



Scale: 5" / 100'
Measured Depth Log

Well Name Pronghorn 21-24-17HNB

Location NWNW SECTION 17, T5N, R61W

State COLORADO

County WELD

Country USA

Rig Number CADE 25

API Number 05-123-39393

Region DJ BASIN

Field WATTENBERG

Spud Date 6/16/2014

Drilling Completed 6/21/2014

Surface Coordinates 350' FNL x 1186' FWL

Bottom Hole Coordinates 402' FSL x 2012' FWL

Ground Elevation 4592'

K.B. Elevation 4609'

Logged Interval 5660' To 10749'

Total Depth 10749'

Formation NIOBRARA B CHALK

Type of Drilling Fluid FW LSND

Company Bonanza Creek
Address 410 17th STRE
DENVER, CO 8

Name BRANT LOGAN
Company BONANZA CRE
Address 410 17th STRE
DENVER, CO 8

COLUMBINE LOGGING, INC
WELL SITE GEOLOGISTS

Operator

Energy Inc.

ET, SUITE 1500
0202

Geologist

EEK ENERGY INC.

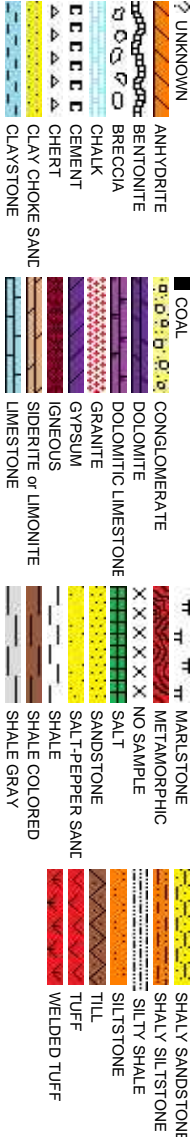
ET, SUITE 1500
0202

Other

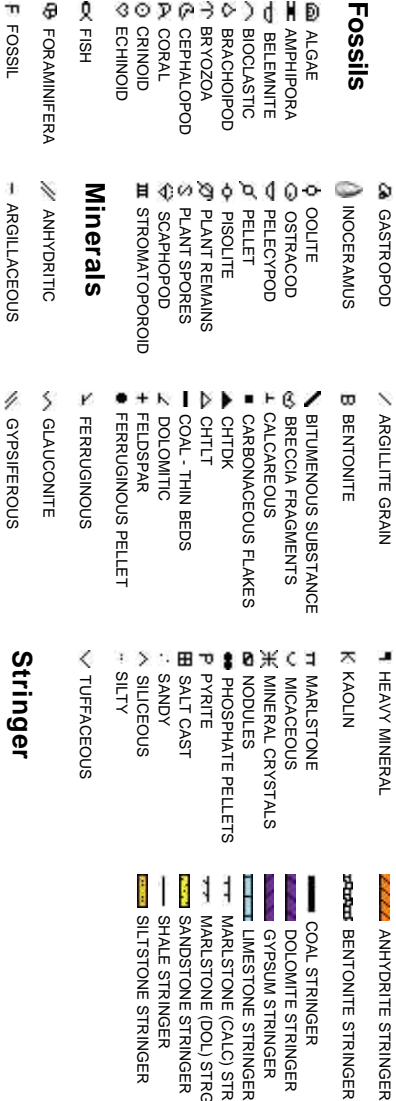
2385 S. LIPAN ST.
DENVER, CO 80223

JOEY LUCE
JEFF LACY

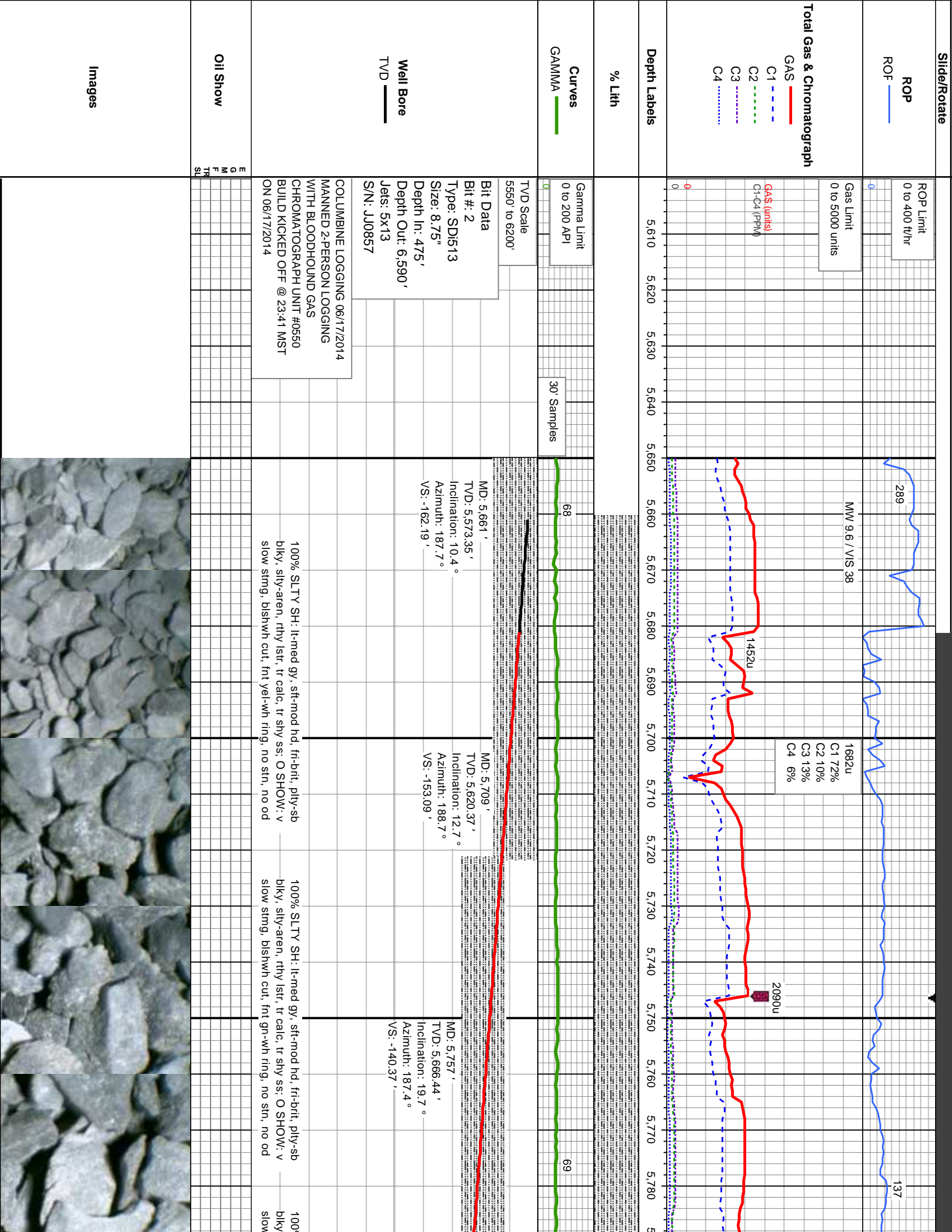
Rock Types

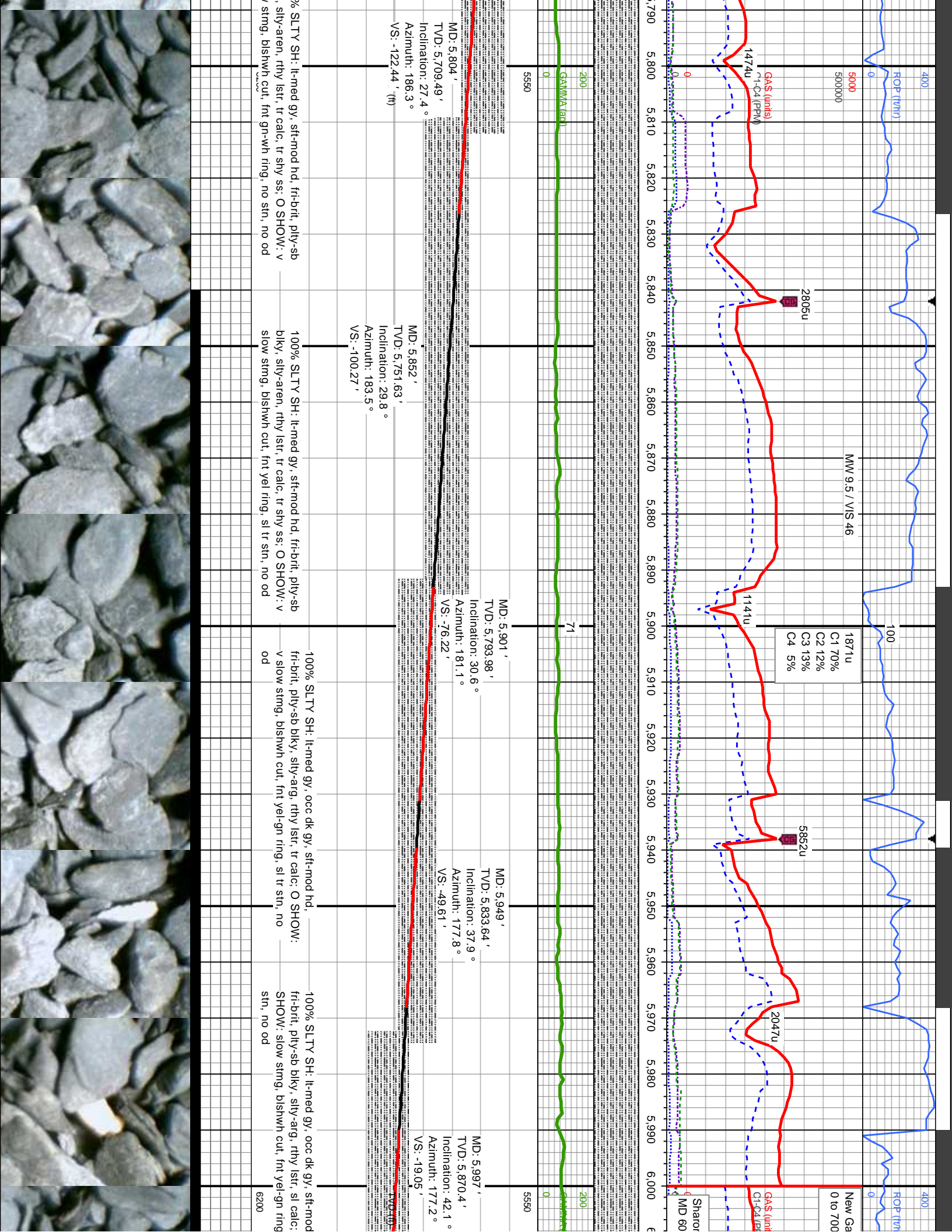


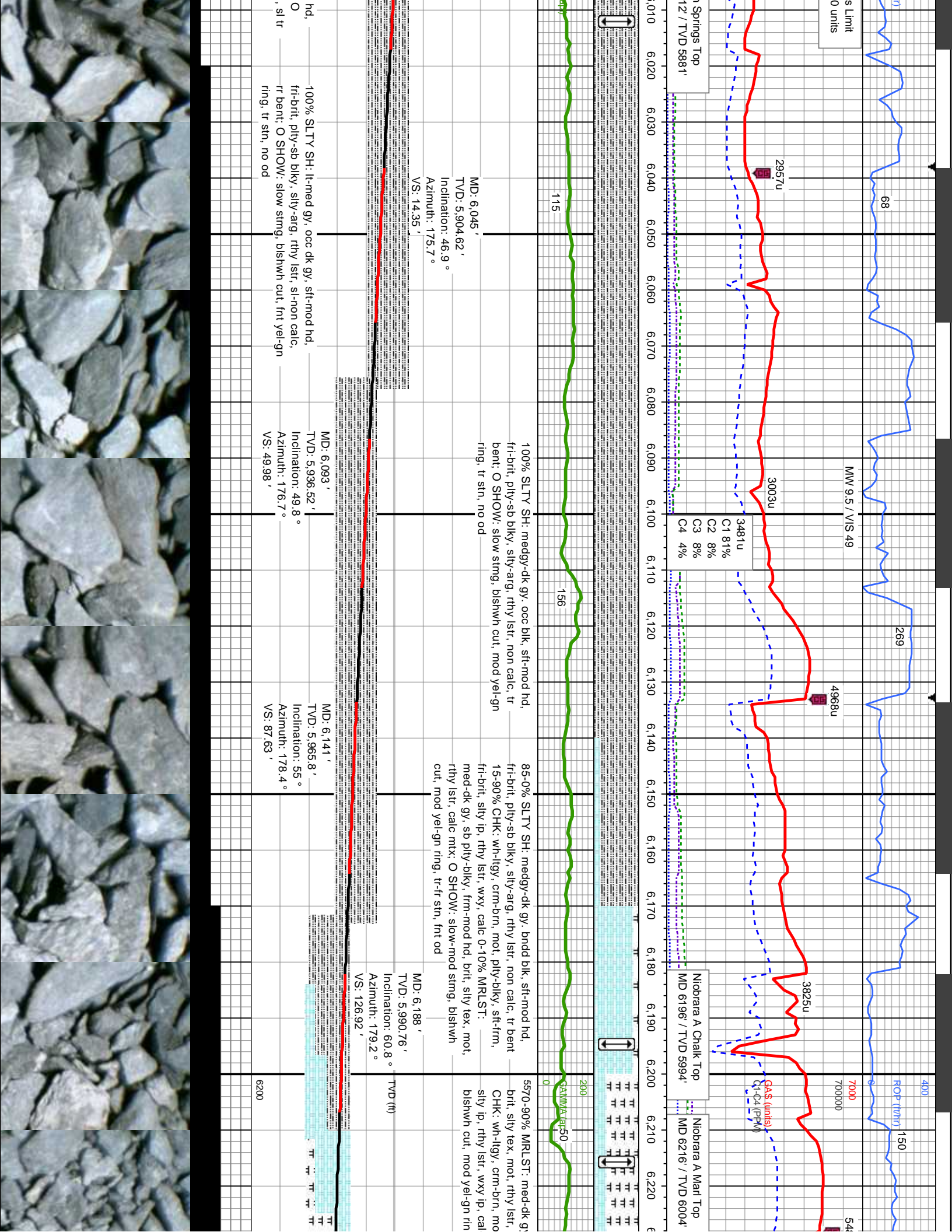
Accessories

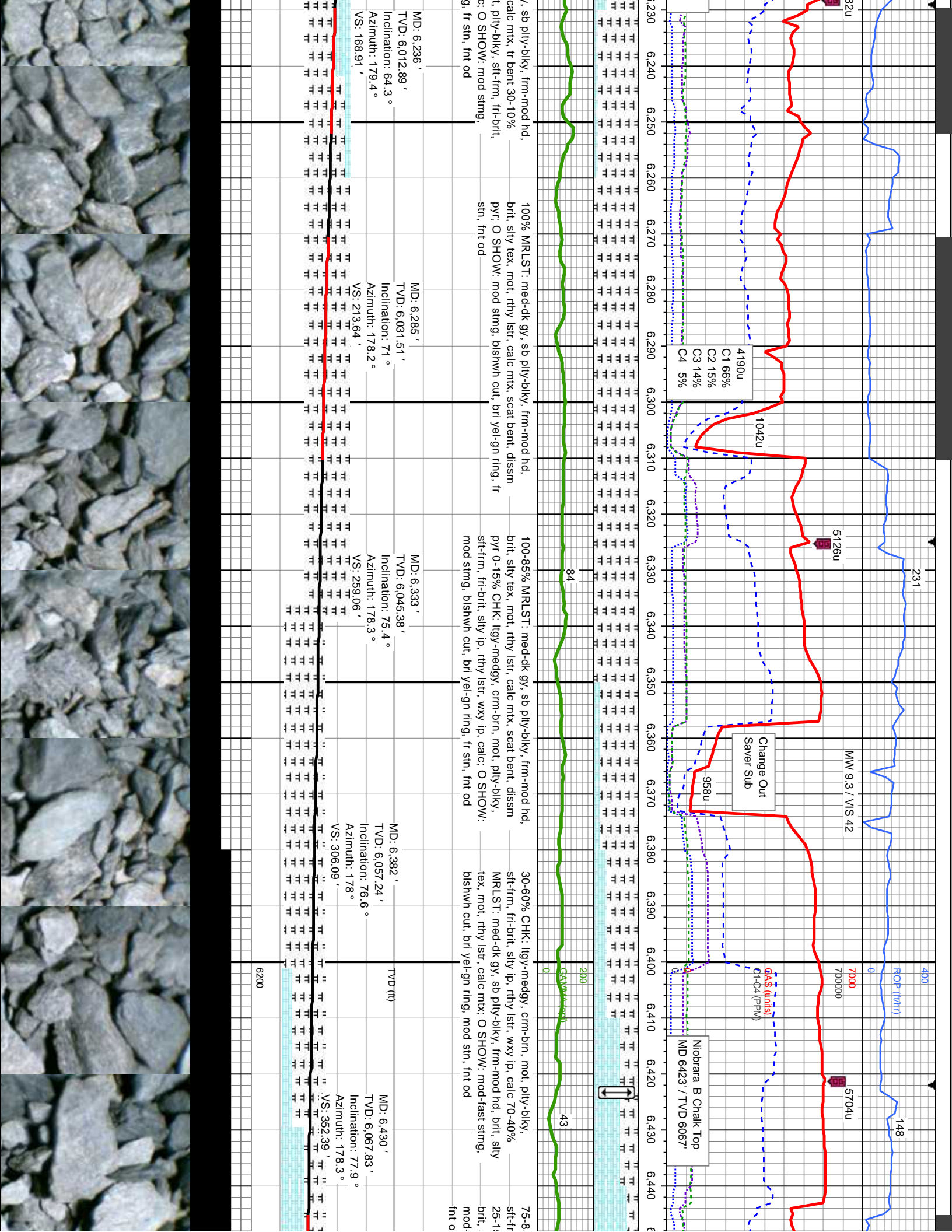


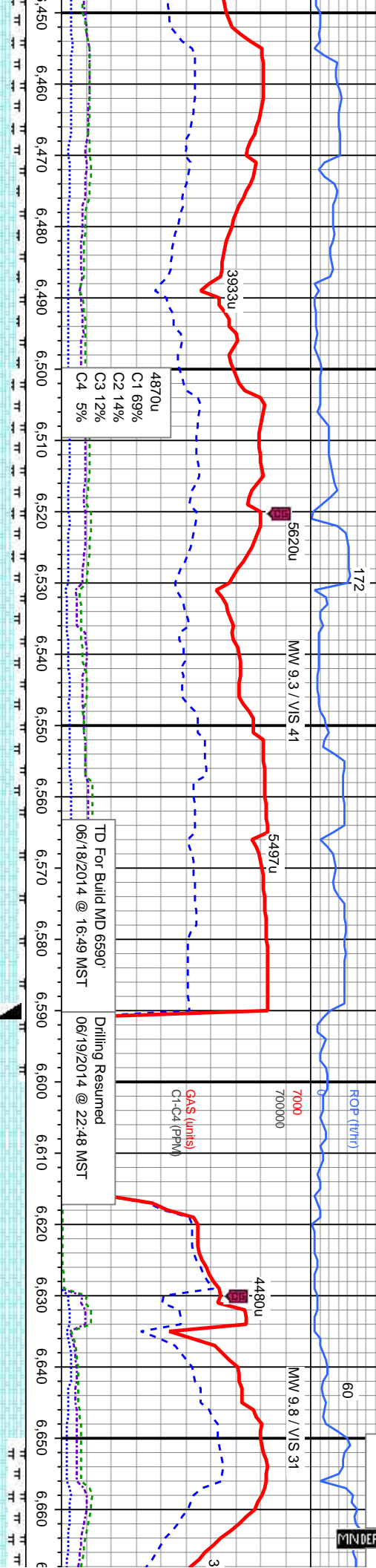
Stringer











55% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, dissim pyr 25-20% MRLST: med-dk gy, sb pily-blky, frm-mod hd, silty tex, mot, rthy lstr, calc mix; O SHOW: fast stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od

