GLACIO-TECTONIC FEATURES AT BALD HILL RONKONKOMA MORAINE

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Near the southern margin of the Ronkonkoma Moraine on Bald Hill immediately (~100m) south of the Bald Hill Cultural Center, an excavation formed an east-west trending cliff exposing glacio-tectonic features. The outcrop was about 45 meter east-west and about 3 to 8 meters high. The outcrop consists of four lithofacies: 1) fine-grained laminated sands, 2) coarse-grained pebbly laminated sands, 3) poorly sorted, crudely bedded pebbly sands, and 4) massive diamict. These lithofacies and their stratigraphic relationships are documented in photographs and a photomosaic of the cliff.

1) The fine-grained laminated sands (Sh) are parallel laminated on cm to sub-cm scale and contain cm-thick clay laminae (Fl). This facies resembles Wisconsinan lacustrine facies and pre-Wisconsinan Pleistocene marine shoreline sands seen in other outcrops of the Roanoke Pt. and Ronkonkoma Moraines respectively. No marine shells were found in this unit, so it is not know if it is Wisconsinan or pre-Wisconsinan.

Fig. 1 Folded and faulted sediments

2) Coarse- grained pebbly sands are parallel bedded (Sh) on a cm scale, and contain rare cross bedding and clay layers. This facies most likely represents subaerial outwash.

3) Poorly sorted coarse pebbly sandstone is distinctly darker brown than the other two facies, probably due to silt content. This lithofacies has irregular parallel bedding on scale of 2 - 5 cms, and contains scattered thin lenses of light colored, better sorted coarse sand. This may represent pro-glacial subaerial debris flows.

Fig. 2 Poorly sorted coarse pebbly sandstone

4) Capping the outcrop is about a meter or less of massive boulder-poor, sandy diamict (Dmm), that could be either till or more debris flow sediments.

Lithofacies 1 and 2 are deformed as evidenced by apparent dips up to 90^{o}, fault contacts between lithofacies or blocks of the same lithofacies, small-scale tight folds, and small-scale fractures. On a larger scale these lithofacies make up a coherent mass (although internally deformed) which constitutes the west half of the outcrop. Lithofacies 3 is more-or-less horizontally bedded and makes up the east half of the outcrop. At the contact lithofacies 3 both underlies and overlies the mass of lithofacies 1 and 2. Our interpretation is that lithofacies 1 and 2 are glacio-tectonically deformed. However, it is not clear if lithofacies 3 is part of the glacio-tectonic "allochthon", or if it represents a syntectonic depositional facies that filled around the deforming masses.

The importance of this outcrop is that it represents one more observation adding to the evidence for widespread glacio-tectonics being the major process forming the Ronkonkoma Moraine. This outcrop has been covered since our visit, a fate common to many outcrops in quarries and excavations on Long Island. This illustrates that photos and even brief documentation of field observations of ephemeral outcrops such as this represent an important source of geologic information.

Fig. 3 Photo mosaic of section exposed.