

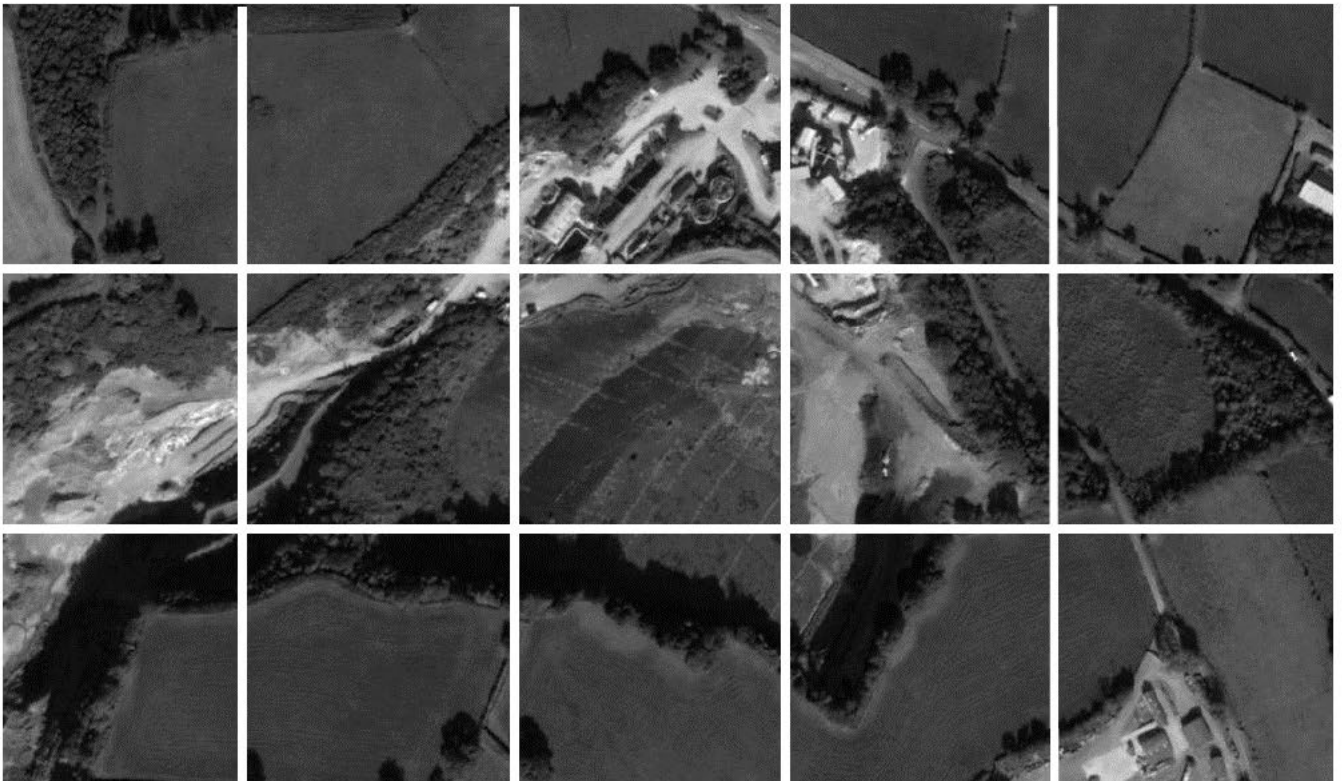


WDR & RT TAGGART

ARCHITECTURE CIVIL ENGINEERING WASTE & ENERGY PROJECT MANAGEMENT

BLUE SKY RESOURCE RECOVERY LTD.

LISBANE LANDFILL SITE ANNUAL ENVIRONMENTAL REPORT 2019



JANUARY 2020



Report

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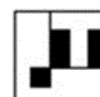
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1 Introduction

1.1 Background

The operator of Lisbane Landfill Site is as below:

Blue Sky Resource Recovery Ltd.
29 Aughlish Road
Tandragee
BT62 2EE

The agent completing the Annual Environmental Monitoring Report is as below:

WDR & RT Taggart
Russell Business Centre
40-42 Lisburn Road
Belfast
County Antrim
BT9 6AA

The monitoring of water quality and landfill gas at Lisbane is undertaken on a monthly basis as a requirement of PPC permit P0145/06A/V5.

1.2 Scope and Objective

The objectives of this report are to:

- Review the groundwater quality at the site for the period January to December 2019;
- Review the surface water quality at the site for the period January to December 2019;
- Review leachate quality at the site for the period January to December 2019; and
- Review the landfill gas at the site for the period January to December 2019.

1.3 Terms of Reference

This document represents the Annual Environmental Monitoring Report for Lisbane Landfill Site submitted to the Northern Ireland Environment Agency (NIEA) in pursuance of PPC permit number P0145/06A/V5.



1.4 Limitations of the Review

Some samples were unable to be collected for various reasons, which are detailed in the monitoring section.



2 Site Characteristics

2.1 Site Location

Lisbane Landfill Site occupies a former steep sided quarry and is located on Aughlish Road, approximately 2.3km to southeast of Tandragee. The site previously accepted a variety of primarily non-hazardous wastes since 1997. The site was constructed as a containment landfill with a groundwater management system and a composite lining system.

Table 2.1 Site Details

Site Address	Lisbane Landfill, 29 Aughlish Road, Tandragee, Co Armagh
Grid Reference	J 04803 44531
Estimated Site Area	3.8 hectares

The immediate surrounding area is primarily agricultural, open farmland with scattered farm buildings and dwellings.

Table 2.2 Potential Receptors

Receptor Name	Receptor Type	Minimum Distance from Site Boundary	Direction from Site
A	Commercial property	Adjacent to site	East
B	Residential property	240m	North-East
C	Residential property	130m	South-East
D	Residential properties	300m	South
E	Residential property	420m	West
F	Residential property	290m	North-West



2.2 Installation Details

The total area of the site is approximately 3.8 hectares, the site ceased accepting non-hazardous waste in 2013. The site was excavated to approximately 30m deep below its eastern, and lowest, crest. A recent permit variation included allowing the acceptance of inert wastes in order to bring the site to final approved restoration levels.

The site was engineered as a landfill with a groundwater management system outside a composite lining system, which comprised of: Bentonite Enriched Soil (BES) and a Geo-Synthetic Clay Layer (GCL) overlain by a High-density Polyethylene (HDPE) liner.

Leachate drainage over the base of the site is also provided either in the form of herringbone drains or as a drainage blanket. Leachate is extracted via two leachate extraction points (LEP A and LEP B) and treated in the onsite leachate treatment plant. The site has gas exploitation with a single gas engine and flare installed.

2.3 Geology

The Geological Survey Northern Ireland (GSNI) Bedrock Geology Map shows that the bedrock geology beneath the facility is Sandstone. The GSNI Superficial Geology Map shows that the superficial geology at the majority of the site is Diamicton.

2.4 Hydrogeology

The Groundwater Vulnerability Map for Northern Ireland indicates that the Strangford Group Formation is classed as a weakly permeable formation with soil of low leaching potential.

The overlying till is likely to represent low permeability, non-water bearing drift deposits which can be substantial in thickness and act as a barrier to any downwardly migrating contaminants.

2.5 Hydrology

The landfill has been operated under hydraulic containment since 2010, the maximum leachate level permitted at the site is 19.8mAOD (3m above the basal liner). The direction of groundwater flow in the greywacke sandstone aquifer is towards the site from the south, east and west.



2.6 Environmentally Sensitive Areas

An Area of Special Scientific Interest (ASSI) is located approximately 5km of the Site, this is Moyrourkan Lough ASSI which lies southwest of the Site, it is of special scientific interest because of its wetland flora and fauna.

The wetland has a diverse range of communities ranging from open water to swamp and fen. Marginal grasslands and Carr woodland provide additional habit diversity. The open waters of the two small lakes support an extensive growth of floating broad-leaved pondweed, with localised yellow waterlily along the margins. A wide range of fen communities surround the lakes. The fen is dominated by bottle sedge and associated species are highly variable ranging from bogbean and water horsetail in the wetter pockets to sweet vernal-grass and Yorkshire fog in drier areas.

Moyrourkan Lough also supports a notable invertebrate community, including a number of locally distributed species of aquatic Coleoptera (water beetles) such as *Dytiscus circumcinctus*. The community also contains a number of relict species (isolated remnant of a once-abundant species) indicative of undisturbed rich fens, generally restricted to east and central Ireland.

It must be noted that this ASSI is not hydraulically linked to Lisbane Landfill Site. No other environmentally sensitive areas lie within 5 km of the installation.

2.7 Current Site Operations

The site accepted a variety of waste types, primarily non-hazardous, between 1997 and 2013. The site currently is accepting inert wastes in order to raise landfill levels to agreed restoration levels. Leachate continues to be treated within the on-site leachate treatment plant.

2.8 Pre-operational Measures and Improvement Conditions

Improvement condition related to leachate extraction point LEP A.

2.9 Topography

Lisbane Landfill is set within an open and relatively undulating rural landscape. The landfill site is situated in a former flooded hard rock quarry (greywacke), which was excavated to approximately 30m deep below its eastern, and lowest, crest.



Topographically, the site falls towards the east, with an elevation drop across the Installation from approximately 65 mAOD in the west to about 35 mAOD in the east.

The most recent topographical survey undertaken is available in Appendix A. A settlement assessment and remaining void capacity report is available in Appendix D.



3 Leachate

3.1 Leachate Permit Conditions

Leachate monitoring occurs at two locations; one before the leachate treatment plant (raw leachate) and one after the leachate treatment plant (treated leachate). Table S4.1 of the permit states that leachate levels must not exceed 3m above the cell base. Details of the leachate monitoring requirements are shown below.

Table 3.1 Leachate Level Monitoring Requirements

Monitoring Point	Limit	Frequency
LEP A	3m above base	Monthly
LEP B		

Table 3.2 Leachate Monitoring Requirements

Emission Point Reference	Parameter	Monitoring Frequency
MBR Inlet MBR Outlet	pH, Temperature, Electrical Conductivity, Ammoniacal Nitrogen, Chloride, BOD, COD, Total Suspended Solids	Monthly
MBR Inlet MBR Outlet	TON, TOC, Calcium, Magnesium, Sodium, Potassium, Manganese, Iron, Zinc, Nickel, Chromium, Cadmium, Arsenic, Mercury, Sulphate, Lead, Alkalinity, Mecoprop, Naphthalene, Phenols	Quarterly
MBR Inlet MBR Outlet	Hazardous Substances Screen	Annually



The locations of the groundwater, surface water, leachate and gas monitoring locations are shown in Figure 15047-003.

Leachate is currently managed through a leachate drainage, extraction and treatment system. The base of the landfill has been designed with falls to a leachate collection drain and sump. This allows any leachate to be efficiently carried to the drainage sump for extraction from the site via a submersible pump which is connected to an 80mm pumping main. Leachate is pumped from two points within the landfill to the leachate treatment plant.

Leachate samples are taken prior to entry to the treatment plant (raw) and following treatment within the on-site plant (treated).

3.2 Leachate Results and Discussion

The level of leachate in the landfill is monitored via two leachate extraction points; LEP A and LEP B. Table S4.1 of the permit specifies the limit of leachate to be 3m above the cell base.

The level of leachate within LEP A and LEP B throughout the monitoring period is expressed as metres above base and shown in the table below. Please note that results from the Hazardous Substances Screen are available in Appendix B.



Table 3.3 Leachate Levels (m)

Monitoring Point	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
LEP A	-	-	-	-	-	-	-	-	-	-	-	-
LEP B	0.50	0.05	0.50	0.37	0.41	0.21	0.53	0.27	0.34	0.31	0.40	0.52

Levels recorded at LEP B remained within compliance levels throughout the monitoring period. Please note that LEP A was unable to be dipped throughout the monitoring period.

Table 3.4 Raw Leachate Results

Parameter	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	mg/l	516	495	528	426	313	274	209	226	269	512	167	556
BOD	m/l	16.7	15.7	18.7	57.3	20.7	34.4	24.5	11.8	7.35	42.8	26.4	63.2
Chloride	mg/l	788	756	705	780	669	561	583	519	525	686	580	865
COD	mg/l	808	791	860	1300	990	747	638	588	545	802	726	1090
Electrical Conductivity	µS/cms	8750	8,670	8,580	8,550	7,130	6420	5,860	5630	5,720	8400	7720	10200
pH	Units	7.81	7.77	7.73	7.71	8.18	7.91	7.98	7.88	8.11	7.6	7.65	7.64
Suspended Solids	mg/l	22	41	58	144	130	112	76	40	16	62	25	44
Alkalinity	mg/l			3220			2220			2310		2910	
Arsenic	ug/l			22.2			17.2			14.4		20.7	
Cadmium	ug/l			<0.5			<0.5			<0.5		<0.07	
Calcium	mg/l						136			114		121	
Chromium	ug/l			116			105			71.4		86.2	
Iron	mg/l			4.77			7.62			4		4160	
Lead	ug/l			1.62			3.34			8.46		1.23	
Magnesium	mg/l						57.7			52.1		53.5	
Manganese	ug/l			720			572			567		580	



Mecoprop	ug/l			<4			<4			0.045		0.762	
Mercury	ug/l			<0.2			<0.02			<0.2		<0.02	
Naphthalene	ug/l			<0.01			0.322			0.0178		<0.5	
Nickel	ug/l			82.2			64.8			55.8		68.3	
Phenol	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium	mg/l			-			259			225		274	
Sodium	mg/l			-			618			577		602	
Sulphate	mg/l			8.41			50.7			60		120	
TOC	mg/l			298			219			252		242	
TON	mg/l			4.62			4.05			17.8		0.22	
Zinc	ug/l			75.8			136			102		55.6	

Table 3.5 Treated Leachate Results

Parameter	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	mg/l	53.2	28.2	11	9.71	0.2	0.23	0.26	0.29	<0.55	0.7	0.4	2.61
BOD	m/l	5.39	3.35	7.15	14.1	6.39	5.5	1.91	5.9	4.53	5.79	2.08	3.71
Chloride	mg/l	1080	1100	1020	1070	1160	1170	1200	1290	1310	1180	1090	1090
COD	mg/l	893	900	915	1080	1150	1120	1070	1010	1820	858	848	936
Electrical Conductivity	µS/cms	10,800	11000	10,900	11,200	11,500	11,500	11,700	11600	11,600	11200	10200	11300
pH	Units	7.68	7.67	7.76	7.81	7.86	7.54	7.38	7.59	7.6	7.13	7.2	7.13
Suspended Solids	mg/l	7	34	45	33	20	18	25	18	52	25	21	20
Alkalinity	mg/l			368			296			306		233	
Arsenic	ug/l			27			34.7			35.1		34.4	
Cadmium	ug/l			<0.5			<0.5			<0.5		<0.07	
Calcium	mg/l			-			94.6			75.7		88	
Chromium	ug/l			172			230			201		154	
Iron	mg/l			5.32			9.4			6.77		6160	
Lead	ug/l			2.34			4.17			10.1		3.31	



Magnesium	mg/l			-			55.2			47.9		50.7	
Manganese	ug/l			86.6			133			120		212	
Mecoprop	ug/l			<4			<4			0.102		<0.1	
Mercury	ug/l			<0.02			<0.02			<0.2		<0.02	
Naphthalene	ug/l			0.0146			0.0221			0.0193		<0.5	
Nickel	ug/l			126			138			133		113	
Phenol	mg/l			<0.002			<0.002			0.01		<0.2	
Potassium	mg/l			-			477			442		400	
Sodium	mg/l			-			1890			1920		1720	
Sulphate	mg/l			64.9			105			38.6		337	
TOC	mg/l			313			387			343		308	
TON	mg/l			3.88			2.47			1020		311	
Zinc	ug/l			288			250			230		203	



3.3 Leachate Conclusions

Results for raw leachate remained consistent throughout the year, with electrical conductivity showing the most variance. Treated leachate results were consistent, with chloride, COD and suspended solids showing the most variations during the year.