75-80% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, dissim pyr 25-20% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brlt, silty tex, mot, rthy lstr, calc mix; O SHOW: mod-fast stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od

90% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, dissim pyr 10% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brlt, silty tex, mot, rthy lstr, calc mix; O SHOW: mod-fast stmg, bri blshwh cut, bri yel-gn ring, mod stn, fnt od

55% 100% CHK: wh-llgy, crm, not, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, dissim pyr, tr mlst O SHOW: fast stmg, bri blshwh cut, bri yel-gn ring, g stn, tr od

70% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, dissim pyr 25-20% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brlt, silty tex, mot, rthy lstr, calc mix; O SHOW: fast stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od

MD: 6,479 '
TVD: 6,077.09 '
Inclination: 80.3 °
Azimuth: 178 °
VS: 399.98 '

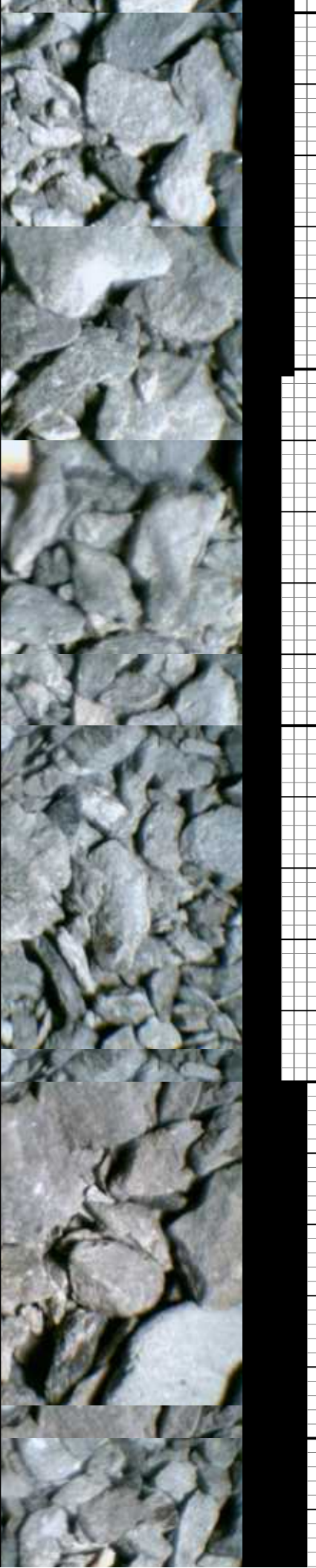
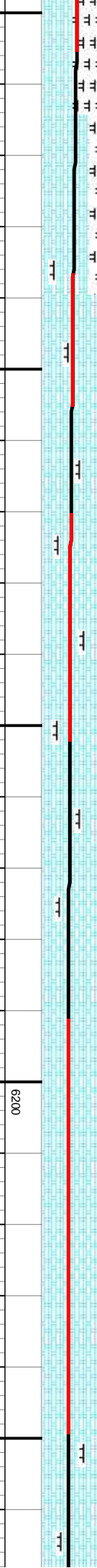
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TVD: 6,083.56 '
Inclination: 84.2 °
Azimuth: 178.3 °
VS: 447.01 '

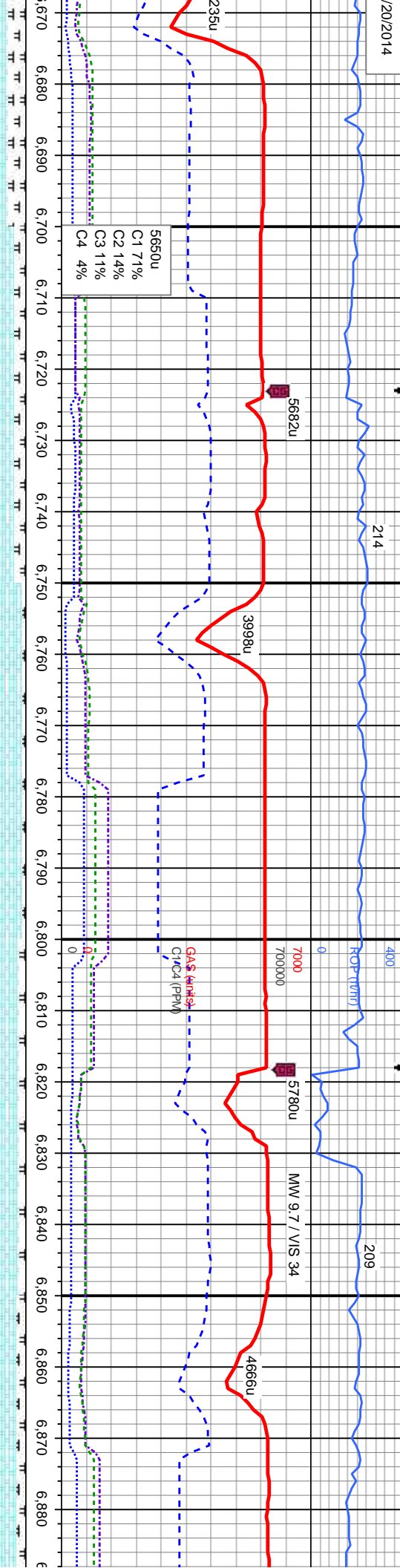
MD: 6,549 '
TVD: 6,085.2 '
Inclination: 87.3 °
Azimuth: 178.1 °
VS: 468.71 '

MD: 6,587 '
TVD: 6,086.09 '
Inclination: 90 °
Azimuth: 176.1 °
VS: 506.37 '

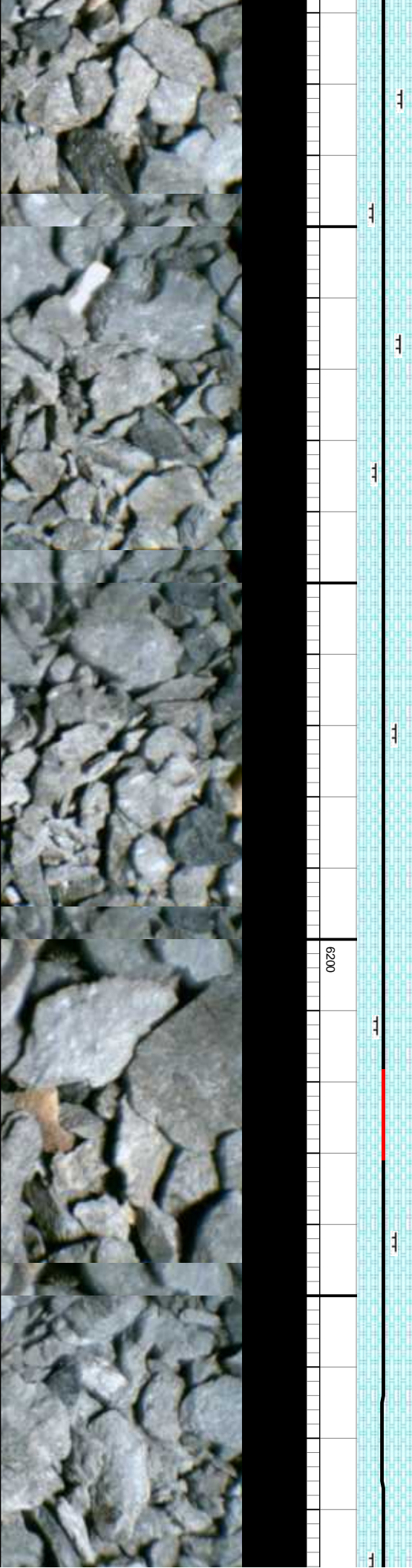
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Size: 6.125"
Depth In: 6,590 '
Depth Out: 10,749 '
Jets: 5x14
S/N: JH6872

