

Operator: CWM Environmental Ltd
Permit: CP3735PB

Installation: Nantycaws Landfill Site
Form: Surface Waters Q2 2023

Reporting of surface water monitoring for the period 01-Apr-2023 to 30-Jun-2023

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Ionic balance	CALC	11-Apr-2023		0.299	%
	Electrical conductivity (field)	Field	11-Apr-2023		250	µS/cm
			05-May-2023		215	µS/cm
			13-Jun-2023		304	µS/cm
	Groundwater level/dip		11-Apr-2023		21mm	m
			05-May-2023		18mm	m
			13-Jun-2023		12mm	m
	Water temperature		11-Apr-2023		11.3	°C
			05-May-2023		15.1	°C
			13-Jun-2023		16.7	°C
	Total Suspended solids	TM022	11-Apr-2023		<2	mg/l
			05-May-2023		6.05	mg/l
			13-Jun-2023		8.75	mg/l
	Total organic carbon	TM090	11-Apr-2023		<3	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023		<0.2	mg/l
			05-May-2023		0.349	mg/l
			13-Jun-2023		<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023		<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023		100	mg/l
	Chromium (filtered)		11-Apr-2023		<0.001	mg/l
	Iron (filtered)		11-Apr-2023		<0.019	mg/l
	Lead (filtered)		11-Apr-2023		<0.0002	mg/l
	Magnesium (filtered)		11-Apr-2023		10.3	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Manganese (filtered)	TM152	11-Apr-2023		0.0226	mg/l
	Nickel (filtered)		11-Apr-2023		0.000466	mg/l
	Potassium (filtered)		11-Apr-2023		1.3	mg/l
	Sodium (filtered)		11-Apr-2023		13.7	mg/l
	Zinc (filtered)		11-Apr-2023		0.0044	mg/l
	4-Methylphenol	TM176	11-Apr-2023		<0.001	mg/l
	Diethyl phthalate		11-Apr-2023		<0.001	mg/l
	Chloride	TM184	11-Apr-2023		44	mg/l
			05-May-2023		41.4	mg/l
			13-Jun-2023		54.7	mg/l
	Nitrate as NO3		11-Apr-2023		8.65	mg/l
	Nitrite as NO2		11-Apr-2023		<0.05	mg/l
	Sulphate		11-Apr-2023		14.9	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		1.95	mg/l
	Dichloromethane	TM208	11-Apr-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	11-Apr-2023		237	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		570	µS/cm
			05-May-2023		489	µS/cm
			13-Jun-2023		646	µS/cm
	pH (lab)		11-Apr-2023		7.56	pH units
			05-May-2023		7.87	pH units
			13-Jun-2023		7.56	pH units
	Total Alkalinity as CaCO3		11-Apr-2023		238	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023		237	mg/l
	Mecoprop	TM411	11-Apr-2023		<0.00004	mg/l
SW202	Ionic balance	CALC	11-Apr-2023		-0.977	%
	Electrical conductivity (field)	Field	11-Apr-2023		204	µS/cm
			05-May-2023		141	µS/cm
			13-Jun-2023		184	µS/cm

