



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Jennifer M. Granholm, Governor • Steven E. Chester, Director

REMEDIATION AND REDEVELOPMENT DIVISION

INTERNET: www.michigan.gov/deqrrd

INFORMATION BULLETIN

FORMER SANICEM LANDFILL

Orion Charter Township/City of Auburn Hills, Oakland County

June 2005

INTRODUCTION

The Department of Environmental Quality (DEQ) has prepared this bulletin to provide area residents and interested parties with information regarding: 1) the generation and migration of methane gas from the former Sanicem Landfill in Oakland County, 2) high concentrations of methane in the soil gas under or near commercial buildings adjacent to the landfill property that may pose a hazard to human health and safety (see Methane), and 3) actions being taken by the DEQ to alleviate potential methane hazards.

The Remediation and Redevelopment Division (RRD) of the DEQ is responsible for implementing Part 201 (Environmental Remediation) of the Natural Resources and Environmental Protection Act (NREPA), the primary Michigan law governing cleanup of environmental contamination sites. Part 201 and the Part 201 Administrative Rules establish standards and processes for remedying contamination which are intended to protect public health, safety and welfare, and the environment.

After numerous requests by the DEQ, the former owners and operators of the landfill have failed to conduct the necessary response activities (see Site History). Therefore, the DEQ has recently issued an Administrative Order that requires the former owners and operators to undertake the necessary and appropriate response activities to mitigate the risk associated with the methane migration (see Response Actions).

PUBLIC MEETING

The DEQ has scheduled a public information meeting for 6:30 p.m. on July 27, 2005, at the Orion Township Hall, Lower Level Boardroom, located at 2525 Joslyn Road. The purpose of this meeting is to: 1) further explain the environmental conditions and associated risks that exist as a result of the

methane migration, 2) to encourage property owners to cooperate with the response efforts – including the installation of indoor methane monitors and alarms at some structures (see Response Activities), and 3) to answer any additional questions community residents may have concerning this site.

SITE HISTORY

The Former Sanicem Landfill is located on South Lapeer Road. The landfill property is roughly bordered by Bald Mountain Road to the east, Lapeer Road to the west, Ellen Drive to the north, and Superior Court to the south. The site consists of approximately 145 acres with landfill material on nearly 70 acres. The northern 40 acres are in Orion Charter Township with the remainder in the city of Auburn Hills (see map).

This property was used as a landfill from 1964 to 1978, with the J. Fons Company operating the landfill from 1969 through 1978. The J. Fons Company and Daniel P. Fons, the President of J. Fons Company from 1969 through July 1997, also owned portions of the landfill property. According to records kept by the J. Fons Company, approximately 7,000 to 8,000 cubic yards of waste were disposed of daily during their operation of the landfill.

During the landfill's operation, inspections conducted by the DEQ (formerly Department of Natural Resources) identified numerous deficiencies, including, but not limited to:

- leachate outbreaks (liquid leaching from the wastes),
- solid waste dumped into the water at the bottom of the excavation,
- inadequate placement of daily landfill cover,
- failure to install perimeter drains for surface water management, and

- failure to determine the need for methane gas management at the landfill.

Based upon these, as well as other conditions, the DEQ denied a license to continue to operate Sanicem Landfill, and it was closed on June 7, 1978.

On September 25, 1978, a consent order was entered between the DEQ and the J. Fons Company. The consent order required that the J. Fons Company correct the deficiencies at the landfill and that the landfill remain closed until the issuance of the necessary permits and licenses. The J. Fons Company initiated corrective actions from August through October 1981 with the intent of reopening the landfill; however, the J. Fons Company never satisfactorily corrected all the deficiencies at the landfill. Consequently, a license to operate was not obtained, and the landfill remained closed.

In 2002, Brown Road Group, L.L.C. (BRG) purchased the former Sanicem landfill to redevelop the property for light industrial use. While redeveloping the former Sanicem landfill property it became known that methane, generated by decomposition of the waste in the landfill, was present at potentially explosive levels at and beyond the property boundary. Investigations (soil borings to test for methane) conducted by the DEQ and others have demonstrated that methane continues to migrate from the property, but the full extent of methane migration has not been defined (see Environmental Conditions).

The waste in the landfill is decomposing, which generates methane gas. The J. Fons Company and Daniel P. Fons, as owners and operators of the former landfill at the time the waste was disposed, are responsible for taking actions to mitigate the hazards created, and clean up the environmental contamination.

In 2002, the BRG performed a Baseline Environmental Assessment (BEA), which is designed to distinguish existing contamination from any new releases of hazardous substances that may occur as a result of BRG's operations at the site. Under Part 201, this exempts the BRG from responsibility for past contamination from the landfill, but they must still ensure their use of the property does not worsen the contamination or cause unacceptable exposure to it.

The BRG has received a loan from Oakland County based on a grant from the U.S. Environmental

Protection Agency (EPA) to install a methane extraction system along the north side of the landfill property; design and construction of this system is underway. While this system will be designed to prevent continued methane migration off the landfill property, it will not mitigate the methane gas that has already escaped.

METHANE

Methane (CH₄) is the lightest of all hydrocarbons and diffuses very rapidly in air. It is a colorless, odorless, tasteless, flammable gas which is a result of the microbial or thermal alteration of organic matter. Methane is widely distributed in nature, and the atmosphere. Methane is not toxic and is not known to have systemic toxicological effects. The principle concerns with methane are its explosiveness, flammability and asphyxiant (suffocation by displacing oxygen) properties.

Methane sources include, but are not limited to, solid waste landfills, dumps, oil and gas wells, swamps, compost piles, groundwater contamination plumes, leaking natural gas pipelines, and abandoned or active coal mines.

