

Begin Logging at
4:30 PM on 5/11/07

jf

100

200

Ran 20" conductor pipe; set at
20' Drill out with 8-3/4" bit.

Mw 8.7+ Vis 34

Siltst: Medium gray moderately
firm, occasionally grading to very
fine grain sandst, poorly
cemernted mostly with clay
matrix, some carbonaceous with
traces fossil fragments

Sandst: light gray moderately firm
friable, very fine to fine with rare
medium mostly subanglr clear,
white qtz with predom clay matrix

400 300 200 100

0

50

100

10

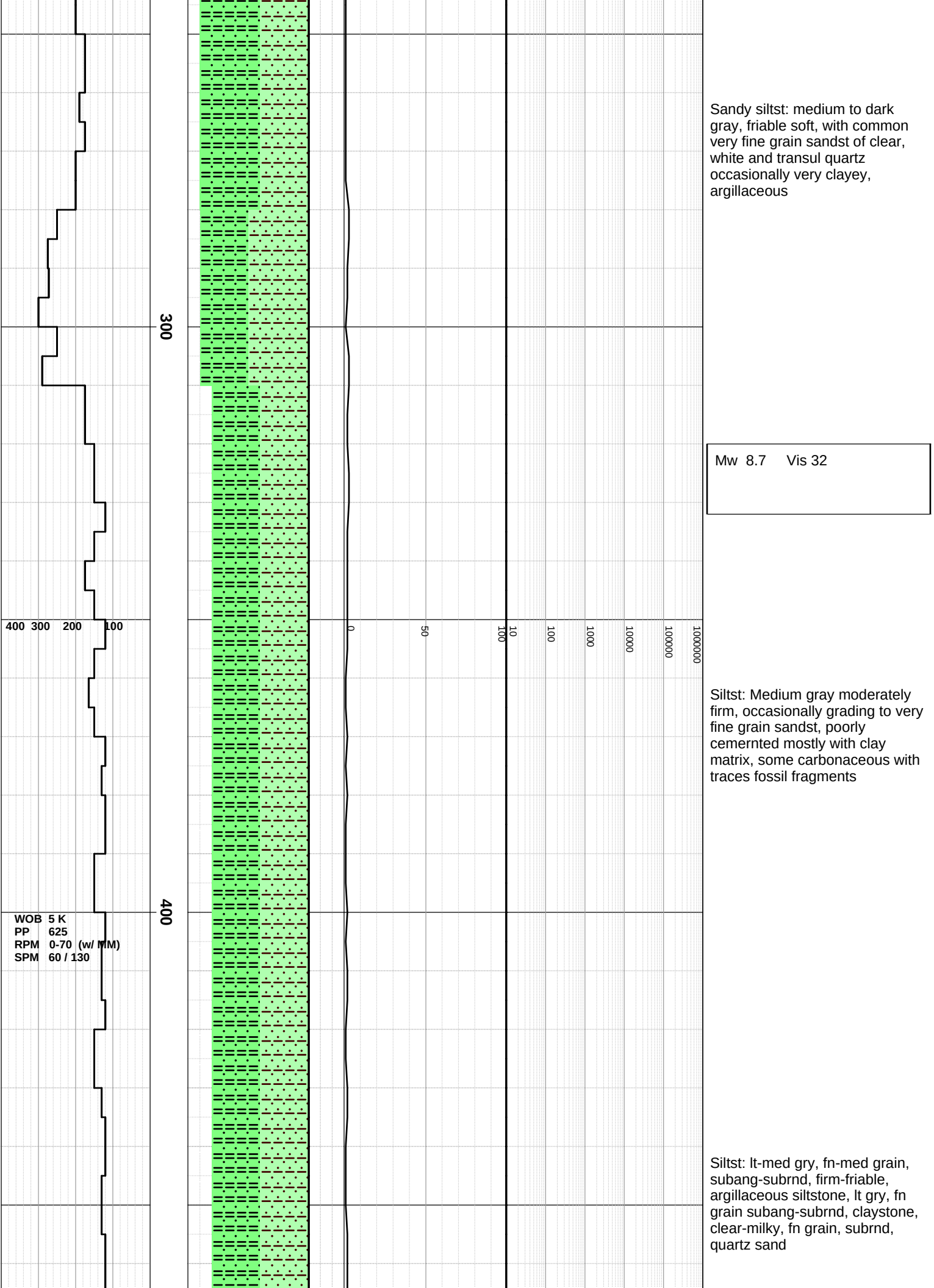
100

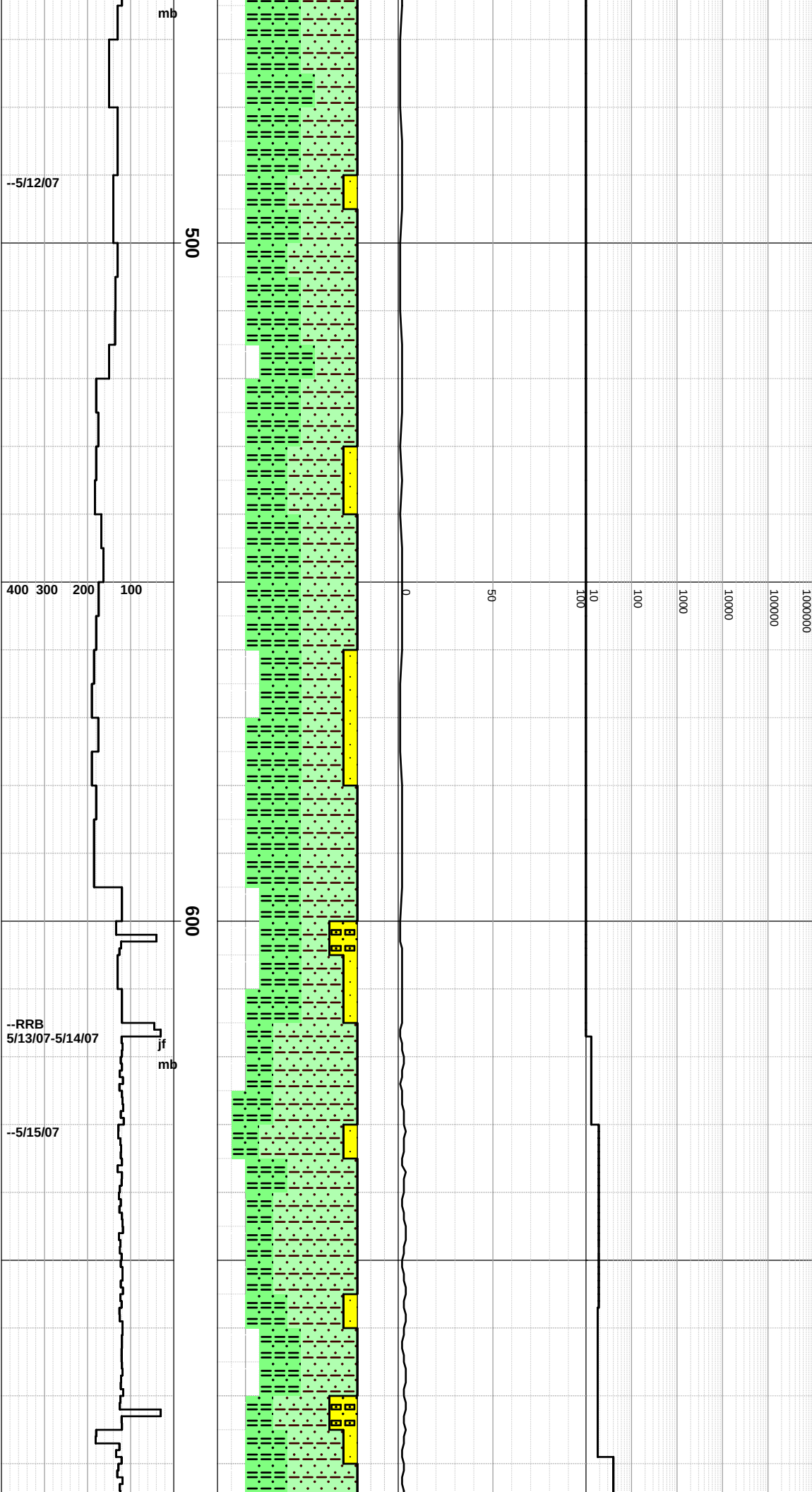
1000

10000

100000

1000000





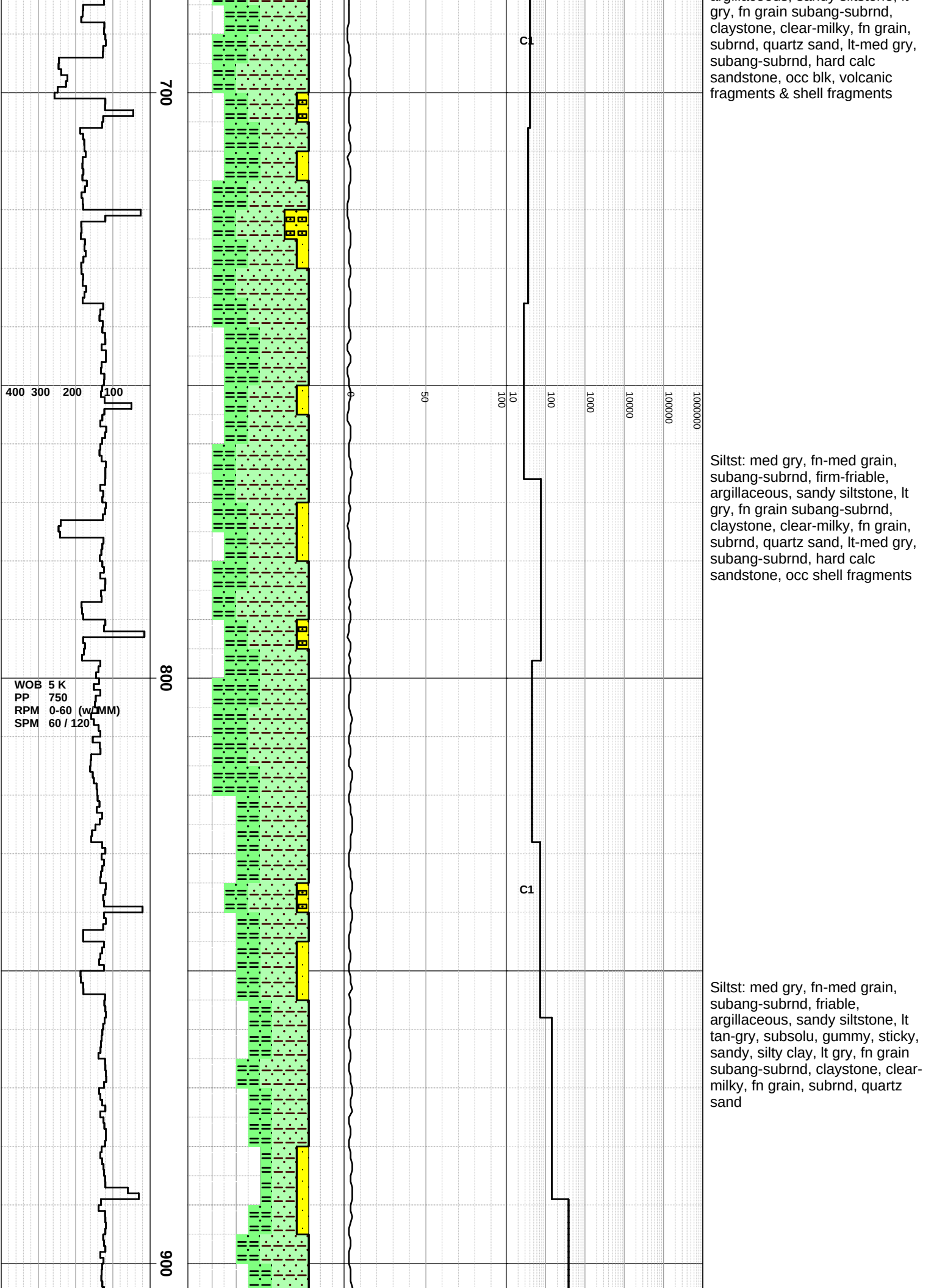
Mw 8.7 Vis 42

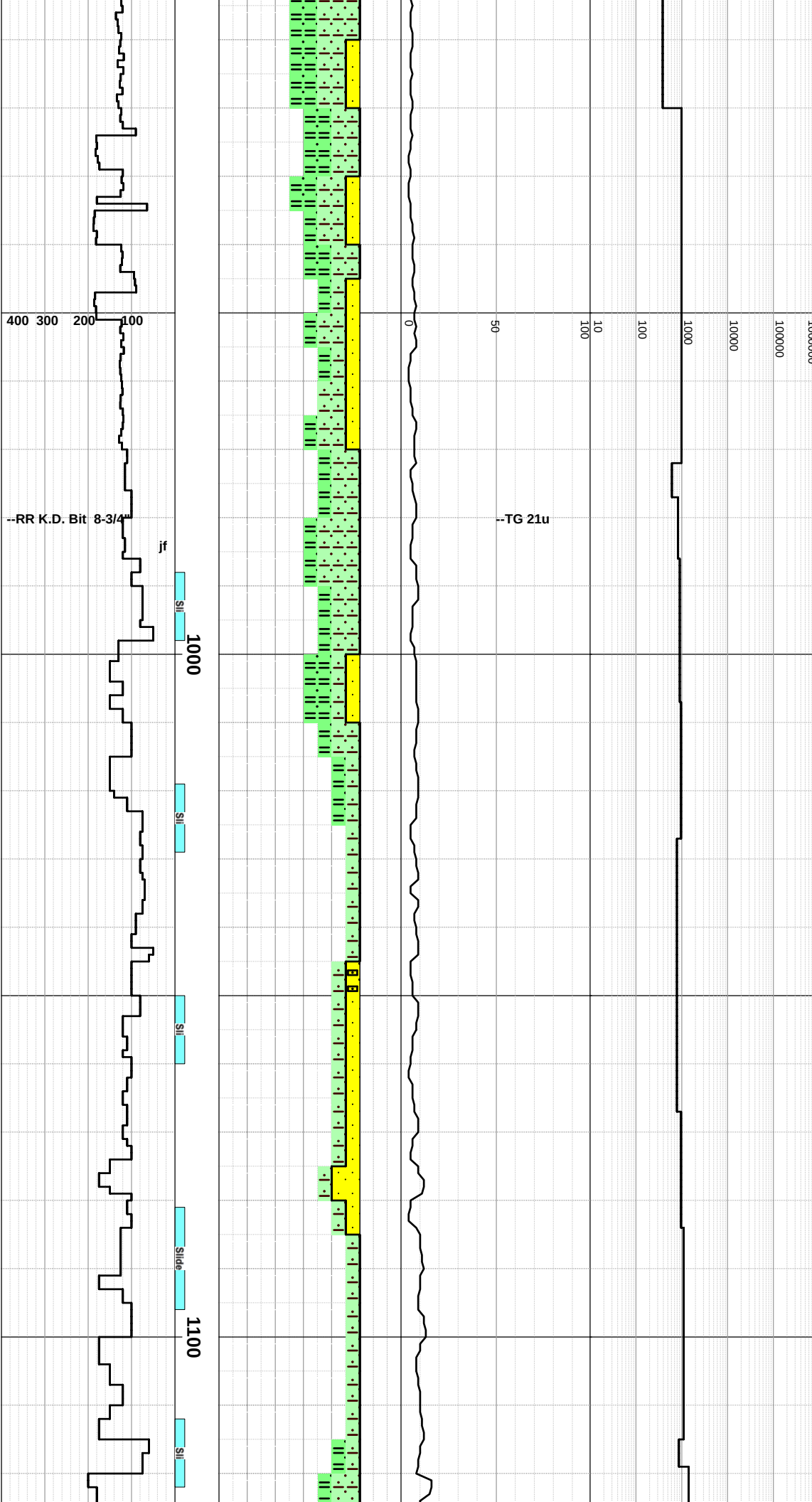
Siltst: lt-med gry, fn-med grain, subang-subrnd, firm-friable, argillaceous siltstone, lt gry, fn grain subang-subrnd, claystone, clear-milky, fn grain, subrnd, quartz sand, occ blk, volcanic fragments

