

Bowral Waste Centre
EPA Licence No: 13366
Monitoring Point 1

(UTM Zone 56: 262017.85 East, 6180632.609 North)

Surface water monitoring and discharge

Discharge point at Southern end of premises as identified in Licence Variation
 Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9
 DOC 21/142907

Sampling Frequency: Daily during discharge

Pollutant		Conductivity	pH	Turbidity
Unit of Measure		µs/cm	pH units	NTU
100 Percentile Concentration Limit		TBD	6.5-8.5	150
Lowest sample value		0	7	16
Highest sample value		0.7	8.4	127.0
Mean of samples		0.5	7.7	37.5
Sample Date	2/06/2021	0.6	7.9	25.8
	3/06/2021	0.6	7.64	27.1
	21/06/2021	0.5	7.97	32.5
	22/06/2021	0.5	7.81	27.6
	23/06/2021	0.5	7.65	29.9
	24/06/2021	0.4	7.54	28.7
	5/07/2021	0.5	7.75	19.7
	6/07/2021	0.5	7.84	25.1
	7/07/2021	0.5	7.65	36.1
	23/07/2021	0.5	7.97	20.8
	24/07/2021	0.5	7.86	22.9
	26/07/2021	0.5	7.95	22.0
	27/07/2021	0.5	7.94	29.5
	16/08/2021	0.5	7.84	33.6
	23/08/2021	0.5	8.11	34.1
	24/08/2021	0.4	8.06	113.0
	25/08/2021	0.3	8.19	126.0
	26/08/2021	0.3	8.12	36.6
	20/09/2021	0.5	7.88	30.6
	21/09/2021	0.5	7.74	27.8
	27/09/2021	0.5	7.25	17.3
	28/09/2021	0.5	7.37	15.5
	29/09/2021	0.5	7.48	18.8
	18/10/2021	0.4	7.58	26.6
	22/10/2021	0.4	7.70	33.1
	29/11/2021	0.5	7.09	27.6
	30/11/2021	0.5	7.10	26.2
	12/12/2021	0.5	7.02	35.4
	17/01/2022	0.5	7.70	25.1
	18/01/2022	0.5	7.65	39.8
	19/01/2022	0.5	7.73	41.4
	14/02/2022	0.5	7.97	31.9
	1/03/2022	0.5	8.17	57.7
	10/03/2022	0.3	8.41	27.3
	11/03/2022	0.3	8.30	35.9
	12/03/2022	0.4	8.21	37.2
	14/02/2022	0.5	7.97	31.9
	14/03/2022	0.4	8.16	18.6
	15/03/2022	0.4	8.09	21.2
	22/03/2022	0.7	7.72	54.9

23/03/2022	0.7	7.74	59.0
25/03/2022	0.7	7.83	46.5
31/03/2022	0.6	7.98	26.7
6/04/2022	0.5	7.88	43.8
7/04/2022	0.5	7.84	30.1
11/04/2022	0.4	7.98	21.2
10/05/2022	0.5	7.94	32.4
13/05/2022	0.4	8.00	48.3
14/05/2022	0.4	7.96	35.1
16/05/2022	0.4	7.88	44.2
24/05/2022	0.5	7.98	25.7
25/05/2022	0.5	8.11	29.4
28/05/2022	0.5	7.93	24.9
30/05/2022	0.5	7.73	31.5
31/05/2022	0.4	7.70	37.0
1/06/2022	0.5	7.71	33.4
6/06/2022	0.5	7.58	29.6
8/06/2022	0.5	7.88	20.7
2/07/2022	0.5	7.68	41.2
4/07/2022	0.2	8.23	127.0
5/07/2022	0.2	8.07	97.4
6/07/2022	0.4	6.82	65.4
8/07/2022	0.5	7.40	53.1
11/07/2022	0.5	7.50	47.5
16/07/2022	0.5	7.58	32.1
18/07/2022	0.4	7.62	25.6
23/08/2022	0.5	6.88	33.4
26/08/2022	0.5	6.90	30.3
2/09/2022	0.5	7.32	31.3
9/09/2022	0.5	7.11	21.2
20/09/2022	0.5	7.62	37.4
26/09/2022	0.5	7.45	32.8
4/10/2022	0.5	7.65	23.7
5/10/2022	0.5	7.74	21.0
6/10/2022	0.4	7.34	102.0

*Below detection limit.

