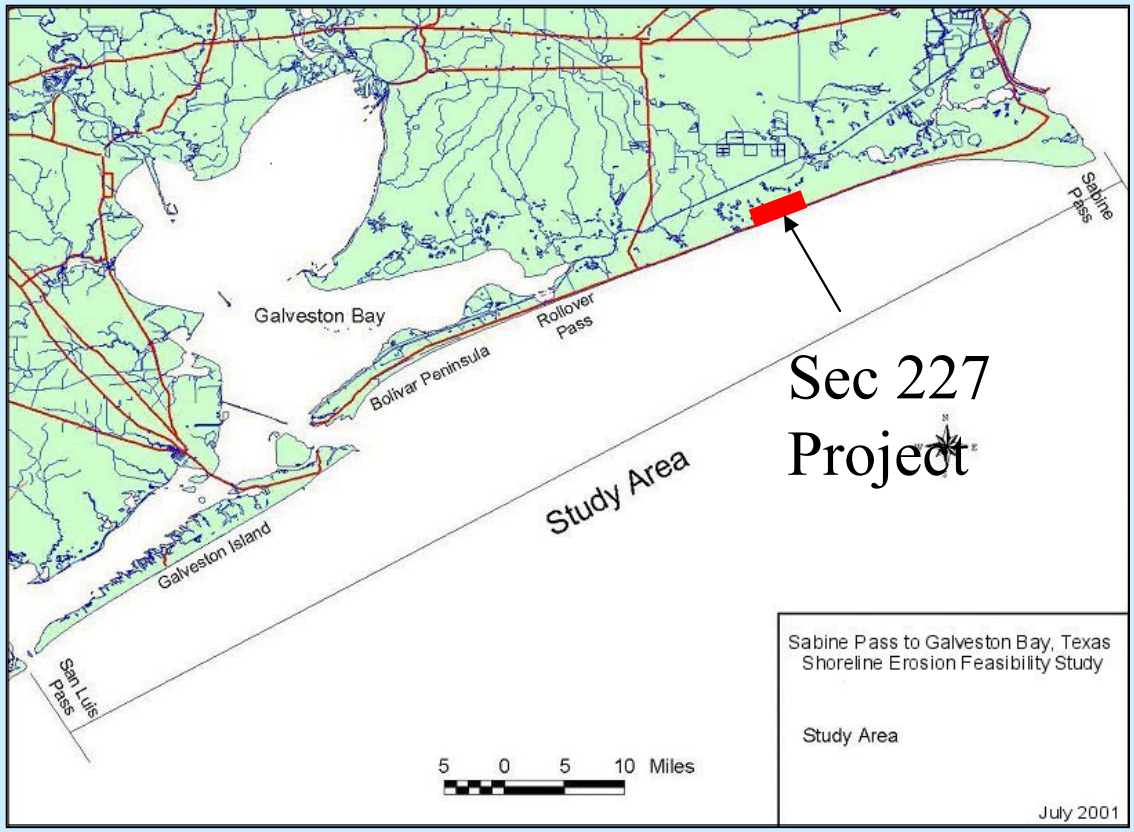
SECTION 227

Jefferson County, TX – Low Volume Beach Fill

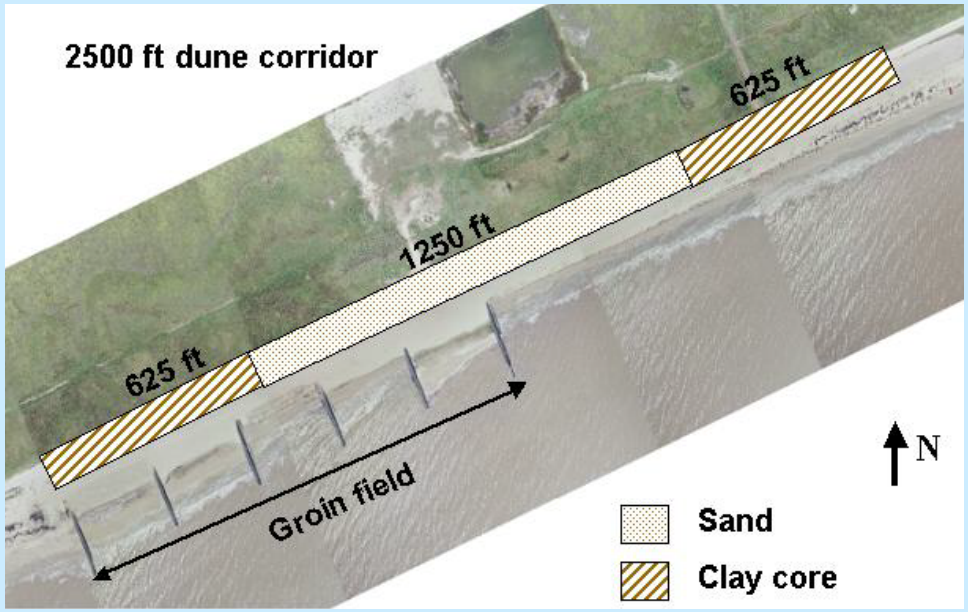
SECTION 227



Project fronts the McFaddin NWR – area is charcterized by a broad salt marsh with a muddy substrate

