

**United States Environmental Protection Agency**  
**Region V**  
**POLLUTION REPORT**

**Date:** Friday, February 22, 2008

**From:** Steven Faryan

**Subject:** Mallard Lake Landfill

26W580 Schick Road, Hanover Park, IL

Latitude: 41.9525000

Longitude: -88.1442000

|                          |                          |                            |                |
|--------------------------|--------------------------|----------------------------|----------------|
| <b>POLREP No.:</b>       | 11                       | <b>Site #:</b>             | B5MH           |
| <b>Reporting Period:</b> | Feb 4, 2008-Feb 22, 2008 | <b>D.O. #:</b>             |                |
| <b>Start Date:</b>       | 11/6/2007                | <b>Response Authority:</b> |                |
| <b>Mob Date:</b>         | 11/6/2007                | <b>Response Type:</b>      | Time-Critical  |
| <b>Demob Date:</b>       |                          | <b>NPL Status:</b>         |                |
| <b>Completion Date:</b>  |                          | <b>Incident Category:</b>  | Removal Action |
| <b>CERCLIS ID #:</b>     |                          | <b>Contract #</b>          |                |
| <b>RCRIS ID #:</b>       |                          |                            |                |

#### **Site Description**

The Mallard Lake Landfill is located near the intersection of Schick Road and County Farm Road in unincorporated DuPage County, Illinois. The landfill is owned by the DuPage Forest District and is operated by BFI. The landfill is maintained and monitored under the post closure requirements of their RCRA permit that Illinois Environmental Protection Agency oversees. The methane gas that is being recovered at the Mallard Lake landfill is recovered and sent via piping to the GRS facility that is located on the property to burn the gas for energy recovery. GRS operates three turbines and a 4th steam boiler to generate electricity which is sold to Comed and transmitted to the power grid.

US EPA, BFI and DuPage Forest District have signed a RCRA Section 7003 Consent Order to have BFI and the Forest District fully characterize landfill gas that has migrated off site from the facility and to provide corrective action measures to correct the migration and collect gas that has migrated off-site. The investigation work and emergency corrective action are being over-seen by U.S. EPA and their contractor Weston Solutions.

#### **Current Activities**

During this reporting period, six cone penetrometers (GX12, 13, 14, GPT5 and GPT6 and CP60S) were installed all of which detected zero methane gas during open bore-hole monitoring with the LandTech Gem 500 methane detector. CP60s is a nested well pushed and screened to 29 feet near CP60. Probes GPT5 and GPT6 were pushed on February 5th to depths of 11.02 and 30.78 respectively with no methane detections.

The remaining two probes (ML 4 and 5) just northeast of the landfill were not pushed because geological and methane data from probes ML1, 2, 3 and 6 were efficient to characterize the northeast methane gas migration extent. A historical map review of landfill methane gas probes prompted a gas migration investigation along the far east and northeast boundary of the landfill.

During this reporting period, the three CPT probe locations (GX12, 13 and 14), proposed along the R.O.W. of Schick Road, (south side) were pushed once permits were approved by the DuPage County Department of Transportation. All three probes detected no methane gas during open-bore hole monitoring. A total of eleven probes were installed along Schick Road to investigate the southern off-site gas migration. The probes were pushed on the north and south side of Schick Road and methane gas was only detected in GX-9 at 74.5%.

To date, approximately 119 probes (CPT probes shallow, intermediate and deep wells) have been installed in the investigation areas west, south and northeast of the Mallard Lake Landfill. Prior to the December 7th probe installation start-up, approximately 11 CPT probes had been installed by STS during the Wayne Township Groundwater investigation. Therefore, a total of 130 CPT gas probes have been installed to investigate the migration of methane gas from the Mallard Lake Landfill. Of the 130 total gas

probes, currently 77 have no methane detection as February 6, 2008.

BFI and STS finished the Phase I gas migration characterization with the CPT probe investigations on February 6th with the demobilization of the CPT crew and rig. Approximately 130 gas probes were pushed to evaluate the southeast and northwest off-site gas migration within the investigation area. Characterization and extent of the off-site migration will be evaluated by BFI and STS and a full investigation and characterization report is due to USEPA in early March of 2008.

STS has proposed emergency corrective action measures plan to capture current and prevent future methane gas releases (Phase II). BFI and STS will introduce provisional procedures such as zone of influence study, pump tests, groundwater and soil gas sampling to assess the efficiency of the current extraction system, alleviate gas pressures and determine the most efficient correction action. In addition, large diameter wells will be installed on the West and South Perimeter in an attempt to prevent the migration of landfill gas off-site.

The landfill gas migration has been defined as far west as Hawk Hollow Forest Preserve and Green Bridge Lane and as far south as Schick Road. The Phase I investigation area is bounded by Green Bridge Lane to the west, Discovery Park to the east, Schick Road to the far south and Hawk Hollow Preserve to the north.