SW202	Groundwater level/dip	Field	11-Apr-2023	33mm	m
			05-May-2023	28mm	m
			13-Jun-2023	20mm	m
	Water temperature		11-Apr-2023	11.9	°C
			05-May-2023	16.2	°C
			13-Jun-2023	17.1	°C
	Total Suspended solids	TM022	11-Apr-2023	21.7	mg/l
			05-May-2023	<2	mg/l
			13-Jun-2023	9.17	mg/l
	Total organic carbon	TM090	11-Apr-2023	5.08	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023	<0.2	mg/l
			05-May-2023	<0.2	mg/l
			13-Jun-2023	<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023	<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023	73.8	mg/l
	Chromium (filtered)		11-Apr-2023	<0.001	mg/l
	Iron (filtered)		11-Apr-2023	0.0198	mg/l
	Lead (filtered)		11-Apr-2023	0.000213	mg/l
	Magnesium (filtered)		11-Apr-2023	7.44	mg/l
	Manganese (filtered)		11-Apr-2023	0.0304	mg/l
	Nickel (filtered)		11-Apr-2023	0.000802	mg/l
	Potassium (filtered)		11-Apr-2023	7.29	mg/l
	Sodium (filtered)		11-Apr-2023	13.5	mg/l
	Zinc (filtered)		11-Apr-2023	0.00331	mg/l
	4-Methylphenol	TM176	11-Apr-2023	<0.001	mg/l
	Diethyl phthalate		11-Apr-2023	<0.001	mg/l
	Chloride	TM184	11-Apr-2023	19.2	mg/l
			05-May-2023	16.5	mg/l
			13-Jun-2023	18	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW202	Nitrate as NO3	TM184	11-Apr-2023		5.97	mg/l
	Nitrite as NO2		11-Apr-2023		<0.05	mg/l
	Sulphate		11-Apr-2023		13.8	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		1.35	mg/l
	Dichloromethane	TM208	11-Apr-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	11-Apr-2023		212	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		448	µS/cm
			05-May-2023		363	µS/cm
			13-Jun-2023		396	µS/cm
			11-Apr-2023		7.53	pH units
	pH (lab)		05-May-2023		7.43	pH units
			13-Jun-2023		7.08	pH units
			11-Apr-2023		213	mg/l
	Total Alkalinity as CaCO3		11-Apr-2023		212	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023		<0.00004	mg/l
	Mecoprop	TM411	11-Apr-2023			
SW203	Groundwater level/dip	Field	11-Apr-2023		DRY	m
			05-May-2023		DRY	m
			13-Jun-2023		DRY	m
SW204	Ionic balance	CALC	11-Apr-2023		-0.256	%
			11-Apr-2023		185	µS/cm
			05-May-2023		155	µS/cm
	Electrical conductivity (field)	Field	11-Apr-2023		257	µS/cm
			05-May-2023		155	µS/cm
			13-Jun-2023		257	µS/cm
	Groundwater level/dip		11-Apr-2023		26mm	m
			05-May-2023		16mm	m
			13-Jun-2023		12mm	m
	Water temperature		11-Apr-2023		10.7	°C
			05-May-2023		16	°C
			13-Jun-2023		21.6	°C
	Total Suspended solids	TM022	11-Apr-2023		6.8	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW204	Total Suspended solids	TM022	05-May-2023		2.6	mg/l
			13-Jun-2023		8.95	mg/l
	Total organic carbon	TM090	11-Apr-2023		18.5	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023		<0.2	mg/l
			05-May-2023		<0.2	mg/l
			13-Jun-2023		<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023		<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023		52.9	mg/l
	Chromium (filtered)		11-Apr-2023		<0.001	mg/l
	Iron (filtered)		11-Apr-2023		0.109	mg/l
	Lead (filtered)		11-Apr-2023		0.000381	mg/l
	Magnesium (filtered)		11-Apr-2023		4.87	mg/l
	Manganese (filtered)		11-Apr-2023		0.0056	mg/l
	Nickel (filtered)		11-Apr-2023		0.00267	mg/l
	Potassium (filtered)		11-Apr-2023		38.5	mg/l
	Sodium (filtered)		11-Apr-2023		10.4	mg/l
	Zinc (filtered)		11-Apr-2023		0.00526	mg/l
	4-Methylphenol	TM176	11-Apr-2023		<0.001	mg/l
	Diethyl phthalate		11-Apr-2023		<0.001	mg/l
	Chloride	TM184	11-Apr-2023		22.9	mg/l
			05-May-2023		16.4	mg/l
			13-Jun-2023		35.4	mg/l
	Nitrate as NO3		11-Apr-2023		3.76	mg/l
	Nitrite as NO2		11-Apr-2023		<0.05	mg/l
	Sulphate		11-Apr-2023		31.6	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		0.85	mg/l
