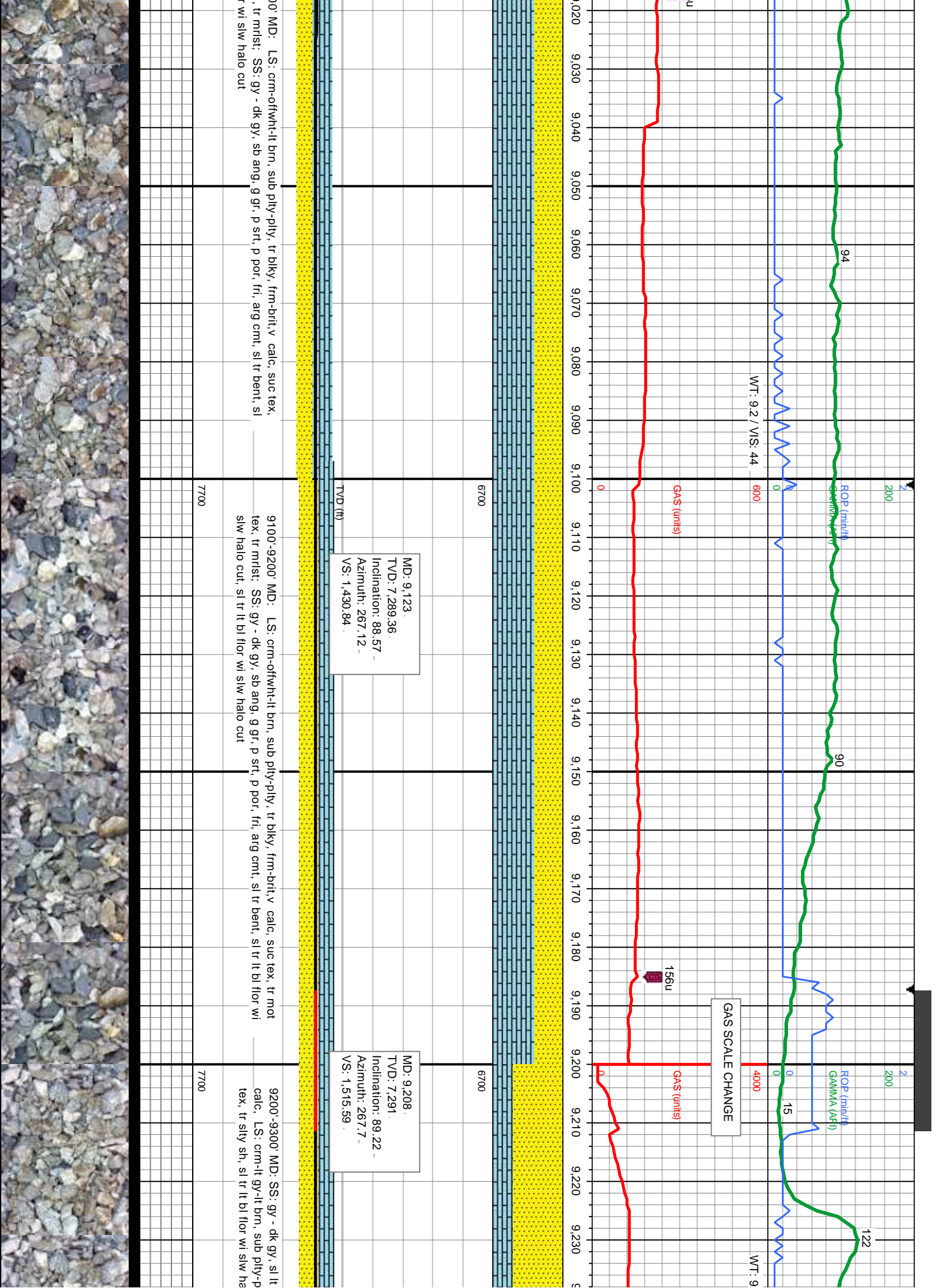


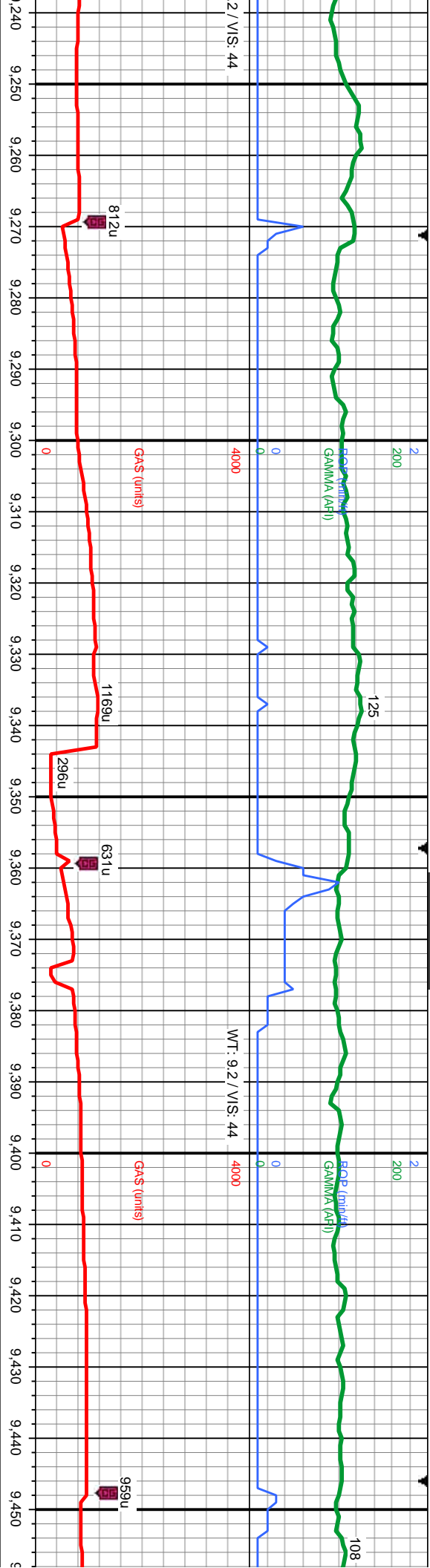












MD: 9,294.
TVD: 7,291.89
Inclination: 89.59
Azimuth: 268.19
VS: 1,601.41

(ft)

TVD (ft)

brn, sb ang - sb rnd, med - f gr, p srt, fri, arg cmt, tr glauc, sl
ly, tr sb blk, frm-brit, v calc, occ sl dolc, suc tex, tr mot
to cut, sl tr lt bl flr wi slw halo cut

