3.23.4 WYOMING LANDFILL

Facility Name:	Wyoming Closed Landfill
A.K.A.	Wyoming Sanitary Landfill
Location:	Situated in Wyoming's Oak Park, which is located east of Oak Avenue and northeast of the Crosley Avenue intersection in Wyoming, Ohio.
Parcel(s):	59200060013
Lat, Long:	39.234889 -84.465193
Region:	Wyoming, OH 45215
Owner:	City of Wyoming
Operation (yrs):	mid 1950's – 1979 (based on records)

FACILITY OVERVIEW

The closed landfill is bounded by the West Branch of the Mill Creek on the west and south and by a CSX railroad line to the east. North of the closed landfill, the West Branch of the Mill Creek and the railroad converge forming a relatively thin strip of wooded land. The site was operated by the city as a municipal landfill from the mid-1950s to 1979.

Topographically, the property was once a generally low-lying area adjacent to the West Branch of the Mill Creek. Today, the ground surface of the property is generally at the level of the previously (before landfill use) built up railroad line across most of the site. While the majority of the closed landfill is primarily flat, steep slopes are present along the south, east, and west sides of the property.

The City of Wyoming began operating the landfill sometime in the mid-1950's. Based on historic information and discussions with City personnel, the landfill was used to dispose of typical household waste (garbage), yard waste (grass cuttings, branches, leaves, etc.) and some hard fill type material (concrete, rubble, etc.). Lime from the public water treatment plant was also reportedly deposited in the northern portion of the landfill. Figure 3.23.4-A is an aerial from 1973 showing fill activities at the site. Figure 3.23.4-B is an aerial from 1986 after the area was developed as a park.

FIGURE 3.23.4-A

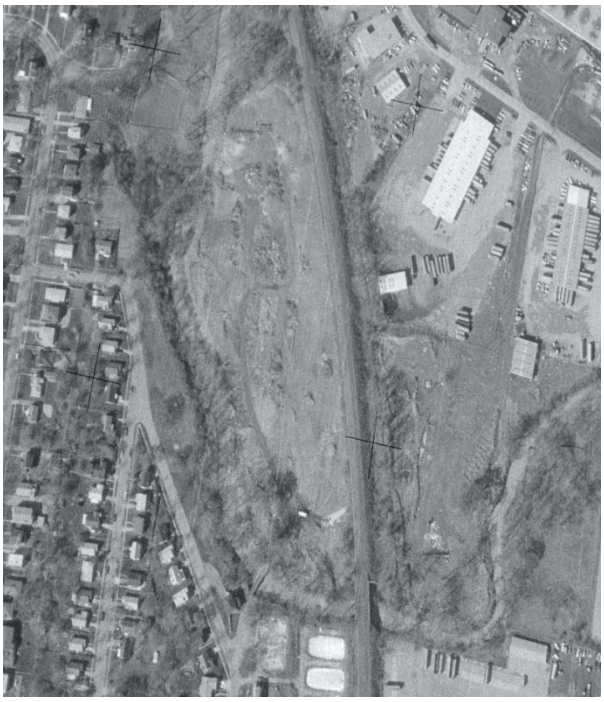
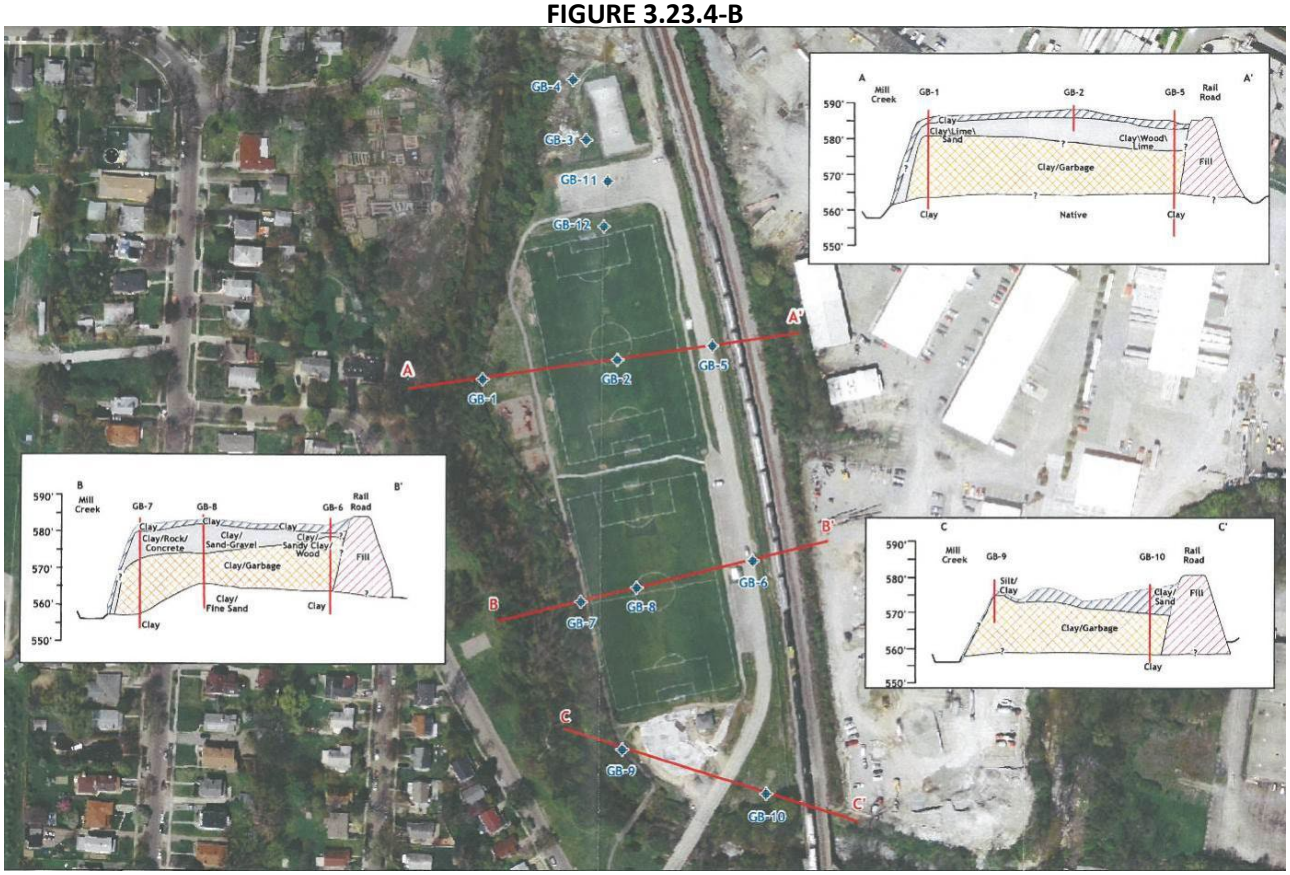


