

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

Site Description

The Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site includes former disposal areas, former paper mill properties, an approximately eighty-mile stretch of the Kalamazoo River from Morrow Dam to Lake Michigan, and a three-mile stretch of Portage Creek, a tributary. The portion from Morrow Dam to Lake Allegan Dam (a 50-mile stretch) is referred to as the “upper” river, and below Lake Allegan Dam the “lower” river extends to Lake Michigan. The Michigan Department of Environmental Quality (MDEQ) estimates that the entire river contains over 110,000 pounds (50,000 kg) of polychlorinated biphenyls (PCBs) and over 8 million cubic yards of PCB-containing river and floodplain sediments (MDEQ 2007).

On February 21, 2007, two settlement agreements were reached between the United States Environmental Protection Agency (EPA), the current lead agency for the Site, and the Potentially Responsible Parties (PRPs) to perform supplemental remedial investigations/feasibility studies (SRI/FS) of the River (EPA 2007b) and a time-critical removal action (TCRA) in the former Plainwell Impoundment (EPA 2007a). The agreements are a result of negotiations between the PRPs, the EPA, the MDEQ, and the Natural Resource Trustees, which include the Michigan Department of Natural Resources (MDNR), Michigan Department of Attorney General (MDAG), National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish and Wildlife Service (USFWS).

Potential Responsible Parties (PRPs)

The current PRPs for the Site are Millennium Holdings, LLC, Georgia-Pacific Corporation and Weyerhaeuser Company. The Plainwell Paper Company, another PRP, is bankrupt.

In December 2004, Weyerhaeuser Company entered into a Consent Decree with the EPA regarding the site. As part of the decree, Weyerhaeuser will pay \$6.2 million, which EPA will use to fund the cleanup of PCBs in the Kalamazoo River, as well as \$138,000 in past costs related to the former Plainwell Paper Mill and the 12th Street Landfill OU.

Threat and Contaminants

The constituent of concern is PCBs. Reduction of potential ecological and human health risks associated with levels of PCB in fish tissue is a primary goal of remediation efforts.

Investigation/Cleanup Approach Update Since 2004

The 2007 settlement agreements call for the completion of SRI/FS work for the River and the completion of a TCRA in the former Plainwell Impoundment. SRI/FS work in the most upstream reach, extending from Morrow Dam to Plainwell Dam (referred to as Area 1), began in fall 2007.

Supplemental Remedial Investigations/Feasibility Studies

The SRI/FS in Area 1 (ARCADIS BBL 2007a) will include the following activities:

- RI samples will be collected from the area between Morrow Dam and Plainwell Dam, as well as from Portage Creek, during 2007 and 2008.
- Sediment PCB data will be collected to more fully characterize the study area, update trend analyses, and facilitate an assessment of risk for PCBs and, if appropriate, other hazardous substances.
- Riverbank and floodplain soils samples will be collected to further assess specific areas.
- To assess potential impacts associated with releases/erosion of sediments during and after construction of the TCRA, composite samples of whole-body yearling smallmouth bass will be collected in the Otsego City Impoundment, which is located immediately downstream of the TCRA area, and analyzed for PCBs in 2007 and 2008.
- To evaluate the effects of the partial removal of the former Plainwell Dam on the river bottom, bathymetric data will be collected periodically from the former Plainwell Impoundment during and after removal activities. To evaluate the potential effects of removal activities on sediment and PCB transport during construction, PCBs and total suspended solids (TSSs) will be monitored in the

surface water upstream and downstream of the removal area during and after removal activities.

- Quarterly groundwater samples will be collected following the TCRA to evaluate whether PCBs remaining in the floodplains migrate to the river.

Key aspects of the Site-wide SRI/FS activities currently underway are listed below.

- The remainder of the River (Plainwell Dam to Lake Michigan) is comprised of six areas bounded by dams or Lake Michigan. SRI/FS activities will be conducted on an area-specific basis as designated in the 2007 settlement agreement (EPA 2007b). EPA is to propose a schedule for work in the areas downstream of the Plainwell Dam by August 2008.
- A long-term monitoring program, including fish and water-column monitoring, is required by the agreement. The PRPs, EPA and MDEQ are currently developing details of the program.

