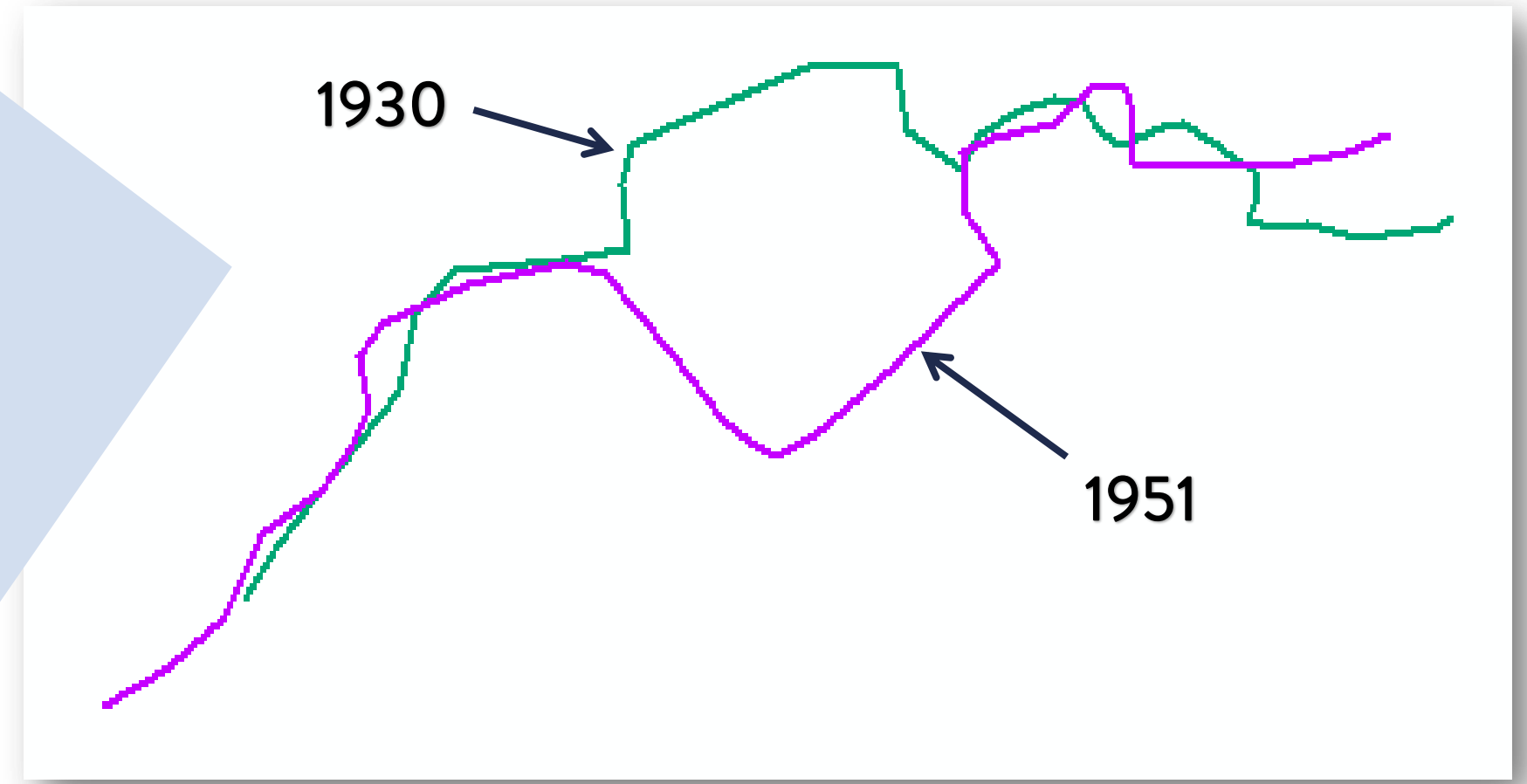
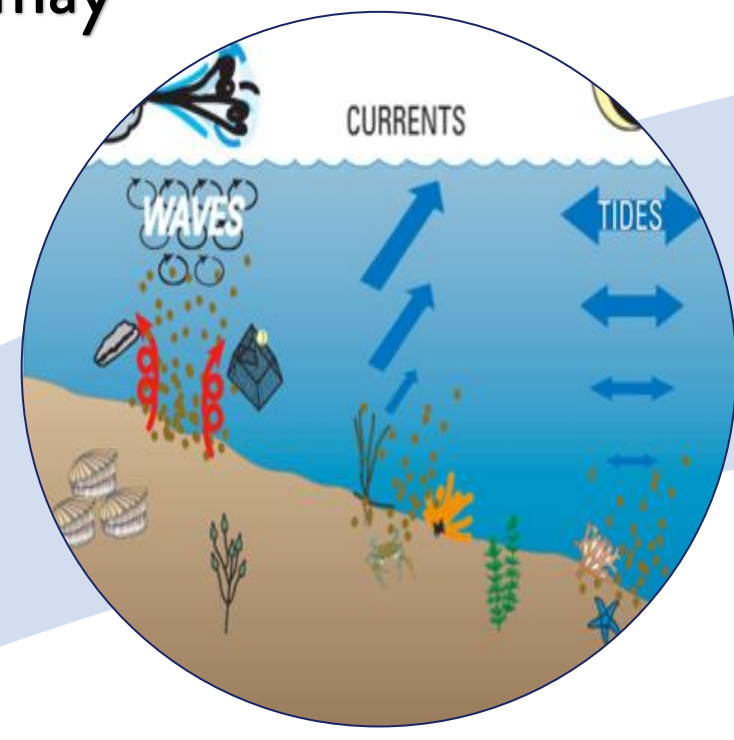