	Dichloromethane	TM208	11-Apr-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	11-Apr-2023		157	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		414	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW204	Electrical conductivity @20°C (lab)	TM256	05-May-2023		346	µS/cm
			13-Jun-2023		558	µS/cm
			11-Apr-2023		7.84	pH units
			05-May-2023		7.83	pH units
			13-Jun-2023		8.13	pH units
	Total Alkalinity as CaCO3		11-Apr-2023		160	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023		157	mg/l
	Mecoprop	TM411	11-Apr-2023		<0.00004	mg/l
SW205a	Ionic balance	CALC	11-Apr-2023		0.776	%
			11-Apr-2023		254	µS/cm
			05-May-2023		223	µS/cm
			13-Jun-2023		133	µS/cm
			11-Apr-2023		42mm	m
	Groundwater level/dip		05-May-2023		34mm	m
			13-Jun-2023		28mm	m
			11-Apr-2023		10.8	°C
			05-May-2023		19.1	°C
			13-Jun-2023		17.5	°C
	Total Suspended solids	TM022	11-Apr-2023	<70 mg/l	10.2	mg/l
			05-May-2023	<70 mg/l	3.7	mg/l
			13-Jun-2023	<70 mg/l	36.2	mg/l
	Total organic carbon	TM090	11-Apr-2023		19.2	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023	<1.0 mg/l	0.895	mg/l
			05-May-2023	<1.0 mg/l	<0.2	mg/l
			13-Jun-2023	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023		74	mg/l
	Chromium (filtered)		11-Apr-2023		<0.001	mg/l
	Iron (filtered)		11-Apr-2023		0.158	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW205a	Lead (filtered)	TM152	11-Apr-2023		0.000845	mg/l
	Magnesium (filtered)		11-Apr-2023		7.31	mg/l
	Manganese (filtered)		11-Apr-2023		0.0568	mg/l
	Nickel (filtered)		11-Apr-2023		0.00404	mg/l
	Potassium (filtered)		11-Apr-2023		47	mg/l
	Sodium (filtered)		11-Apr-2023		17.9	mg/l
	Zinc (filtered)		11-Apr-2023		0.0105	mg/l
	4-Methylphenol	TM176	11-Apr-2023	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		11-Apr-2023	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	11-Apr-2023	<150 mg/l	37.3	mg/l
			05-May-2023	<150 mg/l	31	mg/l
			13-Jun-2023	<150 mg/l	11.6	mg/l
	Nitrate as NO3		11-Apr-2023		14.1	mg/l
	Nitrite as NO2		11-Apr-2023		0.348	mg/l
	Sulphate		11-Apr-2023		35.6	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		3.3	mg/l
	Dichloromethane	TM208	11-Apr-2023	<0.002 mg/l	<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)		11-Apr-2023		211	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		566	µS/cm
			05-May-2023		505	µS/cm
			13-Jun-2023		301	µS/cm
	pH (lab)		11-Apr-2023	6 to 9 pH units	7.99	pH units
			05-May-2023	6 to 9 pH units	8.27	pH units
			13-Jun-2023	6 to 9 pH units	7.48	pH units
	Total Alkalinity as CaCO3		11-Apr-2023		214	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023		211	mg/l
	Mecoprop	TM411	11-Apr-2023	<0.000055 mg/l	0.000103	mg/l
SW206	Ionic balance	CALC	11-Apr-2023		0.514	%
	Electrical conductivity (field)		11-Apr-2023		153	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Electrical conductivity (field)	Field	05-May-2023		147	µS/cm
			13-Jun-2023		202	µS/cm
	Groundwater level/dip		11-Apr-2023		31mm	m
			05-May-2023		26mm	m
			13-Jun-2023		21mm	m
	Water temperature		11-Apr-2023		12.3	°C
			05-May-2023		17	°C
			13-Jun-2023		22	°C
	Total Suspended solids	TM022	11-Apr-2023	<50 mg/l	5.6	mg/l
			05-May-2023	<50 mg/l	3.05	mg/l
			13-Jun-2023	<50 mg/l	12.8	mg/l
	Total organic carbon	TM090	11-Apr-2023		8.18	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023	<1.0 mg/l	<0.2	mg/l
			05-May-2023	<1.0 mg/l	<0.2	mg/l
			13-Jun-2023	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023		43.4	mg/l
	Chromium (filtered)		11-Apr-2023		<0.001	mg/l
	Iron (filtered)		11-Apr-2023		0.128	mg/l
