

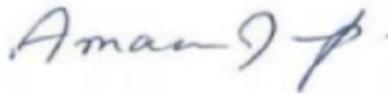
Annual Environmental Management Report

Woodlawn Waste Expansion Project

January 2018



QUALITY INFORMATION


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DEFINITIONS/ABBREVIATIONS

AEMR	Annual Environmental Management Report
AQGMP	Air Quality and Greenhouse Management Plan
BoM	Bureau of Meteorology
BTT	Banksmeadow transfer Terminal
CTT	Clyde Transfer Terminal
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EMP	Environment Management Plan
EP&A	Environmental Planning and Assessment (Act and Regulations)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
IEA	Independent Environmental Audit
IMF	Intermodal Facility
LEMP	Landfill Environment Management Plan
LMP	Leachate Management Plan
MBT	Mechanical Biological Facility
NIMS	National Integrated Management System
NMP	Noise Management Plan
SWMP	Soil Water and Management Plan
TADPAI	Tarago and District Progress Association Inc
TPA	Tonnes per annum
Veolia	Veolia Australia and New Zealand
WHS	Work Health and Safety (Act and Regulation)
WMP	Waste Management Plan

EXECUTIVE SUMMARY

This Annual Environmental Management Report (AEMR) has been prepared to detail the environmental performance of the Woodlawn Waste Expansion Project (the expanded operations) as per Project Approval - 10_0012 (the Consent) from 9 September 2016 to 8 September 2017 (the 2016 - 2017 reporting period).

This AEMR is the first reported following the commencement of the expanded operations at the Woodlawn Bioreactor (the Bioreactor) and Crisps Creek Intermodal Facility (IMF), which form part of the Woodlawn Eco-Precinct Site (the Eco-Precinct Site) owned and operated by Veolia Australia and New Zealand (Veolia).

In accordance with Schedule 7, Condition 5 of the Consent, this AEMR provides a summary of environmental monitoring conducted at the Bioreactor and IMF, recommendations for environmental and operational improvements as a result of regulatory inspections and external feedback, as well as Veolia's internal assurance programs and corrective actions, where implemented.

In the previous reporting period, a number of findings because of the various monitoring activities were observed and actioned. These are summarised as follows:

Previous Period Finding	Consent Condition	Recommendation	Corrective Action	Status
The Independent Environmental Audit (IEA) was not commissioned in 2015, three years after the first IEA in 2012	Condition 6, Schedule 7 of the PA 10_0012	Use the Internal audit tracking system to records dates for commissioning and submission of reports and audits required under consents and EPL	SHEQ governance program and environmental management tools have been developed to track audit dates. Email notifications have also been set up to alert relevant personnel of upcoming audit dates.	Completed
Tracking of materials	Condition 67, of the DA No.31-02-99	Veolia to continue to monitor and implement improvements to the wheel wash system to ensure tracking of materials beyond the site boundary is negated.	Veolia finalised its improvement to the wheel wash system, which included a water collection system and extension to the rattle grid. Veolia has also procured a road sweeper for additional road cleaning	Completed
Container Integrity	Condition 31 of the DA No.31-02-99	Identify Improvements in the mid-year container quality assurance program and review continue to be implemented to ensure container integrity between the Clyde Transfer Terminal, Crisps Creek Intermodal Facility and Woodlawn Bioreactor	Combined attention with the operational personnel at Clyde and Banksmeadow Transfer Terminals improved the container maintenance process	Completed

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Previous Period Finding	Consent Condition	Recommendation	Corrective Action	Status
Odour management	Schedule 4, Condition 6	Implementation of recommended waste profiling and infrastructure improvements will continue to be implemented to reduce odour emissions and increase gas capture. Furthermore, a long term leachate treatment strategy will be progress in the coming year. Proposal of potential alternative cover materials will also be prepared for approval by the EPA.	Veolia engaged Run Energy Pty Ltd during the reporting period to assess, modify and improve the gas capture network in the Bioreactor.	Ongoing
Evaporation Dam 1 and 2 Lining assessment	Schedule 1, Condition 18D of MP 10_0012	Engage suitably qualified consultants to assess the integrity of Evaporation Dams 1 & 2 to determine their suitability for proposed stormwater and treated leachate storage proposed under Department of Planning & Environment consent modifications	AECOM where commissioned by Veolia to carry out the integrity assessment of ED1 and ED2. This report and the findings where provided to the EPA and Department of Planning. A strategy for the ongoing use of the dams has been presented to the EPA and DPE as part of the Consent Modification for the new Leachate Treatment Plant. This strategy includes constructing a lined coffer dam to store treated effluent, and implement an evaporation strategy for the remaining water in the dams.	Ongoing
Community consultation	Schedule 1, Condition 16A of DA 31-02-99	Veolia to actively be involved in the regional community by continuing to participate in the Community Liaison Committee process and TADPAI meetings. The distribution of odour diaries also be undertaken to develop an understanding of odour profiles within the regional landscape.	Veolia continues to operate the Community Liaison Committee on a quarterly basis and also engages directly with TADPAI. Odour diaries have been rolled out within the community. Veolia has also engaged a third party consultant to work with the residents of the community on formalizing a Tarago Village Plan.	Completed

Section 1

Introduction

SECTION 1 INTRODUCTION

1.1. Site Background

The Bioreactor and IMF form part of the 6000 hectare Woodlawn Eco-Precinct Site (the Eco-Precinct Site), owned and operated by Veolia Australia and New Zealand (Veolia), located approximately 250 kilometres (km) south west of Sydney in the NSW Southern Tablelands. A site location plan is provided in Appendix 1.

The Bioreactor has been operating since September 2004, with waste landfilling and landfill gas extraction occurring in the void of a remnant open cut mine, approximately 33 million cubic metres (m³) in capacity. The collection of landfill gas from landfilled waste to extract methane for energy generation commenced in 2008. This occurs at the adjacent Woodlawn Bio Energy Power Station (the Power Station).

Waste to the Bioreactor initially from Sydney was via the Clyde Transfer Terminal (CTT), transported in shipping containers via rail and unloaded onto road trucks at the IMF, located approximately 8 km away in the township of Tarago. Local waste from neighbouring councils and businesses was transported via road.

In order to support the removal of the arbitrary annual waste input limit into the Bioreactor based on landfill capacity and demand in NSW, the Department of Planning and Environment (DPE) granted Consent approval on 16 March 2012, to increase the Bioreactor's annual maximum input rate from 500,000 tonnes per annum (TPA) to 1,130,000 TPA.

In order to facilitate the expanded operations under the Consent, Veolia constructed an additional waste transfer station and associated rail infrastructure in Southern Sydney, which is called the Banksmeadow Transfer Terminal (BTT). The BTT commenced operations on 7 September 2016, which enabled the expanded operations to commence at the IMF and Bioreactor from 9 September 2016.

1.2. Legal and Other Requirements

The main legislative instruments governing the environmental performance and activities undertaken at the Terminal include the *Environmental Planning and Assessment Act 1979* (the EP&A Act) regulated by the DPE, and the *Protection of the Environment Operations Act 1997* (POEO Act) regulated by the EPA, as well as their respective associated regulations.

In addition to the Consent, an Environment Protection Licence (EPL) issued by the EPA, under the POEO Act, regulates the operational activities conducted at the Bioreactor and IMF. Monitoring activities undertaken at both facilities are reflected in the EPL consistent with the consent requirements

A Landfill Environmental Management Plan (LEMP) has been prepared to reflect the requirements of the Consent for the operation of the Bioreactor and IMF. The

document concentrates on key environmental issues identified in the Environmental Assessment for the Woodlawn Expansion Project (2010) and sets out the criteria for managing and monitoring environmental parameters such as water quality, waste, traffic, air quality, greenhouse gas, noise, landscape and vegetation and emergency response.

The above requirements stipulate the performance standards that need to be met to maintain compliance at the Bioreactor and IMF, and those relevant to the preparation of this AEMR are provided in **Table 1-1** and further discussed in Section 2.

Table 1-1 - Consent Conditions for the preparation of this AEMR

Relevant Condition	Requirement
SCHEDULE 7 – ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING	
Annual Environment Management Review	
5	<p>One (1) year after the commencement of expanded operations, and annually thereafter, the Proponent shall prepare an Annual Environmental Management Report (AEMR) to review the environmental performance of the project to the satisfaction of the Director-General. This review must:</p> <p>a) describe the operations that were carried out in the past year; analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the</p> <ul style="list-style-type: none"> • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the EA; <p>c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>d) identify any trends in the monitoring data over the life of the Project; and</p> <p>e) describe what measure will be implemented over the next year to improve the environmental performance of the Project.</p>

1.2.1. Other Requirements (Licences and Permits)

The following environmental approvals are in place for the Bioreactor:

Table 1.2 Environmental Approvals

Description	Number
Conditions of Development Consent: The Woodlawn Waste Management Facility (issued by Department of Planning and Environment)	31-02-99
Project Approval: Woodlawn Waste Expansion Project (issued by Department of Planning and Environment)	10_0012
Environment Protection Licence (issued by Environment Protection Authority)	11436
Special (Crown & Private Lands) Lease 20 (SML 20) (issued by Department of Primary Industries)	SML 20

Water Access Licence: Willeroo Borefield (issued by Water NSW)	40WA411642
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1.3. Responsibilities

- Environmental monitoring of the Bioreactor and IMF was undertaken and/or supervised by Ark Du (Landfill Engineer) and Harneet Puarr (Woodlawn Environmental Officer).
- Analyses of collected samples were performed at Australian Laboratory Services Pty Ltd (ALS), which is a NATA accredited laboratory.
- The Odour Unit Pty Ltd (TOU) was appointed in February 2017 to conduct odour audits for the Bioreactor and IMF.
- An Independent Environmental Audit (IEA) was conducted by Ramboll Environ Australia Pty Ltd in the previous reporting period, the findings of which and corrective actions implemented in this reporting period are presented in this AEMR.
- The audit team associated with this IEA included Victoria Sedwick (Lead Auditor), Shaun Taylor (Auditor) and Ronan Kellaghan (Auditor). The audit team was approved by the DPE with the Consent.

Section 2

Environmental Assessment Predictions

SECTION 2 ENVIRONMENTAL ASSESSMENT PREDICTIONS

Based on the predictions in the EA, the key environmental issues presented in **Table 2.1** were risk assessed and controls designed accordingly as detailed in the LEMP. Performance against these predictions and results of monitoring measures in this reporting period are presented in this AEMR.

Table 2.1 EA Predictions and Risk Assessment

Issue	Environmental Risk	Likelihood of Occurrence	Control Measure	AEMR Section Reference
Air quality (dust and odour)	Emission of air pollutants and odour above the EPA guidelines.	Low level of risk due to the large buffer distance between the Bioreactor and sensitive receptors.	Monthly Dust monitoring Annual Independent Odour Audits	Section 3.2
Greenhouse gas emissions and energy use	Excessive energy consumption and related GHG emissions compared to similar facilities.	Known consequences with significant offset through generation of electricity from methane produced at the site.	Extraction & monitoring of the gas for green energy generation , reporting under National Greenhouse and Energy Scheme	Section 3.3
Surface Water	Contamination of surface water.	Possible without control measures, but unlikely due to existing approved Surface Water Management Scheme.	Ongoing Surface and Ground water monitoring, Leachate monitoring	Section 3.4
Groundwater	Contamination of ground water.	Possible without control measures, however unlikely due to the use of leachate barrier systems and existing Groundwater Management Scheme.		
Noise	Increased noise impacts above the EPA guidelines. Impacts on local residents.	Rare due to the large buffer distance between the Bioreactor sensitive receivers.	In the event a noise compliant is received , Noise monitoring is carried out at the site	Section 3.5

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Issue	Environmental Risk	Likelihood of Occurrence	Control Measure	AEMR Section Reference
Pest, disease and agriculture related impacts	Introduction of pests and the spreading of disease as a result of the proposed expansion.	Possible without control measures, however unlikely due to existing approved, operational management measures.	Routine Site Inspections	Section 3.7
Traffic and transport	Significant impacts on local Tarago community, impacting levels of service and traffic flow.	The risk is rare due to the relatively low level of truck movements.	Limit the transfer of waste within approved operational hours	
Socio economic	Negative impact on existing social conditions and on economic vitality of the Tarago district.	Rare as the Project will generate additional employment demand, while amenity impacts are low.	Veolia has well established mechanisms in place for addressing community concerns for engaging with the community to assist in the management of issues raised	
Hazard and risk	Increased risk to human health and the environment from expansion, especially from dangerous materials and gases.	Rare as hazardous substances may not be received at the Bioreactor and IMF.	All known hazards are understood and managed by Veolia with any incidents dealt with as part of the Fire and Emergency Response Plan	

Section 3

Environmental Monitoring

SECTION 3 ENVIRONMENTAL MONITORING

3.1 Monitoring Requirements

This section presents the monitoring undertaken at the Bioreactor and IMF throughout the reporting period, in accordance with the requirements of the Consent and other appropriate regulations, as detailed in the LEMP.

An Environmental Monitoring Program (EMP) within the LEMP was prepared to guide monitoring requirements. The monitoring requirements enable the continuous measuring and assessment of suitability, adequacy and effectiveness of on-site environmental management measures. These requirements are summarised in **Table 3-1** and **Table 3-2**.

A monitoring location plan is included in Appendix 2.

Table 3-1 Bioreactor Monitoring Requirements

Consent Reference	Type of Monitoring	Frequency	Commentary
Schedule 4, Condition 3	Site Inspection	Daily	Ongoing basis
Schedule 4, Condition 7	Odour Audit	Annually	Condition satisfied , odour audit conducted 02/02/17
Schedule 4, Condition 11	Dust Monitoring	Monthly	Ongoing basis
Schedule 4,Condition 12/ Air Quality and Greenhouse management Plan	Odour – Site inspections	Daily or as required	Ongoing basis
Schedule 4,Condition 17/ Soil and Water management Plan/EPL	Surface water monitoring Groundwater monitoring	Quarterly/ Annually	Ongoing basis
Schedule 4, Condition 18/ Leachate Management Plan	Leachate pond monitoring and Leachate recirculation monitoring	Annually	Ongoing basis
Schedule 4, Condition 19/ Noise Management Plan	Noise Monitoring	As required	Not triggered
Schedule 4, Condition 22	Meteorological monitoring	Continues	Ongoing basis

Consent Reference	Type of Monitoring	Frequency	Commentary
Schedule 4, Condition 23/ Landscaping and Vegetation Management Plan	Site Inspections	Weekly housekeeping	Ongoing basis
Schedule 4 Condition 24/ Pest ,Vermin & Noxious Weed Management	Site Inspections	Weekly housekeeping	Ongoing basis

Table 3-2 Crisps Creek IMF Operations Monitoring Requirements

Consent Reference	Type of Monitoring	Frequency	Commentary
Schedule 5, Condition 5	Litter control	Daily	Ongoing basis
Schedule 5 Condition 6/ Pest ,Vermin & Noxious Weed Management	Site Inspections	Weekly housekeeping	Ongoing basis
Schedule 5, Condition 9	Odour Audit	Annually	Condition satisfied , odour audit conducted 02/02/17
Schedule 5, Condition 15	Noise Monitoring	As required	Not triggered

3.2 Air Quality

Air quality monitoring, pertaining to odour and dust emissions, was undertaken in accordance with the Consent to determine whether activities conducted at the Bioreactor and Crisps Creek IMF affected ambient air quality.

3.2.1 Bioreactor Air Quality Monitoring Results

Meteorology

Veolia operates an onsite meteorological station to continuously monitor climatic data listed in the EPL. Meteorological data recorded includes (but is not limited to):

- Wind speed at 10m;
- Wind direction at 10m;
- Temperature at 2m;
- Temperature at 10m;
- Rainfall;
- Solar radiation; and
- Sigma theta at 10m

Meteorological data is logged in 15 minute and 24 hour intervals and can be made available for the 2016/2017 reporting period upon request. Servicing and calibration of the meteorological station is carried out quarterly by Hydrometric Consulting Services (calibration reports can be provided upon request)

Dust

All operations and activities were carried out at the Bioreactor in a manner to minimise dust at the boundary of the premises. These included all access roads from the IMF to the Bioreactor and the haul road used for ancillary operations being sealed, the use of water trucks for dust suppression as required and monthly sampling to monitor for the presence and quantity of depositional dust.

