

September 8, 2021

Ms. Cindy Koepke
Bureau for Remediation and Redevelopment
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Re: DNR BRRTS Activity #02-33-582970
Landfill Gas Monitoring, Darlington City Historic Landfill
149 Wells Street, Darlington, WI
July 2021 Monitoring Results

Dear Ms. Koepke:

Ayres Associates Inc (Ayres), on behalf of the City of Darlington (City), is providing the July 2021 sampling results of gas probes on the site perimeter at 149 Wells Street. This monitoring event was conducted on July 29, 2021. This is the twelfth event conducted under the July/December monitoring events as noted in a Wisconsin Department of Natural Resources letter dated September 10, 2015 detailing revised monitoring frequency.

Results Discussion

All currently approved monitoring locations were accessible, dry, and the probes and sample ports appeared in good working order, except for GP-106 which was submerged in water in the sample vault due to rainfall the previous night. We anticipate being able to collect this point during the upcoming December 2021 sampling event. Note that GW-20R that was previously buried was located and sampled (0.0 percent methane) this event.

The biannual monitoring used a calibrated Landtec GEM 2000 landfill gas meter. The attached monitoring results show that three of the eleven monitoring points sampled had detections of methane in them above background, two (GW-14R and GW-22R) were over the lower explosive limit (LEL) of 5% methane. None of the methane detects were over the upper explosive limit (UEL) of 15%. The last sampling event which occurred in December 2020 showed two methane detections above 0.3% (presumed background), one of which was over the LEL but below the UEL. Reviewing older data, the sampling event from July 2020 exhibited three methane detections above LEL, one of which was over the UEL. The probes above LEL in this sample event have had similar ranges in the past. Sample probe GW-14R had similar levels the last two July events, and GW-22R had similar methane levels in the last three consecutive events, and the sample from December 2019 for GW-22R was also above LEL.

Overall, there methane detects in this sampling event were similar to historical data. Most probes continue to consistently show non-detects or low-level detects below the LEL (many believed to be background or slight calibration float in the meter) since January 2012. Detailed sample results for this event are shown on attached Table 1.

Passively venting the system continues to provide an avenue for any subsurface gas to be released from beneath the site. Many of the sampling points that have had historical measurable levels of methane have been significantly reduced, with most having non-detects or non-detect equivalents in more recent sampling events. The attached Table 2 details historical sampling results noting these trends.

Indoor Air Monitoring

Alarms are installed within the building at various locations to alert personnel of the presence of methane should any venting occur within the building from subsurface conditions. New meters were installed in November 2014 and are replaced by City staff when the test function indicates the sensor needs replacement. A new alarm was installed earlier in 2021 at the former Badgerland Financial office on the northeast side of the tenant space, replacing the missing Alarm Number 1. This space is being used temporarily by the Wisconsin Department of Transportation as a field construction office. All installed meters continue to be operating properly and were tested during this sample event.

To date, no audible alarms have been noted within the building from tenants or the landlord. If any audible alarms are noted within the building, the WDNR will be notified of this event, and response actions will be taken according to the Explosive Gas Alarm Contingency Plan.

The next regularly scheduled sampling event will be in December 2021.

Please contact me with any further questions.

Sincerely,

Ayres Associates Inc



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BP:ac

Enclosure

cc: Bryson Family Rental LLC
Mayor Mike McDermott – City of Darlington
Jeremy Williams – City of Darlington



Dick's Supermarket Site - Darlington, WI

December 2020 Gas Monitoring Event

Table 2: Summary of Methane Sample Data (July 28, 2008 to July 29, 2021)