Drill 8-3/4" hole 617', open 17-1/2" to 590'. Run and cement 13-3/8" casing with shoe at 590'. Rig up BOP Drill ahead.

Mw 8.6 Vis 35

Siltst: lt-med gry, fn-med grain, subang-subrnd, firm-friable, argillaceous. sandv siltstone, lt



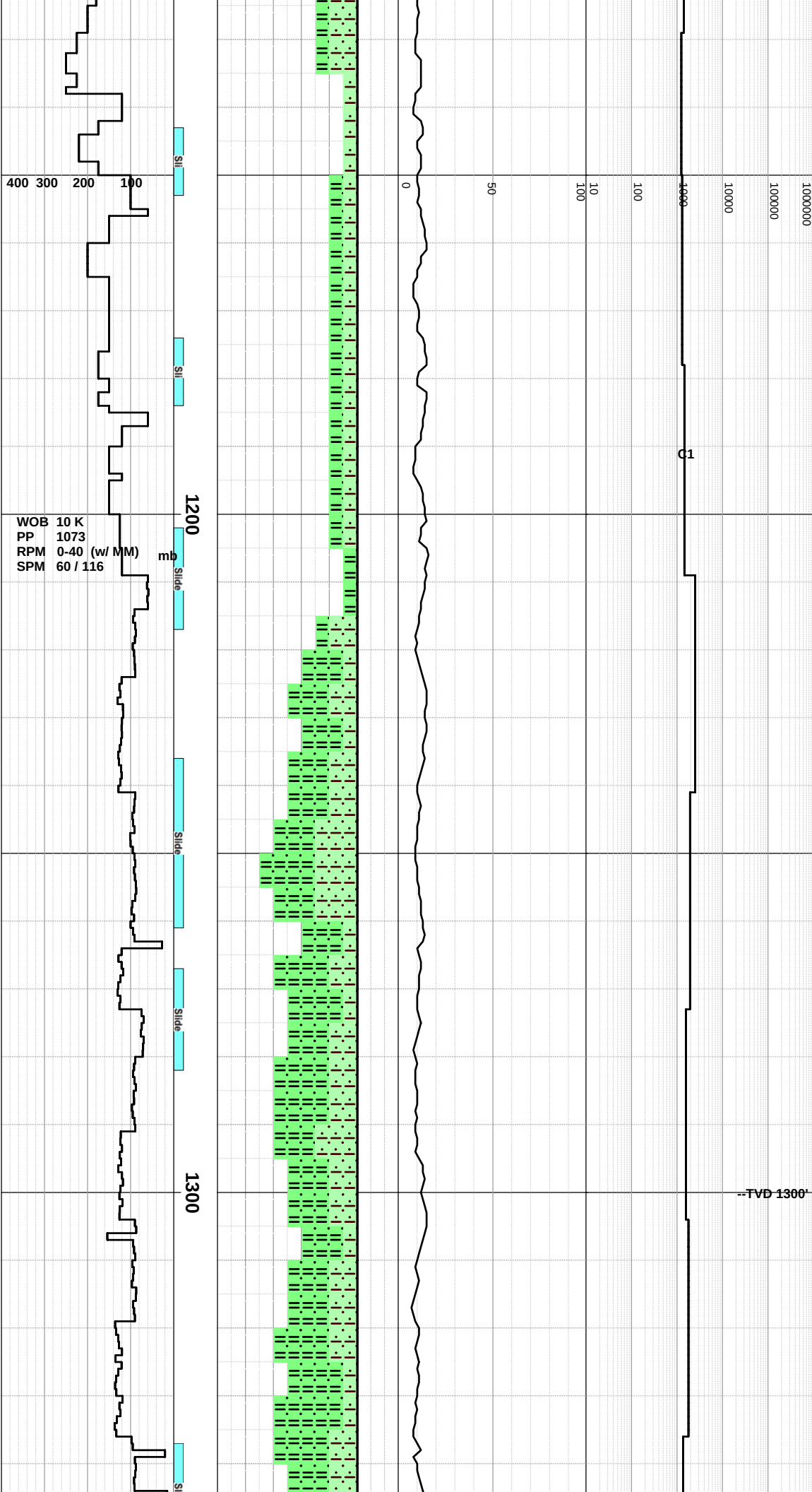


Mw 8.2 Vis 37

Run and cement 13-3/8" casing
with shoe at 563' Rig BOP Drill
ahead

Rig up new BHA pick up
directional tools MWD and MM

Clayst: medium gray brown,
moderately soft, occasionally
very sandy and silty with some
carbonaceous matrI and rare
fossil fragments, argillaceous,
soluable in part, sticky soft



Clay : medium gray brown, occasionally very silty to sandy, moderately soft, rare lignite and fossil fragments, soluble in part, sticky soft, amorphous

