

Superior Fibers, Inc., Bremen, Ohio

Background

Superior Fibers, Inc. (Superior) operates a manufacturing facility on approximately 32 acres located at 499 North Broad Street on the north side of the village of Bremen in eastern Fairfield County. Superior manufactures fiberglass filtration media. Modiglass Fibers operated the facility in the late 1950s and early 1960s, until the facility was purchased by Reichhold Chemicals, Inc. in 1964. Superior purchased the facility in 1984 and is the current owner.

Trichloroethene, also known as trichloroethylene or TCE, was used as a degreasing agent at the facility from the early 1970s until approximately 1987. TCE and its breakdown products, cis-1,2 dichloroethene, trans-1,2 dichloroethene and vinyl chloride, were the primary contaminants detected in ground water at concentrations

exceeding regulatory standards on Superior's property during site assessment activities initiated by Superior in 2002. In 2006, ground water contamination was confirmed to be migrating off of Superior's property.



Site Assessment and Regulatory Activities

Superior conducted site assessment activities in 2002 and entered the property into Ohio EPA's Voluntary Action Program (VAP) in February 2003 by submitting the results of its investigation to Ohio EPA with a request for a covenant not to sue (CNS). Superior's site assessment activities detected the presence of 12 chemicals of concern (COCs) in soil and ground water on its property.

Ohio EPA issued a CNS in March 2005 that included an operation and maintenance (O&M) agreement and plan that required Superior to conduct quarterly ground water monitoring and, if COCs were detected and confirmed in any monitoring wells on Superior's property boundary, initiate active cleanup of the ground water contamination. Contaminants were detected at early warning wells along the property boundary in February 2006 and were confirmed in March 2006, triggering Superior's obligation to implement an active remedy in accordance with the O&M agreement and plan.

Ohio EPA issued a notice of failure to comply with VAP applicable standards to Superior on Dec. 13, 2006. On Jan. 26, 2007, Superior entered into a compliance schedule agreement with Ohio EPA detailing steps to bring the property back into compliance with applicable standards by May 16, 2011, or five years from the date the O&M plan stated the contingent remedy must be implemented. Superior needed to ensure that contaminated ground water was not migrating off its property.

During 2007, Superior installed and sampled additional monitoring wells on its property and on an adjacent landowner's property to delineate the extent of the ground water contamination while initiating clean-up activities in the source area on Superior's property. Superior submitted an O&M plan addendum to Ohio EPA in August 2008, which outlined clean-up activities to bring the property into compliance by May 2011.

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After meeting with officials from Superior and prior owner Reichhold in February 2011, it was apparent that the property could not achieve VAP applicable standards by May 2011 and the CNS was revoked by Ohio EPA on May 16, 2011. After revocation of the CNS, Ohio EPA began negotiation of an administrative order with Superior and Reichhold officials to conduct a clean-up investigation and feasibility study at the site, which includes Superior's property and an adjacent neighbor's property. The site has been referred to the Ohio Attorney General's Office (AGO) for resolution.

Superior and Reichhold continued to perform cleanup and monitoring activities at the site after revocation of the CNS on a voluntary basis but not in the VAP or other regulatory program.

Clean-up Activities

Ground water clean-up activities are occurring in two areas of the site — the source area on Superior's property and along the east property line.

The source area where the TCE was disposed of is located in the approximate center of the property. Approximately 2,000 tons of contaminated soil above the water table were excavated from the source area by Superior and disposed of in a licensed landfill in 2007.

From 2007 through 2012, a series of chemical injections were also applied in the source area in an effort to break down the contaminants in shallow and intermediate depth ground water.



The injection of permanganate and persulfate to break down the chemicals through oxidation was followed by later applications of an organic solution to enhance breakdown of the contaminants by anaerobic bacteria naturally present in the ground.

Superior also constructed a series of air sparging/biosparging (AS/B) wells along its east property line to treat ground water as it leaves the property. The AS/B wells introduce air into the ground water under low pressure. This supplies oxygen to native bacteria underground, allowing it to further break down the contaminants. The AS/B wells can also be used to introduce air under higher pressure to directly break down the contaminants by oxidation.

Both the permanganate/persulfate applications and construction of the AS/B wells were efforts originally undertaken by Superior in an effort to bring the property back into compliance under the VAP program. The organic solution applications occurred in 2012 and the AS/B system is still being operated on Superior's property.

Currently, ground water migrating off the property still contains TCE and breakdown compounds and remains a concern.

Ohio EPA's Role

Ohio EPA previously provided oversight of the ground water delineation and clean-up activities performed in the VAP. Ohio EPA has recently referred the site to the AGO for resolution through legal orders for a clean-up investigation and feasibility study.

Ohio EPA is concerned about the proximity of contamination to the nearby village wellfield, which supplies Bremen, Rushville and other areas with drinking water, and is located downgradient of the contaminated ground water plume. Ohio EPA has been monitoring the village water supply wells for the contaminants biannually, and TCE or breakdown compounds have not been detected in the village supply wells to date.

This fact sheet will be updated periodically and posted on Ohio EPA's website at epa.ohio.gov/cdo/superior_fibers.aspx. For more information regarding this site, contact Ohio EPA's Public Interest Center at (614) 644-2160.