

**2006 POST-CONSTRUCTION MONITORING AND
PROJECT COMPLETION REPORT
HOLLY STREET LANDFILL**

Prepared for

City of Bellingham
Public Works Department
210 Lottie Street
Bellingham, Washington 98225

For submittal to

Washington State Department of Ecology

Prepared by

Anchor Environmental, L.L.C.
1423 Third Avenue, Suite 300
Seattle, Washington 98101

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1 INTRODUCTION

The Holly Street Landfill Consent Decree, executed by the Washington Department of Ecology (Ecology), the City of Bellingham (City), and other Defendants, includes requirements for compliance monitoring in 2006, 2010, and 2015 (as necessary). The monitoring data will be used by Ecology to confirm that cleanup actions described in final design documents approved by Ecology in April 2004 (Anchor and Aspect 2004), and constructed by the City over the period from August 2004 to March 2005, have achieved Site cleanup standards. The post-construction monitoring data are also used to develop appropriate adaptive management/contingency response plans (as necessary) to ensure the continued effectiveness of the cleanup remedy. This report presents the results of the first stage of post-construction compliance monitoring performed in 2006, and outlines planned adaptive management response actions.

1.1 Background

The Holly Street Landfill Site is a 13-acre historic municipal solid waste landfill located in the City's Old Town district. Beginning in approximately 1937 and continuing as late as 1959, municipal solid waste was placed on both sides of Whatcom Creek, with the landfill divided into a northern unit and a southern unit. Both the northern landfill unit on the northwest bank of Whatcom Creek, and the southern landfill unit encompassing Maritime Heritage Park and the southeast bank of the creek, are listed and ranked by Ecology as contaminated sites subject to the investigation and cleanup requirements of the Washington State Model Toxics Control Act (MTCA). Since these areas are essentially one Site bisected by Whatcom Creek, Ecology combined the areas into a single Site known as the Holly Street Landfill.

The City currently owns 8.3 acres of the 13-acre landfill Site, including all landfill properties located along the Whatcom Creek shoreline. Various private property owners own land around the upland/inland perimeter of the landfill.

A Remedial Investigation/Feasibility Study (RI/FS) was prepared by Anchor and Aspect (2003) to characterize the nature and extent of contamination at the Holly Street Landfill Site. Soil, sediment, surface water, and groundwater conditions were characterized during the RI/FS. As set forth in Ecology's Cleanup Action Plan (CAP) for the Site (included as Exhibit A to the Consent Decree), based on the findings of the RI/FS, controls were needed

at the Site to continue to prevent future human and environmental exposure to buried (subsurface) refuse and associated soil contaminants. Moreover, although contaminants were not detected in Site groundwater at levels of potential concern, metals such as copper and zinc in the landfill refuse could potentially be mobilized by tidal processes in the shoreline landfill zone. During the conduct of the RI/FS, these processes were found to result in seepage to Whatcom Creek along a localized reach of the northern landfill unit shoreline, posing a potential risk to sensitive aquatic species in this area.

The RI/FS and CAP developed and evaluated remedial alternatives for the Site. As set forth in the Consent Decree, the selected cleanup alternative for the Site included a cap constructed along the northern landfill area and localized upland areas, institutional controls, and monitoring of localized surface water seeps. Based on a consideration of geochemical processes controlling copper and zinc mobility at the Site, the identified shoreline capping system was designed to restrict tidal mixing and associated oxygen transfer into nearshore refuse deposits of the northwest landfill lobe. Such a cap system is expected to be effective in controlling the release of copper and zinc into Whatcom Creek.

Consistent with the requirements of the CAP and Consent Decree, the cleanup option implemented by the City combined habitat restoration, public access, and land use elements into a single integrated cleanup and source control remedy. The integrated plan included:

- Excavating wedges of shoreline solid waste within and adjacent to the "B" Street right-of-way, and along limited oversteepened/bulkhead areas of the Maritime Heritage Park shoreline, and disposing the excavated material off-Site
- Backfilling the excavation areas with a clean cap material graded to relatively flat slopes, concurrently providing slope stabilization and restoring historically lost aquatic habitat in this important estuary
- Enhancing the existing soil cap in portions of the Maritime Heritage Center to be consistent with other landfill areas already capped to ensure that humans and the environment are protected from buried solid waste
- Incorporating public access into the overall project design to address existing community open space goals and planning objectives

The habitat restoration component of the integrated action included conversion of approximately 0.3 acres of uplands to aquatic habitat via excavation of refuse and subsequent capping, thus restoring critical estuarine riparian buffer, marsh, and mudflat banks that existed historically in this area of Bellingham Bay. This action also provided a park-like setting allowing citizens trail access along this stretch of Whatcom Creek to the Maritime Heritage Center. Incorporating public access design with cleanup and habitat restoration helped meet community open space goals and planning objectives, leveraged additional community support and funding, and provided an opportunity to educate the public about critical estuarine environments. Future plans are consistent with maintaining long-term habitat restoration and public access benefits at the Site.

The Consent Decree included a list of specific deliverables required to document compliance during construction of the cleanup action. All such deliverables have been submitted to Ecology. Record drawing information was incorporated into a single “as-built” plan sheet, including the final topography of the creek banks provided by the contractor in those areas where excavation and/or fill work was performed. This finished slope topography was combined with earlier pre-construction bathymetric surveys for areas of Whatcom Creek that were beyond the limits of construction, to provide a single post-construction topographic surface (see Figure 1). The as-built locations of field changes, such as revised locations of woody debris and new storm sewer features near the bridge, were also added to the record drawing map.

