

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

**Date:** Thursday, February 7, 2008

**From:** Steven Faryan

**Subject:** On-going Site Activities

Mallard Lake Landfill

26W580 Schick Road, Hanover Park, IL

Latitude: 41.9525000

Longitude: -88.1442000

**POLREP No.:** 10

**Site #:** B5MH

**Reporting Period:** January 29, 2008-February 3, 2008

**D.O. #:**

**Start Date:** 11/6/2007

**Response Authority:**

**Mob Date:** 11/6/2007

**Response Type:** Time-Critical

**Demob Date:**

**NPL Status:**

**Completion Date:**

**Incident Category:** Removal Action

**CERCLIS ID #:**

**Contract #**

**RCRIS ID #:**

#### **Site Description**

EPA's Emergency Response Branch was requested to assist the IEPA in March of 2007 at the Wayne Township Ground Water site in Northern DuPage County, Illinois. U.S. EPA upon reviewing available data and well logs from the Mallard Lake landfill discovered a boring conducted by BFI contractor Hearst and Assoc in April of 2006 with methane levels of 17.9% concentration within 50 feet of a residential neighborhood on the West perimeter of the landfill. U.S. EPA requested the operator of the landfill, BFI, and owner of the landfill, DuPage Forest District, to conduct an investigation outside the West boundary, South Boundary and on the Right-of Way to determine the extent of the gas migration off site. This landfill gas has historically contained high levels of Volatile Organic Compounds including vinyl chloride which was reported by the landfill operator to lead to ground water contamination exceeding the Maximum Concentration Limit (MCL) for vinyl chloride at the Western perimeter of the landfill.

During the first phase of the investigation conducted November 6-10, high levels of methane exceeding 75% in concentration were detected in temporary monitoring wells at locations within 30-50 feet from residential homes. The permeable zone containing this methane is 40-45 beneath the ground surface. BFI consultants STS, began installation of shallow monitoring wells on November 31, 2007.

#### **Current Activities**

During this reporting period, WESTON provided oversight of 16 Cone penetrometer (CP58, 59, 60, 62, 63, 64, RW27 and RW28, ML1, 2, 3 and 6 and GPT-1, 2, 3 and 4) methane monitoring installations. Only one gas probe (GPT-2) detected methane gas at 28.7%. The remaining probe locations installed detected no methane during the initial open borehole monitoring with the Landtech GEM 500 methane detector. At most of the R.O.W., locations, the utilities were cleared by the Hanover Park Public Works Department vacuum truck. The depth of up to 6 feet was vacuum extracted to check for presence of subsurface utility at each location. Prior to starting the CPT installation each vacuum location was filled with sand. Refer to Table 2 and the Proposed Landfill Gas (LFG) Installation and Mallard Lake Landfill East Investigation maps for information on CPT Installations.

STS proposed an additional six probe locations just northeast of the landfill (M1-M6; Refer to Table 2 and the maps mentioned above, for information on CPT Installations). Four of the six locations (ML1, 2, 3 and 6) were investigated during this reporting period and methane was not detected during the open borehole monitoring with the methane detector. A historical map review of methane gas probes revealed detections along the far east and northeast boundary of the landfill.

Also during this reporting period, three more CPT probe locations (GX12, 13 and 14) were proposed along the R.O.W. of Schick Road (south side). However, these CPT probes were not pushed during this reporting period due to permit review by the DuPage County Department of Transportation. Along Schick Road a total of eight probes have been installed to date. The probes have been installed on the north and south side of Schick Road. Methane of 74.5% was detected in only one CPT location (GX-

9). These probes are installed to assess the landfill gas migration to the south of the Mallard Lake Landfill. Refer to Table 2 and the maps mentioned above, for information on CPT Installations

To date, approximately 113 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 124 CPT gas probes have been installed to investigate the migration of methane gas from the Mallard Lake Landfill. Of the 124 total gas probes, currently 71 have no methane detection as February 3, 2008.

STS will begin to wrap-up the gas migration characterization with the CPT probe investigations (Phase I). Field data from these gas probe installations will be utilized to assess corrective actions (Phase II) to monitor and mitigate the southeast and northwest extent of landfill gas migration. The landfill gas migration has been defined as far west as Hawk Hollow Forest Preserve and Green Bridge Lane. The southern extent (Schick Road) is still under investigation. As of February 3rd, the CPT installation 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 15 homes screened and no explosive gases detected. Refer to Table 1 - Residential Screening Summary. All but one home screened had explosive gas meters installed (once access was granted from respective residents). The homes were located along Green Bridge Lane, Thistle and Russelwood Court, McCormick and Wright Lane, Whitney and Zeppelin Drive and Jefferson Street.

These detectors are similar in size and operation to a smoke detector, and can detect the presence of methane, propane and other explosive gases. The detectors sound an audible alarm when the gases reach a concentration that is 25 % LEL. All residents are given written and verbal instructions on what to do when the alarm sounds. BFI has prepared a contingency plan with emergency contact information if an alarm sounds. In the contingency plan, residents are advised to call 911 which will notify the Hanover Park Fire Department.

To date, the U.S. EPA, STS (BFI contractors) and WESTON have screened 217 homes, installed 182 explosive gas detectors and visited a total of 288 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. Due to the detection of methane at CP probe GX9 south of Schick Road, residential investigation may be extended into subdivisions south of Schick Road.

Analytical results are still pending for probe TW-1 which was purged and sampled for VOCs, total suspended solids, chemical oxygen demand and biological oxygen demand, ammonia, and chloride on January 24th.

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

U.S. EPA is meeting weekly on Monday's at 2:00 PM to inform and update pertinent parties and agencies involved. The next meeting will be held February 11, 2008.

### **Planned Removal Actions**

- STS to prepare for Shut-In Test on original CPT probes with methane detection to determine the radius of influence and potential hydraulic continuity of the methane gas; groundwater sampling and possibly soil gas sampling (summa canisters) is required prior to Shut-In test to ensure no release of any volatile organic compounds.
- BFI and the DuPage Forest District will submit an Emergency Corrective Action Plan to alleviate the migration of methane from the Landfill; and
- BFI and the DuPage Forest District will submit a landfill gas optimization plan to evaluate, replace and add additional methane recovery wells in the landfill; and
- BFI and the DuPage Forest District will begin preparing the Corrective Action Plan to prevent methane gas from migrating off-site and to collect gas that has already migrated into the residential areas.

### **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 will propose soil gas sampling locations to the North and to the East; and
- BFI and STS will conduct VOC gas sampling and water sampling at probes where methane gas has been detected; and
- 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.

#### **Key Issues**

- Clearing utilities along the right of ways in ample time for CPT installations; and
- Winter weather conditions interfering with completion of CPT push and probe; and installations, probe surface completions and groundwater sampling; and
- Conducting soil gas sampling (with summa canisters) prior to the start-up of the shut-in tests; and

[response.epa.gov/mallardlake](https://response.epa.gov/mallardlake)