

# Superfund Program Update for the Grasse River Study Area Massena, New York

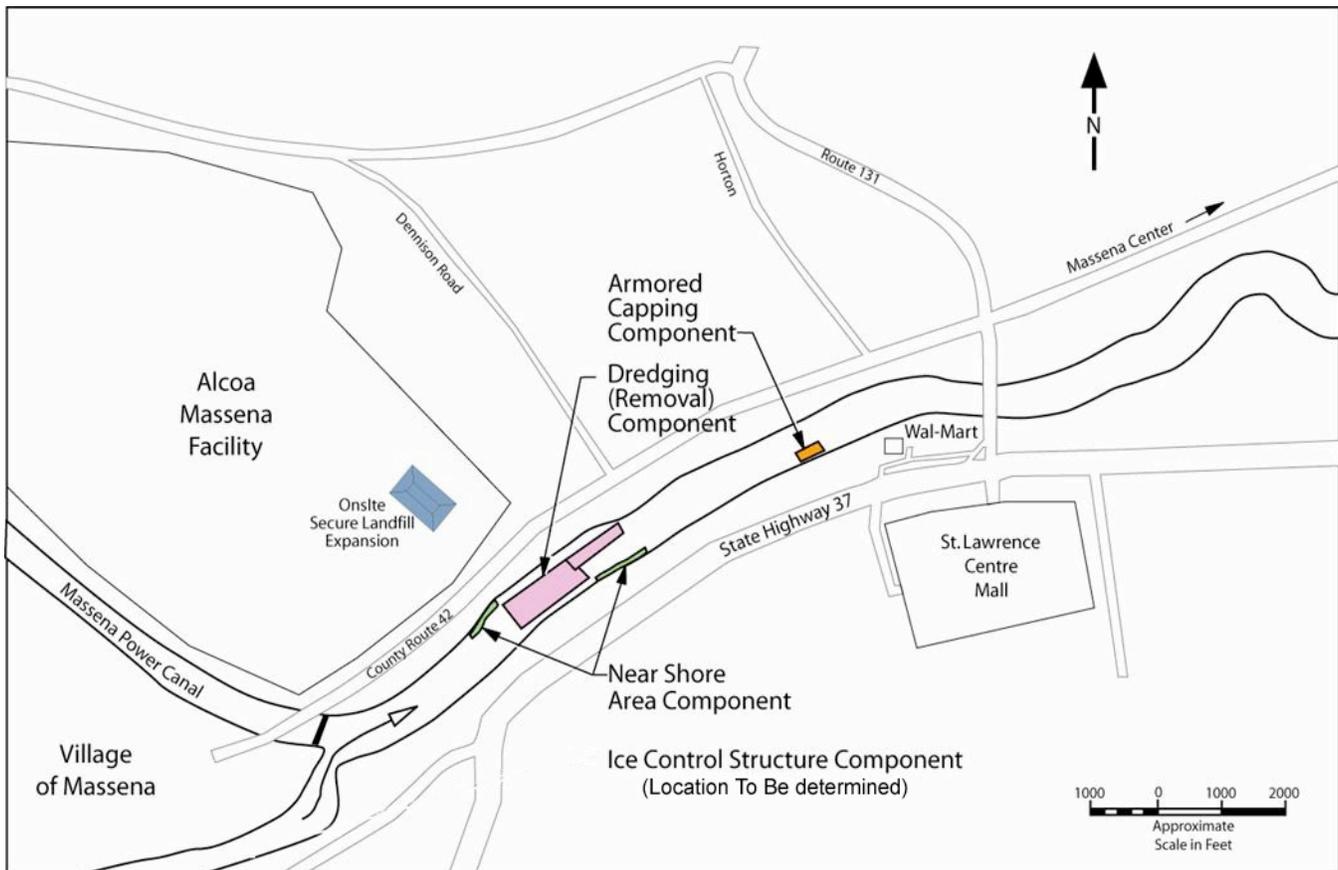


April 2005

*This update is produced periodically by Alcoa and the EPA to provide an overview of activities associated with the Grasse River Study Area, including key elements of the cleanup process and the next steps in the program. Your comments on the activities described in this update are welcome. If you would like more information on the Grasse River project or have any questions, please visit the project website at [www.thegrasseriver.com](http://www.thegrasseriver.com) or contact one of the individuals listed on the back of this newsletter.*

