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## ENVIRONMENTAL MONITORING DATA

### URALLA LANDFILL, URALLA

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#### 1 INTRODUCTION AND BACKGROUND

The Uralla Landfill is located on Rowan Avenue, Uralla NSW 2358. Council is licenced under the Protection of the Environment Operations Act 1997 (POEO Act) as Uralla Shire Council, PO Box 106, Uralla NSW 2358 (licensee) to operate the site under Environmental Protection Licence (EPL) 5899. The site currently disposes waste to land and undertakes waste processing. A copy of the current EPL is provided on Council's website (<https://www.uralla.nsw.gov.au/Council-Services/Environment/Environmental-Monitoring>).

The EPL requires Council to monitor methane gas, surface water, groundwater, and leachate at various locations across the site (refer **Figure 1** below). The location name, type and the sampling frequency as required by the EPL, are summarised in **Table 1** below.

This document details monitoring results within the last four (4) years (2017 to 2021) as required by the EPA publishing requirements. A link to the current version of this document is available on Council's website. This has been provided to meet Council's obligation under Section 66 (6) of the POEO Act.



**Figure 1** Current EPL Site Monitoring Locations, Uralla Landfill

**Table 1** *EPL Sample Locations and Monitoring Summary*

<b>Historical Sample Identification</b>	<b>Environmental Protection Authority Identification</b>	<b>Type of Monitoring</b>	<b>Monitoring Frequency as Required by EPL</b>
US1	EPA 1	Surface Water	Six monthly or during discharge events from EPL2.
EPL2	EPA 2	Leachate Overflow	During overflow events.
Leachate Discharge Volume	EPA 3	Discharge to Irrigation	NA
UW1	EPA 4	Groundwater	Field measurements six monthly, depths recorded quarterly.
UW2	EPA 5	Groundwater	Collect samples six monthly, depths recorded quarterly.
UW3	EPA 6	Groundwater	Collect samples and recorded depths quarterly.
UL1	EPA 7	Leachate	Six monthly.
Surface Methane (AMP2)	EPA 8	Surface methane gas	Quarterly.
Building Methane (AMP1)	EPA 9	Accumulated methane gas	Quarterly.
US2	EPA 10	Surface water - upstream leachate overflow point	During leachate discharge events from EPL2.
US3	EPA 11	Surface water - downstream leachate overflow point	During leachate discharge events from EPL2.

