

Operator: CWM Environmental Ltd
Permit: CP3735PB

Installation: Nantycaws Landfill Site
Form: Surface waters Q2 2022

Reporting of surface water monitoring for the period 01-Apr-2022 to 30-Jun-2022

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Ionic balance	Calulation	25-Apr-2022		-0.462	%
	Electrical conductivity (field)	Field	13-Apr-2022		286	µS/cm
			11-May-2022		236	µS/cm
			14-Jun-2022		182	µS/cm
	Groundwater level/dip		13-Apr-2022		32mm	m
			11-May-2022		15mm	m
			14-Jun-2022		50mm	m
	Water temperature		13-Apr-2022		15.4	°C
			11-May-2022		13.5	°C
			14-Jun-2022		17	°C
	Total Suspended solids	TM022	13-Apr-2022		4.95	mg/l
			11-May-2022		10.7	mg/l
			14-Jun-2022		3.35	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		155	mg/l
	Total Alkalinity as CaCO3		13-Apr-2022		150	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		155	mg/l
	Total organic carbon	TM090	13-Apr-2022		<3	mg/l
	Ammoniacal Nitrogen as N	TM099	25-Apr-2022		<0.2	mg/l
			11-May-2022		<0.2	mg/l
			14-Jun-2022		<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022		<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		57.7	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Chromium (filtered)	TM152	25-Apr-2022		<0.001	mg/l
	Iron (filtered)		25-Apr-2022		0.0797	mg/l
	Lead (filtered)		25-Apr-2022		0.000277	mg/l
	Magnesium (filtered)		25-Apr-2022		6.54	mg/l
	Manganese (filtered)		25-Apr-2022		0.0152	mg/l
	Nickel (filtered)		25-Apr-2022		0.00125	mg/l
	Potassium (filtered)		25-Apr-2022		12.6	mg/l
	Sodium (filtered)		25-Apr-2022		12.3	mg/l
	Zinc (filtered)		25-Apr-2022		0.00448	mg/l
	4-Methylphenol	TM176	13-Apr-2022		<0.001	mg/l
	Diethyl phthalate		13-Apr-2022		<0.001	mg/l
	Chloride	TM184	25-Apr-2022		24.7	mg/l
			11-May-2022		37.3	mg/l
			14-Jun-2022		26	mg/l
	Nitrate as NO3		25-Apr-2022		6.04	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		20.2	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		1.41	mg/l
	Dichloromethane		13-Apr-2022		<0.003	mg/l
	Electrical conductivity @20°C (lab)		13-Apr-2022		306	µS/cm
			11-May-2022		525	µS/cm
			14-Jun-2022		403	µS/cm
	pH (lab)		13-Apr-2022		8.27	pH units
			11-May-2022		8.01	pH units
			14-Jun-2022		8.14	pH units
	Mecoprop	TM411	13-Apr-2022		<0.00004	mg/l
SW202	Ionic balance	Calulation	25-Apr-2022		-2.5	%
	Electrical conductivity (field)	Field	13-Apr-2022		315	µS/cm
			11-May-2022		220	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW202	Electrical conductivity (field)	Field	14-Jun-2022		215	µS/cm
	Groundwater level/dip		13-Apr-2022		38mm	m
			11-May-2022		20mm	m
			14-Jun-2022		61mm	m
	Water temperature		13-Apr-2022		15.9	°C
			11-May-2022		13.6	°C
			14-Jun-2022		17.8	°C
	Total Suspended solids	TM022	13-Apr-2022		5.4	mg/l
			11-May-2022		3.7	mg/l
			14-Jun-2022		2.7	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		185	mg/l
	Total Alkalinity as CaCO3		13-Apr-2022		140	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		185	mg/l
	Total organic carbon	TM090	13-Apr-2022		3.46	mg/l
	Ammoniacal Nitrogen as N		25-Apr-2022		<0.2	mg/l
			11-May-2022		<0.2	mg/l
			14-Jun-2022		<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022		<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		68	mg/l
	Chromium (filtered)		25-Apr-2022		<0.001	mg/l
	Iron (filtered)		25-Apr-2022		<0.019	mg/l
	Lead (filtered)		25-Apr-2022		<0.0002	mg/l
	Magnesium (filtered)		25-Apr-2022		6.32	mg/l
	Manganese (filtered)		25-Apr-2022		0.0215	mg/l
	Nickel (filtered)		25-Apr-2022		0.000558	mg/l
	Potassium (filtered)		25-Apr-2022		5.28	mg/l
	Sodium (filtered)		25-Apr-2022		10.1	mg/l
	Zinc (filtered)		25-Apr-2022		0.00441	mg/l
