

# Landfill Leachate – 2021-11-02

## Sample Overview

<b>Site</b>	Landfill Leachate
<b>Date sampled</b>	2021-11-02
<b>Report type</b>	Standard WW

## qPCR Results

Test	Copy no.	%
bacF (Total Bacteria 1)	297946	100.0%
thau1 (Thauera Group 1)	25579	8.6%
thau2 (Thauera Group 2)	5796	1.9%

## Functional Traits by Genus

Name	Rel. freq. %	AOO	NOB	ANMX	Denite	SOB	SRB	PAO	GAO	NF Bulking	FOA	FIL	C1s
<b>Sum (rel. freq. %)</b>	—	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>51.1%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>0.8%</b>	<b>0.0%</b>	<b>20.2%</b>	<b>0.0%</b>	<b>1.9%</b>	<b>0.5%</b>
Lautropia	26.3%	—	—	—	✓	—	—	—	—	—	—	—	—
Thauera	20.1%	—	—	—	✓	—	—	—	—	✓	—	—	—
Limnobacter	3.4%	—	—	—	—	—	—	—	—	—	—	—	—
Mesorhizobium	2.7%	—	—	—	✓	—	—	—	—	—	—	—	—
midas_g_1838	2.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_5706	1.9%	—	—	—	—	—	—	—	—	—	—	—	—
Haliangium	1.5%	—	—	—	—	—	—	—	—	—	—	—	—
SM1A02	1.3%	—	—	—	—	±	—	—	—	—	—	—	—
midas_g_7167	1.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_19344	1.1%	—	—	—	—	—	—	—	—	—	—	—	—
Hydrogenophaga	0.9%	—	—	—	✓	—	—	—	—	—	—	—	—
midas_g_3043	0.9%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_3775	0.9%	—	—	—	—	—	—	—	—	—	—	—	—
Tetrasphaera	0.8%	—	—	—	—	—	—	✓	—	—	—	✓	—
midas_g_169	0.8%	—	—	—	—	—	—	—	—	—	—	—	—
Pedomicrobium	0.6%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_50073	0.6%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_5053	0.6%	—	—	—	—	—	—	—	—	—	—	—	—
Litorilinea	0.5%	—	—	—	—	—	—	—	—	—	—	✓	—
Pseudaminobacter	0.5%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_11150	0.5%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_39032	0.5%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_5853	0.5%	—	—	—	—	—	—	—	—	—	—	—	—
Aquamicrobium	0.4%	—	—	—	✓	—	—	—	—	—	—	—	—
Ca_Promineofilum	0.4%	—	—	—	—	—	—	—	—	—	—	✓	—
Hyphomicrobium	0.4%	—	—	—	✓	✓	—	—	—	—	—	—	✓

Name	Rel. freq. %	AOO	NOB	ANMX	Denite	SOB	SRB	PAO	GAO	NF Bulking	FOA	FIL	C1s
Oikopleura	0.4%	—	—	—	—	—	—	—	—	—	—	—	—
Planctomicrobium	0.4%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_28177	0.4%	—	—	—	—	—	—	—	—	—	—	—	—
Legionella	0.3%	—	—	—	—	—	—	—	—	—	—	—	—
Leucobacter	0.3%	—	—	—	—	—	—	—	—	—	—	—	—
Microbacterium	0.3%	—	—	—	—	—	—	—	—	—	—	—	—
OM27_clade	0.3%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_12692	0.3%	—	—	—	—	—	—	—	—	—	—	—	—
Bryobacter	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
Rubrivivax	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_12378	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_1919	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_21052	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_2582	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_29742	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_40025	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_4378	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
midas_g_61117	0.2%	—	—	—	—	—	—	—	—	—	—	—	—
Allorhizobium-Neorhizobium-Pararhizobium- Rhizobium	0.1%	—	—	—	—	—	—	—	—	—	—	—	—
Amaricoccus	0.1%	—	—	—	—	—	—	—	—	—	—	—	—
Aminobacter	0.1%	—	—	—	—	—	—	—	—	—	—	—	—
Azoarcus	0.1%	—	—	—	✓	—	—	—	—	✓	—	—	—
Ca_Alysiosphaera	0.1%	—	—	—	—	—	—	—	—	—	—	✓	—
Ca_Omnitrophus	0.1%	—	—	—	—	—	—	—	—	—	—	—	—
Fluviicola	0.1%	—	—	—	—	—	—	—	—	—	—	—	—
Leptothrix	0.1%	—	—	—	✓	—	—	—	—	—	—	✓	—
Methyloceanibacter	0.1%	—	—	—	—	—	—	—	—	—	—	—	✓
Ottowia	0.1%	—	—	—	✓	✓	—	—	—	—	—	—	—