Table 3.3: Bioreactor Air Quality Monitoring Results

Parameter	Results/Discussion																			
Particulates/Dust Monitoring	<p>Monitoring of 3 depositional dust gauges (DG) was completed on a monthly basis as required under the EPL, the results of which are generally consistent with previously reporting periods as depicted in Figure 3.1</p> <p>The results of total insoluble solids found within the depositional dust samples are summarised for each of the monitoring locations in Table 3.2.2.1 below, with the detailed results tabulated in Tables 4.1 - 4.3 (refer Appendix 3).</p> <div style="text-align: center;"> <p>Table 3.2.2.1: Dust Monitoring Results</p> <table border="1"> <thead> <tr> <th rowspan="2" style="background-color: #4F81BD; color: white;">Dust Gauge</th> <th colspan="3" style="background-color: #4F81BD; color: white;">Summary Total Insoluble Solids (g/m²/month)</th> </tr> <tr> <th style="background-color: #4F81BD; color: white;">Minimum</th> <th style="background-color: #4F81BD; color: white;">Maximum</th> <th style="background-color: #4F81BD; color: white;">Average</th> </tr> </thead> <tbody> <tr> <td style="background-color: #4F81BD; color: white;">DG22</td> <td style="text-align: center;">0.9</td> <td style="text-align: center;">4.7</td> <td style="text-align: center;">2.41</td> </tr> <tr> <td style="background-color: #4F81BD; color: white;">DG24</td> <td style="text-align: center;">0.4</td> <td style="text-align: center;">2.3</td> <td style="text-align: center;">1.2</td> </tr> <tr> <td style="background-color: #4F81BD; color: white;">DG28</td> <td style="text-align: center;">0.09</td> <td style="text-align: center;">6</td> <td style="text-align: center;">2.7</td> </tr> </tbody> </table> </div> <p>The maximum dust level recorded in this reporting period was 6 g/m²/month at DG28 in August 2017 which is located at the Veolia owned property of 'Pylara'. Given that for the corresponding month there were no similar levels recorded at the dust gauges located within the proximity of the landfill void, it can be inferred that this dust emission was not as a result of the Bioreactor activities and can be treated as an outlier. Veolia infer that this result is due to activities such as mowing and/or recreational camp fires in the immediate vicinity by visiting guests. Veolia proposed to move the dust gauge to a location approximately 100 metres from its current location</p> <p>Overall dust suppression is generally consistent with previous years and a measure of the dust control measures that the site has in place.</p>	Dust Gauge	Summary Total Insoluble Solids (g/m ² /month)			Minimum	Maximum	Average	DG22	0.9	4.7	2.41	DG24	0.4	2.3	1.2	DG28	0.09	6	2.7
Dust Gauge	Summary Total Insoluble Solids (g/m ² /month)																			
	Minimum	Maximum	Average																	
DG22	0.9	4.7	2.41																	
DG24	0.4	2.3	1.2																	
DG28	0.09	6	2.7																	

<p>Odour Monitoring</p>	<p>36 odour complaints were received at the premises during this reporting period.</p> <p>An annual independent odour audit is used to assess the effectiveness of odour control measures and to identify improvements to existing odour management practices at the site. The odour audit report indicated Veolia has implemented all recommendations from the previous odour audit.</p> <p>Veolia will continue to implement recommended actions from the odour audit in combination with improving current odour control measures identified by Veolia.</p>
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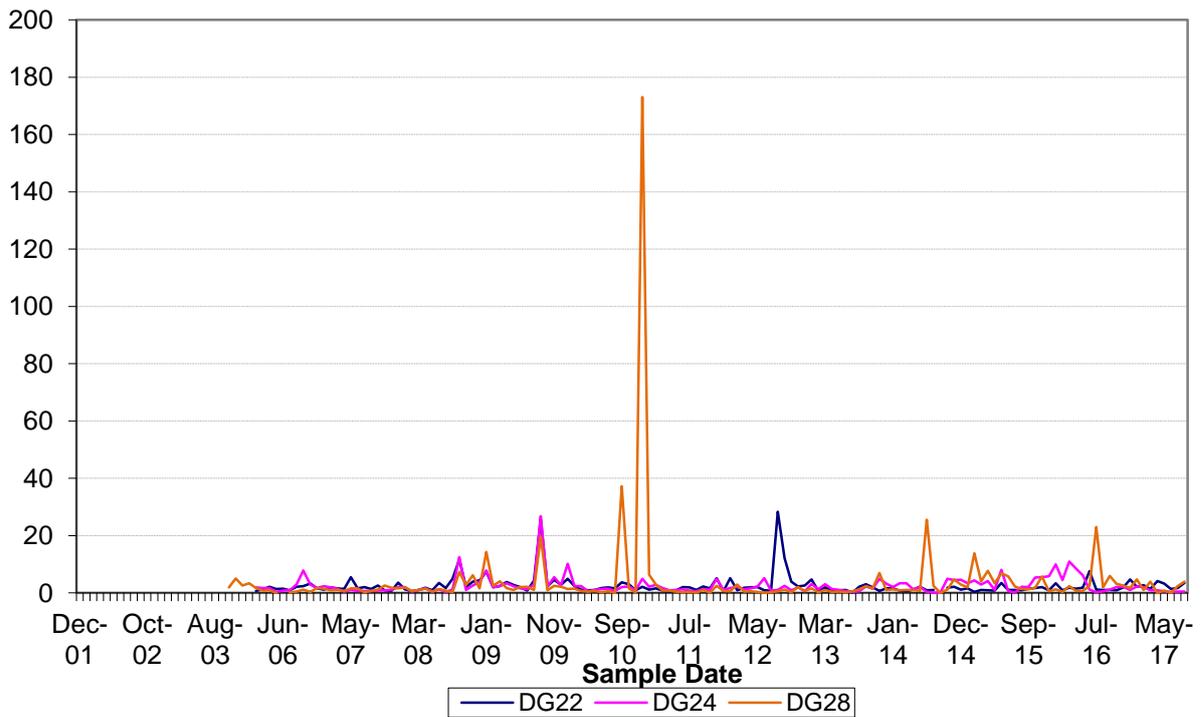


Figure 3.1 – Bioreactor Depositional Dust Levels (g/m²/month)

PM10/TSP monitoring results

As per the monitoring requirements stated in the Air Quality and Greenhouse Gas management Plan for the Woodlawn Bioreactor, following Schedule 4, Condition 11, below are the results for TSP and PM10 taken over a period of four months. Results show that there were no exceedance both on and offsite. The maximum PM10 level was 21.7µg/m³ onsite, which was under the limit. (Note: Monitoring for the month November started 11/11/2016)

Note: Heron Resources as part of their construction activities have begun PM10/TSP at the Pylara monitoring site.

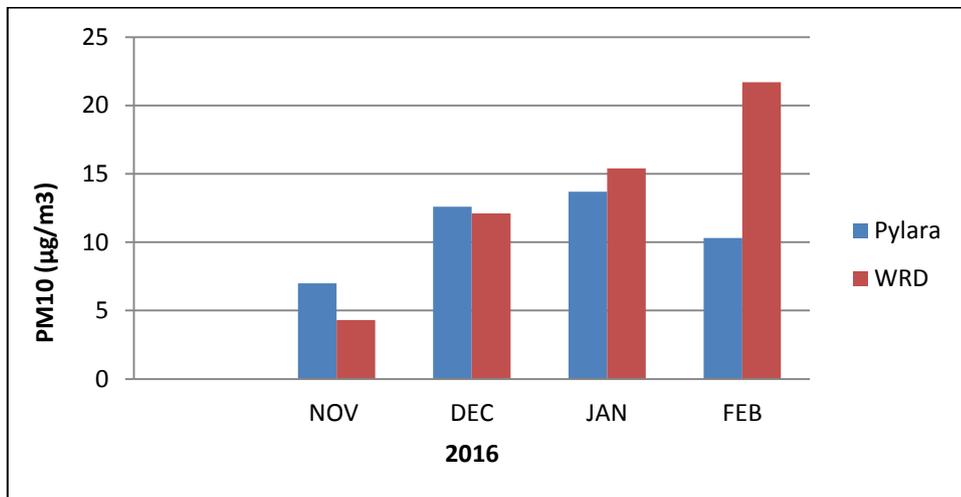


Figure 3.2 – Bioreactor PM10 Levels (µg/m³)

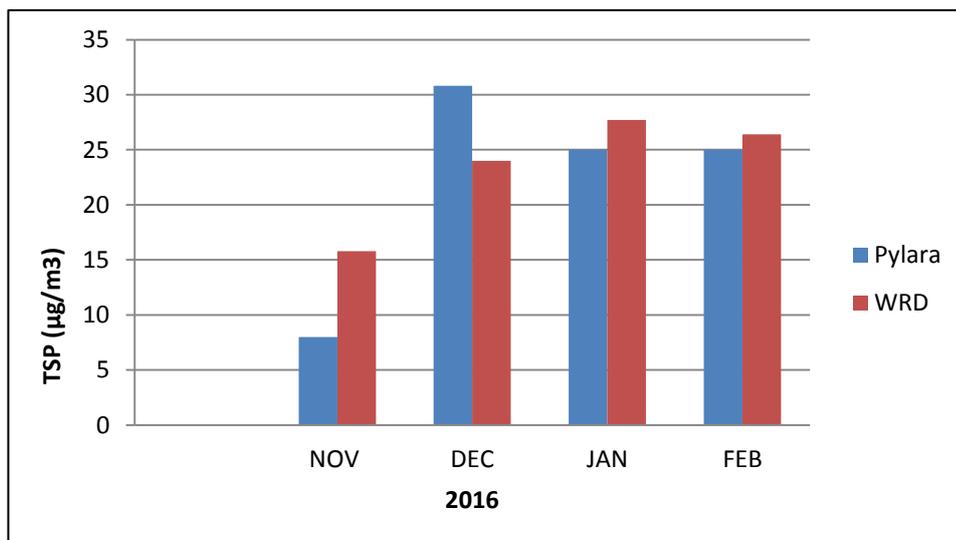


Figure 3.3 – Bioreactor TSP Levels (µg/m³)

3.2.2 IMF Air Quality Monitoring Results

Dust

Dust monitoring is undertaken monthly at one location at the IMF in accordance with the EPL. A summary of this reporting period is provided in Table 3.4 and detailed in Table 10 (refer Appendix 3).

The results at DG18 indicate an average level of total insoluble solid matter is 1.35 g/m²/month, which is generally consistent with overall historical trends as seen in the subsequent graph, Figure 3.4. The handling of waste and associated operational activities at the IMF are undertaken in a manner to ensure minimal emissions of dust. This includes no opening of containerised waste on unloading and operating on hardstand site.

Table 3.4: Dust Monitoring Results

Dust Gauge	Summary Total Insoluble Solids (g/m ² /month)		
	Minimum	Maximum	Average
DG18	0.4	4.1	1.35

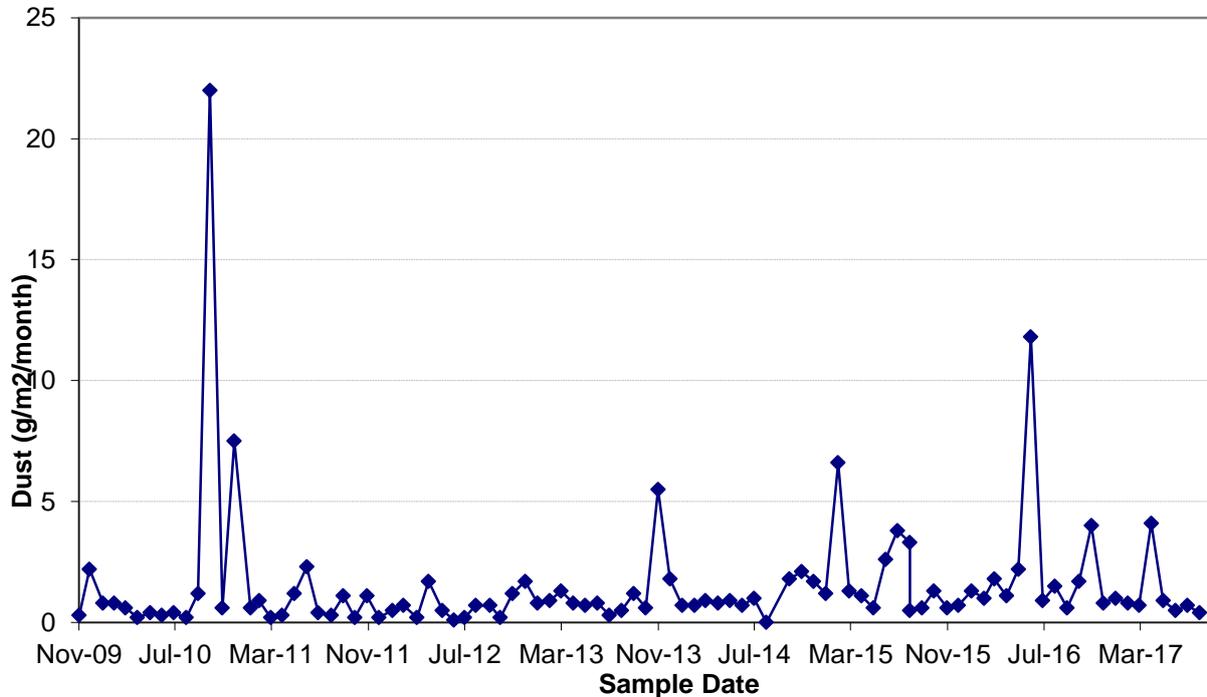


Figure 3.4 – IMF Depositional Dust Levels – DG18

Odour

An annual independent odour audit is used to assess the effectiveness of odour control measures and to identify improvements to existing odour management practices at the site. The odour audit report indicated Veolia has implemented all recommendations from the previous odour audit and is further discussed in Section 6 of this AEMR.

Veolia will continue to implement recommended actions from the odour audit in combination with improving current odour control measures identified by Veolia.

No odour complaints were received for the IMF during this reporting period.

3.3 Bioreactor Landfill Gas Monitoring results

Veolia operate the Bioreactor to maximise the production of landfill gas for generation of renewable energy at the Power Station, where 6 generators have been installed and commissioned, with 2 auxiliary flares as back up treatment of landfill gas emissions captured. The generators and flares satisfy the design, installation and operational requirements within the Consent and EPL.

The landfill gas extraction and utilisation infrastructure in the Bioreactor has been designed to meet the conditions of the landfill including settlement.

The findings from Landfill gas monitoring required under the Consent and EPL is summarised in **Table 3.2.1** below

Table 3.2.1: Bioreactor Landfill Gas Monitoring Results

Parameter	Results/Discussion																								
Subsurface Gas	<p>Monitoring of 3 subsurface gas monitoring bores (GMB) was undertaken on a quarterly basis as per EPL requirements and is summarised in Table 3.2.1.1 below:</p> <p style="text-align: center;">Table 3.2.1.1: Subsurface Gas Monitoring Result</p> <table border="1"> <thead> <tr> <th rowspan="2">Gas Monitoring Bore ID</th> <th colspan="4">Purged Methane Reading (%)</th> </tr> <tr> <th>17/11/2016</th> <th>10/05/2017</th> <th>27/07/2017</th> <th>8/08/2017</th> </tr> </thead> <tbody> <tr> <td>GMBH1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>GMBH2</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>GMBH4</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>The results show that the gas collection network is effectively capturing and controlling landfill gas within the landfill void. Engineered impermeable barriers and the natural subsurface of the void wall also minimises the potential movement of landfill gas from the Bioreactor, allowing for maximum extraction through the gas collection system.</p>	Gas Monitoring Bore ID	Purged Methane Reading (%)				17/11/2016	10/05/2017	27/07/2017	8/08/2017	GMBH1	0	0	0	0	GMBH2	0	0	0	0	GMBH4	0	0	0	0
Gas Monitoring Bore ID	Purged Methane Reading (%)																								
	17/11/2016	10/05/2017	27/07/2017	8/08/2017																					
GMBH1	0	0	0	0																					
GMBH2	0	0	0	0																					
GMBH4	0	0	0	0																					
Landfill Gas Extraction Booster	<p>The data reported for the landfill gas extraction booster at the Power Station is consistent to the historical average since 2008 as summarised in Table 3.2.1.2 below:</p> <p style="text-align: center;">Table 3.2.1.2: Landfill Gas Extraction Booster Monitoring Results</p>																								

		Summary											
		Parameter	Historical Average	2016/2017 Result									
		Temperature (° C)	36.7	3									
		Volumetric Flow (m3/hr)	2761	2500									
		Methane (%)	52.1	49.82									
		The detailed data for each of the parameters required under the EPL for the gas extraction booster is provided in Table 1 (refer Appendix 3).											
Surface Gas	<p>Surface gas monitoring was completed on a quarterly basis as per EPL requirements, which are summarised in Table 3.2.1.3 below. The detailed tabulated data is available in Table 2 (refer Appendix 3).</p> <p style="text-align: center;">Table 3.2.1.3: Surface Gas Monitoring Results Summary</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Minimum</th> <th>Maximum</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>Methane (%)</td> <td>0.0001</td> <td>0.086</td> <td>0.010</td> </tr> </tbody> </table> <p>Methane was detected in varying amounts over the waste surface with an overall average of 0.010% during this reporting period.</p> <p>The emission threshold concentration for methane detected in surface gas emission testing is 500 parts per million (0.05%), as recommended in (Environmental Guidelines for Solid Waste Landfills, January 1996).</p> <p>Surface gas monitoring enables site operational personnel to investigate and apply corrective actions where any high concentrations of methane has been detected to maintain the effectiveness of the landfill cap and prevent migration of landfill gas through preferential pathways to the surface.</p> <p>This can include application of cover material in areas of the void demonstrating settlement cracking, commissioning and rebalancing of gas extraction wells and installing additional gas collection infrastructure. During this reporting period vegetation mulch bio-cover was implemented around wells which have assisted in mitigating odour and reducing surface gas emissions. Veolia has submitted a Biofiltration Trial report in March 2017 to the EPA outlining the performance of the material. Veolia has demonstrated that this odour management strategy is effective and has maintained the use with the bioreactor.</p>				Parameter	Minimum	Maximum	Average	Methane (%)	0.0001	0.086	0.010	
Parameter	Minimum	Maximum	Average										
Methane (%)	0.0001	0.086	0.010										
Landfill Gas Flare	<p>The landfill gas flares are manufactured to a residence time of 0.3 seconds with a destruction efficiency of 98% for methane and non methanogenic organic compounds to meet the requirements of the EPL. Monitoring was continuously performed during this reporting period, an average of which is summarised in Table 3.2.1.4 below.</p> <p style="text-align: center;">Table 3.2.1.4: Landfill Gas Flare Monitoring Results</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Temperature</td> <td>°C</td> <td>1097.8</td> </tr> <tr> <td>Residence Time</td> <td>Seconds</td> <td>< 0.3</td> </tr> </tbody> </table>				Parameter	Units	Result	Temperature	°C	1097.8	Residence Time	Seconds	< 0.3
Parameter	Units	Result											
Temperature	°C	1097.8											
Residence Time	Seconds	< 0.3											

