



Kyogle Landfill Facility Environmental Monitoring Data – 2020/21

64-78 Runnymede Road, Kyogle, NSW 2474
Environmental Protection Licence (EPL) number: 12124

Background

Under the *Protection of the Environment Operations Act 1997*, Kyogle Council must publish or make pollution monitoring data for the Kyogle Landfill Facility available to members of the public. This document summarises the pollution monitoring data for the Kyogle Landfill Facility for the 2020 – 2021 reporting period.

The Environment Protection Licence (EPL) for the Kyogle Landfill Facility outlines how and when pollution must be monitored and the pollution limits which should not be exceeded. A copy of the EPL for the Kyogle Landfill Facility is available from the NSW Environmental Protection Agency's Protection of the Environment Operations Public Register at <https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers/about-prpoeo>.

Environmental Monitoring Data

Leachate

MONITORING POINT 1: Western Leachate Dam (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	Quarterly	384	303	485	647	303	455	647	No limit
Ammonia	Milligrams per litre	Quarterly	0.36	0.27	45	67.5	0.27	28.3	67.5	No limit
Arsenic	Milligrams per litre	Quarterly	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	0.005	No limit
Calcium	Milligrams per litre	Quarterly	61.2	42.6	60.2	68.8	42.6	58.2	68.8	No limit
Chloride	Milligrams per litre	Quarterly	407	362	290	230	230	322	407	No limit
Conductivity	Microsiemens per centimetre	Quarterly	2040	1700	1880	1930	1700	1888	2040	No limit
Dissolved organic carbon	Milligrams per litre	Quarterly	52	46	95	70	46	66	95	No limit
Iron	Milligrams per litre	Quarterly	0.31	0.54	2.0	16.5	0.31	4.84	16.5	No limit
Magnesium	Milligrams per litre	Quarterly	46.4	31.8	33.4	34.6	31.8	36.55	46.4	No limit
Manganese	Milligrams per litre	Quarterly	0.13	1.06	1.49	1.53	0.13	1.05	1.53	No limit
Nitrate	Milligrams per litre	Quarterly	0.08	<0.05	<0.05	<0.05	<0.05	0.06	0.08	No limit
Nitrite	Milligrams per litre	Quarterly	0.03	0.02	<0.01	0.01	<0.01	0.02	0.03	No limit
Nitrogen	Milligrams per litre	Quarterly	7.1	6.0	54.0	87.1	6.0	38.6	87.1	No limit

MONITORING POINT 1: Western Leachate Dam (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
pH	pH	Quarterly	7.8	7.7	7.3	7.0	7.0	7.5	7.8	No limit
Potassium	Milligrams per litre	Quarterly	76.5	43.4	59.3	45.9	43.4	56.3	76.5	No limit
Sodium	Milligrams per litre	Quarterly	302	209	198	175	175	221	302	No limit
Sulphate	Milligrams per litre	Quarterly	39.1	3.2	2.8	9.3	2.8	15.9	39.1	No limit
Total petroleum hydrocarbons	Micrograms per litre	Quarterly	<100	<100	<100	740	<100	260	740	No limit

MONITORING POINT 2: Eastern Leachate Dam (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	Quarterly	209	207	154	193	154	190.8	209	No limit
Ammonia	Milligrams per litre	Quarterly	0.19	0.74	3.9	7.3	0.19	3.03	3.9	No limit
Arsenic	Milligrams per litre	Quarterly	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	No limit
Calcium	Milligrams per litre	Quarterly	60.3	46.7	28.6	41.9	28.6	44.4	60.3	No limit
Chloride	Milligrams per litre	Quarterly	259	277	119	98	98	188	277	No limit
Conductivity	Microsiemens per centimetre	Quarterly	1380	1340	706	832	706	1065	1380	No limit
Dissolved organic carbon	Milligrams per litre	Quarterly	24	31	26	24	24	26	31	No limit
Iron	Milligrams per litre	Quarterly	0.19	1.2	1.9	0.31	0.19	0.9	1.9	No limit
Magnesium	Milligrams per litre	Quarterly	25.1	21.3	10.9	22.1	10.9	19.9	25.1	No limit
Manganese	Milligrams per litre	Quarterly	0.031	0.31	0.16	0.064	0.031	0.14	0.31	No limit
Nitrate	Milligrams per litre	Quarterly	1.7	0.26	<0.05	3.3	<0.05	1.33	3.3	No limit
Nitrite	Milligrams per litre	Quarterly	0.06	0.04	0.11	0.79	0.04	0.25	0.79	No limit
Nitrogen	Milligrams per litre	Quarterly	4.5	4.3	6.2	14	4.3	7.25	14	No limit
pH	pH	Quarterly	7.6	7.8	7.4	7.4	7.4	7.55	7.8	No limit
Potassium	Milligrams per litre	Quarterly	36.3	39.4	28.1	21.9	21.9	31.4	39.4	No limit
Sodium	Milligrams per litre	Quarterly	178	169	85.4	76.3	76.3	127.2	178	No limit
Sulphate	Milligrams per litre	Quarterly	71.1	50.9	6.1	64.8	6.1	48.2	71.1	No limit
Total petroleum hydrocarbons	Micrograms per litre	Quarterly	<100	<100	740	<100	<100	260	740	No limit