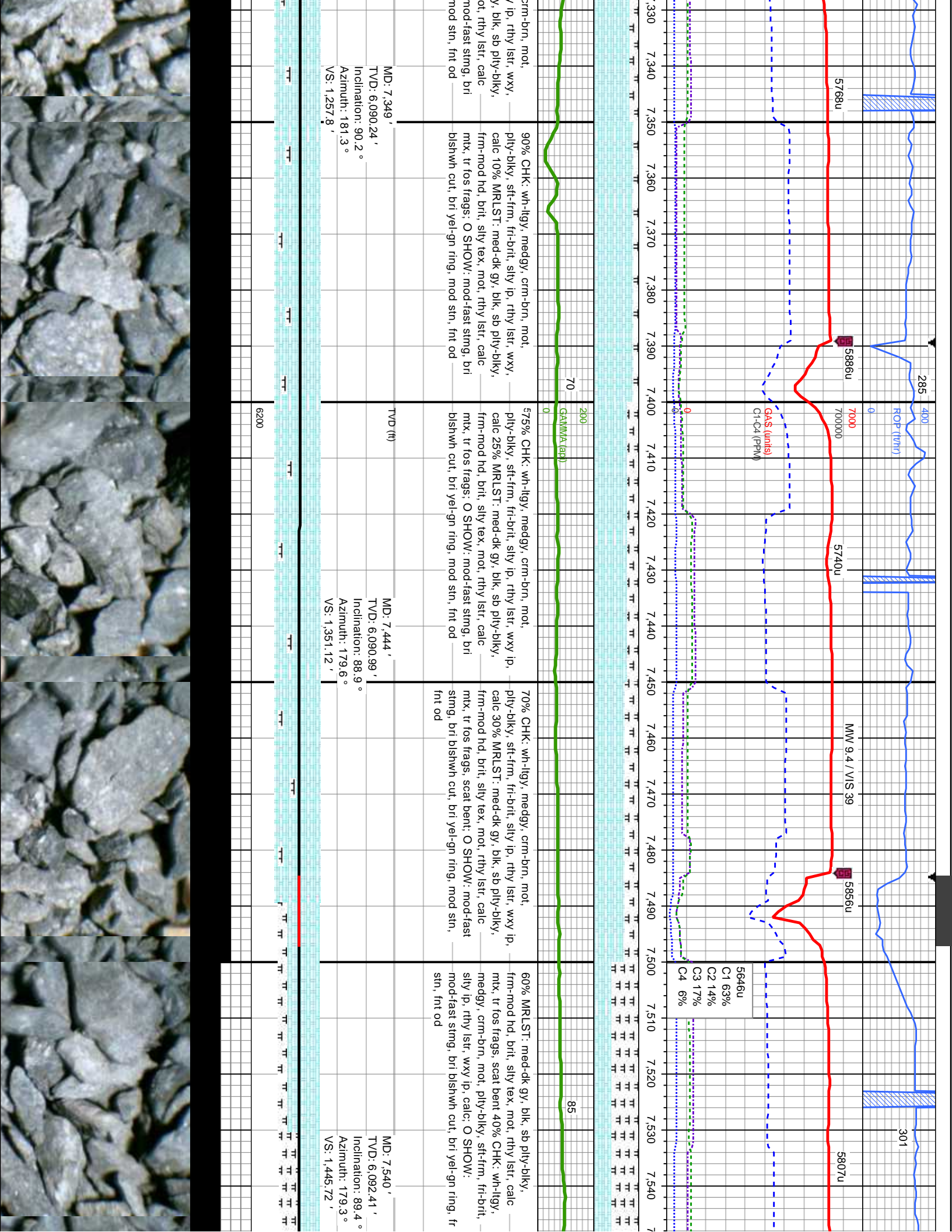
Bit Data
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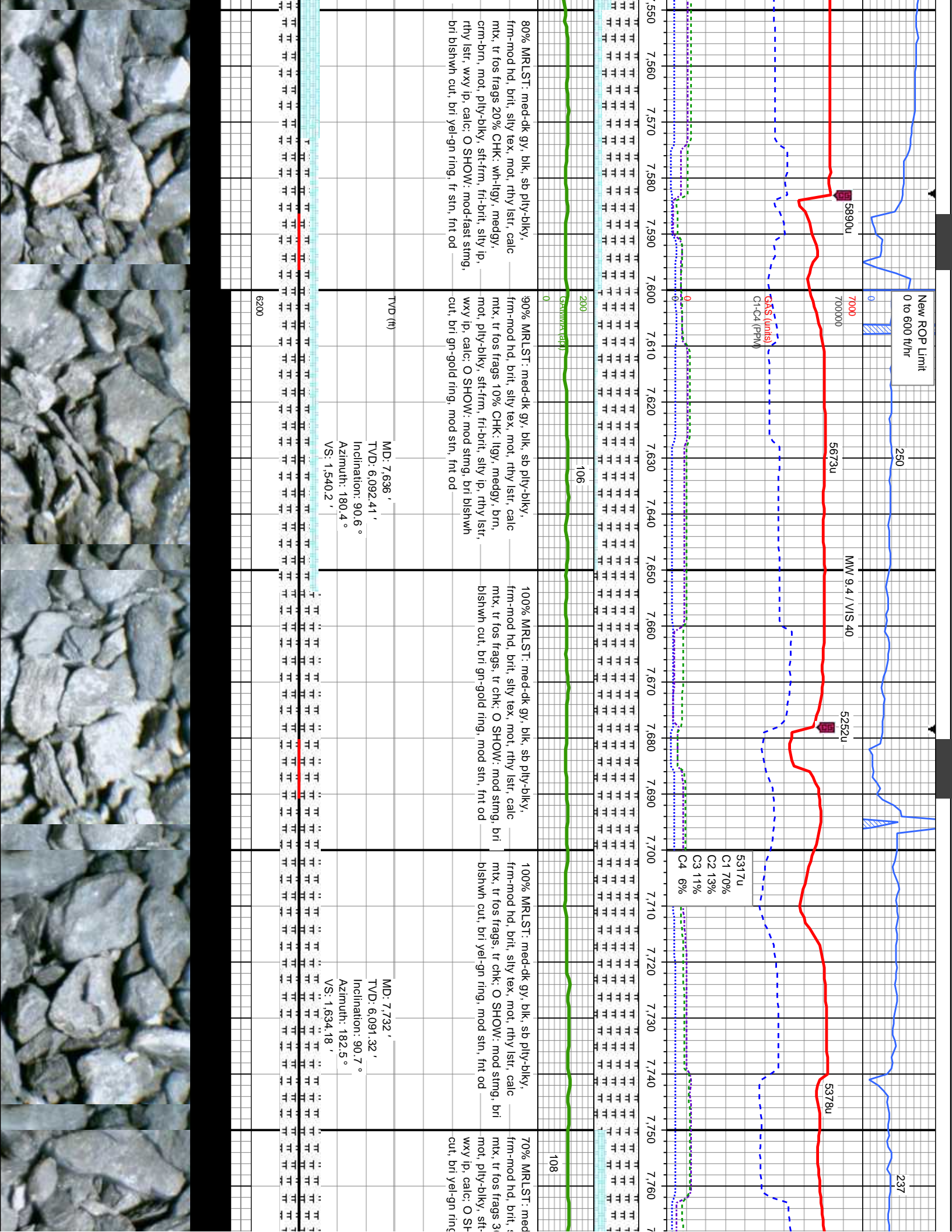


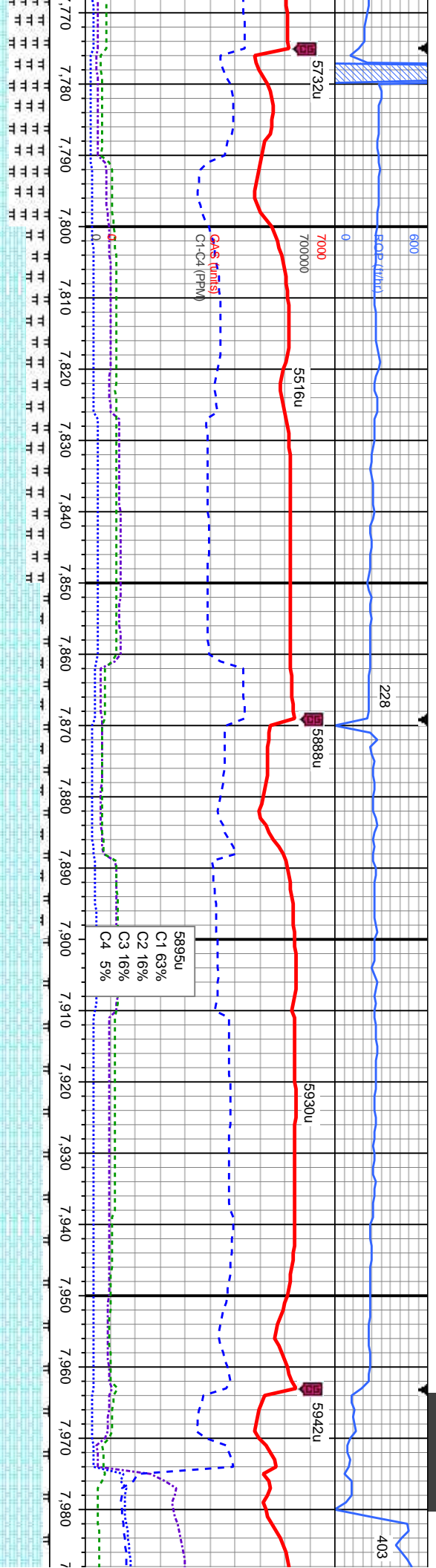


gy, medgy, crm-brn, mot, , fri-brit, silty ip, rthy lstr, wxy, 20% MRLST: med-dk gy, sb od hd, brit, silty tex, mot, rthy SHOW: fast stmg, bri blshwh ng, g stn, tr od	80% CHK: wh-ilgy, medgy, crm-brn, mot, pily-biky, sft-firm, fri-brit, silty ip, rthy lstr, wxy, calc, dissm pyr 20% MRLST: med-dk gy, sb pily-biky, firm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx; O SHOW: fast stmg, bri blshwh cut, bri yel-gn ring, g stn, tr od	95% CHK: wh-ilgy, medgy, crm-brn, mot, pily-biky, sft-firm, fri-brit, silty ip, rthy lstr, wxy, calc, dissm pyr 5% MRLST: med-dk gy, sb pily-biky, firm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx; O SHOW: fast stmg, bri blshwh cut, bri yel-gn ring, g stn, tr od	590% CHK: wh-ilgy, medgy, crm-brn, mot, pily-biky, sft-firm, fri-brit, silty ip, rthy lstr, wxy, calc, dissm pyr 10% MRLST: med-dk gy, sb pily-biky, firm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx; O SHOW: fast stmg, bri blshwh cut, bri yel-gn ring, g stn, tr od	85% CHK: wh-ilgy, medgy, crm-brn, mot, pily-biky, sft-firm, fri-brit, silty ip, rthy lstr, wxy, calc, dissm pyr 15% MRLST: med-dk gy, sb pily-biky, firm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx; O SHOW: fast stmg, bri blshwh cut, bri yel-gn ring, g stn, tr od
MD: 6,680 ' TVD: 6,086.82 ' Inclination: 89.1 ° Azimuth: 178.3 ° VS: 598.57 '		MD: 6,775 ' TVD: 6,087.82 ' Inclination: 89.7 ° Azimuth: 178 ° VS: 692.52 '		MD: 6,870 ' TVD: 6,088.31 ' Inclination: 89.7 ° Azimuth: 178.2 ° VS: 786.5 '



