

Environmental Quality Company Chooses ISCO to Help Safeguard Prominent Industrial Company's Landfill

Allen Park, Michigan

Landfills are dynamic environments. Through natural processes of rainfall, condensation, and decomposition, landfills themselves produce a liquid waste stream, called leachate. Often the leachate contains hazardous materials, so properly managing a landfill requires handling the waste.

In Allen Park, Michigan, a prominent industrial company's landfill site, operated by Waste Management, Inc., serves an assembly plant. Environmental Quality Company (EQ) in Wayne, Michigan, contracted with this industrial company to install a 3,000-foot dual contained transmission system to convey the leachate. In turn, EQ turned to ISCO Industries, LLC, for their HDPE expertise.

The Requirements

The transmission system includes single wall and dual wall manholes that provide access to control the levels of hazardous materials that often flow through the line. A mixing chamber mechanically agitates leachate to stop settlement of solids.

The physical characteristics and chemical environment of the landfill pose numerous challenges.

"Some of the leachate has a very high pH," says Mark LaRowe, Construction Project Manager for EQ's Site Services group. "Caustic chemicals could degrade other types of pipe." In addition, he said, the landfill is located on a rolling site. "The topography dictates lots of bends and curves in the transmission line."

Given this operating environment, high-density polyethylene (HDPE) pipe was the perfect choice, providing chemical compatibility, strength, flexibility, and ease of fabrication for special fittings.

EQ selected ISCO Industries to work with them. "Other suppliers either simply couldn't provide the manholes we needed, or their costs were prohibitive," says LaRowe

ISCO fabricated HDPE pipe and components, including many custom fittings, the manhole structures, and the mixing chamber. In addition, the company provided technical assistance and CAD drawings for the design of both the manhole components and the overall system design. In fact, one of ISCO's recommended design changes saved EQ and Ford several thousand dollars.

"Basically, it was an issue of constructability of the monitoring ports for the dual contained transmission line," ISCO Sales Engineer, Chris Ulrich explains. Thanks to a value engineering process, the customer realized a more workable design that cost less. "We were very impressed," says LaRowe.

"ISCO has been excellent all the way around," he continues. "ISCO's fabrication shop met very aggressive delivery schedule for the manholes." In addition, ISCO fabricator Dallas Grimes worked on-site to fabricate pipe-line and fittings, a fact that LaRowe says saved a lot of downtime.

Manhole & Mixing Chamber Details

The dual-contained manholes, with built-in monitoring ports and valves to the transmission line, provide a structure where technicians can check for leaks, draw samples, and test the chemical composition of the leachate. The system also includes a dual-contained mixing chamber that mechanically agitates the leachate to stop settlement of suspended solids before discharging it into an industrial sewer system.

ISCO fabricated the mixing chamber and 10 large diameter manholes from inch-thick HDPE pipe and sheet stock. The flat sheets of HDPE were rolled and welded into cylinders.

- Special structures for this project included:
- Single-wall 48-inch manholes.
- Dual-wall 48 x 54-inch manholes and a 72 x 84-inch manhole.
- Dual-wall mixing chamber with baffles.

Summary

ISCO serves the solid waste industry throughout the entire United States & Internationally.

"This landfill project is a perfect illustration of ISCO's commitment to its customers: Innovative solutions and personal service," says Jimmy Kirchdorfer, CEO of ISCO. "We're constantly looking for ways our high quality HDPE products and our design expertise can benefit customers."