Residential screening continued during this reporting period with a total of 12 homes screened and no explosive gases detected. All but one home screened had explosive gas meters installed (once access was granted from respective residents). The homes were located along Green Bridge, Camden, DeForest and Victor Lane.

During residential screening and installations on February 8th, STS and WESTON personnel screened a home that detected an LEL of 100% and a FID of 100 ppm along a gas pipeline (T-section). The pipeline was located along the ceiling inside a storage room in the basement of the home. The homeowner requested the screening due to a gas odor observed in the basement which was previously investigated by the gas company. Further screening of the room's breathing zone and a sump pump revealed no LEL nor FID detections. The homeowner was notified of the potential hazard with the LEL detection and advised to notify the Fire Department. However, the owner elected to contact the gas company and allow the room to vent by opening a window. STS continued to screen the rest of the basement and installed a gas meter (at the request of the homeowner) in the utility room.

To date, the U.S. EPA, STS (BFI contractors) and WESTON have screened 229 homes, installed 195 explosive gas detectors and visited a total of 298 homes (See Figure 1-Residential Screening Summary). BFI's public relations consultants, Reputation Partners continue to schedule the residential screening and gas meter installations with field support by STS and WESTON personnel.

No slam-bar sampling was conducted during this reporting period due to weather conditions, but STS has access to over 30 properties to conduct the sampling.

The next project update meeting with BFI, U.S. EPA and other agencies will be held February 25, 2008 at 2:00 pm.

U.S. EPA, IEPA and BFI and DuPage Forest District met on February 20, 2008 at Mallard Lake to discuss emergency corrective actions and permitting requirements. U.S. EPA and IEPA concur that the emergency corrective actions can be conducted under the existing permit that the Mallard Lake Landfill operates under. An air permit will be required for any additional oxidizers or flares that may be proposed. US EPA and IEPA Division of Air have promised that the review on these air permits will be conducted on an expedited time frame in order to implement emergency corrective action at the landfill. A tour was conducted of the GRS waste to energy plant to assure the facility is capable of accepting additional landfill gas from the proposed large diameter perimeter wells and any expansion of existing methane recovery wells. In addition, GRS was requested to properly maintain the flare system to burn off landfill gas if the turbines go down for any reason. US EPA has requested GRS and BFI to notify them immediately if the system goes down for any reason and additional sampling will be required of the landfill.

#### **Planned Removal Actions**

- STS has requested approval from USEPA to conduct a Shut-In Test on original CPT probes with methane detection to determine the radius of influence and potential hydraulic continuity of the methane gas. Gas sampling (summa canisters) results will be required prior to Shut-In test to ensure no release of any volatile organic compounds.
- BFI and the DuPage Forest District have submitted an Emergency Corrective Action Plan to alleviate the

migration of methane from the Landfill on the Western and Southern boundaries. US EPA is reviewing the plan and will provide comments.

- BFI and the DuPage Forest District have submitted a landfill gas optimization plan to evaluate, replace and add additional methane recovery wells in the landfill
- BFI and the DuPage Forest District will submitted a Corrective Action Plan to prevent methane gas from migrating off-site and to collect gas that has already migrated into the residential areas. Sampling has initiated at the temporary probes where methane gas was detected. Summa Cannister samples and ground water samples will be collected. Ground water levels have been measured and ground water flow and contour maps will be generated by STS.

### **Next Steps**

- BFI and STS will continue screening homes and installing explosive gas meters based on appointments scheduled by Reputation Partners public relations; and
- BFI and STS will continue methane gas migration investigation South along Schick Road using the CPT rig; the western and eastern gas migration extent has been defined; and
- BFI and STS, will begin assessing potential corrective actions to improve and expand the methane recovery system and to address methane that has migrated off the property; and
- BFI and STS will continue weekly methane gas monitoring of existing and newly installed probes; and
- BFI and STS submitted a plan to conduct VOC gas sampling and water sampling at probes where methane gas has been detected. VOC gas sampling initiated on February 22, 2008 and water sampling will follow in the next 2 weeks weather permitting.
- BFI and STS will install and sample shallow soil gas (slam bar method) near residential homes (based on access); and
- BFI and STS will install and sample sub-slab sampling ports (based on access); and
- U.S.EPA and WESTON will continue to provide oversight of the work performed by BFI and STS.
- STS has initiated a Radius of Influence test on the Western Perimeter in order to design emergency corrective action measures. STS will schedule the drilling of large diameter wells on the west perimeter of the landfill to conduct additional Radius of Influence testing. These wells will be piped into the existing methane recovery system. A backup blower and oxidizer will be designed and installed if the landfill gas from the large diameter wells is not consistent with operational limits at the gas to energy plant.

### **Key Issues**

USEPA and IEPA have agreed that corrective actions can be conducted at the Mallard Lake landfill under the existing permit. Air permits will be required if additional oxidizers or flares are needed to burn off the additional landfill gas that is collected.

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