

**PORTLAND LANDFILL**

**2017 Groundwater Monitoring**

Date	Bore	SWL (mBTOC)	Total Depth (mBTOC)	Turbidity (NTU)	pH	EC ( $\mu\text{S}/\text{cm}$ )	Redox (mV)	DO (ppm)	Colour	Odour
27/03/2017	MP1	6.18	-	44.5	5.65	1812	104	7.30	Orange	nil
27/03/2017	MP5	22.26	>30	74.7	7.36	1600	41	7.33	Orange	nil
28/03/2017	MP8	3.09	13.0	90.2	6.7	2370	231	8.22	Brown	nil
28/03/2017	MP9	-0.05	17.1	92.8	6.59	3520	57	8.07	Brown	nil

				ADWG 2015 Aesthetic	ADWG 2015 Health	ANZECC 2000 FW 95%	ANZECC 2000 Irrigation	ANZECC 2000 Stock Water	MP1	MP5	MP8	MP8	MP9
Chem_Group	Chemical Name	Units	EQL										
	Tokuthion	mg/L	0.002						<0.002	<0.002	<0.002	<0.002	<0.002
Halogenated Benzenes	Hexachlorobenzene	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
Inorganics	Alkalinity (Bicarbonate as CaCO3)	mg/L	20						57	470	540	540	690
	Alkalinity (Carbonate as CaCO3)	mg/L	10						<10	<10	<10	<10	<10
	Alkalinity (total) as CaCO3	mg/L	20						57	470	540	540	690
	Ammonia as N	µg/L	10			900			1300	20	20	30	<10
	Electrical conductivity *(lab)	µS/cm	1			125-2200	950		2100	1700	2700	2700	4100
	pH (Lab)	pH Units	0.1			6.5-8	6-8.5	5-9	6	7.2	7.2	7.2	7.1
	TOC	mg/L	5						24	7.6	8.5	<5	<5
Major Anions	Chloride	mg/L	1	250			175		240	60	210	200	380
	Fluoride	mg/L	0.5		1.5				<0.5	<0.5	<0.5	<0.5	<0.5
	Nitrate (as N)	mg/L	0.02			0.159		90	0.79	0.03	0.1	0.06	<0.02
	Sulphate	mg/L	5	250					580	340	710	700	1200
Major Cations	Calcium	mg/L	0.5						130	120	260	250	310
	Magnesium	mg/L	0.5						41	43	100	100	200
	Potassium	mg/L	0.5						71	6.2	9.3	8.9	5
	Sodium	mg/L	0.5	180			115		89	58	110	110	180
Metals	Aluminium (Filtered)	mg/L	0.05			0.055			0.1	<0.05	<0.05	<0.05	0.05
	Chromium (III+VI) (Filtered)	mg/L	0.001			0.001		1	<0.001	<0.001	<0.001	<0.001	<0.001
	Iron (Filtered)	mg/L	0.05	0.3			0.2-10	20	2.8	5.1	2.2	5.9	0.46
	Manganese (Filtered)	mg/L	0.005	0.1	0.5	1.9	0.2-10		1.3	1.8	1.3	1.3	1
Organochlorine Pesticides	4,4-DDE	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	a-BHC	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Aldrin	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	b-BHC	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	chlordan	µg/L	1		2	0.08			<1	<1	<1	<1	<1
	d-BHC	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	DDD	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	DDT	µg/L	0.1		9	0.01			<0.1	<0.1	<0.1	<0.1	<0.1
	Dieldrin	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan I	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan II	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan sulphate	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin	µg/L	0.1			0.02			<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin aldehyde	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin ketone	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	g-BHC (Lindane)	µg/L	0.1		10	0.2			<0.1	<0.1	<0.1	<0.1	<0.1
	Heptachlor	µg/L	0.1		0.3	0.09			<0.1	<0.1	<0.1	<0.1	<0.1
	Heptachlor epoxide	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Methoxychlor	µg/L	0.1						<0.1	<0.1	<0.1	<0.1	<0.1
	Toxaphene	mg/L	0.01			0.0002			<0.01	<0.01	<0.01	<0.01	<0.01
Organophosphorous Pesticides	Azinophos methyl	µg/L	2		30	0.02			<2	<2	<2	<2	<2
	Bolstar (Sulprofos)	µg/L	2		10				<2	<2	<2	<2	<2
	Chlorfenvinphos	µg/L	2		2				<2	<2	<2	<2	<2
	Chlorpyrifos	µg/L	20		10	0.01			<20	<20	<20	<20	<20
	Chlorpyrifos-methyl	mg/L	0.002						<0.002	<0.002	<0.002	<0.002	<0.002
	Coumaphos	µg/L	20						<20	<20	<20	<20	<20
	Demeton-O	µg/L	2						<2	<2	<2	<2	<2
	Demeton-S	µg/L	20						<20	<20	<20	<20	<20
	Diazinon	µg/L	2		4	0.01			<2	<2	<2	<2	<2
	Dichlorvos	µg/L	2		5				<2	<2	<2	<2	<2
	Dimethoate	µg/L	2		7	0.15			<2	<2	<2	<2	<2
	Disulfoton	µg/L	2		4				<2	<2	<2	<2	<2
	Ethion	µg/L	2		4				<2	<2	<2	<2	<2
	Ethoprop	µg/L	2		1				<2	<2	<2	<2	<2
	Fenitrothion	µg/L	2		7	0.2			<2	<2	<2	<2	<2
	Fensulfthion	µg/L	2		10				<2	<2	<2	<2	<2
	Fenthion	µg/L	2		7				<2	<2	<2	<2	<2
	Malathion	µg/L	2		70	0.05			<2	<2	<2	<2	<2
	Merphos	mg/L	0.002						<0.002	<0.002	<0.002	<0.002	<0.002
	Methyl parathion	µg/L	2		0.7				<2	<2	<2	<2	<2
	Mevinphos (Phosdrin)	µg/L	2		5				<2	<2	<2	<2	<2
	Monocrotophos	µg/L	2		2				<2	<2	<2	<2	<2
Naled (Dibrom)	µg/L	2						<2	<2	<2	<2	<2	
Omethoate	µg/L	2		1				<2	<2	<2	<2	<2	

