

Item 4 - From the Phase I Report- The addition of phosphorus to the Delaware River could be detrimental.

EPA Concern

EPA found the original report unclear concerning the effect of the addition of MPA and other phosphorus-containing compounds from the discharge of the treated caustic VX hydrolysate effluent into the Delaware River. The agency's principal concern was that the discharge of these compounds could increase the amounts of dissolved inorganic phosphorus in the estuary to such a point that the system would create unwanted algal blooms.

Response

In March 2005, DuPont submitted the *Treatability Study for Phosphonate Removal Technology* to EPA for consideration. This report demonstrated that their new treatment process removes approximately 99% of the phosphonate compounds during the treatment of the caustic VX hydrolysate. This report was reviewed by both EPA regional staff and the Office of Research and Development (ORD). Although our review revealed some minor errors, we agreed with the conclusions.

The DuPont report, *Treatability Study Summary for Phosphonate Removal Technology on 16% Newport (IN) Caustic Hydrolysate* was submitted to the EPA in August 2005. The object of the report was to determine if the SET facility could successfully treat 16% caustic VX hydrolysate containing the three different stabilizers. The report concluded that the combined pre-treatment involving persulfate oxidation and ferric chloride precipitation removes greater than 97% of the phosphonates (EMPA and MPA) from the waste-stream before it enters the wastewater treatment plant.

Finding

- EPA concerns regarding the addition of phosphorus-containing compounds to the Delaware River are adequately addressed by the protocols and procedures used in the proposed phosphonate-removal treatment that DuPont will add to the ultimate treatment of VX hydrolysate before it enters the river.