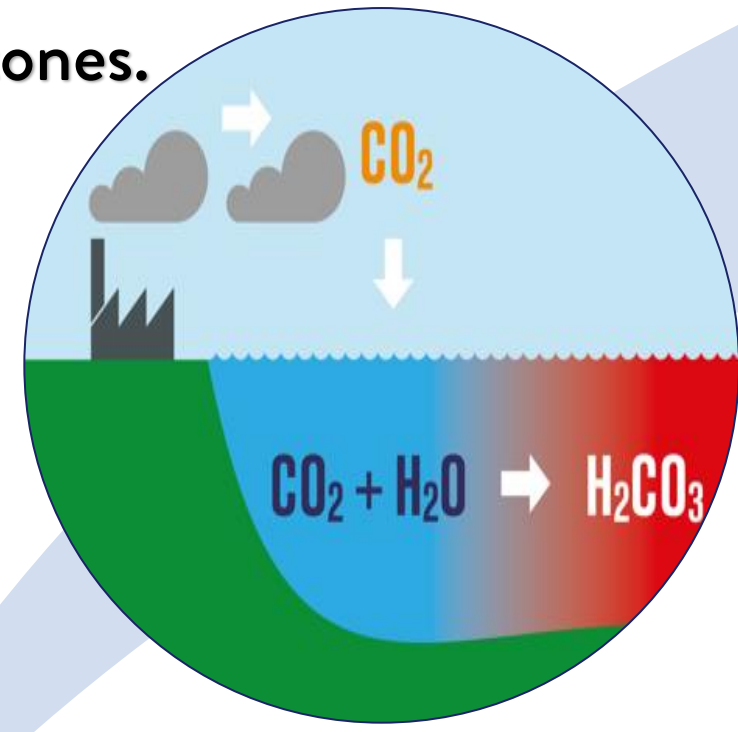