## **ATTACHMENTS**

**Attachment A** – Surface Water Results

**Attachment B** – Groundwater Results

**Attachment C** – Leachate Results

**Attachment D** – Surface and Accumulated Gas Results

**Attachment E** – Rainfall Summary and Leachate Pumping Volumes

Sample Identification	US1	US1	US1	US1	US1	US1	US1	US1	US1	US1	US1	US1	US1
Date	16-Jan-17	29-Jul-17	19-Jan-18	9-Sep-18	5-Jan-19	13-Apr-19	14-Aug-19	5-Oct-19	15-Feb-20	3-Sep-20	16-Oct-20	16-Feb-21	20-Jul-21
Date Received from Laboratory	24-Jan-17	10-Aug-17	30-Jan-18	17-Jun-18	--	26-Apr-19	23-Aug-19	--	26-Feb-20	--	26-Oct-20	25-Feb-21	27-Jul-21
Date Accessible on Council Website	14-Feb-21	30-Aug-17	19-Feb-18	8-Oct-18	--	16-May-19	12-Sep-18	--	17-Mar-20	--	16-Nov-20	26-Mar-21	21-Dec-21
Depth (m top of water surface)	0.002	0.05	0.05	0.05	--	0.1	0.1	--	0.002	--	0.003	0.003	0.6
Volumetric Flow Rate (kL/day)	0.58	10.8	NF	NF	NF	NF	NF	NF	2.59	NF	2.59	0.73	NF
Sample collected by	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	RCA-ZL
<b>Field Readings</b>													
Temperature (°C)	22.5	8.2	21.7	16.2	--	17.7	12.8	--	23	--	18.9	18.1	6.43
pH (pH UNIT)	6.91	7.01	6.72	6.64	--	7.3	7.05	--	7.28	--	7.28	7.07	7.67
ORP (mV)	-62	-75	-204	-205	--	-141	-105	--	-71	--	-177	131	151
Conductivity (uS/cm)	689	1781	1695	2102	--	2206	2164	--	2256	--	1966	2127	267
Dissolved Oxygen (mg/L)	1.62	4.33	6.17	0.64	--	1.51	3.91	--	3.03	--	0.86	3.26	6.33
<b>General Water Quality</b>													
Total Suspended Solids	34	20	14	53	--	44	33	--	31	--	58	73	343
<b>Non Metallic Inorganics</b>													
Total Organic Carbon	25	40	44	36	--	42	32	--	30	--	23	41	23
<b>Nutrients</b>													
TKN	2	5.3	3.9	2.8	--	3.3	3.2	--	3.4	--	2.6	3.6	8.4
Total Oxidisable Nitrogen as N	0.02	1.21	0.03	0.01	--	<0.01	<0.01	--	0.01	--	<0.01	<0.01	0.08
Total Phosphorus as P	0.38	0.28	0.15	0.35	--	0.22	0.16	--	0.23	--	0.1	0.46	3.14
<b>Dissolved Major Cations</b>													
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	10
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	9
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	24
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	8
<b>Major Anions</b>													
Total Alkalinity as CaCO <sub>3</sub>	147	583	517	717	--	1100	680	--	533	--	536	587	79
Sulphate	10	46	9	<1	--	9	<1	--	122	--	46	40	12
Chloride	64	268	259	315	--	411	351	--	412	--	469	326	20
<b>Metals (total)</b>													
Arsenic	0.002	0.001	0.003	0.004	--	0.003	0.001	--	0.003	--	0.002	0.003	0.016
Chromium	<0.001	0.004	0.001	0.001	--	0.001	<0.001	--	0.002	--	<0.001	<0.001	0.089
Copper	<0.001	0.003	0.001	0.002	--	0.002	<0.001	--	0.002	--	0.001	<0.001	0.026
Iron	2.54	0.14	0.97	3.01	--	12.2	11.5	--	4.73	--	2.46	2.26	44.2
Manganese	1.26	1.18	1.98	3.93	--	3.88	3.38	--	5.67	--	2	3.09	3.39
Zinc	<0.005	0.006	0.007	<0.005	--	0.021	<0.005	--	0.01	--	0.01	0.006	0.116
<b>Benzene, Toluene, Ethylbenzene, Xylene (BTEX)</b>													
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	<0.005
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	<0.001
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
meta- and para-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
ortho-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	<0.002

NF - No flow at time of sampling

All results are in units of mg/L unless otherwise stated

Sample Identification	Sample collected by	Date Sampled	Date Accessible on Council Website	Groundwater Level (m TOC)	Groundwater Level (m AHD)	Field Readings	Temperature (°C)	pH (pH UNIT)	ORP (mV)	Conductivity (uS/cm)	Dissolved Oxygen (mg/L)
UW1	CodyHart	16-Jan-17	14-Feb-17	19.36	83.75		--	--	--	--	--
UW1	CodyHart	13-May-17	12-Jun-17	19.26	83.85		17.2	6.41	118	1774	4.26
UW1	CodyHart	29-Jul-17	30-Aug-17	19.20	83.91		--	--	--	--	--
UW1	CodyHart	1-Oct-17	1-Nov-17	19.20	83.91		16.7	6.92	102	1749	8.7
UW1	CodyHart	19-Jan-18	19-Feb-18	19.11	84.00		--	--	--	--	--
UW1	CodyHart	11-Jul-18	8-Aug-18	19.03	84.08		16.3	7.63	119	1762	5.43
UW1	CodyHart	9-Sep-18	8-Oct-18	19.02	84.09		--	--	--	--	--
UW1	CodyHart	14-Oct-18	9-Nov-18	19.01	84.10		18.4	6.95	208	1691	3.6
UW1	CodyHart	5-Jan-19	12-Feb-19	18.97	84.14		--	--	--	--	--
UW1	CodyHart	13-Apr-19	16-May-19	18.96	84.15		20	6.84	167	1785	6.62
UW1	CodyHart	14-Aug-19	12-Sep-19	19.01	84.10		--	--	--	--	--
UW1	CodyHart	5-Oct-19	5-Nov-19	18.92	84.19		18.3	7.36	194	1793	10.38
UW1	CodyHart	15-Feb-20	17-Mar-20	18.88	84.23		--	--	--	--	--
UW1	CodyHart	17-Jun-20	14-Jul-20	18.98	84.13		18.3	6.9	143	1699	2.75
UW1	CodyHart	3-Sep-20	2-Oct-20	18.95	84.16		--	--	--	--	--
UW1	CodyHart	16-Oct-20	16-Nov-20	18.91	84.20		20.7	6.84	179	1695	3.18
UW1	CodyHart	16-Feb-21	26-Mar-21	18.98	84.13		--	--	--	--	--
UW1	RCA-ZL	20-Jul-21	21-Dec-21	18.90	84.21		15.02	6.63	170	1760	4.1