	Lead (filtered)		11-Apr-2023		0.000684	mg/l
	Magnesium (filtered)		11-Apr-2023		2.9	mg/l
	Manganese (filtered)		11-Apr-2023		0.0157	mg/l
	Nickel (filtered)		11-Apr-2023		0.00157	mg/l
	Potassium (filtered)		11-Apr-2023		3.56	mg/l
	Sodium (filtered)		11-Apr-2023		7.46	mg/l
	Zinc (filtered)		11-Apr-2023		0.00796	mg/l
	4-Methylphenol	TM176	11-Apr-2023	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		11-Apr-2023	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	11-Apr-2023	<150 mg/l	12.8	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Chloride	TM184	05-May-2023	<150 mg/l	11.9	mg/l
			13-Jun-2023	<150 mg/l	29.4	mg/l
	Nitrate as NO3		11-Apr-2023		5.09	mg/l
	Nitrite as NO2		11-Apr-2023		<0.05	mg/l
	Sulphate		11-Apr-2023		13.8	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		1.15	mg/l
	Dichloromethane	TM208	11-Apr-2023	<0.002 mg/l	<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	11-Apr-2023		103	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		254	µS/cm
			05-May-2023		309	µS/cm
			13-Jun-2023		449	µS/cm
	pH (lab)		11-Apr-2023	6 to 9 pH units	7.97	pH units
			05-May-2023	6 to 9 pH units	8.25	pH units
			13-Jun-2023	6 to 9 pH units	8.46	pH units
	Total Alkalinity as CaCO3		11-Apr-2023		103	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023		103	mg/l
	Mecoprop	TM411	11-Apr-2023	<0.000055 mg/l	<0.00004	mg/l
SW207	Ionic balance	CALC	11-Apr-2023		-0.797	%
	Electrical conductivity (field)	Field	11-Apr-2023		124	µS/cm
			05-May-2023		133	µS/cm
			13-Jun-2023		151	µS/cm
	Groundwater level/dip		11-Apr-2023		56mm	m
			05-May-2023		51mm	m
			13-Jun-2023		41mm	m
	Water temperature		11-Apr-2023		11.7	°C
			05-May-2023		17.1	°C
			13-Jun-2023		20.3	°C
	Total Suspended solids	TM022	11-Apr-2023		8	mg/l
			05-May-2023		4.3	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW207	Total Suspended solids	TM022	13-Jun-2023		15.6	mg/l
	Total organic carbon	TM090	11-Apr-2023		16.7	mg/l
	Ammoniacal Nitrogen as N	TM099	11-Apr-2023		0.319	mg/l
			05-May-2023		0.25	mg/l
			13-Jun-2023		<0.2	mg/l
	Cadmium (filtered)	TM152	11-Apr-2023		<0.00008	mg/l
	Calcium (filtered)		11-Apr-2023		47.3	mg/l
	Chromium (filtered)		11-Apr-2023		<0.001	mg/l
	Iron (filtered)		11-Apr-2023		0.194	mg/l
	Lead (filtered)		11-Apr-2023		0.00052	mg/l
	Magnesium (filtered)		11-Apr-2023		4.06	mg/l
	Manganese (filtered)		11-Apr-2023		0.032	mg/l
	Nickel (filtered)		11-Apr-2023		0.00225	mg/l
	Potassium (filtered)		11-Apr-2023		20.2	mg/l
	Sodium (filtered)		11-Apr-2023		10.3	mg/l
	Zinc (filtered)		11-Apr-2023		0.00695	mg/l
	4-Methylphenol	TM176	11-Apr-2023		<0.001	mg/l
	Diethyl phthalate		11-Apr-2023		<0.001	mg/l
	Chloride	TM184	11-Apr-2023		23	mg/l
			05-May-2023		12.4	mg/l
			13-Jun-2023		11.9	mg/l
	Nitrate as NO3		11-Apr-2023		9.74	mg/l
	Nitrite as NO2		11-Apr-2023		0.153	mg/l
	Sulphate		11-Apr-2023		14.1	mg/l
	Total Oxidised Nitrogen as N		11-Apr-2023		2.25	mg/l
	Dichloromethane	TM208	11-Apr-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	11-Apr-2023		132	mg/l
	Electrical conductivity @20°C (lab)		11-Apr-2023		342	µS/cm
			05-May-2023		278	µS/cm

SW207	Electrical conductivity @20°C (lab)	TM256	13-Jun-2023	323	µS/cm
	pH (lab)		11-Apr-2023	7.78	pH units
			05-May-2023	8.1	pH units
			13-Jun-2023	8.17	pH units
	Total Alkalinity as CaCO3		11-Apr-2023	128	mg/l
	Total alkalinity as CaCO3 (filtered)		11-Apr-2023	132	mg/l
	Mecoprop	TM411	11-Apr-2023	0.0000556	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.

Signature:.....

Date: 29 June 2023

(Authorised to sign as representative of
Operator)