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<p>Landfill Gas Engine Exhaust Point(s)</p>	<p>Monitoring of a landfill gas engine exhaust point was completed during the reporting period. The results are consistent with the previous monitoring period and presented in Tables 3.1 to 3.5 (refer Appendix 3).</p> <p>Concentration limits for each of the following pollutants are stipulated in the EPL, all of which were below the threshold for the exhaust point test within this reporting period and consistent with previously reported levels, as demonstrated in Figures 3.2.1.1 – 3.2.1.3.</p> <ul style="list-style-type: none"> • Nitrogen Oxides; • Hydrogen Sulphide; • Sulphuric Acid Mist; and • Sulphur Trioxide.
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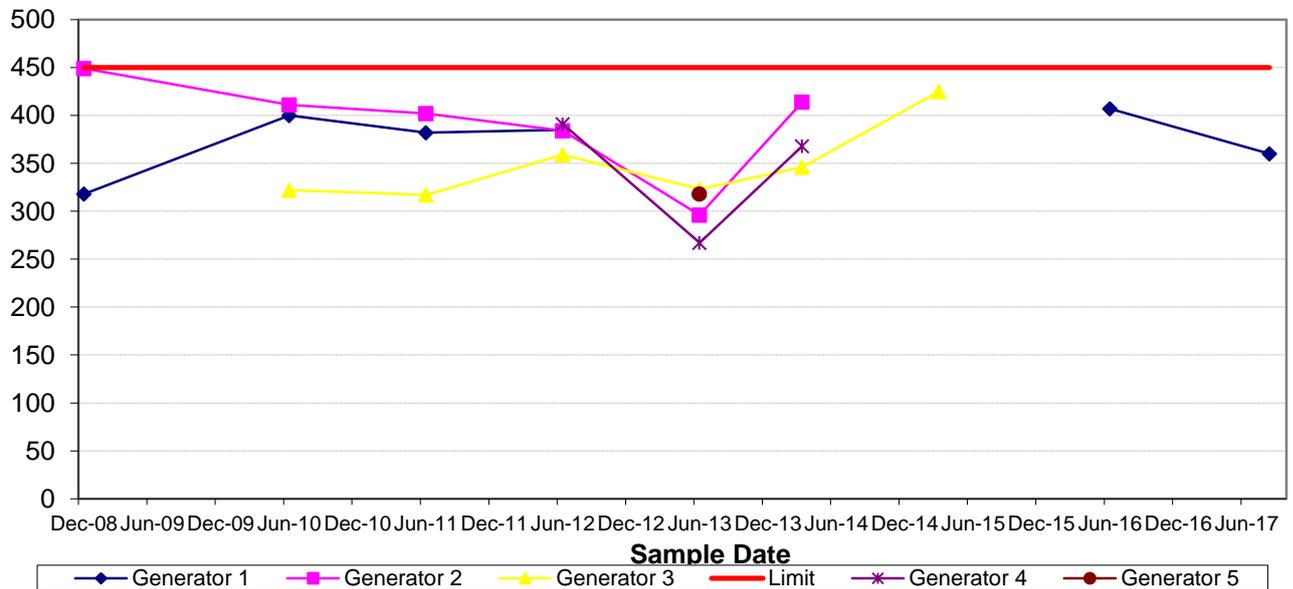


Figure 3.2.1.1 – Landfill Gas Engine Exhaust Point – Nitrogen Oxide Flow (mg/m³)

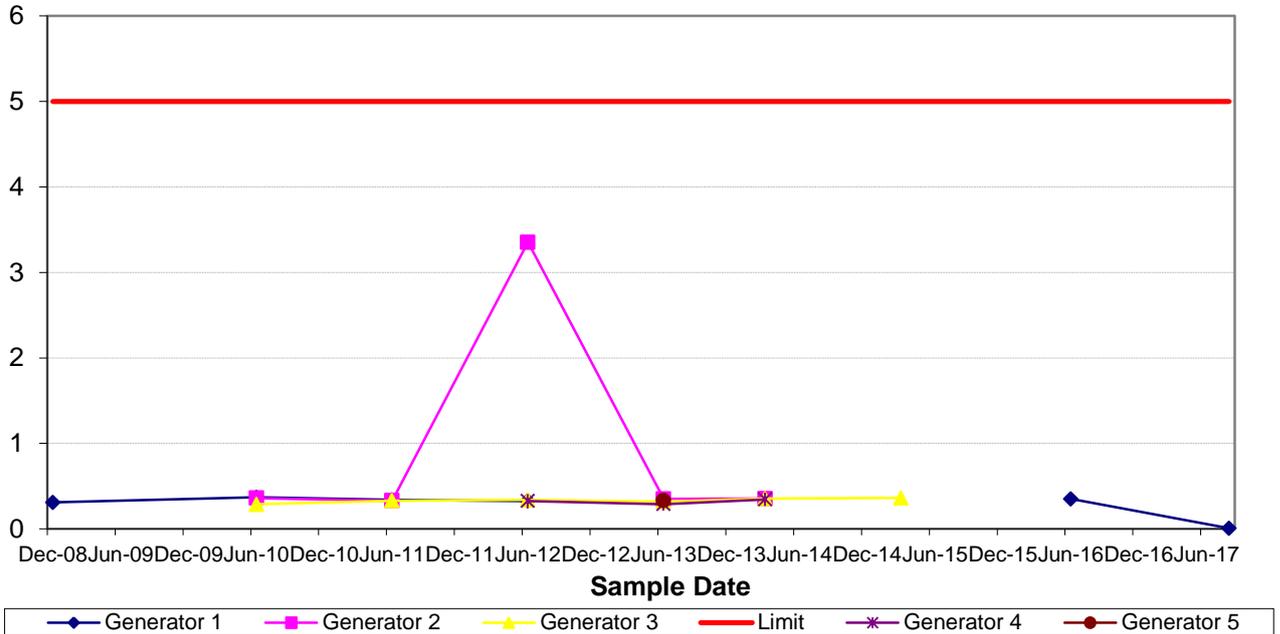


Figure 3.2.1.2 – Landfill Gas Engine Exhaust Point – Hydrogen Sulphide (mg/m³)

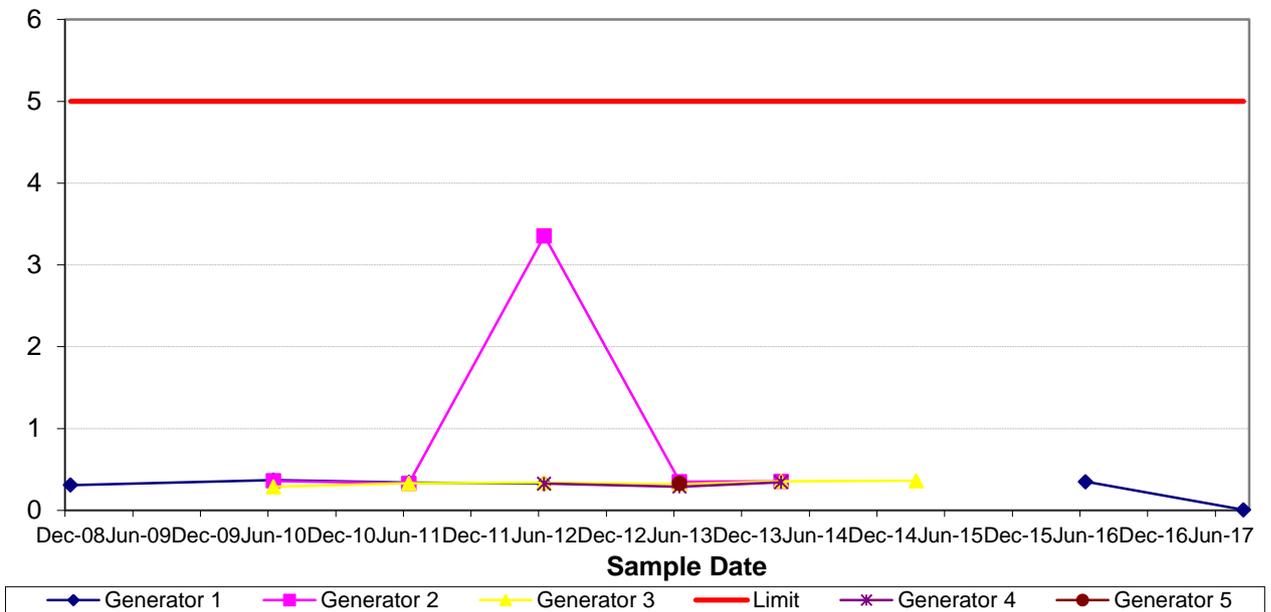


Figure 3.2.1.3 – Landfill Gas Engine Exhaust Point – Sulphuric Acid Mist and Sulphur Trioxide (mg/m³)

3.4 Water Monitoring

3.4.1 Bioreactor Surface Water Monitoring

The processes and management of water quality is documented and implemented on site in accordance with the EPL and the Landfill Environmental Management Plan (LEMP) for the Bioreactor. The LEMP provides guidance on the management of surface and stormwater systems such as drainage and pumping networks to divert clean water from any water that has come in contact with waste or leachate.

Clean surface and stormwater collected from within the void is pumped to Evaporation Dam 3 South (ED3S) for evaporation.

Water contaminated by waste or leachate is collected and treated in the Leachate Treatment System before being transferred to Evaporation Dam 3 North (ED3N) for evaporation. Mechanical evaporators may be used to assist evaporation and are controlled by wind direction sensors to prevent the drifting of sprayed liquids from the premises.

The wash bay, used for cleaning of containers and equipment associated with Bioreactor operations, collects sediment in a drainage sump. This sump is periodically drained and the resultant waste deposited in the Bioreactor

The findings from water quality monitoring of surface water locations required under the Consent and EPL is summarised in Table 3.5 below with detailed data provided in Tables 5.1 - 5.10 (refer Appendix 3). Key quality indicators selected to identify likely impacts from the Bioreactor include:

- pH,
- Electrical conductivity (EC),
- Ammonia (NH₃),
- Total organic carbon (TOC),
- Iron (Fe),
- Sulphate (SO₄), and
- Zinc (Zn).

These are depicted in the trend graphs (Figures 3.2.3.1 – 3.2.3.10) provided in Appendix 4.

Table 3.5: Bioreactor Surface Water Monitoring Results

Parameter	Results/Discussion
Site 115 – Allianoyonyige Creek	<p>Site 115 is situated downstream of the evaporation dams. 2 out of 4 quarterly monitoring events required under the EPL were undertaken in this monitoring period, due to insufficient flow, and have been documented in the Annual Return.</p> <p>Based on the results provided in Table 5.1 (refer Appendix 3), the pollutant concentration trends from previous monitoring periods are generally consistent.</p>

Parameter	Results/Discussion
	<ul style="list-style-type: none"> • Mean pH at 8.14 for this location indicates slightly alkaline water. • EC at 2815 $\mu\text{S}/\text{cm}$, indicating fresh to brackish water. • NH_3 at $<0.1\text{mg}/\text{L}$ and TOC at mean of 15.5 mg/L concentrations recorded in this monitoring period remain consistent with historical monitoring results • Heavy metal concentrations are of low magnitude for this reporting period – less than 0.02 mg/L for Pb and less than 0.06mg/L for Zn, indicating no contaminated runoff is impacting surface water at this monitoring location.
Spring 2	<p>Spring 2 is located upstream of the Bioreactor and adjacent to Crisps Creek. The site therefore provides background water quality information to site operations. The spring naturally overflows to Crisps Creek during rainfall events.</p> <p>2 out of 4 quarterly monitoring events required under the EPL were undertaken in this monitoring period, due to insufficient flow, and have been documented in the Annual Return. Water quality trend in Spring 2, based on the results provided in Table 5.2 (refer Appendix 3), is consistent with water quality from historical monitoring records.</p> <ul style="list-style-type: none"> • pH is consistent with previous years (average 7.16) and reflective of the overall range of 3.5 – 8.5 for this location; • EC (average 747 $\mu\text{S}/\text{cm}$) for this reporting period is indicative of fresh water. • SO_4 (average 250 mg/L) shows an identical trend to conductivity, again indicating a direct effect on EC. • Pb (average 0.0043 mg/L) and Zn (average 6.38 mg/L) concentrations continue to show slow decline from overall averages with some variability likely due to dilution following wet weather periods and concentration during drier periods. • NH_3 (average 0.40 mg/L) and TOC (average 18.00 mg/L) concentrations recorded in this monitoring period were consistent with historical monitoring results.
Site 105 – Crisps Creek	<p>Site 105 is located downstream of the Bioreactor and tailings dams. 2 out of 4 quarterly monitoring events required under the EPL were undertaken in this monitoring period, due to insufficient flow, and have been documented in the Annual Return.</p> <p>Water quality trends in Site 105, based on the results provided in Table 5.3 (refer Appendix 3) are consistent with previous monitoring results.</p> <ul style="list-style-type: none"> • pH (average 8.04) is within the overall range of 5.4 – 8.6 for this location, indicating relatively neutral water; • EC (average 1865.00 $\mu\text{S}/\text{cm}$) is consistent with historical results, reflecting brackish water. • TOC (average 17.00 mg/L) and NH_3 (average 0.1 mg/L) were consistent with historical trends.

Parameter	Results/Discussion
	<ul style="list-style-type: none"> Zn and Pb remain consistent and average 0.28 mg/L and 0.002 mg/L respectively consistent with historical results.
<p>WM200 Raw Water Dam</p>	<p>The Raw Water Dam is located to the west of the dolerite stockpile and collects uncontaminated water. Quarterly monitoring events were undertaken in accordance with EPL conditions.</p> <p>Based on the results provided in Table 5.4 (refer Appendix 3), the results for WM200 remain generally consistent with the previous reporting periods.</p> <ul style="list-style-type: none"> pH (average 7.17) indicates slightly alkaline water; EC (average 1225 $\mu\text{S}/\text{cm}$) is lower than previous monitoring periods (average 1500 $\mu\text{S}/\text{cm}$) and is indicative of fresh/brackish water; SO_4 level (average 300 mg/L) is consistent with historical results Zn and Fe levels appear to have stabilised at averages of 13.2 mg/L and 0.18 mg/L respectively, which is consistent with previous reporting periods; TOC was an average of 11 mg/L in this reporting period which is consistent with historical results. This could be reflective of the presence of organic matter from riparian zone vegetation surrounding the dam. NH_3 at an average of 0.15 mg/L is at quite low levels at this location.
<p>WM201 – Entrance Road Culvert</p>	<p>The Entrance Road Culvert collects surface water runoff from the Woodlawn Bioreactor administration office and workshop areas. 2 out of 4 quarterly monitoring events required under the EPL were undertaken in this monitoring period, due to insufficient flow, and have been documented in the Annual Return, the results of which are provided in Table 5.5 (refer Appendix 3).</p> <ul style="list-style-type: none"> pH is consistent (average 7.0) with previous reporting periods and remains within the overall range of 4.5 – 8.2 for this location; EC at 624.5 $\mu\text{S}/\text{cm}$ is reflective of fresh water and is consistent with previous reporting periods. EC variability can be caused by dilution during rainfall events. Pb, Zn and Fe average 0.12 mg/L, 1.48 mg/L and 2.4 mg/L respectively, remained reasonably stable throughout the reporting period <p>Veolia will continue to monitoring this location in the next reporting period for any likely contaminant run off impacts.</p>
<p>ED3SS – Lagoon 5</p>	<p>Evaporation Dam 3 South-South (ED3SS) is a new storage point to manage treated leachate by evaporation. Quarterly monitoring events were undertaken in accordance with the EPL.</p> <p>Based on the water quality results provided in Table 5.6 (refer</p>

Parameter	Results/Discussion
	<p>Appendix 3), for ED3SS, the following can be confirmed:</p> <ul style="list-style-type: none"> • pH (average 8.37) appears to be fairly consistent with the existing treated leachate quality • EC average 18300 $\mu\text{S}/\text{cm}$ appears to be generally consistent with the existing treated leachate quality • SO_4 averages (1192.5 mg/L) • Fe levels (average 30.5 mg/L) Zn levels (average 23.5 mg/L) appears to be generally consistent with the existing treated leachate quality • NH_3 concentrations (average 809.25 mg/L) remained stable over the course of the reporting period (598 – 934mg/L). • TOC (average 1395 mg/L) appears to be fairly consistent with the existing treated leachate quality
<p>WM203 – Evaporation Dam 3 North</p>	<p>Evaporation Dam 3 North (ED3N) is a storage point to manage treated leachate by evaporation. Quarterly monitoring events were undertaken in accordance with the EPL.</p> <p>Based on the water quality results provided in Table 5.7 (refer Appendix 3), for WM203, the following can be confirmed:</p> <ul style="list-style-type: none"> • pH (average 7.98) appears to be generally consistent with previous reporting periods. • EC average 28475 $\mu\text{S}/\text{cm}$) appears to be fairly consistent with previous reporting periods (average 28450 $\mu\text{S}/\text{cm}$); • SO_4 averages (6480 mg/L) is lower than previous monitoring periods • Fe levels (average 31.35 mg/L) are slightly higher than previous years whilst Zn levels (average 214.25) reflect a downward trend. • NH_3 concentrations (average 730 mg/L) remained stable over the course of the reporting period (592 – 885 mg/L). • TOC is trending upward (average 1557.5 mg/L) from the previous reporting period.
<p>Pond 3</p>	<p>Pond 3 is situated on a bench within the landfill void at a relative level (RL) of 740 m above sea level. Pond 3 acts as a transfer point to capture stormwater from the walls of the landfill void to Evaporation Dam 3 South.</p> <p>2 out of 4 quarterly monitoring events required under the EPL were undertaken in this monitoring period, due to insufficient flow, and have been documented in the Annual Return., the results of which are tabulated in Table 5.8 (refer Appendix 3). These water quality results consistent results with previous reporting periods.</p> <ul style="list-style-type: none"> • pH average of 3.42 confirms acidic nature of water that comes in contact with the void walls and is generally consistent with previous results • EC (average 2465 $\mu\text{S}/\text{cm}$) shows a declining trend compared to previous results (3053 $\mu\text{S}/\text{cm}$); • SO_4 trends (average 1575 mg/L) is generally consistent with previous results

Parameter	Results/Discussion
	<ul style="list-style-type: none"> • Pb average of 3.8 mg/L is generally consistent with previous results • Zn (average 196 mg/L) shows a declining trend; • NH₃ (average 11.9 mg/L) and TOC (average 28 mg/L) both mirror a similar trend which appears quite variable over historical monitoring results. <p>These results and trends are deemed representative of the stormwater quality captured from the walls of the void.</p>
WM202 – ED3S	<p>Evaporation Dam 3 South is a storage point to manage stormwater from the void by evaporation. Quarterly monitoring events were undertaken in accordance with EPL conditions.</p> <p>Water quality results indicated a similar trend to previously reported data as seen in Table 5.9 (refer Appendix 3).</p> <ul style="list-style-type: none"> • pH levels indicate an acidic, yet stable trending result with the average pH of 3.19 slightly lower than the previous reporting period; • Fe (average 37.38 mg/L) is slightly lower than previous reporting period; • Zn at an average of 758.50 mg/L shows a decrease from the average reporting in the previous period (905 mg/L) and is well within the maximum measured at this location of 1964 mg/L; • SO₄ shows a decrease of an average of 7310 mg/L from an average of 8140 mg/L reported in the previous period • EC (average 8890 µS/cm) remains within the overall average. Both SO₄ and EC concentrations reflect the signature for Acid Mine Drainage (AMD) contaminated waters from remnant mining operations stored in Evaporation Dam 3 South. • NH₃ concentrations (average 108 mg/L) which is consistent with previous reporting periods.
ED1 – Evaporation Dam 1	<p>Evaporation Dam 1 (ED1) is a storage point to manage runoff stormwater from its external catchment including dolerite stockpile area. Quarterly monitoring events were undertaken in accordance with the EPL.</p> <p>Based on the water quality results provided in Table 5.10 (refer Appendix 3), for ED1, the following can be confirmed:</p> <ul style="list-style-type: none"> • pH (average 3.37) which is consistent with previous reporting periods • EC average 8537.5 µS/cm which is consistent with previous reporting periods • SO₄ (averages 11342.5 mg/L) and Fe levels (average 16.7 mg/L) is lower than previous reporting period • Zn levels (average 1500 mg/L) is lower than previous reporting period • NH₃ concentrations (average 10.13 mg/L) remained stable over the course of the reporting period (5.6 – 15.1 mg/L).