Compared to previous years, raw leachate has shown an average decrease in ammoniacal nitrogen, BOD, chloride, electrical conductivity and COD, with an average increase in pH and suspended solids. Treated leachate remained similar to previous years, with a decrease in average BOD and suspended solids.



4 Groundwater

4.1 Groundwater Permit Conditions

There are a total of thirteen groundwater monitoring points, with eight located up-gradient (BH1, BH2, BH4, BH7A, BH9, BH10, BH11, BH12, and BH13) and five down-gradient (BH5, BH5A, BH6, BH6A and BH8) of the site. Please note that BH5A is no longer required to be sampled. BH1, BH7A, BH11 and BH12 are inaccessible and unable to be sampled, BH10 is dry and unable to be sampled.

Table 4.1 Groundwater Monitoring Requirements

Emission Point Reference	Parameter	Control Limit	Trigger Limit	Monitoring Frequency
BH1, BH2, BH4, BH5, BH5A BH6, BH6A, BH7A, BH8, BH9, BH10, BH12, BH13 and GWL	Chloride	150 mg/l	250 mg/l	Monthly
	Ammoniacal Nitrogen	0.25 mg/l	1 mg/l	
BH1, BH2, BH4, BH5, BH5A BH6, BH6A, BH7A, BH8, BH9, BH10, BH12, BH13 and GWL	Nickel	19 ug/l	20 ug/l	Quarterly
	Cadmium	1 µg/l	1 µg/l	
	Mercury	0.1 µg/l	0.1 µg/l	
	Zinc	800 µg/l	1000 µg/l	
	Mecoprop	20 µg/l	20 µg/l	
	Naphthalene	10 µg/l	10 µg/l	
	Phenol	20 µg/l	30 µg/l	

Table 4.2 Other Groundwater Monitoring Requirements

Monitoring point reference	Parameter	Monitoring Frequency
BH1, BH2, BH4, BH5, BH5A BH6, BH6A, BH7A, BH8, BH9, BH10, BH12, BH13	pH Water Level Temperature COD Electrical Conductivity	Monthly



Monitoring point reference	Parameter	Monitoring Frequency
BH1, BH2, BH4, BH5, BH5A BH6, BH6A, BH7A, BH8, BH9, BH10, BH12, BH13	Alkalinity TON TOC BOD Calcium Magnesium Sodium Potassium Manganese Iron Chromium Lead Arsenic Sulphate	Quarterly
BH1, BH2, BH4, BH5, BH5A BH6, BH6A, BH7A, BH8, BH9, BH10, BH12, BH13	Hazardous Substances Screen	Annually

4.2 Groundwater Results and Conditions

The tables below show the results for groundwater sampling undertaken from January to December 2019. The results are screened against limits listed in Schedule 4 of the permit; any exceedances will be highlighted in red, with any exceedances of EQS/UKDWS limits highlighted in blue. Groundwater levels throughout the year are shown in Table 4.3

Results of the Hazardous Substances Screen are available in Appendix B.





Table 4.3 Groundwater Levels

Monitoring Point	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
BH1	18	18	18	18	-	-	-	-	-	-	-	-
BH2	23.5	23.5	23.3	23.5	23.5	23.3	23.4	23.4	23.3	23.4	23.4	23.1
BH4	5.7	5.7	5.3	5.6	8.2	5.5	5.8	5.4	5.9	5.8	4.7	5.6
BH5	4.9	4.8	4.4	4.8	5.0	4.7	4.9	4.5	5.1	4.8	4.2	4.8
BH5A	5.4	5.1	4.9	5.0	5.2	5.0	5.0	4.8	5.0	5.1	4.8	5.0
BH6	4.2	4.3	4.2	4.4	4.4	4.1	4.5	4.3	4.5	4.5	4.2	4.5
BH6A	4.9	4.7	4.3	4.9	4.9	4.7	5.5	4.7	4.7	4.7	5.3	5.2
BH7A	-	-	-	-	-	-	-	-	-	-	-	-
BH8	12.1	11.5	11.7	12.3	12.2	11.8	12.0	11.8	11.8	11.9	11.5	11.8
BH9	17.3	17.2	17.1	17.4	17.3	17.0	17.0	16.9	17.1	17.1	16.8	16.8
BH10	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
BH12	-	-	-	-	-	-	-	-	-	-	-	-
BH13	10.6	10.4	10.2	10.4	10.4	10.2	10.4	10.3	10.3	10.4	10.0	10.3

*Groundwater levels are measured from the top of the borehole cover and expressed as mAOD.





Table 4.4 BH1 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11								
Chloride	250	mg/l	10.9	9.99	11.1	12.9								
COD		mg/l	<25	48	<25	30								
Electrical Conductivity		µS/cm	529	277	539	531								
pH		Units	7.59	9.58	7.93	7.7								
Alkalinity		mg/l			209									
Arsenic		ug/l			<2									
BOD		ug/l			<1									
Cadmium	1	ug/l			<0.5									
Calcium		ug/l			65.6									
Chromium		ug/l			<3									
Iron		mg/l			0.331									
Lead		ug/l			<1									
Magnesium		mg/l			24.2									
Manganese		ug/l			6.06									
Mecoprop	20	ug/l			<0.04									
Mercury	0.1	ug/l			<0.02									
Naphthalene	10	ug/l			0.304									
Nickel	20	ug/l			1.3									
Phenol	0.03	mg/l			<0.002									
Potassium		mg/l			1.28									
Sodium		mg/l			15.3									
Sulphate		mg/l			58.7									
TOC		mg/l			<1									
TON		mg/l			1.13									
Zinc	1000	ug/l			5.35									





Table 4.5 BH2 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	0.3	0.32	<0.11	<0.11	<0.11
Chloride	250	mg/l	18.5	22.1	31.3	22.2	19.8	20.6	19.6	18.8	26.3	31.7	19.6	21.1
COD		mg/l	30	<25	27	43	<25	<25	<25	<25	<25	26	30	<25
Electrical Conductivity		µS/cm	697	696	623	692	704	703	696	689	693	963	781	688
pH		Units	7.5	7.57	7.62	7.58	7.57	7.52	7.69	7.1	7.15	6.97	7.12	7.23
Alkalinity		mg/l			125			186			206		190	
Arsenic		ug/l			12.4			40.8			76.7		7.99	
BOD		ug/l			2.17			1.2			1.52		1.58	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		21.3	
Calcium		ug/l			68.9			86.2			66.3		85.7	
Chromium		ug/l			<3			<3			<3		<0.9	
Iron		mg/l			0.457			0.0897			0.535		0.0631	
Lead		ug/l			2.12			<1			<1		0.48	
Magnesium		mg/l			21.5			35.9			31.5		29.1	
Manganese		ug/l			89.8			6.8			137		17	
Mecoprop	20	ug/l			<0.04			<0.04			<0.01		<0.01	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			0.269			<0.01			<0.01		<0.5	
Nickel	20	ug/l			5.47			2.51			3.56		4.31	
Phenol	0.03	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			4.14			3.64			2.86		4.54	
Sodium		mg/l			17.6			21.2			18		21.7	
Sulphate		mg/l			126			155			129		160	
TOC		mg/l			6.12			<3			2.84		10.1	
TON		mg/l			5.89			0.48			1.82		7.36	
Zinc	1000	ug/l			8.77			<5			18.8		21.3	





Table 4.6 BH4 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	0.2	<0.11	<0.11	<0.11	<0.11
Chloride	250	mg/l	19.8	19.7	19	19.3	19.4	15.3	14.9	15	15.4	16.2	16	16.4
COD		mg/l	30	40	<25	42	<25	<25	<25	32	<25	<25	<25	<25
Electrical Conductivity		µS/cm	1200	1180	1160	1140	1130	943	945	943	958	985	1050	1030
pH		Units	7.05	7.01	7.16	7.1	7.1	7.12	7.21	7.05	7.19	7.29	7	6.97
Alkalinity		mg/l			299			272			279		289	
Arsenic		ug/l			<2			2.38			<2		<2	
BOD		ug/l			1.15			<1			<1		1.01	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		<9.7	
Calcium		ug/l			162			139			118		135	
Chromium		ug/l			3.87			<3			6.41		3.16	
Iron		mg/l			2.92			1.43			4.21		2.11	
Lead		ug/l			<1			<1			<1		0.446	
Magnesium		mg/l			51.1			43.2			38.4		46.5	
Manganese		ug/l			178			284			169		136	
Mecoprop	20	ug/l			<0.04			<0.04			<0.01		<0.01	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			0.0663			<0.01			<0.01		<0.5	
Nickel	20	ug/l			5.16			3.47			7.79		4.21	
Phenol	0.03	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			4.77			4.04			4.84		5.21	
Sodium		mg/l			19.1			17.1			13.3		16	
Sulphate		mg/l			334			211			227		249	
TOC		mg/l			1.38			3.65			2.48		4.51	
TON		mg/l			0.29			0.44			0.29		0.17	
Zinc	1000	ug/l			8.95			<5			14.2		<9.7	





Table 4.6 BH5 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	0.17	<0.11	<0.11	<0.11	<0.11
Chloride	250	mg/l	23.9	37.5	20.7	35.1	34.1	15.3	23.7	19.8	25.4	19.1	9.6	20.4
COD		mg/l	37	32	<25	46	30	30	<25	46	<25	<25	<25	25
Electrical Conductivity		µS/cm	734	894	736	972	1000	699	1160	910	1210	811	531	754
pH		Units	7.12	7.1	7.3	7.16	7.15	7.17	7.39	7.13	7.12	7.22	7.27	7.16
Alkalinity		mg/l			136			165			207		131	
Arsenic		ug/l			<2			<2			<2		<2	
BOD		ug/l			<1			<1			<1		<1	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		13.7	
Calcium		ug/l			99.3			96			143		60.6	
Chromium		ug/l			<3			3.06			<3		1.57	
Iron		mg/l			1.2			2.19			1.36		1.21	
Lead		ug/l			1.84			2.17			9.44		1.38	
Magnesium		mg/l			21.8			24.8			47.2		17.6	
Manganese		ug/l			119			181			150		603	
Mecoprop	20	ug/l			<0.04			<0.04			<0.01		<0.01	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			<0.01			<0.01			<0.01		<0.5	
Nickel	20	ug/l			6.65			10.8			7.83		8.69	
Phenol	0.03	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			6.05			7.34			8.99		4.86	
Sodium		mg/l			17.7			21.3			26.1		9.77	
Sulphate		mg/l			194			168			424		120	
TOC		mg/l			4.78			7.85			4.95		4.97	
TON		mg/l			3.04			1.94			0.89		0.98	
Zinc	1000	ug/l			13.9			33.1			11.1		13.7	





Table 4.7 BH6 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	2.11	4.02	1.14	1.96	0.13	-	2.03	2.98	1.55	0.94	<0.11
Chloride	250	mg/l	22.6	25.7	16.5	27.2	27.1	17.6	-	20.6	22.5	14.2	21.7	25.8
COD		mg/l	242	6900	-	6630	48200	10900	-	-	-	-	4330	68
Electrical Conductivity		µS/cm	759	737	937	838	1130	746	-	1240	1200	906	653	652
pH		Units	7.12	7.2	7.36	7.4	7.34	7.43	-	7.22	7.33	7.22	7.35	7.26
Alkalinity		mg/l			347			143			298		174	
Arsenic		ug/l			104			51.4			43.9		66.9	
BOD		ug/l			105			21.5			1.1		25.9	
Cadmium	1	ug/l			5.85			<3			1.42		1280	
Calcium		ug/l			516			156			1470		356	
Chromium		ug/l			761			271			362		243	
Iron		mg/l			708			160			832		201	
Lead		ug/l			822			190			933		358	
Magnesium		mg/l			256			116			2330		508	
Manganese		ug/l			28700			9370			41600		17700	
Mecoprop	20	ug/l			2.64			<0.4			<0.01		<0.02	
Mercury	0.1	ug/l			0.742			0.183			0.258		<0.02	
Naphthalene	10	ug/l			1.11			0.266			<0.01		<0.5	
Nickel	20	ug/l			1660			559			631		653	
Phenol	0.03	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			27.8			12.4			171		50.2	
Sodium		mg/l			18.1			15.2			46.5		25.5	
Sulphate		mg/l			238			227			348		119	
TOC		mg/l			928			8.38			227		124	
TON		mg/l			<0.4			1.57			0.13		2.71	
Zinc	1000	ug/l			3040			895			6680		1280	





Table 4.8 BH6A Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	0.24	<0.11	0.32	0.29	<0.11	0.46	0.26	0.32	<0.11
Chloride	250	mg/l	28	28.7	28.7	29.3	29.2	31	31.8	30.8	29.7	29.6	23.6	25.1
COD		mg/l	34	28	<25	282	<25	119	39	<25	174	<25	25	<25
Electrical Conductivity		µS/cm	928	948	951	918	918	886	896	863	955	956	861	919
pH		Units	6.98	6.94	6.91	7.06	7.04	7.09	7.78	7.09	7.08	7	7.01	7.04
Alkalinity		mg/l			209			196			226		203	
Arsenic		ug/l			4.77			4.37			<2		<2	
BOD		ug/l			<1			<1			<1		1.06	
Cadmium	1	ug/l			<0.5			<5			<0.5		20.8	
Calcium		ug/l			115			118			104		92.7	
Chromium		ug/l			24.7			23.3			3.64		1.02	
Iron		mg/l			11.2			10.5			1.38		0.622	
Lead		ug/l			13.2			14.7			<1		1.01	
Magnesium		mg/l			29.3			30.2			33.4		26.5	
Manganese		ug/l			569			415			217		262	
Mecoprop	20	ug/l			0.0819			<0.04			0.059		0.035	
Mercury	0.1	ug/l			0.0354			0.037			<0.02		<0.02	
Naphthalene	10	ug/l			0.114			<0.01			<0.01		<0.5	
Nickel	20	ug/l			21.1			20.5			10.2		8.12	
Phenol	0.03	mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			5.99			7.02			9.59		5.39	
Sodium		mg/l			33			35.8			36.5		32.7	
Sulphate		mg/l			247			205			228		200	
TOC		mg/l			1.96			<3			16.6		5.42	
TON		mg/l			2.92			2.75			3.35		2.37	
Zinc	1000	ug/l			55.7			51.2			19		20.8	