FIGURE 3.23.4-B

Studies performed by BHE Environmental, Inc. (during 2006 and 2007) found the horizontal extent of waste placement is bound to the south and west by the West Branch of the Mill Creek, by the railroad embankment to the east, and terminated in the area of the current basketball court to the north. The investigation also found that the observations of material encountered during soil borings support the historic information that suggested waste was built up from the former ground surface and that the bottom of the waste corresponds to the approximate pre-landfill ground surface. Survey data combined with stratigraphic information indicates that along the western boundary of Oak Park, the depth of waste placement is above the level of the Mill Creek. Along the eastern boundary of Oak Park, the depth of waste placement appears to be above the ground surface east of the railroad along the northern portion of Oak Park; however, within the southern portion of Oak Park the depth of waste placement appears to be below the current ground surface on the east side of the railroad tracks.

On August 15 and 16, 2007, twelve soil borings were completed by BHE Environmental Inc. at the landfill to determine if a formal explosive gas monitoring plan (EGMP) was needed. In a report submitted on November 27, 2007, BHE used these borings to approximate both the horizontal and vertical limits of debris placement within the landfill (Figure 3.23.4-B). In a letter dated December 14, 2007, the OEPA concurred with the consultant's findings and determined that an EGMP would not be required.

FIGURE 3.23.4-B

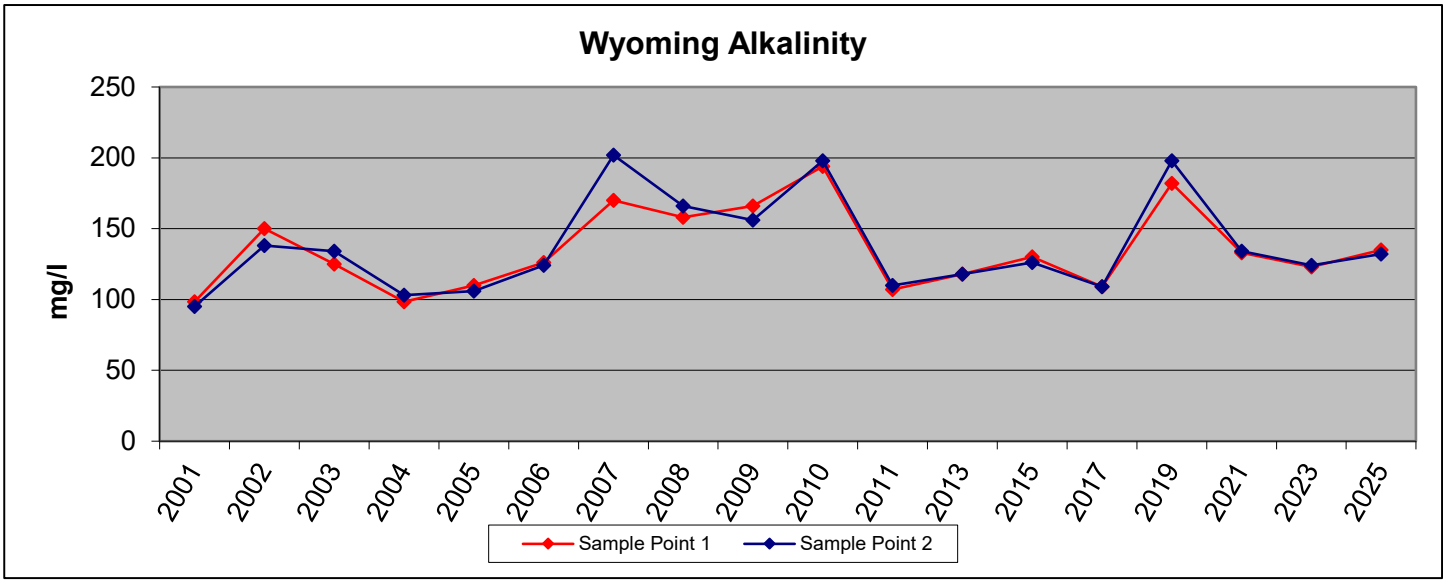


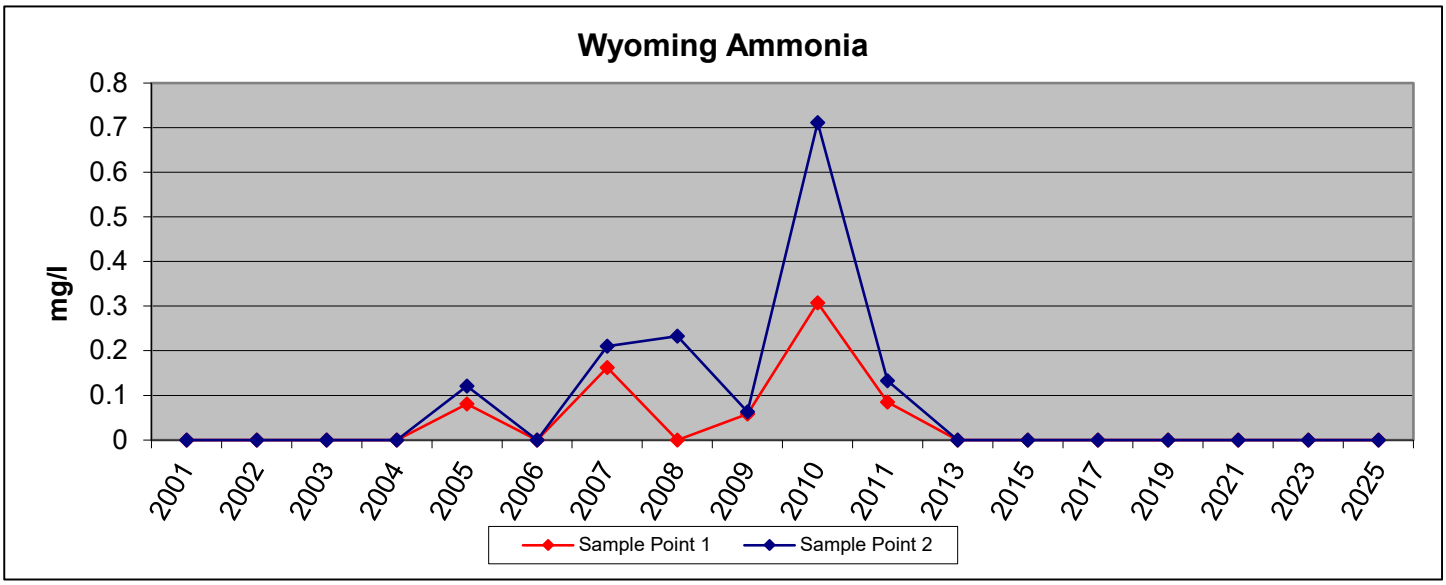
In March of 2016 a request for a rule 13 authorization was submitted on behalf of the city. The request was for planned maintenance on the bike path, driveways, parking lots, basketball court, and soccer fields. Also included was fence/fence post replacement and demolishing an old bridge abutment. Ohio EPA approved the request in August of 2016.

