

### **3.12.4 LOVELAND HARPER AVENUE LANDFILL**

Facility Name: Harper Avenue Landfill

A.K.A.: Loveland Harper Landfill

Location: East end of Harper Avenue Loveland, Ohio; Adjacent to west bank of the Little Miami River, Immediately North of Kealhofers's Run Creek.

Parcel(s): 62100020001

Lat/Long: 39.273066 -84.260486

Region: Loveland

Owner: City of Loveland

Operation (yrs): 1968 – 1980



#### **FACILITY OVERVIEW**

Harper Avenue landfill began accepting waste in 1968 in an old gravel pit on the east end of Harper Avenue in Loveland, OH. Burning and burying of the waste had been the means of disposal until April of 1971 when the city was told by health officials to stop burning waste, stop accepting household garbage, and to build a levee along the river to prevent flooding. An application for a license from HCGHD was made August 2, 1971. The landfill was approved to accept bulky items not picked up by the city's refuse hauler. The site was also allowed to take tree debris, demolition material, leaves, and clean hard fill.

Inspection reports and letters indicate the city was unable to properly operate the facility. The facility was accepting household garbage from inside and outside the city, not adequately covering and grading the site, and not properly securing the site allowing for open dumping. On February 12, 1980, the OEPA recommended closure of the facility, the license was revoked, and the facility was closed.

After the license was revoked, the facility was still allowed to accept tree debris, demolition debris, and clean hard fill but no solid wastes. Numerous letters and inspection reports after the license was revoked indicate the facility was not restricting access to the site and therefore were accepting solid and possibly hazardous waste at the site.

According to a 1994 letter from the Ohio EPA when the facility closed it did not close in accordance with the rules which requires a slope no less than 1%. This resulted in a depression on the surface of the landfill which allowed ponding and percolation of surface water into the waste. Three groundwater monitoring wells were installed at the landfill in 1986 and in March 1987 the OEPA discovered the wells were contaminated with low concentrations of Toluene, Methylene Chloride and Benzene. The OEPA determined that the low concentrations were a minimal threat to human health, welfare, or the environment. Locations of the monitoring wells (★) are shown in Figure 3.12.4-A.

**FIGURE 3.12.4-A**



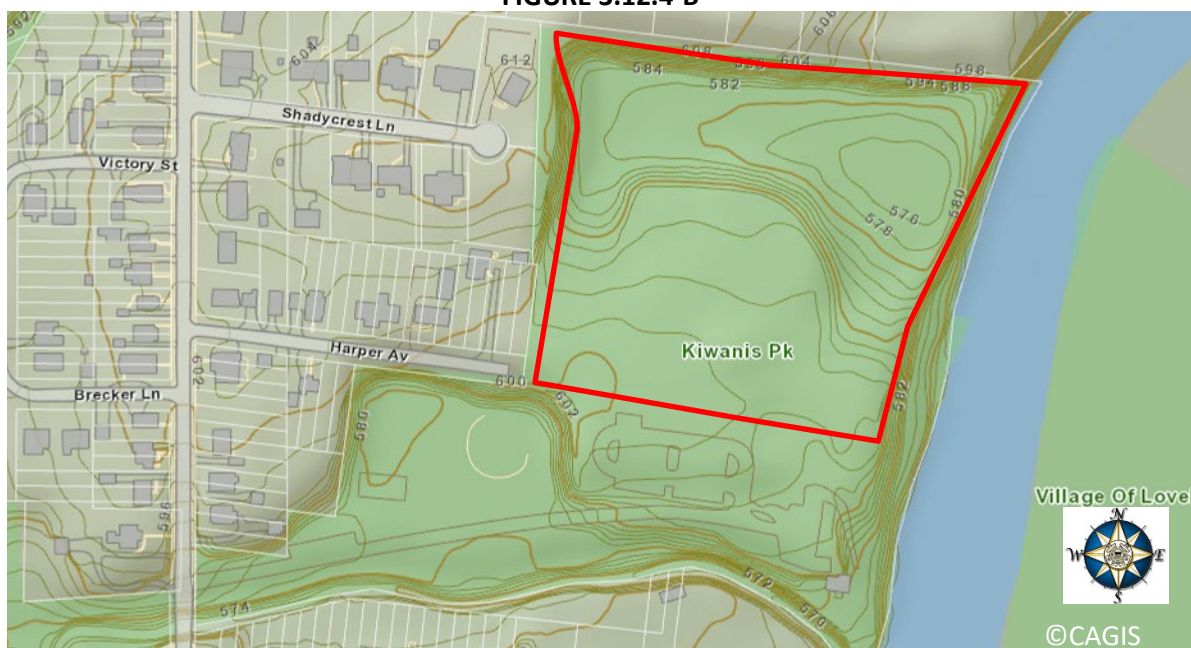
In October of 1988 Aeromex Inc. signed an agreement with the city to reopen the Harper Avenue Landfill. On January 5, 1989, Aeromex requested approval from the OEPA to commence filling on top of the closed landfill. On May 12, 1989, Aeromex was granted authorization to fill on the closed landfill in accordance with the plans submitted. Aeromex was authorized to accept clean hard fill, tree debris only from the city of Loveland, and demolition debris from special projects could be accepted from the city of Loveland only after concurrence from the OEPA. In a July 25, 1989, letter the OEPA notified Aeromax that they were accepting demolition debris