Table 4.9 BH8 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Chloride	250	mg/l	18	16.5	21.4	25.1	15.5	14.8	34.7	7.29	18.8	11.1	17.1	20.4
COD		mg/l	<25	<25	<25	29	<25	<25	<25	<25	<25	<25	<25	<25
Electrical Conductivity		µS/cm	1060	1050	1010	1090	954	868	1120	726	1060	1020	901	1020
pH		Units	7.17	7.05	7.06	7.26	7.3	7.4	7.27	7.6	7.26	7.25	7.3	7.21
Alkalinity		mg/l			200			171			223		185	
Arsenic		ug/l			<2			<2			<2		<2	
BOD		ug/l			<1			<1			<1		<1	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		18.2	
Calcium		ug/l			133			129			125		106	
Chromium		ug/l			<3			3.43			<3		<0.9	
Iron		mg/l			0.48			1.88			0.426		0.479	
Lead		ug/l			1.12			7.76			<1		0.841	
Magnesium		mg/l			41.8			41.7			45		38	
Manganese		ug/l			842			2200			1070		1610	
Mecoprop	20	ug/l			<0.04			<0.04			<0.01		<0.01	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			0.0461			<0.01			<0.01		<0.5	
Nickel	20	ug/l			6.71			10.9			6.59		3.92	
Phenol	0.03	mg/l			<0.025			<0.002			<0.002		<0.2	
Potassium		mg/l			1.93			2.2			1.52		1.97	
Sodium		mg/l			17.4			15.6			19		15.1	
Sulphate		mg/l			320			225			349		275	
TOC		mg/l			<1			<3			<1.00		3.64	
TON		mg/l			<0.08			0.08			<0.08		<0.08	
Zinc	1000	ug/l			16.3			28.6			17.7		18.2	





Table 4.10 BH9 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	2.32	1.08	2.19	0.33	3.09	2.67	1.27	0.79	3.07	0.14	1.56	0.23
Chloride	250	mg/l	63.7	59.4	49.6	51.5	59.1	62.6	63.9	79.5	73.3	70.7	49.4	44.1
COD		mg/l	113	113	78	69	45	46	45	38	45	38	51	44
Electrical Conductivity		µS/cm	1720	1700	1610	1600	1630	1680	1670	1670	1690	1670	1570	1580
pH		Units	6.77	6.69	6.83	6.9	6.89	6.94	6.87	6.87	7.03	6.83	6.88	6.76
Alkalinity		mg/l			277			325			353		315	
Arsenic		ug/l			4.83			<2			<2		<2	
BOD		ug/l			<1			<1			<1		<1	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		9.72	
Calcium		ug/l			197			214			171		179	
Chromium		ug/l			18			<3			9.85		3.77	
Iron		mg/l			14.9			1.29			1.98		3.11	
Lead		ug/l			6.65			<1			1.16		1.67	
Magnesium		mg/l			64.2			66.3			62		61.6	
Manganese		ug/l			810			530			751		590	
Mecoprop	20	ug/l			0.0979			0.0902			0.167		0.055	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			0.0762			<0.01			<0.01		<0.5	
Nickel	20	ug/l			31.8			16.9			21.1		15.8	
Phenol	0.03	mg/l			<0.025			<0.002			<0.002		6.88	
Potassium		mg/l			14.8			16.7			15.9		14.1	
Sodium		mg/l			61.3			68			69.4		59.3	
Sulphate		mg/l			499			495			464		528	
TOC		mg/l			11.3			17			10.5		14.7	
TON		mg/l			6.5			7.5			6.93		6.24	
Zinc	1000	ug/l			25.2			<5			5.69		9.72	





Table 4.11 BH13 Results

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	2.07	<0.11	<0.11	<0.11	<0.11	<0.11	0.73	<0.11
Chloride	250	mg/l	28.3	28.8	27.4	28.4	29.3	24.9	28.2	29.1	29.7	30.4	28.9	23.1
COD		mg/l	<25	<25	<25	28	43	<25	<25	<25	<25	<25	<25	<25
Electrical Conductivity		µS/cm	720	708	711	710	758	715	735	729	740	734	737	783
pH		Units	7.57	7.44	7.44	7.6	7.43	7.6	7.67	7.51	7.64	7.39	7.55	7.48
Alkalinity		mg/l			192			173			195		193	
Arsenic		ug/l			6.12			6.59			7.82		9.68	
BOD		ug/l			<1			<1			4.9		1.66	
Cadmium	1	ug/l			<0.5			<0.5			<0.5		<9.7	
Calcium		ug/l			71			78			62.5		64.8	
Chromium		ug/l			<3			<3			<3		<0.9	
Iron		mg/l			0.223			0.26			0.549		0.179	
Lead		ug/l			<1			<1			<1		<0.3	
Magnesium		mg/l			35.5			40			37.3		37.8	
Manganese		ug/l			201			431			745		181	
Mecoprop	20	ug/l			<0.04			<0.04			<0.01		<0.01	
Mercury	0.1	ug/l			<0.02			<0.02			<0.02		<0.02	
Naphthalene	10	ug/l			0.201			<0.01			<0.01		<0.5	
Nickel	20	ug/l			1.03			1.2			1.55		<1.8	
Phenol	0.03	mg/l			<0.025			<0.002			<0.002		<0.2	
Potassium		mg/l			1.12			1.27			1.02		1.21	
Sodium		mg/l			20.1			21.3			21		20.5	
Sulphate		mg/l			148			165			158		153	
TOC		mg/l			1.78			<3			2.19		3.91	
TON		mg/l			<0.08			0.16			0.11		<0.08	
Zinc	1000	ug/l			6.14			15.1			7.66		<9.7	



4.3 Groundwater Conclusions

Groundwater levels remained consistent throughout the monitoring period and are similar to previous years. From the above tables, BH2 and BH5 recorded one exceedance of cadmium in November, with all other parameters within limits.

BH6 recorded exceedances of ammoniacal nitrogen throughout the monitoring period but has since returned to within compliance limits in November and December. Exceedances of cadmium, mercury, nickel and zinc were also recorded at this borehole.

BH6A recorded slight exceedances of nickel but returned to compliance levels and recorded one exceedance of cadmium. BH8 also recorded one exceedance of cadmium.

BH9 recorded exceedances of ammoniacal nitrogen throughout the monitoring but has returned to compliance in December. Slight exceedances of nickel were also recorded, as well as an exceedance of cadmium. BH13 recorded one exceedance of ammoniacal nitrogen in May.

Exceedances recorded at BH6 and BH9 are considered to be caused by influences from outside the site, given that the boreholes in close proximity did not record similar levels of exceedances throughout the monitoring period. BH6 is downgradient of BH9, meaning there is a possibility of a hydraulic link between the two boreholes.

All other parameters were within compliance of the limits set by the permit. Key parameters have also been screened against relevant EQS/UKDWS limits. BH6, BH9 and BH13 recorded exceedances of ammoniacal nitrogen, with BH1 exceeding limits for pH.



5 Surface Water

5.1 Surface Water Permit Conditions

There are a total of four surface water monitoring points surrounding the site. Surface water is monitored upstream of the site at the main culverted section (SW1) and further downstream as it re-emerges at the northern boundary of the site (SW2). Surface water is also monitored upstream (SW3) and downstream (SW4) of the site in a tributary of the Cusher River. The required surface water monitoring schedule including emission limits are shown in the tables below.

Table 5.1 Surface Water Monitoring Requirements

Emission Point Reference	Parameter	Limit	Monitoring Frequency
SW1, SW2, SW3, SW4	Suspended Solids	50 mg/l	Monthly
	pH	>6 and <9	
	BOD	5mg/l	
	Ammoniacal Nitrogen	1mg/l	
	Oil and Grease	None Visible	

Table 5.2 Other Surface Water Monitoring Requirements

Emission Point Reference	Parameter	Monitoring Frequency
SW1, SW2, SW3, SW4	Chloride	Monthly
	Electrical Conductivity	
	Temperature	



Emission Point Reference	Parameter	Monitoring Frequency
SW1, SW2, SW3, SW4	COD TON TOC Total Alkalinity Copper Calcium Magnesium Sodium Potassium Manganese Iron Nickel Cadmium Chromium Zinc Lead Sulphate Dissolved Oxygen Mecoprop Naphthalene Phenols	Quarterly
SW1, SW2, SW3, SW4	Hazardous Substances Screen	Annually

5.2 Surface Water Results and Discussion

The tables below show the results for surface water sampling undertaken from January to December 2019. The results are screened against limits listed in Schedule 4 of the permit; any exceedances will be highlighted in red, with any exceedances of EQS/UKDWS limits highlighted in blue. Please note that results from the Hazardous Substances Screen are available in Appendix B.



Table 5.3 Results SW1

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
BOD	5	mg/l	1.14	<1	1.02	2.12	1.03	<1	<1	<1	1.4	<1	1.2	1.03
Chloride		mg/l	25.4	24.3	26.4	25	25.7	18.7	24.7	19.1	26.3	21	20.3	20.9
Electrical Conductivity		µS/cm	714	843	942	1020	1,240	776	1,280	789	536	835	533	843
Oil and Grease	None visible	-	None	None	None	None	None	None	None	None	None	None	None	None
pH	6.0-9.0	Units	7.61	7.4	7.6	7.85	7.69	7.55	7.51	7.39	7.61	7.47	7.49	7.43
Suspended Solids	50	mg/l	5	12	4	3	<3	<3	4	<3	3	3	12	
Alkalinity		mg/l			133			130			219		105	
Cadmium		ug/l			<0.5			<0.5			<0.5		9.73	
Calcium		mg/l			114			100			144		54.6	
Chromium		ug/l			<3			<3			<3		<0.9	
COD		mg/l			<25			<25			<25		44	
Copper		ug/l			3.46			6.04			3.66		6.83	
Dissolved Oxygen		mg/l			9.02			8.42			8.63		8.77	
Iron		mg/l			0.0338			0			0.22		354	
Lead		ug/l			<1			<1			<1		<0.3	
Magnesium		mg/l			43			35.3			63.7		19.8	
Manganese		ug/l			5.21			5			32.6		6.41	
Mecoprop		ug/l			<0.04			<0.04			<0.01		<0.01	
Naphthalene		ug/l			0.227			<0.01			<0.01		<0.5	
Nickel		ug/l			5.94			7.74			6.73		7.21	
Phenol		mg/l			<0.002			<0.002			0.002		<0.2	
Potassium		mg/l			5.7			6.79			5.5		7.1	
Sodium		mg/l			18.9			17.1			25.5		12.5	
Sulphate		mg/l			328			225			494		131	



TOC		mg/l			6.01			8			4.06		10.7	
TON		mg/l			2.65			1.68			0.15		2.79	
Zinc		ug/l			8			8.25			<5		9.73	

Table 5.4 Results SW2

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	0.18	<0.11	<0.11	<0.11	0.14	<0.11	<0.11	<0.11	<0.11	0.16	0.14	0.14
BOD	5	mg/l	1.48	1.13	<1	1.68	2.14	<1	<1	<1	<1	<1	1.28	1.01
Chloride		mg/l	25.3	25.2	23.5	26	3.24	18	25.2	18.6	26.2	21.3	19.3	21.8
Electrical Conductivity		µS/cm	678	844	939	1020	137	774	1,270	784	1300	842	534	845
Oil and Grease	None visible	-	None	None	None	None	None	None	None	None	None	None	None	None
pH	6.0-9.0	Units	7.61	7.61	7.73	7.87	7.94	7.64	7.85	7.52	7.92	7.57	7.55	7.56
Suspended Solids	50	mg/l	16	8	5	5	71	<3	6	3	3	<3	16	
Alkalinity		mg/l			134			131			220		98	
Cadmium		ug/l			<0.5			<0.5			<0.5		<9.7	
Calcium		mg/l			113			100			144		54.5	
Chromium		ug/l			<3			<3			<3		<0.9	
COD		mg/l			<25			<25			66		50	
Copper		ug/l			3.34			6			3.28		6.6	
Dissolved Oxygen		mg/l			8.65			8.44			8.75		8.76	
Iron		mg/l			0.0265			0.12			0.0874		297	
Lead		ug/l			<1			<1			<1		<0.3	
Magnesium		mg/l			42			35.2			63.2		19.4	
Manganese		ug/l			4.57			5.3			19.5		4.88	
Mecoprop		ug/l			<0.04			<0.04			<0.01		<0.01	
Naphthalene		ug/l			0.0588			<0.01			<0.01		<0.5	
Nickel		ug/l			5.93			7.47			6.16		7.02	



Phenol		mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			5.59			6.82			5.43		7.04	
Sodium		mg/l			18.6			17.1			25.6		12.5	
Sulphate		mg/l			327			237			488		126	
TOC		mg/l			5.66			8.17			3.62		11.2	
TON		mg/l			2.65			1.58			0.17		2.32	
Zinc		ug/l			8.8			14.4			8.34		<9.7	

Table 5.5 Results SW3

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	0.27	<0.11	<0.11	<0.11	<0.11	<0.11
BOD	5	mg/l	1.35	3.7	1.14	10.2	2.7	2.35	1.97	2.15	7.01	4.09	1.08	1.19
Chloride		mg/l	133	43.7	38.2	43.2	45.3	31.2	37.1	31.6	37.9	31.2	34.8	32.8
Electrical Conductivity		µS/cm	836	483	444	486	525	402	512	407	516	447	397	441
Oil and Grease	None visible	-	None	None	None	None	None	None	None	None	None	None	None	None
pH	6.0-9.0	Units	6.96	7.16	7.42	7.43	7.17	7.12	7.27	7.11	7.5	7.34	7.07	7.16
Suspended Solids	50	mg/l	27	9	4	23	7	8	17	20	748	422	8	10
Alkalinity		mg/l			106			117			177		88.5	
Cadmium		ug/l			<0.5			<0.5			<0.5		10.4	
Calcium		mg/l			45.7			47.4			57.6		33.1	
Chromium		ug/l			<3			<3			37.9		<0.9	
COD		mg/l			<25			<25			<3		38	
Copper		ug/l			1.54			6.59			<25		4.12	
Dissolved Oxygen		mg/l			8.64			7.73			11.7		8.66	
Iron		mg/l			0.0396			0.32			4.65		178	
Lead		ug/l			<1			<1			8.21		<0.3	
Magnesium		mg/l			12.5			13.8			18.2		11	



Manganese		ug/l			5.05			891			9530		10.6	
Mecoprop		ug/l			<0.04			<0.04			<0.01		<0.01	
Naphthalene		ug/l			0.182			<0.01			<0.01		<0.5	
Nickel		ug/l			2.07			7.29			21.4		3.36	
Phenol		mg/l			<0.002			<0.002			<0.002		<0.2	
Potassium		mg/l			2.04			6.37			31.9		3.55	
Sodium		mg/l			20.5			20.8			23.9		19.1	
Sulphate		mg/l			40.2			33			54.4		25.3	
TOC		mg/l			4.59			5.16			5.43		8.21	
TON		mg/l			4.24			2.14			0.44		5.86	
Zinc		ug/l			10.4			59.8			202		10.4	

