



## Client

Valero

## Vessel Type

Panamax with 2 ASD Tugs

## Location

Levis, Quebec, Canada

## Manoeuvring Feasibility Study for Loaded Panamax Vessel

In order to determine whether Panamax type vessels, loaded to a 12-meter draught, could safely depart from a newly dredged area in wind conditions at the upward limits established for the St. Romuald terminal, Valero mandated the Maritime Simulation and Resource Centre (MSRC) to carry out a series of simulated exercises with a Panamax-type vessel assisted by two Z-Drive tugs with a bollard pull of 60 tons each.

The study was conducted on the Kongsberg's built, Class A and DNV approved, full mission simulator, which consists of a fully integrated bridge with modern instruments and a 330° uninterrupted field of vision and two other simulation bridges were used for the tugs manned by 2 qualified tug masters.

The MSRC's own database development tool was used to modify the 3D database. ENC's were used for geo-referencing all pertinent aspects of marine navigation: terrain elevation, coast line and man-made structures. Satellite imagery and local photography were used to ensure that the visual scenery yielded an accurate area representation, including non-charted fixtures commonly used by experienced pilots from the Corporation of Lower St. Lawrence Pilots.