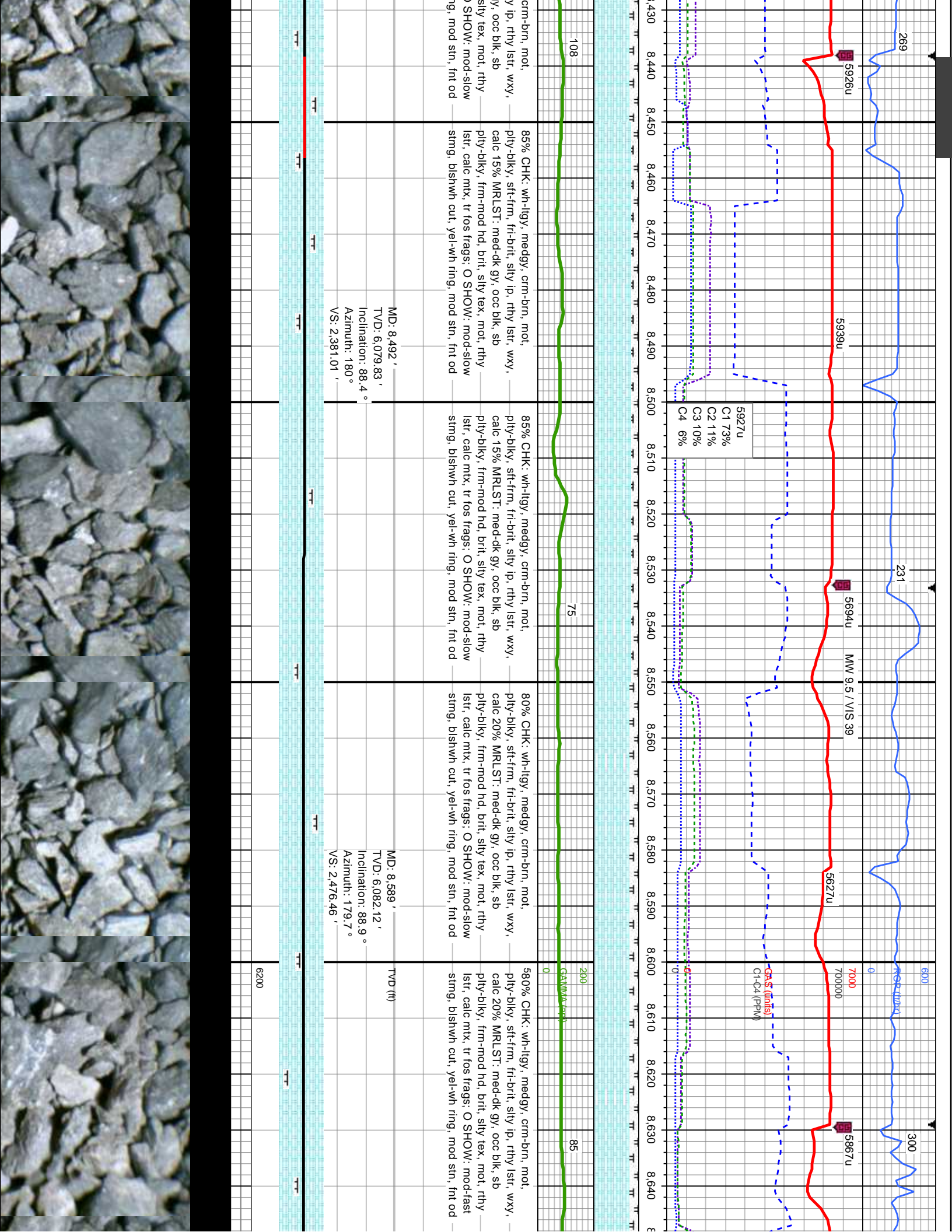


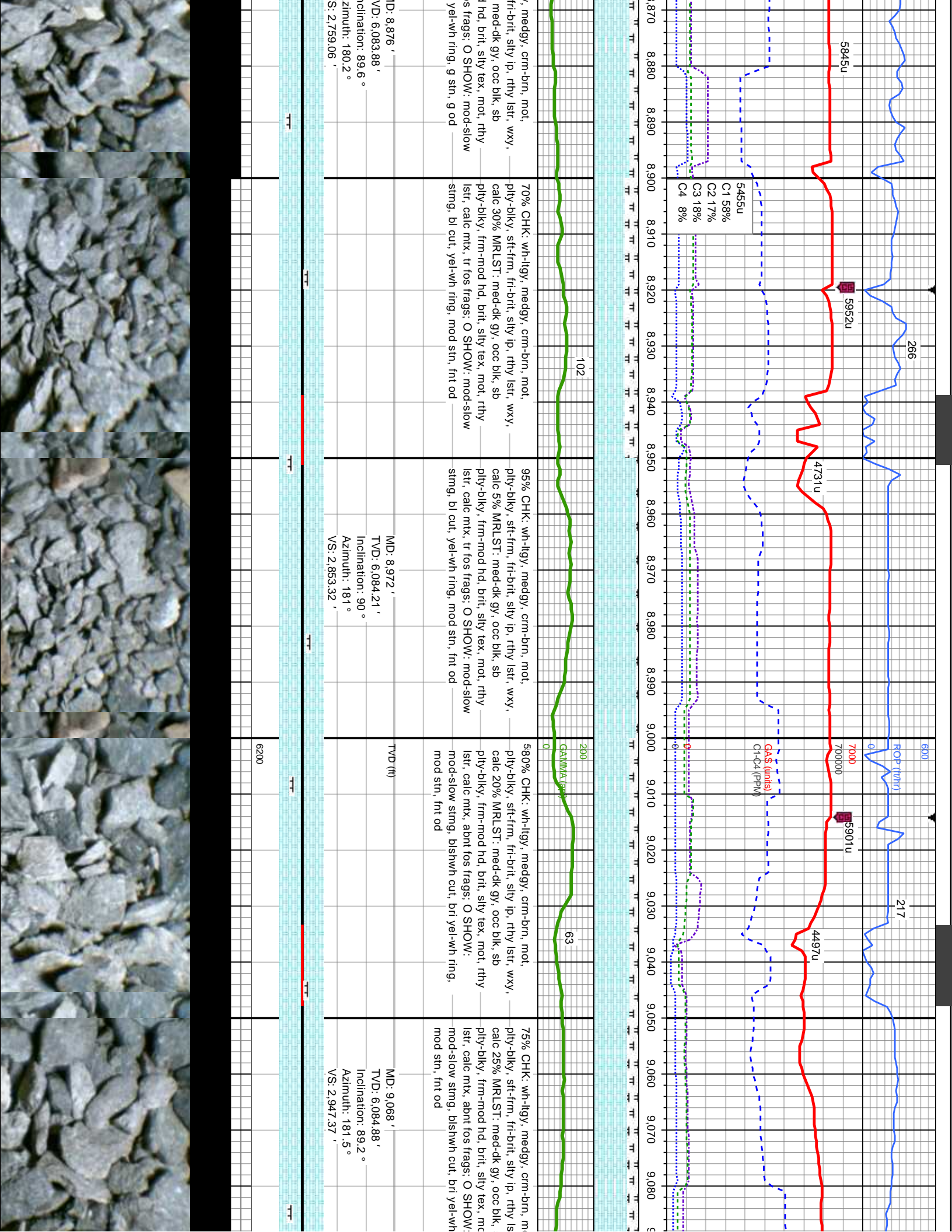


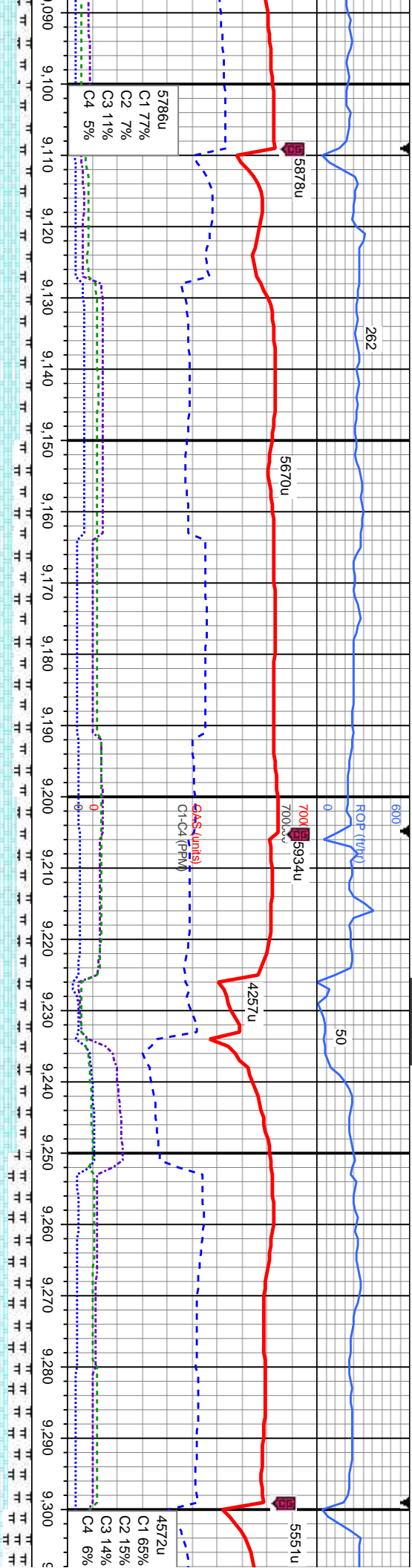


dk gy, blk, sb pily-blky, pily tex, mot, rthy lstr, calc 20% CHK: lgy, medgy, brn, frm, fri-brt, sily ip, rthy lstr, mod stmg, bri blshwh j, mod stn, fnt od	560% CHK: wh-lgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy ip, calc 40% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr fos frags: O SHOW: mod stmg, bri blshwh cut, bri yel-gn ring, mod stn, fnt od	85% CHK: wh-lgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 15% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr fos frags: O SHOW: mod stmg, bri blshwh cut, bri yel-gn ring, mod stn, fnt od	90% CHK: wh-lgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr fos frags: O SHOW: mod-fast stmg, bri blshwh cut, bri yel-gn ring, mod stn, fnt od	90% CHK: wh-lgy, medgy, crm-brn, r pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, calc 10% MRLST: med-dk gy, blk, sb p frm-mod hd, brit, sily tex, mot, rthy lstr mtx, tr fos frags: O SHOW: mod-fast s blshwh cut, bri yel-gn ring, mod stn, f
TVD (ft)	MD: 7,826 ' TVD: 6,090.34 ' Inclination: 90.5 ° Azimuth: 181.5 ° VS: 1,726 '		MD: 7,922 ' TVD: 6,089.75 ' Inclination: 90.2 ° Azimuth: 180.2 ° VS: 1,820.18 '	
6200				