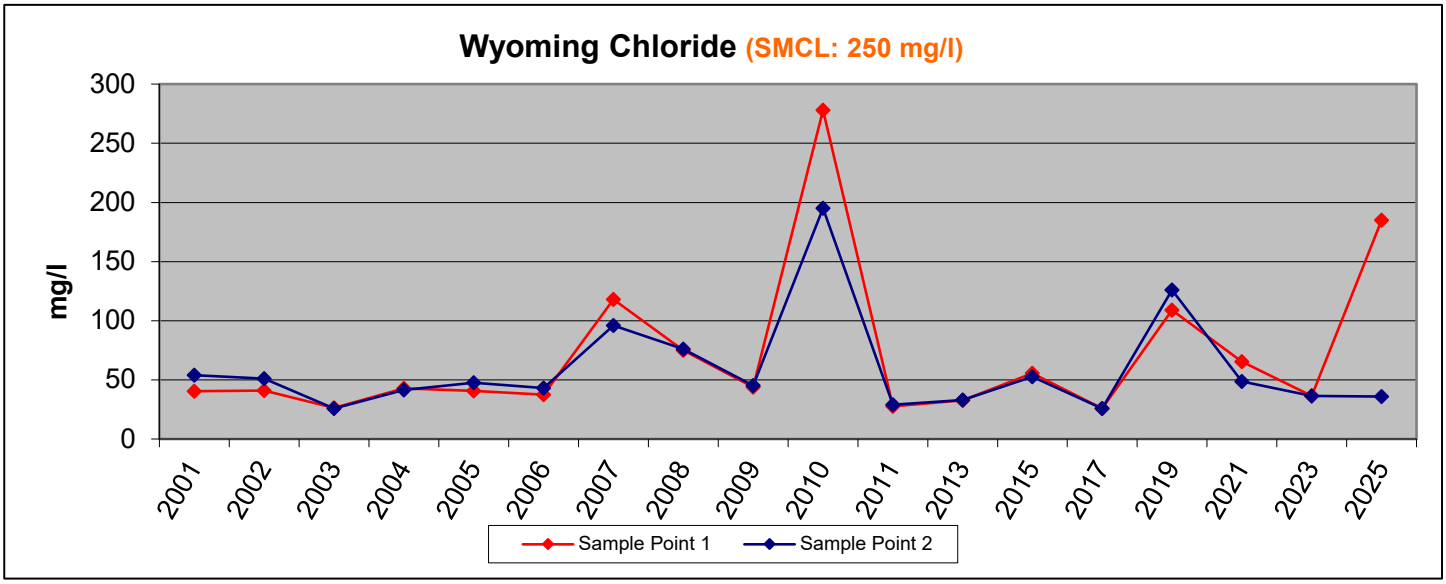
SAMPLING RESULTS

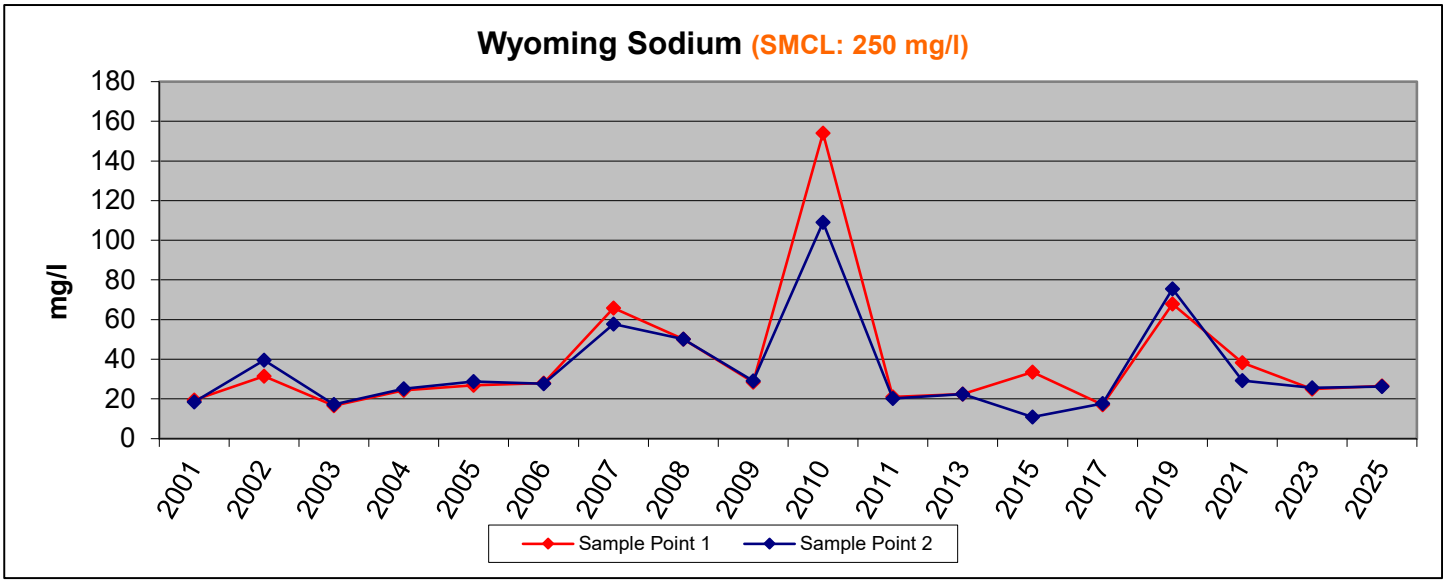
The West Fork of the Mill Creek flows along the west and south side of the Wyoming Landfill. Samples are taken above (S-1) and below (S-2) the landfill. Samples around Wyoming Landfill were collected on October 20, 2025 (Appendix A). The samples were collected during average flow. The S-1 sample location consisted of a series of pools and gravelly/rocky riffles located adjacent to the landfill. The Wyoming S-2 sample location is the same as the Lockland Shepherd Lane (S-1) sample location consisting of pools with a gravel/rocky bottom. The referenced locations are shown on Figure 3.23.4-C.