All results are in units of mg/L unless otherwise stated

Sample Identification	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2	UW2
Date Sampled	16-Jan-17	13-May-17	29-Jul-17	1-Oct-17	19-Jan-18	11-Jul-18	9-Sep-18	14-Oct-18	5-Jan-19	13-Apr-19	14-Aug-19	5-Oct-19	15-Feb-20	17-Jun-20	3-Sep-20	16-Oct-20	16-Feb-21	20-Jul-21
Date Received from Laboratory	--	23-May-17	--	13-Jan-17	--	19-Jul-18	--	22-Oct-18	--	26-Apr-19	--	16-Oct-19	--	24-Jun-20	--	26-Oct-20	--	27-Jul-21
Date Accessible on Council Website	14-Feb-17	12-Jun-17	30-Aug-17	1-Nov-17	19-Feb-18	8-Aug-18	8-Oct-18	9-Nov-18	12-Feb-19	16-May-19	12-Sep-19	5-Nov-19	17-Mar-20	14-Jul-20	2-Oct-20	16-Nov-20	26-Mar-21	21-Dec-21
Groundwater Level (m TOC)	9.60	9.50	9.45	9.47	9.43	9.55	9.56	9.57	9.56	9.65	9.72	9.73	9.76	9.71	9.65	9.60	9.51	9.32
Groundwater Level (m AHD)	78.62	78.36	78.41	78.39	78.43	78.31	78.30	78.29	78.30	78.21	78.14	78.13	78.10	78.15	78.21	78.26	78.35	78.54
Sample collected by	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	RCA-ZL
<b>Field Readings</b>																		
Temperature (°C)	--	15.9	--	15.4	--	15.6	--	15.6	--	17.1	--	16.9	--	16.2	--	18.1	--	13.21
pH (pH UNIT)	--	6.48	--	6.52	--	7.07	--	6.81	--	7.05	--	7.06	--	7.21	--	7.02	--	7.06
ORP (mV)	--	129	--	202	--	79	--	169	--	132	--	158	--	105	--	174	--	104
Conductivity (uS/cm)	--	1660	--	1641	--	1721	--	1717	--	1705	--	1772	--	1681	--	1689	--	1770
Dissolved Oxygen (mg/L)	--	1.33	--	3.65	--	0.52	--	0.66	--	0.62	--	3.64	--	0.43	--	0.24	--	3.85
<b>Non Metallic Inorganics</b>																		
Total Organic Carbon	--	14	--	18	--	22	--	11	--	9	--	17	--	9	--	15	--	3
Dissolved Oxygen	--	1.33	--	3.65	--	0.52	--	0.66	--	0.62	--	3.64	--	0.43	--	0.24	--	9.2
Free Carbon Dioxide as CO2	--	147	--	150	--	164	--	182	--	179	--	147	--	153	--	158	--	21
<b>Nutrients</b>																		
TKN	--	0.8	--	1	--	0.8	--	0.9	--	0.8	--	1.1	--	0.8	--	1	--	1
Total Oxidisable Nitrogen as N	--	0.06	--	0.04	--	0.04	--	0.07	--	0.03	--	0.02	--	0.03	--	0.02	--	0.09
<b>Major Anions</b>																		
Total Alkalinity as CaCO <sub>3</sub>	--	607	--	631	--	647	--	653	--	660	--	667	--	653	--	707	--	700
Chloride	--	172	--	202	--	223	--	201	--	201	--	226	--	224	--	232	--	213
<b>Metals (dissolved)</b>																		
Arsenic	--	0.004	--	0.004	--	0.005	--	0.005	--	0.005	--	0.004	--	0.006	--	0.006	--	0.006
Iron	--	0.08	--	<0.005	--	<0.005	--	0.2	--	0.06	--	<0.005	--	<0.005	--	0.05	--	<0.005
Manganese	--	0.058	--	0.076	--	0.064	--	0.103	--	0.057	--	0.048	--	0.044	--	0.054	--	0.064