without prior approval and were operating outside the approved hours. This was a final warning to operate within the Directors Findings and Orders or face enforcement. On May 31, 1990, the authorization was revoked because "Aeromax failed to properly screen the fill material." Aeromex was required to cease accepting waste, post closure signs, and submit a closure plan. On June 27, 1990, the city requested a stay from the orders to allow the city to submit its own request to continue filling. However due to public opposition the city decided to keep the landfill closed and submitted the required closure plan.

A closure plan was submitted by the City of Loveland and was approved on January 19, 1995. The city was ordered to complete closure activities by October 30, 1995. On December 4, 1996, the OEPA sent the city a letter informing them of conditions at the landfill that were still in violation of the closure plan. The final closure certification report was approved on December 16, 1997, by the OEPA. Present day topography is shown in Figure 3.12.4-B.

**FIGURE 3.12.4-B**

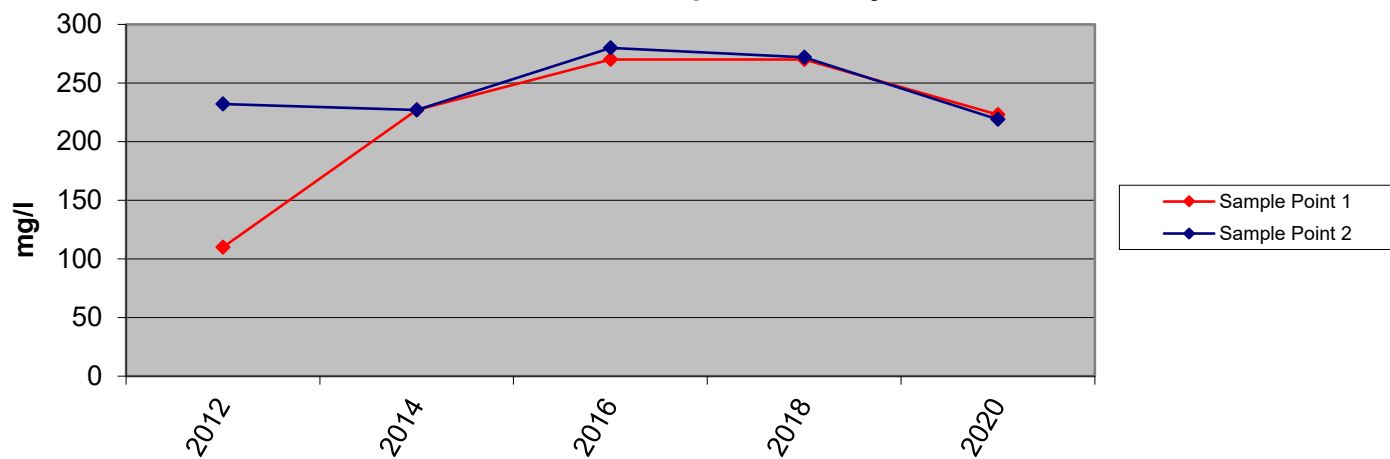


## **SAMPLING RESULTS**

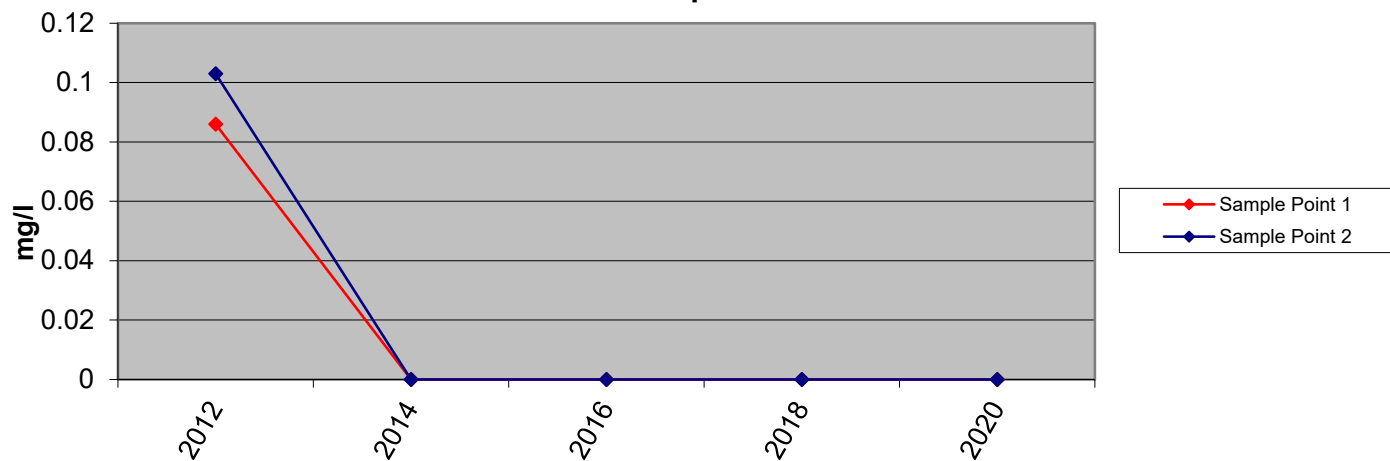
The Little Miami River runs along the east side of the Loveland Harper Landfill. Samples are taken above and below the landfill (Appendix A). Samples around Loveland Harper Landfill were collected on October 14, 2020. The river had average flow on the