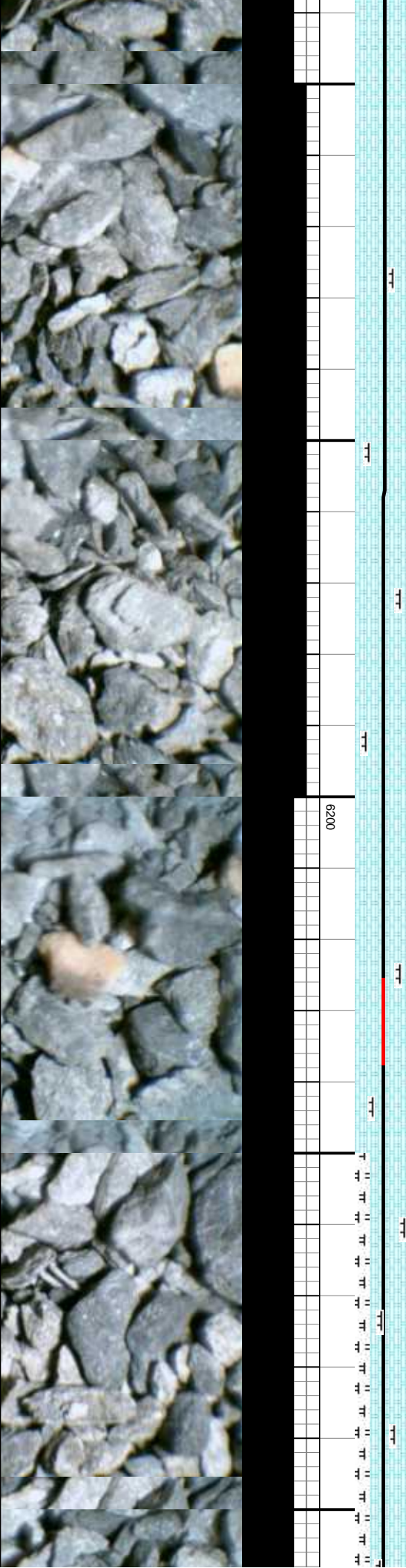








80% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frn, frt-brit, silty ip, rthy lstr, wxy, calc 20% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, abnt fos frags; O SHOW: mod-slow stmg, blshwh cut, yel-wh ring, g stn, g od	70% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frn, frt-brit, silty ip, rthy lstr, wxy, calc 30% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ fos frags; O SHOW: mod-slow stmg, blshwh cut, yel-wh ring, g stn, g od	75% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frn, frt-brit, silty ip, rthy lstr, wxy, calc 25% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ fos frags; O SHOW: mod-slow stmg, blshwh cut, gn-yel ring, mod stn, frnt od	60% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frn, frt-brit, silty ip, rthy lstr, wxy, calc 40% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ fos frags; O SHOW: mod-slow stmg, blshwh cut, gn-yel ring, mod stn, frnt od	50% C sft-frn MRLS frm-mn mtx, o blshwh
56	56	71	71	
MD: 9,163 ' TVD: 6,085.79 ' Inclination: 89.7 ° Azimuth: 181.9 ° VS: 3,040.28 '	MD: 9,163 ' TVD: 6,085.79 ' Inclination: 89.7 ° Azimuth: 181.9 ° VS: 3,040.28 '	MD: 9,257 ' TVD: 6,087.19 ' Inclination: 88.6 ° Azimuth: 179.4 ° VS: 3,132.54 '	MD: 9,257 ' TVD: 6,087.19 ' Inclination: 88.6 ° Azimuth: 179.4 ° VS: 3,132.54 '	



06/20/2014 06/21/2014

MINDEPTH

MMW 9.4 / VIS 35

MMW 9.4 / VIS 34

270

3690u

4248u

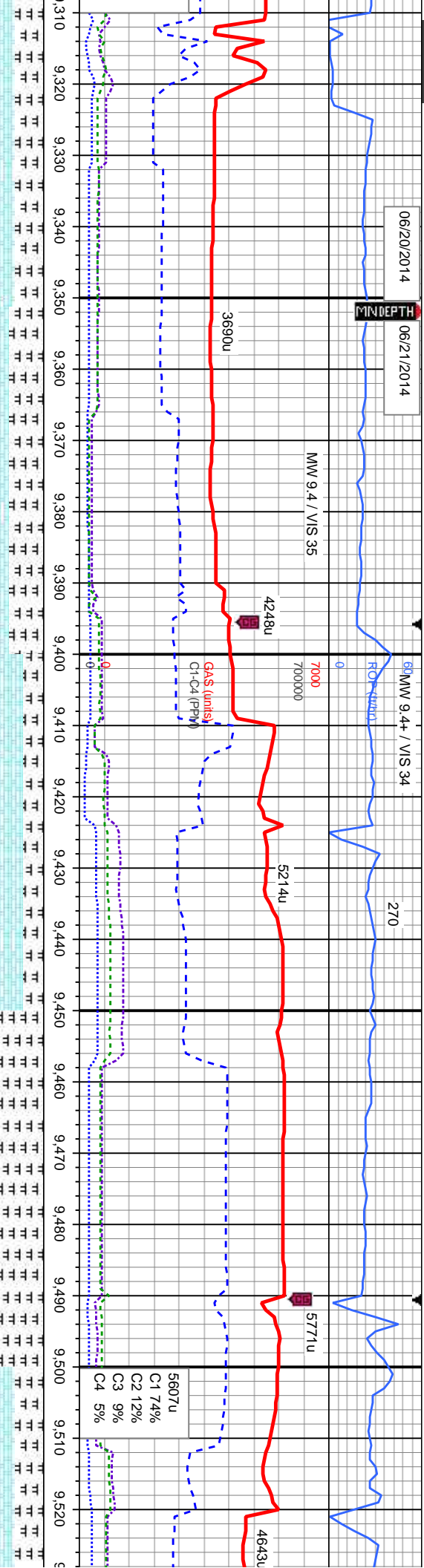
5214u

5771u

4643u

7000
700000

5607u
C1 74%
C2 12%
C3 9%
C4 5%



HK: lt-medgy, crm-brn, mot, pily-blky, fri-brt, sily ip, rthy lstr, wxy, calc 50%
T: med-dk gy, occ blk, sb pily-blky, mod hd, brit, sily tex, mot, rthy lstr, calc
occ fos frags: O SHOW: mod-slow sting, n cut, bri gn-wh ring, mod stn, fnt od

60% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, occ fos frags 40% CHK: lt-medgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc: O SHOW: mod-slow sting, bishwh cut, bri gn-wh ring, mod stn, fnt od

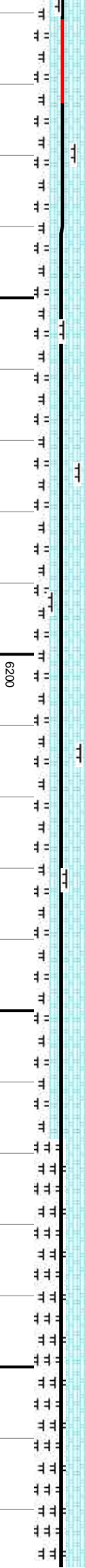
565% CHK: lt-medgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, occ fos frags: O SHOW: mod-fast sting, bishwh cut, gn-wh ring, mod stn, fnt od

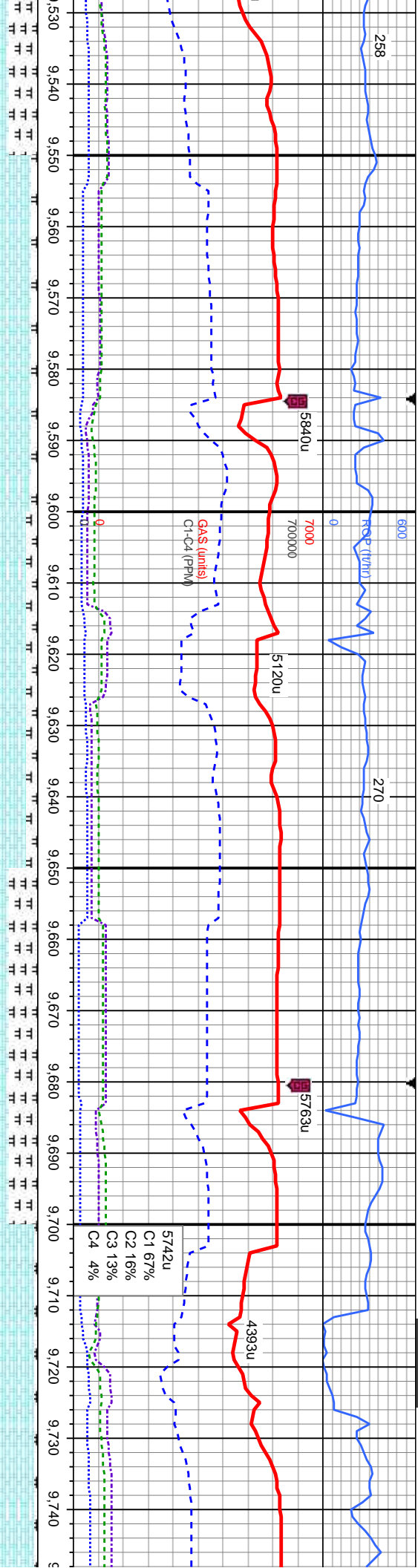
75% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, r fos frags 25% CHK: medgy, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc: O SHOW: mod-fast sting, bishwh cut, gn-wh ring, mod stn, fnt od