Sample Identification	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3	UW3
Date Sampled	16-Jan-17	13-May-17	29-Jul-17	1-Oct-17	19-Jan-18	11-Jul-18	9-Sep-18	14-Oct-18	5-Jan-19	13-Apr-19	14-Aug-19	5-Oct-19	15-Feb-20	17-Jun-20	3-Sep-20	16-Oct-20	16-Feb-21	20-Jul-21
Date Received from Laboratory	24-Jan-17	23-May-17	10-Aug-17	13-Oct-17	30-Jan-18	19-Jul-18	17-Sep-18	22-Oct-18	17-Jan-19	26-Apr-19	23-Aug-19	16-Oct-19	26-Feb-20	24-Jun-20	14-Sep-20	26-Oct-20	25-Feb-21	27-Jul-21
Date Accessible on Council Website	14-Feb-17	12-Jun-17	30-Aug-17	1-Nov-17	19-Feb-18	8-Aug-18	8-Oct-18	9-Nov-18	12-Feb-19	16-May-19	12-Sep-19	5-Nov-19	17-Mar-20	14-Jul-20	2-Oct-20	16-Nov-20	26-Mar-21	21-Dec-21
Groundwater Level (m TOC)	9.53	9.43	9.27	9.22	9.14	9.21	9.30	9.37	9.28	9.62	9.82	9.81	9.96	10.06	10.02	9.98	9.80	8.42
Groundwater Level (m AHD)	81.10	81.20	81.36	81.41	81.49	81.42	81.33	81.26	81.35	18.01	80.81	80.82	80.67	80.57	80.61	80.65	80.83	82.21
Sample collected by	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	RCA-ZL
<b>Field Readings</b>																		
Temperature (°C)	17.2	15.6	15.8	15	19.1	14.8	15.7	15.9	18	16.9	15.7	16.7	17.9	15.8	13.7	18.5	17.4	13.52
pH (pH UNIT)	6.49	6.25	6.43	6.37	6.32	6.37	6.85	6.43	6.51	6.47	6.25	6.38	6.34	6.61	6.4	6.39	6.43	6.38
ORP (mV)	142	151	172	133	107	96	114	185	139	136	125	191	171	159	147	139	134	159
Conductivity (uS/cm)	1831	1843	1919	1927	2009	1945	2002	1980	2072	2160	2156	2140	2213	2206	2230	2189	2261	2420
Turbidity (NTU)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9
Dissolved Oxygen (mg/L)	0.35	0.45	0.52	0.29	0.48	0.72	0.26	0.24	0.19	0.95	0.95	0.88	0.57	0.26	0.29	0.34	0.21	2.65
Salinity (%)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.126
Methane Gas (ppm)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.7
<b>Non Metallic Inorganics</b>																		
Total Organic Carbon	14	14	14	5	8	29	20	22	14	20	14	13	10	25	41	14	34	19
Free Carbon Dioxide as CO2	320	308	337	367	279	425	411	431	387	405	513	455	469	440	337	469	455	144
Total Carbon Dioxide as CO2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	684
<b>Nutrients</b>																		
TKN	2.4	1.6	2.8	2.7	2.6	2.6	2.7	3.1	0.7	2.1	2.5	2.9	2.8	1	2.1	2	3	2.7
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.25
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.2
Total Oxidisable Nitrogen as N	14.2	13.5	14.3	15.9	14	16.2	13.8	13.3	12.4	12.3	12.3	12.2	12.7	11.2	10.4	9.14	11.6	11.5
<b>Major Anions</b>																		
Total Alkalinity as CaCO <sub>3</sub>	507	460	469	519	513	547	567	560	560	553	580	613	680	687	587	620	607	614
Chloride	246	247	252	287	110	305	302	310	314	317	348	373	378	376	365	375	419	400
<b>Metals (dissolved)</b>																		
Arsenic	0.056	0.056	0.057	0.052	0.047	0.048	0.051	0.04	0.052	0.047	0.049	0.049	0.053	0.047	0.052	0.057	0.053	0.047
Iron	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	0.017	0.017	0.017	0.017	0.016	0.015	0.017	0.013	0.017	0.02	0.017	0.015	0.019	0.017	0.019	0.02	0.029	0.019