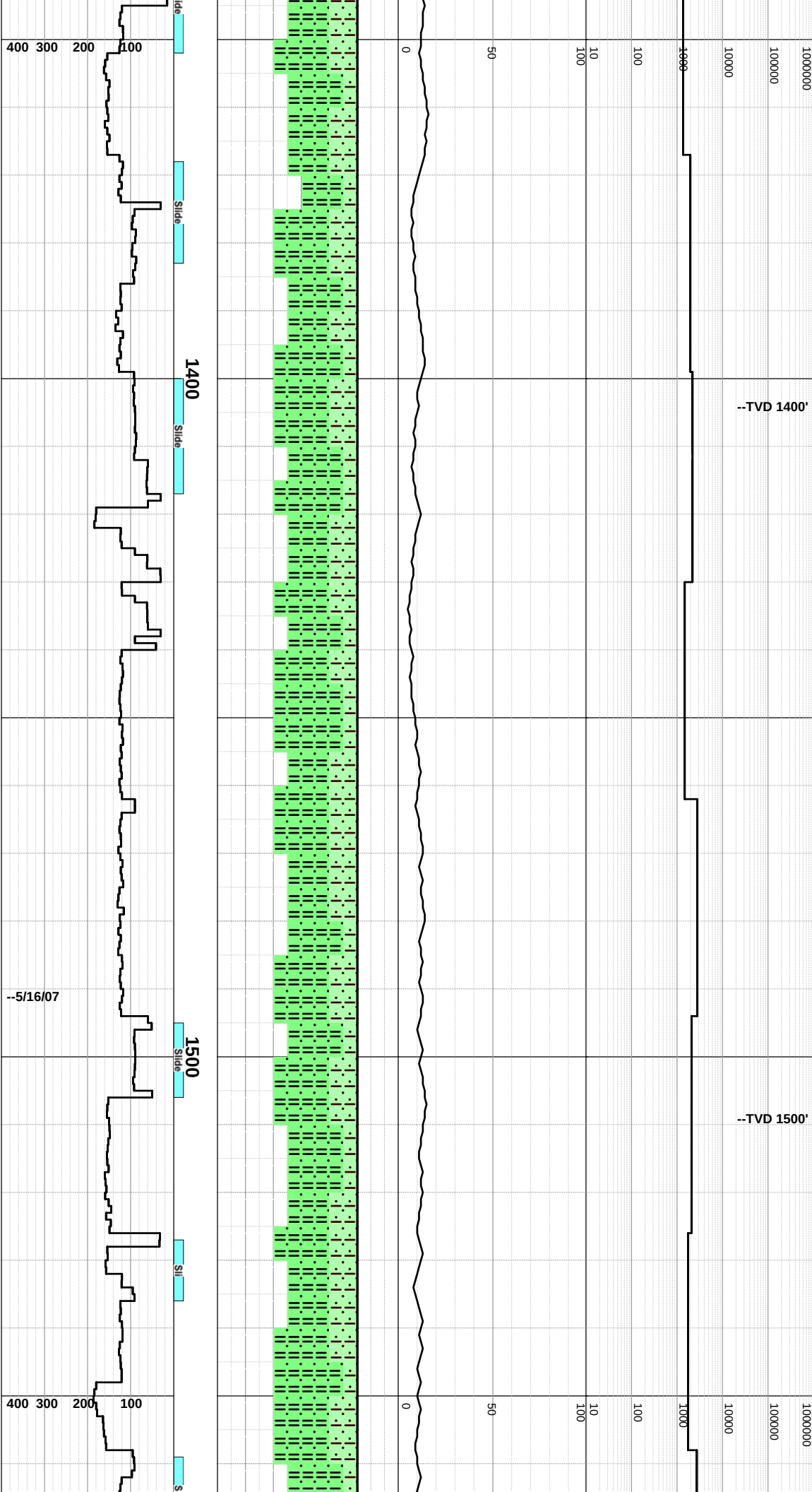
Siltst: medium gray with some gray brown, occ firm with some fissility, some grading to very fine grain sandstone, carbonaceous slightly calcareous

Survey at 1248' Incl 10.00°
Az 322.30° TVD 1246.67'
N 14.97' W 16.65'

Mw 8.6 Vis 44

Siltst: lt-med gry, fn grain, subang-subbrnd, moderately firm-firm, siltstone, lt-med gry-tan, slou-subsolu, occ sticky, silty clay, occ volcanic fragments

clay, occ volcanic fragments



Survey at 1403'	Incl 16.40°
Az 335.60°	TVD 1397.54'
N 45.63'	W 33.65'

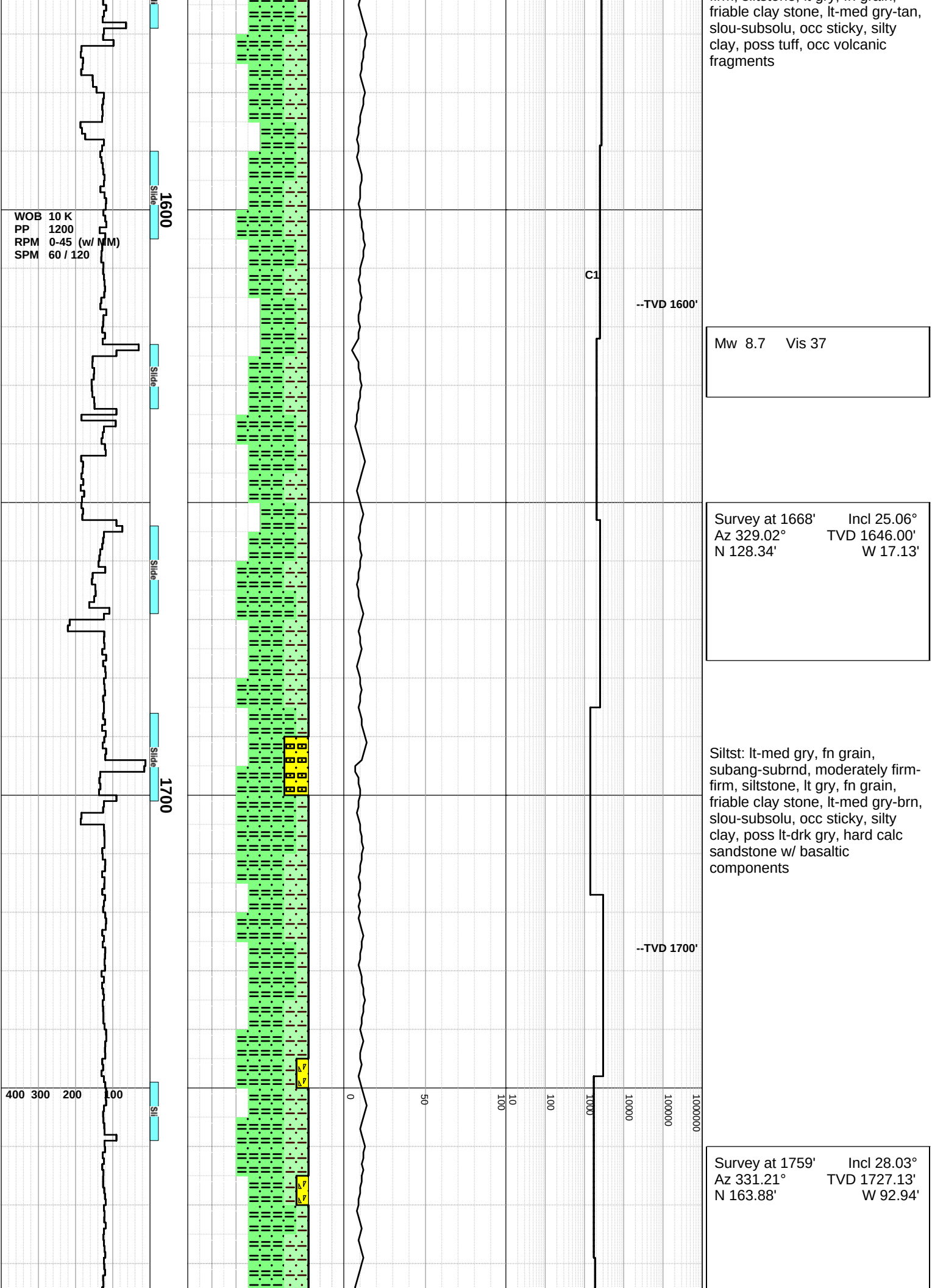
--TVD 1400'

