

**Table B**  
**Field Observation Data - Groundwater, Surface water and leachate**  
**February 2024**  
**Hawkesbury Environmental Monitoring, 20139725**

Location	Date Sampled	Volume (L) Removed	DO ppm	EC (µS/cm)	pH (pH units)	Er (mV)	Eh (mV)	Temp (°C)	SWL (mbtoc)	Comments
GWM1	21/02/2024	-	4.43	11,879	6.72	-64	135	19.9	11.70	Light brown, moderate turbidity, no odour.
GWM2	21/02/2024	-	1.89	12,737	6.33	-53	146	19.6	11.81	Light brown, moderate turbidity, no odour.
GWM3	21/02/2024	-	7.15	19,310	7.76	-69.8	129	19.30	9.811	Light brown, moderate turbidity, no odour.
GWM4	21/02/2024	-	6.52	11,445	7.33	-65	134	22.5	12.06	Colourless, low turbidity, very slight H2s odour.
GWM6	21/02/2024	-	5.17	4,067	6.26	-19	180	22.1	8.05	Pale brown, high turbidity, no odour.
GWM7	21/02/2024	-	1.07	10,012	6.06	-15	184	19.6	4.78	Light brown, low turbidity, mild H2S odour.
GWM8	21/02/2024	-	1.24	14,692	6.37	-46	153	19.2	3.03	Light brown green, low turbidity, mild leachate odour.
GWM9	21/02/2024	-	3.53	8,182	6.84	-117	167	20.6	2.26	Light brown, moderate turbidity, slight H2S odour.
SW1	21/02/2024	-							Destroyed.	
LCH1	21/02/2024	-	3.66	3,159	7.14	-118	81	25.7	Tap	Light brown, low turbidity, strong leachate odour.

**Legend:**

Eh = Redox potential relative to the standard hydrogen electrode. (Eh = Er + 199mv).

TDS = EC in µS x 0.6

Er = Oxidation reduction (redox) potential as measured with a platinum electrode and silver/silver chloride reference electrode.

mbtoc = metres below top of casing



**TABLE D - Subsurface Gas Field Measurements**

Hawkesbury City Waste Management Facility  
 Environmental Monitoring - February 2024  
 1 The Driftway South Windsor, NSW 2756

Location ID	Date	Type	Location	Flow rate		Methane (CH <sub>4</sub> )		Carbon Dioxide (CO <sub>2</sub> )		Oxygen (O <sub>2</sub> )		Carbon Monoxide (CO)		Hydrogen Sulfide (H <sub>2</sub> S)			
				Initial reading	Post-purge	Initial reading	Post-purge	Initial reading	Post-purge	Initial reading	Post-purge	Initial reading	Post-purge	Initial reading	Post-purge	Initial reading	Post-purge
				L/Hr		%v/v		%v/v		%v/v		%v/v		ppm		ppm	
<b>Subsurface Gas Hawkesbury Landfill</b>																	
G1	21/02/2024	Subsurface Gas	HCRG	0.1	0.3	0.0	0.0	0.1	0.0	19.4	19.4	2	2	1	0		
RW1	21/02/2024	Subsurface Gas	HCRG	0	0.3	0.0	0.1	1.7	17.1	18.0	4.3	2	2	0	0		
Gas 1	21/02/2024	Subsurface Gas	HCRG	0.0	0.1	0.0	0.0	5.2	4.3	17.5	15.5	1	0	0	0		
Gas 2	21/02/2024	Subsurface Gas	HCRG	0.0	0.1	0.0	0.0	0.1	0.1	19.7	19.5	1	1	0	0		
Gas 3	21/02/2024	Subsurface Gas	HCRG	0.0	0.0	0.0	0.0	0.1	1.4	19.2	18.0	1	2	0	0		
Gas 4	21/02/2024	Subsurface Gas	HCRG	0.0	0.2	0.0	0	6.0	9.5	14.1	10.8	0.0	0.0	0.0	0		
Gas 5	21/02/2024	Subsurface Gas	HCRG	0	0.1	0.0	0.0	4.6	8.4	15.0	12.0	2.0	1.0	0.0	0		
Gas 6	21/02/2024	Subsurface Gas	HCRG	0	0	0.0	0.0	5.4	6.1	14.4	13.9	1	1	0	0		
BH1	21/02/2024	Subsurface Gas	HCRG	0.0	0.1	2.7	3.9	12.0	17.4	9.0	4.5	3	1	1	0		
BH2	21/02/2024	Subsurface Gas	HCRG	0.0	-	0.0	-	0.0	-	19.0	-	2	-	0	-		
BH3	21/02/2024	Subsurface Gas	HCRG	0.0	0.0	0.0	0.0	0.3	0.4	19.5	19.5	1	1	0	0		
BH4	21/02/2024	Subsurface Gas	HCRG	0.0	0.1	0.0	0	6.4	0.5	12.7	19.2	2.0	1.0	0.0	0		
BH5	21/02/2024	Subsurface Gas	HCRG	0	0.1	0.0	0.0	0.1	0.1	19.9	19.4	2.0	2.0	0.0	0		
BH6	21/02/2024	Subsurface Gas	HCRG	0	0	0.0	0.0	0.0	0.0	19.8	19.5	2	2	0	1		
<b>NSW EPA (2016) threshold for notification to EPA, further investigation &amp; corrective action</b>						-	1.00	-	-	-	-	-	-	-	-		
<b>NSW EPA (2016) threshold for further investigation &amp; corrective action</b>						-	-	-	1.5*	-	-	-	-	-	-		