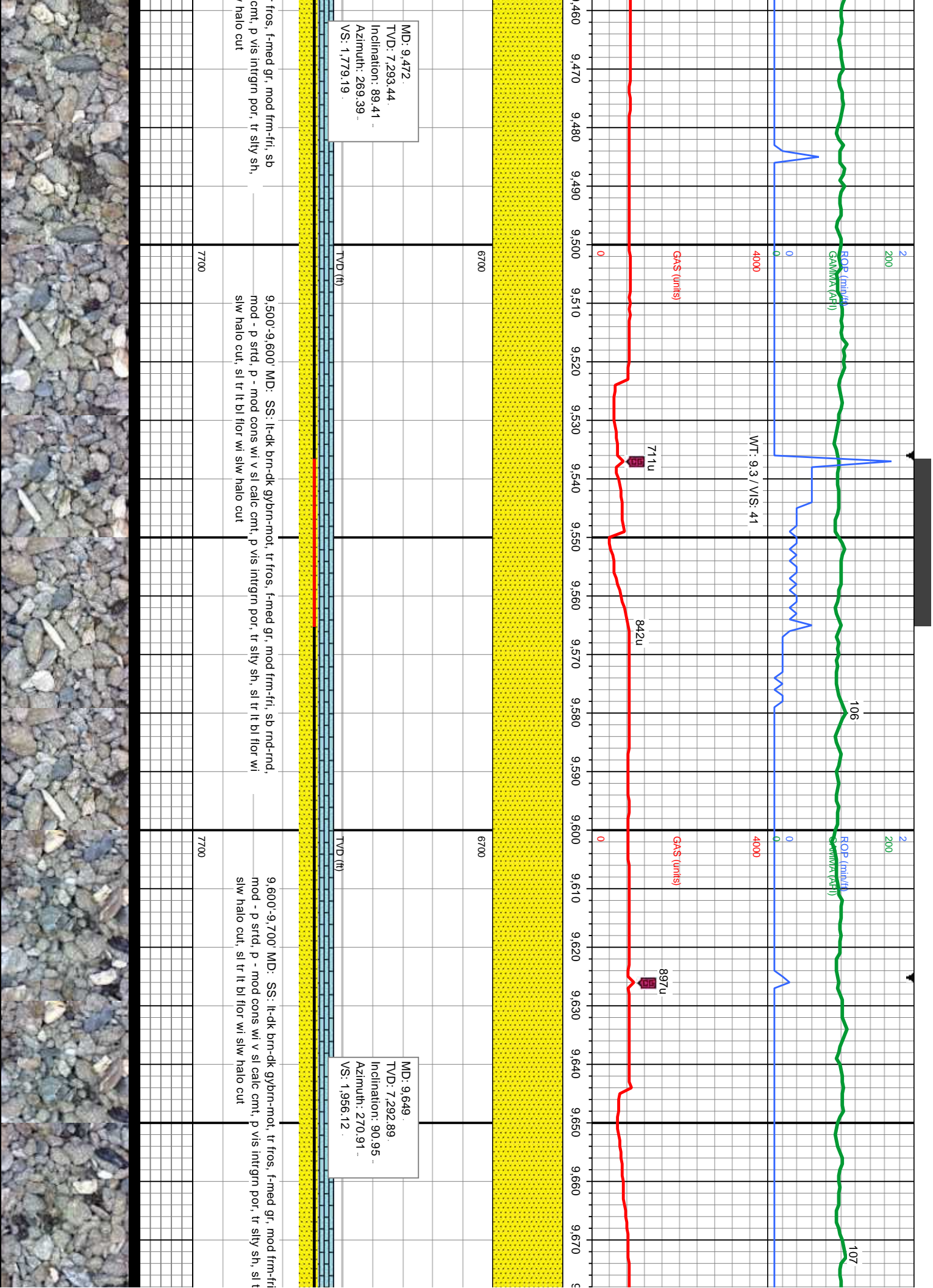
9300'-9400' MD: SS: gy - dk gy, sl lt brn, sb ang - sb rnd, med - f gr, p srt, fri, arg cmt, tr glauc,
sl calc, LS: crm-lt gy-lt brn, sub pty-pty, tr sb blk, frm-brit, v calc, occ sl dolc, suc tex, tr mot
tex, tr stly sh, sl tr lt bl flr wi slw halo cut, sl tr lt bl flr wi slw halo cut

9,100'-9,200' MD: SS: lt-dk brn-dk gy-brn-mot, tr
rnd-rnd, mod - p srt, p - mod cons wi v sl calc
sl tr lt bl flr wi slw halo cut, sl tr lt bl flr wi slw

7700

7700





MD: 9.472.
TVD: 7.293.44.
Inclination: 89.41°
Azimuth: 269.39°
VS: 1.779.19°

TVD (ft)

6700

TVD (ft)

6700

MD: 9.649.
TVD: 7.292.89.
Inclination: 90.95°
Azimuth: 270.91°
VS: 1.956.12°

WT: 9.3 / VIS: 4.1

711u

842u

897u

EOP (min/ft)

106

EOP (min/ft)

107

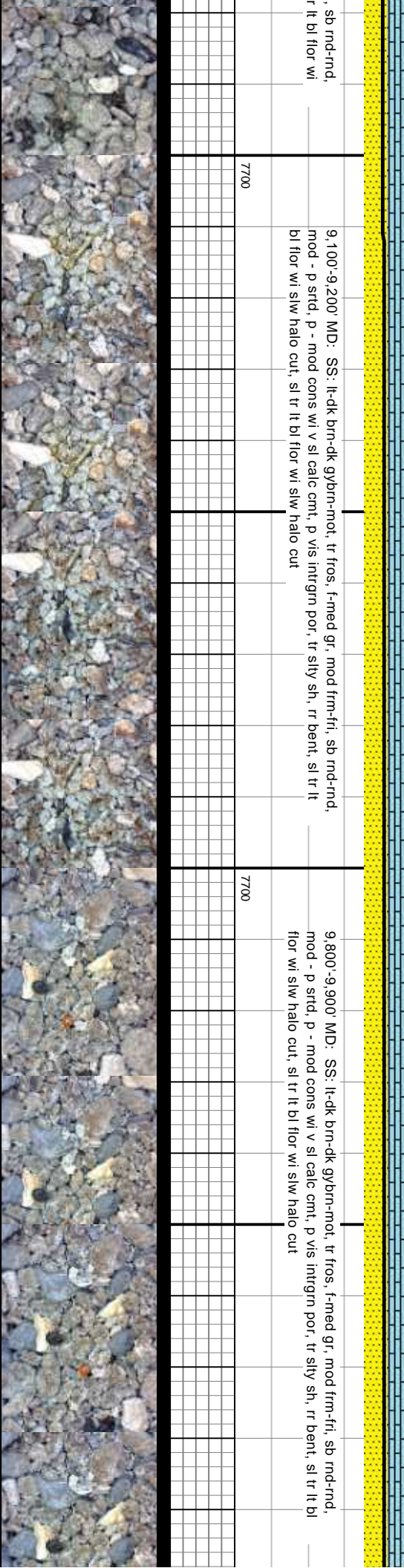
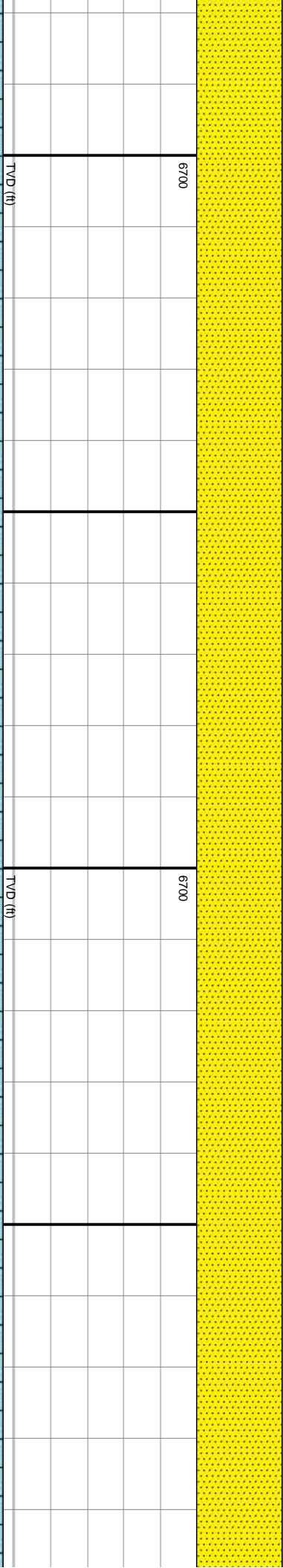
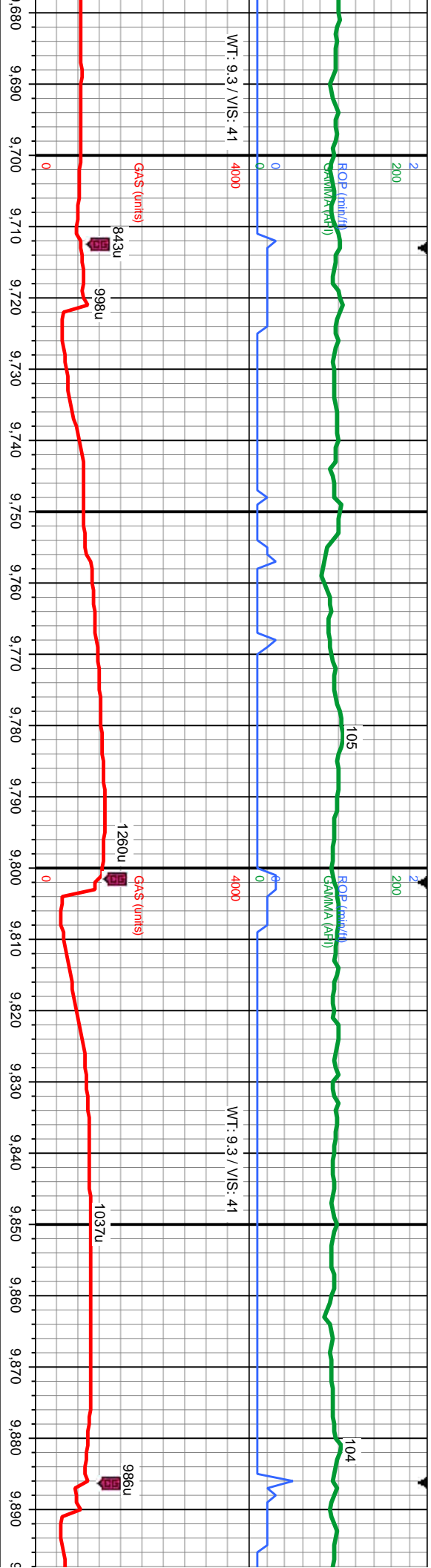
GAMMA (API)