	4-Methylphenol		13-Apr-2022		<0.001	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW202	Diethyl phthalate	TM176	13-Apr-2022		<0.001	mg/l
	Chloride	TM184	25-Apr-2022		21.5	mg/l
			11-May-2022		32.4	mg/l
			14-Jun-2022		31.4	mg/l
	Nitrate as NO3		25-Apr-2022		5.72	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		15.5	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		1.84	mg/l
	Dichloromethane	TM208	13-Apr-2022		<0.003	mg/l
	Electrical conductivity @20°C (lab)	TM256	13-Apr-2022		330	µS/cm
			11-May-2022		468	µS/cm
			14-Jun-2022		478	µS/cm
	pH (lab)		13-Apr-2022		8.28	pH units
			11-May-2022		8.35	pH units
			14-Jun-2022		8.18	pH units
	Mecoprop	TM411	13-Apr-2022		<0.00004	mg/l
	Electrical conductivity (field)	Field	13-Apr-2022		208	µS/cm
			14-Jun-2022		176	µS/cm
	Groundwater level/dip		13-Apr-2022		28mm	m
SW203			11-May-2022		DRY	m
			14-Jun-2022		22mm	m
	Water temperature		13-Apr-2022		16.3	°C
			14-Jun-2022		18.4	°C
	Total Suspended solids	TM022	13-Apr-2022		13.2	mg/l
			14-Jun-2022		43.8	mg/l
	Ammoniacal Nitrogen as N	TM099	14-Jun-2022		<0.2	mg/l
	4-Methylphenol	TM176	13-Apr-2022		<0.001	mg/l
	Diethyl phthalate		13-Apr-2022		<0.001	mg/l
	Chloride	TM184	14-Jun-2022		23.2	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW203	Dichloromethane	TM208	13-Apr-2022		<0.003	mg/l
	Electrical conductivity @20°C (lab)	TM256	13-Apr-2022		461	µS/cm
			14-Jun-2022		367	µS/cm
	pH (lab)		13-Apr-2022		8.29	pH units
			14-Jun-2022		8.26	pH units
SW204	Mecoprop	TM411	13-Apr-2022		5.44e-05	mg/l
	Ionic balance	Calulation	25-Apr-2022		0.0687	%
	Electrical conductivity (field)	Field	13-Apr-2022		304	µS/cm
			11-May-2022		138	µS/cm
			14-Jun-2022		176	µS/cm
	Groundwater level/dip		13-Apr-2022		25mm	m
			11-May-2022		18mm	m
			14-Jun-2022		31mm	m
	Water temperature		13-Apr-2022		12.8	°C
			11-May-2022		13.6	°C
			14-Jun-2022		15.4	°C
	Total Suspended solids	TM022	13-Apr-2022		4.3	mg/l
			11-May-2022		<2	mg/l
			14-Jun-2022		5.75	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		150	mg/l
	Total Alkalinity as CaCO3		13-Apr-2022		155	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		150	mg/l
	Total organic carbon	TM090	13-Apr-2022		4.39	mg/l
	Ammoniacal Nitrogen as N	TM099	25-Apr-2022		<0.2	mg/l
			11-May-2022		<0.2	mg/l
			14-Jun-2022		<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022		<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		60.3	mg/l
	Chromium (filtered)		25-Apr-2022		<0.001	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW204	Iron (filtered)	TM152	25-Apr-2022		<0.019	mg/l
	Lead (filtered)		25-Apr-2022		<0.0002	mg/l
	Magnesium (filtered)		25-Apr-2022		4.8	mg/l
	Manganese (filtered)		25-Apr-2022		0.0085	mg/l
	Nickel (filtered)		25-Apr-2022		0.000495	mg/l
	Potassium (filtered)		25-Apr-2022		5.43	mg/l
	Sodium (filtered)		25-Apr-2022		8.16	mg/l
	Zinc (filtered)		25-Apr-2022		0.00288	mg/l
	4-Methylphenol		13-Apr-2022		<0.001	mg/l
	Diethyl phthalate		13-Apr-2022		<0.001	mg/l
	Chloride	TM184	25-Apr-2022		16.1	mg/l
			11-May-2022		14.5	mg/l
			14-Jun-2022		13.6	mg/l
	Nitrate as NO3		25-Apr-2022		4.55	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		17.4	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		0.949	mg/l
	Dichloromethane		13-Apr-2022		<0.003	mg/l
	Electrical conductivity @20°C (lab)		13-Apr-2022		364	µS/cm
			11-May-2022		326	µS/cm
			14-Jun-2022		358	µS/cm
	pH (lab)		13-Apr-2022		8.15	pH units
			11-May-2022		8.27	pH units
			14-Jun-2022		8.2	pH units
	Mecoprop		13-Apr-2022		<0.00004	mg/l
SW205a	Ionic balance		25-Apr-2022		-2.15	%
	Electrical conductivity (field)		13-Apr-2022		446	µS/cm
			11-May-2022		231	µS/cm
			14-Jun-2022		211	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW205a	Groundwater level/dip	Field	13-Apr-2022		48mm	m
