

**SUMMARY OF THE VELSICOL SUPERFUND SITE, ST. LOUIS, MI**  
**BRIEF HISTORY OF COMMUNITY INVOLVEMENT**

<http://pineriver.alma.edu>

***What Are Some Chemicals Of Concern***

The Velsicol Chemical Corporation (also known as Michigan Chemical Company) operated between 1935 and 1978 in St. Louis, MI along the Pine River (see attached maps). Michigan Chemical owned and operated the plant before they were bought out by Velsicol in the early 1960's. Velsicol decided to let the plant keep the name, Michigan Chemical.

The chemical plant manufactured many chemicals, but most notably:

- DDT - pesticide
- MgO – magnesium oxide - supplement for cattle feed also used in other chemical manufacturing
- PBB/TRIS – fire retardants (white powder similar in color and consistency to MgO)
- Picture tube parts – utilizing Rare Earth Element stock by filtering out radioactive elements like Thorium

It is important to note that these were end-use products. The chemical plant used tons of stock chemicals that were equally as hazardous as end products including: Benzene, chlorobenzene, metals, bromine (sometimes as a gas) and over 100 other chemicals.

***History Of Mis-Management And Pollution***

The Michigan Chemical/Velsicol Chemical plant had a history of mis-management, exposing workers to hazardous conditions and polluting the environment. Old annual reports from the company show that they were marginally profitable and as a result cut corners in every possible process including waste disposal. They operated for many years with the blessing of the U.S. government as demonstrated in a file letter sent to the company praising them for their patriotic contribution to the war effort - as Michigan Chemical was one of the top producers of DDT during and after World War II.

Michigan Chemical/Velsicol had many documented citations related to air and water pollution (mostly regarding fish kills, strong odors and absence of life in the Pine River downstream from the plant) beginning almost immediately after the plant opened in 1935. Citizen complaints over the decades the plant operated prompted several well-researched studies of Michigan Chemical's impact on the river environment.

***Plant Closure: “The PBB Incident”***

The combination of mis-management and willful disregard for the local environment came together in 1973 when PBB was “accidentally” bagged in Magnesium Oxide bags at the Michigan Chemical/Velsicol plant. Tons of PBB was then hauled away (presumably as MgO)

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and mixed with cattle feed in Battle Creek, Michigan – where it then was distributed all over the State of Michigan. It was almost a year later before it was discovered that this mix-up had occurred. By that time, PBB had been passed on to consumers who ate beef or drank milk from Michigan cattle. It is estimated that between 5 and 8 million people were affected making it one of the most widespread cases of human food chain contamination ever recorded.

### *Sweetheart Deal Between Government And Velsicol: The Consent Judgment (1982)*

The PBB incident eventually led to the shut-down of the chemical plant in 1978. In 1982, the Former Plant Site, Pine River adjacent to the Plant Site and two other sites (Griatiot County Landfill and Edgewood Golf Course Sites) became Superfund sites as they were placed on the National Priority List (NPL – see map). Also in 1982, U.S. EPA, State of Michigan and Velsicol Chemical Corporation entered into a Consent Judgment that forced Velsicol to bury contamination on the chemical plant site, essentially making it a hazardous waste landfill. As part of the Consent Judgment, Velsicol agreed to leave the State of Michigan and was absolved from any liability related to pollution in the Pine River. It was believed that DDT and other contaminants in the Pine River would reduce in concentration through “natural attenuation.”

### *How Natural Attenuation Doesn't Work*

Between 1985 and 1997, fish in the Pine River (mostly carp) showed an increase in concentrations of DDT according to samples taken by the State Department of Natural Resources (now known as Michigan Department of Environmental Quality – MDEQ). Samples of skin-off filet showed concentrations of DDT at **90 ppm** (5 ppm for whole fish samples is determined to be the cut-off for safe consumption). Whole fish samples showed levels up to **160 ppm** DDT – some of the largest DDT concentrations ever recorded in the state and nation. The record high levels of DDT in the fish prove that natural attenuation does not work – at least for these chemicals in the Pine River and prompted the Velsicol Superfund Site to move to the top of the NPL.

