United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Friday, February 11, 2011
From: Sam Borries, OSC

Subject: Final POLREP
Plainwell No. 2 Dam
Plainwell, MI
Latitude: 42.4279865
Longitude: -85.6292009

POLREP No.:	7	**Site #:**	059B
Reporting Period:	8/30/2010 - 10/20/2010	**D.O. #:**	
Start Date:	8/5/2009	**Response Authority:**	CERCLA
Mob Date:	8/5/2009	**Response Type:**	Time-Critical
Demob Date:	10/20/2010	**NPL Status:**	NPL
Completion Date:	10/20/2010	**Incident Category:**	Removal Action
CERCLIS ID #:		**Contract #**	
RCRIS ID #:			

Site Description

Former industrial and waste water treatment practices, that took place from approximately the 1950s to the mid-1970s, released polychlorinated biphenyls (PCBs) into the Kalamazoo River in southwest Michigan. At least one source of the PCBs was the waste water released from the paper mills operating in the Kalamazoo, Michigan area; specifically, from the processing and de-inking of carbonless copy paper containing PCBs. These paper mills released PCBs into the Kalamazoo River system, some of which deposited in the area of the river known as the Plainwell Impoundment (which was created as a result of the building of a hydroelectric dam on the Kalamazoo River in the early 1900s).

Beginning in 2007 and continuing through 2008, investigations in Area 1 of the Kalamazoo River OU, including Plainwell Dam #2, were conducted as part of the Supplemental Remedial Investigation/Feasibility Study (SRI/FS). Phase 1 of that work involved the delineation of frequently inundated areas of the floodplain upstream of Plainwell Dam #2. Phase 2 of the investigation involved the sampling of Plainwell Dam #2. Results of the Phase 2 investigation of Plainwell Dam #2 found elevated levels of PCBs in bank and floodplain soils and, to a limited extent, in in-stream river sediments. Samples were collected at 94 locations from a uniform grid in the floodplain, including in-stream islands. A total of 302 individual samples were collected from the floodplain, with total PCB concentrations ranging from non-detect to 60 milligrams per kilogram (mg/kg). Bank soil samples were collected from 78 locations. A total of 265 samples were analyzed for PCBs, with total PCB concentrations ranging from non-detect to 45 mg/kg. River sediment samples were collected from 60 locations, resulting in 267 samples analyzed for PCBs. PCB concentrations in the river sediment ranged from non-detect to 100 mg/kg. A summary of the investigation results is presented in the Plainwell No. 2 Conceptual Design Report.

On December 10 and 11, 2008, MDEQ collected 30 river floodplain soil cores and 18 bank cores. A total of 50 individual river sediment and 25 soil samples were analyzed for PCBs. Total PCB concentrations in the river sediment ranged from non-detect to 80.2 mg/kg. Total PCB concentrations in soil ranged from non-detect to 80.5 mg/kg.

The Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site (Site) encompasses the Kalamazoo River from Morrow Dam to Lake Michigan and approximately 3 miles of Portage Creek to the Kalamazoo River. The Plainwell Dam #2 (Site) is located approximately 3.5 miles upstream of the former Plainwell Dam in the Township of Gun Plain, T 1N, R 11 W, in portions of Sections 32 and 33 upstream to the Penn Central Railroad Bridge.

On June 8, 2009, an Administrative Order on Consent (AOC) was entered into between U.S. EPA and Georgia-Pacific, LLC, whereby, Georgia-Pacific agreed to conduct a time-critical removal action at the Site. The response actions include dredging and/or excavation of river sediment, riverbank soils and floodplain soil, containment, monitoring, water treatment, stabilization, and the off-Site disposal of excavated material in accordance with federal PCB regulations at 40 C.F.R. § 761.61. The response activities will require approximately 200 on-Site working days to complete, and will result in the removal

of approximately 12,000 cubic yards of waste material, containing approximately 89% of the PCBs in the Plainwell Dam #2.

Additional site description and history can be found in the July 2009 Plainwell No. 2 Dam Area Time-Critical Removal Action Design Report, the June 8, 2009, Administrative Settlement Agreement and Order on Consent for Removal Action, the June 8, 2009, Time-Critical Removal Action Memorandum, and other Administrative Record documents.

Current Activities

During the week ending September 4, 2010, Terra continued to excavate soil from Area 6; began to build a temporary pier in the oxbow delta (which allowed for the excavation of soil from this area); continued to haul soil from Staging Area 1 to the landfill; began to remove the finger roads that cut into the oxbow; began the removal of the access road upstream of Area 5B; began and completed the re-excavation of a failed grid in the upland portion of Area 5B; began and completed the re-excavation of two failed grids in the oxbow; began pugging soil at Staging Area 1; and began to excavate soil from the oxbow delta.