# Bacteria

Kingdom	Phylum	Class	Order	Family	Genus	Rel. freq. %
Bacteria	—	—	—	—	—	0.2%
Bacteria	Acidobacteriota	Acidobacteriae	Bryobacterales	Bryobacteraceae	Bryobacter	0.2%
Bacteria	Acidobacteriota	Acidobacteriae	PAUC26f	midas_f_59582	midas_g_61117	0.2%
Bacteria	Acidobacteriota	Acidobacteriae	Paludibaculum	midas_f_675	midas_g_42266	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	Actinomarinales	midas_f_591	midas_g_4688	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	Actinomarinales	midas_f_591	midas_g_591	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	IMCC26256	midas_f_2	—	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	IMCC26256	midas_f_2	midas_g_290	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	IMCC26256	midas_f_2	midas_g_4307	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	IMCC26256	midas_f_2	midas_g_653	0.1%
Bacteria	Actinobacteriota	Acidimicrobiia	Microtrichales	Ilumatobacteraceae	—	0.2%
Bacteria	Actinobacteriota	Acidimicrobiia	Microtrichales	Ilumatobacteraceae	midas_g_26940	0.1%
Bacteria	Actinobacteriota	Actinobacteria	Corynebacteriales	—	—	0.1%
Bacteria	Actinobacteriota	Actinobacteria	Micrococcales	Intrasporangiaceae	Tetrasphaera	0.8%
Bacteria	Actinobacteriota	Actinobacteria	Micrococcales	Microbacteriaceae	—	0.3%
Bacteria	Actinobacteriota	Actinobacteria	Micrococcales	Microbacteriaceae	Leucobacter	0.3%
Bacteria	Actinobacteriota	Actinobacteria	Micrococcales	Microbacteriaceae	Microbacterium	0.3%
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prolixibacteraceae	—	0.1%
Bacteria	Bacteroidota	Bacteroidia	Chitinophagales	Saprosiraceae	—	0.1%
Bacteria	Bacteroidota	Bacteroidia	Chitinophagales	Saprosiraceae	midas_g_1838	2.2%
Bacteria	Bacteroidota	Bacteroidia	Chitinophagales	midas_f_108	midas_g_21052	0.2%
Bacteria	Bacteroidota	Bacteroidia	Cytophagales	Microscillaceae	midas_g_5053	0.6%
Bacteria	Bacteroidota	Bacteroidia	Flavobacteriales	Crocinitomicaceae	Fluviicola	0.1%
Bacteria	Bacteroidota	Bacteroidia	Sphingobacteriales	NS11-12_marine_group	midas_g_50227	0.1%
Bacteria	Bacteroidota	Kryptonia	Kryptoniales	MSB-3C8	midas_g_4378	0.2%
Bacteria	Bdellovibrionota	Bdellovibrionia	Bdellovibrionales	Bdellovibrionaceae	—	0.1%
Bacteria	Bdellovibrionota	Bdellovibrionia	Bdellovibrionales	Bdellovibrionaceae	OM27_clade	0.3%
Bacteria	Chloroflexi	Anaerolineae	Anaerolineales	Anaerolineaceae	—	0.1%
Bacteria	Chloroflexi	Anaerolineae	Anaerolineales	Anaerolineaceae	midas_g_50073	0.6%
Bacteria	Chloroflexi	Anaerolineae	Ardenticatenales	Ca_Promineofilaceae	—	0.2%
Bacteria	Chloroflexi	Anaerolineae	Ardenticatenales	Ca_Promineofilaceae	Ca_Promineofilum	0.4%
Bacteria	Chloroflexi	Anaerolineae	Ardenticatenales	Ca_Promineofilaceae	midas_g_16734	0.1%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	—	0.7%

