

E² Inc. – Situation Assessment

Hamilton, Ohio: Chem-Dyne Corporation Superfund Site

March 2007

Introduction

Funded by EPA Region 5, environmental consulting company E² Inc. conducted a situation assessment in Hamilton, Ohio in March 2007 to gather information to inform EPA's efforts to address long-term stewardship and institutional control (IC) issues at the Chem-Dyne Corporation Superfund Site.

EPA's primary responsibility at Superfund sites is to ensure the protection of human health and the environment. With forethought and effective planning, however, EPA can work with communities and site stakeholders to develop long-term stewardship strategies for maintaining the protectiveness of site remedies while allowing sites to be returned to productive use

Activities Conducted During Situation Assessment

- conference calls with EPA site staff, Ohio EPA representatives, Hamilton and Butler County officials, surrounding business owners, and PRP group representatives from the Chem-Dyne Trust.
- information gathering and review of community planning materials and EPA site reports;

This summary memo provides an overview of the key findings identified during the project's situation assessment as well as a set of potential next steps for developing a long-term stewardship strategy for the Chem-Dyne.

I. Findings

A. Community History

- The 10-acre Chem-Dyne Superfund site is located in Hamilton, Ohio approximately 15 miles northwest of Cincinnati. Hamilton has a population of 60,000 and is located on the Great Miami River.
- Once an established industrial manufacturing center, the City of Hamilton has seen a large shift in its economy in the last fifty years with new job growth in the service sector and the majority of new development taking place in surrounding Butler County.
- The City of Hamilton has struggled with population loss, and relative to other communities in the region, Hamilton has lower high school graduation rates, household and per capita incomes, and home values. Hamilton also saw higher poverty and unemployment rates compared to Butler County and the State of Ohio.
- Hamilton is an independent city that lies within Butler County. The city establishes its own land use and zoning, and has a planning and economic development office. The City of Hamilton is working to encourage development at brownfield sites in the downtown area as well as in an industrial park east of the City.

B. Site Contamination, Remediation, and Institutional Controls

- The Chem-Dyne Corporation (Chem-Dyne) Superfund site is a former chemical waste recycling and storage facility. Between 1974-1979 Chem-Dyne accepted drums and bulk cargo containers of chemical waste from over 200 generators. The company recycled, stored, and disposed of a broad range of chemical industrial wastes.
- Over 30,000 barrels and 300,000 gallons of bulk materials were left on the site, when chemical storage and recycling operations ceased in 1980. According to the site's 1985 Record of Decision (ROD), uncontrolled releases of hazardous materials were frequent at the Chem-Dyne facility. Liquid wastes were often mixed in open gravel pits, resulting in the release of vapors into the air as well as the contamination of the underlying soils and groundwater. Various wastes stored in 55-gallon drums and railroad tank cars were also dumped into ditches and stored on the site.
- Improper hazardous waste handling and disposal practices at the site led to the contamination of the site's soil and ground water. Groundwater was contaminated with volatile organic compounds (VOCs) and heavy metals, however no drinking water supplies have been affected. Soil was contaminated with VOCs, pesticides, other organic compounds, and heavy metals including mercury, arsenic, nickel, and beryllium. The onsite buildings were contaminated with polychlorinated biphenyls.

- In 1985, a final remedy was selected for the site. The Record of Decision (ROD) outlined the following response actions for the site:
 - removal of soil hot spots;
 - construction of a cap over the remaining contaminated soils;
 - demolition of eight contaminated buildings on the site;
 - excavation of a perimeter trench severing utilities and stormwater conveyances; and
 - installation of a ground water extraction-injection system.
- All surface cleanup actions were complete in 1987. The ground water extraction-injection system has been in operation since 1988 and is expected to remain in operation beyond 2008.
- The Chem-Dyne Trust, which represents the site's 173-member group of potentially responsible parties (PRPs), operates the site's ground water remedy with oversight from EPA and the Ohio Environmental Protection Agency (OEPA). The Trust is currently considering conducting a voluntary removal action to address residual source contamination that has complicated the site's groundwater remedy. In-situ treatment of contaminated subsurface soils has been contemplated. The Trust would likely complete the removal action in the next two to five years. In the long term, the Trust would like to see the site returned to reuse.
- Institutional controls (ICs), including deed notices, covenants and easements, are required for the site in the 1985-ROD as well as the 2005 Five-Year Review. The 2005 Five-Year Review suggests that an institutional controls study would be initiated in March 2006. Project research indicates that ICs have not yet been identified.