Motivation and Objectives

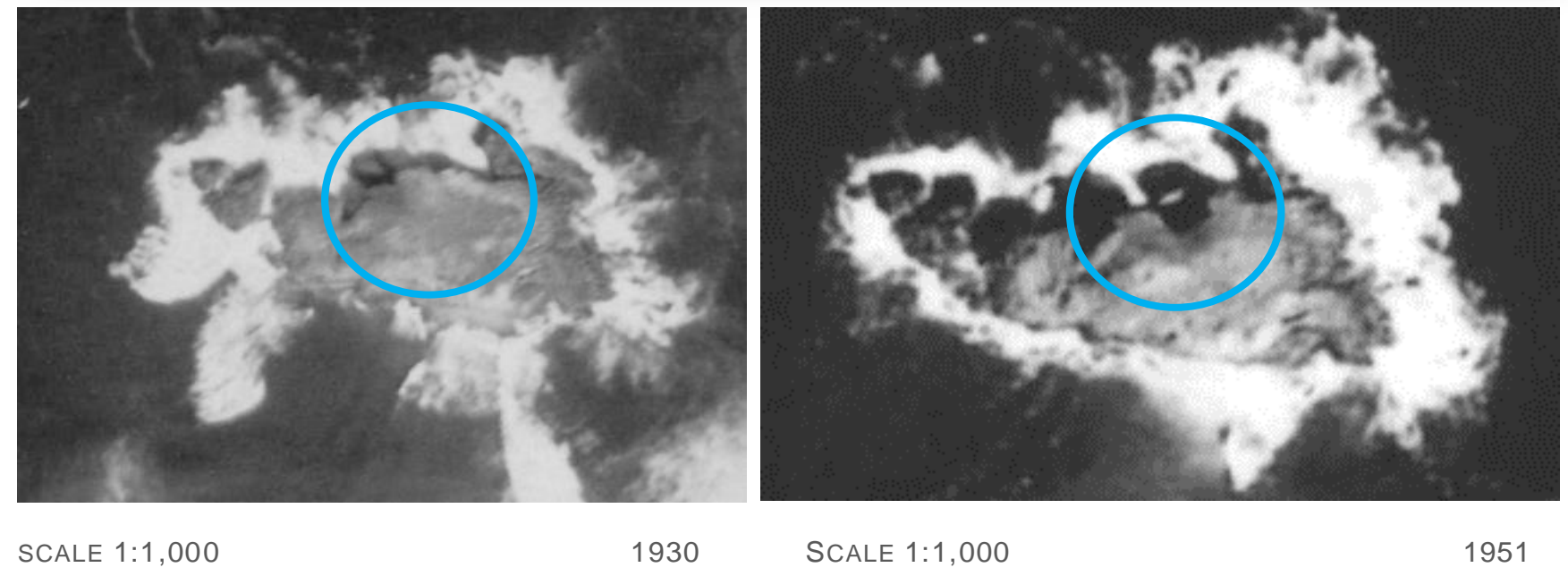
Physical stressors such as waves and currents, combined with chemical stressors like the raising acidic levels of the ocean, may cause degradation of coastal barriers as shown in Peñón Amador, Camuy Puerto Rico. This project seeks to further understand the combined effect of acidic water and fluid turbulence on sandstones.

We will evaluate the following pre-and post-treatment characteristics:

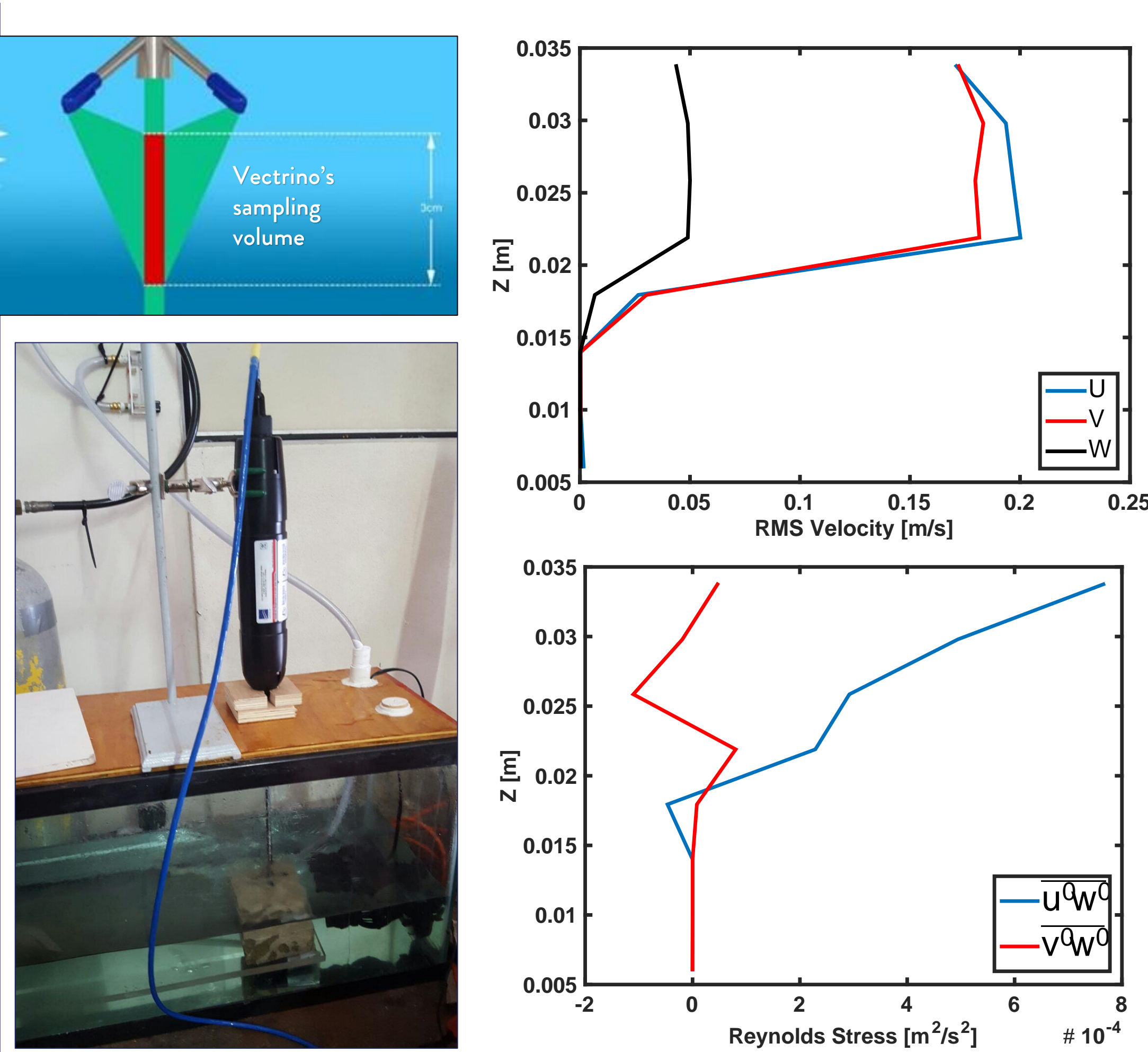
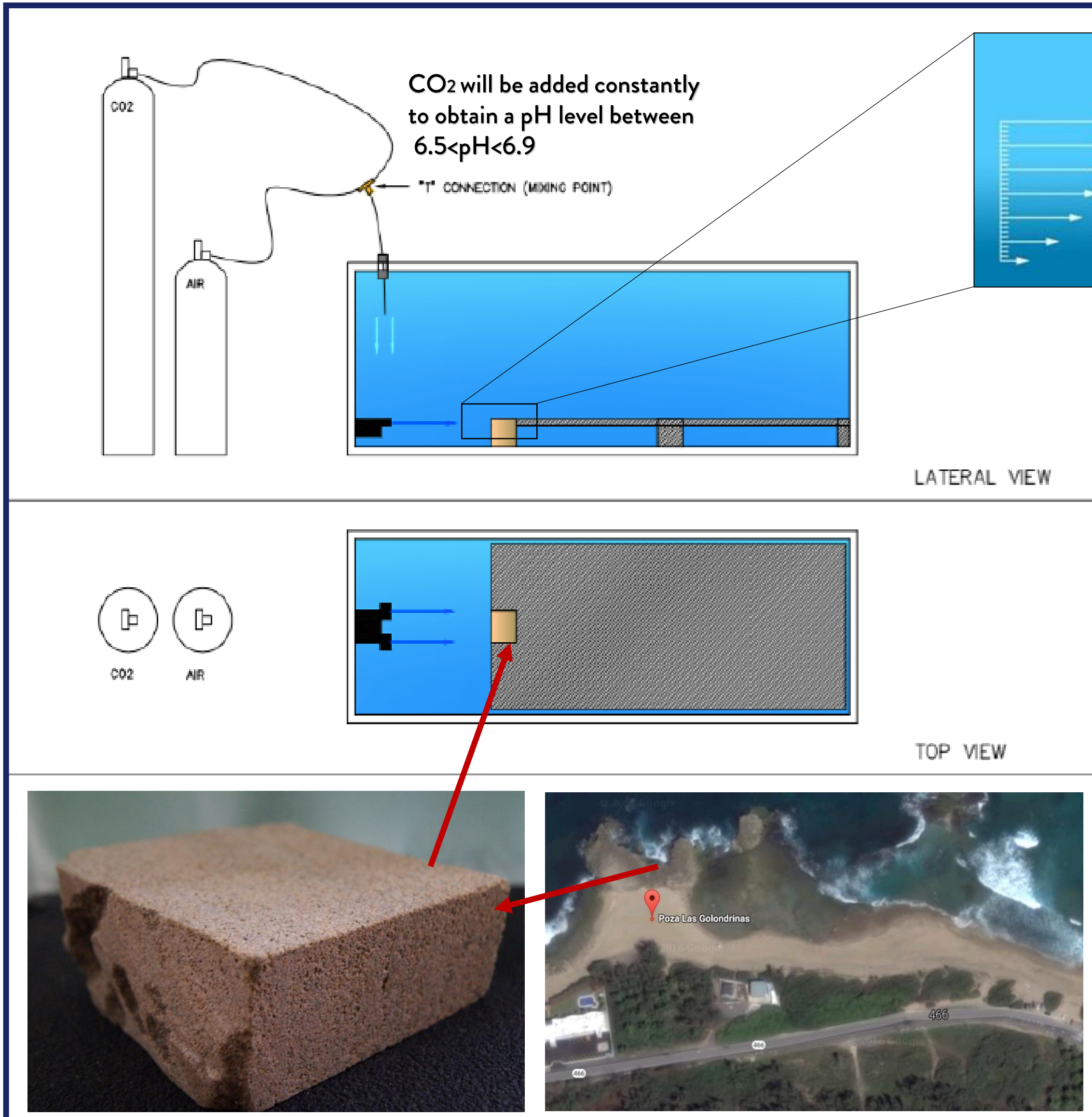
- strength
- roughness
- morphology
- mass
- carbonate
- binding.