Parameter	Results/Discussion
	<ul style="list-style-type: none"> TOC averages 6.75 mg/L remains consistent with previous reporting periods

3.4.2 Bioreactor Leachate Monitoring Results

Leachate quality monitoring is undertaken annually at two monitoring locations in the Bioreactor as required by the EP. The findings from this reporting period are summarised in Table 3.6 below with the detailed data provided in Tables 6.1 and 6.2 (refer Appendix 3). The key quality indicators selected to characterize the leachate and identify any migration into groundwater or surface water monitoring locations include:

- pH,
- Electrical Conductivity (EC),
- Sulphate (SO₄),
- Lead (Pb),
- Zinc (Zn),
- Ammonia (NH₃), and
- Total Organic Carbon (TOC).

These are depicted in the subsequent trend graphs **Figures 3.2.4.1** and **3.2.4.2**.

Table 3.6: Bioreactor Leachate Monitoring Results

Parameter	Results/Discussion
Leachate Dam	<p>The leachate dam is located at the northwest rim of the landfill void where leachate collected and extracted from the void is treated by aeration to oxidise organic compounds. An annual monitoring round was completed during this reporting period as per the requirements of the EPL.</p> <p>Based on the results provided in Table 6.1 (refer Appendix 3), the characteristics of the leachate are:</p> <ul style="list-style-type: none"> • pH (8.74) is indicative of an increasingly alkaline state from the previous reporting period result of 8.59 • EC (29,200 µS/cm) is consistent with the previous reporting period; • SO₄, one of the dominant anions, (152 mg/L) continues to indicate a downward trend from the previous reporting periods; • Pb (0.0748 mg/L) and Zn (1.7 mg/L) show a decrease in trend from the previous reporting period • NH₃ (2510 mg/L) is consistent with previous reporting readings; • TOC (3310 mg/L) is consistent with previous reporting <p>Leachate quality sampled at this point will be affected by the status of the Leachate Treatment System and how long the leachate has been subjected to the treatment process.</p>
Leachate Recirculation	<p>The leachate recirculation system is located within the landfill void, comprised of a network of drainage sumps, pipes, pumps and wells that</p>

Parameter	Results/Discussion
System	<p>are used to collect and extract leachate from the waste mass.</p> <p>An annual round was completed during this reporting period in accordance with the EPL, the results of which are detailed in the Table 6.2 (refer Appendix 3).</p> <p>Based on these results, the leachate collected directly from the recirculation system displays similar characteristics to the leachate pond, with some exceptions as summarised below:</p> <ul style="list-style-type: none"> • pH (8.44) is generally consistent with previous reporting period and slightly less alkaline than the dam; • EC (36,700 $\mu\text{S}/\text{cm}$) is consistent with the previous reporting period (34,900 $\mu\text{S}/\text{cm}$) and is generally consistent with the overall annual average for this location; • SO_4 (64.8 mg/L) shows a significant decrease from the previous reporting period, however is still less than the overall annual average for this location; • Both Pb and Zinc show decreasing trends from previous reporting period, 0.0653 mg/L and 0.75 mg/L respectively, remaining significantly lower than historical averages. • TOC (5260 mg/L) shows a slight decrease from the previous reporting period but is generally consistent with historical monitoring results.

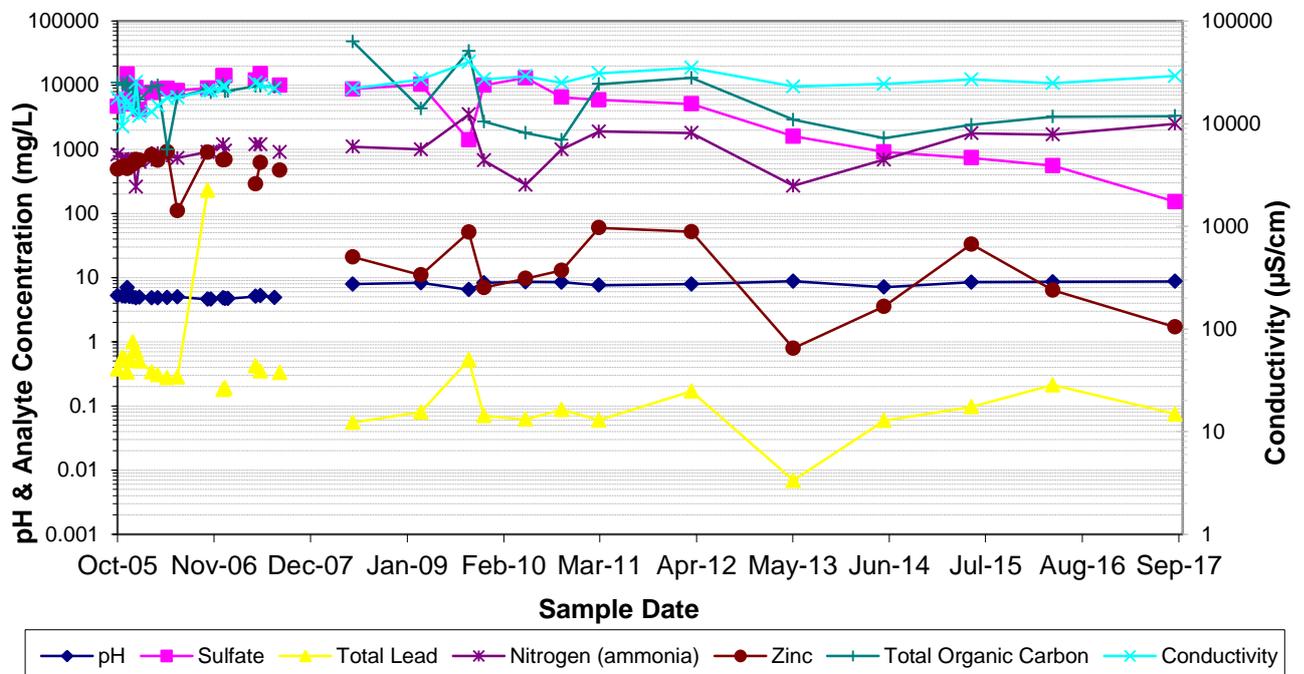


Figure 3.2.4.1 – Leachate Trends – Leachate Dam

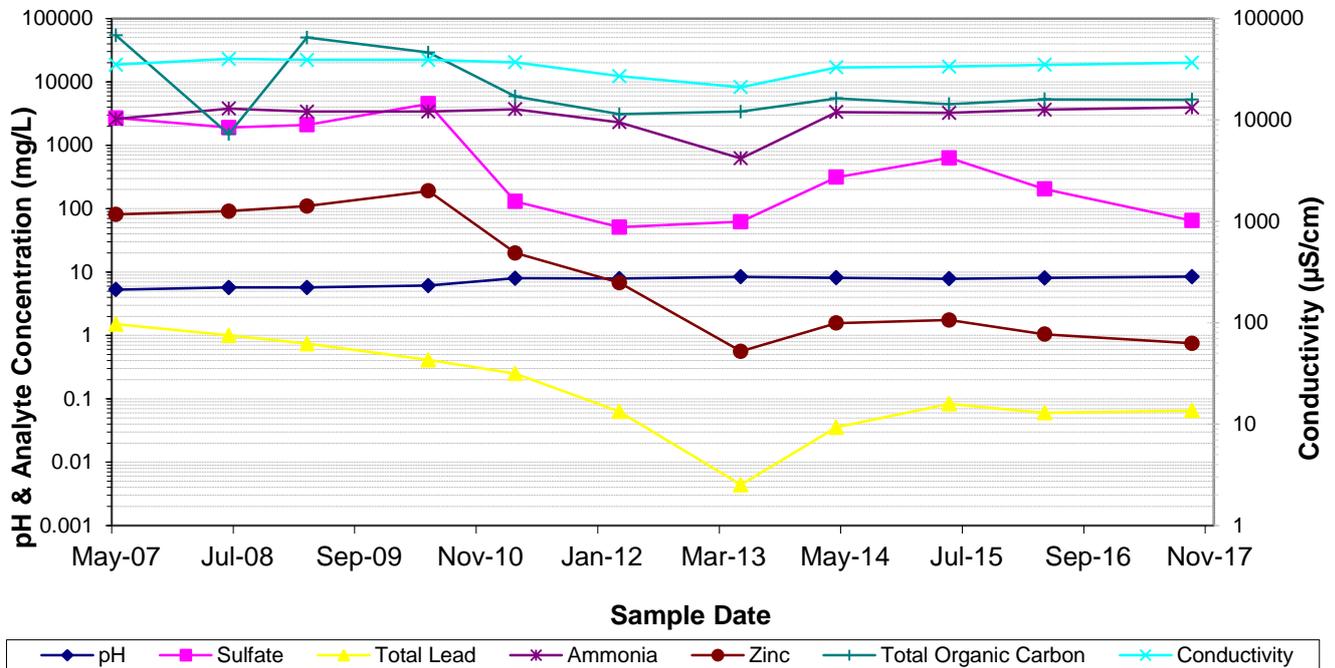


Figure 3.2.4.2 – Leachate Trends – Leachate Recirculation System

3.4.3 Bioreactor Groundwater Monitoring Results

Groundwater quality monitoring at 16 locations was undertaken in this reporting period as required by the EPL, comprising of one annual and three quarterly rounds of monitoring, the results of which are summarised in **Table 3.7** below. Detailed data is provided in Tables 7.1 – 7.15 (refer Appendix 3).

The groundwater monitoring well network allows for an assessment of potential impacts from the waste operations at the Bioreactor, evaporation dams and tailing dams. The key quality indicators selected to detect any pollutants in groundwater samples are the same as those deemed characteristic for leachate and are as follows:

- pH
- Electrical Conductivity (EC),
- Sulphate (SO₄),
- Lead (Pb),
- Zinc (Zn),
- Ammonia (NH₃), and
- Total Organic Carbon (TOC).

These are depicted in the trend graphs Figures 3.2.5.1 to 3.2.5.15 (refer Appendix 4). In addition to water quality monitoring, standing water levels (SWL) of the wells are also measured in metres relative to sea level (m RL) and are depicted in the subsequent graphs Figures 3.2.5A, 3.2.5B and 3.2.5C.

Table 3.7: Bioreactor Groundwater Monitoring Results

Parameter	Results/Discussion
MB1	<p>MB1 is located down gradient of the landfill void. Based on the results provided in Table 7.1 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 778.9 m RL) was slightly higher than the long term average since 2004 (769.98) due to significant rainfall events; • pH (average 7.6) neutral – to slightly alkaline consistent with previous reporting period; • EC (average 1597.5 $\mu\text{S}/\text{cm}$) is slightly higher than but generally consistent with previous readings representing fresh water; • SO_4 (average 299 mg/L) is generally consistent with previous periods; • Pb and Zn (average 0.0007 mg/L and 0.5 mg/L respectively) are generally consistent with previous periods. • NH_3 (average 0.1) is consistent with previous reporting periods. • TOC (7 mg/L) is consistent with the previous reporting period and historical trends. The concentration is indicative of natural conditions. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved. <p>All trends at this location indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.</p>
MB2	<p>MB2 is located upstream of Evaporation Dam 2. Based on the results provided in Table 7.2 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 779.2 m RL) was consistent with long term average since 2004; • pH (average 7.19) neutral, consistent with previous reporting period; • EC (average 6855 $\mu\text{S}/\text{cm}$) and SO_4 (average 3825 mg/L) is consistent with previous periods; • Pb (average 0.0003 mg/L) indicates a stable trend consistent with the previous reporting period. • Zn (average 0.044 mg/L) is generally consistent with previous reporting periods. • NH_3 (<0.1 mg/L) same as previous monitoring periods of non detection rates; • TOC (4 mg/L) is consistent with previous reporting periods. <p>All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.</p>
MB3	<p>MB3 is located upstream of the Bioreactor and mine site. Based on the results provided in Table 7.3 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 791.56 m RL) was consistent with long term average since 2004; • pH (average 7.31) near neutral is consistent with previous

Parameter	Results/Discussion
	<p>reporting period;</p> <ul style="list-style-type: none"> • EC (average 2015 $\mu\text{S/cm}$) is consistent with previous readings representing fresh water; • SO_4 (average 30.7 mg/L) is stable and consistent with previous periods; • Pb (average 0.0003 mg/L) and Zn (average 0.014 mg/L) are stable and consistent with previous periods. • NH_3 (< 0.1 mg/L) is consistent with previous monitoring periods of non detection rates; • TOC (5 mg/L) result is consistent with historical results. The concentration is indicative of natural conditions. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved. <p>All trends indicate fairly stable concentration and provide an indication of background groundwater concentrations.</p>
MB4	<p>MB4 is located downstream of the Bioreactor. Based on the results provided in Table 7.4 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 770.7 m RL) was consistent with long term average since 2004; • pH (average 5.66) slightly acidic, consistent with previous reporting period; • EC (average 1602.5 $\mu\text{S/cm}$) represents fresh water salinity and is consistent with previous period. This trend is reflected in SO_4 (average 194 mg/L) results for this period; • Pb (average 0.006 mg/L) remains stable while Zn (average 0.84 mg/L) is seen to fluctuate which appears consistent with historical cyclic trends; • NH_3 (< 0.1 mg/L) is consistent with previous monitoring periods of non detection rates; • TOC (2 mg/L) result is consistent with historical results. The concentration is indicative of natural conditions. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved. <p>All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities.</p>
MB6	<p>MB6 is located downstream of Evaporation Dam 3 and upstream of the Bioreactor. Based on the results provided in Table 7.5 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 792.54 m RL) was consistent with historical results; • pH (average 6.1) slightly acidic consistent with previous reporting period; • EC (average 5475 $\mu\text{S/cm}$) represents brackish water and the trend is mirrored by SO_4 (average 842.5 mg/L) consistent with previous periods; • Pb (average 0.0082 mg/L) and Zn (average 11.2 mg/L) is consistent with previous periods; • TOC (29.5 mg/L) and NH_3 average of 2 mg/l is higher than previous reporting periods, which resulted in a NH_3 reading of 5mg/L in the 4th Quarter sampling. Veolia has carried out

Parameter	Results/Discussion
	<p>additional monitoring to determine if this is an anomaly. The results have decreased to below 2mg/L with subsequent monitoring. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved.</p>
<p>MB7</p>	<p>MB7 is located upstream of Evaporation Dam 3. Based on the results provided in Table 7.6 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 786.18 m RL) was consistent with long term average since 2004; • pH (average 7.3) neutral is consistent with the previous reporting period; • EC (average 8792.50 μS/cm) and SO₄ (average 187.50 mg/L) follow a similar stable trend to previous reporting periods ; • Pb (average 0.0005 mg/L) is consistent throughout the reporting period whilst Zn (average 0.19 mg/L) shows a fluctuating trend consistent with historical cycles; • NH₃ (< 0.1 mg/L) is consistent with previous monitoring periods of non detection rates; • TOC (17 mg/L) appears consistent with the previous reporting period. The concentration is indicative of natural conditions. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved. <p>All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities.</p>
<p>MB10</p>	<p>MB10 is located adjacent to Evaporation Dam 1. Based on the results provided in Table 7.7 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 781.25 m RL) was consistent with previous monitoring periods; • pH (average 7.3) neutral is consistent with previous reporting periods; • EC (average 7930 μS/cm) is of brackish quality consistent with previous readings; • SO₄ (average 3575 mg/L) mirrors EC and is generally consistent with previous periods; • Pb (average 0.0006 mg/L) is stable while Zn (average 0.018 mg/L) and generally consistent with previous reporting periods; • NH₃ (< 0.1 mg/L) is consistent with previous monitoring periods of non detection rates; • TOC (3.5 mg/L) appears consistent with the previous reporting period. The concentration is indicative of natural conditions. Veolia will continue to monitoring this parameter in the future to ensure water quality at this location is preserved. <p>All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities.</p>
<p>ED3B</p>	<p>ED3B is located downstream of Evaporation Dam 3. Based on the results provided in Table 7.8 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 784.14 mRL) was consistent with previous

Parameter	Results/Discussion
	<p>monitoring periods;</p> <ul style="list-style-type: none"> • pH (average 7.48) is neutral – slightly alkaline and consistent with previous reporting period; • EC (average 8052.5 $\mu\text{S}/\text{cm}$) indicating brackish water and SO_4 (average 1162.5 mg/L) follow similar trends consistent with previous periods; • Pb (average 0.0004 mg/L) remains stable while Zn (average 1.1 mg/L) is consistent with previous monitoring periods. • NH_3 (0.1 mg/L) is at non detection rates; • TOC (9 mg/L) is slightly higher but reflective of historical results in previous reporting periods. <p>All trends indicate fairly stable concentrations at this location with no evidence of contamination from mining or Bioreactor activities.</p>
WM1	<p>WM1 is located northeast of the landfill void. Based on the results provided in Table 7.9 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 739.75 m RL) is consistent with previous monitoring periods; • pH (average 7.5) neutral – to slightly alkaline consistent with previous reporting period; • EC (average 2905 $\mu\text{S}/\text{cm}$) represents slightly brackish water, and is consistent with previous historical records; • SO_4 (average 1487.5 mg/L) is similar in trend to EC and demonstrating a long term upward trend; • Both Pb (average 0.003 mg/L) and Zn (average 4.9 mg/L) remain consistent with previous reporting periods. • NH_3 (average 0.1 mg/L) is close to, or within, non-detection rates; • TOC (3 mg/L) is consistent with previous monitoring period reflective of natural conditions; <p>All trends indicate fairly stable concentrations at this location with no evidence of contamination from mining or Bioreactor activities.</p>
WM4	<p>WM4 is located on the northeast side of the void. Based on the results provided in Table 7.10 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 725.6 mRL) continues to show a noticeable increase since previous reporting periods. This increase is likely due to the increased height of the waste within the void and that the water level has risen to capacity in the mine decline. • pH (average 7.2) neutral is consistent with long term historical trend; • EC (average 2006 $\mu\text{S}/\text{cm}$) is generally consistent with previous readings representing fresh water; • SO_4 (average 968 mg/L) is similar to EC trend; • Pb (average 0.00025 mg/L) and Zn (average 0.4 mg/L) both fluctuate, which appears consistent with historical cyclic trends; • NH_3 (average 0.1 mg/L) is close to, or within, non-detection rates; • TOC (2 mg/L) is consistent with the previous reporting period and reflective of natural conditions.

