

Refuse Hideaway Landfill

PUB-RR-889

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7562 U.S. Highway 14
Town of Middleton, WI
Dane County

23 acres

Location: A rural area along Highway 14 in Dane County, surrounded by several farms.

Years of dumping caused contamination at this landfill near Middleton, but a solar energy pilot project is providing a silver lining to this Superfund site.

History

In the mid-1970s, a property owner began operating a licensed landfill along U.S. Highway 14 west of Middleton in south central Wisconsin, aptly named Refuse Hideaway. During its 14 years of operation, Refuse Hideaway received roughly 1.2 million cubic yards of municipal, commercial and industrial waste were dumped on-site. Unlike today's landfills, insufficient barriers were in place to prevent contamination from moving through the layers of waste and migrating into the soil and groundwater.

Investigation and Cleanup

In 1988, the Wisconsin Department of Natural Resources (DNR) confirmed that volatile organic compounds (VOCs) were

migrating into the groundwater, including perchloroethene, trichloroethene and vinyl chloride. The migration had already hit three nearby drinking water wells, with other neighboring wells at risk.



The new solar array at Refuse Hideaway generates as much electricity as the average American home uses in a year (photo courtesy DNR).

Help came quickly to prevent the further spread of contamination. A state order forced Refuse Hideaway to shut down immediately. Within a year, the site was capped with clay and soil and the DNR installed a methane gas and leachate collection system to try and prevent any further spread of contamination. With these measures in place, DNR project managers evaluated long-term remediation options at the former landfill. In 1992, the state worked with the U.S. Environmental Protection Agency (EPA) to designate Refuse Hideaway a Superfund site and utilize federal resources. On-going remediation at the site would eventually include continued operation of leachate and landfill gas collection systems.



Wisconsin Department of Natural Resources
Remediation and Redevelopment Program

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Tests showed that these methods were effective in containing the contaminant plume in the groundwater.

Redevelopment

While Refuse Hideaway is not an immediate candidate for redevelopment, the site was chosen for a different kind of make over. The DNR's Remediation and Redevelopment (RR) Program chose the former landfill as a pilot project for its Wisconsin Initiative for Sustainable Cleanups (WISC).

The goal of the initiative is to research and implement methods of remediating soil and groundwater contamination that use less energy – thereby reducing the carbon footprint of brownfield sites and saving money in the long run.

Because the landfill site has good sun exposure, a solar array was a natural fit to generate clean power to off-set the needs of the energy-hungry remediation systems. A Madison-based company was hired to install a 44-solar panel array, capable of generating 12,000 kilowatt hours a year. Energy from the system is then returned to the power grid, and the DNR is credited on its next energy bill.

The RR Program will study the outcomes of this solar panel project and see how it could be improved or replicated at other sites. In future years, the energy cost-savings may be great enough to warrant adding additional panels. For now, the panels represent the RR Program's commitment to restoring the health of our soil and groundwater in an environmentally-friendly way.

Financial, Liability, Technical Assistance

Since the RR Program has been involved in the clean up at Refuse Hideaway, at least \$5 million dollars in state-funded response monies have been spent.

The EPA contributed an additional \$650,000 to help cleanup this Superfund site.

Installation of the photovoltaic system cost \$94,462. Of that money, \$25,134 came from an implementation grant from Focus on Energy, a Wisconsin green energy organization. The remaining cost was covered by the RR Program.

The DNR also receives prime rates for the energy it generates through Madison Gas and Electric's Clean Power Partner Program.

The EPA and National Renewable Energy Laboratory provided the RR Program a \$35,000 grant in the form of contractor services to examine the effectiveness of the solar array and investigate ways to copy any success at other sites in Wisconsin and nationwide.

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