

that increased with increasing distance from the Study Area suggestive of other sources. No PAHs were detected in stormwater inflow to the canal, but thirteen metals were detected.

Water quality data (pH, temperature, specific conductance, and dissolved oxygen) for the canal included measurements taken during June and August 1990 and a continuous monitoring program conducted in 1994 and 1995. Dissolved oxygen levels range from 0.9 to 11.7 mg/L. The higher oxygen levels are at the surface of the canal, the lower levels occur near the bottom. The variability of dissolved oxygen may be attributed to high sediment oxygen demand associated with eutrophic conditions in the canal. A detailed discussion of water quality information is in the 1997 ARI.

E. Sediments

A thorough characterization of shallow (top 4 inches) sediments in the canal and wetlands during the 1997 ARI revealed extensive PAH contamination (mean concentration of 505.5 ppm), with the highest levels (up to 29,360 ppm) in the northern part of the canal and turning basin. Concentrations of metals and cyanide were also elevated in shallow canal and bordering wetland sediments. Concentrations of cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc exceeded their published ecological effects guidelines (Long et al., 1995; Jaagumagi et al., 1995).

F. Air

Air sampling was conducted during the 1992 SRI and 1997 ARI. The results indicate that during undisturbed conditions, that is when the soil and sediments at the Site are not stirred up, there is no impact on the local ambient air.

G. Ecological Resources/Wetlands

1. Ecological Setting

Approximately 21 acres of the Site are represented by four wetland community types. These are palustrine emergent wetland (7.5 acres), palustrine open water (6.2 acres), palustrine forested wetland (3.7 acres) and palustrine scrub-shrub wetland (3.7 acres). (Palustrine refers to a specific wetland system that is nontidal and dominated by trees, shrubs and emergent vegetation.) The remaining 17 acres of the Site are upland scrub-shrub and forested communities, and open grassy areas typical of disturbed urban areas. Pine Street Canal Site wetlands rated high in a wetlands functions and values assessment based on the presence of physical (abiotic) elements and vegetation (plant assemblages). The wetlands rated high because structural elements exist for promotion of wildlife and aquatic habitat, nutrient removal/transformation, sediment/toxicant retention, and production export. These wetlands have the potential to provide the following ecological and socio-economic services: temporary storage of stormwater runoff, surficial-flow stormwater quality enhancement, fisheries habitat, wildlife and migratory bird habitat, and open space and aesthetics. Based on a computer simulation model (WETHings), wildlife surveys and best professional judgement, the wetlands have the potential to support a variety of mammals, reptiles, fish, and amphibians, based on the interspersion and juxtaposition of vegetation and abiotic structural elements.

**ENVIRONMENTAL PROTECTION AGENCY
REGION I**

RECORD OF DECISION

**PINE STREET CANAL SUPERFUND SITE
BURLINGTON, VERMONT**

SEPTEMBER 1998