SECTION 227

Project Features



2500 ft dune

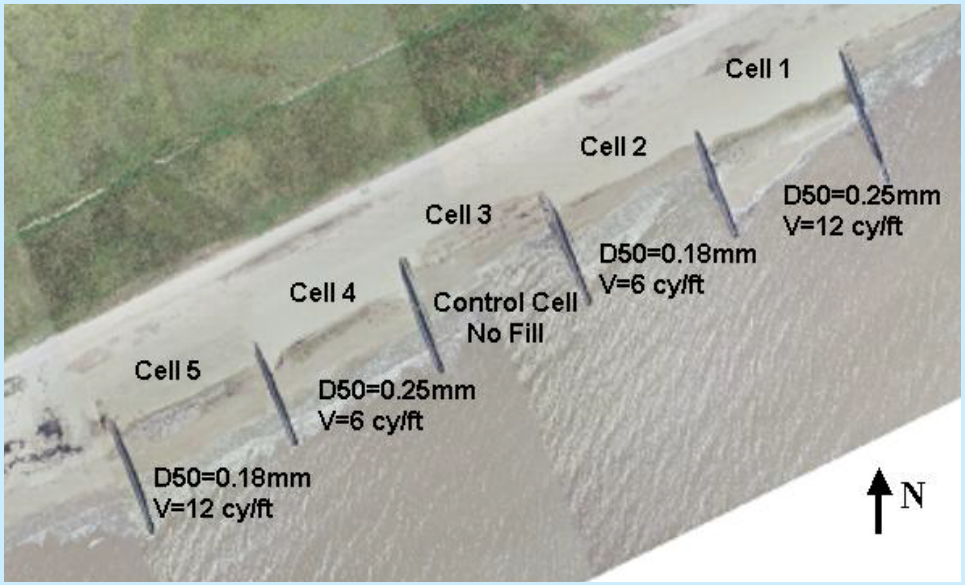
½ sand

½ sand/clay

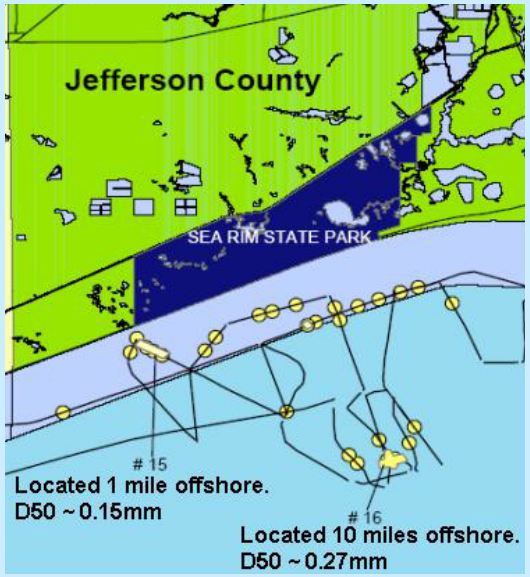
Geotube Groins

5 Nourishment Cells

SECTION 227



Experiment Groin Cells with Low Volume Beach Fill



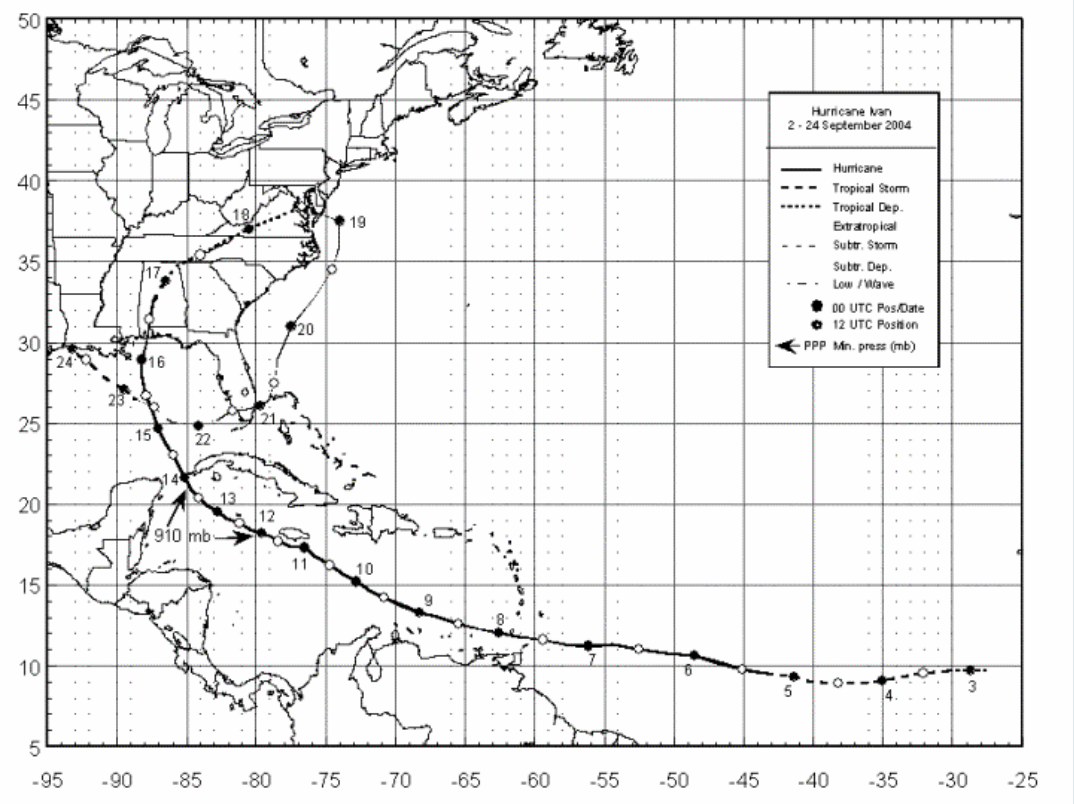
SECTION 227

Project Objectives

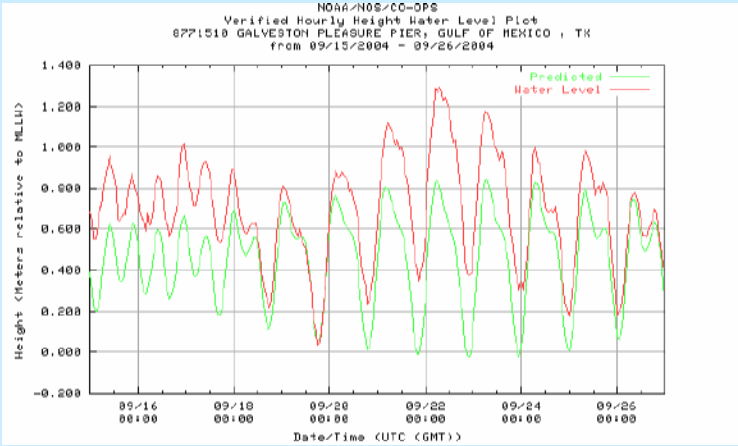
- Evaluate effectiveness of the dune at reducing overwash and retaining sand in the swash zone
- Assess performance of clay-cored dune and sand dune at both nourished and unnourished sites
- Determine effectiveness of low volume beach fill to reduce erosion of underlying clay layers
- Evaluate effectiveness of different grain sizes and nourishment rates
- Evaluate effectiveness of groins at retaining sand in cells and performance of geotextile structures