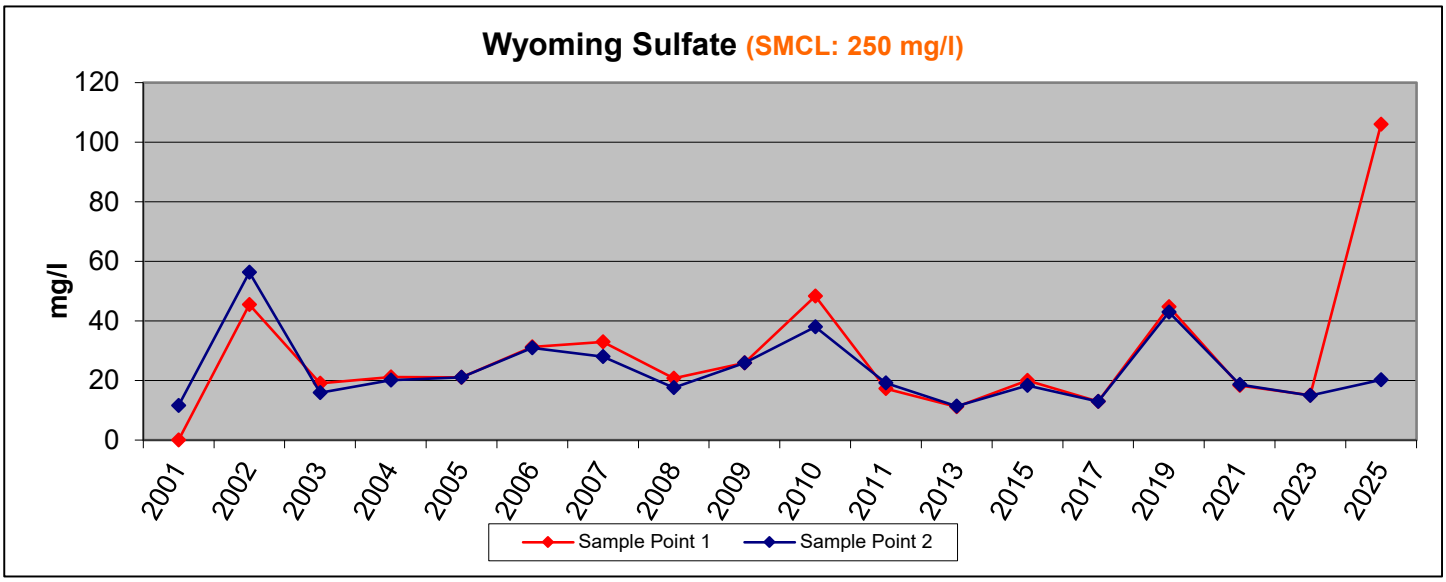
Alkalinity and Sodium have been relatively steady with no directional trend for the last three sampling events. Ammonia has been non-detect at both sample locations for the last seven sampling events. Chloride results showed a sharp increase at sample point 1 when comparing 2023 to 2025. The concentration at S-1 for 2025 was 185 mg/L which is still well below the SMCL of 250 mg/L. Similarly, sulfate results increased at S-1 and the concentration (106 mg/L) was well below the SMCL of 250 mg/L. Since these increases were observed at the upstream location and no corresponding increase was observed at the downstream location it is unlikely that the landfill is contributing to these elevated results. TDS increased at sample point S-2 to 402 mg/L. This concentration is below the SMCL of 500 mg/L; however, it is significantly higher than the upstream concentration of 208 mg/L. Iron exceeded the SMCL of 0.3 mg/L at sampling points 1 (0.501 mg/L) and 2 (0.349 mg/L). Iron has exceeded the SMCL at sample point 1 during each sampling event since it was added as a parameter in 2010. Both sample locations exceeded the SMCL for manganese (0.05 mg/L). Manganese has exceeded the SMCL at both sampling points since it was added as a parameter in 2010. The Health District staff will continue to monitor the water quality in this area for any changes. Surface water chemical data is illustrated for Wyoming Landfill in the graphs below.

