CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: September 4, 1981 File Ref: 3410

To: → Arthur Glor Wolfgang Klassen
Dom DeAmicis Bernie Schultz

From: Pat Hennessy Patrick Hennessy
Frank Schultz Frank Schultz

Subject: Freeman Chemical Corporation, Saukville (Ozaukee County)

On September 2, 1981 the author and Frank Schultz conducted a WPDES Compliance Monitoring Survey at the Freeman Chemical Corporation facility in Saukville. This survey was prompted by a telephone call from David Bailey (804) 257-6358, Director of the Bureau of Environmental Standards, Virginia Sate Water Quality Control Board, to Paul Didier.

Mr. Bailey called Mr. Didier to inform the State of Wisconsin of non-permitted discharges to Virginia's waters by Freeman Resin Company in Chatham, VA.(see attached FCF). Mr. Paul Schaeffer, Plant Manager, was Freeman's representative.

Facility Operations

Freeman Chemical Corporation manufactures three basic groups of organic chemicals as follows:

1. Liquid Polyester Resins - phthalic anhydride or maleic anhydride is combined with one of several glycols (propylene glycol, ethylene glycol, and others) in a condensation reaction that takes place at ~400-500°F. This condensation reaction causes a loss of water which is contaminated with raw materials and or product. The product is then "cut" with styrene or another suitable solvent to reduce the product's viscosity and facilitate handling (the product is then handled at ~150-200°F).

2. Alkyd Resins - Same raw material as in group 1 except that a vegetable (soybean or other) or linseed oil is added during the heating "cooking" process at ~400-500°F. The alkyd resins are then "cut" with solvents (mineral spirits, naphtha, xylene, or others) and are handled at~150-200°F).

3. Urethane (poly) Resins - MDI (a polymeric isocyanate) is combined with a polyol (sucrose or a suitable ester with a hydroxyl group at the end of the molecule. Freon is used as a flowing agent. After "cooking", this material is handled at room temperature most of the time.

Mr. Schaeffer told us they sell only liquids in drums or in tankers. He says they handle no toxicants and no carcinogens except toluene, and says the OSHA inspector was there 3 months ago and found no problems.

They have five main reactor vessels (2 - 3500 gal., 2 - 1000 gal.; 1 - 8000 gal). All except the 8000 gallon are gas flame heated; the 8000 gallon is hot oil heated. The vessels are charged, heated to reaction temperature, solvent is added, and the condensation reaction begins. Solvent and water that are driven off in the reaction go into a gravity separator. The solvent is recycled to the reactor vessel in a closed loop and the water is burned in Freeman's incinerator. The condenser water is from Saukville's famous Well #2 (contaminated with 1,1,1 - trichlorethylene), which now provides water only to Freeman and is not on the municipal system. The condenser cooling water is once-through and is discharged via storm sewer to the Milwaukee River under WPDES Permit No. 0027731. It is monitored for flow and temperature on a weekly basis. All floor drains are plugged with cement, and water that collects there is burned in the incinerator. One exception is the basement below the building housing the 8000 gallon reactor vessel. The sump and the floor drains from this building go to the Saukville sewage treatment plant. All drainage from the facility's grounds enters a "dry pond" in the southeast corner of the grounds. The "dry pond" has a drain that enters the Milwaukee River; the drain can be plugged in case of a spill. This yard drainage could potentially introduce many exotic pollutants to the Milwaukee River and to the groundwater.

All trucks are washed in one place inside a building. A tank of xylene, styrene, or other solvent is carried beneath the transport tank for rinsing the inside of the tank trailers. This is the solvent that fires the incinerators (exception: styrene is reused). Trailers' insides are then washed with caustic. The caustic is recycled to the caustic tank, as in the first water rinse. Subsequent rinses go to the Village of Saukville wastewater treatment plant after being settled and skimmed. Wash water for the exterior of the trucks also is settled, skimmed, and sent to the sanitary sewer.

Their tank farm is diked, and they have six mounded tanks in the storage area. Full barrels are stored upright, and empty barrels are laid on their sides (all had the bungs in). Transfer of liquids from tanks to drums and vice versa is a potential source of groundwater pollution, as well as runoff to the Milwaukee River.

Freeman Chemical operates two incinerators: both are heated by burning waste solvents at 1200°F; one burns the water generated in the condensation reactions and any water that collects in the floor drains; the other burns solid waste such as cardboard, waste resins from the filter presses, etc. Both incinerators are in bad shape, but especially the one into which the waste waters are injected. There are gaping holes near the top of the stack, and I question the efficiency of this system. The area around the incinerators is diked with clay, and there is a sump to collect any runoff from leakage around the incinerators. The sump contents are also burned. Ash is taken to United Wastes' Germantown landfill.

PH:bg