### *Enter U.S. EPA: Where Are We Now*

As a result of significant levels of DDT in resident fish, in 1997, the U.S. EPA conducted a Remedial Investigation (RI) which defined the extent of DDT in Pine River sediment. Concentrations of DDT were found to be over **36,000 ppm** – the highest level of DDT ever recorded in river sediment. After defining the area of concern, the U.S. EPA conducted a \$9 million emergency removal action (ERA) in 1999 to remove the most concentrated region (hot spot) of DDT. After completing a feasibility study (FS) and Record of Decision (ROD), the U.S. EPA began removal of contaminated river sediment through a process of dry excavation. In dry excavation, sheet piling is driven into the river bottom and from this, coffer dams are constructed. Water is pumped out of the coffer dams (and put through a sophisticated wastewater treatment plant on site), and lime is added to wet sediment to stabilize it. It is then removed by front-end loaders, loaded on tractor trailers and hauled to landfills around the state and mid-west. The EPA has completed its cleanup of the Pine River sediment in 2005/2006 to the tune of over \$100 million. It is important to note that this cleanup is touted as one of the

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most successful river sediment cleanups in the country which is due, in large part to the participation of the community through the Community Advisory Group (CAG) – see below.

In addition to the river sediment, the U.S. EPA has investigated and is preparing a feasibility study for the contaminated Velsicol Plant Site that continues to leak toxic chemicals into the river and into the subsurface. The City of St. Louis, MI has a chemical – parachlorobenzene sulfonic acid or pCBSA in its city drinking water (which comes entirely from deep wells). This is a sign that the chemicals in the plant site are not isolated, but leaking into areas that have impacts on human health and environmental health. The CAG is concerned that the U.S. EPA will not clean the plant site to the degree necessary to ensure future recreational use of the Pine River and use of the plant site itself.

### **The Community Advisory Group (CAG): Successful Community Participation**

Before the emergency removal was conducted in 1999 and soon after the U.S. EPA conducted their RI on the Pine River, the communities of St. Louis and Alma banded together and formed the Pine River Superfund Citizen Task Force (PRSCTF) in 1998. The PRSCTF has become the largest and most active Community Advisory Group in the nation. The PRSCTF established what has become a model for community participation and interaction with U.S. EPA as well as the regulatory community in the State of Michigan. Some of the success of the cleanup project that can be attributed directly to PRSCTF intervention/interaction include:

- Forcing EPA to remove river sediment at a higher standard of “clean” than what was proposed in the final Record of Decision (ROD)
- Forcing EPA to test for a litany of known chemicals manufactured at the Velsicol Plant other than DDT, PBB and HBB which were the only chemicals required to be analyzed for in the ROD
- Encouraging and eventually forcing MDEQ and EPA to investigate the former Velsicol Plant Site for potential leakage and as a possible continual source of contamination in the river. This has resulted in an ongoing investigation that will effect an eventual cleanup of the former Plant Site itself – after this process was flatly denied by U.S. EPA in 1998.
- Intervened when EPA could not – working with Nuclear Regulatory Commission (NRC) forcing Velsicol to investigate and eventually clean (proposed cleanup due this year) a radioactive waste dump on the outskirts of St. Louis
- Worked with EPA to take more precautions for public safety during cleanup seasons
- Helped work with local governments and the State to try to streamline procedures to expedite cleanup when appropriate
- Worked out a technical support group for U.S. EPA that includes experts in organic chemistry, geology, legal and public policy, engineering and local environmental issues
- Forced State of Michigan and EPA to consider upstream petroleum contamination from the former Total Petroleum Refinery (now owned by Valero) as well as heavy metal contamination (Cr VI) from a former metal plating company. This has resulted in PRSCTF intervention in a Consent Order between U.S. EPA/U.S. DOJ and Total Petroleum in which a \$9 million (Supplemental Environmental Project) cleanup of a highly contaminated tributary of the Pine River entering the river just upstream of the Superfund Site.