Kingdom	Phylum	Class	Order	Family	Genus	Rel. freq. %
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	Litorilinea	0.5%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_12378	0.2%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_169	0.8%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_2138	0.1%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_2582	0.2%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_3043	0.9%
Bacteria	Chloroflexi	Anaerolineae	Caldilineales	Caldilineaceae	midas_g_7167	1.2%
Bacteria	Cyanobacteria	Sericytochromatia	midas_o_1421	midas_f_1421	midas_g_40025	0.2%
Bacteria	Cyanobacteria	Vampirivibrionia	Obscuribacterales	Obscuribacteraceae	midas_g_11371	0.1%
Bacteria	Dependentiae	Babeliae	Babeliales	Vermiphilaceae	midas_g_39773	0.1%
Bacteria	Firmicutes	Bacilli	—	—	—	0.1%
Bacteria	Myxococcota	Polyangia	Haliangiales	Haliangiaceae	Haliangium	1.5%
Bacteria	Myxococcota	Polyangia	Polyangiales	Polyangiaceae	Pajaroellobacter	0.1%
Bacteria	Patescibacteria	Gracilibacteria	Ca_Peribacteria	midas_f_6329	—	0.1%
Bacteria	Patescibacteria	Microgenomatia	Ca_Pacebacteria	midas_f_25564	—	0.2%
Bacteria	Patescibacteria	Microgenomatia	Ca_Pacebacteria	midas_f_25564	midas_g_70587	0.1%
Bacteria	Patescibacteria	Saccharimonadia	Saccharimonadales	—	—	0.1%
Bacteria	Patescibacteria	Saccharimonadia	Saccharimonadales	Saccharimonadaceae	TM7a	0.1%
Bacteria	Planctomycetota	Phycisphaerae	Phycisphaerales	Phycisphaeraceae	—	1.3%
Bacteria	Planctomycetota	Phycisphaerae	Phycisphaerales	Phycisphaeraceae	SM1A02	1.3%
Bacteria	Planctomycetota	Phycisphaerae	Phycisphaerales	Phycisphaeraceae	midas_g_66249	0.1%
Bacteria	Planctomycetota	Phycisphaerae	mle1-8	midas_f_1686	—	0.1%
Bacteria	Planctomycetota	Planctomycetes	Gemmatales	Gemmataceae	—	0.2%
Bacteria	Planctomycetota	Planctomycetes	Gemmatales	Gemmataceae	midas_g_9516	0.1%
Bacteria	Planctomycetota	Planctomycetes	Pirellulales	Pirellulaceae	—	0.4%
Bacteria	Planctomycetota	Planctomycetes	Pirellulales	Pirellulaceae	Pir4_lineage	0.1%
Bacteria	Planctomycetota	Planctomycetes	Pirellulales	Pirellulaceae	midas_g_1097	0.1%
Bacteria	Planctomycetota	Planctomycetes	Pirellulales	Pirellulaceae	midas_g_33802	0.1%
Bacteria	Planctomycetota	Planctomycetes	Pirellulales	Pirellulaceae	midas_g_36791	0.1%
Bacteria	Planctomycetota	Planctomycetes	Planctomycetales	Rubinisphaeraceae	Planctomicrobium	0.4%
Bacteria	Planctomycetota	Planctomycetes	Planctomycetales	midas_f_1792	midas_g_20504	0.1%
Bacteria	Planctomycetota	Planctomycetes	midas_o_1071	midas_f_1071	midas_g_29742	0.2%
Bacteria	Planctomycetota	Planctomycetes	midas_o_1071	midas_f_1071	midas_g_39032	0.5%
Bacteria	Proteobacteria	Alphaproteobacteria	—	—	—	0.3%
Bacteria	Proteobacteria	Alphaproteobacteria	Azospirillales	midas_f_406	midas_g_2759	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Kiloniellales	Fodinicurvataceae	midas_g_34634	0.1%