Table 5.6 Results SW4

Parameter	Limit	Unit	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Ammoniacal Nitrogen	1	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
BOD	5	mg/l	1.39	1.1	<1	1.77	2.37	<1	<1	<1	1.22	<1	1.33	1.24
Chloride		mg/l	49.7	32.1	29.7	33.2	7.9	22.8	29.8	21.5	30.7	24.4	23.5	25.5
Electrical Conductivity		µS/cm	703	717	753	835	231	646	1,020	724	1050	719	500	708
Oil and Grease	None visible	-	None	None	None	None	None	None	None	None	None	None	None	None
pH	6.0-9.0	Units	7.54	7.63	7.71	7.8	7.46	7.58	7.93	7.67	8.02	7.65	7.48	7.6
Suspended Solids	50	mg/l	21	6	4	3	67	6	3	6	27	<3	15	<3
Alkalinity		mg/l			122			124			206		94.4	
Cadmium		ug/l			<0.5			<0.5			<0.5		<9.7	
Calcium		mg/l			88.2			78.7			108		48.8	
Chromium		ug/l			<3			<3			<3		<0.9	
COD		mg/l			<25			<25			<25		45	
Copper		ug/l			2.88			4.82			2.64		10.1	



Dissolved Oxygen		mg/l			8.65			8.49			8.49		8.82	
Iron		mg/l			0.0398			0.27			0.344		326	
Lead		ug/l			<1			<1			<1		<0.3	
Magnesium		mg/l			29.9			26.8			46.1		17.5	
Manganese		ug/l			4.5			19.4			56.9		16.9	
Mecoprop		ug/l			<0.04			<0.04			<0.01		<0.01	
Naphthalene		ug/l			0.0974			<0.01			<0.01		<0.5	
Nickel		ug/l			4.09			5.80			4.5		6.04	
Phenol		mg/l			0.19			<0.002			<0.002		<0.2	
Potassium		mg/l			4.2			5.13			4.04		6.02	
Sodium		mg/l			19.7			17.7			24.1		14	
Sulphate		mg/l			190			156			197		103	
TOC		mg/l			5.09			6.97			5.22		10.1	
TON		mg/l			3.53			2.13			0.26		3.07	
Zinc		ug/l			6.8			6.18			12.4		<9.7	



5.3 Surface Water Conclusions

From the above tables, SW2 and SW4 recorded a slight exceedance of suspended solids in May. SW3 recorded exceedances of BOD in April and September, and suspended solids in September and October. All parameters returned to within compliance soon after the exceedances were recorded. It should be noted that SW3 is in an upstream location and therefore the exceedances recorded there cannot be attributed to the site

Key parameters have also been screened against relevant EQS/UKDWS limits, with no exceedances recorded.



6 Landfill Gas

6.1 Landfill Gas Permit Conditions

Gas monitoring is undertaken from 13 perimeter boreholes and 23 in waste gas wells. The gas monitoring required by the permit is shown below.

Table 6.1 Landfill Gas Limits

Monitoring Locations	Parameter	Unit	Limit	Frequency of Monitoring Required
LISBH001, LISBH002, LISBH003, LISBH004, LISBH005, LISBH005A, LISBH006, LISBH006A, LISBH007A, LISBH008, LISBH009, LISBH010, LISBH011, LISBH012, LISBH013.	Methane	% v/v	1	Monthly
	Carbon Dioxide	% v/v	1.5	
	Oxygen			
	Atmospheric Pressure			
	Differential Pressure	-	No limit	
	Temperature			
	Meteorological Data			

Table 6.2 Landfill Gas Monitoring Requirements

Emission Point Reference	Parameter	Frequency of Monitoring Required	Other Specifications:
All in-waste landfill gas monitoring boreholes	Methane, Carbon Dioxide, Oxygen, Carbon Monoxide, Atmospheric Pressure, Differential Pressure, Temperature, Meteorological Data.	Fortnightly	Limit of 100ppm for Carbon Monoxide



Emission Point Reference	Parameter	Frequency of Monitoring Required	Other Specifications:
All landfill gas extraction wells	Methane, Carbon Dioxide, Oxygen, Carbon Monoxide, Atmospheric Pressure, Differential Pressure, Temperature, Meteorological Data.	Fortnightly	Limit of 5% for Oxygen

6.2 Landfill Gas Results and Discussion

As required under the permit, landfill gas monitoring has been undertaken at the borehole locations as set out in Schedule 4. The permit trigger levels for landfill gas are greater than 1.0% v/v for methane and greater than 1.5% v/v for carbon dioxide. Landfill gas has been measured in all perimeter boreholes on a monthly basis. Please note that BH7A, BH11 and BH12 are inaccessible and unable to be sampled. BH1 was able to be sampled until April.

Table 6.3 Gas Monitoring January

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	0.7	0.2	22.5	0	0	76.6
BH2	0.8	0.2	22.4	0	0	76.6
BH4	0.8	0.6	21.5	0	0	77.2
BH5	0.7	0.5	21.4	0	0	77.4
BH5A	0.7	0.2	21.9	0	0	77.2
BH6	0.8	0.2	21.2	0	0	77.8
BH6A	0.8	0.2	21	0	0	78.1
BH7A	-	-	-	-	-	-
BH8	0.7	0.2	22.6	0	0	76.4
BH9	0.7	0.3	22.4	0	0	76.6
BH10	0.7	1.5	21.7	0	0	76.1
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.8	0.2	22.2	0	0	76.9

Table 6.4 Gas Monitoring February

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	0.7	0.2	20.3	0	0	78.7
BH2	0.7	0.2	20.3	0	0	78.9
BH4	0.7	0.3	20.2	0	0	78.8



BH5	0.7	0.3	20.4	0	0	78.5
BH5A	0.7	1.3	19.8	0	0	78.2
BH6	0.7	0.6	20.5	0	0	78.2
BH6A	0.7	0.3	20.8	0	0	78.2
BH7A	-	-	-	-	-	-
BH8	0.7	0.2	20.5	0	0	78.6
BH9	0.7	0.2	20.5	0	0	78.6
BH10	0.7	0.5	20.3	0	0	78.6
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.7	0.2	20.2	0	0	78.8

Table 6.5 Gas Monitoring March

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	0.7	0.2	21.6	0	0	77.5
BH2	0.7	0.2	21.6	0	0	77.6
BH4	0.6	0.6	20.9	0	0	77.9
BH5	0.6	0.2	21.1	0	0	78.1
BH5A	0.6	0.2	21.2	0	0	78
BH6	0.7	0.2	20.9	0	0	78.3
BH6A	0.7	0.2	20.8	0	0	78.4
BH7A	-	-	-	-	-	-
BH8	0.6	0.2	21.7	0		77.5
BH9	0.7	0.2	21.8	0	0	77.4
BH10	0.7	1.3	20.5	0	0	77.6
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.7	0.2	21.4	0	0	77.7

Table 6.6 Gas Monitoring April

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	0.7	0.2	20.5	0	0	78.6
BH2	0.7	0.2	20.4	0	0	78.7
BH4	0.7	0.4	20	0	0	79
BH5	0.6	0.3	20	0	0	79.1
BH5A	0.6	0.6	19.8	0	0	79
BH6	0.6	0.4	20.2	0	0	78.7
BH6A	0.7	0.3	20.6	0	0	78.5
BH7A	-	-	-	-	-	-
BH8	0.6	0.2	20.4	0	0	78.7
BH9	0.7	0.3	20.5	0	0	78.6
BH10	0.7	1.6	19.5	0	0	78.2
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-



BH13	0.7	0.2	20.1	0	0	78.9
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Table 6.7 Gas Monitoring May

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	1	0.5	21	0	0	77.5
BH4	0.9	1	19.7	0	0	78.4
BH5	0.9	0.2	20.7	0	0	78.2
BH5A	0.9	0.2	20.8	0	0	78.1
BH6	0.9	0.2	20.7	0	0	78.2
BH6A	0.9	0.2	20.7	0	0	78.2
BH7A	-	-	-	-	-	-
BH8	0.9	0.2	21.4	0	0	77.5
BH9	0.9	0.2	21.3	0	0	77.6
BH10	0.9	1.6	19.5	0	0	78
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.9	0.2	21	0	0	77.9

Table 6.8 Gas Monitoring June

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	1.1	0.3	20.2	0	0	78.5
BH4	1.1	0.5	19.7	0	0	79
BH5	1.1	0.4	19.4	0	0	79
BH5A	1.1	0.3	19.7	0	0	79
BH6	1.1	0.3	19.8	0	0	78.8
BH6A	1.3	0.3	20.5	0	0	77.8
BH7A	-	-	-	-	-	-
BH8	1	0.3	20.4	0	0	78.8
BH9	1.1	0.3	20.3	0	0	78.4
BH10	1.1	1.9	18.6	0	0	78.4
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	1	0.4	20	0	0	78.6

Table 6.9 Gas Monitoring July

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0	0.3	21.5	0	0	78.2
BH4	0	0.5	21	0	0	78.5
BH5	0	0.3	20.7	0	0	79
BH5A	0	0.3	20.8	0	0	78.9
BH6	0	0.3	20.8	0	0	79



BH6A	1.2	0.3	20	0	0	78.4
BH7A	-	-	-	-	-	-
BH8	0	0.3	21.8	0	0	77.9
BH9	0	0.2	21.7	0	0	78
BH10	0	0.3	21.6	0	0	78.1
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0	0.9	20.9	0	0	78.2

Table 6.10 Gas Monitoring August

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0	0.7	20.2	0	0	79.2
BH4	0	0.4	20.3	0	0	79.3
BH5	0	0.4	20.6	0	0	79
BH5A	0	0.3	20.4	0	0	79.3
BH6	0	0.3	20.7	0	0	78.9
BH6A	0	0.3	21.1	0	0	78.5
BH7A	-	-	-	-	-	-
BH8	0	0.3	21.5	0	0	78.2
BH9	0	0.3	21.3	0	0	78.4
BH10	0	3.8	17.1	0	0	78.8
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0	0.8	20.3	0	0	79

Table 6.10 Gas Monitoring September

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0.1	1	21.7	0	0	77.3
BH4	0.1	1.2	21	0	0	77.7
BH5	0.1	1.6	20.7	0	0	77.7
BH5A	0	0.4	21.7	0	0	77.9
BH6	0.1	0.9	21.4	0	0	77.6
BH6A	0.1	0.3	21.7	0	0	79.9
BH7A	-	-	-	-	-	-
BH8	0	0.3	22.2	0	0	77.4
BH9	0	0.3	22.3	0	0	77.4
BH10	0.1	0.4	21.7	0	0	77.8
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.1	0.4	21.7	0	0	79.8



Table 6.11 Gas Monitoring October

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0.1	0.5	22.2	0	0	77.2
BH4	0.1	0.4	21.1	0	0	77.5
BH5	0.1	1.2	21.8	0	0	77
BH5A	0.1	1.9	21.5	0	0	76.6
BH6	0.1	0.7	21.5	0	0	77.7
BH6A	0.1	0.4	21.6	0	0	78
BH7A	-	-	-	-	-	-
BH8	0.1	0.4	22.4	0	0	77.1
BH9	0.1	0.3	22.4	0	0	77.1
BH10	0.1	2.3	21.1	0	0	76.6
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0.1	0.4	22.2	0	0	77.4

Table 6.12 Gas Monitoring November

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0	0.4	22.6	0	0	77.1
BH4	0	0.5	22.3	0	0	77.2
BH5	0	0.4	22.1	0	0	77.5
BH5A	0	0.4	22.2	0	0	77.4
BH6	0	0.6	21.9	0	0	77.5
BH6A	0	0.4	21.8	0	0	77.8
BH7A	-	-	-	-	-	-
BH8	0	0.4	22.8	0	0	76.8
BH9	0	2	20.8	0	0	77.2
BH10	0	1.7	22	0	0	76.3
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0	0.4	22.4	0	0	77.2

Table 6.13 Gas Monitoring December

Monitoring Point Reference	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂	CO	H ₂ S	Balance (%)
BH1	-	-	-	-	-	-
BH2	0	0.4	22.2	0	0	77.4
BH4	0	0.4	22	0	0	77.6
BH5	0	1	21.6	0	0	77.4
BH5A	0	0.6	21.3	0	0	78.1
BH6	0	0.5	21.7	0	0	77.8
BH6A	0	0.4	21.6	0	0	78
BH7A	-	-	-	-	-	-



BH8	0	0.4	27.4	0	0	77.2
BH9	0	0.8	22	0	0	77.2
BH10	0	1.3	22.1	0	0	76.6
BH11	-	-	-	-	-	-
BH12	-	-	-	-	-	-
BH13	0	0.4	22.1	0	0	77.5

6.3 Landfill Gas Conclusions

Gas levels remained fairly consistent throughout the monitoring period. Slight exceedances of methane were recorded in BH2, BH4, BH5, BH5A, BH6A, BH9 and BH10, with carbon dioxide exceeding in BH5, BH5A, BH9 and BH10. All other boreholes remained within compliance limits during the monitoring period.

The in-waste landfill gas wells are controlled through collection and utilisation via the landfill gas engine and flare. Gas wells are monitored and balanced regularly to achieve optimum gas extraction from each well.

During gas balancing, gas well valves are adjusted accordingly in order to achieve the highest methane values possible. The results of in-waste gas monitoring can be found in Appendix C.



7 Other Conditions

There are no other monitoring requirements for the site. Monitoring of dust, PM₁₀ and asbestos fibers will only be required to be carried out in future should the site re-open for the acceptance of waste.

8 Additional Mandatory Information

“Blue Sky Resource Recovery Ltd. undertook the operational liability of Lisbane Landfill site following Quinn Environmental going into administration. At the time of takeover there were significant issues with the site. Blue Sky Resource Recovery Ltd have worked tirelessly to provide ongoing financial provision to remedy these issues. Ongoing financial provision includes funds associated with the ongoing permanent capping of the site, leachate extraction and disposal, environmental monitoring and landfill gas control. The management of the site is financed on an ongoing basis by the limited revenue generation from energy production from the landfill gas engine.

Blue Sky Resource Recovery Ltd are currently in negotiations with NIEA regarding a suitable financial provision guarantee for the site given the previous investments that the company have made.”

██████████ currently holds COTC certification and is progressing to OCC.

No nuisance complaints were received in 2019.

No non-compliances were recorded in 2019.

No compliance tests have been undertaken in 2019.

A total of twenty Schedule 6 notifications were sent to NIEA during the monitoring period

Table 8.1 Performance Parameters

Month	Annual Total	Units
Potable water use	N/A	Cubic metres
Energy used	*	MW
Non potable water used	*	Cubic metres
Total		

*Figures unavailable at time of report, to be forwarded to NIEA when available.



Table 8.2 Annual Production/Treatment

Parameter	Total
Leachate:	
Disposed of off-site;	N/A
Disposed of to any onsite effluent treatment plant;	6,095.92m ³
Recirculated into the waste mass	N/A
Surface water and/or groundwater:	
Disposed of off-site;	N/A
Disposed of to any onsite effluent treatment plant	N/A
Landfill Gas:	
Combustion in flares;	N/A
Combustion in gas engines;	1,049,929 m ³
Other methods of gas utilisation	N/A



9 Conclusions and Recommendations

Leachate levels remained within compliance throughout the year, with concentrations remaining fairly consistent. Gas levels remained within compliance limits for the majority of the monitoring period, with a number of slight exceedances recorded in June and July

Exceedances recorded at BH6 and BH9 are considered to be caused by influences from outside the site boundary, with other boreholes recording some exceedances, but the majority of parameters remaining within compliance limits. Surface water monitoring has shown the majority of the monitoring period has remained within compliance, with a few exceedances recorded.