## Alcoa to Conduct Remedial Options Pilot Study

Alcoa Inc. with oversight from the US Environmental Protection Agency (EPA), will conduct a study in 2005 to further evaluate the potential remedial options to be considered for the lower Grasse River near its Massena, New York plant. This study will build upon previous work in order to address outstanding issues concerning the evaluation of potential remedial options. It will also include an assessment of possible options to address the scour of sediment related to the increased water velocities in certain sections of the river that were caused by the ice jam that occurred in the river in the spring of 2003. The study will have multiple components, as shown below, with the majority of the work taking place in the summer of 2005.



*Remedial Options Pilot Study Component Locations Map*

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## **PROJECT OVERVIEW**

As part of an Administrative Order issued by EPA in 1989, the Alcoa West Plant is doing investigation and an analysis of remedial alternatives for an area called the Grasse River Study Area. The studies identified a 7-mile stretch of the Grasse River from the Power Canal to the St. Lawrence River as the area for remedial focus. This section is often referred to as the lower Grasse River.

The major contaminant of concern in the Grasse River Study Area is polychlorinated biphenyls (PCBs).

Alcoa has been conducting sampling of the Grasse River sediments, water column and biota. Following this extensive sampling effort, Alcoa began evaluating potential remedial alternatives. In 1995, Alcoa conducted a dredging action from a 1-acre area of the river directly offshore from Alcoa's main wastewater discharge outfall. In 2001, Alcoa performed another pilot study to evaluate subaqueous (under water) capping as a potential remedial alternative to address levels of polychlorinated biphenyls in the biota of the lower Grasse River. The capping pilot study consisted of constructing a subaqueous cap in an approximate 7-acre portion of the river. Data collected in 2001 and 2002 indicated the subaqueous cap was intact, there was no evidence of polychlorinated biphenyls migration into or through the cap, and the benthic organisms were re-colonizing the capped area.



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## **2003 RIVER STUDIES**

Monitoring of the river in the spring of 2003 found that the subaqueous cap and, in some areas, underlying sediment had been disturbed. Through a series of studies it was determined that an ice jam, which had occurred in the lower Grasse River in the spring of 2003, had caused hydraulic scour (by rushing water) of a portion of the river bottom. The ice jam-related scour was not expected, and the pilot cap had not been designed to withstand the forces generated by the ice jam event.

Despite the extensive studies undertaken to date, there are still areas of further investigation needed to answer outstanding questions about the remedial options. The additional work will provide data that will be helpful in screening and comparing cleanup options for the lower Grasse River that will address both the polychlorinated biphenyl levels in the water and mitigate ice jam-related scour effects.

Alcoa has remediated areas at the Massena West Plant under an agreement with the New York State Department of Environmental Conservation (NYSDEC). Cleanup activities on the property are not covered in the Grasse River Study Area and are not addressed in this update.

Besides the cleanup activities on the property, the plant has undertaken a series of actions to eliminate PCB discharges to the river. Between 1997 and 2003 several treatment systems were installed to treat contaminated process water and stormwater from the site. Plans are in place to reduce water usage at the plant, reducing the overall volume of water that needs to be treated.

One of the best ways to get this information is to conduct large-scale projects in the field. These large-scale projects can demonstrate potential remedy effectiveness, and can help resolve construction questions. They also allow progress to be made while the studies are underway. The information from the studies will be used to develop a final remedy proposal.

The information obtained from this study will also help address outstanding questions regarding potential remedy effectiveness, implementation and impact.