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- Put pressure on federal, state and local representatives to go to bat for various issues to break potential log-jams related to funding, slowing or expediting the cleanup process and to stay informed of what is going on in the St. Louis/Alma community
- Fought for and are continuing to fight for a comprehensive health study to be conducted on the residents of this region so that precautionary diagnostic procedures can be implemented if necessary and, if appropriate to seek restitution
- Continue to fight for sportsman's rights to recreate on the river. We advocate unlimited recreation on the Pine River be restored.

Reasons for the success of the PRSCTF can be attributed to several things. The tenacity of the members of the group is strong due mostly to a history of government and industry failing to remedy a serious economic, environmental and health problem in the community. Also, we have established a “brain trust” that includes experts in just about every area in which we have found we require help. This includes: former chemical workers, county officials, retired, long-time residents who have knowledge and time to help, college professors, local philanthropic organizations, churches, schools and the media (print, radio and video).

We feel we have come a long way in terms of what has been accomplished, but much more needs to be done. We could not have gotten to where we are without having established a trust and cooperation between the community, state and federal officials that is unprecedented. The PRSCTF board currently consists of:

**Jane Keon** - Chair. Long time resident, English instructor at Alma College and former member of the local press. Expertise in activism and promoting environmental causes.

**Gary Smith** – Treasurer. Long-time resident. Former refinery worker and Chemical Workers Union official. Currently working at Dow Chemical in Midland, MI. Held office for local low income housing in St. Louis and has expertise dealing with the chemical and refining industry as well as local government.

**Joe Scholtz** – Governmental liaison. Long-time resident and officer in the Michigan Education Association union. Currently working for Alma Public Schools. Expertise in working with State Senators and House Members for Central Michigan. Long-time activist and lobbyist and long-time sportsman. Joe runs the successful fishing derby every year.

**Ed Lorenz** – Former CAG Chair and currently Legal Committee Chair. Director of Public Affairs and Chair of the Political Science Department at Alma College. Expertise in Environmental Law and Policy, specifically comparative environmental policy – U.S. and Mexico. Other expertise in international labor relations. Appointed by Christie Todd Whitman to sit on national committee overseeing community relations and Superfund.

**Murray Borrello** – Chair, Technical Advisory Committee (TAG). Director of Environmental Studies and Chair of Geology at Alma College. Expertise in fate and transport of contamination in the Pine River and its tributaries and local hydrogeology. Other expertise includes CAFO impacts on surface water, Michigan environmental law (MNREPA, Part 201) and design and implementation of environmental research.

**Melissa Strait** – CAG Secretary. Professor of Chemistry at Alma College. Expertise in environmental chemistry, specifically heavy metals and petroleum contamination in Pine River and its tributaries. Other expertise includes geochemistry of meteorites.

**Dianne Borrello** - Technical Advisor. Geological Engineer and consultant. Former engineer

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working in the Environmental Quality Office at Ford Corporate Headquarters in Dearborn, MI. Expertise in environmental engineering, reporting and  
**Norm Keon** – Health Chair. Long-time resident and member of the Michigan Department of Community Health. Expertise in epidemiology and regional governmental health agencies.

Other members who regularly contribute include former county and city officials, former workers of Velsicol and the Total Petroleum Refinery as well as former chemists, entomologists and engineers with specific expertise in important areas. This includes two Dow Chemical retirees, one of which is a former member of the Michigan Water Resources Commission (appointed by Governor William Milliken) and the other who is a co-founder of the Society of Environmental Toxicology and Chemistry (SETAC) and expert on DDT uptake in invertebrates.