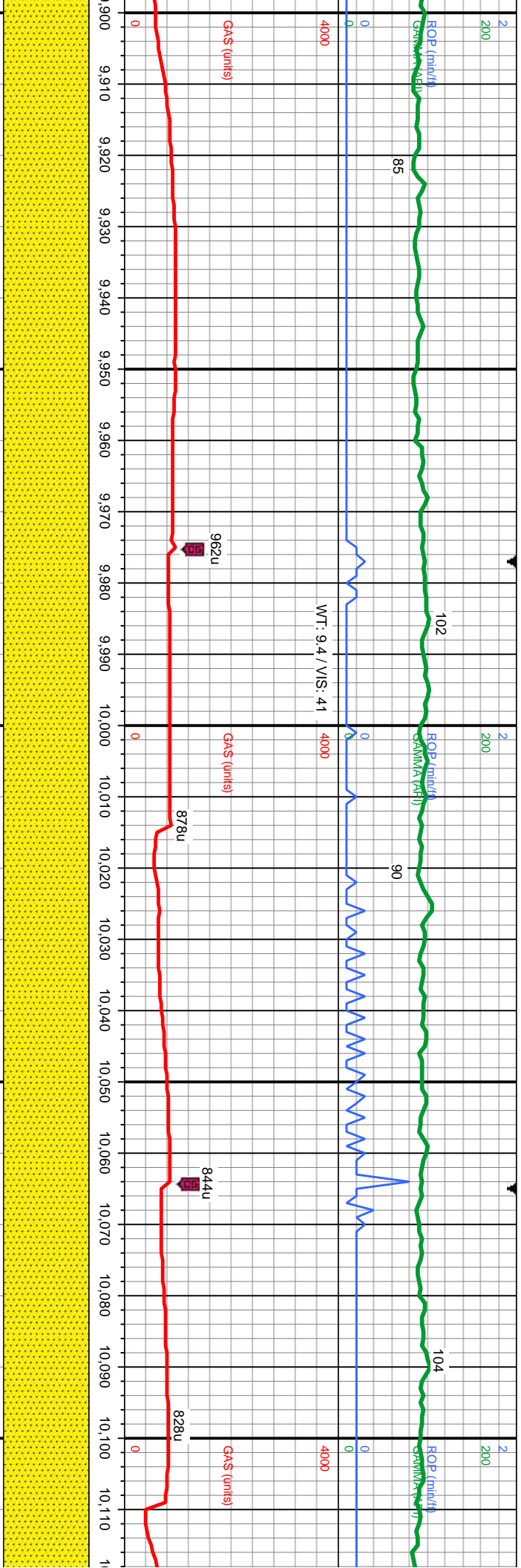
GAS (units)

4000

GAS (units)

4000





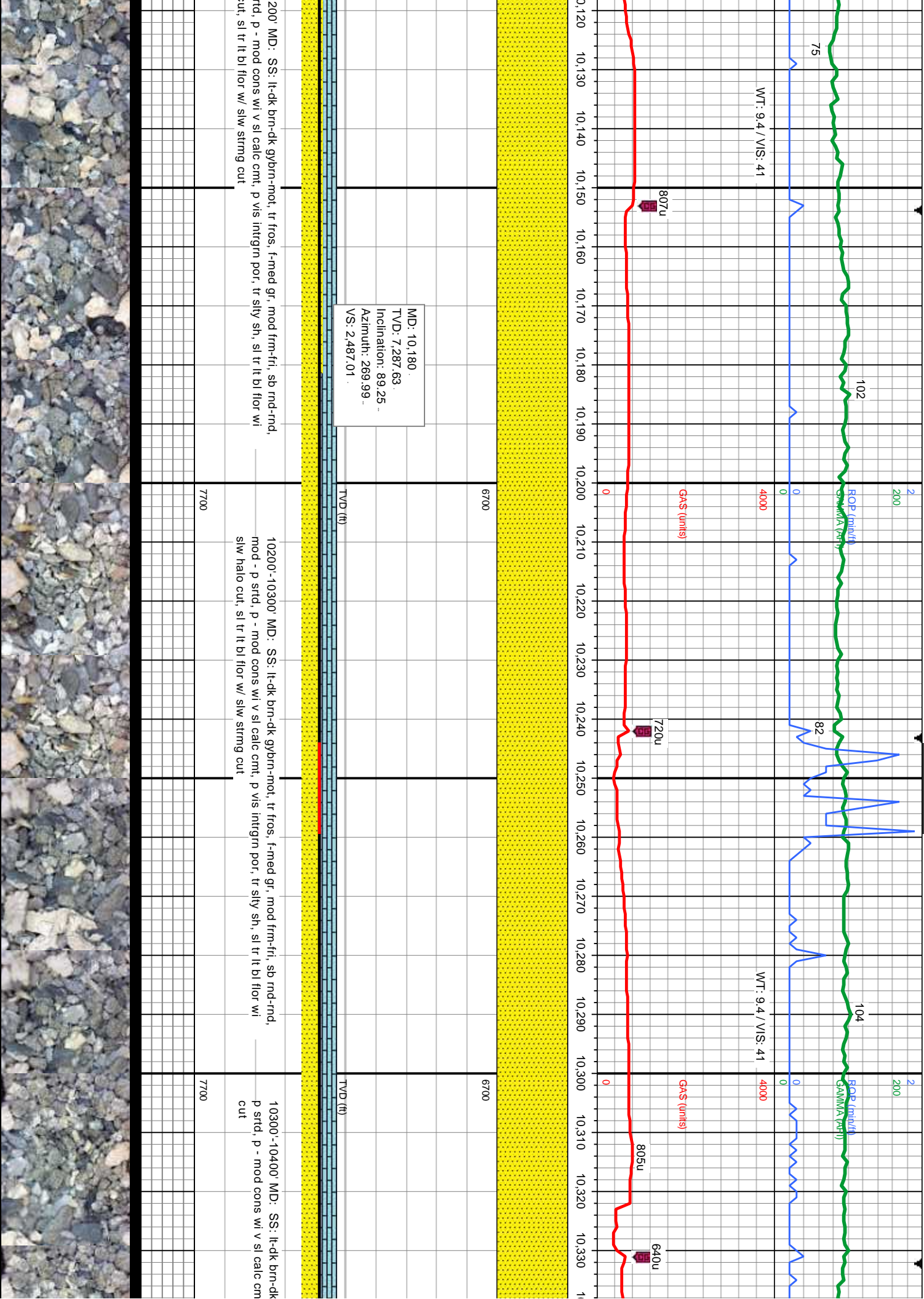
MD: 9,913.
TVD: 7,288.3
Inclination: 91.04
Azimuth: 271.27
VS: 2,220.07

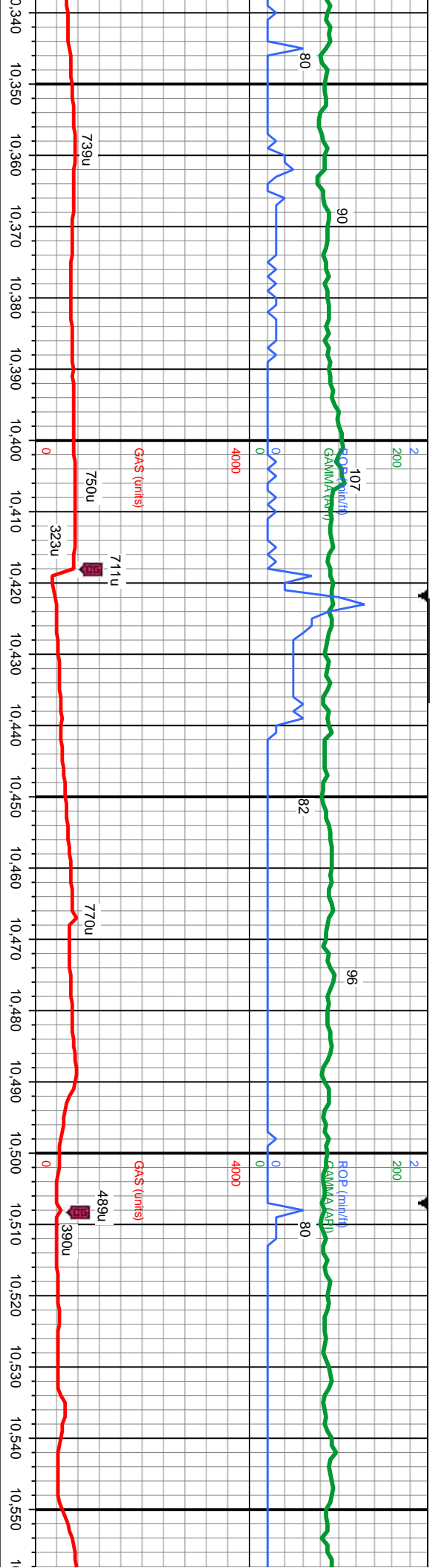
9,900'-10000' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cmt, p vis intrgrn por, tr sily sh, rr bent, sl tr lt bl flr wi slw halo cut, sl tr lt bl flr wi slw halo cut

10000'-10100' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cmt, p vis intrgrn por, tr sily sh, rr bent, sl tr lt bl flr wi slw halo cut, sl tr lt bl flr w/ slw strng cut

10100'-10110' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cmt, p vis intrgrn por, tr sily sh, rr bent, sl tr lt bl flr wi slw halo cut, sl tr lt bl flr w/ slw strng cut







MD: 10,358.
TVD: 7,287.55.
Inclination: 90.8 -
Azimuth: 271.29 -
VS: 2,664.97 .

