

GEOLOGY OF A SEASONAL POOL OF WATER IN THE 707

The results of an auger test made on August 1, 2009 were as follows:

Site: A well-known dip (Randy Hollow) in the landscape on the main north-south path.
Flooded in winter.

Tall (2m) canary grass reeds (*Phalaris arundinacea*), rushes (*Juncus effusus*), sedges (*Scirpus americanus*), and mint (*Mentha arvensis*).

49° 9.74' N 123° 48.50' W

Surface soil condition: dry, no surface moisture anywhere.

0-60 mm	roots
60-400 mm	mainly coarse and very-coarse sand, no stones rich-brown near surface, becoming progressively lighter and sandier in colour with depth
400-1040 mm	montmorillonitic clay, greenish yellow with orange oxidation streaks, commonly called “gley soil” or gleysol (picture below). Turns white-ish on drying. Occasional isolated stones, probably dropstones.
1040 mm (41-inches)	bedrock, sandstone.

600-mm clay horizon had no interleavings of any kind, particularly not of peat or diatomaceous earth. Also no coarse gravel. It is common in wetlands all over Gabriola and is the result of weathering of deposits of glacial silt or “rock flour” that originally contained only silt and clay-sized particles, but no clay minerals. It’s likely glacial origin is confirmed by the presence of dropstones (stones rafted on to a lake by ice that subsequently melted).

Although the clay was cool and moist, there was no free water at any depth.

Montmorillonite is a common product of modern weathering of fractures in feldspathic sandstone/wacke that contain water and of regolith in wet conditions.