Bowral Waste Centre**EPA Licence No: 13366****Monitoring Point 2**

(UTM Zone 56: 262080.407 East, 6180766.636 North)

Leachate Quality Monitoring

Leachate holding dam as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Yearly

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results
								7/07/2022
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	1320	1320	1320	1320
Aluminium (Al)	mg/L		1	1	0.23	0.23	0	0.23
Arsenic (As)	mg/L		1	1	0.041	0.041	0.041	0.041
Barium (Ba)	mg/L		1	1	0.387	0.387	0.387	0.387
Benzene	mg/L		1	1	5	5	5.000	5
Cadmium (Cd)	mg/L		1	1	0.0005	0.0005	0.001	0.0005
Calcium (Ca)	mg/L		1	1	205	205	205	205
Chemical Oxygen Demand	mg/L		1	1	457	457	457	457
Chloride (Cl)	mg/L		1	1	240	240	240	240
Conductivity	(µ/cm)		1	1	3560	3560	3560	3560
Copper (Cu)	mg/L		1	1	0.066	0.066	0.07	0.066
Dissolved Organic Carbon	mg/L		1	1	183	183	183	183
Ethyl Benzene	mg/L		1	0	0	0	BDL*	BDL*
Fluoride (F)	mg/L		1	1	0.6	0.6	0.6	0.6
Lead (Pb)	mg/L		1	1	0.017	0.017	0.017	0.017
Magnesium (Mg)	mg/L		1	1	77	77	77	77
Manganese (Mn)	mg/L		1	1	1.62	1.62	1.620	1.62
Mercury (Hg)	mg/L		1	0	0	0	BDL*	BDL*
Nitrate + Nitrite	mg/L		1	1	1.78	1.78	1.78	1.78
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	203	203	203	203
Organochlorine Pesticides	mg/L		1	0	0	0	BDL*	BDL*
Organophosphate Pesticides	mg/L		1	0	0	0	BDL*	BDL*
pH	pH Units		1	1	7.73	7.73	7.73	7.73
Phosphate (PO ₄)	mg/L		1	0	0	0	BDL*	BDL*
Phosphorus (P)	mg/L		1	1	0.49	0.49	0.5	0.49
Polychlorinated biphenyls (mg/L)	mg/L		1	0	0	0	BDL*	BDL*
Polycyclic Aromatic Hydrocarbons (mg/L)	mg/L		1	0	0	0	BDL*	BDL*
Potassium (K)	mg/L		1	1	60	60	60	60
Sodium (Na)	mg/L		1	1	138	138	138	138
Sulfate (SO ₄)	mg/L		1	1	361	361	361	361
Toluene	mg/L		1	0	0	0	BDL*	BDL*
Total Iron (Fe)	mg/L		1	1	5.21	5.21	5	5.21
Total Petroleum Hydrocarbons	mg/L		1	1	1650	1650	1650	1650
Total Phenolics	mg/L		1	0	0	0	BDL*	BDL*
Xylene	mg/L		1	0	0	0	BDL*	BDL*
Zinc (Zn)	mg/L		1	1	0.269	0.269	0.269	0.269

*Below detection limit.

Bowral Waste Centre**EPA Licence No: 13366****Monitoring Point 3**

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	706	706	706	706	
Aluminium (Al)	mg/L		1	1	0.02	0.02	0	0.02	
Calcium (Ca)	mg/L		1	1	128	128	128	128	
Chloride (Cl)	mg/L		1	1	96	96	96	96	
Conductivity	(µ/cm)		1	1	1460	1460	1460	1460	
Copper (Cu)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Fluoride (F)	mg/L		1	1	0.2	0.2	0.2	0.2	
Iron	mg/L		1	1	0.52	0.52	0.5	0.52	
Lead (Pb)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Magnesium (Mg)	mg/L		1	1	94	94	94	94	
Manganese (Mn)	mg/L		1	1	0.137	0.137	0.137	0.137	
Nitrate	mg/L		1	1	0.02	0.02	0.020	0.02	
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	0.65	0.65	1	0.65	
pH	pH Units		1	1	7.9	7.9	7.90	7.9	
Potassium (K)	mg/L		1	1	9	9	9	9	
Sodium (Na)	mg/L		1	1	61	61	61	61	
Standing Water Level	metres		1	1	14.85	14.85	15	14.85	
Sulfate (SO ₄)	mg/L		1	1	9	9	9	9	
Total dissolved solids	mg/L		1	1	823	823	823	823	
Total organic carbon	mg/L		1	1	11	11	11	11	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	0	0	0	#DIV/0!	BDL*	

*Below detection limit.

