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"Caribbean Exploration – Planning for the Future"

## ABSTRACT

## HYDROLOGICAL EFFECTS OF THE 1997/04/22 TOBAGO EARTHQUAKE

## Joan L. Latchman

Seismic Research Unit, The University of the West Indies, St. Augustine, Trinidad, Trinidad & Tobago.

Significant earthquakes near Tobago have been recognised as having important hazard implications only since 1982. In April 1997, two of the largest earthquakes, since continuous, instrumental recording began in 1952, occurred: one off the west coast and the other off the south coast. There was a dramatic coseismic increase in groundwater discharge. This increased groundwater discharge was restricted to south-west Tobago between Shirvan Road in the west and Hillsborough West River in the east. A plot of the locations exhibiting such increased release reveals that they are within the boundary zones of the large-scale lithologic units. It is proposed that the water bearing fractures would have had to have closed significantly to output the volumes of water observed. The fault plane solution of the triggering event suggests that there was a normal faulting component, which is consistent with evidence that normal faulting produces the biggest impact on groundwater release.