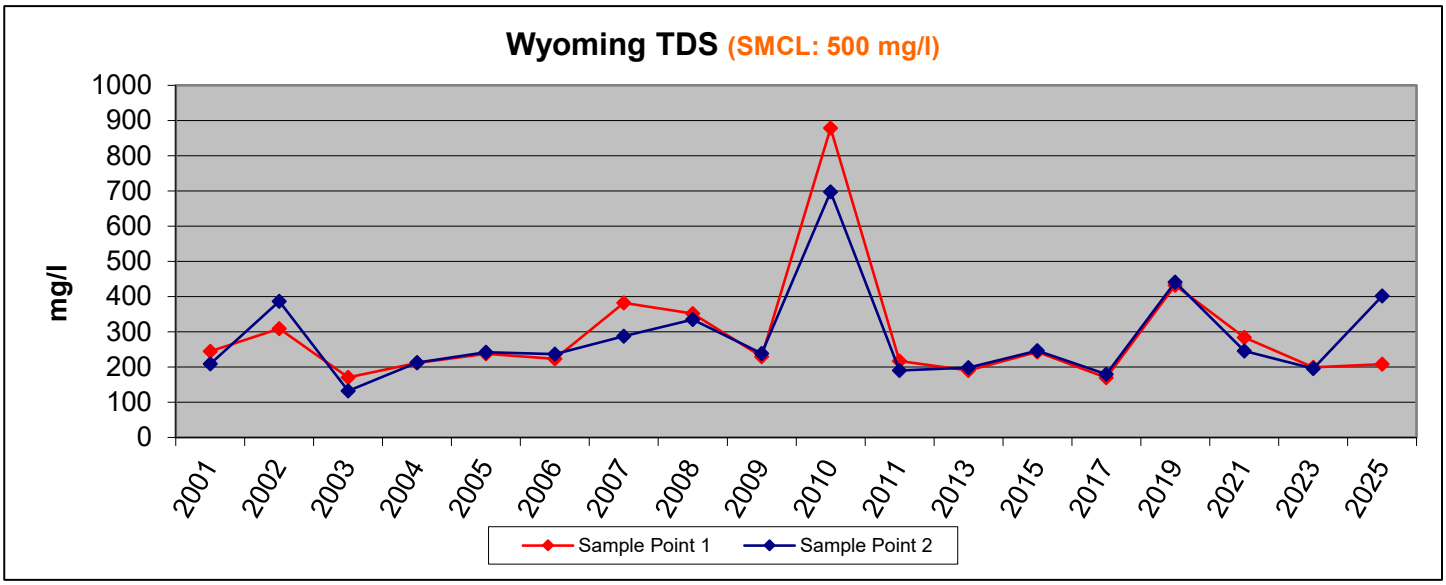

Wyoming Alkalinity
mg/l
250
200
150
100
50
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2


Wyoming Ammonia
mg/l
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2


Wyoming Chloride (SMCL: 250 mg/l)
mg/l
300
250
200
150
100
50
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2


Wyoming Sodium (SMCL: 250 mg/l)
mg/l
180
160
140
120
100
80
60
40
20
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2


Wyoming Sulfate (SMCL: 250 mg/l)
mg/l
120
100
80
60
40
20
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2


Wyoming TDS (SMCL: 500 mg/l)
mg/l
1000
900
800
700
600
500
400
300
200
100
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2013
2015
2017
2019
2021
2023
2025
Sample Point 1
Sample Point 2

During 2025 sampling 4 organisms, 3 of which are indicators of high or moderate water quality, were collected or observed at S-1 and 7 organisms, 6 of which were indicators of high or moderate water quality, were collected/observed at S-2 (Table 3.23.4-A). During 2023 sampling 4 organisms were collected at S-1 while 6 organisms were collected at S-2. The dominant organisms found at both sampling locations over the last several sampling events have been Caddis Fly, Mayfly, sow bugs, and flat worms. During 2017 sampling biota data was unable to be collected at S-1 because the normal sampling location was not accessible. The Health District staff will continue to monitor the biological water data in this area.