TVD (ft)

6700

TVD (ft)

6700

MD: 10,536.
TVD: 7,287.86.
Inclination: 89 -
Azimuth: 270.55 -
VS: 2,842.95 .

gybrn-mol, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod -
t, p vis intrgrn por, tr silty sh, sl tr lt bl flr wi slw halo

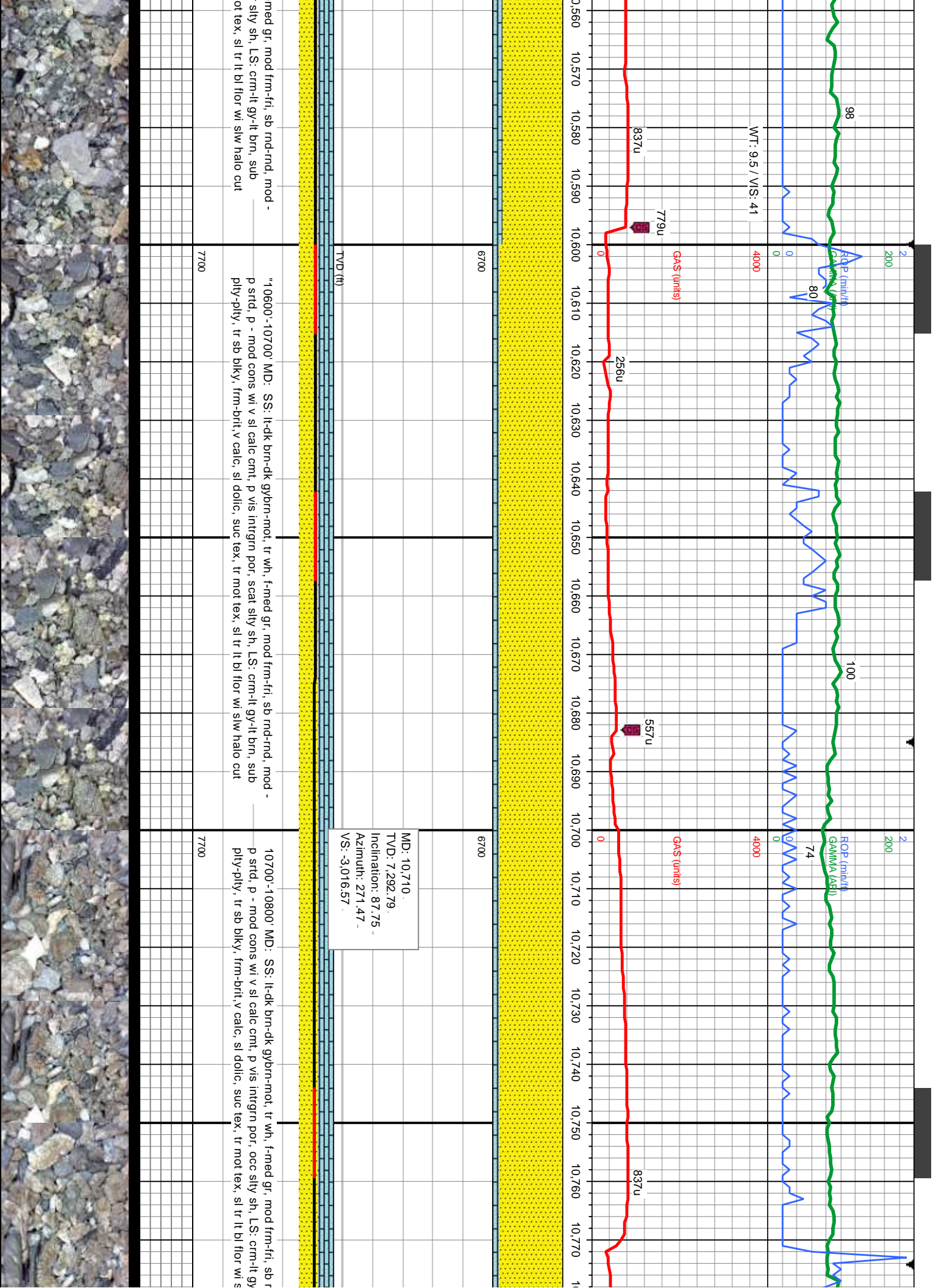
10400'-10500' MD: SS: lt-dk brn-dk gy brn, occ wh, tr fros, f-med gr, mod frm-fri, sb rnd-rnd,
mod - p strd, p - mod cons wi v sl calc cntl, p vis intrgrn por, tr silty sh, LS: crm-lt gy-lt brn,
sub pily-pily, tr sb blk, frm-brt, v calc, sl dolc, suc tex, tr mot tex, sl tr lt bl flr wi slw halo
cut

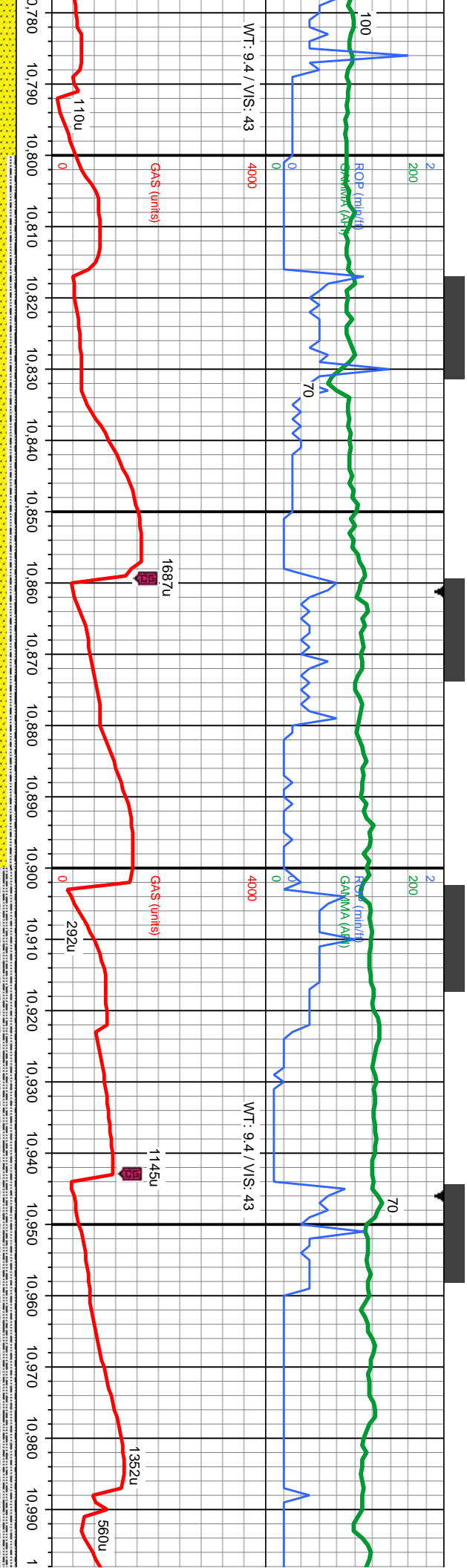
7700

10500'-10600' MD: SS: lt-dk brn-dk gybrn-mol, tr fros, f-
p strd, p - mod cons wi v sl calc cntl, p vis intrgrn por, tr
pily-pily, tr sb blk, frm-brt, v calc, sl dolc, suc tex, tr m

