

The following update was taken from the *Range Condition Assessment Report for Naval Surface Warfare Center, Dahlgren Laboratory Ranges, Dahlgren, Virginia*, pages 2-34 and 2-35, Sep 2010 <http://www.dtic.mil/dtic/tr/fulltext/u2/a562082.pdf>

The first Five-Year Review of Site 17 was conducted in December 2003 and a final report was subsequently prepared (JMWA, 2004d). The final report indicated that the Site 17 remedy is protective of human health and the environment and is functioning as intended. However, several issues which if not addressed, could affect the future performance of the landfill cap. These issues include poor condition of the phytoremediation trees on the surface of the landfill cap and blockage of the pond outfall structure. The blockage at the outfall structure, which was caused by beaver activity, was removed by the Navy.

The causes of poor tree survival were (1) dry conditions, particularly right after planting, (2) poor topsoil fertility, and (3) use of mechanical augering during planting, which smeared the sides of the root holes. The DIRT [Dahlgren Installation Restoration Team] agreed that supplemental planting was necessary to enhance evapotranspiration of infiltrated rainfall and to maintain compliance with the ROD. The next Five-Year Review is scheduled to be conducted in September 2008 with a final report to be completed in January 2009.

Based on the poor condition of the phytoremediation trees on the landfill cap, a supplemental tree planting design was prepared by TtNUS [Tetra Tech NUS, Inc.] in Spring 2005. Approximately 600 Hybrid Poplar and 600 American Sycamore seedlings were planted in November 2005. Two-year seedlings were selected to (1) minimize transplant shock, (2) protect against desiccation, and (3) because they are capable of adapting to less than ideal soils. Specific recommendations during planting included: (1) hand planting to prevent smearing of side walls, (2) set up rain reels before planting, (3) direct planting toward gaps in existing tree cover, (4) water during planting, and (5) placement of tree guard tubes. A visual inspection during the Spring and Fall 2006 wetland monitoring events indicated that most of the planted trees are surviving and developing leaves. Hybrid Poplar was particularly prevalent in the western portion of Site 17 where overall stem counts have increased by more than 50 percent since 2005. Similarly, overall stem counts have increased by approximately 20 percent in the eastern portion of Site 17 since 2005.

A count of woody vegetation was also conducted in May 2008. This count was conducted to determine the types and numbers of trees currently on the landfill. The conclusion of the tree counts were that there was poor survival rates of the planted trees on Site 17, however, large numbers of loblolly pines have volunteered on Site 17. The equivalence of the loblolly pines to the designed tree plantings (with respect to phytoremediation) is being evaluated. A preliminary analysis indicated that the loblolly pine can be adequately demonstrated to achieve equivalency. During the May 2008 DIRT meeting it was noted that the loblolly pines would likely take over the site and may have a longer life than the hybrid poplars.