Former Plainwell Impoundment Time-Critical Removal Action

The TCRA will be implemented as part of another 2007 settlement agreement (EPA 2007a) to address PCB-containing sediments, river bank soils, and floodplain soils in the former Plainwell Impoundment. The TCRA began in the spring of 2007 and is projected to be completed in 2009. Elements of the TCRA (ARCADIS BBL 2007b) are as follows:

- The TCRA is taking place in the former Plainwell Impoundment, which is located in Gun Plain and Otsego Townships, downstream of Plainwell, Michigan. It is roughly bounded on its upstream (or southeastern) end by the Main Street Bridge in Plainwell, and on its downstream (or northwestern) end by the former Plainwell Dam (the concrete sill of the dam remains in place).
- Approximately 132,000 cubic yards of soil and sediment are targeted for removal and disposal in commercial landfills. Plans for disposal at a landfill operable unit in Kalamazoo (the Allied Paper, Inc. OU) that is part of the Superfund Site were abandoned due to public opposition.

- Terra Contracting LLC is the main contractor performing the TCRA construction work. A variety of long- and short-reach excavators working from land are being used.
- Materials targeted for excavation as part of the TCRA project were identified in 13 distinct sediment, bank soil, and floodplain soil Removal Areas:
 - *Sediments*: Removal efforts are focused on accessible near-shore sediments (within 40 feet of the existing river bank greater than 6 inches thick), select mid-channel sediments (more than 40 feet from the existing river bank with PCB concentrations greater than 50 parts per million [ppm or mg/kg] based on available data), sediment deposits associated with three islands, and sediments in the vicinity of the Plainwell Dam that need to be removed to facilitate creation of a new western channel and removal of the dam.
 - *Bank Soils*: The design calls for excavation of materials above the current median flow water elevation and below the existing top of bank that need to be removed to create stable banks.
 - *Floodplain Soils*: Primary targets are isolated pockets of soils with PCB concentrations greater than 50 ppm or mg/kg (based on available data). Additional areas are also targeted based on the desire to enhance riparian habitat and to achieve the MDEQ's generic screening-level residential direct-contact criterion of 4 ppm.
- Confirmation samples will be collected upon completion of each individual Removal Area and at project completion.
- The design provides for a stable river channel to be established post-removal. The project area will be revegetated with native plants.
- Cofferdams and a water control structure will be used to control downstream flows during dam and upstream sediment removal operations.
- A new channel will be excavated to the west of the Plainwell Dam and portions of the dam will be removed to return the river to its natural, free-flowing condition.
- As presented in the Settlement Agreement, the estimated cost to perform the TCRA is \$21 million. This assumed disposal at the Allied Paper Inc. OU.

References:

ARCADIS BBL. 2007a. *Supplemental Remedial Investigation/Feasibility Study Work Plan - Morrow Lake to Plainwell*. February 2007. (<http://www.epa.gov/region5/sites/kalproject/pdfs/Attachment%20C%20%20SR%20FS%20Work%20Plan%20and%20Figures%201-1%20and%203-1.pdf>)

ARCADIS BBL. 2007b. *Former Plainwell Impoundment Time-Critical Removal Action Design Report*. February 2007. (<http://www.epaossc.net/sites%5C2815%5Cfiles%5C008711188%20plainwell%20tcr%20design%20report%2002-13-07.pdf>)

EPA, Region 5. 2007a. *Administrative Settlement Agreement and Order on Consent for Removal Action*. February 2007. (http://www.epa.gov/region5/sites/kalproject/pdfs/plainwell_impoundment-removal_aoc_final_2.pdf)

EPA, Region 5. 2007b. *Administrative Settlement Agreement and Order on Consent for RI/FS*. February 2007. (<http://www.epa.gov/region5/sites/kalproject/pdfs/Fully%20Executed%20SRIFS%20AOC.pdf>)

MDEQ. 2007. Allied Paper, Inc/Portage Creek/Kalamazoo River Superfund Site Information Page. (<http://www.michigan.gov/deq/0,1607,7-135-3304-84646--,00.html>)

United States Department of Justice (USDOJ). 2005. U.S. Reaches Settlement with Weyerhaeuser Company to Clean Up Paper Mill and Landfill along the Kalamazoo River. January 3, 2005. (http://www.usdoj.gov/opa/pr/2005/January/05_enrd_001.htm)