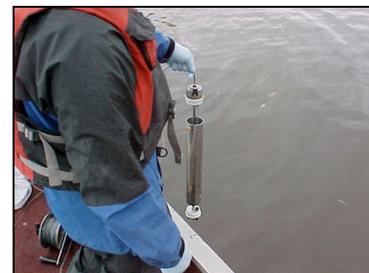
The Remedial Options Pilot Potential Study will include:

- ◆ A dredging (removal) component
- ◆ An armored cap component
- ◆ A near shore area removal and capping component
- ◆ Monitoring
- ◆ An ice control structure (proposed implementation 2006)

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## **REMEDIAL OPTIONS PILOT STUDY**

To make progress in identifying the preferred remedial approach for the Grasse River, EPA has decided to pursue a Remedial Options Pilot Study. The study will include provisions to prevent ice jam-related scour, in which, buried PCBs contaminated sediments could be disturbed before a final remedy can be proposed, selected, and implemented.



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## ***SEDIMENT DREDGING***

The sediment dredging component will involve the removal of sediments containing elevated levels of polychlorinated biphenyls from a portion of the river just downstream of the main Alcoa wastewater discharge outfall. Sediment will be removed from the bottom by hydraulic methods (pumping or vacuuming), and, if necessary, mechanical (clamshell bucket and crane). Dredging will be performed in a targeted area (see page 1) that could be subjected to ice jam-related sediment disturbance and where sediment monitoring indicates elevated polychlorinated biphenyls. The effectiveness and logistics of dredging will be evaluated. The work will include:

- ◆ Expanding Alcoa's landfill for disposal of dredged solids
- ◆ Dredging (removal) of sediments from a 9-acre area
- ◆ Using appropriate containment systems to contain sediments disturbed during dredging
- ◆ Placing 1-foot of new clean material on river bottom after dredging where necessary

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## ***ARMORED CAPPING***

The armored cap component will help ice experts evaluate the effective placement of subaqueous cap materials that are capable of withstanding the water forces created by an ice jam. A cap would consist of sand/topsoil with an outer "armor" of larger sized stone placed on top. Armored capping will use construction techniques similar to the 2001 Capping Pilot Study. The following work will be conducted:

- ◆ An engineering study to determine appropriate armor stone size
- ◆ Constructing an armored cap in a 1-acre area (see page 1)
- ◆ Using an appropriate containment system(s) to contain sediments disturbed during capping

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## ***NEARSHORE AREA REMOVAL AND/OR CAPPING***

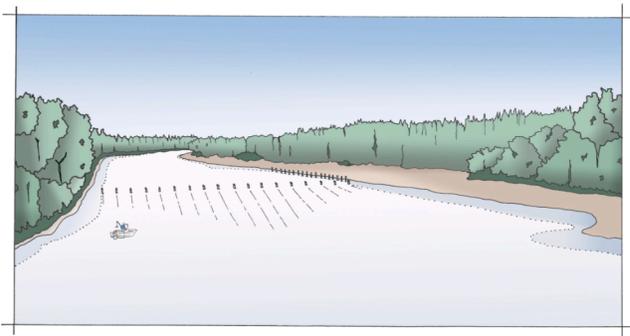
Some areas along the lower Grasse River contain a shallow or "nearshore area" with water depths of less than 5-feet. Although polychlorinated biphenyl concentrations are generally lower in the nearshore areas, these areas offer different habitat for fish and other wildlife. A specific study is being performed to evaluate cleanup options for the nearshore areas to include:

- ◆ North shore - removing 1-foot of soft sediment from 1-acre area and replacing it with new clean material
- ◆ South shore - placing a thin layer of sand/topsoil mix over the top of existing sediments

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## ***MONITORING***

All of the pilot study components will be monitored before, during and after construction. The monitoring will investigate the effects of construction on sediment, water, air, and habitat. The monitoring program will have specific requirements to ensure that the work is done in a safe and protective manner. EPA and Alcoa will work with the community on issues that may be of concern including air and water quality, truck traffic, river traffic, noise and light.