Terra shipped a total of 23 loads (1,188.79 tons) of non-TSCA-level soil to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected nineteen soil samples from Area 6 (TS20456 to TS20474); six individual node samples from Grid 5 of Area 6 (TS20460_A2, TS20460_B2, TS20460_C2, TS20460_D2, TS20460_E5, and TS20460_F3); four soil samples from the oxbow (TS20475, TS20476, TS20478, and TS20479); one soil sample from the upland portion of Area 5B (TS20477); three water samples from the Kalamazoo River (TS30185, TS30186, and TS30187); and one rinsate sample (TS30188). Arcadis also split Samples TS20458 and TS20467 with START. The START-designated names for its samples are PD2-083110-18-SD/TS20458 and PD2-090110-19-SD/TS20467. With the exception of Samples TS20457 (14.1 mg/kg), TS20463 (9.29 mg/kg), TS20465 (10.01 mg/kg), TS20474 (13.9 mg/kg), TS20475 (5.8 mg/kg), and TS20476 (1.5 mg/kg), the remaining samples were below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the second excavation in the oxbow and for the removal areas outside of the oxbow).

After Terra excavated an additional six inches of soil from the grids encompassing Samples TS20457, TS20463, TS20465, TS20474, TS20475, and TS20476, the follow-up samples for these grids (i.e., TS20486, TS20485, TS20484, TS20483, TS20478, and TS20479, respectively) had a PCB content below 5.0 mg/kg for the second six-inch excavation in the oxbow and 5.0 mg/kg for the removal areas outside of the oxbow.

Arcadis also monitored the turbidity of the river on August 30 and 31, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending September 11, 2010, Terra began and completed the re-excavation of four failed grids in Area 6; continued to pug and haul soil from Staging Area 1 to the landfill; began to restore the upland portion of Area 5B; completed the removal of the finger roads that were located in the oxbow; began to solidify soil at Staging Area 2; began to restore Area 6; and began and completed the re-excavation of a failed grid in the oxbow.

Terra shipped a total of 28 loads (1,469.84 tons) of non-TSCA-level soil to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected four soil samples from the oxbow (TS20480 to TS20482 and TS20487); four soil samples from Area 6 (TS20483 to TS20486); two water samples from the Kalamazoo River (TS30189 and TS30190); and one rinsate sample (TS30191). Arcadis also split Sample TS20480 with START. The START-designated name for this sample is PD2-090710-20-SD/TS20480. Note: START collected a duplicate of its sample, which, in turn, was named PD2-090710-20-SD-DP/TS20480. With the exception of Sample TS20480 (4.0 mg/kg), the remaining samples were below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the second excavation in the oxbow and 5.0 mg/kg for the removal areas outside of the oxbow).

After Terra excavated an additional six inches of soil from the grid encompassing Sample TS20480, the follow-up sample for this grid (i.e., TS20487) had a PCB content below 5.0 mg/kg for the second six-inch excavation in the oxbow.

Arcadis also monitored the turbidity of the river on September 7 and 10, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending September 18, 2010, Terra continued to restore Area 6; began and completed the removal of the temporary pier that extended into the delta of the oxbow; began and completed the dismantling of the pugging machinery at Staging Area 1; transferred water, via a vacuum truck from Staging Area 2 to Staging Area 1; began and completed the removal of the oxbow access road; continued to haul soil from Staging Area 2 to the landfill; continued to restore the upland portion of Area 5B; and began and completed the excavation of 1 x 3 rock and soil from the area where Terra had initially constructed the temporary pier in the delta of the oxbow.

Terra shipped a total of twenty loads (962.10 tons) of non-TSCA-level soil to the Ottawa Farms Landfill in Coopersville, MI.

JFNew began and continued the installation of biologs and erosion control mats along the riverbank perimeter of Area 6.

Arcadis collected five water samples from the water treatment system located at Staging Area 1 (W_SA1_In_012, W_SA1_RM_012, W_SA1_LM_012, W_SA1_RE_012, and W_SA1_LE_012); two water samples from the Kalamazoo River (TS30192 and TS30193); and one rinsate sample (TS30194). All of these samples were below the action level for PCBs. Note: The 0.02 µg/liter result for Sample W_SA1_LE_012 still allowed Arcadis to discharge its water into the Kalamazoo River because the 0.02 µg/liter result was below the 0.2 µg/liter Project Quantification Limit listed in the Substantive Requirements Document (SRD# MIU990028) issued by the State of Michigan Department of Natural Resources and Environment (formerly known as the Michigan Department of Environmental Quality).