SECTION 227

Project Performance – Hurricane Ivan



SECTION 227

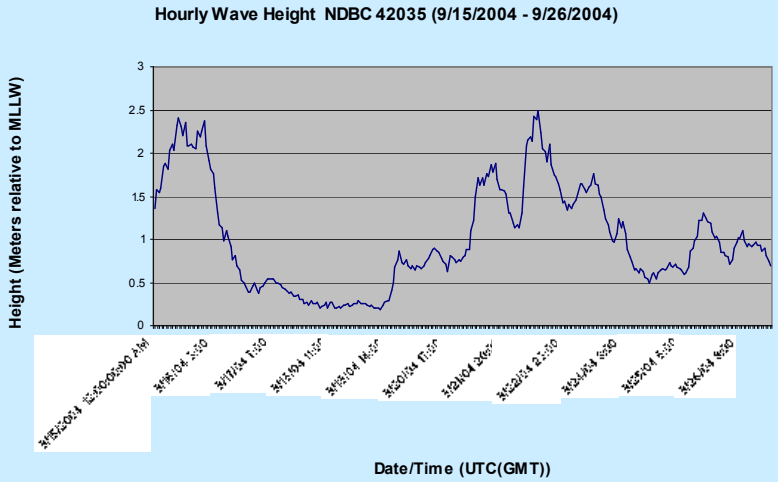


Hourly Water Levels

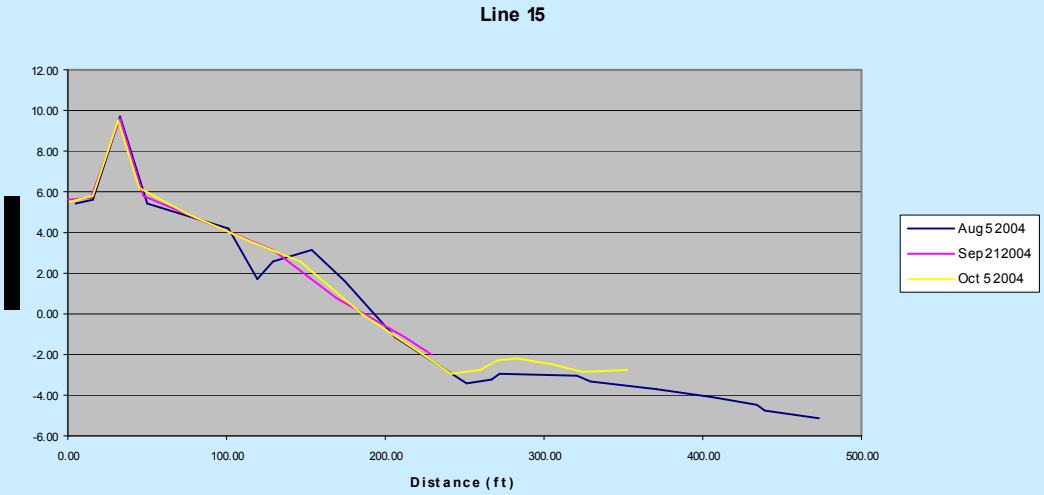
Pleasure Pier, Galveston

