



de maximis, inc.

>500x 1,4-Dioxane Reduction With Limited Operating Costs & Near-Zero Bromate Formation

CUSTOMER: de maximis, Inc.

LOCATION: Concord, Massachusetts

CHALLENGE

Between the 1970s and 2011, a large-scale depleted uranium (DU) production facility operated in Concord, MA that resulted in significant contamination threatening a downgradient municipal well. Recognizing the urgency of the resulting 1,4-Dioxane and volatile organic compounds (VOCs) plume, the EPA declared it a Superfund Site and evaluated various treatment alternatives. At first, they utilized a granulated activated carbon (GAC) system followed by an advanced oxidation process (AOP) solution pairing sodium persulfate with UV light to destroy the elevated contaminants in extracted groundwater.

SOLUTION

As the official General Contractor responsible for performing all remedial activities on site, de maximis, Inc. then turned to APT's HiPOx Advanced Oxidation System after seeing a successful pilot study at the Helen Kramer Landfill Superfund Site in Mantua Township, NJ. Due to those results, a pilot scale study was conducted at the Concord Superfund Site resulting in the successful treatment of 1,4-Dioxane to below the treatment objective. APT was then awarded a contract to design, fabricate, install, and start up a full-scale HiPOx system to treat groundwater on the Site handling a flow rate of 20 GPM, targeting a reduction of influent 1,4-Dioxane levels from 20 µg/L to less than .035 µg/L, and controlling bromate formation to less than drinking water standards. The successful system was deployed in 2023.

WHY HiPOx?

After seeing the exceptional HiPOx 1,4-Dioxane treatment test results, it was an easy decision to officially adopt the technology at the Concord Superfund Site. Additionally, the HiPOx technology had low operating costs and the necessary bromate control.

IMPACT

HiPOx continues to successfully treat 1,4-Dioxane and VOCs in the Concord Site's extracted groundwater to below detection limits.

"HiPOx is running great, no maintenance or operation issues and no discharge compliance issues with the 1,4-Dioxane destruction to non-detect."