Ground water quality

Ground water monitoring is required to be conducted following the first 24 hour rainfall event exceeding 25 millimetres in each quarterly period. Monitoring results will be published below if monitoring was required during the quarter. If no monitoring results are published below it means that a rainfall event exceeding 25mm in 24 hours did not occur during the quarter.

	July 2020	October 2020	January 2021	April 2021
No. of events during quarter	0	0	1	0
Date of first event	N/A	N/A	16/12/20	N/A

MONITORING POINT 4: GW1A (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	108	-	108	108	108	No limit
Ammonia	Milligrams per litre		-	-	0.02	-	0.02	0.02	0.02	No limit
Nitrogen	Milligrams per litre		-	-	2.4	-	2.4	2.4	2.4	No limit
pH	pH		-	-	6.5	-	6.5	6.5	6.5	No limit
TRHC10-C14	Micrograms per litre		-	-	<50	-	<50	<50	<50	No limit
TRHC15-C28	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 5: GW2A (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	107	-	107	107	107	No limit
Ammonia	Milligrams per litre		-	-	1.1	-	1.1	1.1	1.1	No limit
Nitrogen	Milligrams per litre		-	-	9.9	-	9.9	9.9	9.9	No limit
pH	pH		-	-	6.2	-	6.2	6.2	6.2	No limit
TRHC10-C14	Micrograms per litre		-	-	64	-	64	64	64	No limit
TRHC15-C28	Micrograms per litre		-	-	510	-	510	510	510	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 8: GW3A (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	<20	-	<20	<20	<20	No limit
Ammonia	Milligrams per litre		-	-	1.1	-	1.1	1.1	1.1	No limit
Nitrogen	Milligrams per litre		-	-	9.1	-	9.1	9.1	9.1	No limit
pH	pH		-	-	4.3	-	4.3	4.3	4.3	No limit
TRHC10-C14	Micrograms per litre		-	-	<50	-	<50	<50	<50	No limit
TRHC15-C28	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 10: BH3 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	<20	-	<20	<20	<20	No limit
Ammonia	Milligrams per litre		-	-	0.26	-	0.26	0.26	0.26	No limit
Nitrogen	Milligrams per litre		-	-	6.4	-	6.4	6.4	6.4	No limit
pH	pH		-	-	5.2	-	5.2	5.2	5.2	No limit
TRHC10-C14	Micrograms per litre		-	-	<50	-	<50	<50	<50	No limit
TRHC15-C28	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 12: BH5 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	<20	-	<20	<20	<20	No limit
Ammonia	Milligrams per litre		-	-	<0.01	-	<0.01	<0.01	<0.01	No limit
Nitrogen	Milligrams per litre		-	-	4.2	-	4.2	4.2	4.2	No limit
pH	pH		-	-	6.0	-	6.0	6.0	6.0	No limit
TRHC10-C14	Micrograms per litre		-	-	96	-	96	96	96	No limit
TRHC15-C28	Micrograms per litre		-	-	150	-	150	150	150	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 13: BH6 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	NT	-	-	-	-	No limit
Ammonia	Milligrams per litre		-	-	0.35	-	0.35	0.35	0.35	No limit
Nitrogen	Milligrams per litre		-	-	98.3	-	98.3	98.3	98.3	No limit
pH	pH		-	-	4.0	-	4.0	4.0	4.0	No limit
TRHC10-C14	Micrograms per litre		-	-	<50	-	<50	<50	<50	No limit
TRHC15-C28	Micrograms per litre		-	-	290	-	290	290	290	No limit
TRHC29-C36	Micrograms per litre		-	-	110	-	110	110	110	No limit