Kingdom	Phylum	Class	Order	Family	Genus	Rel. freq. %
Bacteria	Proteobacteria	Alphaproteobacteria	Micavibrionales	Micavibrionaceae	—	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Puniceispirillales	midas_f_38514	midas_g_41536	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	—	—	0.7%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Amb-16S-1323	midas_g_27435	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Hyphomicrobiaceae	—	0.4%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Hyphomicrobiaceae	Hyphomicrobium	0.4%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Hyphomicrobiaceae	Pedomicrobium	0.6%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Methylogigellaceae	—	0.6%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Methylogigellaceae	Methyloceanibacter	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Methylogigellaceae	midas_g_11150	0.5%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Methylogigellaceae	midas_g_12692	0.3%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	—	2.9%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Allorhizobium-Neorhizobium-Pararhizobium-Rhizobium	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Aminobacter	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Aquamicrobium	0.4%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Mesorhizobium	2.7%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Pseudaminobacter	0.5%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Xanthobacteraceae	—	0.2%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Xanthobacteraceae	midas_g_1919	0.2%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhizobiales	Xanthobacteraceae	midas_g_21520	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhodobacterales	Rhodobacteraceae	—	0.2%
Bacteria	Proteobacteria	Alphaproteobacteria	Rhodobacterales	Rhodobacteraceae	Amaricoccus	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Sphingomonadales	Sphingomonadaceae	—	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Sphingomonadales	Sphingomonadaceae	Sphingobium	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Tistrellales	Geminicoccaceae	—	0.2%
Bacteria	Proteobacteria	Alphaproteobacteria	Tistrellales	Geminicoccaceae	Ca_Alysiosphaera	0.1%
Bacteria	Proteobacteria	Alphaproteobacteria	Tistrellales	Geminicoccaceae	midas_g_5706	1.9%
Bacteria	Proteobacteria	Alphaproteobacteria	midas_o_24	midas_f_107	midas_g_2332	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	—	—	—	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	—	—	0.4%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Alcaligenaceae	—	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Burkholderiaceae	—	0.7%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Burkholderiaceae	Lautropia	26.3%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Burkholderiaceae	Limnobacter	3.4%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	—	0.6%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	Hydrogenophaga	0.9%

Kingdom	Phylum	Class	Order	Family	Genus	Rel. freq. %
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	Leptothrix	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	Ottowia	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	Rubrivivax	0.2%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Comamonadaceae	midas_g_81	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Nitrosomonadaceae	mle1-7	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Rhodocyclaceae	—	0.2%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Rhodocyclaceae	Azoarcus	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Rhodocyclaceae	Thauera	20.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	Rhodocyclaceae	midas_g_26	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Burkholderiales	TRA3-20	midas_g_1667	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Ectothiorhodospirales	Thioalkalspiraceae	—	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Legionellales	Legionellaceae	Legionella	0.3%
Bacteria	Proteobacteria	Gammaproteobacteria	Run-SP154	midas_f_27	—	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Run-SP154	midas_f_27	midas_g_3775	0.9%
Bacteria	Proteobacteria	Gammaproteobacteria	Run-SP154	midas_f_27	midas_g_5853	0.5%
Bacteria	Proteobacteria	Gammaproteobacteria	Xanthomonadales	—	—	1.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Xanthomonadales	Rhodanobacteraceae	—	1.2%
Bacteria	Proteobacteria	Gammaproteobacteria	Xanthomonadales	Rhodanobacteraceae	Pseudofulvimonas	0.1%
Bacteria	Proteobacteria	Gammaproteobacteria	Xanthomonadales	Rhodanobacteraceae	midas_g_19344	1.1%
Bacteria	Proteobacteria	Gammaproteobacteria	midas_o_26	midas_f_98	—	0.1%
Bacteria	Verrucomicrobiota	Kiritimatiellae	WCHB1-41	midas_f_28177	midas_g_28177	0.4%
Bacteria	Verrucomicrobiota	Omnitrophia	Omnitrophales	Omnitrophaceae	Ca_Omnitrophus	0.1%
Bacteria	Verrucomicrobiota	Verrucomicrobiae	Pedosphaerales	Pedosphaeraceae	Oikopleura	0.4%