Peñón Amador, Camuy, PR



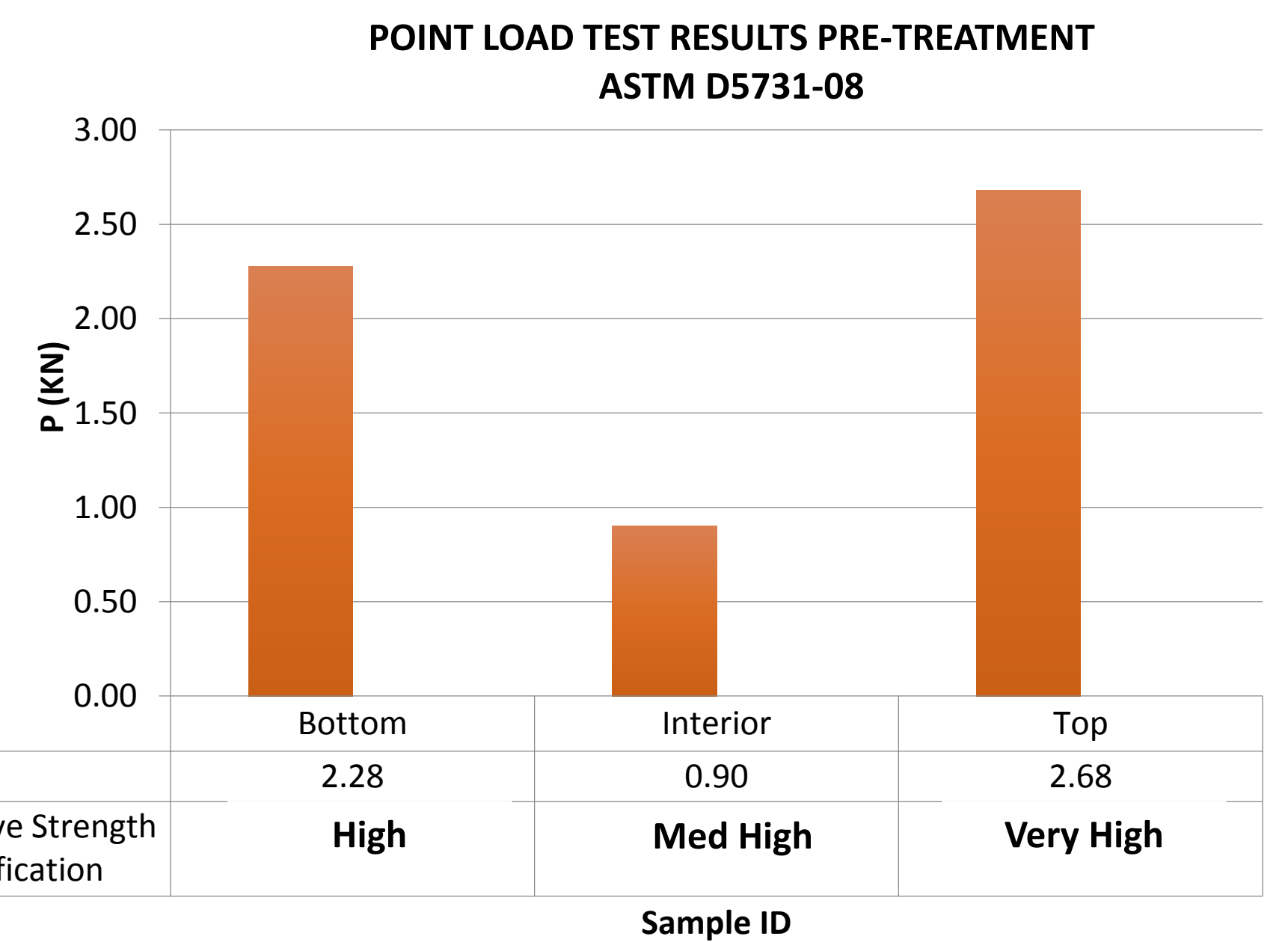
Experimental Setup



A sandstone sample obtained from Isabela, PR (left) is subjected to acidic seawater and fluid turbulence in the laboratory. Turbulence is provided by a fish tank pump (RMS horizontal velocities of O[20cm]), and characterized using a Nortek Vectrino Profiler (above).

Ongoing and Future Work

Characterization of sandstone samples took place before the chemical and physical treatment. Mineralogy images (below right) were collected to record the pre-treatment carbonate binding and roughness. A cast (below left) was also taken to record the pre-treatment morphology. Additionally, a point load test was used to characterized the material strength (right). These tests will be repeated after treatment to evaluate net effect of the combined physical and chemical stressors.



Acknowledgements

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