Arcadis also monitored the turbidity of the river on September 16, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending September 25, 2010, Terra began to decontaminate the turbidity curtain and heavy equipment sections at Staging Area 1; began and completed the removal of the 1 x 3 rock from the oxbow access road and the placement of topsoil over this road; began and completed the excavation of soil from a remaining portion of the oxbow delta and the riverbank of Area 5B adjacent to the oxbow delta; continued to haul soil and stumps from Staging Area 2 to the landfill; completed the restoration of Area 6; began and completed the placement of river run rock along the perimeter of the Area 5B river bank that is adjacent to the oxbow delta; began and completed the decontamination and removal of the blue storage trailer that Terra had originally staged near the former pontoon bridge to Island 2; began and completed addressing the grubbed trees along the oxbow and Area 5B access roads; and began and completed the removal of the access road immediately upstream of the oxbow culvert.

Terra shipped 40 loads (1,930.73 tons) of non-TSCA-level soil and six loads (147.26 tons) of stumps to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected fourteen soil samples from Area 5B (TS20488 to TS20501); ten water samples from the water treatment system located at Staging Area 1 (W_SA1_In_013, W_SA1_LM_013, W_SA1_RM_013, W_SA1_LE_013, W_SA1_RE_013, W_SA1_In_014, W_SA1_LM_014, W_SA1_RM_014, W_SA1_LE_014, and W_SA1_RE_014); two water samples from the Kalamazoo River (TS30195 and TS30196); and one rinsate sample (TS30197). Arcadis also split Sample W_SA1_LE_014 with START. The START-designated name for this sample is PD2-092310-03-WT/ W_SA1_LE_014. With the exception of Samples TS20488 (8.4 mg/kg) and TS20492 (8.1 mg/kg), the remaining samples were below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the removal areas outside of the oxbow).

Following the excavation of an additional twelve inches of sediment from Grid 12 of Area 5B, the follow-up samples collected from this Grid (TS20502 and TS20503) were below the cleanup criteria of PCBs (i.e., 5.0 mg/kg for the removal areas outside of the oxbow).

Arcadis also monitored the turbidity of the river from September 20 to September 23, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending October 2, 2010, Terra continued to restore the upland portion of Area 5B; began the decommissioning of Staging Area 2; began and continued the re-excavation of a failed grid in Area 5B; continued to haul soil and gravel from Staging Area 2 to the landfill; began and completed the excavation of the soil that lies directly above the oxbow culvert; and began and completed the restoration of the failed grid in Area 5B once Arcadis learned that the samples collected from the failed grid were non-detect for PCBs.

Terra shipped 66 loads (3,218.32 tons) and one load (48.53 tons) of non-TSCA-level soil to the Ottawa Farms Landfill in Coopersville, MI and the C & C Landfill in Marshall, MI, respectively.

JFNew continued restoration activities in Areas 4B and 5B.

Arcadis collected two soil samples from Area 5B (TS20502 and Ts20503); six water samples from the water treatment system located at Staging Area 1 (W_SA1_In_015, W_SA1_LM_015, W_SA1_RM_015, W_SA1_LE_015, W_SA1_RE_015, and W_SA1_DUP_006); two water samples from the Kalamazoo River (TS30198 and TS30199); one rinsate sample (TS30200); one wipe sample from the vacuum truck that hauled water from Staging Area 2 to Staging Area 1 (VT-R43(100110)); one wipe sample from the vacuum truck that removed carbon from the water treatment system (VT-67(100210)), and one five-point composite soil sample from the floor of Staging Area 2, following the decommissioning of this staging area (TS0104). The analytical results for these samples were below the action level for PCBs.

Arcadis also monitored the turbidity of the river on September 28, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending October 9, 2010, Terra shipped thirteen loads (668.69 tons) of non-TSCA-level soil to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected one five-point composite soil sample from the floor of Staging Area 1, following the decommissioning of this staging area (TS0105); ten soil samples from the access road that crossed over the Farrell property (TS10106 to TS10115); one soil sample from the access road that crossed over the Consumers Energy property (TS10116); sixteen soil samples from the access road that crossed over the Simons property (TS10117 to TS10131 and TS10135); and three soil samples from the access road that crossed over the McMurtrie property (TS10132 to TS10134). The analytical results for these samples were below the action level for PCBs.

Next Steps

No further time critical removal activities are anticipated for the Plainwell Dam 2 Area.

Key Issues

This is the final POLREP for the Plainwell Dam 2 Area. On site removal activities are now complete.

Disposition of Wastes

A total of 15,700 cubic yards of sediment/soil was excavated and disposed of at off-site landfills. Waste material was disposed of at either C&C Landfill located in Marshall, Michigan or Ottawa County Landfill located in Coopersville, Michigan. A total of 9.19 acres of area was restored as part of this removal action.

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