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## ***ICE CONTROL STRUCTURE (2006)***

Ice control structures are used effectively in a number of communities, mostly to avoid property damage and flooding from ice jams during the spring thaw. An ice control structure is proposed as part of the Remedial Options Pilot Study to act as a preventative temporary measure (help avoid ice jams and potential sediment disturbance) until the final remedy for the Grasse River site is proposed and implemented. The type of control structure being considered for the Grasse River is a "pier type" of structure where piers would extend above the water to trap large ice fragments. Spaces between the piers will allow for free passage of fish and recreational boaters.

The work will include:

- ◆ An engineering study and developing a lab-scale model (with help from US Army Corps of Engineers)
- ◆ Discussions with the community and local landowners
- ◆ Considerations as to how the barrier can be attractive to look at
- ◆ Building the ice control structure in 2006 at a location that is still to be determined

## **FUTURE NEWS**

The next newsletter will report the progress of the Remedial Options Pilot Study. The information from this study will be used to revise the Analysis of Alternatives Report. A Proposed Plan identifying the proposed remedy for the Grasse River site will then be prepared by EPA and provided to the public for comment. After a review and comment period, a final decision is made by the EPA. The selected remedy is then recorded in a Record of Decision and the cleanup plan is then implemented.

Because this update contains only summary information on the Grasse River Study Area, you are encouraged to consult the information repositories which contain site-related documents issued by the EPA. Documents pertaining to this project are available at the following locations:

### **Massena Public Library**

41 Glenn Street  
Massena, New York 13662  
(315) 769-9914

### **US Environmental Protection Agency**

290 Broadway, 18<sup>th</sup> Floor  
New York, New York 10007-1866  
By appointment: (212) 637-4217

### **St. Regis Mohawk Tribe Environmental Division**

82 Indian Village Road  
Akwesasne, New York 13655  
By appointment:  
Contact Ken Jock, Division Director  
(518) 358-5937



A comprehensive history of the Grasse River project and additional information can also be obtained on the project website:

[www.thegrasseriver.com](http://www.thegrasseriver.com)

## **GLOSSARY**

**Superfund:** The common name for the federal program established by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended in 1986. The Superfund law authorizes EPA to investigate and cleanup sites where hazardous substances have been or might have been released into the environment and may pose a risk to human health or the environment.

**Polychlorinated biphenyls (PCBs):** A group of chemicals used for a variety of purposes including electrical appliances, hydraulic fluids and caulking compounds. PCBs are persistent in the environment because they are very stable, non-reactive and heat-resistant. PCB production and sales were banned in the United States in 1979 due to concerns that some types of PCBs may cause cancer.

**Benthic Organisms:** Small organisms that live in and near the river bottom sediments.

**Pilot Study:** An engineering study of a technology with specific objectives and monitoring requirements.

**Dredging:** To remove sediment using a hydraulic and/or mechanical dredging technique from the river bottom.

**Sediments:** The layer of soil and mineral at the bottom of surface waters such as streams, lakes and rivers which absorb contaminants.

**Capping:** Installation of clean materials (sand/topsoil) over an area of concern to prevent direct contact and provide containment.

**Dewatering:** The separation of water from the sediments removed during a dredging operation.

**Resuspension:** The lifting of previously settled sediments up into the surrounding water through activity.

**Containment System:** Flexible fabric barriers (such as silt curtains) that are used to isolate and contain materials within the work area on the river.

**Armored Cap:** A cover material placed on the river bottom that is capable of withstanding flow, erosion and ice jam forces. Natural rock of various sizes is typically used as the armor material.

**Hydraulic:** Related to movement of water. Hydraulic dredging – removal of sediments from a water body by equipment which loosens the sediments and pumps them through a pipeline to a processing area.

## **FOR MORE INFORMATION**

If you would like additional information or would like to be added to the Grasse River site mailing list, please contact:

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