50% CHK: lt-medgy, crm-brn, sft-frm, fri-brt, sily ip, rthy lstr, calc MRLST: med-dk gy, occ blk, frm-mod hd, brit, sily tex, m mtx, occ fos frags: O SHOW: bishwh cut, bri gn-wh ring,

MD: 9,352 '
TVD: 6,088.43 '
Inclination: 89.9 °
Azimuth: 179.1 °
VS: 3,226.21 '

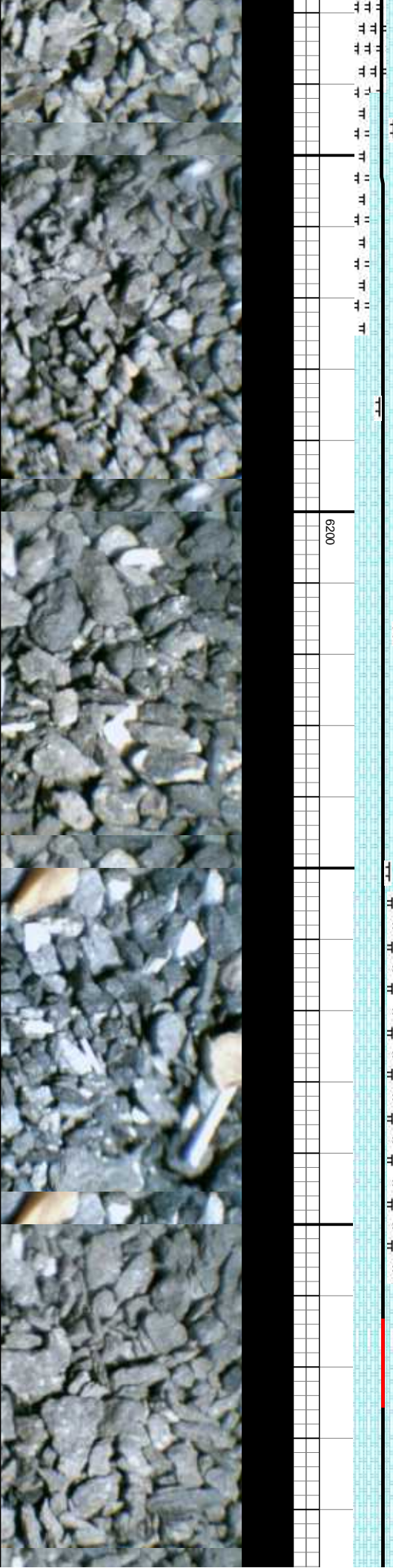
MD: 9,448 '
TVD: 6,088.51 '
Inclination: 90 °
Azimuth: 178.9 °
VS: 3,320.94 '

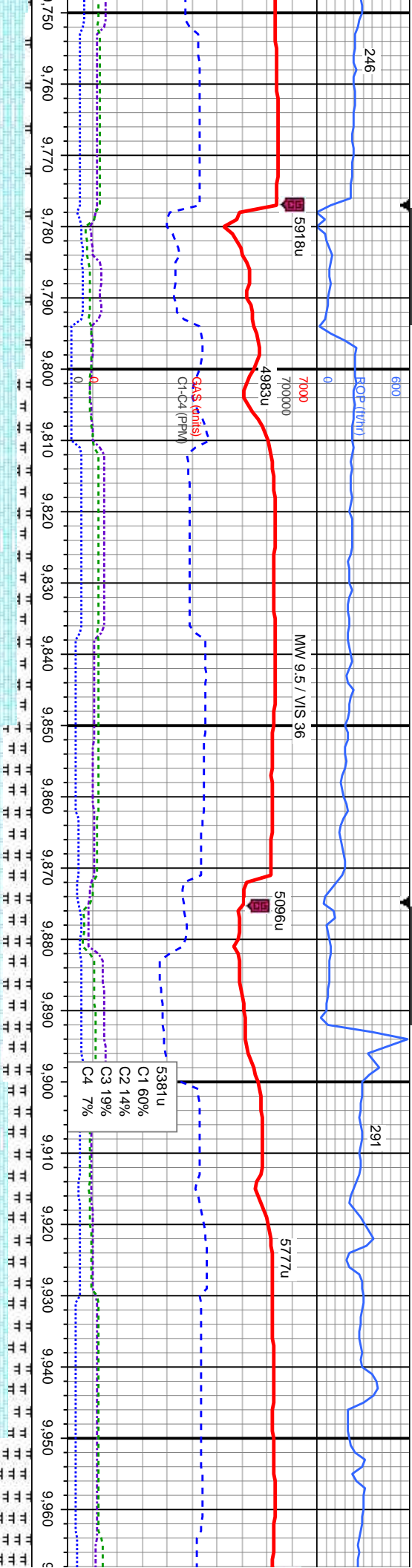




88	90% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, tr fos frags: O SHOW: mod-fast stmg, bishwh cut, bri gn-wh ring, mod sin, fnt od
200 GAMMA (API)	580% CHK: wh-llgy, medgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc 20% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ fos frags: O SHOW: mod-fast stmg, bishwh cut, bri yel-gn ring, mod sin, fnt od
82	50% CHK: lt-medgy, occ wh, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc 50% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, abnt fos frags: O SHOW: mod-fast stmg, bishwh cut, bri yel-gn ring, mod sin, fnt od
	95% CHK: wh-llgy, crm-brn, mot, pily-blky, sft-frm, fri-brlt, silty ip, rthy lstr, wxy, calc, tr scat bent 5% MRLST: med-dk gy, occ blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, tr fos frags: O SHOW: mod-fast stmg, bishwh cut, bri yel-gn ring, mod sin, fnt od

MD: 9,544 ' TVD: 6,088.35 ' Inclination: 90.2 ° Azimuth: 178.2 ° VS: 3,415.79 '	TVD (ft)	MD: 9,640 ' TVD: 6,087.68 ' Inclination: 90.6 ° Azimuth: 178.2 ° VS: 3,510.73 '	MD: 9,736 ' TVD: 6,087.84 ' Inclination: 89.2 ° Azimuth: 177.2 ° VS: 3,605.79 '
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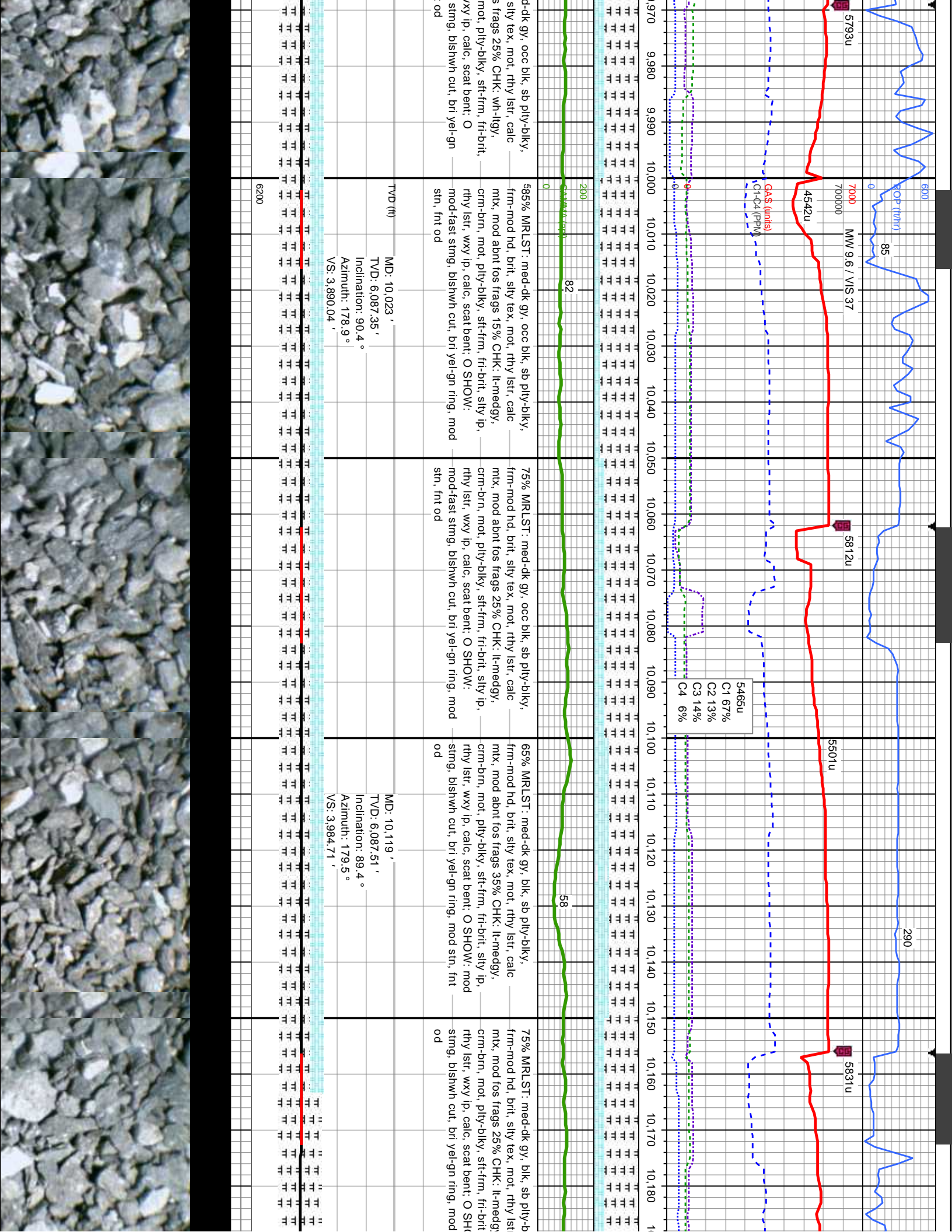


