

**Syndicate Systems, Inc.
Indiana Voluntary Remediation Program
Middlebury, Indiana**

Swenson – Marzec & Associates (SMA) principals led the investigation, risk evaluation, and regulatory closure of this multi-property Indiana Voluntary Remediation Program (VRP) project in Middlebury, Indiana. The project area spans a large active manufacturing facility, an adjacent former warehouse property, and neighboring residential and commercial properties, and involved commingled chlorinated and petroleum volatile organic compound (cVOC and pVOC) plumes in groundwater originating from multiple source areas, including a former waste disposal pit, a former electroplating absorption pond, and sanitary sewer lines running through the project area. Previous consultants had conducted more than two decades of subsurface investigation and active remediation at the site – including operation of a groundwater pump-and-treat system and multiple rounds of in-situ substrate injection for reductive dechlorination of trichloroethylene – but the project had stalled in pursuit of closure.

SMA took over as project lead and delivered a risk-based closure strategy that resolved the outstanding regulatory requirements and closed the project:

- Conducted a vertical delineation investigation across the commingled plume area, including installation of interface monitoring wells at the base of the upper aquifer, paired soil sampling in the underlying clay till, and pump testing of a deep production well, and demonstrated that contaminant impacts are confined to the shallow sand aquifer and do not threaten the underlying lower aquifer used for municipal and industrial water supply.
- Completed horizontal plume delineation with additional downgradient monitoring wells and used Mann-Kendall trend analysis across the full monitoring network to demonstrate that the groundwater plumes are stable to decreasing.
- Forensically distinguished impacts attributable to the client's operations from a separate release along the adjacent public right-of-way associated with the municipal sewer, removing an off-site liability from the client's perimeter of compliance.
- Executed paired sub-slab and indoor air vapor intrusion screening across residential, commercial, and industrial buildings within the project area over two seasonal sampling windows, and demonstrated that the vapor intrusion pathway is not completed.
- Eliminated the groundwater exposure pathway across the full plume footprint through a combination of Environmental Restrictive Covenants recorded on the two affected industrial properties, private well abandonment and connection of two off-site residences to the municipal water supply, and a town-wide Environmental Restrictive Ordinance prohibiting potable groundwater use.
- Delivered the Remediation Completion Report that closed out the VRP project and secured IDEM's Certificate of Completion and Covenant Not to Sue for the project area.

SMA's risk-based approach closed a complex multi-property VRP project that had been active for more than two decades without the need for any further active remediation.