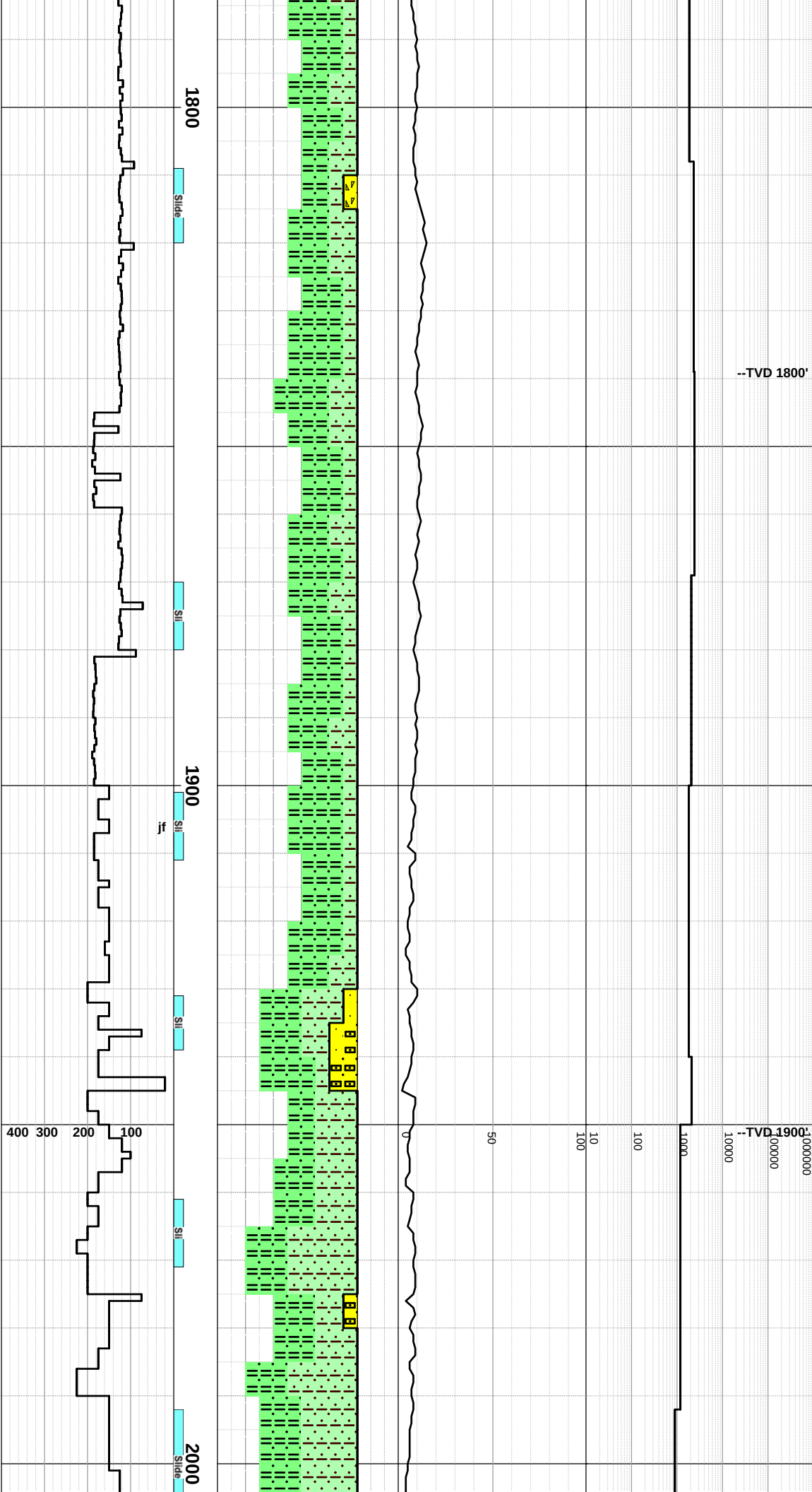
Siltst: lt-med gry, fn grain,
subang-subbrnd, moderately firm-
firm, siltstone, lt gry, fn grain,
friable clay stone, lt-med gry-tan,
slou-subsolu, occ sticky, silty
clay, occ volcanic fragments

Survey at 1509'	Incl 19.30°
Az 339.07°	TVD 1498.49'
N 75.77'	W 45.10'

--TVD 1500'

Siltst: lt-med gry, fn grain,
subang-subrnd, moderately firm-
firm, siltstone. lt gry, fn grain.



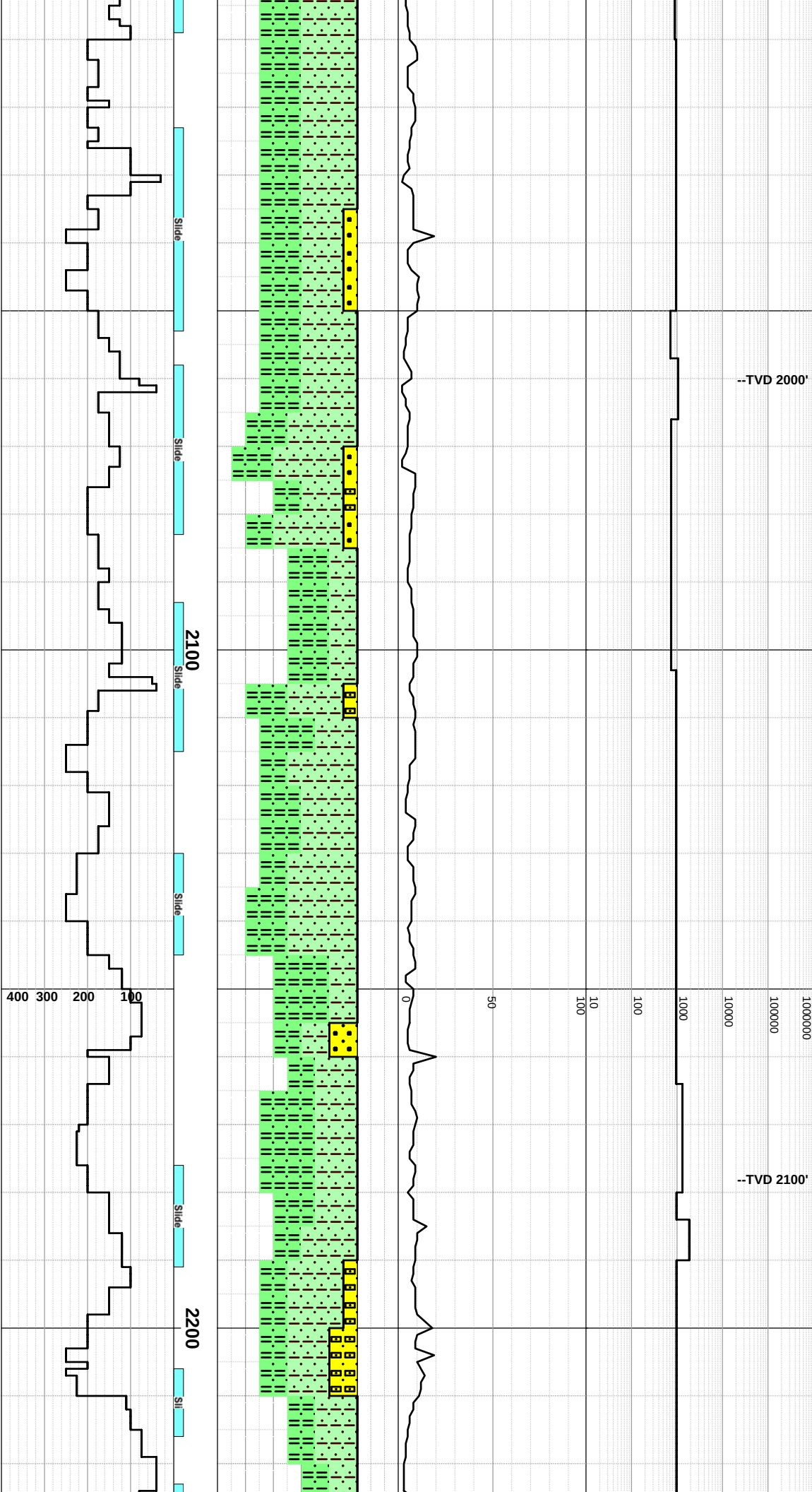


Mw 8.8 Vis 43

Siltst: lt-med gry, fn grain, subang-subrnd, moderately firm-firm, siltstone, lt gry, fn grain, friable clay stone, lt gry-tan, subsolu, sticky, gummy, silty clay, poss tuff fragments

