

THE GEOLOGY OF THE COLLEGE OF STATEN ISLAND CAMPUS

Alan I. Benimoff

Department of Engineering Science and Physics
And

The Masters Program in Environmental Science
The College of Staten Island/CUNY
2800 Victory Boulevard
Staten Island, NY 10314
benimoff@mail.csi.cuny.edu

The College of Staten Island of the City University of New York is situated on a 204 acre campus in the Willowbrook Section of Staten Island. Geotechnical studies completed before the construction of the campus show that the bedrock under most of the campus is weathered serpentinite. The serpentinite is overlain by glacial till of the Wisconsin glacial age. Numerous glacial erratics are present throughout the campus and the predominant rock type of these erratics appears to be palisades diabase.

An exposure of Palisades Diabase was revealed in an excavation for a storm runoff retention basin at the north end of the campus. It was examined by Prof. John Puffer and this author in 1993. The origin of this trapezoidal exposure (base approximately 7 meters x 4.4 meters) is enigmatic. Although the exposure is near the eastern contact of the Palisades Sill, its chemistry is indicative of the highly fractionated diabase of the upper sill, it contains about 20 volume % of interstitial remarkably unaltered granophyres composed of quartz and K-feldspar. On the eastern side of the exposure the diabase is in vertical contact with an eroded xenolith. The absence of a chilled zone in the diabase supports the hypothesis that the contact is with a xenolith. The xenolith exhibits mudcracks on its nearly vertical east facing face, but it is so highly altered to actinolite and chlorite that its origin is obscure. Further work is in progress by this author in order to resolve this enigma.

The United States Geological Survey has installed a stream gaging station at Willowbrook creek in the north end of the campus and a real time ground water well in the south end of the campus. Corson Brook woods borders the south end of the campus and Corson brook enters the south campus eventually feeding Willowbrook pond which borders the west end of the campus.