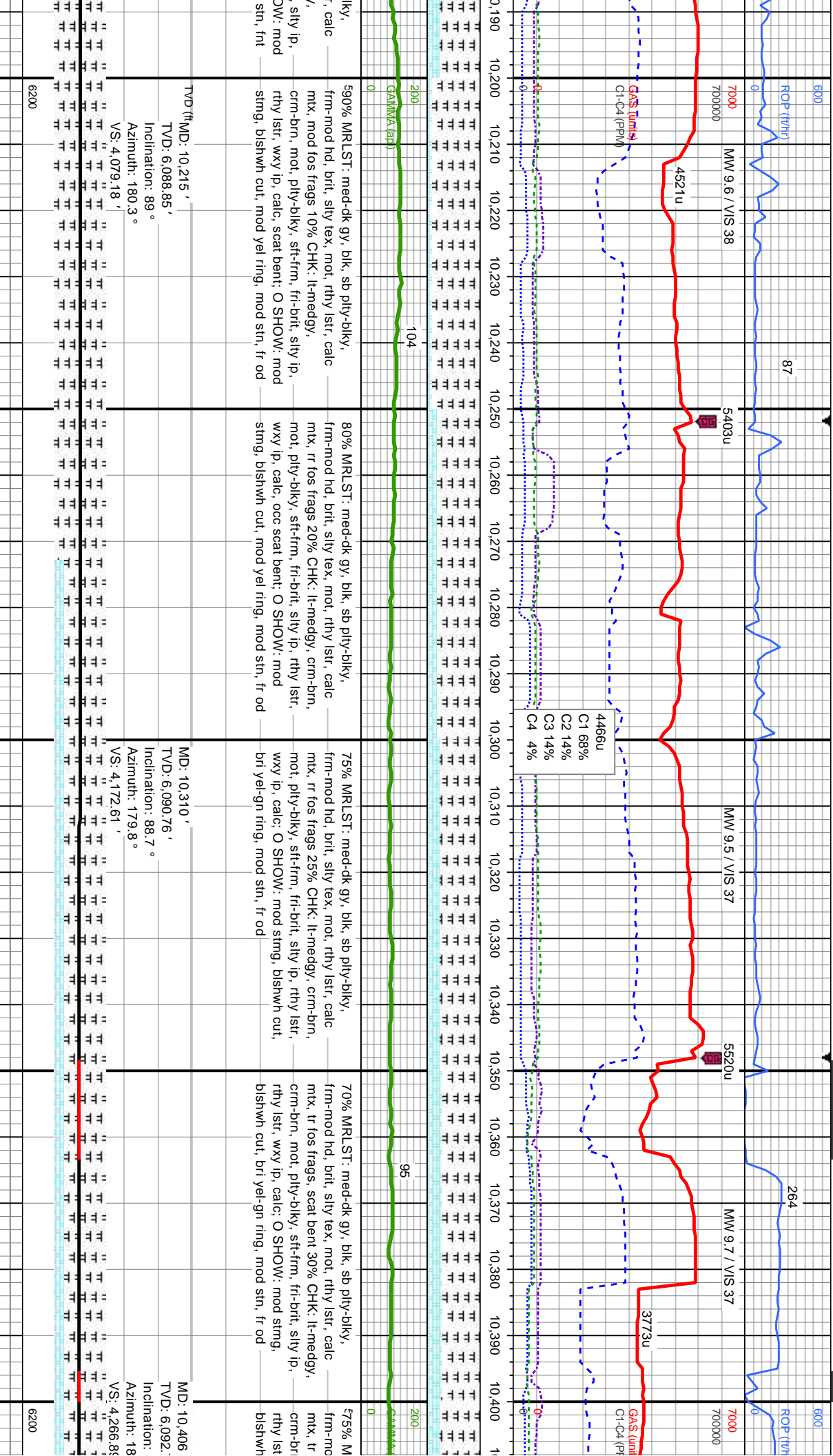


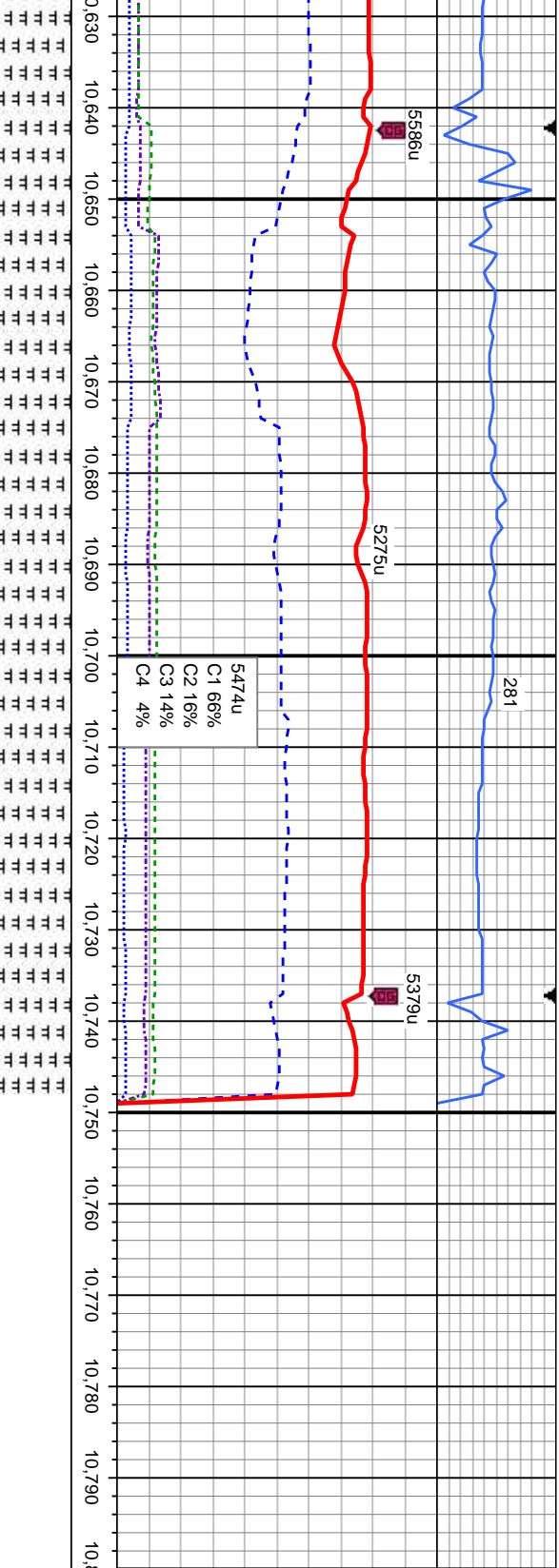
90% CHK: wh-llgy, crm-brn, mot, pily-biky, sft-frm, frt-brlt, sily ip, rthy lstr, wxy, calc, r scat bent 10% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, r tos frags: O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, mod sin, fnt od	575% CHK: wh-llgy, crm-brn, mot, pily-biky, sft-frm, frt-brlt, sily ip, rthy lstr, wxy, calc, r scat bent 25% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, mod tos frags: O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, mod sin, fnt od	50% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frm, frt-brlt, sily ip, rthy lstr, wxy ip, calc, r scat bent 50% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, mod tos frags: O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, mod sin, fnt od	60% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, sft-frm, frt-brlt, sily ip, rthy lstr, wxy ip, calc, r scat bent 40% MRLST: med-dk gy, occ blk, sb pily-biky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, mod tos frags: O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, mod sin, fnt od	75% MRLST: me frm-mod hd, brit, mtx, mod abnt for medgy, crm-brn, sily ip, rthy lstr, v SHOW: mod-fast ring, mod sin, fnt
59	200		68	

TVD (ft)	MD: 9,832 ' TVD: 6,088.35 ' Inclination: 90.2 ° Azimuth: 176.7 ° VS: 3,701.01 '	MD: 9,927 ' TVD: 6,087.93 ' Inclination: 90.3 ° Azimuth: 178 ° VS: 3,795.16 '	D/U Fault
6200			









blk, sb pily-biky, ot, rthy lstr, calc tr chk; O SHOW: bri yel-gn ring, fr	100% MRLST: med-dk gy, blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, mod abnt fos frags, scat bent, rr chk; O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, fr stn, fnt od	100% MRLST: med-dk gy, blk, sb pily-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, mod abnt fos frags, scat bent; O SHOW: mod-fast stimg, blshwh cut, bri yel-gn ring, fr stn, fnt od
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MD: 10,694 ' TVD: 6,092.03 ' Inclination: 89.4 ° Azimuth: 179.5 ° VS: 4,549.33 '	MD: 10,706 ' TVD: 6,092.15 ' Inclination: 89.4 ° Azimuth: 179.5 ° VS: 4,561.15 '	MD: 10,749 ' TVD: 6,092.6 ' Inclination: 89.4 ° Azimuth: 179.5 ° VS: 4,603.52 '
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Projection to Bit

Thank you for using
Columbine Logging, Inc.

TD Reached @ MD 10749
06/21/2014 @ 16:59 MST