Sandst: light to medium gray, firm to hard, very fine to fine with some minor medium grains, predominately subrounded clear, white and transul quartz, common mafics with some vari colored volcanics grains with well cemented calcareous matrix

Survey at 1966' Incl 27.50°
Az 332.45° TVD 1910.27'
N 234.86' W137.70'



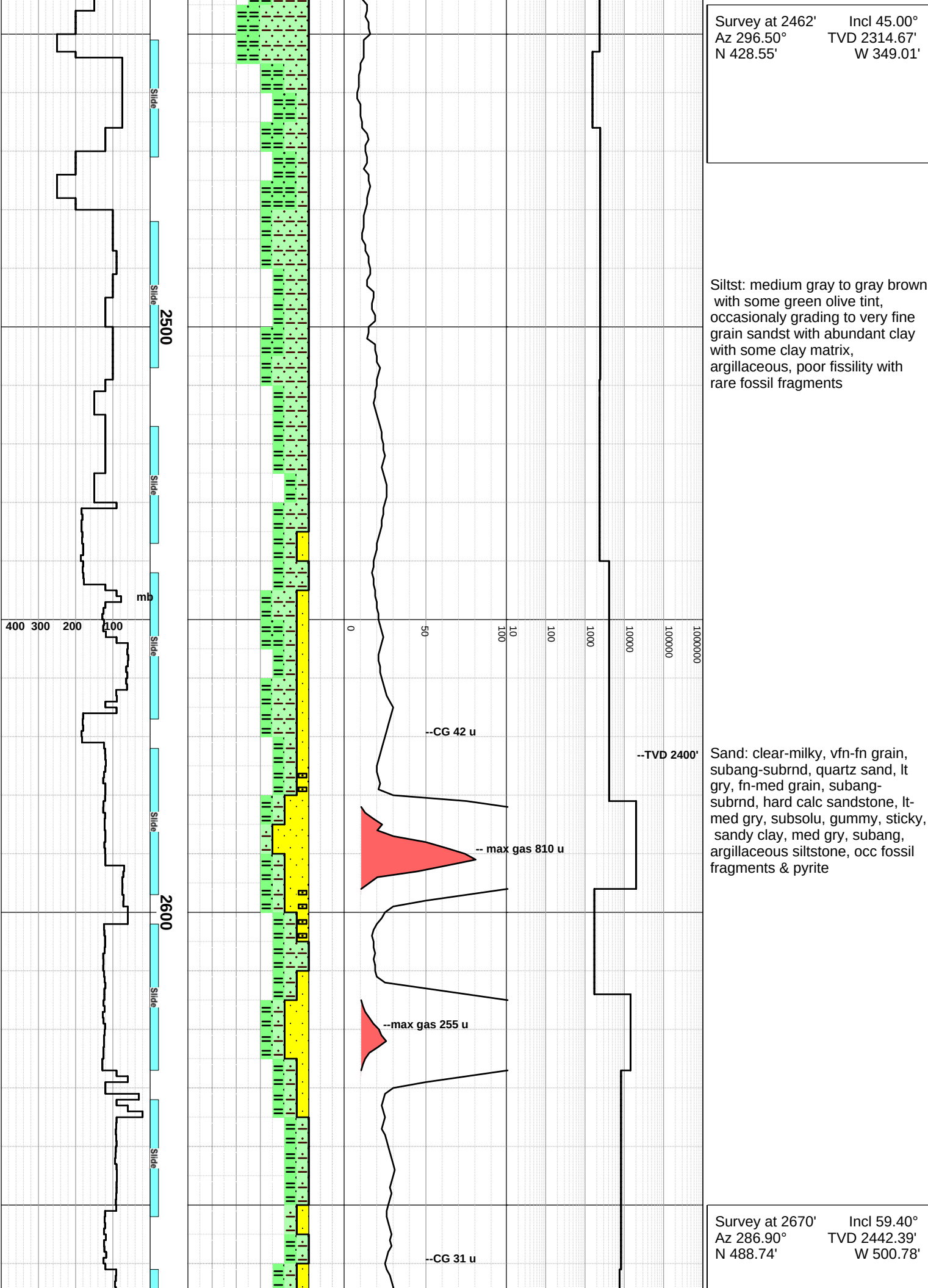
Clayst: medium to light gray with some mottled gray brown, occasionally very silty to sandy, mostly sticky soft, soluble in part, with rare lignite and fossil fragments, amorphous

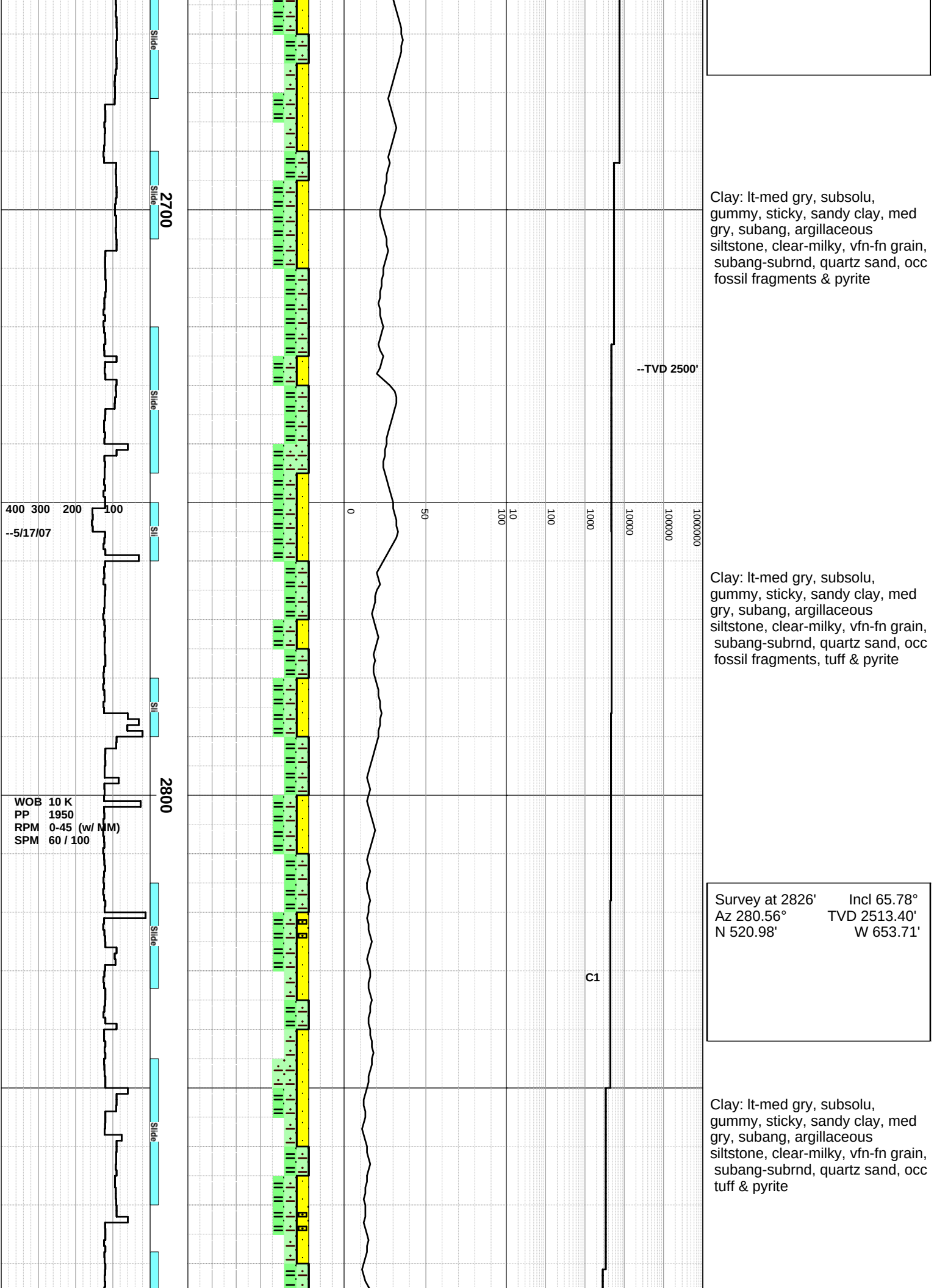
Mw 8.8+ Vis 52

Survey at 2126' Incl 33.30°
Az 319.70° TVD 2053.16'
N 307.07' W179.03'