day of sampling. The upstream and downstream samples were in shallow (1'), gravelly, rocky riffle areas of the river. The shallow areas had rapid flow across the rocks. The referenced locations are shown on Figure 3.12.4-C.

Since these locations have only been sampled five times (2012, 2014, 2016, 2018 & 2020) few trends are evident at this time. During 2016 sampling TDS exceeded the SMCL of 500 mg/L at both sampling locations. Subsequent sampling in 2018 and 2020 have resulted in concentrations of TDS below the SMCL at both sampling locations. During initial sampling in 2012 Iron (0.39 mg/L) was slightly above the SMCL of 0.3 mg/L at S-1. During the next three sampling events Iron was below the SMCL at both locations. During 2020 sampling S-1 was again slightly above the SMCL at 0.311 mg/L. All other parameters sampled for have been below their respective Maximum contaminant level (MCL) or Secondary Maximum Contaminant Level (SMCL) during each of the five sampling events from 2012 through 2020. No significant differences were observed when comparing results from the downstream sample to the results from the upstream sample. In 2014, a difference was noted between the upstream and downstream concentrations of chloride. However, both S-1 (42.1 mg/L) and S-2 (84.2 mg/L) had concentrations well below the SMCL of 250 mg/L. Surface water chemical data is illustrated for Loveland Harper Landfill in the graphs on the subsequent pages.

