

[EPA Region 10 Dive Team](http://www.epa.gov/region10/dive)

Investigation of Petroleum Spill, Duwamish East Waterway, April, 2012

What: On March 9, 2012, a petroleum spill occurred at the Port of Seattle's Terminal 18 located on the east side of Harbor Island (Figure 1). The material spilled was a substance referred to as "S-7079 Mining Intermediate" which is a light, white colored petroleum distillate with a specific gravity of 1.0. An estimated 3,000 to 4,000 gallons of this liquid was released from a container, and entered the East Duwamish Waterway through a series of six drains located on the dock. Both the U.S. Coast Guard and the Washington Department of Ecology responded to the spill.

Why: The East Duwamish Waterway is a federal Superfund site on the National Priorities List. As part of the CERCLA remedy, a sandy cap was placed on the marine sediment surface in this area to physically isolate the contamination from the benthic environment.

Where/When: April 4, 2012.

How: Execute a visual and photographic survey of the bottom sediments in the vicinity of Terminal 18 to determine if there are obvious residual effects from the March 9 petroleum spill such as staining or free product. The area outlined in yellow on Figure 1 represents the approximate survey area for this dive operation. Water depths in the East Duwamish Waterway adjacent to Terminal 18 are between 55 and 60 feet. In order to determine if gross concentrations of petroleum (i.e., free product or sediment staining) are present that have contaminated the sandy bottom sediments of the marine cap, visual and photographic surveys were conducted along five, north-south transects, each approximately 200 feet in length and separated by about 25 feet. Each transect was centered on the cross-hairs shown on Figure 1 which represents the location of the spill. The western most transect was located immediately adjacent to the Terminal 18 pier (Figure 2), with the eastern most transect approximately 100 feet out into the channel.

Diver observations of the sediment surface were verbally communicated to the surface through a hard-wired connection between the divers AGA full face mask and the Kirby Morgan KMACS 5 system control box. A live video feed was also obtained and recorded through an arm mounted drop-camera and the *Monitor's* flat panel screen (Figure 3).

Results: On the morning of April 4, 2012, Terminal 18 was wide open and vacant of vessel traffic permitting easy access to the study area. However, a large container ship pulled into Terminal 18 at 13:20 in the afternoon that terminated dive operations (see Figure 7). The [R10 Dive Unit](#) was aware of this situation in advance from communication with Vessel Traffic Service (VTS) of Sector Seattle, U.S. Coast Guard.

During dive operations, no visual evidence of the petroleum spill such as sediment staining or free product was observed. In general, the bottom of the East Duwamish Waterway in the vicinity of Terminal 18 is a flat to slightly undulating sandy bottom covered with varying amounts of silt from trace

amounts to several inches in thickness. Bottom depths ranged from 56 to 61 feet deep across the surveyed area. While little benthic life was observed on the bottom, scattered invertebrates such as anemones, mollusks (gaper clams), starfish, and sea pens were seen (Figures 7-9) along with a variety of debris including scrap wood and metal, bottles, rope, articles of clothing, and logs. While visibility in the water column was about 5 to 7 feet, on and near the bottom, visibility was in the 15 to 20 foot range. The still photographic images presented in Figures 7-9 were captured from video feeds of both dives which were recorded in near entirety.

More Details: See the Harbor Island Superfund Site web page, <http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/HI>

Contact: Rob Rau, rau.rob@epa.gov

Return to [EPA Region 10 Dive Team](#) homepage.

Figure 1: Port of Seattle Terminal 18, East Duwamish Waterway



Latitude, Longitude: 47.58227215215811, -122.34647512435913

Figure 2. Diver CS preparing for western-most transect dive adjacent to Terminal 18 Pier.



Figure 3. Examining live video feed from drop camera aboard the *Monitor*.



Figure 4. Looking northeast from Terminal 18.

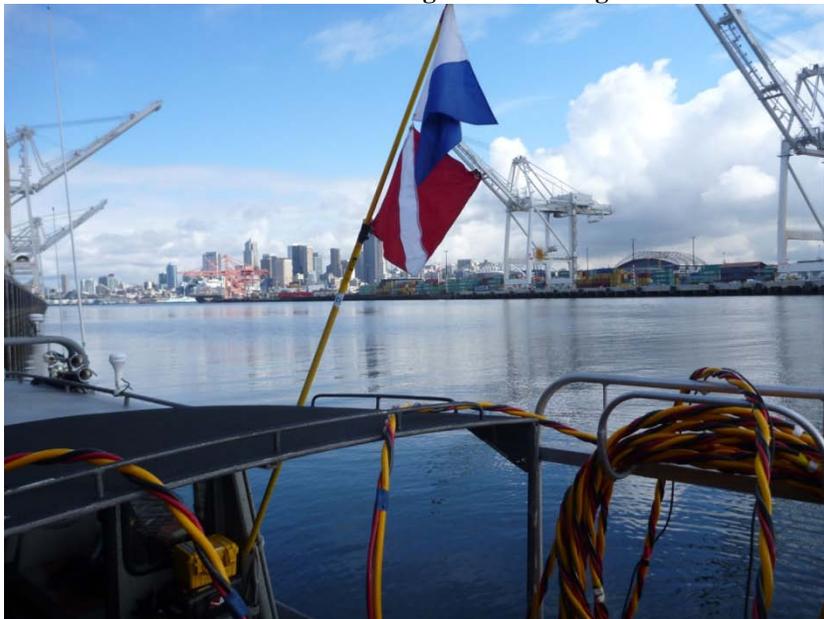


Figure 5. Diver exiting water.

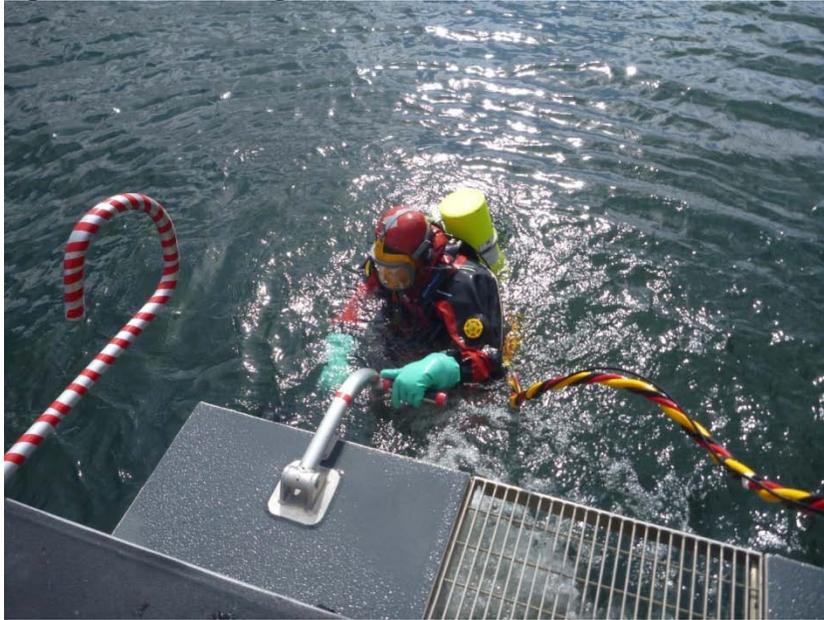


Figure 6. Diver RP and Tender SS.



Figure 7. Container ship entering East Duwamish Waterway, Terminal 18.



Figure 7. Hollowed-out log on bottom.



Figure 8. Star fish on bottom.



Figure 9. Anemones on bottom.