10 Next Monitoring Report

The next monitoring period will cover the period from January 2020 to December 2020. The next annual environmental report is due for submission by the 31st January 2021.

11 References

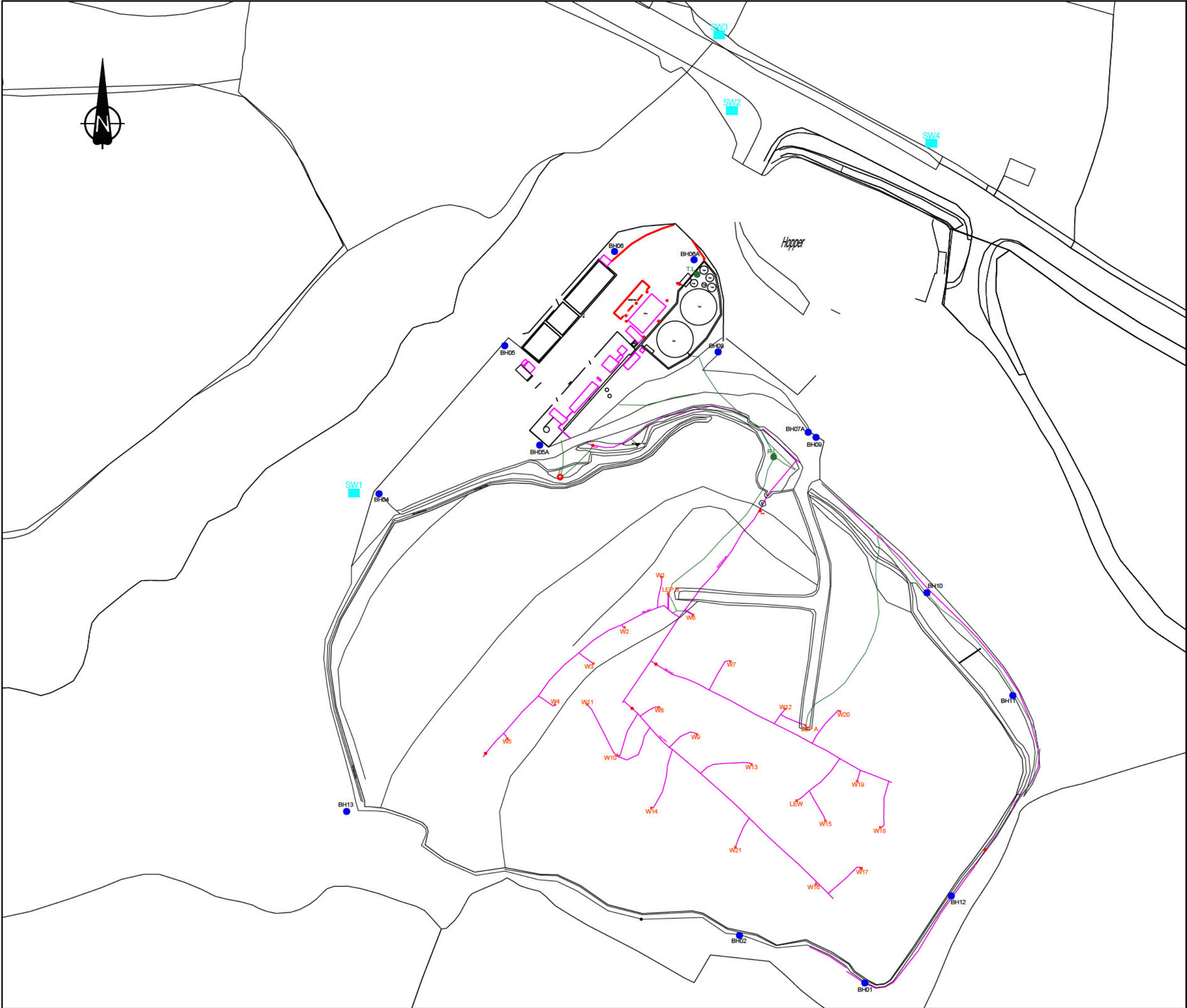
N/A



Appendix A

Drawings





KEY:

- Groundwater and Gas Monitoring Point
- Leachate Monitoring Point
- Surface Water Monitoring Point
- In-waste Gas Monitoring Point

Rev.No.	AMENDMENT DETAILS	BY	DATE
---------	-------------------	----	------

CLIENT
QEL

DRAWING
Monitoring Locations

CONTRACT
Lisbane Landfill Site

SHEET SIZE	DATE	SCALE	DRAWN	CHECKED
A3	27.04.15	1:1250		

DRG No.	Rev.
15047-003	—

Laganwood House
Newforge Lane
Malone Road
Belfast BT9 5NX
Tel 028 9066 2121
Fax 028 9066 3162
email mail@wdr-rt-taggart.com

WDR & RT TAGGART

Architects
Civil Engineers
Structural Engineers
Environmental Engineers

Landscape Architects
Town Planning Consultants
Planning Supervisors
Project Managers

Appendix B

Laboratory Certificates



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015180

Issue No: 1

WDR & RT Taggart
Laganwood House
Newforge Lane
Malone Road
Belfast
Co Antrim
BT9 5NX

Caulside Drive
New Park Industrial Estate
Antrim
BT41 2DV
Tel: (028) 9446 6708
Fax: (028) 9442 9580

www.mcquillancompanies.com
sales@mcquillanenvirocare.com

MCQ Job No	ORD-16611
Sample Receipt Date	30/01/2019
Date Analysis Started	30/01/2019
Completion Date	13/02/2019
Turnaround Time	10
No of Samples	15
Purchase Order Number	Lisbane Monthly
McQuillan Quote Number	ECA-01308

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Envirocare Analytical Laboratory (MCQ) unless otherwise specified. Any analysis that was subcontracted to a McQuillan Companies Approved Laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Results relate only to the items tested. This Test Certificate supersedes any version previously issued by the laboratory. It cannot be reproduced except in full and without written approval from McQuillan Envirocare Ltd.

Should you have any queries regarding this report(s) or any part of our service, please contact Sales on +44(0)28 9446 6708 who will be happy to discuss your requirements.

Thank you for using McQuillan Companies Analytical Services and we look forward to receiving your next samples.

Yours Sincerely

Name: [REDACTED]

Date: 15/2/2019

Title: Lab Administrator



Test Certificate

Certificate: ECTC015180

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ056779	BH1	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	10.90	mg/l	Y	MCQ		
			SAM009	COD (Total)	<25	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	529.0	uS/cm	Y	MCQ		
			SAM004	pH	7.59	Units	Y	MCQ		
	Sample Matrix:		Ground Water	Analyst Comment:						
	MCQ056780	BH2	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	18.50	mg/l	Y	MCQ	
				SAM009	COD (Total)	30	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	697.0	uS/cm	Y	MCQ	
SAM004				pH	7.50	Units	Y	MCQ		
Sample Matrix:		Ground Water	Analyst Comment:							
MCQ056781		BH4	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	19.80	mg/l	Y	MCQ	
				SAM009	COD (Total)	30	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,200.0	uS/cm	Y	MCQ	
	SAM004			pH	7.05	Units	Y	MCQ		
	Sample Matrix:		Ground Water	Analyst Comment:						
	MCQ056782	BH5	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	23.90	mg/l	Y	MCQ	
				SAM009	COD (Total)	37	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	734.0	uS/cm	Y	MCQ	
SAM004				pH	7.12	Units	Y	MCQ		
Sample Matrix:		Ground Water	Analyst Comment:							
MCQ056783		BH6	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	22.60	mg/l	Y	MCQ	
				SAM009	COD (Total)	242	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	759.0	uS/cm	Y	MCQ	
	SAM004			pH	7.12	Units	Y	MCQ		
	Sample Matrix:		Ground Water	Analyst Comment:						

Test Certificate

Certificate: ECTC015180

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ056784	BH6A	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	28.00	mg/l	Y	MCQ		
			SAM009	COD (Total)	34	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	928.0	uS/cm	Y	MCQ		
			SAM004	pH	6.98	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ056785	BH8	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	18.00	mg/l	Y	MCQ	
				SAM009	COD (Total)	<25	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,060.0	uS/cm	Y	MCQ	
SAM004				pH	7.17	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ056786		BH9	29/01/2019	SAM031	Ammonia as N	2.32	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	63.70	mg/l	Y	MCQ	
				SAM009	COD (Total)	113	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,720.0	uS/cm	Y	MCQ	
	SAM004			pH	6.77	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ056787	BH13	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	28.30	mg/l	Y	MCQ	
				SAM009	COD (Total)	<25	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	720.0	uS/cm	Y	MCQ	
SAM004				pH	7.57	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ056788		SW1	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM016	BOD (ATU)	1.14	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	25.40	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	714.0	uS/cm	Y	MCQ	
	SAM004			pH	7.61	Units	Y	MCQ		
	SAM001			Suspended Solids	5.00	mg/l	Y	MCQ		
	Sample Matrix: Surface Water		Analyst Comment:							

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015180

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ056789	SW2	29/01/2019	SAM031	Ammonia as N	0.18	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.48	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	25.30	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	678.0	uS/cm	Y	MCQ	
			SAM004	pH	7.61	Units	Y	MCQ	
			SAM001	Suspended Solids	16.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ056790	SW3	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.35	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	133.00	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	836.0	uS/cm	Y	MCQ	
			SAM004	pH	6.96	Units	Y	MCQ	
			SAM001	Suspended Solids	27.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ056791	SW4	29/01/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.39	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	49.70	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	703.0	uS/cm	Y	MCQ	
			SAM004	pH	7.54	Units	Y	MCQ	
			SAM001	Suspended Solids	21.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ056792	Raw Leachate	29/01/2019	SAM031	Ammonia as N	516.00	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	16.70	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	788.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	808	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	8,750.0	uS/cm	Y	MCQ	
			SAM004	pH	7.81	Units	Y	MCQ	
			SAM001	Suspended Solids	22.00	mg/l	Y	MCQ	
Sample Matrix: Landfill Leachate		Analyst Comment:							
MCQ056793	Treated Leachate	29/01/2019	SAM031	Ammonia as N	53.20	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	5.39	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	1,080.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	893	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	10,800.0	uS/cm	Y	MCQ	
			SAM004	pH	7.68	Units	Y	MCQ	
			SAM001	Suspended Solids	7.00	mg/l	Y	MCQ	

McQuillan Envirocare Ltd
Analytical Services

Test Certificate

Certificate: ECTC015180

Issue No: 1

MCQ056793

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015438

Issue No: 1

WDR & RT Taggart
Laganwood House
Newforge Lane
Malone Road
Belfast
Co Antrim
BT9 5NX

Caulside Drive
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Antrim
BT41 2DV
Tel: (028) 9446 6708
Fax: (028) 9442 9580

www.mcquillancompanies.com
sales@mcquillanenvirocare.com

MCQ Job No	ORD-16871
Sample Receipt Date	26/02/2019
Date Analysis Started	27/02/2019
Completion Date	21/03/2019
Turnaround Time	10
No of Samples	15
Purchase Order Number	Lisbane Monthly
McQuillan Quote Number	ECA-01916

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Envirocare Analytical Laboratory (MCQ) unless otherwise specified. Any analysis that was subcontracted to a McQuillan Companies Approved Laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Results relate only to the items tested. This Test Certificate supersedes any version previously issued by the laboratory. It cannot be reproduced except in full and without written approval from McQuillan Envirocare Ltd.

Should you have any queries regarding this report(s) or any part of our service, please contact Sales on +44(0)28 9446 6708 who will be happy to discuss your requirements.

Thank you for using McQuillan Companies Analytical Services and we look forward to receiving your next samples.

Yours Sincerely

Name: [REDACTED]

Date: 21/3/2019

Title: Senior Analytical
Chemist

Test Certificate

Certificate: ECTC015438

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ057793	BH1	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	9.99	mg/l	Y	MCQ		
			SAM009	COD (Total)	48	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	277	uS/cm	Y	MCQ		
			SAM004	pH	9.58	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ057794	BH2	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	22.1	mg/l	Y	MCQ	
				SAM009	COD (Total)	<25	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	696	uS/cm	Y	MCQ	
SAM004				pH	7.57	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ057795		BH4	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	19.7	mg/l	Y	MCQ	
				SAM009	COD (Total)	40	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,180	uS/cm	Y	MCQ	
	SAM004			pH	7.01	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ057796	BH5	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	37.5	mg/l	Y	MCQ	
				SAM009	COD (Total)	32	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	894	uS/cm	Y	MCQ	
SAM004				pH	7.10	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ057797		BH6	25/02/2019	SAM031	Ammonia as N	2.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	25.7	mg/l	Y	MCQ	
				SAM009	COD (Total)	6,900	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	737	uS/cm	Y	MCQ	
	SAM004			pH	7.20	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015438

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ057798	BH6A	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	28.7	mg/l	Y	MCQ		
			SAM009	COD (Total)	28	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	948	uS/cm	Y	MCQ		
			SAM004	pH	6.94	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ057799	BH8	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y		MCQ
				SAM031	Chloride as Cl	16.5	mg/l	Y		MCQ
				SAM009	COD (Total)	<25	mg/l	Y		MCQ
				SAM005	Electrical Conductivity	1,050	uS/cm	Y		MCQ
SAM004				pH	7.05	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ057800		BH9	25/02/2019	SAM031	Ammonia as N	1.08	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	59.4	mg/l	Y	MCQ	
				SAM009	COD (Total)	113	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,700	uS/cm	Y	MCQ	
	SAM004			pH	6.69	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ057801	BH13	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	28.8	mg/l	Y	MCQ	
				SAM009	COD (Total)	<25	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	708	uS/cm	Y	MCQ	
SAM004				pH	7.44	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ057802		SW1	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	24.3	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	843	uS/cm	Y	MCQ	
	SAM004			pH	7.40	Units	Y	MCQ		
	SAM001			Suspended Solids	12	mg/l	Y	MCQ		
	Sample Matrix: Surface Water		Analyst Comment:		@					

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015438

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ057803	SW2	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	1.13	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	25.2	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	844	uS/cm	Y	MCQ	
			SAM004	pH	7.61	Units	Y	MCQ	
			SAM001	Suspended Solids	8	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ057804	SW3	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	3.70	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	43.7	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	483	uS/cm	Y	MCQ	
			SAM004	pH	7.16	Units	Y	MCQ	
			SAM001	Suspended Solids	9	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ057805	SW4	25/02/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	1.10	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	32.1	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	717	uS/cm	Y	MCQ	
			SAM004	pH	7.63	Units	Y	MCQ	
			SAM001	Suspended Solids	6	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ057806	Treated Leachate	25/02/2019	SAM031	Ammonia as N	28.2	mg/l	Y	MCQ	\$@
			SAM016	BOD (ATU)	3.35	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	1,100	mg/l	Y	MCQ	
			SAM009	COD (Total)	900	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	11,000	uS/cm	Y	MCQ	
			SAM004	pH	7.67	Units	Y	MCQ	
			SAM001	Suspended Solids	34	mg/l	Y	MCQ	
			Sample Matrix: Landfill Leachate		Analyst Comment:				
MCQ057807	Raw Leachate	25/02/2019	SAM031	Ammonia as N	495	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	15.7	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	756	mg/l	Y	MCQ	
			SAM009	COD (Total)	791	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	8,670	uS/cm	Y	MCQ	
			SAM004	pH	7.77	Units	Y	MCQ	
			SAM001	Suspended Solids	41	mg/l	Y	MCQ	

McQuillan Envirocare Ltd
Analytical Services

Test Certificate

Certificate: ECTC015438

Issue No: 1

MCQ057807

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015691

Issue No: 1

WDR & RT Taggart
Laganwood House
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McQuillan Envirocare Ltd t/a McQuillan Environmental
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www.mcquillancompanies.com
samplebooking@mcqcos.com

MCQ Job No	ORD-17124	Sample Receipt Date	26/03/2019
MCQ Quote Number	ECA-01916	Date Analysis Started	26/03/2019
Purchase Order Number	Lisbane	Completion Date	21/05/2019
No of Samples	15	Turnaround Time	10

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Environmental Analytical Laboratory (MCQ) unless otherwise specified. Results relate only to the items tested. Any analysis that was subcontracted to an approved laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Where sample data is provided by the customer, the results relate to the sample supplied and on the basis that this data is correct. Incorrect sampling dates and/or sample information will affect the validity of results. This Test Certificate supersedes any version previously issued by the laboratory. The report shall not be reproduced except in full without approval of the laboratory.