Table 3.23.4-A

	GROUP 1 (Higher Quality)														GROUP 2 (Moderate Quality)															GROUP 3 (Lower Quality)												Non-indicative			
	Micropterus	Notropis	Etheostoma	Amphibia	Gastropoda	Gastropoda	Coleoptera	Coleoptera	Coleoptera	Coleoptera	Trichoptera	Ephemeroptera	Plecoptera	Plecoptera	Chelydra	Pimephales	Amphibia	Pelecypoda	Pelecypoda	Pelecypoda	Diptera	Diptera	Diptera	Hemiptera	Odonata	Odonata	Odonata	Odonata	Isopoda	Amphipoda	Decapoda	Turbellaria	Nematoda	Annelida	Annelida	Gastropoda	Diptera	Diptera	Diptera	Diptera	Diptera	Diptera	Diptera	Hemiptera	Hemiptera	Hemiptera	Hemiptera
	Bass	Shiner	Darter	Plethodontinae (Salamander)	Lymnea (Snail)	Planorbidae (Snail)	Dytiscidae (Crawling Water Beetle)	Hydrophilidae (Beetle Larva)	Psephenidae (Water Penny)	Elmidae (Adult Riffle)	Caddis Fly	Mayfly	Stonefly Nymph	Stonefly Adult	Snapping Turtle	Minnow	Ranidae (Frogs)	Mussel	Fingernail Clam	Other Clams	Crane Fly Larvae	Crane Fly Adult	Ptychopteridae (Phantom Crane Fly)	Sialidae (Alderfly)	Dragonfly Nymph	Dragonfly Adult	Damselfly Nymph	Damselfly Adult	Sow Bug	Scud	Crayfish	Flat Worm	Round Worm	Oligochaeta (Aquatic Worm)	Hirudinea (Leech)	Physa (Pouch Snail)	Simulidae (Blackfly)	Tendipedidae Tendipes (Midge)	Tendipedidae Psychoda (Northfly)	Culex (Mosquito Larva)	Culex (Mosquito)	Tubifera (Rat-Tailed Maggot)	Unknown Larva	Gerridae (Water Strider)	Notonectidae (Back Swimmer)	Corixidae (Water Boatman)	Belostomatidae (Giant Water Bug)
Location S-1																																													
10/9/2006										2	*	9				*				1							22	*	13			*		1	1		1							*			
10/11/2007												24				2*											15		13		*			2		2*								2			
10/23/2008					1				4	2	6	26				3											12		29	5	*	*		6	*	4										
11/5/2009									1																				2			1				1										
9/23/2010												13				*											30		1		25	6			1											
11/1/2011											10	>100																	20	1		30		1												
9/3/2013											4	6								3									>100			>100		2			4									
10/13/2015									2			20				*																*														
9/21/2017																																													
10/23/2019											1	7				*														1		14													
10/13/2021									10		28	22				*											15		1			8													
11/6/2023									3		3	21																	2																
10/20/2025											24	77																	8			16													
Location S-2																																													
10/9/2006										1	36	23						1									4	*				*	2	*	*		3	4					*	1		
10/11/2007										4	6	4				3				3									2														1*			
10/23/2008									1		3					6*			8	2							4		13	6	*	7		*	4	11		3								
11/5/2009							1				8	1															2		6			2				2										
9/23/2010												20				3															25						3									
11/1/2011											2	50							5								1		5	1		5														
9/3/2013										2						1	2			5							1		1		2	100														
10/13/2015											5	50																				>100														
9/21/2017											10	5															26		3			38			1										
10/23/2019											11	43				*													2			16													
10/13/2021									3		46	28							1		1						9				5	3													
11/6/2023			2								10	14																	5					1		1									
10/20/2025									3		38	27			*												1		8			17													

* - Observed while sampling

The Wyoming Closed Landfill was monitored by HCPH for explosive gas on December 23, 2025 (Table 3.23.4-B). Monitoring took place along the southern and eastern perimeter of the property (Figure 3.23.4-D). Methane has been detected along the eastern boundary every year since 2007. During 2025 monitoring there were five detections of methane including two detections in excess of 25% LEL. Additional monitoring further out from those locations resulted in lower levels or no methane. Monitoring completed in 2024 resulted in 8 detections of methane. All detections of methane were low concentrations of <25% LEL except for a sample point along the northeast border of the landfill which had a concentration of 100% LEL and a sample on the west side of the parking lot which had a concentration of 53% LEL. Monitoring completed in 2023 resulted in 9 locations with methane detected including one sample point which had a concentration of 100% LEL. During 2025 monitoring carbon monoxide (CO) was detected at 17 of the sampling locations ranging in concentration from 7 to 301 ppm. This is similar to CO results for past monitoring events. During 2024 monitoring CO was detected at 19 of the sampling locations with concentrations between 2 and 43 ppm. During 2023 monitoring CO was detected at 20 of the sampling locations with concentrations between 2 and 81 ppm.

TABLE 3.23.4-B (12/24/2024)

