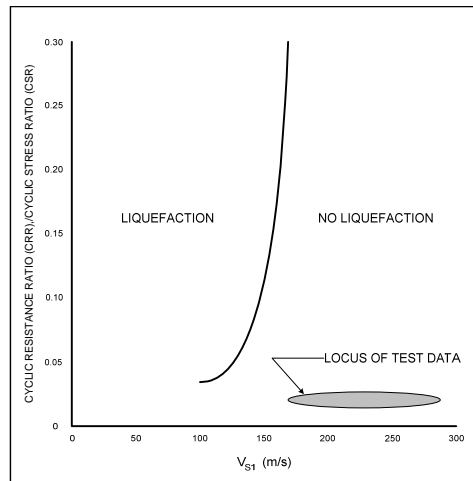


# PROJECT PROFILE

## SEISMIC PIEZOCONE AND DILATOMETER TESTING OF MINE REFUSE

D'Appolonia performed an in-situ testing program at the coal refuse disposal impoundment at a western Pennsylvania mine to confirm the applicability of shear strength properties for fine coal refuse (FCR) used in slope stability analyses of the pond embankment and to evaluate potential liquefaction susceptibility of the FCR.

Two working platforms were constructed by pushing coarse coal refuse out into the pond over the FCR. The in-situ testing program comprised five geotechnical borings. Standard Penetration Tests (SPT) were performed in four of the five borings. Also performed in the borings were: one piezocone test



Results of liquefaction analyses of FCR.



Drill rig positioned on platform of refuse pushed into mine refuse impoundment.

(PCPT), three seismic piezocone tests (SPCPT) and one dilatometer test (DMT). Soil index properties of FCR within the estimated zone of potential critical slip surfaces were obtained from Shelby tube and SPT samples.

A PVC casing was installed through the coarse coal refuse at each borehole location. The piezocone, seismic piezocone and dilatometer were pushed through the PVC casings into the un-

derlying FCR. The SPT, piezocone and dilatometer data were used to estimate the soil shear strength variation with



Drilling activity at one of the two platform locations.



Cone penetration test rig positioned on platform during testing.

depth. The shear strength properties of FCR used in the slope stability analyses were supported by data developed from the in-situ testing program. Additionally, the in-situ SPT and SPCPT data indicated that the FCR would not be susceptible to liquefaction.