**Notes:**

\*\* BH(2) & BH6(2) represent additional LFG monitoring undertaken for confirmation purposes.

- denotes not sampled or criteria not available

Figures in bold exceed the adopted criteria

%v/v: percent volume per volume

ppm: parts per million

NSW EPA (2016) *Solid Waste Landfills*

\*trigger is for exceedance of 1.5%v/v above established background levels

>>>>: Machine displayed out of range value

# Hawkesbury City Council

Reporting Year	Monitoring Date	Pollutant Monitoring Points																	
		Bore Hole 1 - Methane			Bore Hole 5 - Methane			Gas 1 - Methane			Bore Hole 6 - Carbon dioxide			Bore Hole 5 - Carbon dioxide			Gas 1 - Carbon dioxide		
	Published Date	Methane Concentration (% v/v) Limit: 1.25 % v/v	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)	Methane Concentration (% v/v) Limit: 1.25 % v/v	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)	Methane Concentration (% v/v) Limit: 1.25 % v/v	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)	Carbon dioxide Concentration (%) Limit: 1.5 %	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)	Carbon dioxide Concentration (%) Limit: 1.5 %	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)	Carbon dioxide Concentration (%) Limit: 1.5 %	Stable Flow Rate (L/hr)	Gas Screening Value (L/hr)
2019/2020	12-Aug-19	0.0	0.1	0.000	0.0	0.0	0.000	-	-	-	2.9	-0.1	0.014	4.1	0.0	0.000	-	-	-
	13-Sep-19	14.2	0.3	0.000	0.0	0.1	0.000	-	-	-	27.8	0.2	0.008	3.7	0.1	0.004	-	-	-
	11-Oct-19	12.6	0.1	0.000	0.0	<0.1	0.000	0.0	<0.1	0.000	15.7	0.2	0.007	6.1	<0.1	-	-	-	-
	11-Nov-19	13.8	0.1	0.004	0.0	<0.1	<0.001	-	-	-	26.8	0.1	0.007	6.1	<0.1	-	-	-	-
	09-Dec-19	12.4	0.0	0.013	0.0	<0.1	<0.001	-	-	-	26.2	4.2	0.004	2.8	<0.1	-	-	-	-
	10-Jan-20	9.3	0.1	0.009	0.3	<0.1	<0.001	-	-	-	24.9	0.1	0.025	7.8	<0.1	-	-	-	-
	11-Feb-20	0.1	0.1	<0.001	0.3	<0.1	0.001	-	-	-	8.5	0.1	0.009	0.068	0.2	0.007	-	-	-
	09-Mar-20	10.2	0.0	0.014	11.4	<0.1	0.000	-	-	-	15.3	0.0	0.010	1.4	1.2	0.017	-	-	-
	10-Apr-20	3.9	0.0	0.004	15.8	<0.1	0.032	<0.001	-	-	19.0	0.0	0.027	16.9	0.0	0.034	9.9	<0.3	0.000
	11-May-20	0.8	0.1	0.001	<0.1	<0.1	<0.001	-	-	-	11.1	0.1	0.011	0.4	0.2	0.001	1.2	0.1	0.001
10-Jun-20	<0.1	0.1	0.000	<0.1	0.1	0.000	-	-	-	2.9	0.1	0.003	0.1	0.0	0.000	11.8	0.1	0.012	
<b>Comments:</b>																			
2020/2021	17-Jul-20	<0.1	-0.1	0.000	19.4	-0.2	0.039	2.8	-0.2	0.006	0.4	-0.1	0.000	19.0	-0.2	0.038	15.1	-0.2	0.030
	11-Aug-20	10.7	0.0	0.004	21.7	0.0	0.022	5.1	0.0	0.000	4.5	0.0	0.000	17.1	0.0	0.017	14.6	0.0	0.000
	11-Sep-20	0.6	-0.1	0.001	15.8	0.1	0.016	4.1	0.2	0.008	2.0	-0.1	0.014	14.0	0.2	0.029	14.3	0.2	0.029
	07-Oct-20	0.6	0.6	0.004	14.1	1.7	0.032	1.9	0.7	0.032	9.4	0.6	0.056	17.0	3.9	0.663	1.4	1.7	0.024
	04-Nov-20	0.0	0.6	0.000	10.0	15.4	0.000	0.0	10.3	0.000	-	0.6	0.058	15.0	15.4	2.310	9.1	10.3	0.937
	03-Dec-20	0.1	0.1	0.000	8.4	0.0	0.000	0.0	0.5	0.000	-	4.9	0.1	0.005	19.3	6.4	1.235	7.1	0.5
