the canal and turning basin was constructed as an extension to Phase 1B while the canal was dewatered. This change was made because it was determined that placement of the geotextile and sand could be better controlled in the "dry", construction in the winter months would take advantage of increased sediment strength due to freezing; and the schedule would be accelerated. Phase 1A was conducted first to allow for control of the canal water elevation during subsequent phases of construction.

4.2.1 Phase 1A – Construction of the Weir

Phase 1A consisted of the construction of a cast-in-place, broad-crested concrete weir at the canal outlet to Lake Champlain. Construction of the weir took place in October 2001 and received a final construction inspection by EPA on November 1, 2001. The weir is approximately 50 feet long and is located beneath the Burlington bike path bridge at the canal outlet. The weir was designed to provide a normal canal stage elevation between 96.0 and 96.5 feet NGVD. Removable stop logs and a six-foot wide sluice were incorporated into the design to allow variation in the canal stage elevation after completion of construction in order to improve wetlands hydrology and optimize wetlands functions at the Site, and to improve access conditions for cap maintenance activities. The Phase 1A Remedial Action Construction Completion Report was submitted to EPA in January 2002.

4.2.2 Phase 1B/2 – Cap Construction

Phase 1B, which consisted of the capping of Areas 3 and 7, construction of the Burlington Electric Department (BED) stormwater outfall and other stormwater management features, and capping and construction of the Area 2 waterway in the southern end of the canal, was implemented in the summer and fall of 2002. Phase 2 construction was implemented during the winter of 2002/2003 and as an extension of Phase 1B. The cap consists of a geotextile material covered by sand in the canal and turning basin, and sand and topsoil in the upland areas. In the wetland waterways, GeoWeb® was paced on sand and filled with crushed stone to provide erosion protection. Capping of a 100 x 100 foot area south of the turning basin and just east of the canal was done following the winter installation of the cap in the canal and turning basin. The cap in this area consisted of sand and topsoil.

In the spring of 2003, following a high seasonal lake water level, non-aqueous phase liquid (NAPL), both lighter and denser than water (LNAPL and DNAPL), was observed on a portion of the west bank of the canal outside of the cap footprint, and on top of the subaqueous canal cap adjacent to the west bank area. Sheens and globules of NAPL were also observed on the water surface in the canal. During the fall of 2003, a NAPL response strategy was developed which recommended additional capping over the affected portion of the west bank of the canal and removal of DNAPL that had accumulated on the surface of the cap in the canal. Additional investigations of the nature and extent of NAPL contamination on the canal cap and near sub-surface were performed by the Performing Defendants and, based on the results, the West Bank Cap Remedial Action Workplan and Supplemental West Bank Cap Remedial Action Workplan were prepared by Johnson Company, in the late fall of 2003. The west bank cap construction and DNAPL removal were implemented in the summer of 2004.

Wetlands restoration activities were performed in accordance with the Wetland Restoration Plan, contained in the Phase 1B Remedial Action Design Report, and the supplemental restoration plan for the west bank cap, with certain modifications. The initial seeding and planting within the wetland restoration

Five-Year Review Report

for

Pine Street Barge Canal Superfund Site

Burlington,

Chittenden County, Vermont

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