

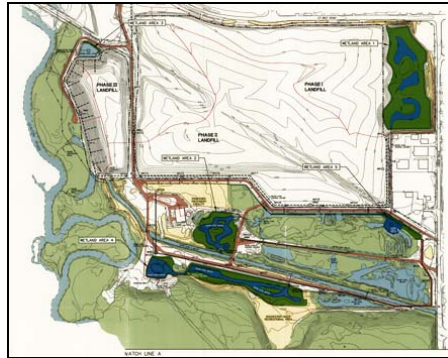


Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- RD/RA Work Plan
- Landfill Cap
- Leachate / Groundwater Collection System
- Slurry Wall
- Biological Leachate / Groundwater Treatment System
- Wetlands Mitigation

G&H LANDFILL SITE MACOMB COUNTY, MICHIGAN



CLIENT: G&H LANDFILL PRP GROUP
DURATION: 1993 - ONGOING
COST: \$16 MILLION

CRA was retained by the G&H Landfill PRP Group to review and comment on the USEPA lead Remedial Investigation (RI) and Feasibility Study (FS) for the G&H Landfill site. The G&H Landfill site is a Superfund site and was ranked first on the Michigan Act 307 Sites of Environmental Contamination. Subsequently, CRA participated in negotiations between the PRPs and USEPA/MDNR (now MDEQ) regarding the scope of the final remedy.

CRA completed the Remedial Design/Remedial Action (RD/RA) Work Plan for G&H Landfill site on behalf of the PRP Group. CRA then completed the pre-design investigations (including hydrogeologic investigations, landfill gas surveys, and treatability studies) and the remedial design. The final remedy consists of a 34-hectare (83-acre) landfill cap [technically equivalent Michigan Act 64 (now Act 451 Part 111) requirements], a physical/hydraulic containment system 1,000m (3,000-foot) long and 6 – 12m (20- to 40-foot) deep slurry wall and pipe and media leachate drain system), a groundwater extraction system, a 1690m³/day (310 gpm) leachate/groundwater treatment system, and wetlands mitigation.

The remedial action for the site utilized a synergistic approach that was designed to not only fulfill the objective of remediating the site, but also improve the ecology and hydrology of the site and surrounding area.

The site was occupied by over 40 hectares (100 acres) of low-value stagnant wetlands. These wetlands were created as a result of historic gravel mining and were supported by groundwater discharge to the surface. The synergistic approach to the remedy included the creation of 5.7 hectares (14 acres) of new wetlands and restoration/rehabilitation of the existing wetlands. This wetland enhancement encourages the onset of wetland species and hydrophyte communities by improving the hydrology within the wetlands. This will, in turn, attract a variety of animal and bird species to the area. The final remedy component incorporated reopening a large portion of the site as a state recreational area.

The remedial action construction was substantially complete by the end of 1998, and subsequently finalized in 1999. CRA continues to provide monitoring and reporting services for the site and treatment facility operation services.

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