Wave Heights

NDBC 42035

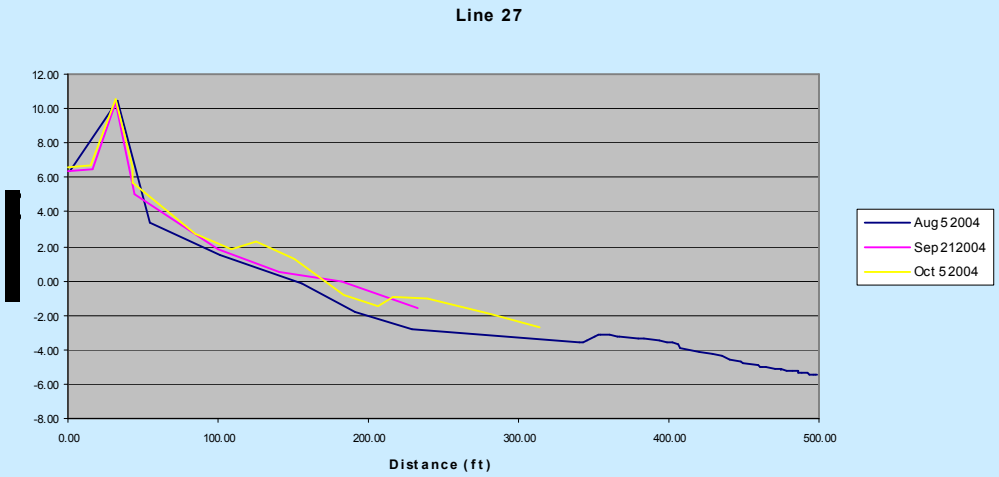


SECTION 227



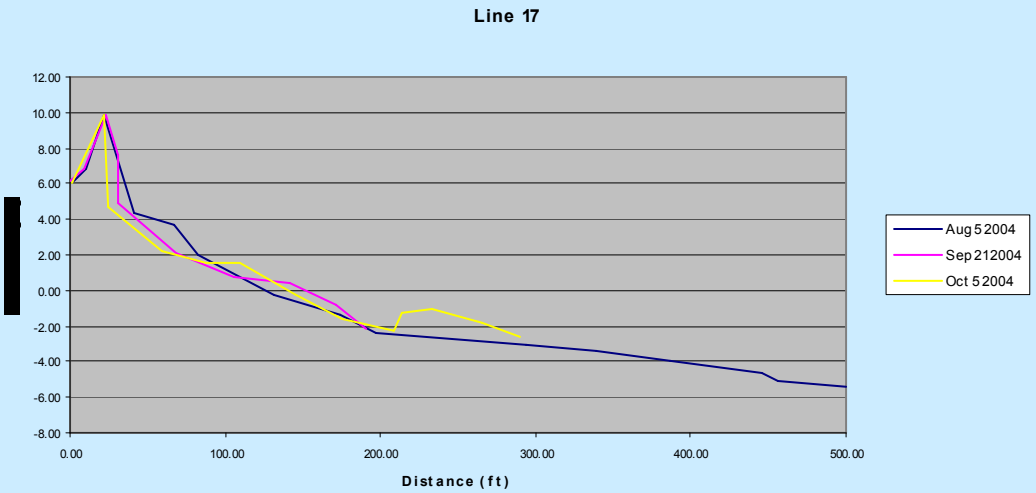
Post construction and post event profile data for Cell #1