7700







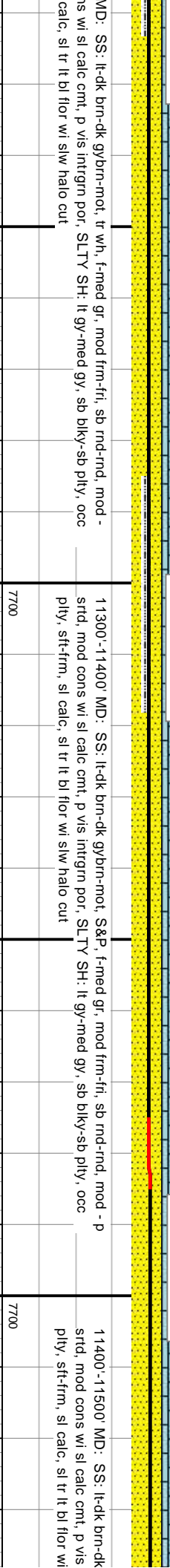
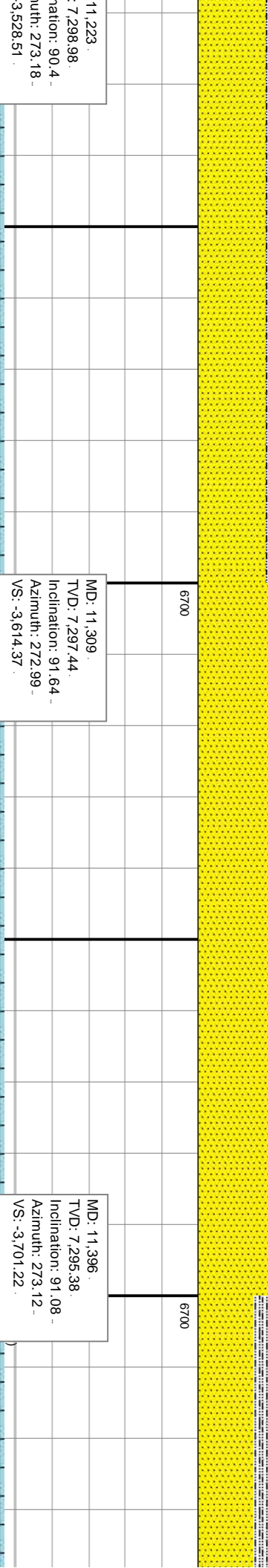
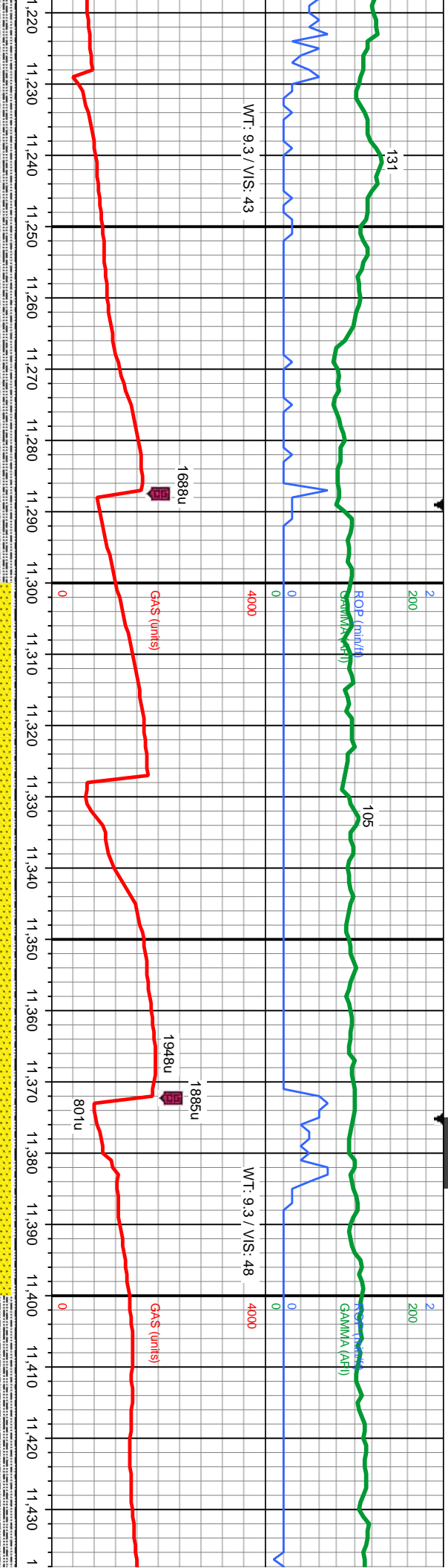
MD: 10,795.
TVD: 7,296.41.
Inclination: 87.38 -
Azimuth: 271.67 -
VS: -3,101.46.

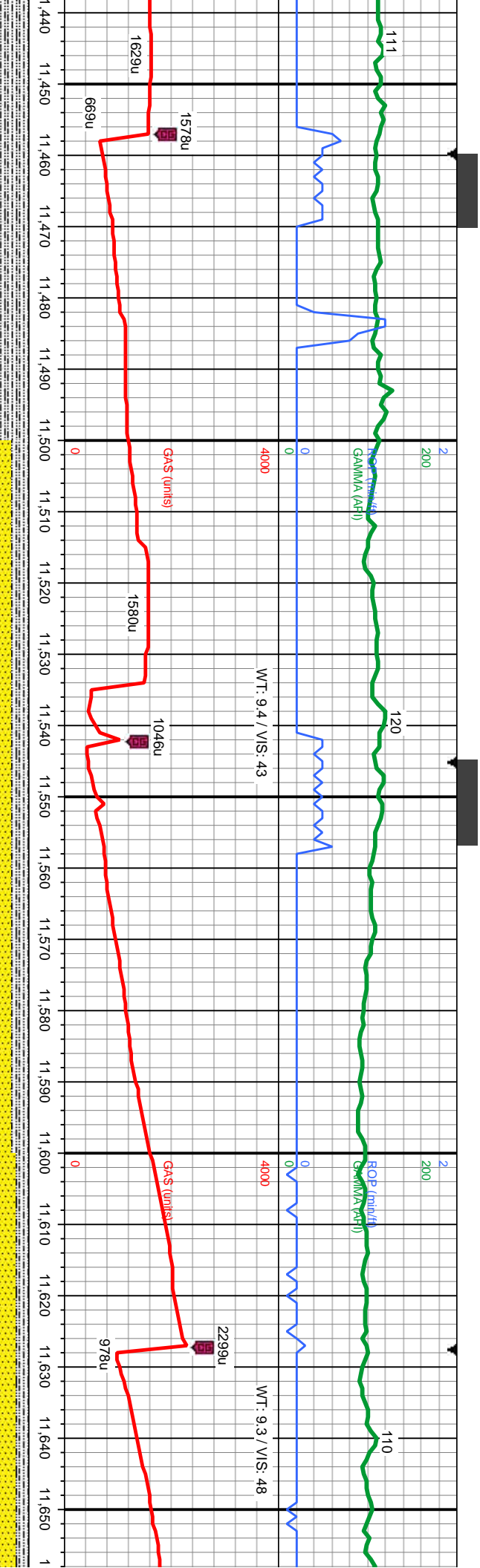
MD: 10,880.
TVD: 7,299.97.
Inclination: 87.81 -
Azimuth: 272.67 -
VS: -3,186.33.

MD: 10,968.
TVD: 7,301.42.
Inclination: 90.31 -
Azimuth: 274.49 -
VS: -3,274.13.

nd-rnd, mod - il-brn, sub lwr halo cut	10800'-10900' MD: SS: lt-dk brn-dk gy-brn-mot, tr wh, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons wi v sl calc cnt, p vis intrgrn por, LS: crm-lt gy-lt brn, sub ply-ply, tr sb bkly, frm-brt, v calc, sl dolc, suc tex, tr mot tex, SLTY SH: lt gy-med gy, sb bkly-sb ply, stf-frm, sl calc, sl tr lt bl flwr wi slw halo cut	7700
	10900'-11000' MD: SS: lt-dk brn-dk gy-brn-mot, tr wh, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, mod cons wi sl calc cnt, p vis intrgrn por, SLTY SH: lt gy-med gy, sb bkly-sb ply, stf-frm, sl calc, sl tr lt bl flwr wi slw halo cut	7700