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Parameter	Results/Discussion
	<p>No other significant variations or anomalies were recorded for any analytes tested during this monitoring period from the data available. This monitoring point has been decommissioned.</p>
WM5	<p>WM5 is located to the west of the void near Evaporation Dam 3 South. Based on the results provided in Table 7.11 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 785.05 mRL) is consistent with long term averages; • pH (average 7.7) neutral is consistent with the previous period. • EC (average 9080 $\mu\text{S/cm}$) is representative of saline water and consistent with the previous reporting period; • SO_4 (average 192 mg/L) is lower than previous reporting period (205 mg/L). • Pb (average 0.0003 mg/L) and Zn (average 0.0345 mg/L) are both lower than the previous reporting period but can be seen to be fluctuating which appears consistent with historical cyclic trends; • NH_3 (average 0.1 mg/L) is close non-detection rates; • TOC (5 mg/L) is consistent with previous monitoring periods reflecting natural conditions; <p>No significant variations or anomalies were recorded for any analyte tested in this location during this monitoring period from the data available.</p>
WM6	<p>WM6 is located to the west of the void adjacent to Evaporation Dam 3 North. Based on the results provided in Table 7.12 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 787.05 m RL) is consistent with the previous reporting period; • pH (average 6.48) is slightly acidic, but stable and consistent with previous reporting period; • EC (average 13,775 $\mu\text{S/cm}$) represents brackish to slightly saline water, consistent with previous reporting period; • SO_4 (average 337.5 mg/L) mirrors EC's stable trend; • Pb (average 0.004 mg/L) and Zn (average 0.19 mg/L) are both similar to the previous reporting period and generally consistent with historical fluctuations. • NH_3 (average 0.1 mg/L) is close to, or within, non-detection rates; • TOC (4 mg/L) is consistent with previous monitoring period reflecting natural conditions; <p>All trends are relatively consistent and there is no indication of contamination from mining or Bioreactor activities.</p>
MW8S	<p>MW8S is located northern side of ED3N. Based on the results provided in Table 7.13 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 785.8 m RL) was consistent with long term average since 2004; • pH (average 7.4) is neutral and consistent with previous reporting period; • EC (average 11700 $\mu\text{S/cm}$) remains stable with previous

Parameter	Results/Discussion
	<p>reporting period results;</p> <ul style="list-style-type: none"> • SO₄ (average 1337.5 mg/L) continues to show a declining trend but is generally consistent with previous periods; • Pb (average 0.0016 mg/L) is stable whilst Zn (average 1.25 mg/L) continues to show a declining trend from historical records. • NH₃ (average 0.1 mg/L) is close to, or within, non-detection rates; • TOC (13 mg/L) is consistent with previous monitoring period reflecting natural conditions; <p>The fluctuations noted could be attributed to the recharging of this well only following significant wet weather events, which indicates that this well intercepts the shallow unconfined aquifer.</p> <p>There is no indication of contamination from mining or Bioreactor activities.</p>
MW8D	<p>MW8D is located adjacent to MW8S. Based on the results provided in Table 7.14 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 786.7 m RL) was consistent with long term average since 2004; • pH (average 6.91) slightly acidic to neutral consistent with previous reporting period. • EC (average 10600 µS/cm) represents brackish water which is consistent with previous readings; • SO₄ (average 4795 mg/L) mirrors EC consistent with previous periods; • Pb (average 0.00062 mg/L) and Zn (average 19 mg/L) are both consistent with previous periods; • NH₃ (< 0.1 mg/L) is at non detection rates; • TOC (6 mg/L) is consistent with previous monitoring period reflecting natural conditions; <p>All trends indicate fairly stable concentrations with no evidence of contamination from mining or Bioreactor activities.</p>
MW9S	<p>MW9S is located on the northwest side of ED3N. Based on the results provided in Table 7.15 (refer Appendix 3), the groundwater quality at this location can be described as:</p> <ul style="list-style-type: none"> • SWL (average 786.6) was consistent with previous reporting period; • pH (average 7.28) consistent with previous reporting period; • EC (average 11,325 µS/cm) remains stable, consistent with previous reporting period for brackish water; • SO₄ (average 4872.5 mg/L) is consistent with previous periods; • Pb (average 0.0002 mg/L) and Zn (average 0.12 mg/L) were both generally consistent with historical results. • NH₃ (< 0.1 mg/L) is at non detection rates; • TOC (6 mg/L) reflecting natural conditions is consistent with historical results; <p>No significant variations or anomalies were recorded for any analyte tested at this location during this monitoring period.</p>

Parameter	Results/Discussion
MW10S	<p>MW10S is located on the northeast side of ED3.</p> <p>No sampling of MW10S could be undertaken during the reporting period as this well was continually dry. This has been a consistent observation since the well was commissioned in 2007.</p> <p>No data is available to produce tables or graphs for this monitoring point.</p>

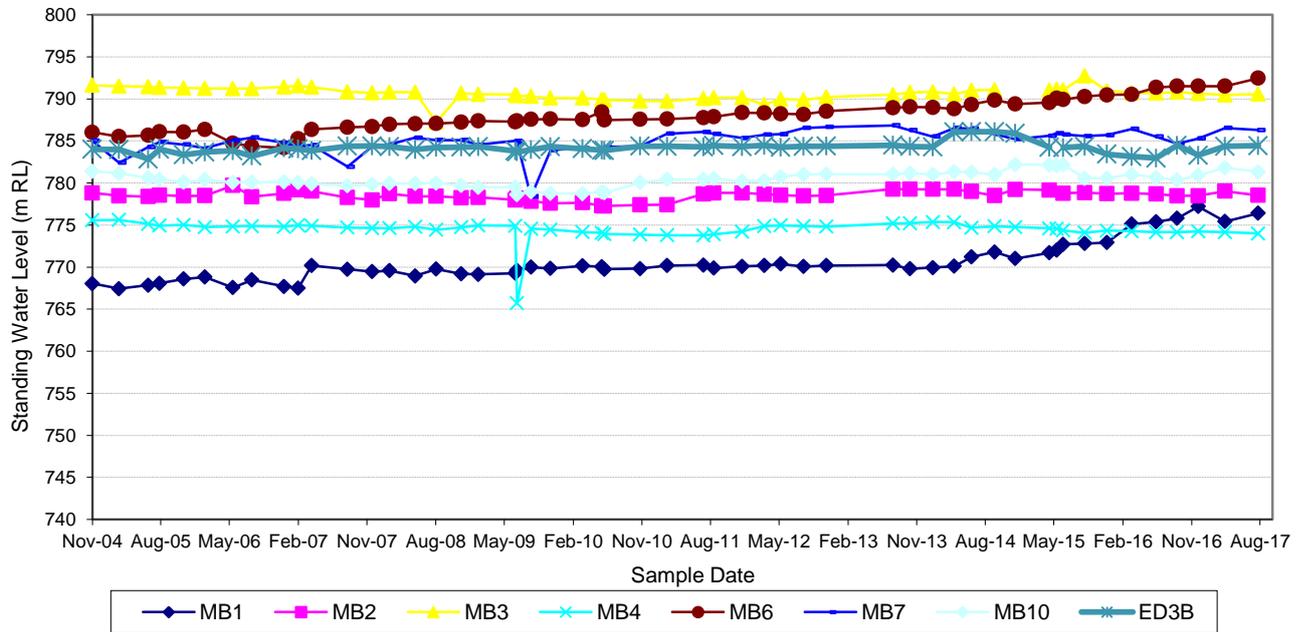


Figure 3.2.5A – Groundwater Levels – MB1 to MB10 and ED3B

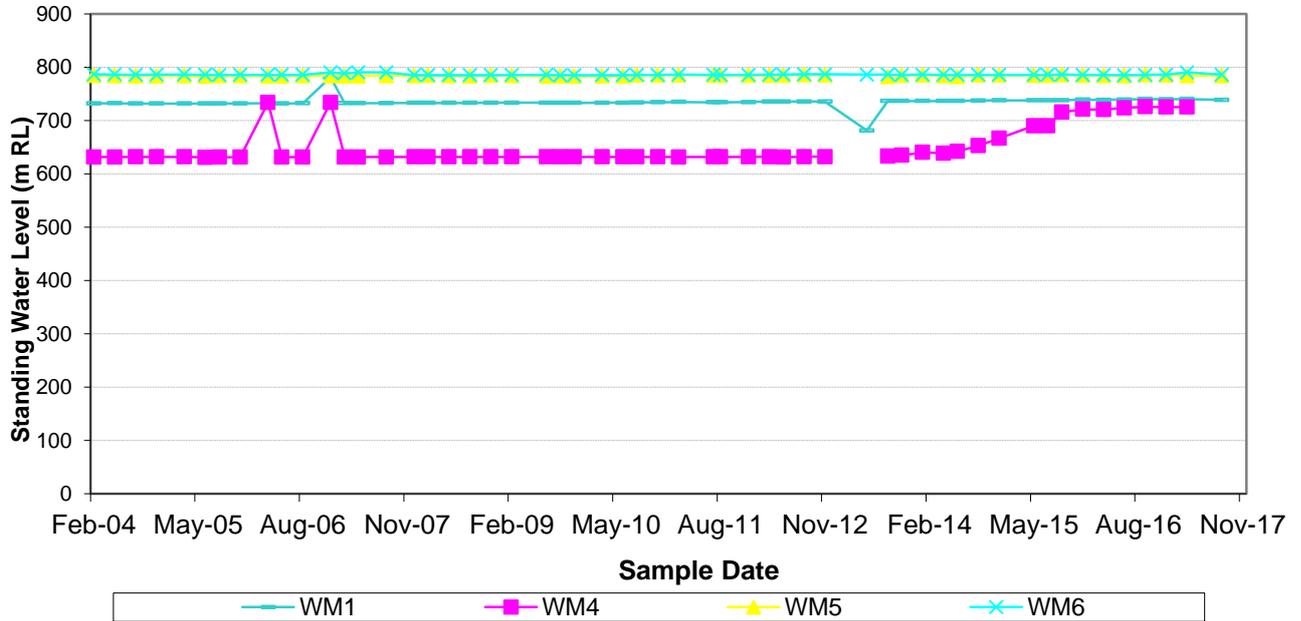


Figure 3.2.5B – Groundwater Levels – WM1 to WM6

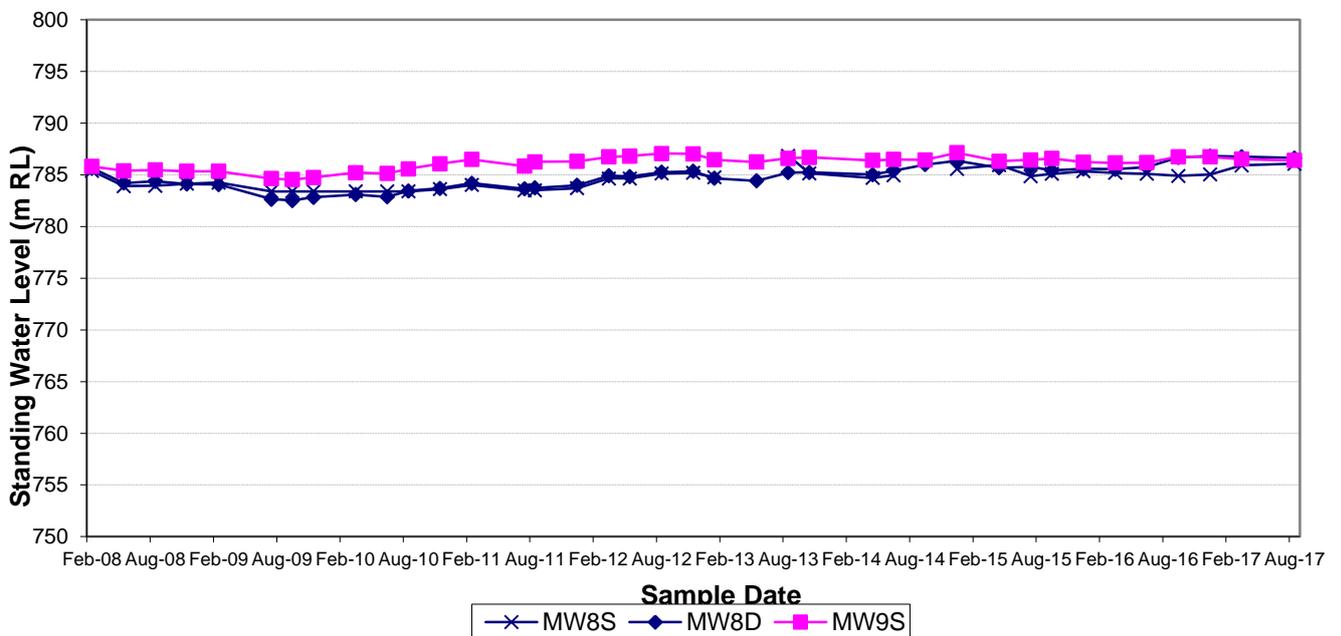


Figure 3.2.5C – Groundwater Levels – MW8S to MW9S

3.4.4 Bioreactor Piezometers Level Monitoring Results

Measurements for groundwater standing water levels (SWL) in the vicinity of the Bioreactor were undertaken at 6 out of 6 piezometers around the landfill void in

accordance with the EPL. Each location consists of a shallow (reference A) and deep (reference B) piezometer.

The findings of the monitoring are summarised in Table 3.8 below and detailed quarterly levels are provided in Tables 8.1 – 8.6 (refer Appendix 3). Standing water levels (SWL) of the piezometers are depicted Figures 3.2.6.1.