MONITORING POINT 14: BH7 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	187	-	187	187	187	No limit
Ammonia	Milligrams per litre		-	-	0.01	-	0.01	0.01	0.01	No limit
Nitrogen	Milligrams per litre		-	-	12	-	12	12	12	No limit
pH	pH		-	-	6.9	-	6.9	6.9	6.9	No limit
TRHC10-C14	Micrograms per litre		-	-	<50	-	<50	<50	<50	No limit
TRHC15-C28	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit
TRHC29-C36	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

Surface water quality

Surface water monitoring is required to be conducted following the first 24hour rainfall event exceeding 25 millimetres in each quarterly period. Monitoring results will be published below if monitoring was required during the quarter. If no monitoring results are published below it means that a rainfall event exceeding 25mm in 24 hours did not occur during the quarter.

	July 2020	October 2020	January 2021	April 2021
No. of events during quarter	0	0	1	0
Date of first event	N/A	N/A	16/12/20	N/A

MONITORING POINT 15: SW001 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	23	-	23	23	23	No limit
Ammonia	Milligrams per litre		-	-	0.01	-	0.01	0.01	0.01	No limit
Arsenic	Milligrams per litre		-	-	<0.005	-	<0.005	<0.005	<0.005	No limit
Calcium	Milligrams per litre		-	-	6.3	-	6.3	6.3	6.3	No limit
Chloride	Milligrams per litre		-	-	11	-	11	11	11	No limit
Conductivity	Microsiemens per centimetre		-	-	104	-	104	104	104	No limit
Dissolved organic carbon	Milligrams per litre		-	-	8	-	8	8	8	No limit
Iron	Milligrams per litre		-	-	0.38	-	0.38	0.38	0.38	No limit
Magnesium	Milligrams per litre		-	-	2.7	-	2.7	2.7	2.7	No limit
Manganese	Milligrams per litre		-	-	<0.005	-	<0.005	<0.005	<0.005	No limit
Nitrate	Milligrams per litre		-	-	0.52	-	0.52	0.52	0.52	No limit
Nitrite	Milligrams per litre		-	-	0.01	-	0.01	0.01	0.01	No limit
Nitrogen	Milligrams per litre		-	-	1.6	-	1.6	1.6	1.6	No limit
pH	pH		-	-	6.8	-	6.8	6.8	6.8	No limit
Potassium	Milligrams per litre		-	-	4.9	-	4.9	4.9	4.9	No limit
Sodium	Milligrams per litre		-	-	8.0	-	8.0	8.0	8.0	No limit
Suspended solids	Milligrams per litre	-	-	1	-	1	1	1	No limit	
Total petroleum hydrocarbons	Micrograms per litre	-	-	<100	-	<100	<100	<100	No limit	

MONITORING POINT 16: SW002 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	34	-	34	34	34	No limit
Ammonia	Milligrams per litre		-	-	0.81	-	0.81	0.81	0.81	No limit
Arsenic	Milligrams per litre		-	-	0.005	-	0.005	0.005	0.005	No limit
Calcium	Milligrams per litre		-	-	13.1	-	13.1	13.1	13.1	No limit
Chloride	Milligrams per litre		-	-	42	-	42	42	42	No limit
Conductivity	Microsiemens per centimetre		-	-	280	-	280	280	280	No limit
Dissolved organic carbon	Milligrams per litre		-	-	14	-	14	14	14	No limit
Iron	Milligrams per litre		-	-	13.4	-	13.4	13.4	13.4	No limit
Magnesium	Milligrams per litre		-	-	5.0	-	5.0	5.0	5.0	No limit
Manganese	Milligrams per litre		-	-	0.055	-	0.055	0.055	0.055	No limit
Nitrate	Milligrams per litre		-	-	2.9	-	2.9	2.9	2.9	No limit
Nitrite	Milligrams per litre		-	-	0.38	-	0.38	0.38	0.38	No limit