C. Site Characteristics and Surrounding Land Uses

- The 10-acre Chem-Dyne site is located at the northern edge of the City of Hamilton. In close proximity to the Great Miami River, the site is bordered by residential land uses to the south, and a municipal recreation park to the east. The Ford Hydraulic Canal and open space areas lie to the north of the site, and a CSX rail line and industrial land uses are located immediately west of the site. The site is accessible from the south via Joe Nuxhaul Boulevard.
- The site is relatively flat; a 30" clay cap covers the majority of 10-acre fenced area. Several small structures, located on the northern portion of the property, house the Chem-Dyne Trust site offices and ground water remedy components for the site. An operational dam on the Ford Hydraulic canal is located on the northern edge of the site as well as a supporting access road and service area.

- A City of Hamilton public recreation park that includes four baseball diamonds and several small buildings is located immediately to the east of the site's access road. The park separates the site from a small neighborhood that lies further to the east.
- An established industrial district lies to the west of the Chem-Dyne site. Facilities in the area include a coal-fired power plant, a paper mill, and several manufacturing businesses.
- Manufacturing business Armor Metal Group, Inc. (Armor Metal) shares is located immediately west of the Chem Dyne site. The company specializes in manufacturing steel components for industrial appliances, and transportation and medical equipment. The Armor Metal facility lies on a long rectangular parcel separating the Chem-Dyne site from the CSX railroad.
- The site lies within half a mile of the New Miami River, a critical resource for the southwestern Ohio region. Extending from Dayton to Cincinnati, the Great Miami River has served as an important industrial and ecological resource for the region. Industrial growth in the cities of Hamilton and Middletown relied on the river as a power source and a transportation route. Canals and spillways were built along the river, diverting water to provide electricity and cooling capacity to industrial manufacturing facilities. The Great Miami River also evolved into an important transportation route, as natural resources and dry goods were frequently shipped by river barge from west central Ohio down the Great Miami and on to the Ohio and Mississippi Rivers. The Great Miami River's role as a transportation route was solidified when the Miami and Erie Canal was constructed, connecting the headwaters of the river in Dayton with the Lake Erie in Toledo, Ohio. The canal system opened the river way to freight traffic from the Great Lakes, and spurred the growth of many small towns in western Ohio.
- Today, the Miami and Erie Canal is designated as a scenic byway. Significant portions of the waterway are accessible to pedestrians and cyclists. While the river no longer functions as an industrial transportation route, initiatives are underway to promote recreational and ecological use of the Great Miami River. The Great Miami River not only serves as a valuable surface water resource, but the underlying Miami aquifer is one of the region's most productive sole source aquifers. Soils in the region are predominantly composed of sand and gravel, leading to a productive ground water resource. The Miami Aquifer is a valuable resource for both industrial use and human consumption. At the Chem-Dyne site the upper ground water aquifer is estimated to be 25 feet below the surface. Generally, the groundwater flows westerly toward the Greater Miami River.

D. Property Ownership and Site Stewardship

- The site's ownership is fairly complex. The now bankrupt Chem-Dyne Corporation owns portions of the site. A land holding entity based in California that is not a PRP controls the majority of the site's acreage. The City of Hamilton owns several parcels as well. Further research would be needed to identify any deed notices and or restrictive covenants in place on parcels at the site.
- Project research indicates that the owner of the majority of the site's acreage purchased the several parcels in the 1990's with the goal of redeveloping the site for industrial use. Subsequent to purchasing the property, the owner transferred the title to the properties several times. Research suggests that land holding companies are tied to the same individual.

E. Site Remedy and Long-term Stewardship Considerations

The Chem-Dyne site has been construction complete for 20 years. Key remedy related issues at the site today include a proposed voluntary removal action, ongoing ground water remediation and operation and maintenance activities, long-term site stewardship concerns, as well as the implementation of institutional controls.