Table 3.8: Bioreactor Piezometers Level Monitoring Results

Parameter	Results/Discussion
P38A & P38B	<p>P38 is located east of the void. Standing water levels are presented in Table 8.1 (refer Appendix 3). This monitoring location was deemed unsafe to access due to a rock slip on the Southern side of the Bioreactor void wall in 2010. An application to remove this monitoring point from the licence was submitted to the EPA and rejected during this reporting period. Following this decision, Veolia engaged a geotechnical consultant and earthmoving company to provide safe access. Monitoring re-commenced immediately.</p> <p>SWL in P38A (shallow aquifer) indicated a stable standing water level ranging from 776.45 metres Relative Level (m RL) to 777.31 RL during this reporting period.</p> <p>SWL in P38B (deep) ranged from 771.24 m RL to 772.08 m RL in this reporting period, consistent with previous reporting periods.</p>
P44A & P44B	<p>P44 is located east of the void. Standing water levels are presented in Table 8.2 (refer Appendix 3).</p> <p>SWL in P44A (shallow aquifer) indicated a variable standing water level from 724.11 m RL to 726.87 m RL during this reporting period, similar to previous trends, indicative of rainfall and infiltration influence.</p> <p>SWL in P44B (deep) has increased approximately 5 m from the previous reporting period and is trending upward. This increase is likely due to the compaction of landfill waste at higher levels within the void preventing water ingress.</p>
P45A & P45B	<p>P45 is located east of the mine void, and to the south of P44. Standing water levels are presented in Table 8.3 (refer Appendix 3).</p> <p>SWL in P45A (shallow) showed a range of 728.75 m RL to 729.82 m RL, stable and is approximately 2 m higher than previous reporting periods.</p> <p>SWL in P45B (deep) fluctuated between 728.57 m RL and 729.44 m RL and is approximately 2m higher than previous reporting periods.</p> <p>This increase is likely due to the compaction of landfill waste at higher levels within the void preventing water ingress.</p>
P58A & P58B	<p>P58 is located west of the void. Standing water levels are presented in Table 8.4 (refer Appendix 3).</p> <p>SWL in P58A (shallow) showed a range of 763.95 m RL to 764.14 m RL and is stable.</p> <p>SWL in P58B (deep) is similar to previous reporting period fluctuating</p>

Parameter	Results/Discussion
	between 756.37 m RL and 760.39 m RL.
P59A & P59B	<p>P59 is located west of the void and to the south of P58. Standing water levels are presented in Table 8.5 (refer Appendix 3).</p> <p>SWL in P59A (shallow) ranged from 786.34 m RL to 787.63 m RL in this reporting period, consistent with previous reporting period.</p> <p>SWL in P59B (deep) ranged between 785.93 m RL and 787.10 m RL, which is almost identical to the level within the shallow piezometer as per previous reporting periods.</p>
P100A & P100B	<p>P100 is located northeast of the void. Standing water levels are presented in Table 8.6 (refer Appendix 3).</p> <p>SWL in P100A (shallow) is consistent with the previous reporting period averaging between 739.79 m RL to 742.28 m RL.</p> <p>P100B (deep) averaged between 730.43 m RL and 732.73 m RL that indicates water above the base level of 698.29 m RL that has been recorded in previous periods.</p> <p>This increase is likely due to the compaction of landfill waste at higher levels within the void preventing water ingress.</p>

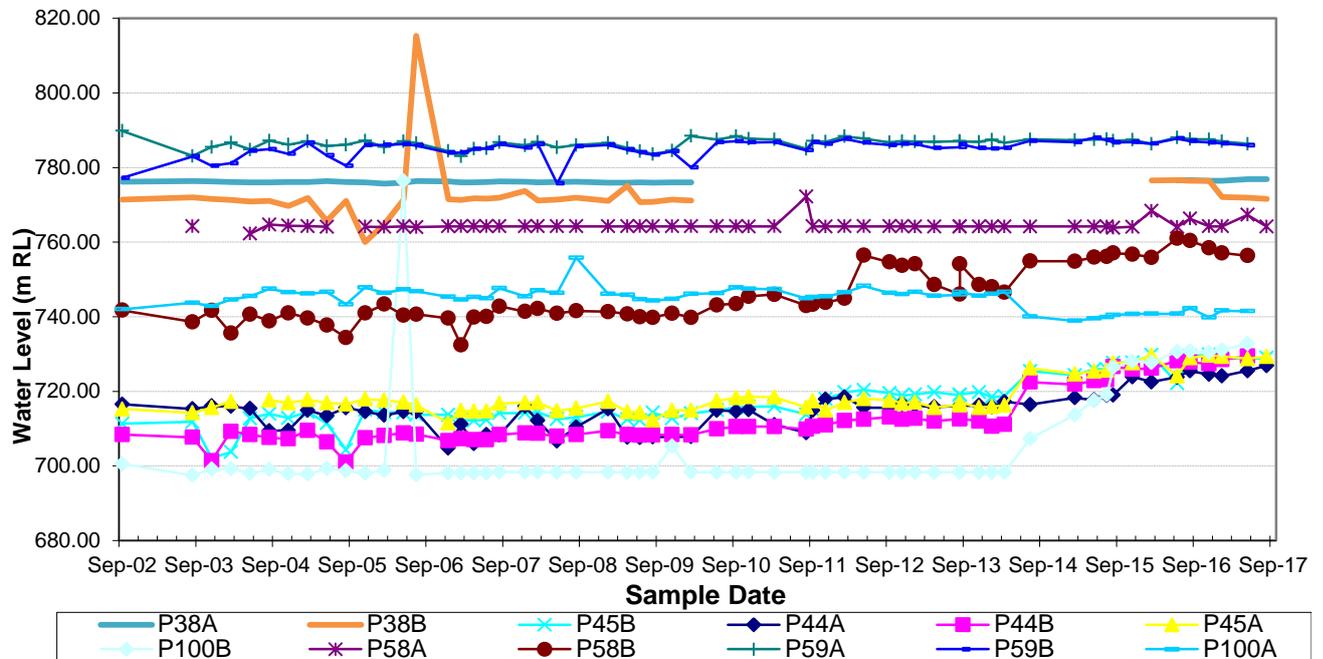


Figure 3.2.6.1 – Piezometer Standing Water Levels – P38 to P100

3.4.5 Bioreactor Evaporation Dam Volume Monitoring Results

The Evaporation Dam 3 (ED3) system comprises extracted (and treated) leachate from the landfill void and captured stormwater. The water volume has to be maintained in all Evaporation Dam 3 (Lagoon systems) below the freeboard level at all times.

Water levels are taken monthly as detailed in Table 3.9, which shows that the dam Relative Levels (RL) of ED3S, ED3S-S and ED3N Lagoon 4 remained below their respective freeboard levels at all times during the reporting period.

Table 3.9: Bioreactor Evaporation Dam Volume Monitoring Results (RL - mAHD)

Date	ED3S	ED3S-S	ED3 NORTH			
			ED3N Lagoon 1	ED3N Lagoon 2	ED3N Lagoon 3	ED3N Lagoon 4
Sep-16	791.07	786.94	791.48	791.73	791.49	791.63
Oct-16	791.17	788.05	791.38	791.47	791.43	791.57
Nov-16	791.17	788.55	791.19	791.31	791.27	791.35
Dec-16	791.17	788.98	791.09	791.23	791.19	791.24
Jan-17	791.17	789.78	790.94	791.08	791.02	791.04
Feb-17	790.97	790.39	790.75	790.89	790.83	790.78
Apr-17	791.07	790.94	790.76	790.90	790.85	790.78
Apr-17	790.95	791.51	790.79	790.86	790.80	790.73
May-17	790.95	792.09	790.60	791.17	790.78	790.72
Jun-17	790.89	792.41	790.62	791.23	790.75	790.67
Jul-17	790.89	792.83	790.57	791.19	790.72	790.62
Aug-17	790.99	793.21	790.61	791.19	790.73	790.57
Minimum	790.89	786.94	790.57	790.86	790.72	790.57
Mean	791.04	790.47	790.90	791.19	790.99	790.98
Maximum	791.17	793.21	791.48	791.73	791.49	791.63
Max Freeboard levels	791.2	793.6	791.8	791.6	791.5	791.7

3.4.6 Extraction of Water

Table 3.10 below provides the volume of the water extracted from the Willeroo Borefield.

Table 3.10: Willeroo Bore Field Extraction Volume

Month	Willeroo Bore Field Usage Volume per month KL
Sep-16	187.4
Oct-16	454
Nov-16	164.7
Dec-16	148.2
Jan-17	171.1
Feb-17	144.9
Mar-17	114.3
Apr-17	130.1
May-17	217.7
Jun-17	608
Jul-17	254.1
Aug-17	1050.9
Total	3645.4

Heron commenced dewatering of the mine workings in May 2017 required for Heron Mine project. Water extracted from the mine decline is summarised in Table 3.11. Extracted water was transferred to ED2.

Table 3.11: Water extracted from the mine decline (Heron Resources)

Heron mine dewatering May 2017 - Aug 2017			
	Date	Cumulative (KL)	Comments
Stage 1	17/05/2017	74	Start of Stage 1
	18/05/2017	873	
	19/05/2017	2016	
	20/05/2017	3060	Stage 1 Completed
Stage 2A	10/08/2017		Start of Stage 2A Pumping
	13/08/2017	6168	
	14/08/2017	7193	
	18/08/2017	11102	
	21/08/2017	13899	
	23/08/2017	15820	

24/08/2017	16800
28/08/2017	20522
29/08/2017	21469
30/08/2017	22217

Total Ground water extracted during the reporting period – **25,862.4 KL**

Leachate extracted from the Bioreactor for the water year (1 July 2016 to 30 June 17) was 110,642 m³. Leachate is treated through the existing Leachate Treatment Plant before being transferred to the ED3 dams for evaporation. For the monthly ED3 lagoon system Relative Levels refer to table 3.9.

Additional mechanical evaporators will be procured used in the next reporting period to reduce the volume of the ED3 dams.

3.4.7 IMF Surface Water Monitoring Results

Surface water quality monitoring at three monitoring locations was undertaken as required by the EPL, the findings of which are summarised in Table 3.10. Detailed quality results are provided in Tables 9.1 to 9.4 (refer Appendix 3). The key quality indicators selected to identify any contamination in the receiving surface waters from site operations include:

- pH,
- Electrical Conductivity (EC),
- Sulphate (SO₄),
- Iron (Fe),
- Zinc (Zn),
- Ammonia (NH₃), and
- Total Organic Carbon (TOC).

These are depicted in trend graphs Figures 5.2.1.1 to 5.2.1.4 (refer Appendix 4).

Table 3.10: IMF Surface Water Monitoring Results

Parameter	Results/Discussion
Site 110 - Upstream	<p>Site 110 is located upstream of the IMF in Crisps Creek. It is approximately 8 km downstream of the Bioreactor.</p> <p>Results provided in Table 9.1 (refer Appendix 3) indicate the following trends:</p> <ul style="list-style-type: none"> • pH is close to neutral (average 7.92), consistent with previous reporting periods; • EC (average 1505.00 µS/cm) is consistent with the previous period and representative of fresh water salinity; • SO₄ (average 152.00mg/L) is consistent with previous reporting periods; • Fe (average 0.22 mg/L) is consistent with previous reporting periods, whilst Zinc indicates a fluctuating trend (average

Parameter	Results/Discussion
	<p>0.25mg/L), consistent with historical cyclic results;</p> <ul style="list-style-type: none"> • NH₃ (average 0.1 mg/L) is consistent with previous reporting periods and continues to be at non-detection levels. • TOC (average 14.50mg/L) is slightly higher than the previous reporting period and is generally reflective of natural organic matter in streams. <p>While the indicator trends for this location indicate some variability over time, this is not uncommon when sampling intermittent streams.</p>
<p>Site 130 - Upstream</p>	<p>Site 130 is located upstream of the IMF in the Mulwaree River.</p> <p>Results provided in Table 9.2 (refer Appendix 3) indicate the following trends:</p> <ul style="list-style-type: none"> • pH is close to neutral (average 8.07), slightly higher than the previous reporting period; • EC (average 533.50 µS/cm) is consistent with the previous reporting period and representative of fresh water salinity; • SO₄ (average 20.85 mg/L) is lower but generally consistent with previous reporting period; • Fe and Zn, average 0.53 mg/L and 0.02 mg/L respectively indicate consistency with fluctuating cycles in previous reporting periods; • NH₃ (<0.1 mg/L) continued to be un-detectable during this reporting period. • TOC (average 13.00 mg/L) is consistent with previous reporting periods.
<p>Site 150 – Mulwaree River</p>	<p>Site 150 is located 2 km downstream of the IMF on the Mulwaree River, which is also downstream of a railway bridge and Braidwood Road.</p> <p>Results provided in Table 9.3 (refer Appendix 3) indicate the following trends:</p> <ul style="list-style-type: none"> • pH (average 8.03) is slightly alkaline, consistent with the previous reporting period; • EC (average 727.50 µS/cm) shows a fluctuating trend and is generally consistent with previous periods and fresh water salinity; • SO₄ (average 44.65 mg/L) is also lower, reflecting EC trend, but generally consistent with previous reporting period; • Fe and Zn, average 0.31 mg/L and 0.06 mg/L respectively indicate consistency with fluctuating cycles in previous reporting periods. • NH₃ (< 0.1mg/L) continued to be not detected during this reporting period. • TOC (average 12.50 mg/L), is slightly lower but generally consistent with previous reporting periods; <p>These results are consistent with the trends for Site 110.</p>

Parameter	Results/Discussion
First Flush Stormwater Outlet	<p>The IMF First Flush is located at the surface water outlet point of the site, prior to runoff into Crisps Creek.</p> <p>Results provided in Table 9.4 (refer Appendix 3) indicate the following trends:</p> <ul style="list-style-type: none"> pH (average 7.53) is close to neutral, consistent with the previous reporting period; EC (average 127.80 $\mu\text{S/cm}$) shows a slight downward trend but is generally consistent with the previous period and representative of fresh water salinity; SO_4 (average 10.46 mg/L) is also slightly lower, reflecting EC trend, but generally consistent with previous reporting period; Fe and Zn, average 0.77 mg/L and 0.05 mg/L are lower than the previous reporting period but reflective of fluctuating cycles. NH_3 (< 0.1mg/L) continued to be not detected during this reporting period. TOC (average 6.60 mg/L) which is lower than previous reporting periods;

3.5 Noise

3.5.1 Noise Monitoring

Operational activities at the Woodlawn Bioreactor and Crisps Creek IMF were restricted within the approved operating hours described in **Table 3.11** as per Conditions of the Consent.

Table 3.11 Approved Hours of Operation

Activity	Day	Hours
Operations	Monday- Saturday	6:00am-10:00pm
	Sunday & Public Holidays	Nil

No noise complaints were received during this reporting period indicating that noise at the Bioreactor was likely maintained within the 35 dB(A) LAeq (15 minute) criteria at the nearest residential receiver. Noise monitoring will be undertaken by Veolia on the receipt of any such complaints.

3.6 Waste

3.6.1 Waste Conformance

All waste received as part of the expanded operations was in accordance with the waste types permitted in the Consent and EPL.

Acceptance and screening of waste prior to final disposal was in accordance with the requirements of the Veolia Control of Non-Conforming Waste Procedure and NSW

Resource Recovery Screening & Recording of Waste Procedure to ensure only conforming waste is received. Visual assessments of incoming waste were conducted by operators, as tipping/unloading occurred on the landfill surface.

No records of non-conforming waste were recorded during this reporting period. Incoming waste and the waste was received as per the condition 20, schedule 5 of project approval 10_0012. Train movements are restricted to two train arrivals and two train departures per day to transfer the required waste tonnages from CTT and BTT through to the Eco-Precinct site.

Banksmeadow Transfer Station was opened in September 2016.

3.6.2 Waste Volume Monitoring and Recording

The Consent stipulates that the expanded operations must not exceed the maximum annual input rates in following **table 3.12**.

Table 3.12 Maximum annual input rates for Woodlawn Bioreactor

Putrescible waste received by rail from Sydney	Received as residual waste from Woodlawn AWT	Putrescible regional waste received by road
900,000 tpa	100,000 tpa	50,000 tpa

Table 3.13 Maximum annual input rates for Crisps Creek

Received by Rail from Sydney	Received by rail from Sydney for processing at the Woodlawn AWT
900,000 tpa	280,000 tpa

All waste received is recorded in the Systems, Applications and Products in Data Processing (SAP) software. SAP also records vehicle registrations, the date and time of delivery, the gross and tare weight of the vehicle, as well as the nature and origin of the waste delivered by each contractor.

The data provided by SAP is used to track and monitor the amount of incoming waste in accordance with the limits of the Consent. **Table 3.14** indicates that the Woodlawn Bioreactor has remained within the annual waste limit stipulated within the Consent.

Table 3.14 Incoming waste tonnage via rail and road per month for Woodlawn Bioreactor, MBT facility and Crisps Creek (IMF) during 2016/2017 reporting period.

Monitoring Period	Incoming Waste Received at the Woodlawn Bioreactor Via Crisps Creek IMF (tonnes)	Incoming Waste Received at the MBT Via Crisps Creek IMF (tonnes)	Incoming Waste Volumes received residual as waste from MBT (tonnes)	Incoming regional waste received by road (tonnes)
9t – 30th Sept 2016	46,649.14	-	-	1748.19
Oct 2016	46,551.62	-	-	1771.63

Nov 2016	50,003.58	-	-	2228.99
Dec 2016	62,304.52	-	-	1600.62
January 2017	55,442.40	-	-	1,428.99
February 2017	54,009.72	-	-	2623.94
March 2017	60,063.56	2447.07	19.63	4036.20
April 2017	57,658.93	1,125.81	520.01	2784.79
May 2017	57,491.16	3,609.81	2,520.62	3620.10
June 2017	56,045.09	4,530.33	3,471.70	3705.20
July 2017	46,642.81	9,205.69	4,404.46	3227.21
August 2017	53,394.56	9,079.79	5,455.86	2584.66
TOTAL	646,257.09	29,998.50	16,392.28	31,360.52

Comparing the Total from Table 3.14 with the maximum input rates (Table 3.12 and 3.13) shows that the waste received at the Woodlawn was within the allowed limits.

3.7 Pests and Vermin

The management of pest and vermin at the Bioreactor and IMF were maintained through preventative and responsive mitigation measures as per the Landscaping Management Plan in the LEMP. Such measures included:

- Inspection of the site by a registered pest controller every two months;
- Weekly Site inspections to record site conditions such as evidence of vermin and pests; and
- Placement of rodent bait stations at various locations around the site

No pest and/or vermin complaints or management issues were reported during the operation of the Bioreactor during the reporting period.

3.8 Rehabilitation

Rehabilitation of the mine void through landfilling is a continuous process. Final rehabilitation works shall be completed in accordance with the closure and rehabilitation plan. The areas to be rehabilitated include:

- The Bioreactor

- Former Mineral Processing Area - Plant Area
- Evaporation Dam 3
- Evaporation Dam 1
- Power Station; and
- Office and car park areas

In 2008 to 2010, Veolia commissioned Golder Associates Pty Ltd to do a detailed contamination assessment of the Former Mineral Processing Area. Veolia post this assessment transported the main contaminates to the tailings dam area, which included the lead reverse tailings dam, which was located in the south part. Landscaping and reshaping the current area will begin post construction activities by Heron Resources.

Veolia will consult with OEH on the final rehabilitation plans and plant species to be adopted within the rehabilitation areas, once a suitable rehabilitation design is selected and additional detail is developed.

Other areas of the mine site are subject to a current development approval by Heron Resources Limited Pty Ltd (Heron). Under the approved development, Heron are proposing to undertake further underground mining and reprocessing over various areas of the mine site. Rehabilitation of other areas, will be the responsibility as identified in Heron Mining Operations Plan (MOP).

On the ongoing basis, Veolia has undertaken vegetation monitoring and tree planting programs at the Eco-Precinct site. Tree planting aims to increase native species, which in turn creates new habitats for native fauna. Tree planting programs may include the following activities:

- Identification of suitable locations for planting;
- Assessment of existing vegetation and trees;
- Purchase of native saplings;
- Planting of saplings, generally with local volunteer groups
- Funding of tree planting program
- Installation of sapling tubes / tree guards
- Application of fertiliser and/or mulch as required

Compost produced from the MBT will be focused on rehabilitation of Heron area of operation initially

Section 4

Environmental Performance

SECTION 4 ENVIRONMENTAL PERFORMANCE

The environmental performance of the expanded operations was assessed through the results of environmental monitoring, internal inspections, as well as external environmental audits.