Siltst: medium gray moderately firm slightly calcareous, occasionally grading to very fine grain sandst, argillaceous

--TVD 2100'



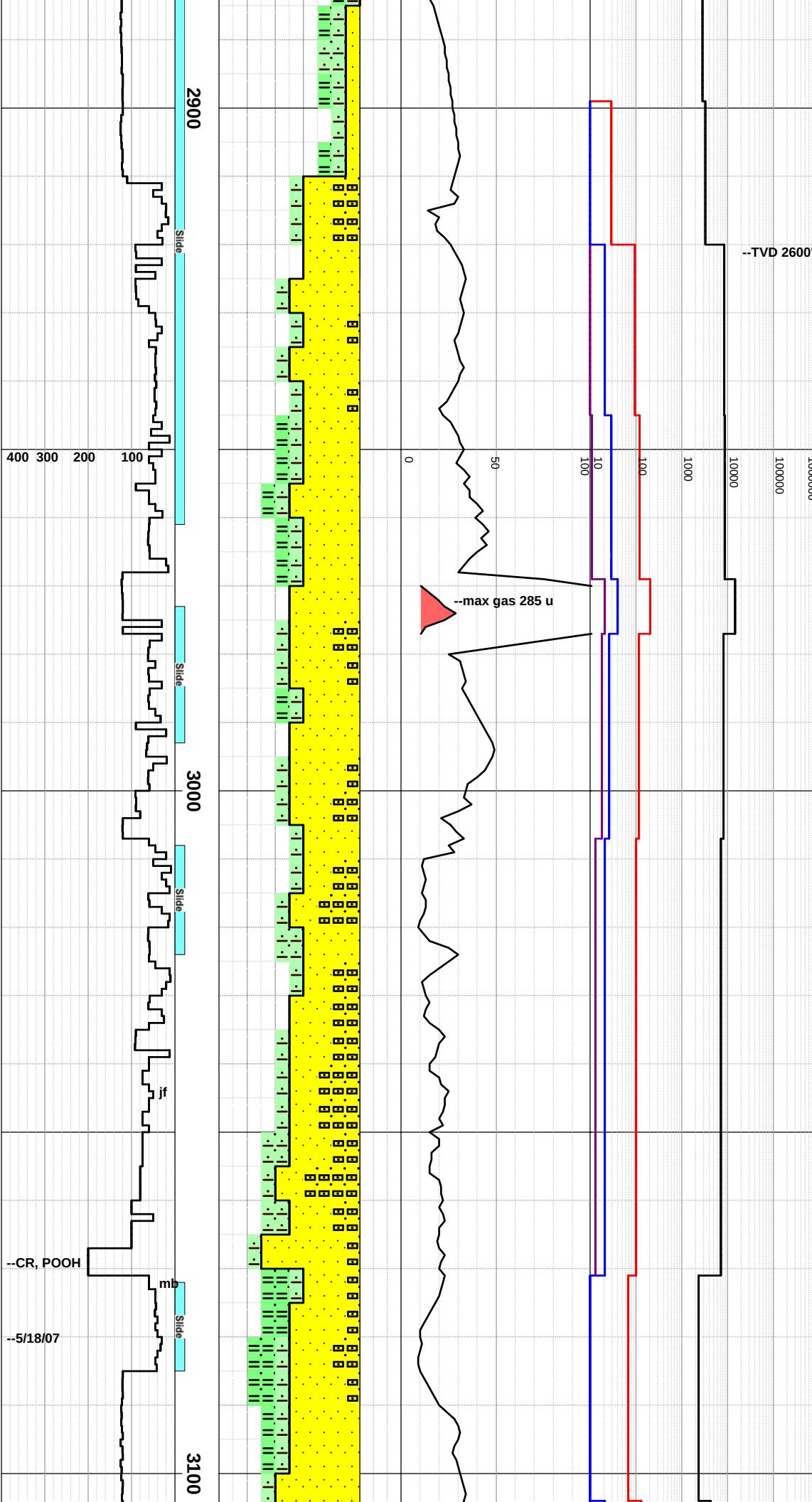


Clay: lt-med gry, subsolu, gummy, sticky, sandy clay, med gry, subang, argillaceous siltstone, clear-milky, vfn-fn grain, subang-subrnd, quartz sand, occ fossil fragments & pyrite

Clay: lt-med gry, subsolu, gummy, sticky, sandy clay, med gry, subang, argillaceous siltstone, clear-milky, vfn-fn grain, subang-subrnd, quartz sand, occ fossil fragments, tuff & pyrite

Survey at 2826' Incl 65.78°
Az 280.56° TVD 2513.40'
N 520.98' W 653.71'

Clay: lt-med gry, subsolu, gummy, sticky, sandy clay, med gry, subang, argillaceous siltstone, clear-milky, vfn-fn grain, subang-subrnd, quartz sand, occ tuff & pyrite