Percent by Volume Methane (LEL=5%, UEL=15%)													
Date	GW-9R	GW-13R	GW-14R	GW-106R	GW-20R	GW-22R	Gooseneck	GP-101	GP-104	GP-105	GP-106	GP-108	BLOWER
7/29/2021	0.0	0.1	12.6	1.6	0.0	13.7	NA	0.0	0.0	0.0	NA-water filled	0.0	0.0
12/3/2020	0.1	0.1	0.1	0.1	NA-inaccessible	13.2	NA	0.1	0.3	0.1	0.1	4.3	0.1
7/8/2020	0.1	0.0	11.2	17.6	NA-buried	13.9	NA	0.0	NA-water filled	0.0	0.2	0.6	0.0
12/5/2019	0.0	0.0	0.0	0.0	NA-buried	6.0	NA	0.0	0.0	0.0	0.0	0.4	0.0
7/19/2019	0.0	0.0	0.0	0.0	NA-buried	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0
12/6/2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0
7/10/2018	0.0	0.0	1.7	4.0	0.0	4.3	0.0	0.0	0.0	1.9	0.2	0.1	0.0
12/7/2017	0.0	0.0	0.0	0.2	1.2	0.1	1.4	0.1	0.0	1.7	1.8	0.0	0.0
7/11/17	0.0	0.2	0.1	0.1	0.1	0.2	--	0.1	0.1	0.2	0.2	0.0	0.0
12/2/2016	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7/13/2016	0.0	0.0	16.4	1.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12/9/2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7/1/2015	0.0	0.0	10.7	0.0	0.0	3.7	--	0.0	0.0	0.0	10.6	0.0	0.0
4/14/2015	0.0	0.1	0.0	0.1	0.0	0.1	--	0.1	0.3	0.1	23.9	0.1	0.0
1/20/2015	0.0	Buried	0.0	0.0	Buried	0.0	0.1	0.0	0.0	0.0	Frozen	0.0	0.0
10/21/2014	0.2	0.2	5.6	0.2	0.2	0.2	--	0.3	0.3	0.3	3.1	0.3	0.2
8/19/2014	PASSIVE VENTING RESUMED												
7/9/2014	0.2	0.3	5.3	0.3	0	7.6		0.2	4.1	0.3	1.0	29.4	0.2
4/8/2014	0.0	1.2	0.9	0.4	0.2	0.2		0.1	0.4	0.2	13.0	15.1	0.2
1/24/2014	0.0	12.7	--	--	--	0.0		0.0	0.1	0.0	--	22.2	0.6
10/4/2013	0.0	7.2	11.9	7.3	0.0	13.5		0.0	0.0	0.0	40.0	24.3	0.5
7/9/2013	0.2	0.3	9.4	5.7	0.1	7.0		0.2	0.2	0.1	Watered Out	19.1	0.3
4/10/2013	0.0	0.0	0.0	0.0	Watered Out	2.0		0.0	0.6	0.0	0.0	12.5	0.1
1/11/2013	0.0	4.5	--	0.5	1.9	0.0	Capped after blower installation since system is no longer passive venting	0.6	0.1	0.0	--	0.2	0.0
12/5/2012	0.0	0.6	0.1	0.8	0.0	8.8		0.0	1.0	0.0	5.0	13.3	0.1
11/8/2012	0.0	0.7	8.5	1.4	0.1	15.5		0.0	0.6	0.1	5.8	13.6	0.2
10/8/2012	0.3	0.9	0.0	2.1	0.1	22.6		0.0	0.0	0.0	9.5	9.3	0.1
9/6/2012	0.1	0.4	16.8	0.1	0.1	17.6		0.2	0.4	0.1	12.3	N/A	0.4
8/7/2012	0.2	0.1	27.3	2.8	0.1	17.5		0.2	0.8	0.1	16.3	0.2	0.4
7/12/2012	0.0	0.0	11.0	2.3	28.7	8.0		0.0	1.0	0.0	20.0	5.8	0.0
6/11/2012	0.1	0.0	14.7	0.0	Watered Out	1.2		0.0	Blockage	0.0	40.1	5.8	New probe installed July 12, 2012
5/4/2012	0.0	0.1	4.2	0.0	Watered Out	0.3		0.0	Blockage	0.1	0.1	0.0	
4/12/2012	0.0	0.0	0.0	0.1	Watered Out	0.1		0.5	0.0	0.0	0.0	32.9	
3/8/2012	0.2	0.2	0.2	1.8	Watered Out	0.1		0.1	Buried	0.1	4.3	35.8	
2/14/2012	Under Ice	0.0	0.1	0.1	17.5	25.2		0.1	Buried	0.1	12.2	31.0	
1/9/2012	0.1	0.3	0.1	1.0	0.2	0.5		0.2	N/A	0.2	29.9	8.5	
1/9/2012	BLOWER SYSTEM INSTALLED												
12/5/2011	0.8	0.0	Car	11.0	0.0	24.4	0.0	15.8	52.3	0.0	78.4	7.8	
11/10/2011	2.1	0.0	10.2	8.8		27.8	0.2	15.4	49.8	0.0	89.9	50.1	
10/7/2011	0.0	0.0		0.1	0.0	16.4	0.0	6.1	44.9	0.1	88.0	52.4	
9/8/2011			11.6	10.3		19.9		5.8	38.3		83.5	49.2	
8/12/2011	0.2	0.1	18.1	11.2	7.3	7.0	0.1	0.1	32.1	0.2	85.5	42.9	
7/6/2011	0.2			2.4	9.8	4.7		3.9	15.8		72.1	13.8	
6/9/2011			7.8	0.8		0.4		0.3	0.8			0.1	
4/12/2011	0.1				0.1								
4/20/2010				0.9									
3/30/2010				0.2									
2/24/2010					19.5	20.5	0.3						
1/26/2010				0.4	0.8	6.7							
12/29/2009													
11/15/2009	0.4	6.3		6.0	0.4	24.9							
10/27/2009	1.1		4.1	11.3	50.0		0.9						
9/29/2009	3.9		3.0										
8/25/2009	2.8			4.6	1.0	39.1							
7/28/2009	1.1		0.4		0.2	30.2							
6/30/2009	1.1				28.5		0.3						
5/27/2009					0.3	19.1							
4/28/2009			0.9			3.7							
3/31/2009		2.5				6.1	0.5						
2/24/2009						5.8	27.7	0.1					
1/27/2009			0.2			28.9		0.8					
12/23/2008				10.5	41.8	22.4	0.2						
11/25/2008	0.2			0.1	31.1	22.8	0.4						
10/3/2008	32.4		9.2	2.6	18.8	29.8							
9/26/2008	45.1	10.5	16.3		59.1	41.8	6.8						
8/28/2008	43.6	0.1	21.0	11.3	27.2	27.3	0.2						
7/28/2008	10.4				0.2		1.0						

Note: all blanks indicated non-detect for methane during sampling event