	10-Jan-21	0.0	1.8	0.001	15.3	1.0	0.153	7.4	1.1	0.081	0.0	1.2	0.000	22.3	1.0	0.223	16.3	1.1	0.201
	10-Feb-21	0.0	0.0	0.000	14.8	2.8	0.414	0.3	0.0	0.000	-	2.8	0.0	0.088	24.5	2.8	0.000	7.2	0.0
	12-Mar-21	0.0	0.0	0.000	14.2	1.5	0.213	0.0	0.1	0.000	0.3	0.0	0.000	23.0	1.5	0.045	5.9	0.1	0.006
	16-Apr-21	0.5	0.0	0.000	10.3	-1.6	0.000	8.6	0.0	0.000	13.2	0.0	0.000	1.9	-1.6	0.030	1.9	0.0	0.000
26-May-21	0.3	0.0	0.000	10.3	0.0	0.000	33.8	0.0	0.000	-	4.0	0.0	0.000	20.4	0.0	0.000	22.2	0.0	
25-Jun-21	0.0	2.5	0.000	1.7	2.5	0.043	28.7	0.9	0.267	0.0	0.0	0.000	4.3	2.5	0.358	4.3	2.5	0.189	
13-Jul-21	0.0	0.0	0.000	1.3	0.1	0.001	19.8	0.3	0.059	0.0	10.3	0.0	0.000	4.0	0.1	0.004	12.1	0.0	
<b>Comments:</b>																			
2021/2022	14-Aug-21	0.0	0.0	0.000	11.8	0.1	0.012	0.2	0.4	0.001	0.0	0.0	0.000	21.0	0.1	0.021	7.0	0.4	0.028
	05-Sep-21	0.0	0.0	0.000	0.4	0.1	0.000	5.9	0.3	0.018	0.0	0.0	0.000	2.1	0.1	0.002	7.0	0.3	0.021
	27-Oct-21	0.0	0.1	0.000	0.0	0.4	0.000	27.1	0.0	0.000	0.0	0.1	0.013	0.6	0.4	0.002	29.8	0.0	0.000
	11-Nov-21	0.0	0.2	0.000	0.0	0.2	0.000	18.1	0.0	0.000	3.1	0.2	0.003	0.1	0.2	0.000	23.2	0.0	0.000
	14-Dec-21	0.0	0.1	0.000	10.1	0.0	0.000	10.1	0.0	0.000	0.7	0.1	0.001	0.5	0.1	0.001	15.2	0.0	0.000
	20-Jan-22	0.0	0.0	0.000	0.0	0.0	0.000	0.0	0.2	0.000	0.0	0.0	0.000	0.1	0.0	0.000	0.0	0.0	0.000
	09-Feb-22	0.0	0.1	0.000	0.0	0.0	0.000	0.0	0.1	0.000	0.7	0.1	0.001	0.1	1.0	0.001	0.0	0.000	
	01-Mar-22	0.0	0.0	0.000	0.0	0.2	0.000	0.0	0.1	0.000	0.3	0.2	0.002	1.3	0.1	0.001	0.2	0.0	0.000
	01-Apr-22	0.0	0.0	0.000	0.1	0.2	0.000	44.0	0.1	0.176	0.0	0.0	0.000	10.3	0.1	0.010	36.4	0.4	0.122
	24-May-22	2.5	0.6	0.015	10.0	0.1	0.010	0.000	0.4	0.176	0.0	0.0	0.000	10.3	0.1	0.010	36.4	0.4	0.122
28-Jun-22	0.9	0.1	0.001	7.5	0.1	0.008	35.1	0.2	0.070	0.0	0.1	0.005	3.4	0.1	0.003	17.8	0.2	0.035	
28-Jul-22	0.2	0.0	0.000	0.9	0.1	0.001	20.1	0.1	0.020	0.0	0.1	0.001	1.4	0.1	0.001	4.1	0.1	0.007	
29-Aug-22	0.0	0.0	0.000	0.0	0.9	0.000	0.0	0.9	0.000	0.0	0.1	0.001	5.1	0.9	0.046	26.5	0.9	0.239	
26-Sep-22	0.5	0.0	0.000	0.8	0.1	0.001	17.1	0.1	0.017	0.0	0.0	0.000	1.4	0.1	0.001	6.9	0.1	0.007	
31-Oct-22	0.5	0.4	0.002	1.5	0.7	0.011	18.1	12.9	2.335	0.0	0.0	0.000	2.4	1.2	0.029	8.8	8.2	0.546	
29-Nov-22	0.4	0.0	0.000	0.9	0.0	0.000	13.1	0.1	0.013	0.0	0.0	0.000	2.2	0.0	0.000	7.6	0.1	0.000	
20-Dec-22	0.3	0.1	0.000	0.5	0.1	0.001	15.9	0.1	0.016	0.0	0.0	0.001	1.2	0.1	0.001	4.1	0.1	0.004	
30-Jan-23	0.1	0.0	0.000	0.9	0.1	0.009	11.2	0.1	0.012	0.0	0.0	0.000	1.0	0.0	0.001	6.2	0.1	0.002	
01-Feb-23	0.1	0.5	0.001	0.6	-0.2	0.001	25.1	0.1	0.025	0.0	0.1	0.000	1.8	-0.2	0.004	18.0	0.1	0.016	
28-Mar-23	13.1	0.0	0.000	0.6	0.3	0.002	0.0	0.1	0.000	0.0	0.0	0.000	1.3	0.3	0.004	7.4	0.1	0.007	
28-Apr-23	8.4	0.0	0.000	3.8	0.3	0.011	0.0	0.2	0.000	0.0	0.0	0.000	5.3	0.2	0.016	1.8	0.2	0.003	
21-May-24	3.9	0.1	0.004	0.0	0.1	0.000	0.0	0.0	0.000	0.0	0.1	0.007	17.4	0.1	0.000	0.0	0.0	0.003	
<b>Comments:</b>																			