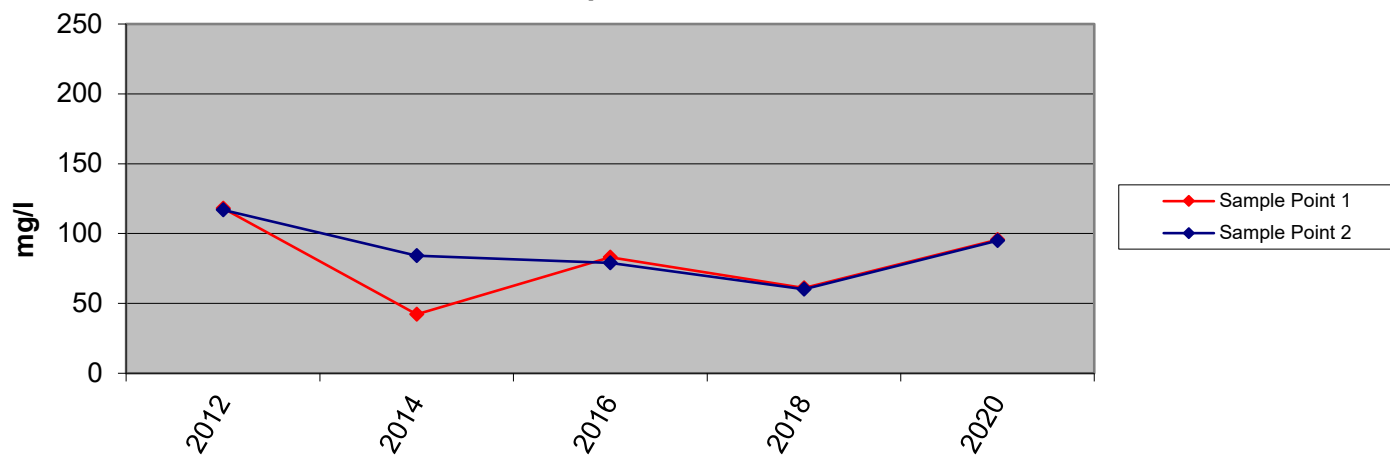
**Loveland Harper Alkalinity**



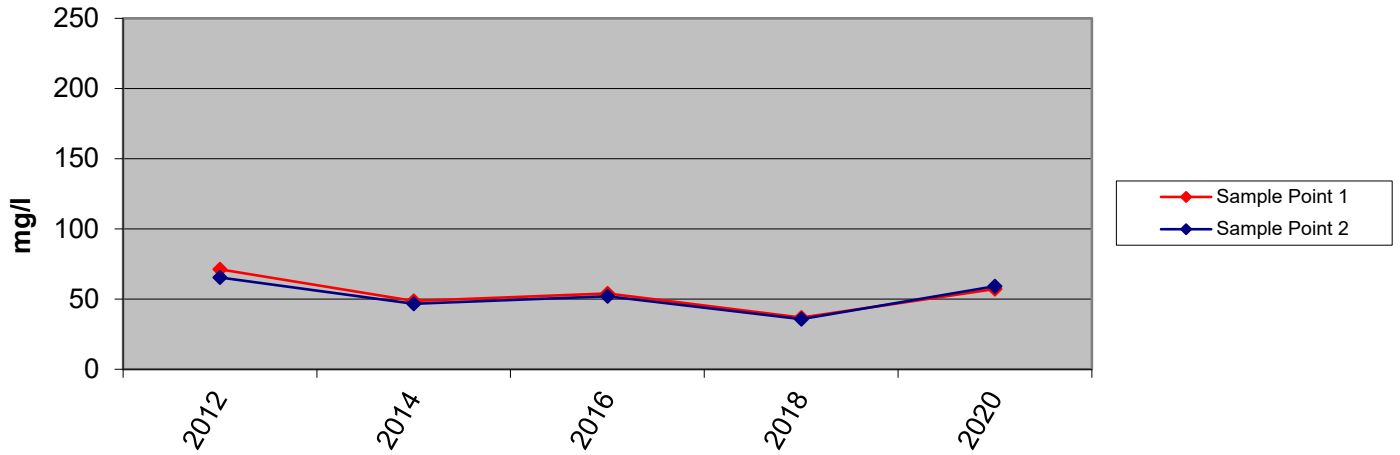
**Loveland Harper Ammonia**



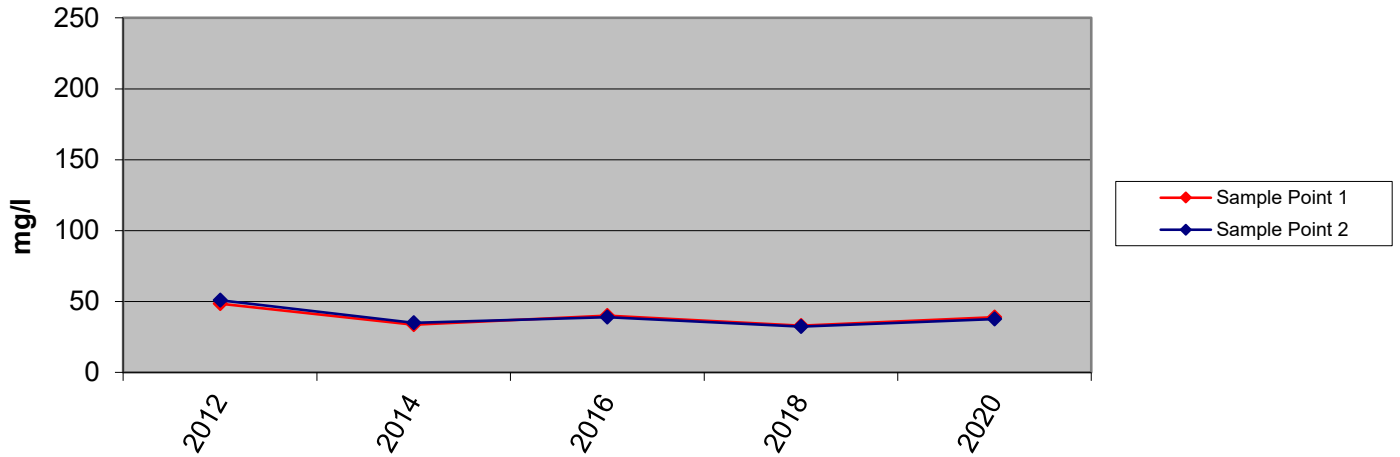
**Loveland Harper Chloride (SMCL: 250 mg/l)**