			11-May-2022		38mm	m
			14-Jun-2022		65mm	m
	Water temperature		13-Apr-2022		14.5	°C
			11-May-2022		14.2	°C
			14-Jun-2022		17.7	°C
	Total Suspended solids	TM022	13-Apr-2022	<70 mg/l	7.9	mg/l
			11-May-2022	<70 mg/l	3.7	mg/l
			14-Jun-2022	<70 mg/l	<2	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		160	mg/l
	Total Alkalinity as CaCO3		13-Apr-2022		178	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		160	mg/l
	Total organic carbon	TM090	13-Apr-2022		3.7	mg/l
	Ammoniacal Nitrogen as N	TM099	25-Apr-2022	<1.0 mg/l	<0.2	mg/l
			11-May-2022	<1.0 mg/l	<0.2	mg/l
			14-Jun-2022	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		58.4	mg/l
	Chromium (filtered)		25-Apr-2022		<0.001	mg/l
	Iron (filtered)		25-Apr-2022		0.0736	mg/l
	Lead (filtered)		25-Apr-2022		<0.0002	mg/l
	Magnesium (filtered)		25-Apr-2022		6.75	mg/l
	Manganese (filtered)		25-Apr-2022		0.0154	mg/l
	Nickel (filtered)		25-Apr-2022		0.00138	mg/l
	Potassium (filtered)		25-Apr-2022		14.6	mg/l
	Sodium (filtered)		25-Apr-2022		13	mg/l
	Zinc (filtered)		25-Apr-2022		0.00447	mg/l
	4-Methylphenol	TM176	13-Apr-2022	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		13-Apr-2022	<0.003 mg/l	<0.001	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW205a	Chloride	TM184	25-Apr-2022	<150 mg/l	28.6	mg/l
			11-May-2022	<150 mg/l	32.3	mg/l
			14-Jun-2022	<150 mg/l	28.6	mg/l
	Nitrate as NO3		25-Apr-2022		5.56	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		24.2	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		2.19	mg/l
	Dichloromethane	TM208	13-Apr-2022	<0.002 mg/l	<0.003	mg/l
	Electrical conductivity @20°C (lab)	TM256	13-Apr-2022		402	µS/cm
			11-May-2022		468	µS/cm
			14-Jun-2022		468	µS/cm
	pH (lab)		13-Apr-2022	6 to 9 pH units	8.19	pH units
			11-May-2022	6 to 9 pH units	8.34	pH units
			14-Jun-2022	6 to 9 pH units	8.25	pH units
SW206	Mecoprop	TM411	13-Apr-2022	<0.000055 mg/l	<0.00004	mg/l
	Ionic balance	Calulation	25-Apr-2022		-5.1	%
	Electrical conductivity (field)	Field	13-Apr-2022		335	µS/cm
			11-May-2022		141	µS/cm
			14-Jun-2022		150	µS/cm
	Groundwater level/dip		13-Apr-2022		47mm	m
			11-May-2022		33mm	m
			14-Jun-2022		54mm	m
	Water temperature		13-Apr-2022		16.6	°C
			11-May-2022		12.9	°C
			14-Jun-2022		16.7	°C
	Total Suspended solids	TM022	13-Apr-2022	<50 mg/l	5.7	mg/l
			11-May-2022	<50 mg/l	8.75	mg/l
			14-Jun-2022	<50 mg/l	9.85	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		165	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Total Alkalinity as CaCO3	TM043	13-Apr-2022		119	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		165	mg/l
	Total organic carbon	TM090	13-Apr-2022		3.66	mg/l
	Ammoniacal Nitrogen as N	TM099	25-Apr-2022	<1.0 mg/l	<0.2	mg/l
			11-May-2022	<1.0 mg/l	<0.2	mg/l
			14-Jun-2022	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		55.7	mg/l
	Chromium (filtered)		25-Apr-2022		<0.001	mg/l
	Iron (filtered)		25-Apr-2022		<0.019	mg/l
	Lead (filtered)		25-Apr-2022		<0.0002	mg/l
	Magnesium (filtered)		25-Apr-2022		4.62	mg/l
	Manganese (filtered)		25-Apr-2022		0.0132	mg/l
	Nickel (filtered)		25-Apr-2022		<0.0004	mg/l
	Potassium (filtered)		25-Apr-2022		1.46	mg/l
	Sodium (filtered)		25-Apr-2022		7.64	mg/l
	Zinc (filtered)		25-Apr-2022		0.00302	mg/l
	4-Methylphenol	TM176	13-Apr-2022	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		13-Apr-2022	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	25-Apr-2022	<150 mg/l	11.4	mg/l
			11-May-2022	<150 mg/l	11.9	mg/l
			14-Jun-2022	<150 mg/l	12.8	mg/l
	Nitrate as NO3		25-Apr-2022		6.43	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		8.8	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		1.02	mg/l
