

## Valdez Navigational Improvements

Valdez, Alaska

The construction of a mooring basin in Valdez, Alaska was planned on soft clay soils. Wick drains were used to eliminate the need for repeated maintenance of the breakwater.



### The project

The City of Valdez Alaska is located in a fjord in the Prince William Sound. The port and the public suffered from limited protected boat storage for smaller vessels. In September of 2014, the US Army Corps of Engineers solicited bids to construct a 14-acre mooring basin, to be protected by placement of 3,100 ft. of rubble breakwater.

## The challenge

A sub-aqueous shelf extended out from the shoreline a suitable distance to construct the mooring basin. The shelf was shallow enough to allow the rubble breakwater to be constructed with a reasonable amount of fill materials. However, the weight of the rubble fill materials would cause the soft clay soils to compress slowly over several years, which would require repeated sculpting/maintenance of the breakwater.

## The solution

It was determined that 5,500 wick drains installed 7 feet apart, through 8-15 feet of water and up to 50 feet into the underlying mud, in a square pattern would shorten the consolidation of the clays to a single winter wait season, which would allow the final breakwater forming to take place in the same contract.

“ The corps is happy with the performance of the breakwater settlement... the largest settlement was 1.5 feet at the end of the East Breakwater and about 1 foot at the end of the South Breakwater.

**Joe Zech**  
Superintendent, Western Marine

## Project facts

### Owner(s)

Town of Valdez

### Keller business unit(s)

Keller

### Main contractor(s)

Western Marine Construction, Inc.

### Engineer(s)

US Army Corps of Engineers

### Solutions

Ground improvement

### Markets

Infrastructure  
Ports and harbors

### Techniques

Wick (PVD) drains

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