- The Chem-Dyne Trust's proposed removal action creates the potential for additional EPA oversight at the site. The location of the contaminated material and the method used to address the contamination could have significant implications for the protectiveness of the site's remedy. Removal activities would need to be coordinated with the location of engineering controls at the site including the site's clay cap and synthetic membrane, as well as the site's ground water remedy components.
- The Chem-Dyne Trust is currently implementing ground water remediation activities with oversight from EPA Region 5 and OEPA. The site's ground water remediation does not currently pose any unacceptable risks to human health and environment. Currently, the site's contaminated ground water meets standards for industrial use but is not suitable for human consumption. Representatives from a regional consortium of water utilities have expressed concerns about the site's ground water contamination and would like to see groundwater remediated to drinking water standards. The primary concern with regard to ground water revolves around the affect on the groundwater plume of surrounding land uses. Ground water contamination at the site limits the opportunities for municipal well field expansion. And project research suggests that local stakeholders are concerned that the site's ground water plume could potentially migrate into drinking water protection areas, if new groundwater-intensive industries were located in the area and caused a large-scale change in ground water flow regimes. As EPA and OEPA consider work to ensure that the Chem-Dyne site's remedy remains protective of human health and the

environment over the long-term, ground water use priorities and restrictions will be important to consider.

- The Chem-Dyne site's current ownership may have several implications for the protectiveness of the site's remedy in the long run. With property at the site owned by a defunct PRP, and an absentee landowner, the site lacks an entity that could serve a steward of the site and its remedial components in the future. While the Chem-Dyne Trust currently maintains an office and remediation components at the site, the members of the Trust's board have not indicated any interest in taking ownership of the property. The primary owner at the site purchased the property in the 1990's and does not likely have any interest in retaining ownership over the long run. When the Chem-Dyne Trust completes its remedial obligations at the site, the site may be left vacant.
- In the future, EPA will likely need to consider developing and implementing an institutional controls (ICs) plan for the site. ICs are required for the site's soil and ground water media in remedial decision documents. Five-Year Review reports suggest the IC evaluations may be needed in the short term.

F. Site Reuse Considerations

Future use of the Chem-Dyne site would likely rely heavily on the institutional controls and land use restrictions proposed for the properties affected by contamination at the site. Adjacent land use patterns and issues suggest that there could be a potential demand for expansion of industrial storage areas, manufacturing facilities, and recreational resources.

- Project research suggests that the adjacent municipal power plant is constrained by its current storage capacity for coal and raw materials. Land availability surrounding the power plant is limited. Further project research would be required to determine whether the 10-acre Chem-Dyne site could potentially support a raw materials storage facility in the future.
- Representatives from Armor Metal have indicated that company would likely be looking to expand industrial operations beyond its existing facility. In initial conversations with EPA Region 5 staff, Armor Metal representatives asked if the Chem-Dyne site would be available and suitable for industrial manufacturing operations. Project research suggests that Armor Metal representatives would require a clear indication of the future land use restrictions and other institutional control mechanisms planned for the site prior to engaging in further discussion of the company's interest in the Chem-Dyne. Further project research would be required in order to identify the whether the Chem-Dyne site's remedy would support industrial manufacturing activities.

G. Potential Next Steps

Project research indicates that the EPA could potentially benefit from technical support and research activities to help outline factors and considerations that may need to be addressed in an institutional controls plan for the site.

The contractor could provide assistance to site managers to help inform the Agency's current efforts to evaluate institutional control considerations at the Chem Dyne site. Below are the areas of support that could be provided:

- conduct a comprehensive site document analyses to highlight EPA's institutional control obligations at the site;
- perform, an analysis of State and local policy considerations that would likely affect the capacity and effectiveness of ICs for the site; and
- provide technical assistance, mapping and facilitation services to support an outreach effort aimed at bringing key site and local government stakeholders together to discuss long-term stewardship and institutional controls for the site.
- E2 staff could be available for a conference call to discuss these and other next steps with EPA Region 5 site staff and other representatives as appropriate.