EPA Licence No: 13366

Monitoring Point 4

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	191	191	191	191	
Aluminium (Al)	mg/L		1	1	0.09	0.09	0	0.09	
Calcium (Ca)	mg/L		1	1	55	55	55	55	
Chloride (Cl)	mg/L		1	1	108	108	108	108	
Conductivity	(µ/cm)		1	1	701	701	701	701	
Copper (Cu)	mg/L		1	1	0.011	0.011	0.01	0.011	
Fluoride (F)	mg/L		1	1	0.1	0.1	0.1	0.1	
Iron	mg/L		1	1	2.25	2.25	2.3	2.25	
Lead (Pb)	mg/L		1	1	0.002	0.002	0.002	0.002	
Magnesium (Mg)	mg/L		1	1	32	32	32	32	
Manganese (Mn)	mg/L		1	1	0.154	0.154	0.154	0.154	
Nitrate	mg/L		1	1	0.13	0.13	0.130	0.13	
Nitrogen as Ammonia (NH ₃)	mg/L		1	0	0	0	#DIV/0!	BDL*	
pH	pH Units		1	1	7.31	7.31	7.31	7.31	
Potassium (K)	mg/L		1	1	4	4	4	4	
Sodium (Na)	mg/L		1	1	38	38	38	38	
Standing Water Level	metres		1	1	31.2	31.2	31	31.2	
Sulfate (SO ₄)	mg/L		1	1	10	10	10	10	
Total dissolved solids	mg/L		1	1	381	381	381	381	
Total organic carbon	mg/L		1	1	2	2	2	2	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	1	0.009	0.009	0.009	0.009	

*Below detection limit.

EPA Licence No: 13366

Monitoring Point 5

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	200	200	200	200	
Aluminium (Al)	mg/L		1	1	0.02	0.02	0	0.02	
Calcium (Ca)	mg/L		1	1	78	78	78	78	
Chloride (Cl)	mg/L		1	1	36	36	36	36	
Conductivity	(µ/cm)		1	1	842	842	842	842	
Copper (Cu)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Fluoride (F)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Iron	mg/L		1	1	2.44	2.44	2.4	2.44	
Lead (Pb)	mg/L		1	1	0.002	0.002	0.002	0.002	
Magnesium (Mg)	mg/L		1	1	47	47	47	47	
Manganese (Mn)	mg/L		1	1	0.531	0.531	0.531	0.531	
Nitrate	mg/L		1	1	0.03	0.03	0.030	0.03	
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	0.26	0.26	0	0.26	
pH	pH Units		1	1	6.94	6.94	6.94	6.94	
Potassium (K)	mg/L		1	1	5	5	5	5	
Sodium (Na)	mg/L		1	1	33	33	33	33	
Standing Water Level	metres		1	1	18.1	18.1	18	18.1	
Sulfate (SO ₄)	mg/L		1	1	185	185	185	185	
Total dissolved solids	mg/L		1	1	522	522	522	522	
Total organic carbon	mg/L		1	1	5	5	5	5	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	1	0.013	0.013	0.013	0.013	

*Below detection limit.

EPA Licence No: 13366

Monitoring Point 6

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	149	149	149	149	
Aluminium (Al)	mg/L		1	1	0.02	0.02	0	0.02	
Calcium (Ca)	mg/L		1	1	42	42	42	42	
Chloride (Cl)	mg/L		1	1	97	97	97	97	
Conductivity	(µ/cm)		1	1	601	601	601	601	
Copper (Cu)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Fluoride (F)	mg/L		1	1	0.1	0.1	0.1	0.1	
Iron	mg/L		1	1	1.01	1.01	1.0	1.01	
Lead (Pb)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Magnesium (Mg)	mg/L		1	1	28	28	28	28	
Manganese (Mn)	mg/L		1	1	0.043	0.043	0.043	0.043	
Nitrate	mg/L		1	1	0.15	0.15	0.150	0.15	
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	0.07	0.07	0	0.07	
pH	pH Units		1	1	7.02	7.02	7.02	7.02	
Potassium (K)	mg/L		1	1	3	3	3	3	
Sodium (Na)	mg/L		1	1	34	34	34	34	
Standing Water Level	metres		1	1	32.47	32.47	32	32.47	
Sulfate (SO ₄)	mg/L		1	1	7	7	7	7	
Total dissolved solids	mg/L		1	1	316	316	316	316	
Total organic carbon	mg/L		1	1	2	2	2	2	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	0	0	0	#DIV/0!	BDL*	

*Below detection limit.