Latitude	Longitude	Date and Time	O2 %	LEL %	CH4%	CO ppm
39.233667	-84.465337	12/23/2025 09:54 AM	19.9%	0	0	0
39.233449	-84.465091	12/23/2025 09:59 AM	19.8%	4	0.2	20
39.233448	-84.465053	12/23/2025 09:59 AM	18.6%	0	0	0
39.233347	-84.464963	12/23/2025 10:01 AM	19.6%	0	0	110
39.233368	-84.464529	12/23/2025 10:03 AM	19.6%	0	0	301
39.23354	-84.464396	12/23/2025 10:04 AM	19.2%	0	0	147
39.233682	-84.464338	12/23/2025 10:07 AM	17%	4	0.2	16
39.233812	-84.464426	12/23/2025 10:09 AM	20.3%	0	0	0
39.233881	-84.464474	12/23/2025 10:10 AM	19.9%	0	0	17
39.234119	-84.464498	12/23/2025 10:11 AM	20.4%	0	0	0
39.234401	-84.464492	12/23/2025 10:13 AM	20.2%	0	0	10
39.234539	-84.464549	12/23/2025 10:14 AM	16.1%	0	0	35
39.234727	-84.464584	12/23/2025 10:19 AM	17.2%	81	4.05	0
39.234927	-84.46463	12/23/2025 10:20 AM	11.5%	0	0	34
39.235071	-84.464628	12/23/2025 10:22 AM	18%	0	0	84
39.235327	-84.46467	12/23/2025 10:23 AM	18.1%	0	0	44
39.235425	-84.46462	12/23/2025 10:24 AM	6.3%	0	0	53
39.235655	-84.46479	12/23/2025 10:26 AM	17%	69	3.45	39
39.235789	-84.464823	12/23/2025 10:27 AM	20.9%	0	0	0
39.236078	-84.464892	12/23/2025 10:28 AM	14.8%	0	0	11
39.236182	-84.464895	12/23/2025 10:30 AM	20.9%	0	0	7
39.235628	-84.464706	12/23/2025 10:32 AM	17.5%	5	0.25	18
39.234817	-84.464465	12/23/2025 10:36 AM	20.9%	0	0	6

The parking area at the north end of the park is likely located over waste. Punch bar sampling in this area has consistently indicated methane production and detection of carbon monoxide gas subsurface during sampling. Since 2006, WM staff have conducted additional sampling around the parking area at the north end of the park prior to the City of Wyoming using this area for fireworks launching in July. Sample locations 1-13 were sampled both at the surface and below the surface. Surface samples were taken using a 1-liter bottle placed over an area of ground (7 sq.in.). Pressure was applied to the bottle to form a semi-tight seal. A hole in the bottle allowed the sampling probe to draw from inside the bottle. Sample 14 was taken inside the women's restroom and sample 15 was taken inside the men's restroom, while samples 16 through 21 were taken from accessible sewer grates/manholes in the park. The results of the sampling are provided to the City of Wyoming prior to the event. The 2025 fireworks sampling locations are shown in Figure 3.23.4-E. The results of the June 2025 sampling are in Table 3.23.4-C. *(Sampling data for this landfill is in the files at Hamilton County Public Health).*

TABLE 3.23.4-C (6/16/2025)

Sample #	O2 %	LEL %	CH4%	CO ppm	NH3 ppm	H2S ppm	General Comments
1	20.5%	0	0	8	0	0	No surface detections
2	20.2%	0	0	16	0	5	No surface detections
3	20.8%	0	0	11	0	0	No surface detections
4	19.7%	5	0.25	9	0	0	No surface detections
5	20.5%	2	0.1	16	0	2	No surface detections
6	20%	3	0.15	39	0	0	No surface detections
7	20.6%	0	0	7	0	0	No surface detections
8	20.9%	0	0	0	0	0	No surface detections
9	19%	0	0	2	0	0	No surface detections
10	20.6%	0	0	13	0	0	No surface detections
11	20.6%	0	0	8	0	0	No surface detections
12	20.6%	0	0	6	0	0	No surface detections
13	20.5%	2	0.1	19	0	0	No surface detections
14	20.8%	0	0	0	0	0	
15	20.7%	0	0	0	0	0	
16	20.9%	0	0	0	0	0	
17	20.9%	0	0	0	0	0	
18	20.9%	0	0	0	0	0	
19	20.8%	0	0	0	0	0	
20	20.9%	0	0	0	0	0	
21	20.9%	0	0	0	0	0	

Ohio EPA conducted an explosive gas investigation at the landfill on October 28, 2021. Gas monitoring was conducted at 30 punch bar locations around the former landfill. Methane was detected at 9 locations in concentrations ranging from 0.1 – 15.5% methane.

SITE INSPECTIONS

The site was inspected by HCPH on December 23, 2025. No violations, nuisance conditions, or maintenance issues were observed on the site.

SITE PRESENT DAY

In 1985 the property was developed into the current day Oak Park recreational facility, owned and operated by the City of Wyoming. The park includes two soccer athletic fields, a skateboard park, basketball courts, an asphalt walking trail, a picnic area with a children's playground, and associated parking areas and green space.

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Figure 3.23.4-C
Wyoming Closed Landfill

◆ = Surface Water Sampling Location

= Approximate Limits of Waste

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Figure 3.23.4-D

Wyoming Fall Gas Sampling

= Approximate Limits of Waste

= Area where gas monitoring is conducted aprox. every 60 ft.

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Figure 3.23.4-E
Wyoming Fireworks
Gas Sampling

▲ = Approximate Gas Monitoring Location

— = Approximate Limits of Waste