4.1 Non-Compliances and Corrective Actions

4.1.1 Non-Compliance

The non-conformances identified during the 2016-2017 reporting period are detailed in Table 4.2 below and the status of corrective actions to resolve/manage these non-conformances are also provided.

Table 4.2 Non-Conformances against the Consent reported in the 2016/2017 reporting period

Relevant Condition	Non-Conformance/Regulatory Action	Corrective Actions
Schedule 2, Condition 67 of DA31-02-99	A PIN was issued on 22 July 2016 to Veolia from the DPE for tracking of material on to external surfaces	Veolia finalized its improvement to the wheel wash system, which included a water collection system and extension to the rattle grid. Veolia has also procured a road sweeper for additional road cleaning.

The IEA carried out in last reporting period determined non-compliances against the Consent. In the previous reporting period, a number of findings because of the various monitoring activities were observed and actioned. These are summarised as follows in **table 4.1:**

Table 4.1.Previous period findings and corrective actions

Previous Period Finding	Consent Condition	Recommendation	Corrective Action	Status
The Independent Environmental Audit (IEA) was not commissioned in 2015, three years after the first IEA in 2012	Condition 6, Schedule 7 of the PA 10_0012	Use the Internal audit tracking system to records dates for commissioning and submission of reports and audits required under consents and EPL	SHEQ governance program and environmental management tools have been developed to track audit dates. Email notifications have also been set up to alert relevant personnel of upcoming audit dates.	Completed
Tracking of materials	Condition 67, of the DA No.31-02-99	Veolia to continue to monitor and implement improvements to the wheel wash system to ensure tracking of materials beyond the site boundary is	Veolia finalised its improvement to the wheel wash system, which included a water collection system and extension to the rattle grid. Veolia has also procured a road sweeper for additional	Completed

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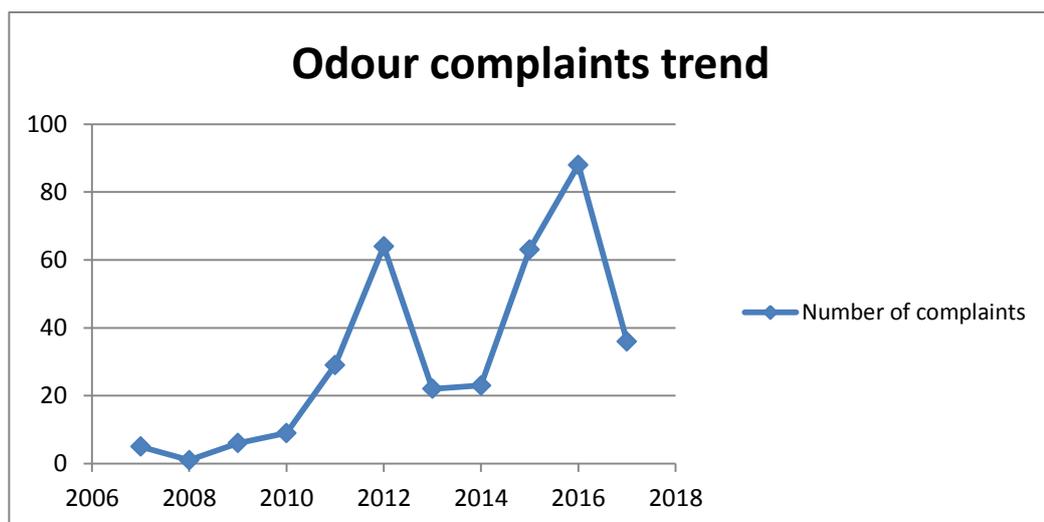
Previous Period Finding	Consent Condition	Recommendation	Corrective Action	Status
		negated.	road cleaning	
Container Integrity	Condition 31 of the DA No.31-02-99	Identify Improvements in the mid-year container quality assurance program and review continue to be implemented to ensure container integrity between the Clyde Transfer Terminal, Crisps Creek Intermodal Facility and Woodlawn Bioreactor	Combined attention with the operational personnel at Clyde and Banksmeadow Transfer Terminals improved the container maintenance process	Completed
Odour management	Schedule 4, Condition 6	Implementation of recommended waste profiling and infrastructure improvements will continue to be implemented to reduce odour emissions and increase gas capture. Furthermore, a long term leachate treatment strategy will be progress in the coming year. Proposal of potential alternative cover materials will also be prepared for approval by the EPA.	Veolia engaged Run Energy Pty Ltd during the reporting period to assess, modify and improve the gas capture network in the Bioreactor.	Ongoing
Evaporation Dam 1 and 2 Lining assessment	Schedule 1, Condition 18D of MP 10_0012	Engage suitably qualified consultants to assess the integrity of Evaporation Dams 1 & 2 to determine their suitability for proposed stormwater and treated leachate storage proposed under Department of Planning & Environment consent modifications	AECOM where commissioned by Veolia to carry out the integrity assessment of ED1 and ED2. This report and the findings were provided to the EPA and Department of Planning. A strategy for the ongoing use of the dams has been presented to the EPA and DPE as part of the Consent Modification for the new Leachate Treatment Plant. This strategy includes constructing a lined coffer dam to store treated effluent, and implement an evaporation strategy for the remaining water in the dams.	Ongoing – Include an Ecological Risk Assessment and Evaporation Plan
Community consultation	Schedule 1, Condition 16A of DA 31-02-99	Veolia to actively be involved in the regional community by continuing to participate in the Community Liaison Committee process	Veolia continues to operate the Community Liaison Committee on a quarterly basis and also engages directly with TADPAI. Odour diaries have been rolled out within the community. Veolia has also engaged a third	Completed

Previous Period Finding	Consent Condition	Recommendation	Corrective Action	Status
		and TADPAI meetings. The distribution of odour diaries also be undertaken to develop an understanding of odour profiles within the regional landscape.	party consultant to work with the residents of the community on formalizing a Tarago Village Plan.	

4.2 Complaints

Veolia operates a 24-hour telephone complaints line that enables the receipt of complaints from members of the public, as required under the EPL. Other complaints that were received off site during this reporting period were logged by the EPA. Veolia recorded a total of 36 complaints, relating only to odour, during this reporting period. Upon receipt of an odour complaint, Veolia recorded all details into the site complaints register as required under the EPL, and Site Management followed up with the complainant to determine the nature (and scale) of the odour.

In order to engage proactively in effective odour management, Veolia participates in regular community liaisons to encourage and gather feedback from the local residents regarding the odour performance at the Bioreactor. These liaisons are facilitated through either the Community Liaison Committee (CLC) to voice their concerns with the Bioreactor site and at the Tarago & District Progress Association Inc. (TADPAI) meetings. Veolia continues to implement activities to eliminate and minimise odour sources at the site based on annual odour audit recommendations.



CONCLUSION

Based on the results of monitoring undertaken at both the Bioreactor and IMF sites in accordance with the respective Consent Conditions and EPLs, the overall environmental performance of the Woodlawn Eco-Precinct in this reporting period can be demonstrated to be well managed.

A number of improvements to the environmental management of the Woodlawn Bioreactor have been implemented during this reporting period. These improvements were implemented as a result of the recommendations and findings identified by independent environmental audits, regulatory inspections as well as Veolia's internal assurance program.

Examples of these improvements include:

- Improvement of the wheel wash system;
- Re-design of the landfill tipping profile and gas collection infrastructure to maximize gas collection and minimize the impacts of higher leachate levels in the void.
- Veolia engaged Run Energy Pty Ltd during the reporting period to assess, modify and improve the gas capture network in the Bioreactor. Implementation of recommended waste profiling and infrastructure improvements will continue to be implemented to reduce odour emissions and increase gas capture. Furthermore, a long term leachate treatment strategy will be progress in the coming year.

Veolia intend to undertake following to improve the community and environmental performance in the next reporting period:

- Construction and operation of the Leachate Treatment Plant to treat the leachate to a higher quality effluent.
- Carry out the required Independent Odour Audits and implement the mandatory improvement measures.
- Construct a HDPE lined dam in ED1 to store water from the new Leachate Treatment Plant.
- Evaporation Dam 1 Ecological Risk Assessment
- Veolia has initiated a Village Plan for Tarago, which involves working directly with the Local Residents of Tarago to develop a community vision and improvements to the local community and village. Such items include supporting the village beautification plan, funding support to local not for profit entities, existing and new and project development for such initiatives as a community centre and village green space. More information can be found at taragovillageplan.com.au
- Maintain the existence and contribution by the Veolia Mulwaree Trust. Over \$10 million has been granted to local Not for Profit organisation since 2003.

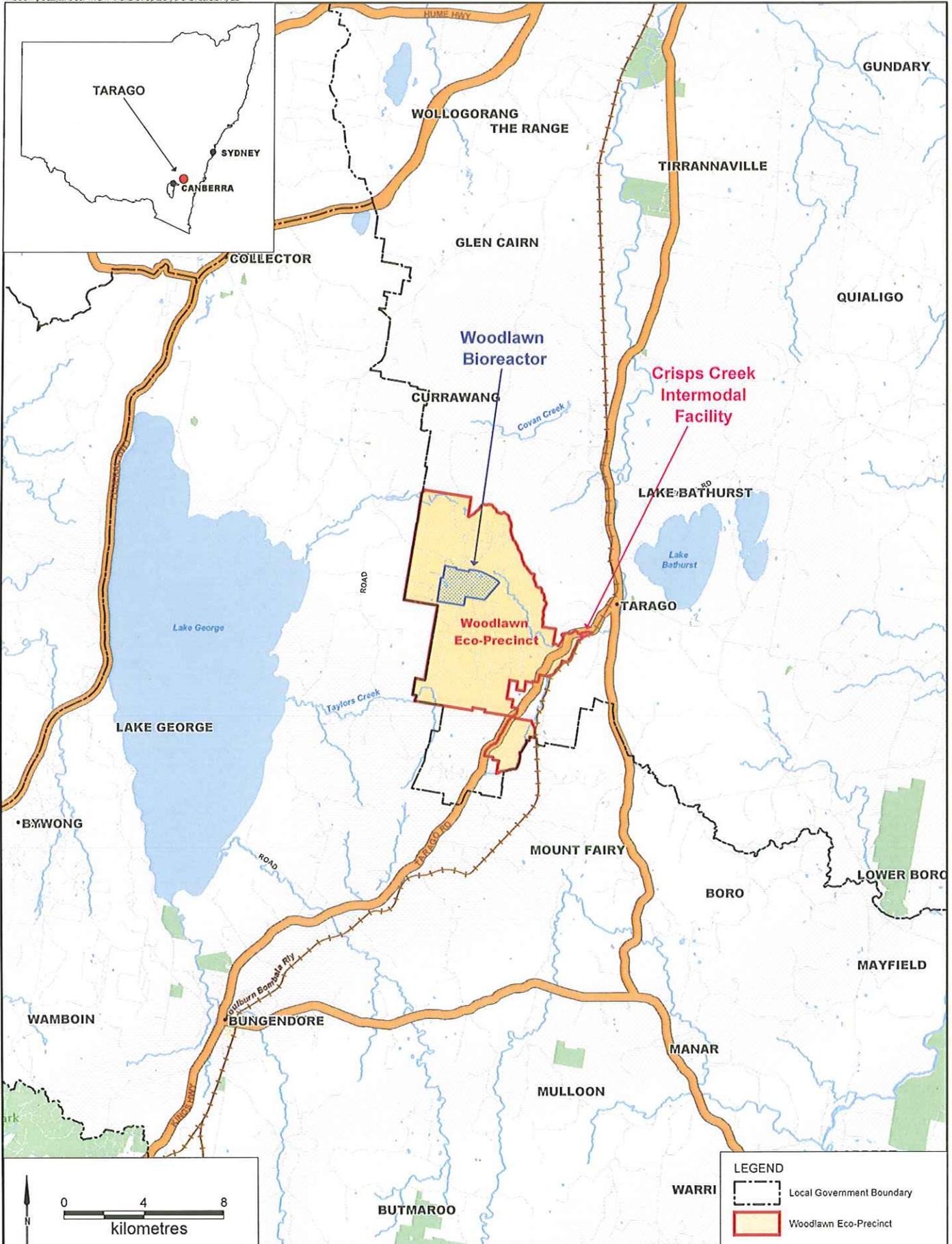
- Installation of the mechanical evaporators to get rid of the stored leachate in the ED3 Lagoon System
- Develop a evaporation plan for the existing stored water in Evaporation Dam 1

REFERENCES

- Veolia Environmental Services Environment Assessment: Woodlawn Expansion Project Volume 1 – Main Report, URS Australia Pty Ltd, August 2010
- Veolia Environmental Services Environment Assessment: Woodlawn Expansion Project Volume 2 – Appendices, URS Australia Pty Ltd, August 2010
- Waste Classification Guidelines Part 1: Classifying Waste, NSW Environment Protection Authority, November 2014;
- Environmental Guidelines: Solid Waste Landfills, NSW Environment Protection Authority, 1996.
- Ramboll Environ (2016). Woodlawn Bioreactor and Crisps Creek Intermodal Facility Independent Environmental Audit 2016, Ramboll Environ. December 2016

APPENDICES

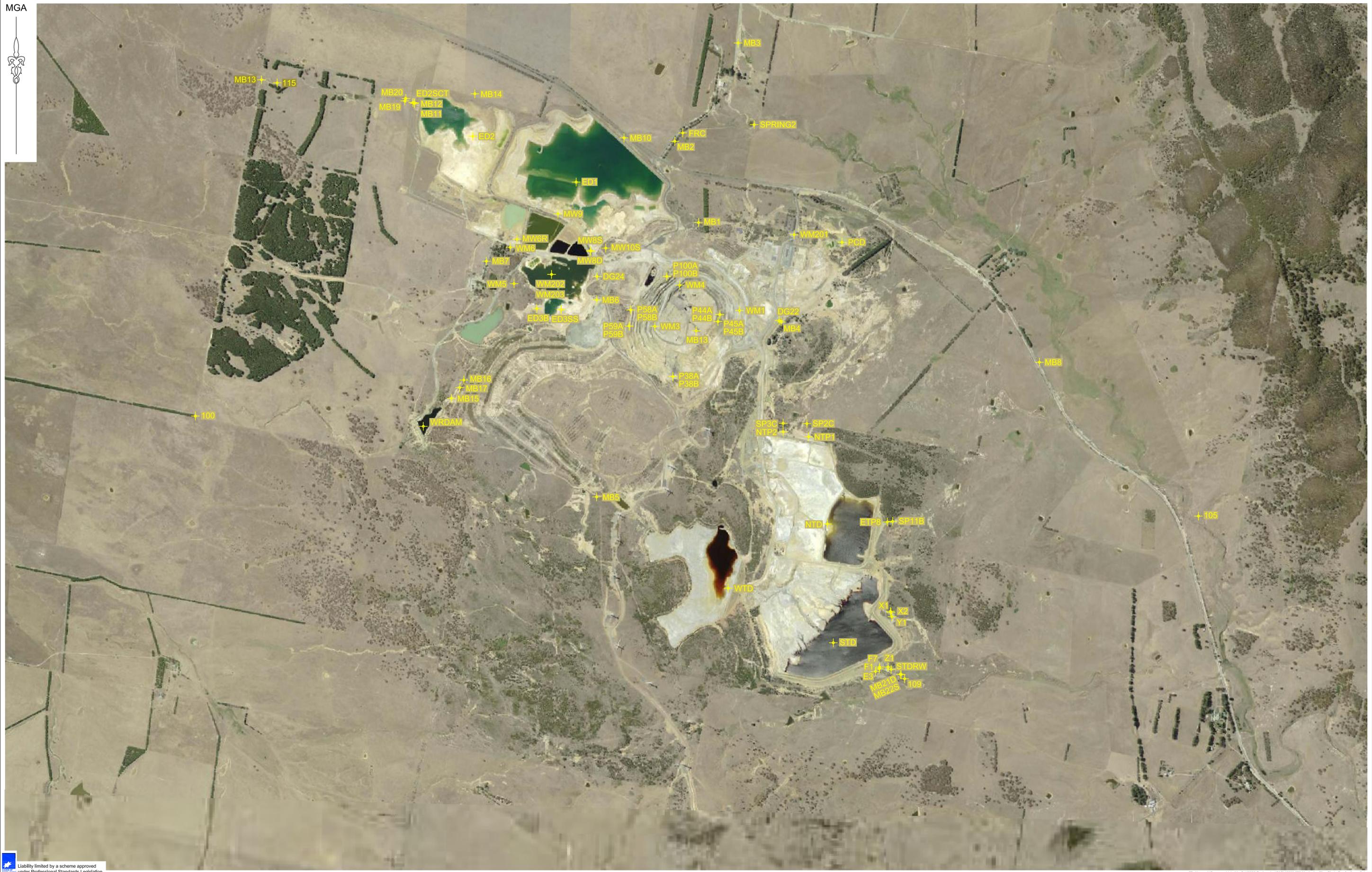
Appendix 1 – Site Layout Plan



Map compiled using MapInfo StreetView Data © 2010 MapInfo Australia Pty Ltd, URS Australia and PSMA Australia Ltd. URS Australia, MapInfo Australia or PSMA Australia do not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that these companies shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

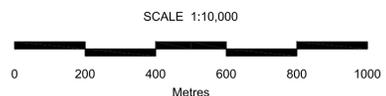
Client VEOLIA ENVIRONMENTAL SERVICES PTY LTD	Project WOODLAWN EXPANSION PROJECT	Title WOODLAWN ECO-PRECINCT LOCATION
	Drawn: SB Approved: LO Date: 06/08/2010 Job No: 43177703 File No: 43177703.018.wor	Figure: 1.1

Appendix 2 – Monitoring Location Plan



Liability limited by a scheme approved under Professional Standards Legislation.