**Table F:**  
HCWWMF Perimeter Dust Deposition Gauges  
Analytical Table

Location ID	Date Placed	Date Collected	No. of days	Type	Location	Dust - Analytical Results				
						Ash Content (mg)	Combustible Matter	Combustible Matter (mg)	Total Insoluble Matter (mg)	
						0.1	1	0.1	1	
						LOR	0.1	1	0.1	1
						Unit	g / m <sup>2</sup> . Month	mg	g / m <sup>2</sup> . Month	mg
DG1	29/11/2023	22/02/2024	85	Dust	HCWWMF		<0.3	<5	<0.3	<5.0
DG2	29/11/2023	22/02/2024	85	Dust	HCWWMF		<0.3	<5	0.5	8.3
DG3	29/11/2023	22/02/2024	85	Dust	HCWWMF		<0.3	<5	<0.3	<5.0
<b>Criterion*</b>										<b>4</b>

## TABLE F

Note: \* Criterion taken from Approved Methods for the Modelling and Assessment of Air Pollutants in NSW; NSW Environment Protection Authority, January 2017 (EPA 2017)

## Analytical Table

### Table F - Dust Analytical Results Table

Hawkesbury City Waste Management Facility  
Environmental Monitoring - February Quarterly 2024  
1 The Driftway, South Windsor, NSW