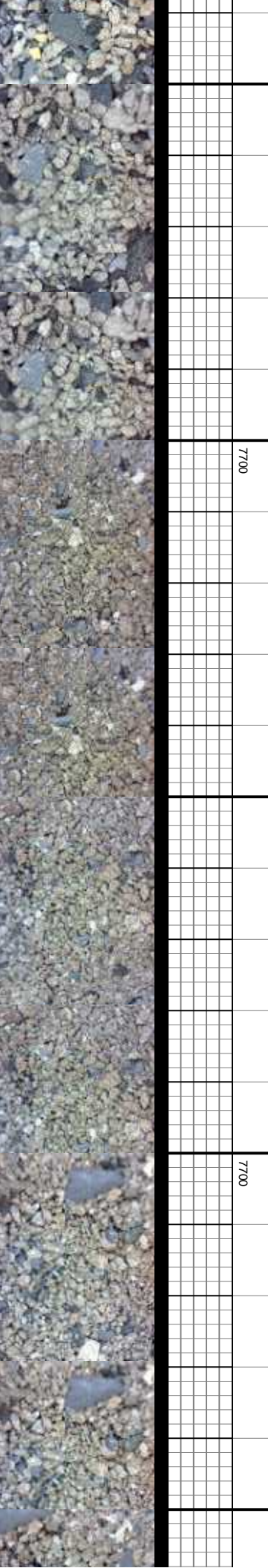
MD: 11,481
TVD: 7,293.85
Inclination: 90.98
Azimuth: 273.23
VS: -3,786.08

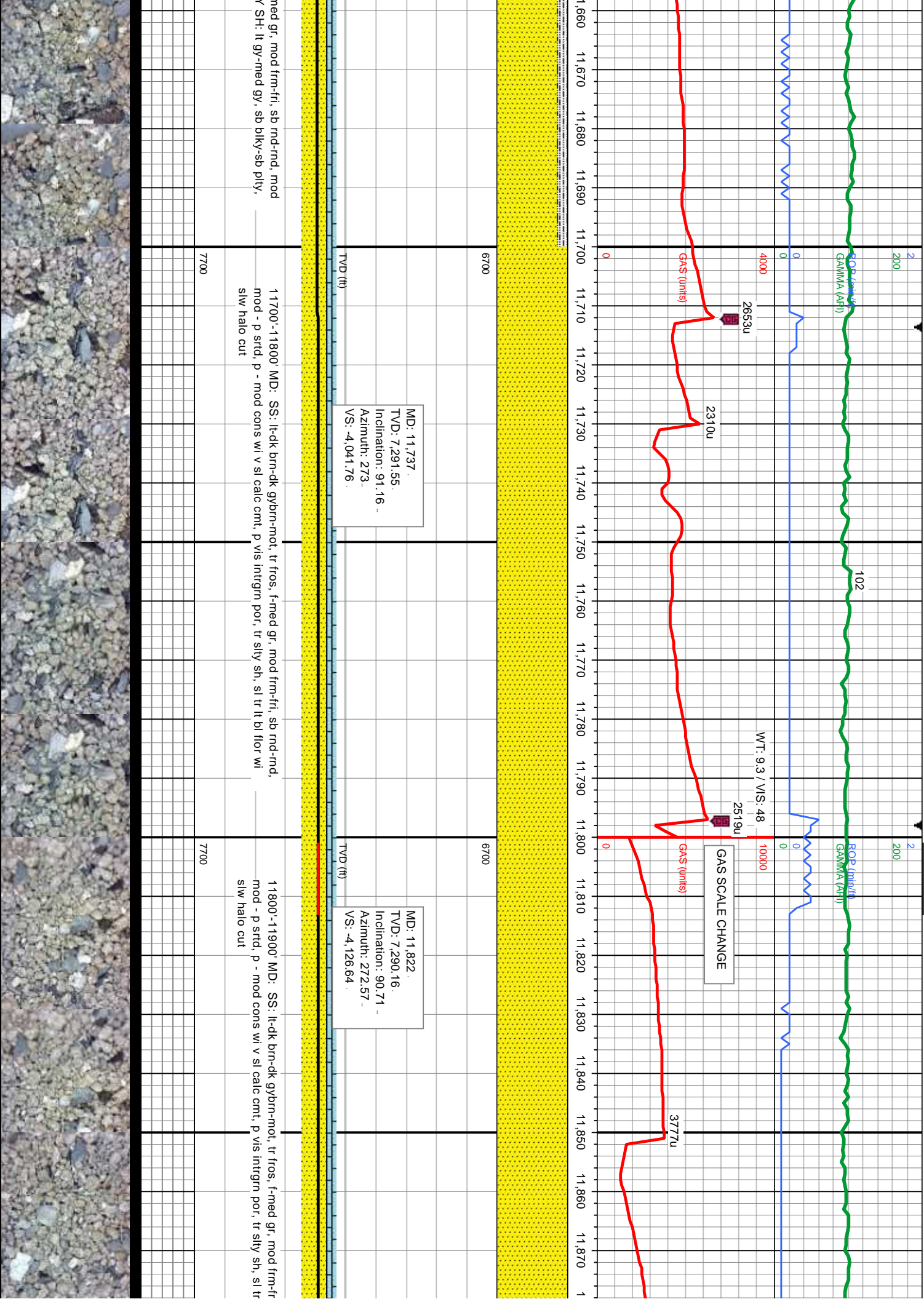
MD: 11,566
TVD: 7,293.18
Inclination: 89.93
Azimuth: 272.53
VS: -3,870.97

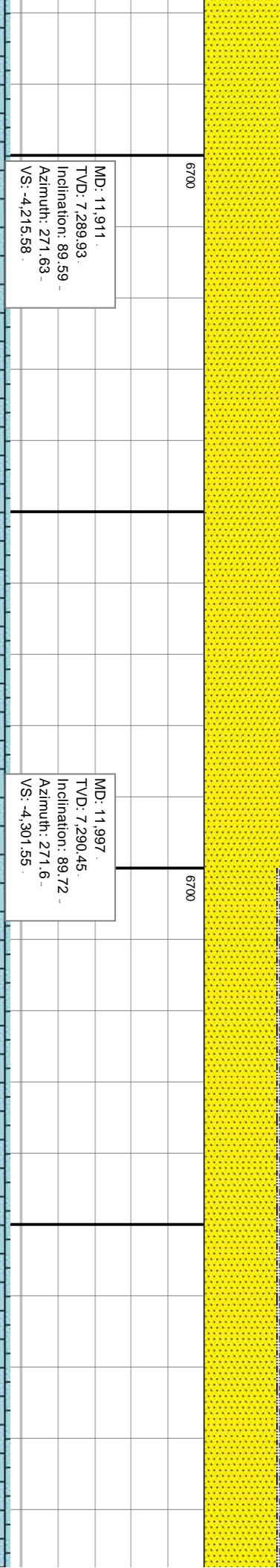
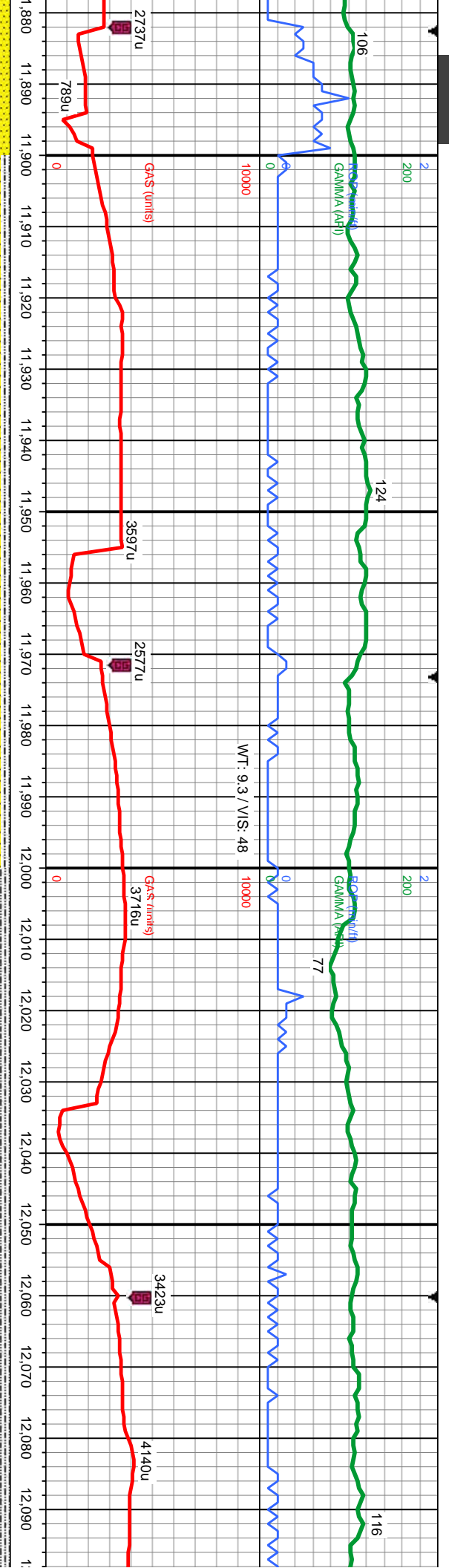
gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p
intrgrn por, SLTY SH: lt gy-med gy, sb blk-y-sb ply, occ
slw halo cut