SECTION 227



Post construction and post event profile data for Cell #3

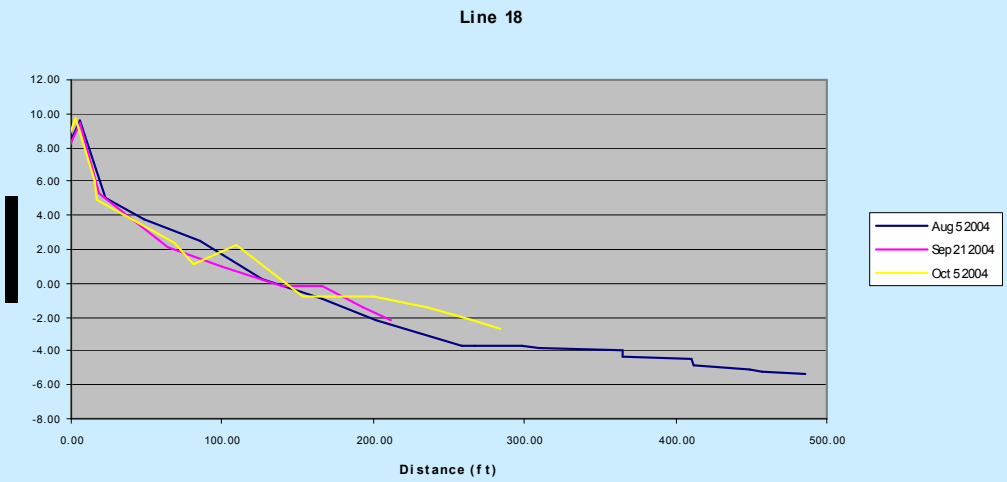
SECTION 227



Dune Response

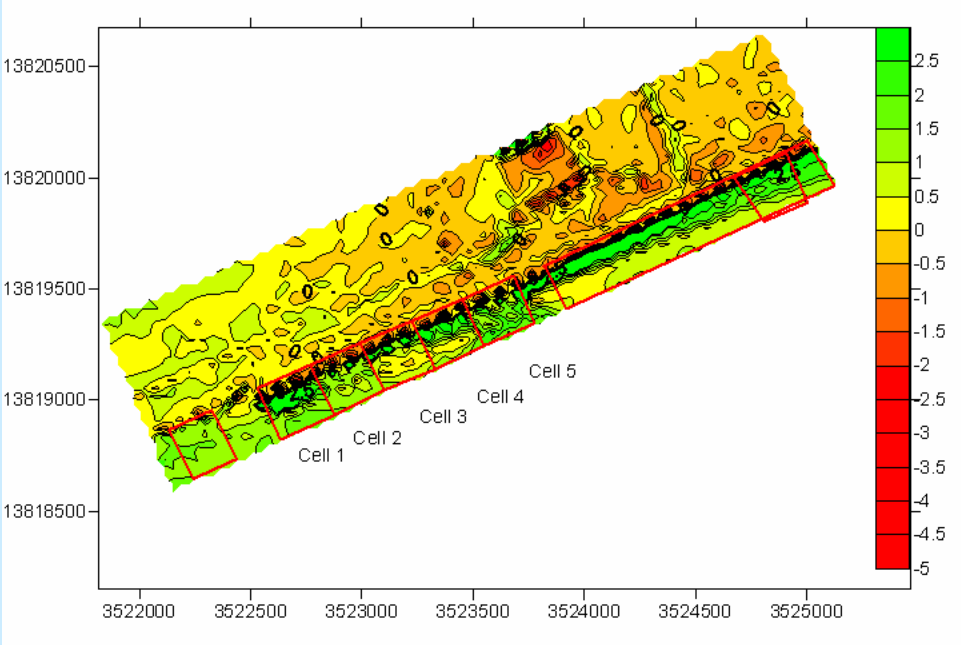
Sand-cored Dune

SECTION 227



Dune Response

Clay-cored Dune



Volume change calculations from digital terrain models, August 14, 2004 and January 14, 2005