				Location Code	MP1	MP5	MP8	MP8	MP9	
				WellCode						
				Sampled Date	27/03/2017	27/03/2017	28/03/2017	28/03/2017	28/03/2017	
				Sample ID	MP1	MP5	FIELD DUP	MP8	MP9	
				Lab_Report_Number	539909	539909	539909	539909	539909	
				ADWG 2015 Aesthetic	ADWG 2015 Health	ANZECC 2000 FW 95%	ANZECC 2000 Irrigation	ANZECC 2000 Stock Water		
Chem_Group	Chemical Name	Units	EQL							
	Phorate	µg/L	2						<2	<2
	Pyrazophos	µg/L	2		20				<2	<2
	Ronnel	µg/L	2						<2	<2
	Terbufos	µg/L	2		0.9				<2	<2
	Trichloronate	µg/L	2						<2	<2
	Tetrachlorvinphos	mg/L	0.002		0.1				<0.002	<0.002
PAH/Phenols	Phenolics Total	µg/L	50						<50	<50
Pesticides	Parathion	µg/L	2		20	0.004			<2	<2
	Pirimiphos-methyl	mg/L	0.02		0.09				<0.02	<0.02
Polychlorinated Biphenyls	Arochlor 1016	µg/L	1						<1	<1
	Arochlor 1221	µg/L	1						<1	<1
	Arochlor 1232	µg/L	1						<1	<1
	Arochlor 1242	µg/L	1			0.6			<1	<1
	Arochlor 1248	µg/L	1						<1	<1
	Arochlor 1254	µg/L	1			0.03			<1	<1
	Arochlor 1260	µg/L	1						<1	<1
	PCBs (Sum of total)	µg/L	1						<1	<1
SVOCs	EPN	µg/L	2						<2	<2

## Certificate of Analysis

Meinhardt Infrastructure and Environment Pty Ltd  
 Level 4, 66 Clarence St  
 Sydney  
 NSW 2000



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 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Ken Douglas-Hill**

Report **511514-W**  
 Project name PORTLAND LANDFILL  
 Project ID 115659P  
 Received Date Aug 10, 2016

Client Sample ID			SW1
Sample Matrix			Water
Eurofins   mgt Sample No.			S16-Au11637
Date Sampled			Aug 09, 2016
Test/Reference	LOR	Unit	
Ammonia (as N)	0.01	mg/L	0.02
Chemical Oxygen Demand (COD)	25	mg/L	< 25
Chloride	1	mg/L	89
Conductivity (at 25°C)	1	uS/cm	1100
Fluoride	0.5	mg/L	< 0.5
Nitrate (as N)	0.02	mg/L	5.6
pH	0.1	pH Units	6.7
Phenolics (total)	0.05	mg/L	< 0.05
Sulphate (as S)	2	mg/L	58
Suspended Solids	5	mg/L	13
Total Organic Carbon	5	mg/L	< 5
<b>Alkalinity (speciated)</b>			
Bicarbonate Alkalinity (as CaCO <sub>3</sub> )	5	mg/L	210
Carbonate Alkalinity (as CaCO <sub>3</sub> )	5	mg/L	< 5
Total Alkalinity (as CaCO <sub>3</sub> )	5	mg/L	210
<b>Heavy Metals</b>			
Aluminium	0.05	mg/L	0.15
Chromium	0.001	mg/L	< 0.001
Iron	0.05	mg/L	0.18
Manganese	0.005	mg/L	0.007
<b>Alkali Metals</b>			
Calcium	0.5	mg/L	85
Magnesium	0.5	mg/L	22
Potassium	0.5	mg/L	64
Sodium	0.5	mg/L	45