Sample Identification	UL1	UL1	UL1	UL1	UL1	UL1	UL1	UL1	UL1
Date Sampled	13-May-17	1-Oct-17	11-Jul-18	14-Oct-18	13-Apr-19	5-Oct-19	17-Jun-20	16-Feb-21	20-Jul-21
Date Received from Laboratory	23-May-17	13-Oct-17	19-Jul-18	22-Oct-18	26-Apr-19	16-Oct-19	24-Jun-20	25-Feb-21	27-Jul-21
Date Accessible on Council Website	12-Jun-17	1-Nov-17	8-Aug-18	9-Nov-18	16-May-19	5-Nov-19	14-Jul-20	26-Mar-21	21-Dec-21
Depth in pond (m top of water surface)	--	--	--	0.05	--	--	--	0.3	0.75
Sample collected by	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	CodyHart	RCA-RJL/KN
<b>Field Readings</b>									
Temperature (°C)	18.6	15.3	12.8	15.6	15.7	19.1	18.4	24.1	9.12
pH (pH UNIT)	6.97	6.81	7.1	6.52	7.48	9.69	7.35	8.14	7.78
ORP (mV)	-169	-89	-11	114	78	121	-79	157	140
Conductivity (uS/cm)	5155	4605	4825	2381	3955	3425	4275	2141	1920
Dissolved Oxygen (mg/L)	1.09	1.22	5.04	9.24	2.96	18.42	1.56	6.6	5.67
<b>Non Metallic Inorganics</b>									
Total Organic Carbon	171	150	47	72	84	112	45	13	47
<b>Nutrients</b>									
TKN	210	182	188	14.9	141	22	180	24.8	28
Total Oxidisable Nitrogen as N	0.02	0.03	5.17	0.63	27.8	<0.01	2.41	4.41	9.99
Total Phosphorus as P	3.29	1.67	1.78	0.51	0.23	2.48	1.18	0.06	0.08
<b>Major Anions</b>									
Total Alkalinity as CaCO <sub>3</sub>	1700	2100	1840	660	1000	760	1933	867	689
Chloride	381	416	357	385	298	718	339	254	193
<b>Metals (total)</b>									
Arsenic	0.124	0.078	0.046	0.011	0.008	0.035	0.06	0.002	0.002
Boron	0.98	0.86	0.92	0.54	0.89	0.86	0.88	0.59	0.42
Chromium	0.023	0.016	0.014	0.004	0.012	0.006	0.017	0.003	0.005
Lead	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001
Manganese	3.21	0.86	0.92	0.54	0.89	0.86	0.88	0.59	0.759
Zinc	0.007	0.01	0.009	0.01	0.034	0.026	0.013	0.014	0.046
Iron	29.5	22.3	15.6	0.7	0.52	1.64	16.9	0.48	0.55
<b>Organochlorine Pesticides (OCP)</b>									
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
HCB	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
gamma-BHC	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
trans-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
alpha-Endosulfan	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
cis-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
DDE	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
beta-Endosulfan	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
DDD	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
DDT	ND	ND	ND	ND	ND	ND	ND	ND	<0.002
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	<0.002
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
<b>Organophosphorous Pesticides (OPP)</b>									
Dichlorvos	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Demeton-S-methyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Monocrotophos	ND	ND	ND	ND	ND	ND	ND	ND	<0.002
Dimethoate	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Diazinon	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Chlorpyrifos-methyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Parathion-methyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.002
Malathion	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Fenthion	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
ChlorpyrifosD	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Parathion	ND	ND	ND	ND	ND	ND	ND	ND	<0.002
Pirimiphos-ethyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Chlorfenvinphos	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Bromophos-ethyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Fenamiphos	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Prothiofos	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Ethion	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Carbophenothion	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Azinphos-methyl	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
<b>Volatile Organic Compounds (VOC)</b>									
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1.3.5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1.2.4-Trimethylbenzene	0.008	ND	ND	ND	ND	ND	ND	ND	<0.005
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
2.2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1.2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
cis-1.3-Dichloropropylene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
trans-1.3-Dichloropropylene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1.2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.05



