Harper Estuary

Phase II Assessment

In 2013, the Legislature directed $4.1 million in funding to restore Harper Estuary, which is located approximately 1.5 miles north of the Southworth Ferry. Harper Estuary became a candidate restoration site as part of the Puget Sound Nearshore Ecosystem Restoration Program (PSNERP). PSNERP evaluated a variety of degraded ecosystems in Puget Sound and identified actions and projects to restore important nearshore habitats. The Harper Estuary Restoration project was selected by Ecology in collaboration with PSNERP for funding through the natural resource damage funds associated with the cleanup settlement account for the ASARCO smelter site in Tacoma. The site is within the affected area of the ASARCO smelter.

Harper Estuary was once an active industrial area and home to the Harper Brick and Tile Factory until the 1930s when the factory closed. After closing its doors, the factory was bulldozed into the adjacent Harper Estuary. Remnants of the factory including kilns, smoke stacks, and bricks are visible in piles within the estuary and in filled areas off of Olympiad Drive. As part of PSNERP's site evaluation efforts, a Level I Survey was performed to determine the potential current and historical influence of contamination from activities on or near the site. This investigation did not reveal any contamination or potential contaminant sources on or in the vicinity of the project area. However, the Level I Survey recommended that a Level II Survey be performed.

Ecology's Toxics Cleanup Program, with the assistance of one of our prime contractors, is leading a Phase II Assessment (equivalent to a Level II Survey) to address potential areas of concern within the restoration footprint. A Phase II assessment consists of:

1) Preliminary field review and review of historical information to identify locations for sampling
2) Collection of soil samples
3) Analysis of samples
4) Report of findings
5) Recommendations for future work, if needed

At Harper Estuary, we identified six locations that are representative of the project site to take samples. The samples were collected and sent to the lab to test for a wide range of chemicals. This analysis is commonly performed for project sites with known historic industrial use that will be restored or redeveloped.

This assessment was used to determine if contaminants are present at the project site and if identified contaminants need to be addressed independent from the proposed restoration.

<u>What was tested for?</u>

A Phase II Assessment involves testing for a wide range of chemicals. For this project, Ecology tested for over 150 chemicals including metals (13 priority pollutant metals), polycyclic aromatic hydrocarbons (PAHs; 20 including carcinogenic PAHs), phthalates (6), phenols (14), other semi-volatile organic

compounds (SVOCs; 28), volatile organic compounds (VOCs; 55), TPHs (gasoline-range hydrocarbons, diesel- and oil-range hydrocarbons), and dioxins/furans (17).

Where?

We took soil samples from 6 locations in Harper Estuary. These locations represent known fill areas that are targeted for restoration (i.e., removal of fill material).

How?

Soil sampling followed standard field procedures. Soil samples were taken from fill areas approximately 6 to 12 inches and 18 to 24 inches below the ground surface using a hand auger. All equipment was decontaminated between samples. The samples were placed into laboratory supplied sampling containers and stored on ice until delivery to the lab. The field sampling and laboratory procedures are outlined in the SAP/QAPP.

What the sampling revealed?

The majority of the chemicals tested for were not detected in the soil samples. Other chemicals were detected but most were not detected above cleanup levels. A few chemicals were detected slightly above cleanup levels.

Sampling results revealed low level contamination (i.e., slightly above cleanup levels) in historic fill material for only two chemicals/compounds – arsenic (2 samples, 1 location) and cPAHs (1 sample, 1 location). These chemicals were found in areas where fill material will be removed as part of the proposed restoration.

These chemicals can be found at existing and historical industrial and commercial sites throughout Puget Sound.

What Ecology recommends based on these results?

The Harper Estuary is a restoration site. The restoration project will contribute to removal of contaminants in the estuary.

Ecology recommends removing fill material where known contaminants are present down to the native material in the estuary. During construction, Ecology recommends sampling for the identified chemicals 1) in the fill material to determine an appropriate disposal site (standard upland landfill or a specialized landfill) and 2) in the native sediments below the fill to confirm whether the contaminants were fully removed and if the contaminants are below cleanup levels.