File Name: J:\Survey\Liabi\Woodlawn\16800_Eng\dwg\CAD\16800-220_Monitoring_Sites_Photo_Overlay_Issue_F.dwg



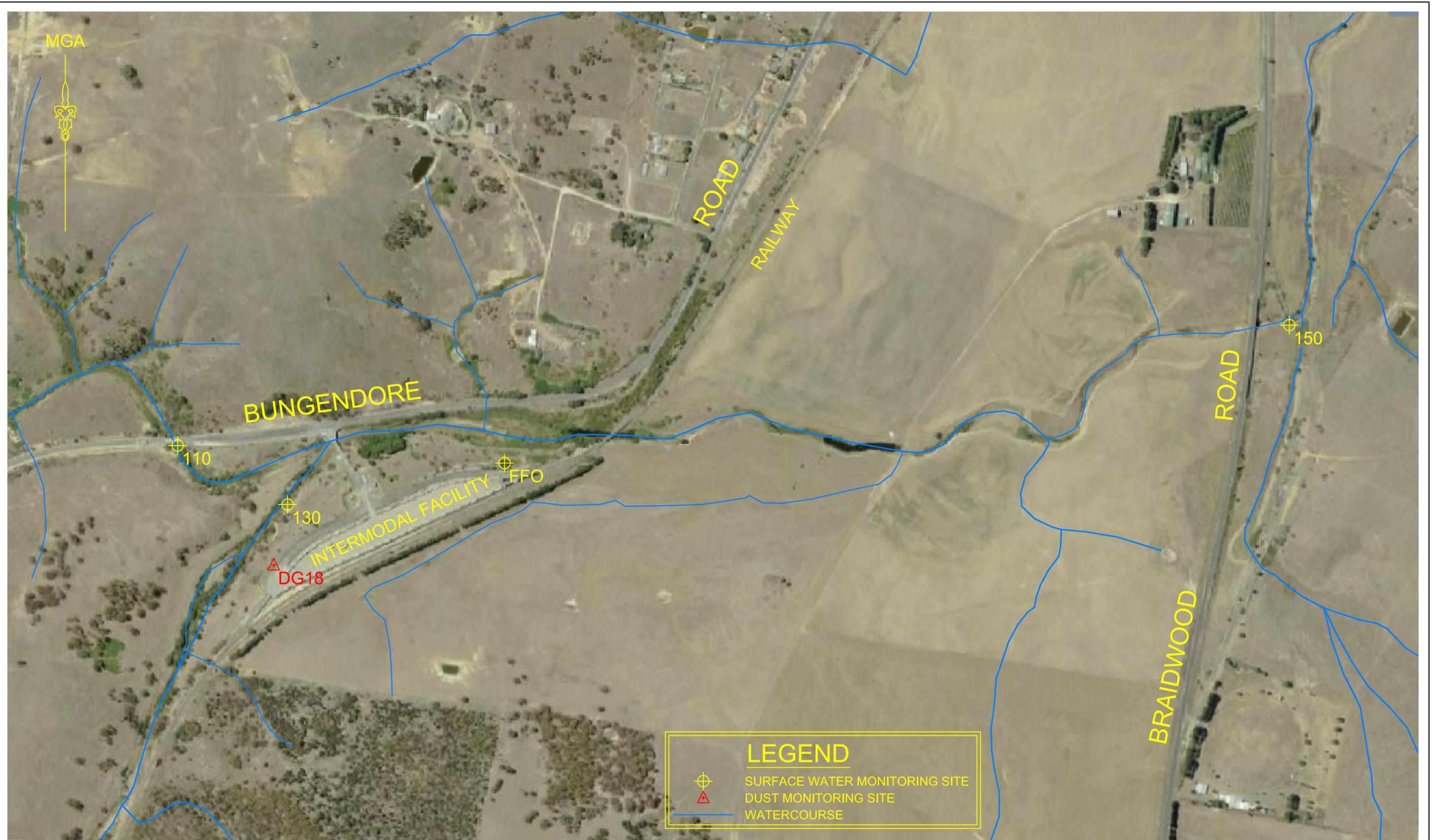
COPYRIGHT: Concepts and information contained within these drawings and related documents are the copyright of LandTeam Australia Pty Ltd. Unauthorised copying of part or whole of the document(s) is a breach of this copyright.

ISSUE	AMENDMENT	DRAWN	DATE
A	INITIAL ISSUE	BR	12/10/2007
B	ADDITIONAL SITES ADDED	SH	01/06/2015
C	WELL POSITIONS AMENDED	MK	18/09/2015
D	REDUNDANT WELLS REMOVED & PLAN RESCALED	MK	06/10/2015
E	WELL LABELLING ENHANCED	MK	19/10/2015
F	MONITORING SITE ED3SS ADDED	MK	24/10/2017

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A1 SHEET	VEOLIA ENVIRONMENTAL SERVICES		WOODLAWN BIOREACTOR COLLECTOR ROAD, TARAGO	
WOODLAWN BIOREACTOR SITE MONITORING LOCATIONS			DESIGNED: N/A	ISSUE
			DRAWN: MK	F
			CHECKED: JK	
			DRAWING No.	
DATUM	N/A	CONTOUR INTERVAL	N/A	DATE
				24/10/2017
				16800-220



File Name: J:\Surveyors\Jobs\Veolia\16735 Comp Model\CAD\16735-15 Intermodal Monitoring Points.dwg

ISSUE	AMENDMENT	DATE
A	INITIAL ISSUE	13/04/2016

SCALE 1:6000

0 72 144 216 288 360
Metres

Liability limited by a scheme approved under Professional Standards Legislation. **A3 SHEET**

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ENVIRONMENTAL SERVICES

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VEOLIA ENVIRONMENTAL SERVICES			
DATE: 13/04/2016		ISSUE	
SURVEYED: N/A		A	
PLAN SHOWING MONITORING SITE LOCATIONS VEOLIA INTERMODAL FACILITY BUNGENDORE ROAD, TARAGO			
DATUM	N/A	CONTOUR INTERVAL	N/A

DRAWN: MK	A
CHECKED: JK	
DRAWING No. 16735-15	

Appendix 3 – Figures

Appendix 4 – Graphs

Appendix 5 – Complaints Register

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
21/09/2017	8:38:00 AM	Letter	Tarago	The complainant reported to the EPA that there was an odour of "rotting food waste started at around 8:15am today. The weather is dry and calm, with a slight westerly breeze. The odour strength is around 4-5/6, quite strong today. This is an ongoing issue at the site."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.
19/09/2017	9:30:00 PM	Letter	Braidwood Road, Tarago	The complainant reported to the EPA that "Excessive rotting rubbish smell coming from the Veolia Woodlawn Bio Reactor, Collector Road, Tarago. Odour started on 19/7/17 at 21:30 and was ongoing overnight."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
18/09/2017	4:00:00 PM	Letter	Rosebery Street, Tarago	The complainant reported to the EPA that "There is a nauseating odour coming from Veolia. The odour started on 18/09/17 at 16:00."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.
17/09/2017	7:15:00 AM	Letter	Roseview Road, Tarago	The complainant reported to the EPA that "The smell of rotting garbage from the Veolia Tarago Landfill was extreme on 17/9/17 from 07:15. This has been an ongoing issue for a long time with many complaints made by local residents over that time and no resolution to the odour issue. The odour started overnight."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
10/09/2017	7:40:00 AM	Letter	Roseview Road, Tarago	The complainant reported to the EPA that "the smell from the Veolia Woodlawn Landfill, Collector Road, Tarago, has been extreme since the early hours of the morning and is still present now at 07:48."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.
10/09/2017	7:30:00 AM	Letter	Braidwood Road, Tarago	The complainant reported to the EPA that there was an "extremely pungent odour in the air coming from the Veolia Woodlawn Landfill, Collector Road, Tarago."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
2/09/2017	8:50:00 AM	Letter	Braidwood Road, Tarago	The complainant reported to the EPA that a "strong garbage smell in the air from Veolia Woodlawn Bioreactor Facility."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.
23/08/2017	11:17:00 AM	Letter	Braidwood Road, Tarago	The complainant reported that "This stench has been phenomenal all over winter. It is blood shocking. Last night we went to a windfarm meeting and walking out of there it nearly knocked you arse over head. That's how bad it was. And people were complaining about it. Let's do something about it for Christ's sake."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
23/08/2017	9:11:00 AM	Letter	Braidwood Road, Tarago	The complainant reported "You promised this stench would be eliminated within about 12 months. It is getting worse. Every day and every morning this winter it is phenomenal. Let's do something about it. Close them down. You haven't heard from me in a long, long while. I'm sick of it. I've had a gutful of it."	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn have implemented a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. Due to leachate levels within the waste mass a new perforated well design has been implemented. This has been installed to maximise the opportunity for gas collection when compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year. A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to undertake a study on fugitive gas emissions/odour and its behaviour to further improve gas collection at the Woodlawn Bioreactor.
23/06/2017	9:00:00 AM	Letter	Coghill Road, Tarago	The complainant reported that the smell this morning is really bad.	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn are well underway with the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd were engaged to model stormwater ingress and their recommendations have been implemented to minimise the potential for stormwater ingress into the void. Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year (Power Generation increase ~86% and Gas Capture Increase ~91%). A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to provide a proposal to further understand fugitive gas emissions/odour and its behaviour.

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
21/05/2017	10:00:00 PM	Letter	Taylors Creek Road, Tarago	The complainant reported that the odour made her eyes water and smelt absolutely putrid.	Veolia continues to address the challenges of water management within the Bioreactor and is attempting to address this with the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Veolia Woodlawn are well underway with the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd were engaged to model stormwater ingress and their recommendations have been implemented to minimise the potential for stormwater ingress into the void. Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. This approach is proving successful as gas collection and power generation has increased substantially when compared with this time last year (Power Generation increase ~86% and Gas Capture Increase ~91%). A bio-filter trial has also been undertaken in an attempt to manage any fugitive gas between the void's wall and waste mass. This has shown to demonstrate some positive results and subsequently is now part of our normal operations. We have also engaged the University of Canberra to provide a proposal to further understand fugitive gas emissions/odour and its behaviour.

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
28/03/2017	10:14:00 AM	Letter	Taylors Creek Road, Tarago	The complainant reported that there was very bad odour this morning.	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined the development and implementation of a longer term treatment solution being advanced by Veolia's water division is integral to the ability for Veolia to manage leachate within the waste mass. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is well underway in its installation to maximise the opportunity for gas collection compared with that of solid wells. This system is proving to be successful as gas capture has increased significantly since the commencement of its implementation. The extraction rate around this period in 2016 was in the vicinity of 1300m3/hr whereby currently we are extracting approximately 2800m3/hr.</p> <p>A bio-filter trial has also commenced in an attempt to manage any fugitive gas between the void's wall and waste mass which is proving to be successful at controlling fugitive gas as outlined in the Bio-filter report that is to be submitted to the EPA shortly.</p> <p>Veolia Woodlawn has made a decision that in an attempt to control the potential for leachate to surface. That is gas wells that extend deeper into the waste mass will be capped and a new well installed in its position to reduce the potential for leachate to migrate further up the waste mass under pressure from within the saturated waste mass. This was determined as the source of the current leachate visible on the surface as seen in the image. The pressure at depth was so great that on Sunday the 26th March the pressure has ejected leachate and gas from deep in the waste and subsequently has forced its way through the waste that was surrounding the particular well resulting in the leachate overwhelming the pumping system. The Woodlawn team attended the site on Sunday to check the pumping system and implement a program of actions to remove such liquid. This liquid is being pumped directly to the leachate treatment</p>

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
27/03/2017	8:30:00 AM	Letter	Willandra Lane, Tarago	The complainant reported that the odour was so bad that they had to close all the windows and doors.	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined the development and implementation of a longer term treatment solution being advanced by Veolia's water division is integral to the ability for Veolia to manage leachate within the waste mass. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is well underway in its installation to maximise the opportunity for gas collection compared with that of solid wells. This system is proving to be successful as gas capture has increased significantly since the commencement of its implementation. The extraction rate around this period in 2016 was in the vicinity of 1300m3/hr whereby currently we are extracting approximately 2800m3/hr.</p> <p>A bio-filter trial has also commenced in an attempt to manage any fugitive gas between the void's wall and waste mass which is proving to be successful at controlling fugitive gas as outlined in the Bio-filter report that is to be submitted to the EPA shortly.</p> <p>Veolia Woodlawn has made a decision that in an attempt to control the potential for leachate to surface. That is gas wells that extend deeper into the waste mass will be capped and a new well installed in its position to reduce the potential for leachate to migrate further up the waste mass under pressure from within the saturated waste mass. This was determined as the source of the current leachate visible on the surface as seen in the image. The pressure at depth was so great that on Sunday the 26th March the pressure has ejected leachate and gas from deep in the waste and subsequently has forced its way through the waste that was surrounding the particular well resulting in the leachate overwhelming the pumping system. The Woodlawn team attended the site on Sunday to check the pumping system and implement a program of actions to remove such liquid. This liquid is being pumped directly to the leachate treatment</p>

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
30/01/2017	11:10:00 PM	Letter	Braidwood Road, Tarago	The complainant reported that "the stench from Woodlawn is coming through my house again".	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn are well underway with its implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void that is being enacted.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also commenced in an attempt to manage any fugitive gas between the void's wall and waste mass.</p>

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
9/01/2017	7:30:00 AM	Letter	Roseview Road, Tarago	The Complainant reported that they "couldn't go outside as the smell was so bad".	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void's wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>

Woodlawn Bioreactor Complaints Register



Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
8/01/2017	11:30:00 PM	Letter	Braidwood Road, Tarago	The Complainant reported that "the stench from Woodlawn has been coming through my house again tonight".	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void's wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
30/12/2016	Not specified	Letter	Tarago Village	The Complainant reported that the odour was “ongoing issue for him and he is unable to open windows or doors at night and is often unable to use air-conditioning in his car.”	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void’s wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
29/12/2016	Not specified	Letter	Tarago Village	<p>The Complainant reported that the odour was “ongoing issue for him and he is unable to open windows or doors at night and is often unable to use air-conditioning in his car.”</p>	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void’s wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
25/12/2016	Not specified	Letter	Tarago Village	<p>The Complainant reported that the odour was “ongoing issue for him and he is unable to open windows or doors at night and is often unable to use air-conditioning in his car.”</p>	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void’s wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
24/12/2016	Not specified	Letter	Tarago Village	The Complainant reported that the odour was "ongoing issue for him and he is unable to open windows or doors at night and is often unable to use air-conditioning in his car."	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p> <p>Veolia Woodlawn have commenced the implementation of a contoured waste profile that allows for better control of storm water flows on the waste surface to minimise the ability for surface storm water to enter the waste. In addition to the aforementioned AECOM Pty Ltd have been engaged to model stormwater ingress and have developed a strategy to minimise surface water from entering the void.</p> <p>Due to leachate levels within the waste mass a new perforated well design has been implemented and is being installed to maximise the opportunity for gas collection compared with that of solid wells. A bio-filter trial has also been presented for approval by the EPA in an attempt to manage any fugitive gas between the void's wall and waste mass. Currently research is being undertaken with regards to the opportunity to use a geo-synthetic cover material as another means of control.</p>
5/12/2016	9:30:00 PM	Letter	Taylor's Creek Road, Tarago	The Complainant reported that the odour was 'particularly bad' and had to close up the house which resulted in a five degree temperature difference between the inside and outside of the house.	<p>Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.</p>

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
2/12/2016	12:30:00 AM	Letter	Tarago Village	The Complainant reported that the odour was "overpowering" when he arrived home at 12:30am on 2 December. He said he is affected by landfill odour at his house on average 4 days a week.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
1/02/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a "phenomenal stench" on the night of 1 December and morning of 2 December. He also said it has been bad in general over the past two months.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
17/11/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported "an unbearable stench" at his house allegedly coming from the Woodlawn Bioreactor.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
15/11/2016	Not specified	Letter	Tarago Village	The Complainant spoke directly to the Woodlawn Facilities Manager. He stated that he was experiencing a "putrid smell" at his residence. He stated the conditions were very still.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
9/11/2016	7:00:00 PM	Letter	Taylor's Creek Road, Tarago	The Complainant reported that there was a "strong stench around last night around 7pm" when they called the Feedback Line.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
2/11/2016	Not specified	Letter	Tarago Village	The Complainant described the odour as "putrid, decomposing garbage odour from the Woodlawn Bioreactor"	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
27/10/2016	10:00:00 AM	Letter	Taylor's Creek Road, Tarago	The Complainant reported that the odour was "strong at their residence all morning" and was in their opinion ranked at about a number four when they called the Feedback Line.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to the community and EPA executives in April 2016 as a key requirement to improve gas capture. Key to this strategy is the recent consent modification approval allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
19/10/2016	10:00:00 AM	Letter	Tarago Village	The Complainant said that the "odour occurs every day regardless of wind direction or speed and that it is worst at night". He also said "they have another property located further away from the landfill from where they also experience the odour". They rated the odour at 4/6.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
29/09/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a "really bad stench coming from Woodlawn"	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
28/09/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a “really bad stench coming from Woodlawn”	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
27/09/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a “really bad stench coming from Woodlawn”	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
21/09/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a “really bad stench coming from Woodlawn”	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
20/09/2016	Not specified	Letter	Braidwood Road, Tarago	The Complainant reported a “really bad stench coming from Woodlawn”	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia’s water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

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Date	Complaint lodged	Response	Location	Description	Response/action taken to resolve the complaint
17/09/2016	17:36	Letter	Braidwood Road, Tarago	The Complainant reported that "the stench is invading my home again".	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.
24/09/2016	Not specified	Letter	Roseview Road, Tarago	The Complainant reported that the odour was strong at his residence at the time he called the Feedback Line.	Veolia continues to address the challenges of water management within the Bioreactor as we have previously outlined to EPA executives in April 2016 and the community as a key requirement to improve gas capture. Key to this strategy is the current consent modification application allowing the use of an additional storage dam within the ED3 South dam system and the development and implementation of a longer term treatment solution being advanced by Veolia's water division. Run Energy Pty Ltd has also been engaged to provide expert consultative and operational advice on system improvements to facilitate improved performance of the gas capture network.

Appendix 6 – Figures in Reports