11500'-11600' MD: SS: lt-dk brn-dk gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p
srtd, mod cons wi sl calc cntl, p vis intrgrn por, SLTY SH: lt gy-med gy, sb blk-y-sb ply, occ
ply, sft-frm, sl calc, sl tr lt bl flwr wi slw halo cut

11600'-11700' MD: SS: lt-dk brn-dk gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p
- p srtd, mod cons wi sl calc cntl, p vis intrgrn por, SLTY SH: lt gy-med gy, sb blk-y-sb ply, occ
occ ply, sft-frm, sl calc, sl tr lt bl flwr wi slw halo cut



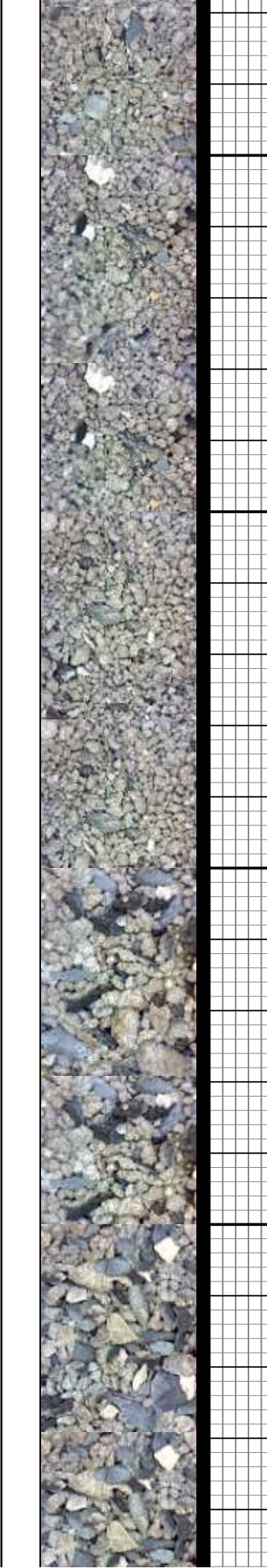


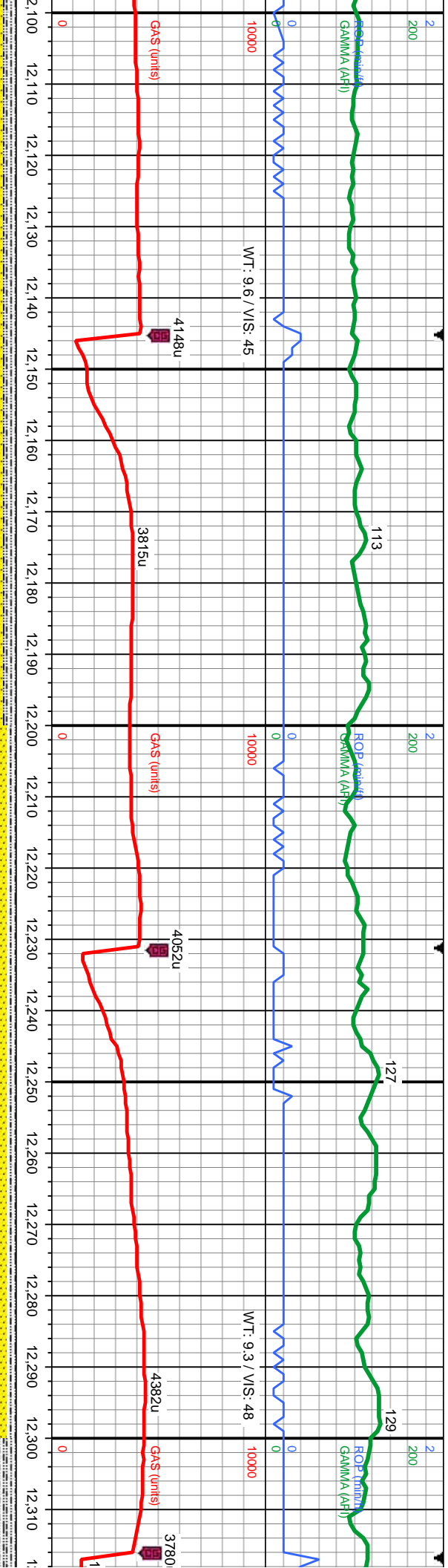


MD: 11,911
TVD: 7,289.93
Inclination: 89.59
Azimuth: 271.63
VS: -4,215.58

MD: 11,997
TVD: 7,290.45
Inclination: 89.72
Azimuth: 271.6
VS: -4,301.55

i, sb rnd-rnd, lt bl flwr wi	11900'-12000' MD: SS: lt-dk brn-dk gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, mod cons wi sl calc cnt, p vis intrgrn por, SLTY SH: lt gy-med gy, sb blk-y-sb plty, occ plty, sft-frn, sl calc, sl tr lt bl flwr wi slw halo cut	12000'-12100' MD: SS: lt-dk brn-dk gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, mod cons wi sl calc cnt, p vis intrgrn por, SLTY SH: lt gy-med gy, sb blk-y-sb plty, occ plty, sft-frn, sl calc, sl tr lt bl flwr wi slw halo cut
7700	7700	7700





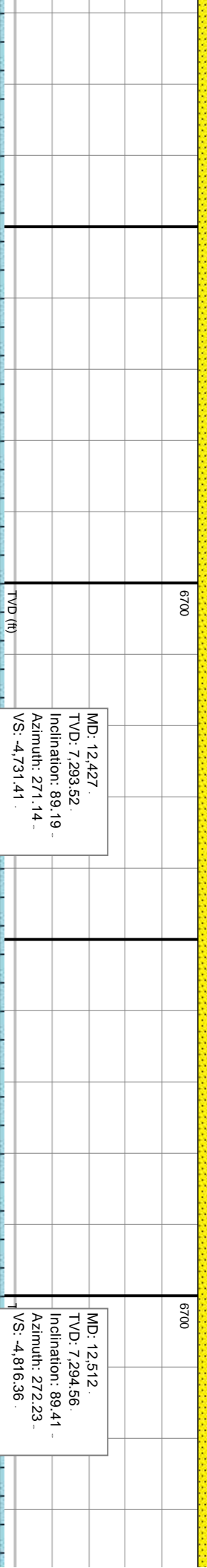
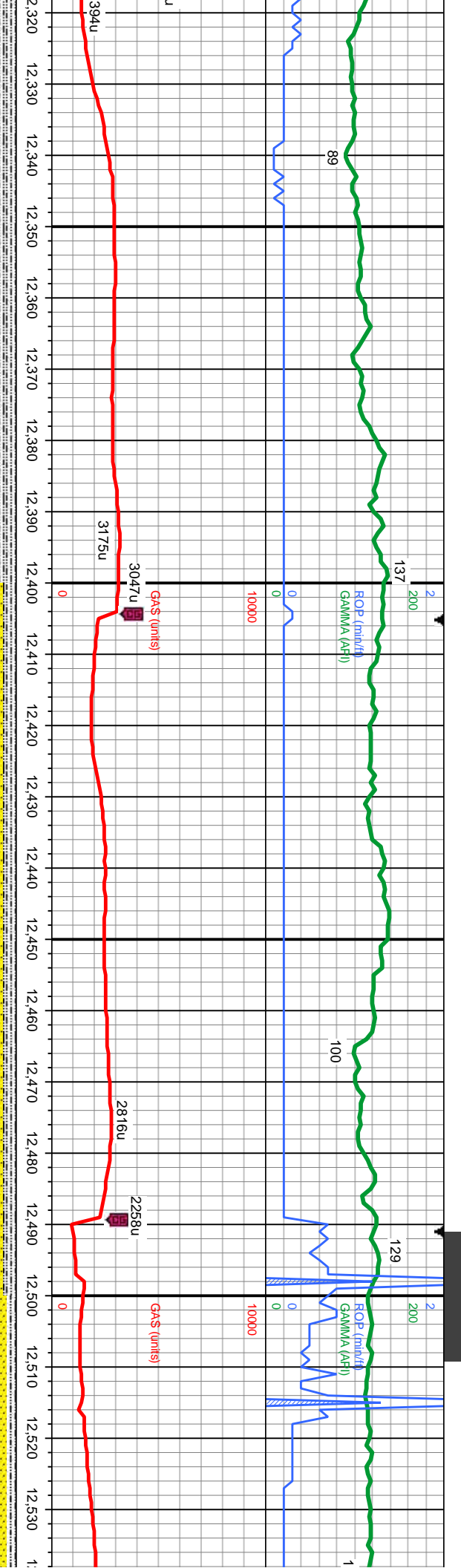
6700	6700	6700
MD: 12,169. TVD: 7,291.2. Inclination: 89.78 - Azimuth: 271.41 - VS: -4,473.48.		
TVD (ft)	TVD (ft)	TVD (ft)