Should you have any queries regarding this report(s) or any part of our service, please contact Sample Booking on 028 9448 3195 who will be happy to discuss your requirements.

Thank you for using our Laboratory and we look forward to receiving your next samples.

Yours Sincerely

[REDACTED]

[REDACTED]

Report Authorised by:

Position: Lab Administrator

Date Issued: 21/5/2019

Addendum To Report:



McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058894	BH1	25/03/2019	SAM031	Alkalinity, Total	209.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	65.6	mg/l	N	S	
			SAM031	Chloride as Cl	11.10	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	539.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.331	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	24.2	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	6.06	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.304	ug/l	N	S	
			N/A	Nickel Total (W)	1.3	ug/l	Y	S	
			SAM004	pH	7.93	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	1.28	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	15.3	mg/l	N	S	
			SAM031	Sulphate as SO4	58.70	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	<1.00	mg/l	Y	MCQ	
			SAM031	TON as N	1.13	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	5.35	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ058895	BH2	25/03/2019	SAM031	Alkalinity, Total	125.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	12.4	ug/l	Y	S	
			SAM016	BOD (ATU)	2.17	mg/l	Y	MCQ	
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	68.9	mg/l	N	S	
			SAM031	Chloride as Cl	31.30	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	27	mg/l	Y	MCQ	

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Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058895	BH2	25/03/2019	SAM005	Electrical Conductivity	623.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.457	mg/l	N	S	
			N/A	Lead (tot.unfilt)	2.12	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	21.5	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	89.8	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.269	ug/l	N	S	
			N/A	Nickel Total (W)	5.47	ug/l	Y	S	
			SAM004	pH	7.62	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	4.14	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.6	mg/l	N	S	
			SAM031	Sulphate as SO4	126.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.8	°C	N	MCQ	
			SAM034	TOC	6.12	mg/l	Y	MCQ	
			SAM031	TON as N	5.89	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	8.77	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ058896	BH4	25/03/2019	SAM031	Alkalinity, Total	299.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	1.15	mg/l	Y	MCQ	@
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	162	mg/l	N	S	
			SAM031	Chloride as Cl	19.00	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	3.87	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,160.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	2.92	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	51.1	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	178	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0663	ug/l	N	S	
			N/A	Nickel Total (W)	5.16	ug/l	Y	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations			
MCQ058896	BH4	25/03/2019	SAM004	pH	7.16	Units	Y	MCQ				
			N/A	Potassium (tot.unfilt)	4.77	mg/l	N	S				
			N/A	Sodium (tot.unfilt)	19.1	mg/l	N	S				
			SAM031	Sulphate as SO4	334.00	mg/l	Y	MCQ				
			Temperature Probe	Temperature	19.4	°C	N	MCQ				
			SAM034	TOC	1.38	mg/l	Y	MCQ				
			SAM031	TON as N	0.29	mg/l	Y	MCQ				
			N/A	Zinc (tot.unfilt)	8.95	ug/l	Y	S				
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S				
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S				
			N/A	Cresols	<0.006	mg/l	Y	S				
			N/A	Phenol	<0.002	mg/l	Y	S				
			N/A	Phenol 5 Speciated								
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S				
			N/A	Xylenols	<0.008	mg/l	Y	S				
			Sample Matrix: Ground Water			Analyst Comment:						
			MCQ058897	BH5	25/03/2019	SAM031	Alkalinity, Total	136.00		mg/l	Y	MCQ
SAM031	Ammonia as N	< 0.11				mg/l	Y	MCQ				
N/A	Arsenic (tot.unfilt)	<2				ug/l	Y	S				
SAM016	BOD (ATU)	<1.00				mg/l	Y	MCQ				
N/A	Cadmium Total (W)	<0.5				ug/l	Y	S				
N/A	Calcium (tot.unfilt)	99.3				mg/l	N	S				
SAM031	Chloride as Cl	20.70				mg/l	Y	MCQ				
N/A	Chromium (tot.unfilt)	<3				ug/l	Y	S				
SAM009	COD (Total)	<25				mg/l	Y	MCQ				
SAM005	Electrical Conductivity	736.0				uS/cm	Y	MCQ				
N/A	Iron (tot.unfilt)	1.2				mg/l	N	S				
N/A	Lead (tot.unfilt)	1.84				ug/l	Y	S				
N/A	Magnesium (tot.unfilt)	21.8				mg/l	N	S				
N/A	Manganese (tot.unfilt)	119				ug/l	Y	S				
N/A	Mecoprop (MCP)	<0.04				ug/l	N	S				
N/A	Mercury (tot.unfilt)	<0.02				ug/l	N	S				
N/A	Naphthalene (aq)	<0.01				ug/l	N	S				
N/A	Nickel Total (W)	6.65				ug/l	Y	S				
SAM004	pH	7.30				Units	Y	MCQ				
N/A	Potassium (tot.unfilt)	6.05				mg/l	N	S				
N/A	Sodium (tot.unfilt)	17.7				mg/l	N	S				
SAM031	Sulphate as SO4	194.00				mg/l	Y	MCQ				
Temperature Probe	Temperature	19.8				°C	N	MCQ				
SAM034	TOC	4.78				mg/l	Y	MCQ				
SAM031	TON as N	3.04				mg/l	Y	MCQ				
N/A	Zinc (tot.unfilt)	13.9				ug/l	Y	S				

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Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058897	BH5	25/03/2019	N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ058898	BH6	25/03/2019	SAM031	Alkalinity, Total	347.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	4.02	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	104	ug/l	Y	S	
			SAM016	BOD (ATU)	105.00	mg/l	Y	MCQ	@
			N/A	Cadmium Total (W)	5.85	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	516	mg/l	N	S	
			SAM031	Chloride as Cl	16.50	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	761	ug/l	Y	S	
			SAM009	COD (Total)	NR	mg/l	Y	MCQ	C
			SAM005	Electrical Conductivity	937.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	708	mg/l	N	S	
			N/A	Lead (tot.unfilt)	822	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	256	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	28700	ug/l	Y	S	
			N/A	Mecoprop (MCP)	2.64	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	0.742	ug/l	N	S	
			N/A	Naphthalene (aq)	1.11	ug/l	N	S	
			N/A	Nickel Total (W)	1660	ug/l	Y	S	
			SAM004	pH	7.36	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	27.8	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	18.1	mg/l	N	S	
			SAM031	Sulphate as SO4	238.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	928.00	mg/l	Y	MCQ	
			SAM031	TON as N	<0.40	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	3040	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
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MCQ058898	Sample Matrix: Ground Water		Analyst Comment:						
MCQ058899	BH6A	25/03/2019	SAM031	Alkalinity, Total	209.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	4.77	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	115	mg/l	N	S	
			SAM031	Chloride as Cl	28.70	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	24.7	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	951.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	11.2	mg/l	N	S	
			N/A	Lead (tot.unfilt)	13.2	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	29.3	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	569	ug/l	Y	S	
			N/A	Mecoprop (MCP)	0.0819	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	0.0354	ug/l	N	S	
			N/A	Naphthalene (aq)	0.114	ug/l	N	S	
			N/A	Nickel Total (W)	21.1	ug/l	Y	S	
			SAM004	pH	6.91	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	5.99	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	33	mg/l	N	S	
			SAM031	Sulphate as SO4	247.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.1	°C	N	MCQ	
			SAM034	TOC	1.96	mg/l	Y	MCQ	
			SAM031	TON as N	2.92	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	55.7	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water
Analyst Comment:

MCQ058900	BH8	25/03/2019	SAM031	Alkalinity, Total	200.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	

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Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058900	BH8	25/03/2019	N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	133	mg/l	N	S	
			SAM031	Chloride as Cl	21.40	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,010.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.48	mg/l	N	S	
			N/A	Lead (tot.unfilt)	1.12	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	41.8	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	842	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0461	ug/l	N	S	
			N/A	Nickel Total (W)	6.71	ug/l	Y	S	
			SAM004	pH	7.06	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	1.93	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.4	mg/l	N	S	
			SAM031	Sulphate as SO4	320.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	<1.00	mg/l	Y	MCQ	
			SAM031	TON as N	< 0.08	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	16.3	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	
			Sample Matrix: Ground Water			Analyst Comment:			
MCQ058901	BH9	25/03/2019	SAM031	Alkalinity, Total	277.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	2.19	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	4.83	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	197	mg/l	N	S	
			SAM031	Chloride as Cl	49.60	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	18	ug/l	Y	S	
			SAM009	COD (Total)	78	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,610.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	14.9	mg/l	N	S	
			N/A	Lead (tot.unfilt)	6.65	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	64.2	mg/l	N	S	

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Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058901	BH9	25/03/2019	N/A	Manganese (tot.unfilt)	810	ug/l	Y	S	
			N/A	Mecoprop (MCP)	0.0979	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0762	ug/l	N	S	
			N/A	Nickel Total (W)	31.8	ug/l	Y	S	
			SAM004	pH	6.83	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	14.8	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	61.3	mg/l	N	S	
			SAM031	Sulphate as SO4	499.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	11.30	mg/l	Y	MCQ	
			SAM031	TON as N	6.50	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	25.2	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ058902	BH13	25/03/2019	SAM031	Alkalinity, Total	192.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	6.12	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	@
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	71	mg/l	N	S	
			SAM031	Chloride as Cl	27.40	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	711.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.223	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	35.5	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	201	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.201	ug/l	N	S	
			N/A	Nickel Total (W)	1.03	ug/l	Y	S	
			SAM004	pH	7.44	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	1.12	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	20.1	mg/l	N	S	
			SAM031	Sulphate as SO4	148.00	mg/l	Y	MCQ	

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058902	BH13	25/03/2019	Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	1.78	mg/l	Y	MCQ	
			SAM031	TON as N	< 0.08	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	6.14	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	
			Sample Matrix: Ground Water			Analyst Comment:			
MCQ058911	SW1	25/03/2019	SAM031	Alkalinity, Total	133.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.02	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	114	mg/l	N	S	
			SAM031	Chloride as Cl	26.40	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	3.46	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	9.02	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	942.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.0338	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	43	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	5.21	ug/l	Y	S	
			N/A	Mecoprop (MCPPE)	<0.04	ug/l	N	S	
			N/A	Naphthalene (aq)	0.227	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	5.94	ug/l	Y	S	
			SAM004	pH	7.60	Units	Y	MCQ	
			SAM029	Phenol Index	0.20	mg/l	Y	MCQ	
			N/A	Potassium (tot.unfilt)	5.7	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	18.9	mg/l	N	S	
			SAM031	Sulphate as SO4	328.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	4.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	6.01	mg/l	Y	MCQ	
			SAM031	TON as N	2.65	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc Total (W)	8	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	

McQuillan Envirocare Ltd
Analytical Services
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Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058911	SW1	25/03/2019	N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Surface Water

Analyst
Comment:

MCQ058912	SW2	25/03/2019	SAM031	Alkalinity, Total	134.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	113	mg/l	N	S	
			SAM031	Chloride as Cl	23.50	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	3.34	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.65	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	939.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.0265	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	42	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	4.57	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0588	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	5.93	ug/l	Y	S	
			SAM004	pH	7.73	Units	Y	MCQ	
			SAM029	Phenol Index	0.21	mg/l	Y	MCQ	
			N/A	Potassium (tot.unfilt)	5.59	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	18.6	mg/l	N	S	
			SAM031	Sulphate as SO4	327.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	5.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM034	TOC	5.66	mg/l	Y	MCQ	
			SAM031	TON as N	2.65	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc Total (W)	8.8	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
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MCQ058912

Sample Matrix: Surface Water

**Analyst
Comment:**

MCQ058913	SW3	25/03/2019	SAM031	Alkalinity, Total	106.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.14	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	45.7	mg/l	N	S	
			SAM031	Chloride as Cl	38.20	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	1.54	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.64	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	444.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.0396	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	12.5	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	5.05	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene (aq)	0.182	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	2.07	ug/l	Y	S	
			SAM004	pH	7.42	Units	Y	MCQ	
			SAM029	Phenol Index	<0.10	mg/l	Y	MCQ	
			N/A	Potassium (tot.unfilt)	2.04	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	20.5	mg/l	N	S	
			SAM031	Sulphate as SO4	40.20	mg/l	Y	MCQ	
			SAM001	Suspended Solids	4.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.5	°C	N	MCQ	
			SAM034	TOC	4.59	mg/l	Y	MCQ	
			SAM031	TON as N	4.24	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc Total (W)	10.4	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Surface Water

**Analyst
Comment:**

MCQ058914	SW4	25/03/2019	SAM031	Alkalinity, Total	122.00	mg/l	Y	MCQ
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McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058914	SW4	25/03/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	88.2	mg/l	N	S	
			SAM031	Chloride as Cl	29.70	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	2.88	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.65	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	753.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.0398	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	29.9	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	4.5	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0974	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	4.09	ug/l	Y	S	
			SAM004	pH	7.71	Units	Y	MCQ	
			SAM029	Phenol Index	0.19	mg/l	Y	MCQ	
			N/A	Potassium (tot.unfilt)	4.2	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	19.7	mg/l	N	S	
			SAM031	Sulphate as SO4	190.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	4.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.9	°C	N	MCQ	
			SAM034	TOC	5.09	mg/l	Y	MCQ	
			SAM031	TON as N	3.53	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc Total (W)	6.8	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Surface Water

Analyst
Comment:

MCQ058915	Raw Leachate	25/03/2019	SAM031	Alkalinity, Total	3,220.00	mg/l	Y	MCQ	8@
			SAM031	Ammonia as N	528.00	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	22.2	ug/l	Y	S	
			SAM016	BOD (ATU)	18.70	mg/l	Y	MCQ	
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	121	mg/l	N	S	
			SAM031	Chloride as Cl	705.00	mg/l	Y	MCQ	