	Dichloromethane	TM208	13-Apr-2022	<0.002 mg/l	<0.003	mg/l
	Electrical conductivity @20°C (lab)	TM256	13-Apr-2022		278	µS/cm
			11-May-2022		313	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Electrical conductivity @20°C (lab)	TM256	14-Jun-2022		331	µS/cm
	pH (lab)		13-Apr-2022	6 to 9 pH units	8.22	pH units
			11-May-2022	6 to 9 pH units	8.24	pH units
			14-Jun-2022	6 to 9 pH units	8.28	pH units
	Mecoprop	TM411	13-Apr-2022	<0.000055 mg/l	<0.00004	mg/l
SW207	Ionic balance	Calulation	25-Apr-2022		0.702	%
	Electrical conductivity (field)		13-Apr-2022		276	µS/cm
			11-May-2022		164	µS/cm
			14-Jun-2022		171	µS/cm
	Groundwater level/dip		13-Apr-2022		52mm	m
			11-May-2022		41mm	m
			14-Jun-2022		70mm	m
	Water temperature		13-Apr-2022		14	°C
			11-May-2022		14.3	°C
			14-Jun-2022		15.4	°C
	Total Suspended solids	TM022	13-Apr-2022		3.4	mg/l
			11-May-2022		6.55	mg/l
			14-Jun-2022		5.85	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	25-Apr-2022		155	mg/l
	Total Alkalinity as CaCO3		13-Apr-2022		145	mg/l
	Total alkalinity as CaCO3 (filtered)		25-Apr-2022		155	mg/l
	Total organic carbon	TM090	13-Apr-2022		7.6	mg/l
	Ammoniacal Nitrogen as N	TM099	25-Apr-2022		<0.2	mg/l
			11-May-2022		<0.2	mg/l
			14-Jun-2022		<0.2	mg/l
	Cadmium (filtered)	TM152	25-Apr-2022		<0.00008	mg/l
	Calcium (filtered)		25-Apr-2022		59.2	mg/l
	Chromium (filtered)		25-Apr-2022		<0.001	mg/l
	Iron (filtered)		25-Apr-2022		0.0931	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW207	Lead (filtered)	TM152	25-Apr-2022		0.000224	mg/l
	Magnesium (filtered)		25-Apr-2022		6.65	mg/l
	Manganese (filtered)		25-Apr-2022		0.0201	mg/l
	Nickel (filtered)		25-Apr-2022		0.00111	mg/l
	Potassium (filtered)		25-Apr-2022		12.7	mg/l
	Sodium (filtered)		25-Apr-2022		12.6	mg/l
	Zinc (filtered)		25-Apr-2022		0.00388	mg/l
	4-Methylphenol	TM176	13-Apr-2022		<0.001	mg/l
	Diethyl phthalate		13-Apr-2022		<0.001	mg/l
	Chloride	TM184	25-Apr-2022		24.7	mg/l
			11-May-2022		24.6	mg/l
			14-Jun-2022		19.3	mg/l
	Nitrate as NO3		25-Apr-2022		6.05	mg/l
	Nitrite as NO2		25-Apr-2022		<0.05	mg/l
	Sulphate		25-Apr-2022		20.2	mg/l
	Total Oxidised Nitrogen as N		13-Apr-2022		1.77	mg/l
	Dichloromethane	TM208	13-Apr-2022		<0.003	mg/l
	Electrical conductivity @20°C (lab)	TM256	13-Apr-2022		370	µS/cm
			11-May-2022		369	µS/cm
			14-Jun-2022		365	µS/cm
			13-Apr-2022		8.19	pH units
			11-May-2022		8.05	pH units
			14-Jun-2022		8.21	pH units
	Mecoprop	TM411	13-Apr-2022		<0.00004	mg/l

- (1) The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
- (2) Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.
- (3) For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
- (4) The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated; refer to laboratory data sheets for specific uncertainty.
- (5) Depths reported as metres (m) are metres above base of ditch / stream.
- (6) For details of the sampling method, frequency and parameters measured / analysed for, refer to the site Environmental Monitoring Management Plan (EMMP).
- (7) Where blank, there is no defined compliance limit specified for the monitoring location / parameter.
- (8) Filtered lab samples for surface water samples were not filtered during the quarterly sampling round in April 2022, therefore only some of the lab analysis was conducted. These locations were then resampled later in April, however SW203 was dry, therefore only some parameters were analysed at SW203.
- (9) Monitoring location SW203 was also recorded as dry during May 2022 monitoring round therefore no surface water sampling and measurements were possible.

Signature:.....

Date: 23 June 2022

(Authorised to sign as representative of
Operator)