Sample Identification	UL1	UL1	UL1	UL1	UL1	UL1	UL1	UL1	UL1
Date Sampled	13-May-17	1-Oct-17	11-Jul-18	14-Oct-18	13-Apr-19	5-Oct-19	17-Jun-20	16-Feb-21	20-Jul-21
Date Received from Laboratory	23-May-17	13-Oct-17	19-Jul-18	22-Oct-18	26-Apr-19	16-Oct-19	24-Jun-20	25-Feb-21	27-Jul-21
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1-Dichloropropylene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
cis-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Pentachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Chlorobenzene	0.009	0.006	ND	ND	ND	ND	0.011	ND	<0.005
Bromobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	<0.005

All results are in units of mg/L unless otherwise stated  
 ND - Not detected

*Surface and Accumulated Methane Gas Results Summary*

<b>Date Sampled</b>	<b>Samples collected by</b>	<b>Detected Locations</b>	<b>Methane (CH<sub>4</sub>) by volume in air (ppm)</b>	<b>Methane (CH<sub>4</sub>) by volume in air (% v/v)</b>	<b>Methane (CH<sub>4</sub>) as % Lower Explosive Limit (5% v/v)</b>	<b>Date Accessible on Council Website</b>
16-Jan-17	CodyHart	Nil Detected				14-Feb-17
13-May-17	CodyHart	Nil Detected				12-Jun-17
29-Jul-17	CodyHart	Nil Detected				30-Aug-17
1-Oct-17	CodyHart	Nil Detected				1-Nov-17
19-Jan-18	CodyHart	Nil Detected				19-Feb-18
11-Jul-18	CodyHart	Nil Detected				8-Aug-18
9-Sep-18	CodyHart	Nil Detected				8-Oct-18
14-Oct-18	CodyHart	Nil Detected				9-Nov-18
5-Jan-19	CodyHart	Nil Detected				12-Feb-19
13-Apr-19	CodyHart	Nil Detected				16/052019
14-Aug-19	CodyHart	Nil Detected				12-Sep-19
5-Oct-19	CodyHart	Nil Detected				5-Nov-19
15-Feb-20	CodyHart	Nil Detected				17-Mar-20
17-Jun-20	CodyHart	Nil Detected				14-Jul-20
3-Sep-20	CodyHart	Nil Detected				2-Oct-20
16-Oct-21	CodyHart	Nil Detected				16-Nov-20
16-Feb-21	CodyHart	Nil Detected				26-Mar-21
20-Jul-21	RCA-ZL	Nil Detected				21-Dec-21

Daily Rainfall summarised as monthly rainfall (mm)	Rainfall (mm) Year 2017	Date Accessible on Council Website	Rainfall (mm) Year 2018	Date Accessible on Council Website	Rainfall (mm) Year 2019	Date Accessible on Council Website	Rainfall (mm) Year 2020	Date Accessible on Council Website	Rainfall (mm) Year 2021	Date Accessible on Council Website
January	145.0	12-Jun-17	27.5	19-Feb-18	26.0	16-May-19	133.5	14-Jul-20	92.4	21-Dec-21
February	116.5	12-Jun-17	54.0	8-Aug-18	15.0	16-May-19	180.5	14-Jul-20	117.4	21-Dec-21
March	144.5	12-Jun-17	21.4	8-Aug-18	66.5	16-May-19	91.5	14-Jul-20	122.5	21-Dec-21
April	36.0	12-Jun-17	25.0	8-Aug-18	29.5	12-Sep-19	45.0	14-Jul-20	32.8	21-Dec-21
May	49.0	30-Aug-17	8.0	8-Aug-18	39.1	12-Sep-19	47.0	14-Jul-20	32	21-Dec-21
June	30.5	30-Aug-17	10.7	8-Aug-18	17.1	12-Sep-19	57.2	14-Jul-20	81.8	21-Dec-21
July	21.0	30-Aug-17	44.2	8-Oct-18	19.0	12-Sep-19	60.9	2-Oct-20	98.8	21-Dec-21
August	18.0	1-Nov-17	12.0	8-Oct-18	4.5	12-Sep-19	51.5	2-Oct-20	88.2	21-Dec-21
September	6.0	1-Nov-17	42.0	8-Oct-18	7.0	5-Nov-19	40.0	16-Nov-20	41.6	21-Dec-21
October	94.0	19-Feb-18	57.0	9-Nov-18	23.0	17-Mar-20	130.0	16-Nov-20	92.4	21-Dec-21
November	86.5	19-Feb-18	73.0	12-Feb-19	13.5	17-Mar-20	26	21-Dec-21	187	21-Dec-21
December	126.0	19-Feb-18	48.0	12-Feb-19	29.6	17-Mar-20	233.8	21-Dec-21		
<b>Total Rainfall (mm)</b>	<b>873.0</b>	--	<b>422.8</b>	--	<b>289.8</b>	--	1096.9	--	986.9	--

