The 2000 ROD included a removal action for “nearshore” sediments and “elevated risk-offshore” sediments, as well as limited action for the “ offshore areas with low risk”. The ROD did not include institutional controls or access restrictions and did not recommend any cleanup actions for groundwater or landfill gas (U.S. Navy, 2000). The limited action alternative did include long- term monitoring (30 years) of sediment and biota and five-year reviews. Annual monitoring was required until the Navy and regulatory agencies determined that the frequency could be reduced from annual to once every 5 years (U.S. Navy, 2000).

2.3.2 Remedy Implementation

Implementation of the source control remedy is described below. As previously mentioned, during construction of the landfill cap, landfill debris was discovered in the intertidal area beyond the landfill boundary. This discovery lead to further investigations, culminating in a second ROD in March 2000, as described above. Implementation of the marine sediment remedy described in the 2000 ROD is also described below.

Source Control

The remedial activities for the McAllister Point Landfill (Source Control) were completed in 1996, and consisted of the following elements:

- Construction of a heavy armor stone revetment to protect the western slope of the landfill from wave erosion;
- Re-grading and reconsolidation of waste material;
- Clean-up of exposed debris within close proximity to the shoreline;
- Covering the fill area with a RCRA Subtitle C multi-layer cap;
- Installing a passive gas collection venting system;
- Installing surface controls to minimize erosion and collect runoff;
- Installing a perimeter chain- link fence and implementing procedures to control site access and use;
- Revegetation planting of upland habitat; and
- Installing groundwater monitoring wells to replace the wells that were destroyed during capping of the landfill.

A final Certification Report for Remedial Action (Halliburton NUS Corp., 1997) was submitted to the Navy, USEPA, and RIDEM in February 1997. The report documented and certified that the methods, procedures, and inspection and testing activities conducted to close the landfill were performed in accordance with the EPA-approved 100 percent design project specifications and drawings, and the Material Quality Assurance/Construction Quality Assurance Plan. The data collected during the project were used as the basis to certify that the landfill was closed in accordance with the project specifications and drawings. As part of the remedy, institutional controls were implemented including fencing, access controls, and restrictions of the area to future use as a landfill. An Operation and Maintenance (O&M) Plan was prepared in March 1997 (Foster Wheeler, 1997). The 30-year O&M period is now underway, in accordance with the May 1997 Operations and Maintenance Manual (see Section 2.3.3).

Marine Sediment/Management of Migration

Following the issuance of the 2000 ROD, a number of studies were completed as part of the remedial design phase of work. The Pre-Design Investigation evaluated the use of the McAllister Point Landfill for disposal of contaminated marine sediments. A baseline marine habitat survey was completed, followed by completion of a habitat mitigation plan. The remedial design reflected the decision to dispose of contaminated sediment and landfill debris at licensed off-site facilities, rather than under the McAllister Point Landfill cap.

Mobilization activities commenced in late February 2001. Site preparation activities included: construction of haul roads to and around the material handling area staged at Tank Farm Five; installation of silt and chain link fencing; and construction of the material handling area. The material handling area and a water collection pond at Tank Farm Five were constructed in accordance with the agency-approved design documents and included a geotextile

membrane liner, sand and gravel layers. Turbidity curtains were installed at the perimeter of the nearshore and elevated risk offshore areas to minimize the migration of sediments during the dredging activities. Turbidity curtains were also used as the dredging progressed to separate confirmed clean areas from active dredging areas.

The landfill debris layer in the nearshore area generally ranged from 1-foot to 10-feet thick. Dredging was performed from a haul road constructed along the shore line. The debris dredged from this area included bricks, scrap metal, glass, submarine netting, automobile tires, a safe, ash, sandblast grit, and a decayed metal storage tank; no drums were found (Foster Wheeler, 2003a). Once the landfill debris layer had been removed and the bottom of contaminated sediment reached based on visual inspection of the material, confirmation samples were collected. After an area was confirmed clean, the area was backfilled with materials appropriate to the area and graded.

Dredging of the sediment from the “elevated risk offshore” area was performed from a barge. Once the bottom extent of the landfill debris material was reached and the material in the clamshell bucket was visually clean, confirmation samples were collected (Foster Wheeler, 2003a). After an area was confirmed clean, the area was backfilled with materials appropriate to the area and graded.

The confirmation samples from both the nearshore and elevated risk offshore areas were analyzed for total anthracene, pyrene, fluorene, and PCBs. Porewater copper and nickel samples were analyzed from every 2,000 square foot area, or every other sample grid (Foster Wheeler, 2003a). Once the confirmation sample results met the PRGs (see table in Section 2.3.1) the area was considered clean. Areas that did not initially meet the PRGs were excavated further and the sampling process repeated until the area was determined to be clean (Foster Wheeler, 2003a). The confirmation sampling program included collection of field duplicates, equipment rinsates, and other QA/QC samples.

The dredged materials were staged in the material handling area and stockpiled in 500 cubic yard piles. Samples were taken from each stockpile for waste characterization and based on the analytical results, an appropriate off site disposal facility was selected. Dredged sediment and landfill debris were disposed as follows: non-hazardous materials were taken to two RCRA Subtitle D facilities in Massachusetts; non-TSCA PCB material was disposed of in New Hampshire; and non-hazardous material with lead concentrations greater than 2000 ppm and non-TSCA PCB material were disposed of in South Carolina. Approximately 46,263 tons of contaminated sediment, 86 tons of scrap metal, and 18.5 tons of steel submarine netting were removed during the remedial action (Foster Wheeler, 2003a). A small amount of material was found that emitted low level radioactivity identified by standard screening processes. This material was containerized into three 55-gallon steel drums, which were removed and properly disposed of by Navy personnel.

Approximately 895,540 gallons of water from the water collection pond were treated and discharged to the Newport publicly-owned treatment works (POTW) under an industrial user wastewater discharge permit. The treatment system that had been installed to treat contaminated groundwater from the Tank 53 area was modified to treat the water from the collection pond. The treatment system included pH adjustment, bag filter units, and carbon units. The treated water was sampled to confirm that the water discharged to the POTW met the PRGs.

Prior to the removal of contaminated sediment, a Habitat Mitigation Plan was developed to restore habitat destroyed during the dredging operations to the conditions documented during a baseline habitat survey conducted in 2000. The mitigation plan included replacement of dredged sediments with clean backfill, construction of fish habitat structures, and off- site eelgrass restoration including transplanted and seeded eelgrass. The work was completed in 2001; monitoring in July 2002 found poor survival of the planted eelgrass (SAIC, 2004). Further monitoring included in the Habitat Mitigation Plan is discussed in Sections 2.3.3 and 2.4.2.

Five-Year Review

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