Testing was done in an attempt to determine the overall contributions that the remains of the groin just west of the cove area made to the erosion problems along the north shoreline. As this groin is in an extreme state of disrepair, it has become permeable and is therefore incapable of retaining sand. It does however create considerable eddy circulation on flood tide thereby enhancing erosion along the shoreline (see Fig. 6.4). P values ranging from 1 to 143 were obtained for flood and storm tides at this location. Negative P values were obtained along the immediate shoreline here during ebb tide. No significant changes in current velocities, wave heights and, therefore, P values in this immediate area were observed upon removal of the groin (See Table J-2), however, the circulation was somewhat attenuated (Fig. 6.5).

With the exception of a reduction in the flow velocity immediately downdrift of the weir-groin, the implementation of this scheme resulted in no noticeable change in the flow velocities and patterns (Fig. 6.6) or the wave heights at the groin location in problem site A. This indeed was desirable for this location as the principle behind the feeder beach and weir-groin concept is that sediment will still be transported over the weir-groin and further inland so as to nourish the westward reach of the north shoreline once a buffer of sand has accumulated in the cove area. P values of 0.5 to 42 for locations downdrift of weir-groin indicate that sediment should continue to be transported westward on a flood tide. In addition, no adverse effects due to the installation of this weir-groin were observed at other locations along the shoreline during the testing. Based on these results, model tests appear to indicate that this scheme is likely to mitigate the erosion problems at site A.