Migrating methane gas has proven to pose a potentially serious public health and safety risk. Fires and explosions, resulting in significant property damage, have occurred in cases where methane gas has migrated into structures or other areas where ignition sources are present.

Fire and explosion can result if methane accumulates at concentrations between five percent (lower explosive limit) and 15 percent (upper explosive limit) in the air of a confined space, and is exposed to an ignition source (e.g., electrical outlets, electrical appliances, pilot lights, static electricity, or open flames). Higher methane concentrations above 15 percent should also be considered dangerous, since high concentrations can quickly dilute to explosive levels.

The RRD has determined that it is necessary to define the areas where methane exists at 1.25 percent by volume in soil gas because of the acute flammability and explosivity hazards associated with methane when it exceeds these levels.

Areas where methane exceeds 1.25 percent in soil gas will require interim response activities to eliminate the acute risks of methane accumulation in buildings, in conjunction with further definition of the extent of methane.

ENVIRONMENTAL CONDITIONS

Methane was discovered under pressure in the soil gas (the air that fills the voids between soil granules) at the northern landfill property line and as far as 1,200 feet north of the landfill property at over eight times (42%) the lower explosive limit for methane. Methane was also found to exceed the level (1.25% in soil gas) at which action should be taken to mitigate potential explosion hazards under or near at least 13 commercial buildings (see Methane).

Of the buildings that have been investigated, methane has been detected in two of the buildings close to the landfill. Methane alarms placed in these two buildings have further signaled the presence of unacceptable levels of methane. Based on these incidents, preliminary abatement measures of ventilation control and sealing floor seams, as well as permanent methane monitors have been instituted. Other buildings in the known methane migration area are reported to have been surveyed for methane with none found to date.

Based on all available information, the DEQ does not believe any of the residential buildings in the area are affected or have cause for concern at this time.

RESPONSE ACTIVITIES

The methane migrating from the landfill property presents a potential risk to public health, safety or welfare, and therefore requires delineation and remediation. In general, the Administrative Order issued by the DEQ requires the J. Fons Company and Daniel P. Fons to mitigate the methane risk and further define the extent of the methane in the soil gas.

To sufficiently protect building occupants on the properties where methane in the soils is at or above a concentration of 1.25% by volume in soil gas, at least three levels of engineering controls are needed. These controls include:

- Indoor methane monitors and alarms in each structure, and the development of an Indoor Methane Monitoring Plan which includes an Indoor Methane Exceedence Response Plan.
- A vapor control system for each structure on the affected properties to keep methane from entering a building;
- Soil gas venting system(s).

These controls will alert building occupants if indoor concentrations of methane gas exceed acceptable limits and provide direction on what steps to take to abate the hazard, prevent the infiltration into and accumulation of methane gas in structures, and assure public health and safety by mitigating unacceptable levels of methane in soil gas.

The Administrative Order directs the J. Fons Company and Daniel P. Fons specifically to perform the following:

- An investigation to adequately characterize the nature, extent, movement, and fate of methane emanating from the landfill property;
- Notification of property owners affected by the migration of methane onto their property;
- An assessment of the indoor presence of methane in each of the structures on properties where methane in the soils is at or above a concentration of 1.25% by volume in soil gas;
- Daily indoor methane monitoring in each structure, unless permanent methane monitors and alarms are already present in the structure, or until such time as permanent methane monitors and alarms are installed;
- The installation of indoor methane monitors and alarms in each structure and the development of an Indoor Methane Monitoring Plan;
- The installation of a vapor control system for each structure that will prevent the infiltration into and the accumulation of methane in these structures;
- The installation and operation of a soil gas treatment system that will capture and prevent migration of methane specifically from the north end of the landfill property, if not otherwise constructed by another entity (eg. BRG);
- The installation and operation of a soil gas venting system(s) to mitigate unacceptable levels of methane off of the landfill property in all areas where methane is detected in the soils at or above a concentration of 1.25% by volume in soil gas.

Property owners near the landfill property may be asked to provide access to their property and or buildings to conduct these response activities. The degree of access required on each affected property will vary, and includes, but is not limited to:

- Daily building access to perform methane monitoring until permanent methane monitors can be installed;
- Building access to install permanent methane monitors;

- Building access to install a vapor control system;
- Property access to perform drilling, sampling, and installation of permanent methane monitoring locations to define the extent of the methane migration;
- Property access to install and operate soil gas treatment or venting system(s);
- Continued access to take periodic methane measurements at permanent methane sampling locations and to perform maintenance on soil gas treatment and/or venting system(s);
- Access to restore any damages created during the response activities, such as damage to landscaping.

Property owners are encouraged to cooperate with these efforts, and assist in alleviating the concern associated with the migration of methane from the landfill property.

FOR MORE INFORMATION

For more comprehensive information on the project and activities, you may contact the DEQ project manager:

Mr. Benjamin Mathews
Department of Environmental Quality
Remediation and Redevelopment Division
Southeast Michigan District Office
27700 Donald Court
Warren, MI 48092-2793
Telephone: (586) 753-3816
Fax: (586) 753-3801
E-Mail: mathewsb@michigan.gov

The DEQ is coordinating with the the Orion Charter Township Fire Department where the high concentrations of methane are known to occur. For emergency conditions, please contact your local fire department.

Contact Information:

Auburn Hills Fire Dept.: 248-370-9461.
Orion Township Fire Dept.: 248-373-4660

If you did not receive this bulletin in the mail, and would like to receive further information regarding the site, please contact Mr. Mathews to have your name added to our mailing list. A copy of the Administrative Order issued by the MDEQ is also available by request.

The Michigan Department of Environmental Quality (DEQ) will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. Questions or comments should be directed to the DEQ Office of Personnel Services, P.O. Box 30473, Lansing, MI 48909.