12100'-12200' MD: SS: lt-dk brn-dk gybrn-mot, S&P, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, mod cons w/ sl calc cmf, p vis intrgrn por, SLTY SH: lt gy-med gy, sb blk-yl-sb ply, ooc ply, sft-frm, sl calc, sl tr lt bl flwr w/ slw string cut

12200'-12300' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cmf, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ slw halo cut, sl tr lt bl flwr w/ slw string cut

12300'-12400' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cmf, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ slw halo cut, sl tr lt bl flwr w/ slw string cut





MD: 12,427
TVD: 7,293.52
Inclination: 89.19
Azimuth: 271.14
VS: -4,731.41

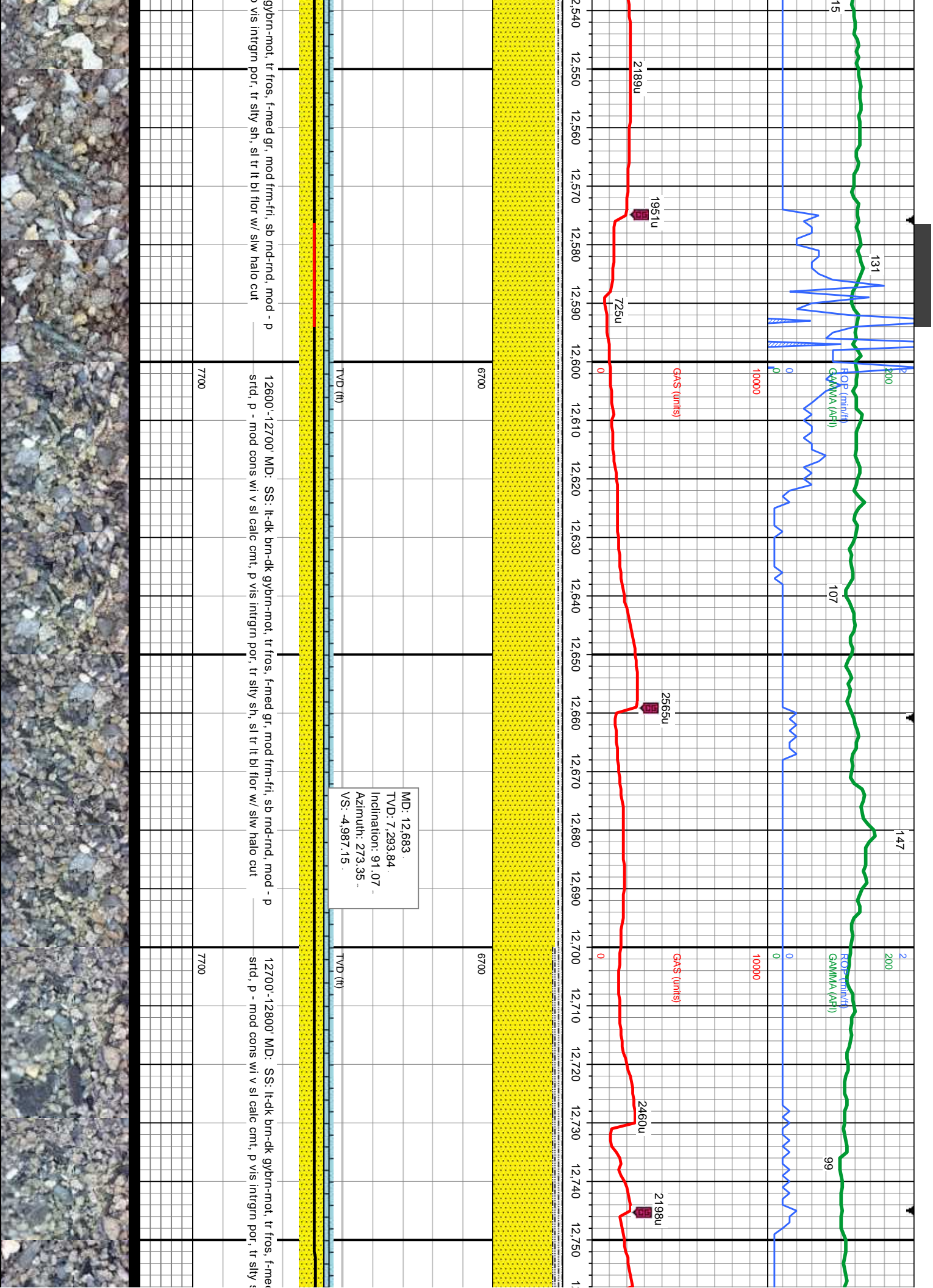
MD: 12,512
TVD: 7,294.56
Inclination: 89.41
Azimuth: 272.23
VS: -4,816.36

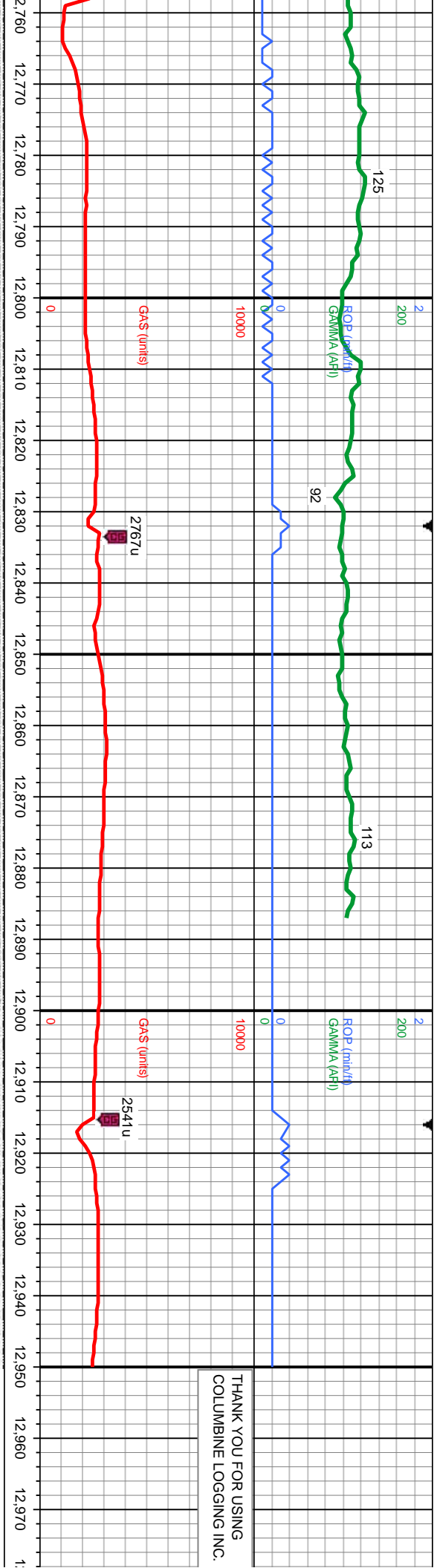
00' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, strd, p - mod cons w/ v sl calc cnt, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ lt, sl tr lt bl flwr w/ slw strng cut

12400'-12500' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p strd, p - mod cons w/ v sl calc cnt, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ slw halo cut, sl tr lt bl flwr w/ slw strng cut

12500'-12600' MD: SS: lt-dk brn-dk strd, p - mod cons w/ v sl calc cnt, p



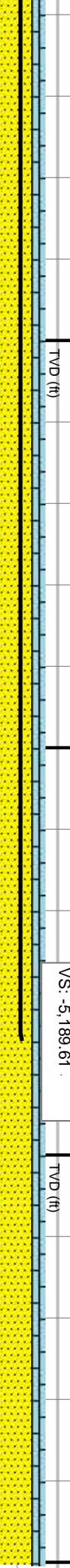




THANK YOU FOR USING
COLUMBINE LOGGING INC.

WELL TDID @12950' @
19:45 HRS ON 10/07/14

MD: 12,886
TVD: 7,287.87
Inclination: 92.3
Azimuth: 274.25
VS: -5,189.61



d gr, mod frm-fri, sb rnd-rnd, mod - p
h, sl tr lt bl flwr w/ slw halo cut
12800'-12900' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p
srted, p - mod cons w/ v sl calc cnt, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ slw halo cut
12900'-12950' MD: SS: lt-dk brn-dk gybrn-mot, tr fros, f-med gr, mod frm-fri, sb rnd-rnd, mod - p
gr, mod frm-fri, sb rnd-rnd, mod - p srted, p - mod cons w/ v sl
calc cnt, p vis intrgrn por, tr silty sh, sl tr lt bl flwr w/ slw
halo cut