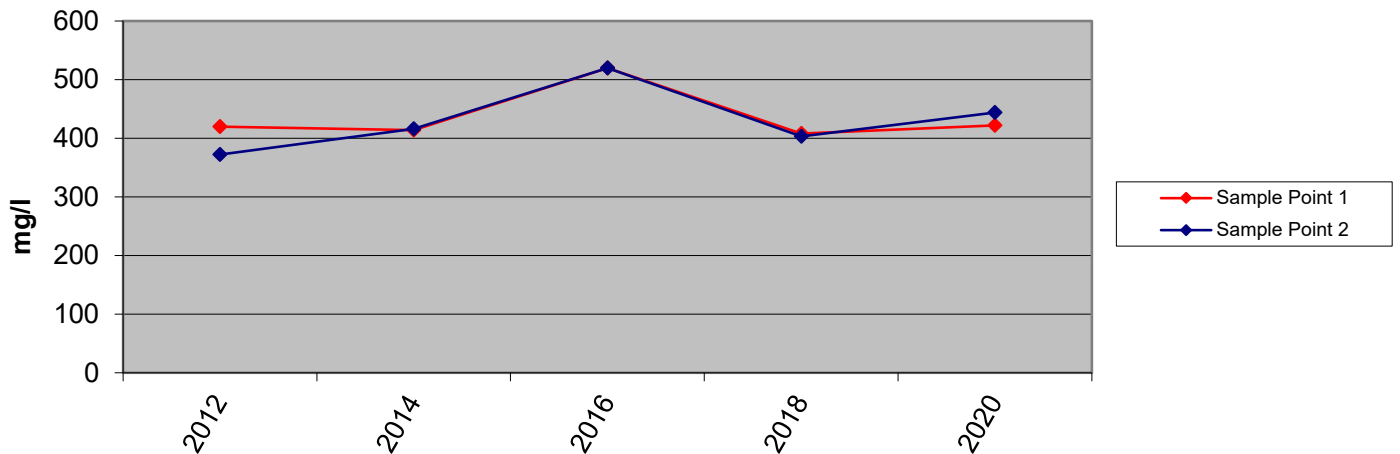
**Loveland Harper Sodium (SMCL: 250 mg/l)**



**Loveland Harper Sulfate (SMCL: 250 mg/l)**



**Loveland Harper TDS (SMCL: 500 mg/l)**



Mayfly, caddisfly, damselfly, water pennies, and snails have been the dominant organisms encountered at both locations since sampling began in 2012 (Table 3.12.4-A). All of the previously mentioned organisms indicate high or moderate water quality. The number of types of organisms observed in 2020 at the upstream sample (S-1) and the downstream sample (S-2) was six and eight respectively. In 2018, ten organisms were observed at S-1 while seven organisms were observed at S-2.

**Table 3.12.4-A**

[illegible]

\* - Observed while sampling

The city had their explosive gas monitoring plan (EGMP) approved on January 3, 2003. Gas monitoring is conducted by City of Loveland personnel. Monitoring consists of sampling each of the fourteen permanent gas monitoring wells on-site (Figure 3.12.4-C). Prior to 2020 gas monitoring had been completed monthly for more than 15 years. In a December 27, 2019, letter to the City of Loveland Ohio EPA noted that the facility has been conducting monthly gas monitoring of the landfill to meet the requirements of contingency monitoring per Section 8.6.2 of the EGMP. The letter indicated that requirements for cessation of the contingency monitoring have been met and the city may return to semi-annual monitoring. However, the facility has failed to complete the first semi-annual gas monitoring event during the last two years. Ohio EPA issued notice of violations in August 2020 and August 2021 for failing to complete the first semi-annual monitoring event.