EPA Licence No: 13366

Monitoring Point 7

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	182	182	182	182	
Aluminium (Al)	mg/L		1	1	0.09	0.09	0	0.09	
Calcium (Ca)	mg/L		1	1	58	58	58	58	
Chloride (Cl)	mg/L		1	1	143	143	143	143	
Conductivity	(µ/cm)		1	1	782	782	782	782	
Copper (Cu)	mg/L		1	1	0.003	0.003	0.00	0.003	
Fluoride (F)	mg/L		1	1	0.2	0.2	0.2	0.2	
Iron	mg/L		1	1	0.47	0.47	0.5	0.47	
Lead (Pb)	mg/L		1	1	0.001	0.001	0.001	0.001	
Magnesium (Mg)	mg/L		1	1	33	33	33	33	
Manganese (Mn)	mg/L		1	1	0.014	0.014	0.014	0.014	
Nitrate	mg/L		1	1	0.97	0.97	0.970	0.97	
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	0.05	0.05	0	0.05	
pH	pH Units		1	1	7.12	7.12	7.12	7.12	
Potassium (K)	mg/L		1	1	6	6	6	6	
Sodium (Na)	mg/L		1	1	45	45	45	45	
Standing Water Level	metres		1	1	27.6	27.6	28	27.6	
Sulfate (SO ₄)	mg/L		1	1	2	2	2	2	
Total dissolved solids	mg/L		1	1	445	445	445	445	
Total organic carbon	mg/L		1	1	3	3	3	3	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	1	0.013	0.013	0.013	0.013	

*Below detection limit.

EPA Licence No: 13366

Monitoring Point 8

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								7/06/2022	
Alkalinity (as CaCO ₃)	mg/L	No concentration limits apply - sampling for monitoring purposes only	1	1	151	151	151	151	
Aluminium (Al)	mg/L		1	1	0.03	0.03	0	0.03	
Calcium (Ca)	mg/L		1	1	36	36	36	36	
Chloride (Cl)	mg/L		1	1	73	73	73	73	
Conductivity	(µ/cm)		1	1	524	524	524	524	
Copper (Cu)	mg/L		1	1	0.002	0.002	0.00	0.002	
Fluoride (F)	mg/L		1	1	0.1	0.1	0.1	0.1	
Iron	mg/L		1	1	0.48	0.48	0.5	0.48	
Lead (Pb)	mg/L		1	0	0	0	#DIV/0!	BDL*	
Magnesium (Mg)	mg/L		1	1	22	22	22	22	
Manganese (Mn)	mg/L		1	1	0.06	0.06	0.060	0.06	
Nitrate	mg/L		1	1	0.26	0.26	0.260	0.26	
Nitrogen as Ammonia (NH ₃)	mg/L		1	0	0	0	#DIV/0!	BDL*	
pH	pH Units		1	1	6.96	6.96	6.96	6.96	
Potassium (K)	mg/L		1	1	4	4	4	4	
Sodium (Na)	mg/L		1	1	36	36	36	36	
Standing Water Level	metres		1	1	32.2	32.2	32	32.2	
Sulfate (SO ₄)	mg/L		1	1	3	3	3	3	
Total dissolved solids	mg/L		1	1	287	287	287	287	
Total organic carbon	mg/L		1	1	2	2	2	2	
Total Phenolics	mg/L		1	0	0	0	#DIV/0!	BDL*	
Zinc (Zn)	mg/L		1	1	0.008	0.008	0.008	0.008	

*Below detection limit.

Monitoring Point 11

Water Quality Monitoring

Stormwater holding dam (Quarry Void) as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907
Sampling frequency: Special Frequency 1 means prior to any water being pumped to the discharge pond (Point 1).

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