Rain data from 19 January 2018 to 12 April 2018 taken from BOM station 056034 located at Dumaresq Street Uralla, approximately 1km from the landfill site

Monthly Leachate Discharge to Irrigation Area	Time (hrs) Year 2017	Volume Pumped (kL) Year 2017	Date Accessible on Council Website	Time (hrs) Year 2018	Volume Pumped (kL) Year 2018	Date Accessible on Council Website	Time (hrs) Year 2019	Volume Pumped (kL) Year 2019	Date Accessible on Council Website	Time (hrs) Year 2020	Volume Pumped (kL) Year 2020	Date Accessible on Council Website	Time (hrs) Year 2021	Volume Pumped (kL) Year 2021	Date Accessible on Council Website
January	312.0	1223.0	12-Jun-17	108 to 191	423.0	19-Feb-18	--	--	16-May-19	53.0	208.0	14-Jul-20	53	795	21/12/2021
February	300.0	1176.0	12-Jun-17	--	--	8-Aug-18	--	--	16-May-19	74.5	292.0	14-Jul-20	74.5	1118	21/12/2021
March	325.0	1274.0	12-Jun-17	--	--	8-Aug-18	--	--	16-May-19	49.0	192.0	14-Jul-20	49	735	21/12/2021
April	294.0	1152.0	12-Jun-17	--	--	8-Aug-18	--	--	12-Sep-19	152.3	597.0	14-Jul-20	547	8205	21/12/2021
May	306.0	1200.0	30-Aug-17	--	--	8-Aug-18	--	--	12-Sep-19	66.8	262.0	14-Jul-20	534	8010	21/12/2021
June	266.0	1043.0	30-Aug-17	--	--	8-Aug-18	--	--	12-Sep-19	35.0	137.0	14-Jul-20	469	7035	21/12/2021
July	264.0	1035.0	30-Aug-17	--	--	8-Oct-18	--	--	12-Sep-19	87.6	343.0	2-Oct-20	546	8190	21/12/2021
August	90.0	353.0	1-Nov-17	--	--	8-Oct-18	--	--	12-Sep-19	46.2	181.0	2-Oct-20	502	7530	21/12/2021
September	192.0	753.0	1-Nov-17	--	--	8-Oct-18	--	--	5-Nov-19	31.4	123.0	16-Nov-20	344	5160	21/12/2021
October	138.0	541.0	19-Feb-18	--	--	9-Nov-18	--	--	17-Mar-20	23.0	90.0	16-Nov-20	493	7395	21/12/2021
November	144.0	564.0	19-Feb-18	--	--	12-Feb-19	--	--	17-Mar-20	108.0	1620	21-Dec-21			
December	180.0	706.0	19-Feb-18	--	--	12-Feb-19	--	--	17-Mar-20	275.0	4125	21-Dec-21			
<b>Year to Date - Total Time (hrs)/Volume Pumped (kL)</b>	<b>2811.0</b>	<b>11020.0</b>	--	<b>108 to 191</b>	<b>423.0</b>	--	--	--	--	<b>1001.8</b>	<b>8170.0</b>	--	<b>3611.5</b>	<b>54172.5</b>	--

Pump rate is 3.92kL/hr (small Yanmar pump), new Hatz pump introduced during 2020 has higher capacity 15kL/hr.