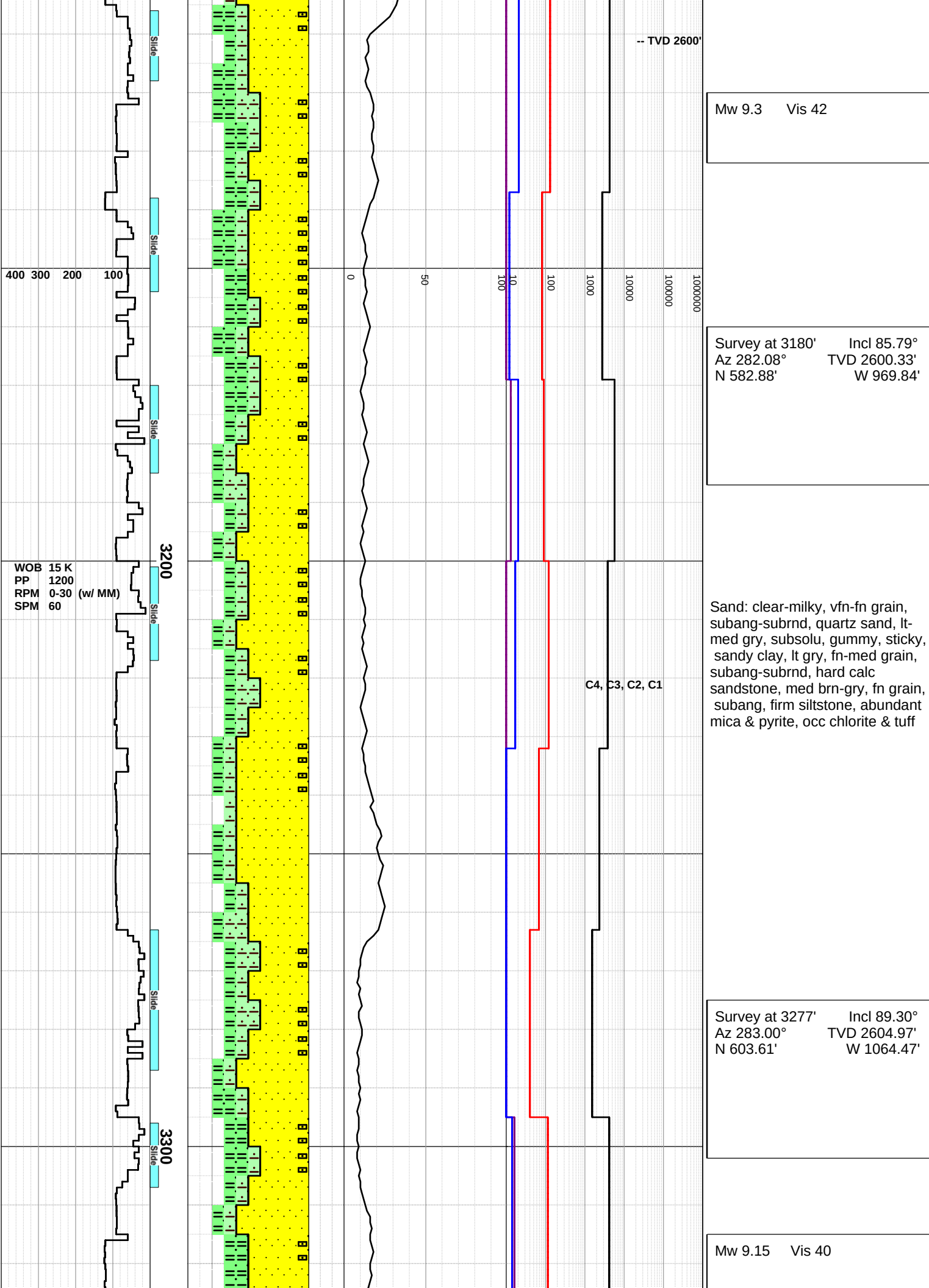


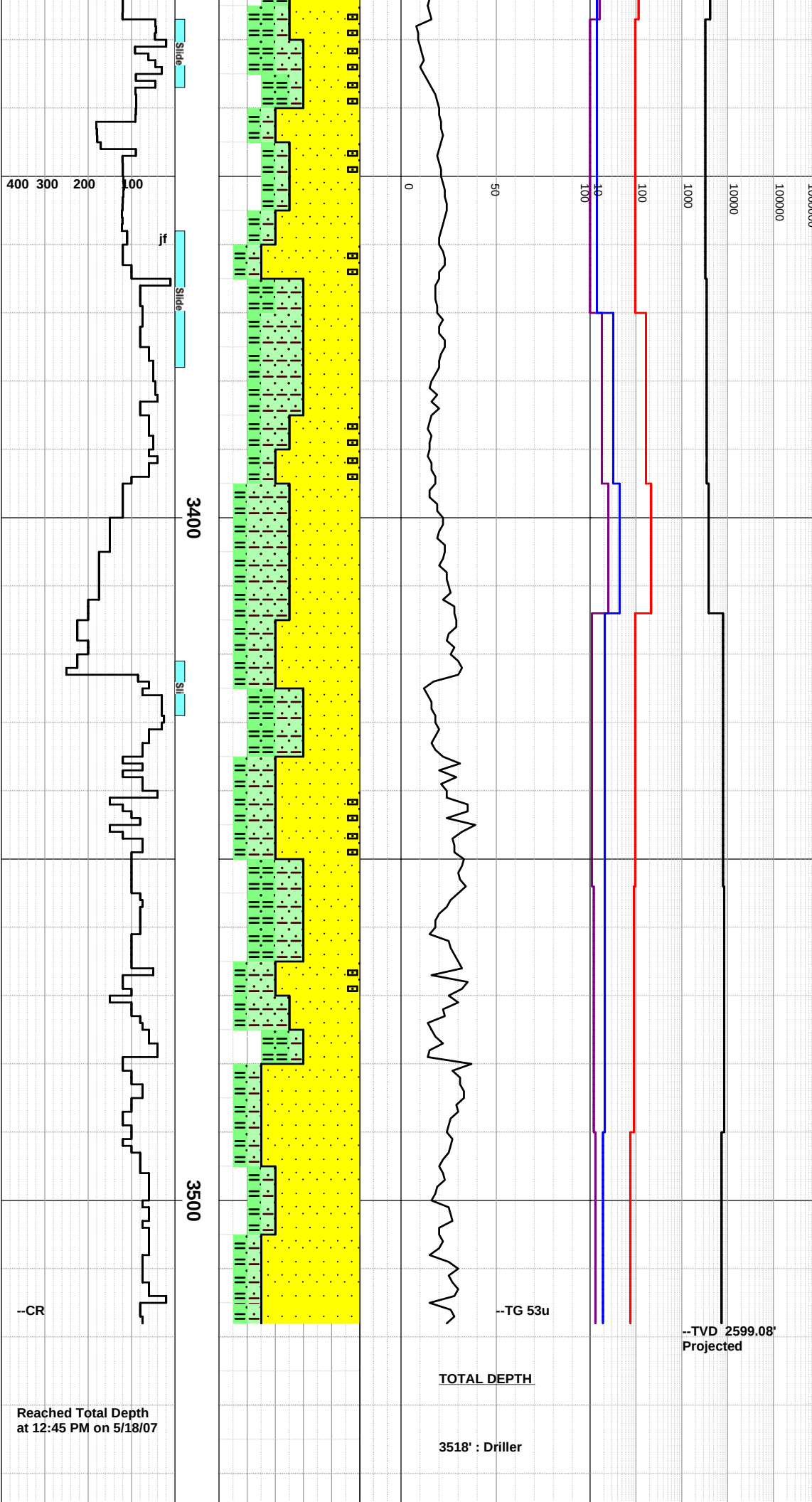
Mw 9.2+ Vis 51

Sand: clear-milky, vfn-fn grain, subang-subrnd, quartz sand, lt-med gry, subsolu, gummy, sticky, sandy clay, lt gry, fn-med grain, subang-subrnd, hard calc sandstone, occ muscovite & pyrite

Survey at 3023' Incl 78.86°
Az 280.17° TVD 2577.35'
N 553.58' W 817.40'

Sand: clear-milky, vfn-fn grain, subang-subrnd, quartz sand, lt-med gry, subsolu, gummy, sticky, sandy clay, lt gry, fn-med grain, subang-subrnd, hard calc sandstone, med brn-gry, fn grain, subang, firm siltstone, muscovite, pyrite & occ chlorite





Sand: clear-milky, vfn-fn grain, subang-subrnd, quartz sand, lt gry, fn-med grain, subang-subrnd, hard calc sandstone, med brn-gry, fn grain, subang, firm siltstone, abundant mica & pyrite, occ lignite

Sand: Light gray, unconsolidated very fine to fine with common medium grain predominately clear, white and transul quartz, very micaceous with muscovite, occasionally with lignite, and welded tuff

Survey at 3469'	Incl 92.00°
Az 281.70°	TVD 2600.83'
N 641.55'	W 1252.67'

Mw 9.0+	Vis 47
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Logging Unit Released
on 5/25/07

NORTHWEST NATURAL IW 23ach-3-65 Bruer Pool Inject/WD Storage SE 1/4 Sec. 3, T6N-R5W; WB&M



Scale: 5" = 100'