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058915	Raw Leachate	25/03/2019	N/A	Chromium (tot.unfilt)	116	ug/l	Y	S	
			SAM009	COD (Total)	860	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	8,580.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	4.77	mg/l	N	S	
			N/A	Lead (tot.unfilt)	1.62	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	54.1	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	720	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<4	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.2	ug/l	N	S	
			N/A	Naphthalene (aq)	<0.01	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	82.2	ug/l	Y	S	
			SAM004	pH	7.73	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	305	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	597	mg/l	N	S	
			SAM031	Sulphate as SO4	8.41	mg/l	Y	MCQ	
			SAM001	Suspended Solids	58.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.5	°C	N	MCQ	
			SAM034	TOC	298.00	mg/l	Y	MCQ	
			SAM031	TON as N	4.62	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	75.8	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Landfill Leachate

Analyst
Comment:

MCQ058916	Treated Leachate	25/03/2019	SAM031	Alkalinity, Total	368.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	11.00	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	27	ug/l	Y	S	
			SAM016	BOD (ATU)	7.15	mg/l	Y	MCQ	8@
			N/A	Cadmium Total (W)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	77.5	mg/l	N	S	
			SAM031	Chloride as Cl	1,020.00	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	172	ug/l	Y	S	
			SAM009	COD (Total)	915	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	10,900.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	5.32	mg/l	N	S	
			N/A	Lead (tot.unfilt)	2.34	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	43.1	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	86.6	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<4	ug/l	N	S	



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015691

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ058916	Treated Leachate	25/03/2019	N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene (aq)	0.0146	ug/l	N	S	
			N/A	Nickel (tot.unfilt)	126	ug/l	Y	S	
			SAM004	pH	7.76	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	423	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	1510	mg/l	N	S	
			SAM031	Sulphate as SO4	64.90	mg/l	Y	MCQ	
			SAM001	Suspended Solids	45.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			SAM034	TOC	313.00	mg/l	Y	MCQ	
			SAM031	TON as N	3.88	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	288	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015868

Issue No: 1

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MCQ Job No	ORD-17304
Sample Receipt Date	11/04/2019
Date Analysis Started	11/04/2019
Completion Date	25/04/2019
Turnaround Time	10
No of Samples	15
Purchase Order Number	Lisbane Monthly
McQuillan Quote Number	ECA-01308

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Envirocare Analytical Laboratory (MCQ) unless otherwise specified. Any analysis that was subcontracted to a McQuillan Companies Approved Laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Results relate only to the items tested. This Test Certificate supersedes any version previously issued by the laboratory. It cannot be reproduced except in full and without written approval from McQuillan Envirocare Ltd.

Should you have any queries regarding this report(s) or any part of our service, please contact Sales on +44(0)28 9446 6708 who will be happy to discuss your requirements.

Thank you for using McQuillan Companies Analytical Services and we look forward to receiving your next samples.

Yours Sincerely

Name: [REDACTED] Date: 25/4/2019

Title: Lab Administrator



Test Certificate

Certificate: ECTC015868

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ059693	BH1	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	12.90	mg/l	Y	MCQ		
			SAM009	COD (Total)	30	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	531.0	uS/cm	Y	MCQ		
			SAM004	pH	7.70	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ059694	BH2	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	22.20	mg/l	Y	MCQ	
				SAM009	COD (Total)	43	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	692.0	uS/cm	Y	MCQ	
SAM004				pH	7.58	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ059695		BH4	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	19.30	mg/l	Y	MCQ	
				SAM009	COD (Total)	42	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,140.0	uS/cm	Y	MCQ	
	SAM004			pH	7.10	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ059696	BH5	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	35.10	mg/l	Y	MCQ	
				SAM009	COD (Total)	46	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	972.0	uS/cm	Y	MCQ	
SAM004				pH	7.16	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ059697		BH6	10/04/2019	SAM031	Ammonia as N	1.14	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	27.20	mg/l	Y	MCQ	
				SAM009	COD (Total)	6,630	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	838.0	uS/cm	Y	MCQ	
	SAM004			pH	7.40	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							

Test Certificate

Certificate: ECTC015868

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
MCQ059698	BH6A	10/04/2019	SAM031	Ammonia as N	0.24	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	29.30	mg/l	Y	MCQ		
			SAM009	COD (Total)	282	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	918.0	uS/cm	Y	MCQ		
			SAM004	pH	7.06	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
	MCQ059699	BH8	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
				SAM031	Chloride as Cl	25.10	mg/l	Y	MCQ	
				SAM009	COD (Total)	29	mg/l	Y	MCQ	
				SAM005	Electrical Conductivity	1,090.0	uS/cm	Y	MCQ	
SAM004				pH	7.26	Units	Y	MCQ		
Sample Matrix: Ground Water		Analyst Comment:								
MCQ059700	BH9	10/04/2019	SAM031	Ammonia as N	0.33	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	51.50	mg/l	Y	MCQ		
			SAM009	COD (Total)	69	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	1,600.0	uS/cm	Y	MCQ		
			SAM004	pH	6.90	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
MCQ059701	BH13	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	28.40	mg/l	Y	MCQ		
			SAM009	COD (Total)	28	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	710.0	uS/cm	Y	MCQ		
			SAM004	pH	7.60	Units	Y	MCQ		
	Sample Matrix: Ground Water		Analyst Comment:							
MCQ059702	SW1	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ		
			SAM016	BOD (ATU)	2.12	mg/l	Y	MCQ		
			SAM031	Chloride as Cl	25.00	mg/l	Y	MCQ		
			SAM005	Electrical Conductivity	1,020.0	uS/cm	Y	MCQ		
			SAM004	pH	7.85	Units	Y	MCQ		
	SAM001	Suspended Solids	3.00	mg/l	Y	MCQ				
Sample Matrix: Surface Water		Analyst Comment:								

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC015868

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ059703	SW2	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.68	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	26.00	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,020.0	uS/cm	Y	MCQ	
			SAM004	pH	7.87	Units	Y	MCQ	
			SAM001	Suspended Solids	5.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ059704	SW3	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	#
			SAM016	BOD (ATU)	10.20	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	43.20	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	486.0	uS/cm	Y	MCQ	
			SAM004	pH	7.49	Units	Y	MCQ	
			SAM001	Suspended Solids	23.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ059705	SW4	10/04/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.77	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	33.20	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	835.0	uS/cm	Y	MCQ	
			SAM004	pH	7.80	Units	Y	MCQ	
			SAM001	Suspended Solids	3.00	mg/l	Y	MCQ	
			Sample Matrix: Surface Water		Analyst Comment:				
MCQ059706	Treated Lechate	10/04/2019	SAM031	Ammonia as N	9.71	mg/l	Y	MCQ	#
			SAM016	BOD (ATU)	14.10	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	1,070.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	1,080	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	11,200.0	uS/cm	Y	MCQ	
			SAM004	pH	7.81	Units	Y	MCQ	
			SAM001	Suspended Solids	33.00	mg/l	Y	MCQ	
Sample Matrix: Landfill Leachate		Analyst Comment:							
MCQ059707	Raw Leachate	10/04/2019	SAM031	Ammonia as N	426.00	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	57.30	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	780.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	1,300	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	8,550.0	uS/cm	Y	MCQ	
			SAM004	pH	7.71	Units	Y	MCQ	
			SAM001	Suspended Solids	144.00	mg/l	Y	MCQ	

McQuillan Envirocare Ltd
Analytical Services

Test Certificate

Certificate: ECTC015868

Issue No: 1

MCQ059707

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016244

Issue No: 1

WDR & RT Taggart
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samplebooking@mcqcqs.com

MCQ Job No	ORD-17686	Sample Receipt Date	28/05/2019
MCQ Quote Number	ECA-02563	Date Analysis Started	28/05/2019
Purchase Order Number	Lisbane Monthly	Completion Date	11/06/2019
No of Samples	14	Turnaround Time	10

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Environmental Analytical Laboratory (MCQ) unless otherwise specified. Results relate only to the items tested. Any analysis that was subcontracted to an approved laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Where sample data is provided by the customer, the results relate to the sample supplied and on the basis that this data is correct. Incorrect sampling dates and/or sample information will affect the validity of results. This Test Certificate supersedes any version previously issued by the laboratory. The report shall not be reproduced except in full without approval of the laboratory.

Should you have any queries regarding this report(s) or any part of our service, please contact Sample Booking on 028 9448 3195 who will be happy to discuss your requirements.

Thank you for using our Laboratory and we look forward to receiving your next samples.

Yours Sincerely

[REDACTED]

Position: Lab Administrator

Date Issued: 11/6/2019

Addendum To Report:



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016244

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ061222	BH2	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	19.80	mg/l	Y	MCQ	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	704.0	uS/cm	Y	MCQ	
			SAM004	pH	7.57	Units	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			Sample Matrix: Ground Water		Analyst Comment:				
MCQ061223	BH4	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	19.40	mg/l	Y	MCQ	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,130.0	uS/cm	Y	MCQ	
			SAM004	pH	7.10	Units	Y	MCQ	
			Temperature Probe	Temperature	19.5	°C	N	MCQ	
			Sample Matrix: Ground Water		Analyst Comment:				
MCQ061224	BH5	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	34.10	mg/l	Y	MCQ	
			SAM009	COD (Total)	30	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,000.0	uS/cm	Y	MCQ	
			SAM004	pH	7.15	Units	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			Sample Matrix: Ground Water		Analyst Comment:				
MCQ061225	BH6	27/05/2019	SAM031	Ammonia as N	1.96	mg/l	Y	MCQ	C
			SAM031	Chloride as Cl	27.10	mg/l	Y	MCQ	
			SAM009	COD (Total)	48,200	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,130.0	uS/cm	Y	MCQ	
			SAM004	pH	7.34	Units	Y	MCQ	
			Temperature Probe	Temperature	19.8	°C	N	MCQ	
			Sample Matrix: Ground Water		Analyst Comment:	High Solid Content, indicative result			
MCQ061226	BH6A	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	29.20	mg/l	Y	MCQ	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	918.0	uS/cm	Y	MCQ	
			SAM004	pH	7.04	Units	Y	MCQ	

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016244

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ061226	BH6A	27/05/2019	Temperature Probe	Temperature	19.6	°C	N	MCQ	
	Sample Matrix:	Ground Water	Analyst Comment:						
MCQ061227	BH8	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	15.50	mg/l	Y	MCQ	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	954.0	uS/cm	Y	MCQ	
			SAM004	pH	7.30	Units	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			Sample Matrix:	Ground Water	Analyst Comment:				
MCQ061228	BH9	27/05/2019	SAM031	Ammonia as N	3.09	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	59.10	mg/l	Y	MCQ	
			SAM009	COD (Total)	45	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,630.0	uS/cm	Y	MCQ	
			SAM004	pH	6.89	Units	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			Sample Matrix:	Ground Water	Analyst Comment:				
MCQ061229	BH13	27/05/2019	SAM031	Ammonia as N	2.07	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	29.30	mg/l	Y	MCQ	
			SAM009	COD (Total)	43	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	758.0	uS/cm	Y	MCQ	
			SAM004	pH	7.43	Units	Y	MCQ	
			Temperature Probe	Temperature	19.8	°C	N	MCQ	
			Sample Matrix:	Ground Water	Analyst Comment:				
MCQ061230	SW1	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	1.03	mg/l	Y	MCQ	@
			SAM031	Chloride as Cl	25.70	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,240.0	uS/cm	Y	MCQ	
			SAM004	pH	7.69	Units	Y	MCQ	
			SAM001	Suspended Solids	<3.00	mg/l	Y	MCQ	@
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	

McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016244

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ061230	Sample Matrix: Surface Water		Analyst Comment:						
MCQ061231	SW2	27/05/2019	SAM031	Ammonia as N	0.14	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	2.14	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	3.24	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	137.0	uS/cm	Y	MCQ	@
			SAM004	pH	7.94	Units	Y	MCQ	
			SAM001	Suspended Solids	71.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
	Sample Matrix: Surface Water		Analyst Comment:						
MCQ061232	SW3	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	2.70	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	45.30	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	525.0	uS/cm	Y	MCQ	@
			SAM004	pH	7.17	Units	Y	MCQ	
			SAM001	Suspended Solids	7.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
	Sample Matrix: Surface Water		Analyst Comment:						
MCQ061233	SW4	27/05/2019	SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	2.37	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	7.90	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	231.0	uS/cm	Y	MCQ	@
			SAM004	pH	7.46	Units	Y	MCQ	
			SAM001	Suspended Solids	67.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.9	°C	N	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
	Sample Matrix: Surface Water		Analyst Comment:						
MCQ061234	Treated Lechate	27/05/2019	SAM031	Ammonia as N	0.20	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	6.39	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	1,160.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	1,150	mg/l	Y	MCQ	@
			SAM005	Electrical Conductivity	11,500.0	uS/cm	Y	MCQ	
			SAM004	pH	7.86	Units	Y	MCQ	
			SAM001	Suspended Solids	20.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	20.1	°C	N	MCQ	

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC016244

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
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MCQ061234

Sample Matrix: Landfill Leachate

Analyst
Comment:

MCQ061235	Raw Leachate	27/05/2019	SAM031	Ammonia as N	313.00	mg/l	Y	MCQ	@
			SAM016	BOD (ATU)	20.70	mg/l	Y	MCQ	
			SAM031	Chloride as Cl	669.00	mg/l	Y	MCQ	
			SAM009	COD (Total)	990	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	7,130.0	uS/cm	Y	MCQ	@
			SAM004	pH	8.18	Units	Y	MCQ	
			SAM001	Suspended Solids	130.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	20.1	°C	N	MCQ	

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	±
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016451

Issue No: 1

WDR & RT Taggart
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MCQ Job No	ORD-17895	Sample Receipt Date	20/06/2019
MCQ Quote Number	ECA-02563	Date Analysis Started	21/06/2019
Purchase Order Number	Lisbane Quarterly	Completion Date	15/07/2019
No of Samples	14	Turnaround Time	10

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Environmental Analytical Laboratory (MCQ) unless otherwise specified. Results relate only to the items tested. Any analysis that was subcontracted to an approved laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Where sample data is provided by the customer, the results relate to the sample supplied and on the basis that this data is correct. Incorrect sampling dates and/or sample information will affect the validity of results. This Test Certificate supersedes any version previously issued by the laboratory. The report shall not be reproduced except in full without approval of the laboratory.

Should you have any queries regarding this report(s) or any part of our service, please contact Sample Booking on 028 9448 3195 who will be happy to discuss your requirements.

Thank you for using our Laboratory and we look forward to receiving your next samples.

