CASE HISTORY NO. W106

PROJECT:	**CONTAINMENT OF METHANE GAS AT THE OTTAWA STREET LANDFILL, KITCHENER, ONTARIO**
OWNER:	REGIONAL MUNICIPALITY OF WATERLOO RAY NOTHDURFT, P. ENG., PROJECT MANAGER
CONSULTING ENGINEER:	CH2M HILL LTD., WATERLOO, ONTARIO GLENN ADAMS, P. ENG., PROJECT ENGINEER
GENERAL CONTRACTOR:	WILSON & SOMERVILLE LIMITED, STRATFORD, ONTARIO B.J. HOUSTON, P. ENG., PROJECT MANAGER
LICENSED WATERLOO CONTRACTOR:	C^3 ENVIRONMENTAL, BRESLAU, ONTARIO MINH LE, PROJECT MANAGER

BACKGROUND/DESCRIPTION OF WORK:

The Ottawa street landfill is a municipal landfill that had been in general use for a period of more than 20 years and was finally closed in the mid 1970's. Residential development of adjoining land proceeded shortly thereafter. By the late 1970's methane gas was being detected in the basements located in close proximity to the property line. In 1990, after a thorough investigation of the site, engineers at CH2M Hill concluded the problem could be improved by installing a barrier wall to work in conjunction with an active gas collection system. The barrier chosen was the Waterloo Barrier® in the WZ 75 configuration.

PERFORMANCE OF WORK:

The WZ 75 Waterloo Barrier® sheet piling was installed along the eastern and the western margins of the property that border along residential neighbourhoods. Approximately 37,000 square feet of WZ 75 piling was driven with a crane-mounted vibratory hammer to depths of 15 to 31 feet in complex soil conditions comprised of fine sands, silty sands and silts. Excavation to remove buried refuse in the path of the wall was occasionally required.

Once the piling was in the ground, the active gas collection system was installed around the entire perimeter of the site. In the vicinity of the Waterloo Barrier®, this was accomplished by excavating along the interior of the wall to a depth of about 10 feet. Once the collection system was in place, the excavation was backfilled and the sealable cavities of the Waterloo Barrier® were flushed clean with pressurized water and grouted. The sealant used was a thixotropic, modified cement grout containing expanding agents.

The Waterloo Barrier® as installed forms a permanent subsurface barrier to reduce the off-site migration of methane gas and improve the efficiency of the gas collection system. It is currently performing as expected and to the satisfaction of the parties involved.

CMRM

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