The landfill has been monitored once during 2020 (Table 3.12.4-B) and once during 2021 (Table 3.12.4-C). The monitoring events completed on December 21, 2020 and August 3, 2021 resulted in no detections of methane. During 2019 monitoring detections of methane occurred during 3 of the 12 monitoring events. During these three monitoring events (Jan, Feb, Mar) methane was detected in various probes (1, 2R, 3R, 5, 6, 7, 8, 9) at concentrations between 1 and 42% LEL. The highest concentration of 42% LEL occurred in monitoring wells 1. During 2018, two detections of methane occurred during the February monitoring. Probe 1 had a detection of 13% LEL and probe 7 had a concentration of 3% LEL. During 2017 monitoring methane was detected in probes 4R, 6, 8, and 14 on one occasion each in concentrations ranging from 1 to 18% LEL. Methane was detected in probes 1 and 2R during 2016, for a total of three detections ranging from 1% to 24% LEL. No methane gas was detected in the probes during any sampling event in 2015.

TABLE 3.12.4-B (12/21/2020)

Probe No.	Reference Depth (feet below surface)	Screen Depth (feet below top of case)	Location	Gas Pressure (inches H <sub>2</sub> O or Hg)	Initial % LEL	Sustained or Repeat % LEL	Calculated Combustible Gas Concentration (% v/v) (%LEL x 0.05)	Water Level
1	27	17	SE Corner	0	0	0	0	Dry
2R	30	28	South Side, W of #1, S of Drive	0	0	0	0	Dry
3R	28	26	South Side, W of #2, S of Drive	0	0	0	0	Dry
4R	29.5	27.5	South Side, W of #3, S of Drive	0	0	0	0	26.650
5	31	25	SW Corner	0	0	0	0	Dry
6	23.5	17	West Side, N of #5	0	0	0	0	Dry
7	31	17	West Side, W of #6	0	0	0	0	Dry
8	13	7	West Side, N of #6	0	0	0	0	Dry
9	41	37	NW Corner, Top of Slope	0	0	0	0	Dry
10	13.5	7	NW Corner, E of #9	0	0	0	0	Dry
11	15	11	North Side, E of #10	0	0	0	0	Dry
12	15	11	North Side, E of #11	0	0	0	0	Dry
13	15	13	North Side, E of #12	0	0	0	0	Dry
14	15	9	NE Corner	0	0	0	0	Dry

TABLE 3.12.4-B (8/3/2021)

Probe No.	Reference Depth (feet below surface)	Screen Depth (feet below top of case)	Location	Gas Pressure (inches H <sub>2</sub> O or Hg)	Initial % LEL	Sustained or Repeat % LEL	Calculated Combustible Gas Concentration (% v/v) (%LEL x 0.05)	Water Level
1	27	17	SE Corner	0	0	0	0	Dry
2R	30	28	South Side, W of #1, S of Drive	0	0	0	0	27.600
3R	28	26	South Side, W of #2, S of Drive	0	0	0	0	26.500
4R	29.5	27.5	South Side, W of #3, S of Drive	0	0	0	0	23.900
5	31	25	SW Corner	0	0	0	0	Dry
6	23.5	17	West Side, N of #5	0	0	0	0	Dry
7	31	17	West Side, W of #6	0	0	0	0	Dry
8	13	7	West Side, N of #6	0	0	0	0	Dry
9	41	37	NW Corner, Top of Slope	0	0	0	0	Dry
10	13.5	7	NW Corner, E of #9	0	0	0	0	Dry
11	15	11	North Side, E of #10	0	0	0	0	Dry
12	15	11	North Side, E of #11	0	0	0	0	Dry
13	15	13	North Side, E of #12	0	0	0	0	Dry
14	15	9	NE Corner	0	0	0	0	Dry

Ohio EPA conducted an explosive gas investigation at the landfill on December 3, 2019. Gas monitoring was conducted at 9 punch bar locations around the former landfill. Methane was detected at 4 locations in low concentrations ranging from 0.1 – 1.7% methane. *(Data for this landfill is in the files at the Health District).*

#### FACILITY INSPECTIONS

The site was inspected by HCPH on October 26, 2021. Inspectors observed several of the gas monitoring probes and both surface water sampling locations. No violations or nuisance conditions were observed on the site.

#### SITE PRESENT DAY

The is currently used as an open space park with a baseball field. The remainder of the site is paved parking lots or open space covered in established grass.





**Figure 3.12.4-C**  
**Loveland Closed Landfill**  
**Harper Avenue**

- ◆ = Surface Water Sampling Location
- = Approximate Limits of Waste
- ▲ = Gas Monitoring Location