MONITORING POINT 16: SW002 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Nitrogen	Milligrams per litre		-	-	6.2	-	6.2	6.2	6.2	No limit
pH	pH		-	-	7.1	-	7.1	7.1	7.1	No limit
Potassium	Milligrams per litre		-	-	10	-	10	10	10	No limit
Sodium	Milligrams per litre		-	-	26.6	-	26.6	26.6	26.6	No limit
Suspended solids	Milligrams per litre		-	-	233	-	233	233	233	No limit
Total petroleum hydrocarbons	Micrograms per litre		-	-	<100	-	<100	<100	<100	No limit

MONITORING POINT 17: SW003 (see map for location)										
Pollutant	Unit of measure	Required monitoring frequency	Quarterly results				Summary results			Pollution limit
			July 2020	October 2020	January 2021	April 2021	Min value	Mean value	Max value	
Alkalinity	Milligrams per litre	When threshold event occurs (see above)	-	-	24	-	24	24	24	No limit
Ammonia	Milligrams per litre		-	-	0.02	-	0.02	0.02	0.02	No limit
Arsenic	Milligrams per litre		-	-	<0.005	-	<0.005	<0.005	<0.005	No limit
Calcium	Milligrams per litre		-	-	8.8	-	8.8	8.8	8.8	No limit
Chloride	Milligrams per litre		-	-	24	-	24	24	24	No limit
Conductivity	Microsiemens per centimetre		-	-	176	-	176	176	176	No limit
Dissolved organic carbon	Milligrams per litre		-	-	14	-	14	14	14	No limit
Iron	Milligrams per litre		-	-	1.2	-	1.2	1.2	1.2	No limit
Magnesium	Milligrams per litre		-	-	3.6	-	3.6	3.6	3.6	No limit
Manganese	Milligrams per litre		-	-	0.009	-	0.009	0.009	0.009	No limit
Nitrate	Milligrams per litre		-	-	0.16	-	0.16	0.16	0.16	No limit
Nitrite	Milligrams per litre		-	-	<0.01	-	<0.01	<0.01	<0.01	No limit
Nitrogen	Milligrams per litre		-	-	1.1	-	1.1	1.1	1.1	No limit
pH	pH		-	-	7.0	-	7.0	7.0	7.0	No limit
Potassium	Milligrams per litre		-	-	6.3	-	6.3	6.3	6.3	No limit
Sodium	Milligrams per litre		-	-	17.9	-	17.9	17.9	17.9	No limit
Suspended solids	Milligrams per litre		-	-	<1	-	<1	<1	<1	No limit
Total petroleum hydrocarbons	Micrograms per litre	-	-	<100	-	<100	<100	<100	No limit	

Stormwater discharge

Stormwater monitoring is required to be conducted following the first discharge event of each quarter arising from a rainfall event of less than 60 millimetres in total falling over a consecutive 5 day period. Monitoring results will be published below if monitoring was required during the quarter. If no monitoring results are published below it means that a discharge event did not occur after the above described rainfall event during the quarter.

	July 2020	October 2020	January 2021	April 2021
No. of events during quarter	0	0	0	0
Date of first event	N/A	N/A	N/A	N/A

Sampling data

Leachate

Key milestones	Quarterly sample			
	July 2020	October 2020	January 2021	April 2021
Date testing conducted	22 July 2020	28 October 2020	3 February 2021	22 April 2021
Date data obtained	10 August 2020	09 November 2020	12 February 2021	10 May 2021
Date data published	11 August 2020	10 November 2020	2 March 2021	20 May 2021

Ground water

Key milestones	Quarterly sample			
	July 2020	October 2020	January 2021	April 2021
Date testing conducted	N/A	N/A	16 December 2020	N/A
Date data obtained	N/A	N/A	6 January 2021	N/A
Date data published	N/A	N/A	7 January 2021	N/A

Surface water

Key milestones	Quarterly sample			
	July 2020	October 2020	January 2021	April 2021
Date testing conducted	N/A	N/A	16 December 2020	N/A
Date data obtained	N/A	N/A	6 January 2021	N/A
Date data published	N/A	N/A	7 January 2021	N/A

Stormwater

Key milestones	Quarterly sample			
	July 2020	October 2020	January 2021	April 2021
Date testing conducted	N/A	N/A	N/A	N/A
Date data obtained	N/A	N/A	N/A	N/A
Date data published	N/A	N/A	N/A	N/A

Kyogle Landfill Facility Monitoring Points (from Appendix 6 of Kyogle Landfill Environmental Management Plan)