Yours Sincerely

[REDACTED]

Position: Lab Administrator

Date Issued: 15/7/2019

Addendum To Report:



McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC016451

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062019	BH2	19/06/2019	SAM031	Alkalinity, Total	186.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	40.8	ug/l	Y	S	
			SAM016	BOD (ATU)	1.20	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	86.2	mg/l	N	S	
			SAM031	Chloride as Cl	20.60	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	703.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.0897	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	35.9	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	6.8	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	2.51	ug/l	Y	S	
			N/A	Organic Carbon, Total	<3	mg/l	Y	S	
			SAM004	pH	7.52	Units	Y	MCQ	
			N/A	Potassium Total (W)	3.64	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	21.2	mg/l	N	S	
			SAM031	Sulphate as SO4	155.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			SAM031	TON as N	0.48	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	<5	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ062020	BH4	19/06/2019	SAM031	Alkalinity, Total	272.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	2.38	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	139	mg/l	N	S	
			SAM031	Chloride as Cl	15.30	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062020	BH4	19/06/2019	SAM005	Electrical Conductivity	943.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	1.43	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	43.2	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	284	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	3.47	ug/l	Y	S	
			N/A	Organic Carbon, Total	3.65	mg/l	Y	S	
			SAM004	pH	7.12	Units	Y	MCQ	
			N/A	Potassium Total (W)	4.04	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.1	mg/l	N	S	
			SAM031	Sulphate as SO4	211.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	0.44	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	<5	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	
Sample Matrix: Ground Water				Analyst Comment:					
MCQ062021	BH5	19/06/2019	SAM031	Alkalinity, Total	165.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	@
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	96	mg/l	N	S	
			SAM031	Chloride as Cl	15.30	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	3.06	ug/l	Y	S	
			SAM009	COD (Total)	30	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	699.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	2.19	mg/l	N	S	
			N/A	Lead (tot.unfilt)	2.17	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	24.8	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	181	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	10.8	ug/l	Y	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062021	BH5	19/06/2019	N/A	Organic Carbon, Total	7.85	mg/l	Y	S	
			SAM004	pH	7.17	Units	Y	MCQ	
			N/A	Potassium Total (W)	7.34	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	21.3	mg/l	N	S	
			SAM031	Sulphate as SO4	168.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	1.94	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	33.1	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ062022	BH6	19/06/2019	SAM031	Alkalinity, Total	143.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	0.13	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	51.4	ug/l	Y	S	
			SAM016	BOD (ATU)	21.50	mg/l	Y	MCQ	#@
			N/A	Cadmium (tot.unfilt)	<3	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	156	mg/l	N	S	
			SAM031	Chloride as Cl	17.60	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	271	ug/l	Y	S	
			SAM009	COD (Total)	10,900	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	746.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	160	mg/l	N	S	
			N/A	Lead (tot.unfilt)	190	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	116	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	9370	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.4	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	0.183	ug/l	N	S	
			N/A	Naphthalene	0.266	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	559	ug/l	Y	S	
			N/A	Organic Carbon, Total	8.38	mg/l	Y	S	
			SAM004	pH	7.43	Units	Y	MCQ	
			N/A	Potassium Total (W)	12.4	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	15.2	mg/l	N	S	
			SAM031	Sulphate as SO4	227.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	20.5	°C	N	MCQ	
			SAM031	TON as N	1.57	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	895	ug/l	Y	S	

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MCQ062022	BH6	19/06/2019	N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ062023	BH6A	19/06/2019	SAM031	Alkalinity, Total	196.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	0.32	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	4.37	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	@
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	118	mg/l	N	S	
			SAM031	Chloride as Cl	31.00	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	23.3	ug/l	Y	S	
			SAM009	COD (Total)	119	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	886.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	10.5	mg/l	N	S	
			N/A	Lead (tot.unfilt)	14.7	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	30.2	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	415	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	0.037	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	20.5	ug/l	Y	S	
			N/A	Organic Carbon, Total	<3	mg/l	Y	S	
			SAM004	pH	7.09	Units	Y	MCQ	
			N/A	Potassium Total (W)	7.02	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	35.8	mg/l	N	S	
			SAM031	Sulphate as SO4	205.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	2.75	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	51.2	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
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MCQ062023 **Sample Matrix:** Ground Water **Analyst Comment:**

MCQ062024	BH8	19/06/2019	SAM031	Alkalinity, Total	171.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	129	mg/l	N	S	
			SAM031	Chloride as Cl	14.80	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	3.43	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	868.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	1.88	mg/l	N	S	
			N/A	Lead (tot.unfilt)	7.76	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	41.7	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	2200	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	10.9	ug/l	Y	S	
			N/A	Organic Carbon, Total	<3	mg/l	Y	S	
			SAM004	pH	7.40	Units	Y	MCQ	
			N/A	Potassium Total (W)	2.2	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	15.6	mg/l	N	S	
			SAM031	Sulphate as SO4	225.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.3	°C	N	MCQ	
			SAM031	TON as N	0.08	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	28.6	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water **Analyst Comment:**

MCQ062025	BH9	19/06/2019	SAM031	Alkalinity, Total	325.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	2.67	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	<2	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062025	BH9	19/06/2019	N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	214	mg/l	N	S	
			SAM031	Chloride as Cl	62.60	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	46	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	1,680.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	1.29	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	66.3	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	530	ug/l	Y	S	
			N/A	Mecoprop (MCP)	0.0902	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	16.9	ug/l	Y	S	
			N/A	Organic Carbon, Total	17	mg/l	Y	S	
			SAM004	pH	6.94	Units	Y	MCQ	
			N/A	Potassium Total (W)	16.7	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	68	mg/l	N	S	
			SAM031	Sulphate as SO4	495.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	7.50	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	<5	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ062026	BH13	19/06/2019	SAM031	Alkalinity, Total	173.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	6.59	ug/l	Y	S	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	@
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	78	mg/l	N	S	
			SAM031	Chloride as Cl	24.90	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	715.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.26	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	40	mg/l	N	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062026	BH13	19/06/2019	N/A	Manganese (tot.unfilt)	431	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	1.2	ug/l	Y	S	
			N/A	Organic Carbon, Total	<3	mg/l	Y	S	
			SAM004	pH	7.60	Units	Y	MCQ	
			N/A	Potassium Total (W)	1.27	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	21.3	mg/l	N	S	
			SAM031	Sulphate as SO4	165.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	0.16	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	15.1	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Ground Water

Analyst
Comment:

MCQ062027	SW1	19/06/2019	SAM031	Alkalinity, Total	130.00	mg/l	Y	MCQ	
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	@
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	100	mg/l	N	S	
			SAM031	Chloride as Cl	18.70	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	6.04	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.42	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	776.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.126	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	35.3	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	5.22	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	7.74	ug/l	Y	S	
			N/A	Organic Carbon, Total	8	mg/l	Y	S	
			SAM004	pH	7.55	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	6.79	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.1	mg/l	N	S	

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Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062027	SW1	19/06/2019	SAM031	Sulphate as SO4	225.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	<3.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.4	°C	N	MCQ	
			SAM031	TON as N	1.68	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc (tot.unfilt)	8.25	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	
			Sample Matrix: Surface Water			Analyst Comment:			
MCQ062028	SW2	19/06/2019	SAM031	Alkalinity, Total	131.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	100	mg/l	N	S	
			SAM031	Chloride as Cl	17.80	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	6.08	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.44	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	774.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.122	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	35.2	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	5.28	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	7.47	ug/l	Y	S	
			N/A	Organic Carbon, Total	8.17	mg/l	Y	S	
			SAM004	pH	7.64	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	6.82	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.1	mg/l	N	S	
			SAM031	Sulphate as SO4	237.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	<3.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.2	°C	N	MCQ	
			SAM031	TON as N	1.58	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc (tot.unfilt)	14.4	ug/l	Y	S	

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC016451

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062028	SW2	19/06/2019	N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	
Sample Matrix: Surface Water			Analyst Comment:						
MCQ062029	SW3	19/06/2019	SAM031	Alkalinity, Total	117.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	2.35	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	47.4	mg/l	N	S	
			SAM031	Chloride as Cl	31.20	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	6.59	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	7.73	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	402.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.319	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	13.8	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	891	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	7.29	ug/l	Y	S	
			N/A	Organic Carbon, Total	5.16	mg/l	Y	S	
			SAM004	pH	7.12	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	6.37	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	20.8	mg/l	N	S	
			SAM031	Sulphate as SO4	33.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	8.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.3	°C	N	MCQ	
			SAM031	TON as N	2.14	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc (tot.unfilt)	59.8	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC016451

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
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MCQ062029

Sample Matrix: Surface Water

**Analyst
Comment:**

MCQ062030	SW4	19/06/2019	SAM031	Alkalinity, Total	124.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	< 0.11	mg/l	Y	MCQ	
			SAM016	BOD (ATU)	<1.00	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	78.7	mg/l	N	S	
			SAM031	Chloride as Cl	22.80	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	<3	ug/l	Y	S	
			SAM009	COD (Total)	<25	mg/l	Y	MCQ	
			N/A	Copper (tot.unfilt)	4.82	ug/l	Y	S	
			MCQ- DO	Dissolved Oxygen	8.49	mg/l	N	MCQ	
			SAM005	Electrical Conductivity	646.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	0.266	mg/l	N	S	
			N/A	Lead (tot.unfilt)	<1	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	26.8	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	19.4	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<0.04	ug/l	N	S	
			N/A	Naphthalene	<0.01	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	5.8	ug/l	Y	S	
			N/A	Organic Carbon, Total	6.97	mg/l	Y	S	
			SAM004	pH	7.58	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	5.13	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	17.7	mg/l	N	S	
			SAM031	Sulphate as SO4	156.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	6.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.5	°C	N	MCQ	
			SAM031	TON as N	2.13	mg/l	Y	MCQ	
			MCQ- VOG	Visible Oil and Grease	<1.0	%	N	MCQ	
			N/A	Zinc (tot.unfilt)	6.18	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Surface Water

**Analyst
Comment:**

MCQ062031	TL	19/06/2019	SAM031	Alkalinity, Total	296.00	mg/l	Y	MCQ
			SAM031	Ammonia as N	0.23	mg/l	Y	MCQ

McQuillan Envirocare Ltd
Analytical Services
Test Certificate

Certificate: ECTC016451

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062031	TL	19/06/2019	N/A	Arsenic (tot.unfilt)	34.7	ug/l	Y	S	@
			SAM016	BOD (ATU)	5.50	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	94.6	mg/l	N	S	
			SAM031	Chloride as Cl	1,170.00	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	230	ug/l	Y	S	
			SAM009	COD (Total)	1,120	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	11,500.0	uS/cm	Y	MCQ	
			N/A	Iron (tot.unfilt)	9.4	mg/l	N	S	
			N/A	Lead (tot.unfilt)	4.17	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	55.2	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	133	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<4	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	0.0221	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	138	ug/l	Y	S	
			N/A	Organic Carbon, Total	387	mg/l	Y	S	
			SAM004	pH	7.54	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	477	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	1890	mg/l	N	S	
			SAM031	Sulphate as SO4	105.00	mg/l	Y	MCQ	
			SAM001	Suspended Solids	18.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.7	°C	N	MCQ	
			SAM031	TON as N	2.47	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	250	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.003	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.006	mg/l	Y	S	
			N/A	Cresols	<0.006	mg/l	Y	S	
			N/A	Phenol	<0.002	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.008	mg/l	Y	S	

Sample Matrix: Landfill Leachate

Analyst
Comment:

MCQ062032	RL	19/06/2019	SAM031	Alkalinity, Total	2,220.00	mg/l	Y	MCQ	@
			SAM031	Ammonia as N	274.00	mg/l	Y	MCQ	
			N/A	Arsenic (tot.unfilt)	17.2	ug/l	Y	S	
			SAM016	BOD (ATU)	34.40	mg/l	Y	MCQ	
			N/A	Cadmium (tot.unfilt)	<0.5	ug/l	Y	S	
			N/A	Calcium (tot.unfilt)	136	mg/l	N	S	
			SAM031	Chloride as Cl	561.00	mg/l	Y	MCQ	
			N/A	Chromium (tot.unfilt)	105	ug/l	Y	S	
			SAM009	COD (Total)	747	mg/l	Y	MCQ	
			SAM005	Electrical Conductivity	6,420.0	uS/cm	Y	MCQ	



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016451

Issue No: 1

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
MCQ062032	RL	19/06/2019	N/A	Iron (tot.unfilt)	7.62	mg/l	N	S	
			N/A	Lead (tot.unfilt)	3.34	ug/l	Y	S	
			N/A	Magnesium (tot.unfilt)	57.7	mg/l	N	S	
			N/A	Manganese (tot.unfilt)	572	ug/l	Y	S	
			N/A	Mecoprop (MCP)	<4	ug/l	N	S	
			N/A	Mercury (tot.unfilt)	<0.02	ug/l	N	S	
			N/A	Naphthalene	0.322	ug/l	Y	S	
			N/A	Nickel (tot.unfilt)	64.8	ug/l	Y	S	
			N/A	Organic Carbon, Total	219	mg/l	Y	S	
			SAM004	pH	7.91	Units	Y	MCQ	
			N/A	Potassium (tot.unfilt)	259	mg/l	N	S	
			N/A	Sodium (tot.unfilt)	618	mg/l	N	S	
			SAM031	Sulphate as SO4	50.70	mg/l	Y	MCQ	
			SAM001	Suspended Solids	112.00	mg/l	Y	MCQ	
			Temperature Probe	Temperature	19.6	°C	N	MCQ	
			SAM031	TON as N	4.05	mg/l	Y	MCQ	
			N/A	Zinc (tot.unfilt)	136	ug/l	Y	S	
			N/A	2,3,5-Trimethylphenol	<0.015	mg/l	Y	S	
			N/A	2-Isopropylphenol	<0.03	mg/l	Y	S	
			N/A	Cresols	<0.03	mg/l	Y	S	
			N/A	Phenol	<0.01	mg/l	Y	S	
			N/A	Phenol 5 Speciated					
			N/A	Phenols, Total Detected 5 speciated	<0.025	mg/l	N	S	
			N/A	Xylenols	<0.04	mg/l	Y	S	

Sample Matrix: Landfill Leachate

Analyst
Comment:

Sample Deviations Legend			
Results may be compromised if the following deviations apply			
Comment	C	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	È
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



McQuillan Envirocare Ltd

Analytical Services

Test Certificate

Certificate: ECTC016744

Issue No: 1

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MCQ Job No	ORD-18190	Sample Receipt Date	30/07/2019
MCQ Quote Number	ECA-02563	Date Analysis Started	31/07/2019
Purchase Order Number	Lisbane Landfill Monthly	Completion Date	09/08/2019
No of Samples	13	Turnaround Time	10

Dear [REDACTED]

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within McQuillan Environmental Analytical Laboratory (MCQ) unless otherwise specified. Results relate only to the items tested. Any analysis that was subcontracted to an approved laboratory is indicated by 'S'. Please refer to the table at the end of your test certificate for explanations of sample deviations.

Where sample data is provided by the customer, the results relate to the sample supplied and on the basis that this data is correct. Incorrect sampling dates and/or sample information will affect the validity of results. This Test Certificate supersedes any version previously issued by the laboratory. The report shall not be reproduced except in full without approval of the laboratory.

Should you have any queries regarding this report(s) or any part of our service, please contact Sample Booking on 028 9448 3195 who will be happy to discuss your requirements.

Thank you for using our Laboratory and we look forward to receiving your next samples.

Yours Sincerely

Position: Lab Administrator

Date Issued: 9/8/2019

Addendum To Report:

