



Annual Environmental Management Report 2019 - 2020

Kemps Creek SAWT

11 December 2020

Project No.: 0570751

Document details	
Document title	Annual Environmental Management Report 2019 - 2020
Document subtitle	Kemps Creek SAWT
Project No.	0570751
Date	11 December 2020
Version	Final
Author	Mathew Crow
Client Name	SUEZ Recycling and Recovery Pty Ltd

Document history

Version	Revision	Author	Reviewed by	ERM approval to issue		Comments
				Name	Date	
Draft	01	Matthew Crow	Michael Gaggin	Michael Gaggin	30.10.2020	
Draft	02	Matthew Crow	Michael Gaggin	Michael Gaggin	02.12.2020	
Final	01	Matthew Crow	Michael Gaggin	Michael Gaggin	11.12.2020	

Signature Page

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Kemps Creek SAWT



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TITLE BLOCK

Name of Operation	Kemps Creek SAWT ARRT
Name of Operator	SUEZ Recycling and Recovery Pty Ltd
Project Approval #	06_0185
Name of holder of project approval	SUEZ Recycling and Recovery Pty Ltd
Environmental Protection Licence #	12889
Name of holder of EPA Licence	SUEZ Recycling and Recovery Pty Ltd
Annual Review start date	29 th July 2019
Annual Review end date	28 th July 2020
<p>I, Mollie Hollingshead, certify that this audit report is a true and accurate record of the compliance status of the SUEZ Kemps Creek SAWT for the period of 29th July 2019 to 28th July 2020 and that I am authorised to make this statement of behalf of SUEZ Australia Pty Ltd.</p>	
Name of authorised reporting officer	Mollie Hollingshead
Title of authorised reporting officer	Environment & Sustainability Business Partner
Signature of authorised reporting officer	
Date	11 December 2020

1. STATEMENT OF COMPLIANCE

The purpose of the 2019-2020 Annual Environmental Management Report (AEMR) is to undertake an assessment and review of compliance, environmental impact predictions and the effectiveness of environmental measures required under the relevant Site approvals (Project Approval 06_0185 and EPL 12889). The AEMR is a self-reporting tool where SUEZ can advise the relevant regulators of any compliance issues 1.1.on an annual basis. ERM has not conducted an Audit as part of the AEMR compilation, a separate Independent Environmental Audit (IEA) is conducted every three years.

An assessment of compliance with all conditions was provided by SUEZ. A comprehensive table with compliance status of all Project Approval conditions is included in Appendix B and EPL conditions are included in Appendix C. A summary of the AEMR findings regarding PA compliance is presented in Table 1.1.

Table 1.1 Summary of Compliance

Relevant Approval	No. of Conditions Compliant	No. of Conditions Non-Compliant	No. of Conditions Not Verified
Project Approval 06_0185	36	4	0
EPL 12889	55	2	0

Non-compliances reported during this AEMR are summarised in Table 1.2 and conditions not verified are summarised in Table 1.3 below.

Table 1.2 Summary of Non-Compliances

Relevant Approval	Condition	Summary	Where addressed in the AEMR
Project Approval 06_0185	3.17	Site recorded exceedances of discharge limits and leachate migrated into stormwater on two occasions.	Section 5.2, 5.3, 8.2, Appendices F and H.
	3.26	Management of the Badgerys Creek Riparian zone was not undertaken during the reporting period in accordance with the Vegetation Management Plan.	Sections 6.8, 8.5 and 8.7
	3.7	Composting was undertaken without tunnel doors in place and closed in previous reporting period, however was not reported in AEMR.	Section 5.3, Appendix F.
	4.3	DPIE not notified of environmental incident (leachate overflow)	Section 5.3, Appendix F
EPL 12889	L2.4	Discharge concentrations exceeded EPL limits	Section 8.2 and Appendix H
	M2.1/2.2	All required parameters not analysed during discharge	Section 8.2, 8.7 and Appendix H

2. INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by SUEZ Australia Pty Ltd (SUEZ) to prepare the 2019/20 Annual Environmental Management Report (AEMR) for the Kemps Creek SUEZ Advanced Waste Treatment (SAWT) Advanced Resource Recovery Facility (ARRT) (the Site). The Site is located at 1725 Elizabeth Drive Kemps Creek, New South Wales (NSW), 2178. The Site location is presented in Figure 1, Appendix A.

The Site is regulated by the New South Wales Environment Protection Authority (NSW EPA) under the NSW *Protection of the Environment Operations Act 1997* through Environment Protection Licence (EPL) 12889 (the EPL). The EPL permits the acceptance of General Solid Waste (putrescible and non-putrescible) and bio-solids for the purpose of composting, resource recovery and storage.

This AEMR reviews the environmental management of the Site as required under the Project Approval (PA). The primary component of environmental management program at the Site is the collection of environmental data which is required to maintain compliance with the Sites Environmental Protection Licence #12889 (EPL). Therefore the AEMR annual reporting timeframes are based around the EPL anniversary, rather than the most recent PA modification date. ERM understands that Suez have agreed with the Department that this approach is appropriate. This AEMR assesses all environmental monitoring data required under the PA and EPL from 29th July 2019 to 28th July 2020.

The AEMR is based on information provided by SUEZ during October 2020. It should be noted that ERM has not collected any data related to this AEMR and all data presented has been provided by SUEZ for the purpose of drafting this document. ERM did not conduct a Site visit as part of the preparation of the AEMR and has relied on the accuracy of the information provided. Where possible ERM has verified that the data is accurate but cannot verify the manner in which the data was collected.

A list of references used in the compilation of this report are included in Section 11 of this document.

2.1 Objective

The objective of this AEMR is to comply with the reporting requirements of Schedule 4, Condition 5 – *Annual Reporting* of the Sites Project Approval (application number 06_0185) (the PA), (included in Appendix B).

2.2 Site Overview

The Kemps Creek SAWT is located at 1725 Elizabeth Drive Kemps Creek, New South Wales (NSW), 2178 (part Lot 1 DP 542395 and part Lot 740, DP 810111). The Site is owned by SUEZ and is operated in parallel to the SUEZ Kemps Creek Landfill Site, which is located immediately to the south and east of the Site. The Site occupies an approximate area of 8.5 ha.

The Site was historically part of the adjacent landfill operation, however has not been historically subject to landfilling. The Site was separated from the landfill and developed in 2009. The Site layout currently includes a large building in which material is received, sorted and refined, as well as a number of maturation tunnels and storage pads, leachate dams and stormwater dams.

3. LICENSING AND APPROVALS

3.1 NSW EPA Environmental Protection Licence

The Kemps Creek SAWT is regulated by the NSW Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997* (POEO Act). The NSW EPA administers its regulation via EPL 12889. The EPL includes the minimum conditions under which the Site may operate in order to maintain compliance with the POEO Act.

The EPL contains conditions which are relevant to the AEMR which include those relating to the implementation of a monitoring program. The EPL monitoring program includes stormwater, leachate and noise and also includes licence limits relating to stormwater discharge concentrations and noise.

During the reporting period EPL 12889 was not subject to any licence variations and the conditions of the EPL remained consistent. The EPL is included in *Appendix C*. The EPL limits are summarised in *Section 6* of this report and an assessment of the Sites monitoring data against the EPL limits is included in *Section 7*.

3.2 Project Approval

The Site is also regulated through conditions of Project Approval (PA) number 06_0185 (provided in *Appendix B*). The Project Approval was issued in 2008 by the NSW Minister for Planning via the Department of Planning. The PA was not subject to any modification during the reporting period.

The PA includes a number of conditions for both the planning and operational management of the Site. The conditions specify a requirement for the development of a suite of management plans, monitoring requirements, operational guidelines and reporting requirements. A review of compliance with all conditions of the PA was provided by SUEZ and is included in *Appendix B*.

Schedule 4.5 of the PA specifies that an AEMR be produced for the Site and submitted to the Director General. This AEMR has been produced to satisfy Schedule 4.5 of the PA. The specific requirements listed for inclusion in the AEMR are further described in *Section 3.3* below.

3.3 AEMR Reporting Requirements

This AEMR has been developed as per Schedule 4.5 of the PA. The condition states 'Every year from the date of this approval, unless the Director-General agrees otherwise, the Proponent shall submit an AEMR to the Director-General and relevant agencies'.

The specific Schedule 4.5 requirements and references to the section of the AEMR are presented in *Table 3.1* below:

Table 3.1 PA Schedule 4.5 Requirements

Condition Requirement	AEMR Section
(a) identify the standards and performance measures that apply to the development;	Sections 3 and 7
(b) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;	Section 5.1
(c) include a summary of the monitoring results for the development during the past year;	Section 8, Appendix G, H, I, K, L
(d) include an analysis of these monitoring results against the relevant: <ul style="list-style-type: none"> ■ impact assessment criteria; ■ monitoring results from previous years; and ■ predictions in the EA; 	Section 8, Appendix H
(e) identify any trends in the monitoring results over the life of the development;	Section 8, Appendix L
(f) identify any non-compliance during the previous year; and	Section 1, 5 and 8, Appendix B.
(g) describe what actions were, or are being taken to ensure compliance	Appendix B, D, J

3.4 Environmental Assessment (Maunsell Aecom 2007)

As part of the planning of the Kemps Creek SAWT facility, an Environmental Assessment (EA) was completed by Maunsell AECOM (2007). The EA included various reviews of the potential environmental impact of the Site based on certain environmental parameters (noise, dust odour etc.). These reviews were used to make predictions as to whether the operation of the Site would have any adverse or unacceptable environmental effects.

The key predictions of the EA were as follows:

- Leachate will remain separate from clean surface water and there will be no negative effects on Badgerys Creek;
- The Site will not impact on any threatened or endangered flora and/or fauna species and no significant impacts to locally or regionally significant native vegetation and flora are expected to occur as a result of the proposed project expected to occur;
- Odour at the facility will not significantly impact surrounding residences;
- Dust will be mitigated such that the Site will not generate significant dust levels;
- The facility operating at full capacity under neutral weather conditions will meet the relevant noise criteria;
- Traffic flows will increase on and offsite, however traffic movements will remain within the approved volumes of the adjacent landfill; and
- The facility will not be visible to any surrounding residences within 5 years based on ongoing landfilling at the adjacent facility.

The assessment criteria which has been adopted to screen the data collected during the reporting period (refer to *Section 7*) is largely aimed at verifying the key predictions made during the EA. Exceedances of the assessment criteria may indicate that either the predictions of the EA were not accurate, or the Site is not being operated within the requirements of the Statement of Commitments which was relied during the EA to make predictions.

3.5 Environmental Management Program

In order to maintain compliance with the Sites licences and approval documents, SUEZ undertakes a monitoring program for the Site which has been designed on an Annual timeframe. The management strategies which SUEZ employ to mitigate and monitor a number of environmental issues are described in the Kemps Creek SAWT ARRT Environmental Management Plan (EMP).

The EMP specifies the requirements of the monitoring program (described in *Section 6*), which this AEMR primarily reports on. The EMP is included in *Appendix J*. The data collected under this program allows assessment of the Site's compliance with relevant documents and allows assessment of the Site's overall environmental performance. The monitoring program incorporates the monitoring required under the Sites licences and approvals as well as additional data collection which is viewed by SUEZ as beneficial from the perspective of environmental diligence. The EMP was last updated on July 31 2020 to include additional information on the overall development and implementation of the program and a number of additional emergency response plans.

4. SITE OVERVIEW

4.1 Site Description

The Site's primary operation is as a resource recovery facility which accepts various types of putrescible and non-putrescible waste materials. The primary composting activity occurs within the composting plant located on the north western portion of the Site. The Site also includes one stormwater dam with discharge point, four leachate holding ponds, compost maturation pads and SUEZ offices and facilities. The Site layout is shown on Figure 2, Appendix A.

The Site generally slopes slightly towards the northwest, however plateaus towards a low lying area which is present beyond the northern and western boundaries.

The Site is located adjacent to the Elizabeth Drive Landfill facility, which is also operated by SUEZ. The footprint of the Site originally formed part of the landfill Site, however was subdivided for the purpose of the Site's construction in 2009.

4.2 Site Operation Overview

The Site is licenced under the EPL to accept the following quantities of various waste streams annually as follows:

- <120,000 tonnes (t) of General Solid Waste (putrescible);
- <120,000t of General Solid Waste (non-putrescible); and
- <14,400t of Biosolids.

Furthermore, the authorised amount of waste permitted to be stored on the premises at any one time must not exceed 32,100 tonnes.

The principle of the SAWT is the utilisation of microbial activity within a number of composting tunnels for the conversion of biodegradable waste materials into a compost product in accordance with *Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches*. The core of the system is a bio-mechanical pre-processing and co-composting device which accomplishes size reduction, homogenisation, microbial acclimation/colonisation and bio-mechanical separation of non-digestible materials.

Waste accepted to the Site is managed and processed under the following general procedure:

- Waste is transported to Site over a weighbridge, which is shared with the adjacent SUEZ landfill facility;
- Waste is accepted in an enclosed building;
- Site operatives separate the putrescible and non-putrescible fractions of the waste both mechanically and manually (plastics, metals, oversize materials);
- The in-feed solid waste is loaded into the composting tunnels and the tunnels are monitored to ensure suitable conditions. Once the material has passed through pasteurisation, all biodegradable materials have been converted into an immature compost material;
- In order to control odour during the process, the building is fitted with bio filters which air exiting the building is extracted through;
- Once material in the composting tunnels has achieved the suitable conditions the material is pre-refined to remove large contaminants (plastics, metals, etc.);
- Following screening the raw compost is stored in drying tunnels or stockpiles/windrows according to material type and batch number for maturation prior to final screening;
- The material undergoes a final screening to remove residual non-compostable materials and is transferred to the final product storage area;

- Non-compostable residual material is disposed of at SUEZ's adjacent Elizabeth Drive landfill (EDL); and
- Prior to release from Site, the final product is inspected and tested against quality parameters as per Table 3.1 of AS 4454-2003.

The Site currently maintains a stock of minor quantities of various chemical which are used for various purposes during routine Site operations. The only material which is stored in any significant volume onsite is diesel, which is stored in a 10kL above ground tank. The register of all chemical products which are currently stored on the Site is included as Appendix E.

4.3 Site Upgrade Works Undertaken During Reporting Period

Suez undertake a continuous program of Site works to upgrade the Site and improve the Sites overall environmental performance. The key Site upgrade complete during the reporting period was the completion of the upgrade of the doors on the composting tunnels. The upgrade was required to better manage odour at the Site. This works were commenced in July 2019 and completed in August 2019.

4.4 Site Setting

4.4.1 Surrounding Land uses and Receptors

Adjacent and sensitive land uses in the vicinity of the site are detailed in Tables 4.1 and Table 4.2 below.

Table 4.1 Adjacent Land Use

Direction	Distance from Site boundary	Land Use
North	Adjacent	Agricultural Land, then Badgerys Creek
East	Adjacent	SUEZ operated Landfill
South	Adjacent	SUEZ operated Landfill
West	Adjacent	NW Sedimentation Dam (EDL), Badgerys Creek, then agricultural land

Table 4.2 Nearest Sensitive Land Use

Direction	Distance from Site boundary	Sensitive land use
North	130m	Badgerys Creek
South	900m	Residential
East	620m	Residential Property
West	Adjacent	Badgerys Creek

4.4.2 Geology

According to the *Penrith 1:100,000 Geological Sheet Survey* (1991, Edition 1), the site is underlain by two lithology groups. Majority of the site is located on Hawkesbury Sandstone, comprising of quartz-rich and quartz-lithic sandstone, with conglomerate, mudstone and siltstone. A portion of the site is located on quaternary alluvial sediments comprising of mud, silt, sand and gravel.

4.4.3 Hydrogeology

There are currently no groundwater monitoring wells installed at the Site and groundwater has not historically been assessed at the Site. However, information made available regarding groundwater data collected from bores on the adjacent SUEZ Landfill site indicate that groundwater is present at a depth of approximately 7 – 14m in the vicinity of the Site. The groundwater flow direction at the Site has not been confirmed, however is likely to flow toward the nearest significant surface water body, which is located to the west (Badgerys Creek).

It is important to note that groundwater flow direction can be influenced locally and regionally by surface topography, recharge and discharge areas, horizontal and vertical inconsistencies in the types, location and orientation of subsurface soils or bedrock, and proximity to water pumping wells.

4.5 Site Management

4.5.1 Leachate Management

4.5.1.1 Leachate Generation and Storage

Based on the current Site activities, leachate is generated only during certain points in the composting process. Leachate is generated both during the initial composting and maturation stages of the process. During initial composting low volumes of leachate may be generated both within the composting tunnels and bio filters. The most significant leachate generating areas are the maturation pads and the final product pad. The increased leachate generation at these locations is considered to be primarily due to stormwater ingress during rainfall events. All stormwater runoff from these areas is directed into the leachate dams and is treated as leachate.

The current leachate storage system at the Site consists of a series of four lined holding dams. The dam lining consists of geomembrane, clay and high density polyethylene (HDPE) layers. Leachate is collected at the points of the co-composting process which generate leachate and is either pumped or gravity fed to the holding dams. In order to retain the capacity to hold the additional leachate generated during significant weather events (1 in 10 year/24 hour duration), the dams are required to maintain a 30% freeboard, which is monitored weekly. The Site has the capability to transfer between all leachate dams as required to maintain appropriate freeboard. The network includes a leachate overflow dam to the north east of the Lower Leachate Dam which is kept dry where ever possible to maximise its capacity for as overflow contingency during significant rainfall events. Any leachate which may flow into the overflow dam during high rainfall events is now removed from Site as liquid waste. During the reporting period 8,152.08 of leachate was removed from the Site as liquid waste.

The dams related to the leachate storage system at the Site are shown on Figure 2, Appendix A. A summary of the leachate holding systems at the Site is included in Table 4.3 below.

Table 4.3 Leachate Storage Dam Summary

Feature	Total Holding Capacity (Mega Litres (ML))	Details
Upper Leachate Dam (EPL Point 2)	1.4	Accepts leachate runoff from the Upper Pad and drying tunnels.
Lower Leachate Dam (Monitoring Point 3)	3	Accepts leachate from the composting tunnels and bio filters, as well as the Lower Maturation Pad.
Leachate Overflow Dam	5	This feature is maintained as a dry location and serves only as a contingency location for leachate overflow from the Lower Leachate Dam to contain overflow events.
Final Product Leachate Dam (Monitoring Point 6)	1.6	Accepts leachate runoff from the Final Product Pad

4.5.1.2 Leachate Treatment and Reduction

The Site currently actively treats and reduces the volume of leachate (as required) through a number of methods given that leachate must not be discharged from Site. The various treatment strategies are as follows:

- Leachate captured undergoes a rectification process using chlorine and BiOWiSH® to improve leachate quality and reduce odours;
- All leachate holding dams are fitted with an aeration system to treat high levels of BOD and ammonia as well as actively increasing evaporation rates; and
- Excess leachate is transported offsite for treatment at a licensed liquid waste treatment plant.

4.5.2 Stormwater Management

Stormwater management at the Site requires management of clean stormwater from roof runoff, clean hardstand areas, access roads, grassed areas. Rainfall on product holding areas which generate leachate is managed as leachate in accordance with Section 4.5.1.

Stormwater runoff from the clean areas of the Site (i.e. uncontaminated areas which do not produce leachate) flows to the Stormwater Dam (Monitoring Point 5). EPL 12889 includes one licenced discharge point for the Site (Monitoring Point 1), where stormwater is licenced to discharge from the Stormwater Dam (Monitoring Point 5), located on the western Site boundary. Any discharge from EPL Point 1 is subject to discharge limits which are specified in Section 7.1 of this AEMR. Stormwater captured in the Stormwater Dam is treated through in-situ aeration, similar to the leachate dams. The discharge point directs stormwater towards into the NW Sedimentation Dam, located to the west of the Site, which subsequently discharges into Badgerys Creek. It is noted that the NW Sedimentation Dam also accepts discharged stormwater from the adjacent landfill facility and the landfill is responsible for the quality of discharge from this dam to Badgerys Creek.

4.5.3 Odour Management

SUEZ operates in accordance with an Odour Management Plan (OMP), which is included in Appendix J. The OMPs primary objective is to demonstrate compliance with EPL Condition O5.2, which states: *The licensee must ensure the facility is built and operated to minimise odours.* The OMP focus on two key areas regarding odour management; odour monitoring and odour mitigation. Odour monitoring at the Site is covered in detail in Sections 6.6, 7.3 and 8.4. The OMP specifies the following key odour controls for implementation at the Site:

- Managing waste receipt appropriately to minimise odour;
- Minimising the duration of waste storage on site prior to processing;
- Sealing the facility where possible, including fully enclosing drying tunnels and closing external doors;
- Passing all air within the enclosed spaces (Biocell Building) through biofilters prior to exhaust.
- Regular maintenance and replacement of the bio filter media;
- Maintaining appropriate temperature and moisture during processing to ensure material is appropriately refined and matured;
- Do not transfer compost to maturation pad until odours are reduced appropriately;
- Regular monitoring of compost and at the maturation pad windrows;
- Regular turning of compost and at the maturation pad windrows (unless odorous);
- Do not transfer compost to final pad (Upper Pad) until odours sufficiently reduced;
- Covering of compost at the maturation pad;
- Treatment of leachate in dams to reduce levels of BOD and ammonia; and
- De-sludge and de water leachate dams appropriately and reprocess sludge.

4.5.4 Vegetation Management

A Vegetation Management Plan (VMP) was developed by Munsell Australia Pty Ltd on behalf of SUEZ to guide the vegetation clearing activities during the construction of the SAWT facility, the continued rehabilitation activities within the adjacent section of the Badgerys Creek Riparian corridor within the Elizabeth Drive Landfill Site and revegetation within a proposed biodiversity offset area. The VMP was developed to cover activities at both the SAWT and the Elizabeth Drive Landfill.

The VMP divides the Site into 3 zones for construction and ongoing management. The zones are further described in the VMP in *Appendix J*. The zones are summarised as follows:

- Zone 1 – Regeneration of degraded vegetation in the riparian zone of Badgerys Creek and ongoing weed control;
- Zones 2a and 2b - Revegetation as biodiversity offset for the clearing of the Site prior to construction and ongoing weed control; and
- Zone 3 – area which the Site currently occupies. Site development required clearing of 0.81 hectares of Cumberland Plain Woodland which is offset by revegetation in Zones 2a and 2b. During clearing seeds were collected for use during revegetation.

Given that clearing and replanting activities were undertaken either during construction or immediately following completion of construction, the primary ongoing requirement of the VMP is weed control both onsite and in Zones 1 and 2 to the west of the Site. The primary noxious weeds which are identified by the VMP as requiring control are Alligator Weed, Blackberry, Green Cestrum and Broad-leaf Privet. Although not listed as noxious, Wandering Jew, Moth Vine and Madeira Vine were also identified as requiring control.

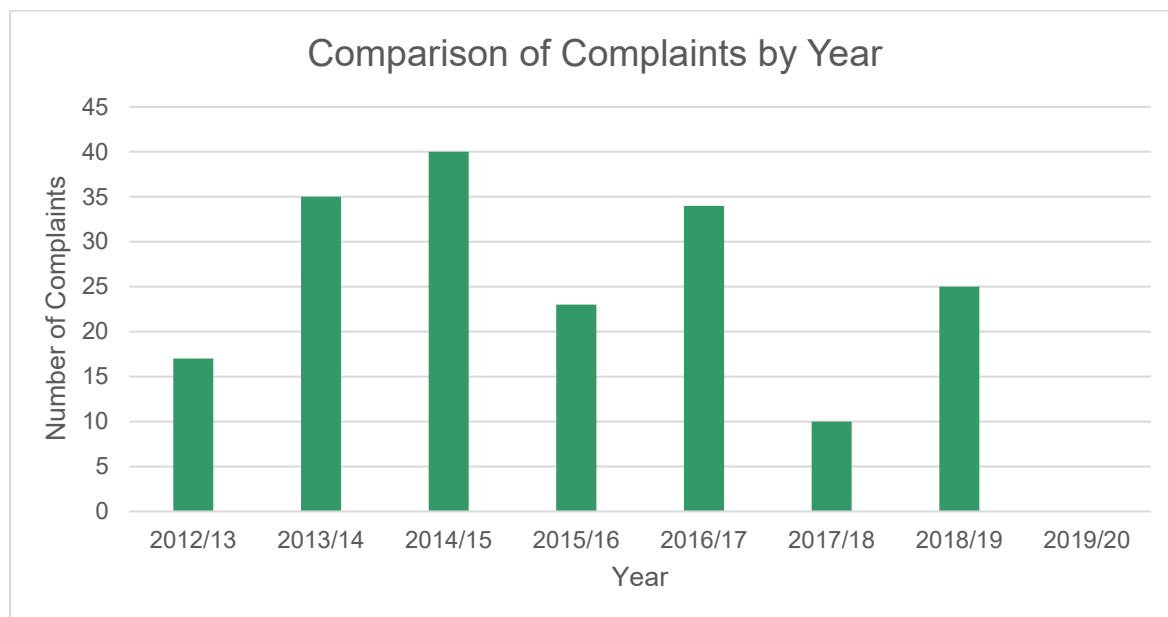
The VMP requires monitoring of the success of the rehabilitation to be conducted. The monitoring requirements are described in Section 6.7.

5. COMPLAINTS AND ENVIRONMENTAL INCIDENTS

5.1 Complaints

SUEZ maintains a register of all complaints received in the SUEZ Integrated Management System (SIMS) system. The environmental complaints register is presented in *Appendix G*. Use of the data base was commenced in July 2013 and therefore only complaints made after this time are included in the register. In the 2019/20 reporting period no complaints were received by SUEZ. In previous years, a number of complaints were received regarding odour issues at the Site. A comparison of total complaints received annually since 2013 is included in Figure 5.1 below.

Figure 5.1 Comparison of Annual Odour Complaints



5.2 Environmental Incidents

The PA defines an incident as any event that causes (or may cause) harm to the environment. According to SUEZ, there were two events which were considered environmental incidents during the 2019/20 reporting period. Additional information regarding these incidents is included in *Appendix F*. The incidents are described as follows:

Leachate Overflow into Stormwater Dam - 16 July 2019. During the replacement of composting tunnel doors the volume of leachate which would be produced was underestimated and ultimately overflowed the containment measures in place. As the Works were being undertaken in the cooler months (due to the ongoing delays and unforeseen events), SUEZ had found it difficult to determine the consistency of and amounts of leachate. The leachate flowed in the EPL Point 5 stormwater dam. This incident was observed by NSW EPA Officers during an inspection of the works and was the subject of a Show Cause letter. Further details are included in Section 5.3 below. Although the date of this event was prior to this reporting period, it was not considered for the previous AEMR as information on the event was not made available and therefore it has been included in this AEMR. Further information on the NSW EPAs involvement in this event is included in Section 5.3 below and *Appendix F*.

Leachate Overflow from Leachate Overflow Dam – 10 February 2020. During a three day rainfall event of 179.4mm (according to Site weather station), leachate overflowed from the onsite dams into the Leachate Overflow dam which in turned overflowed via a discharge point which had previously been removed from the EPL onto the adjacent landfill. Whilst sufficient freeboard was available in all dams before the rain event, the volume of stormwater generated exceeded the Sites design capacity.

The leachate ultimately flowed to the land to the north of the Site via the landfills licenced discharge point. The landfills discharge point was sampled by SUEZ and complied with the landfills EPL discharge limits. It was concluded by SUEZ in their correspondence to the NSW EPA that the leachate was heavily diluted upon discharge and did not pose a risk to the environment. Further information on the NSW EPAs involvement in this event is included in Section 5.3 below and Appendix F.

5.3 NSW EPA Statutory Notices

According to the NSW EPA POEO register, the Site (as regulated under EPL 12889) did not receive any statutory penalty notices during the 2019/20 reporting period.

The NSW EPA was involved in the two incidents outlined in Section 5.2. All NSW EPA correspondence related to these events is included in Appendix F. Further information on the NSW EPA's involvement is as follows:

21 August 2019: Show Cause Letter: Suspected water pollution incident and breach of licence conditions on 16 July 2019. The NSW EPA attended Site on 16 July 2019 and noted leachate flowing from the composting building into the EPL Point 5 Stormwater dam. Furthermore, NSW officers noted that composting was being undertaken with the tunnel doors open, which contravenes EPL condition O.5.2. Note that SUEZ provided a response to the NSW EPA which outlined the background to the events. The works were being conducted under NSW EPA direction and a number of unforeseeable and unforeseen events (as described in SUEZ response in Appendix F) led to all tunnel doors being required to be replaced at once. The volume of material in the tunnels was reduced to mitigate this issue. SUEZ conceded that the volume of leachate which would be produced by the reduced operation was under estimated and therefore sufficient controls were not in place. The EPL Point 5 Stormwater dam was drained and no leachate was discharged offsite. The NSW EPA were satisfied with SUEZ's response to the matter and did not take further action following the incident.

Leachate Overflow from Leachate Overflow Dam – 10 February 2020. Following the leachate overflow incident SUEZ self-notified to the NSW EPA (EPA incident number C01890-2020). Following the self notification SUEZ compiled a report for the EPA which outlined the causes and impacts of the event. The NSW EPA did not take further action following the incident.

5.4 Action Required from Previous IEA

Schedule 4.7 of the PA requires an Independent Environmental Audit (IEA) within two years of the commencement of operations and every three years thereafter. The most recent IEA was completed by Hibbs and Associates in 2018, which included a Site inspection and interview on the 21 March 2018. A summary of the Audit findings is presented in Table 5.1 below.

Table 5.1 Summary of Compliance (Hibbs, 2018)

Relevant Approval	No. of Auditable Conditions	No. of Conditions Compliant	No. of Conditions Non-Compliant	No. of Conditions Not Verified	Not Triggered
Project Approval 06_0185	86	61	15	9	1
EPL 12889	72	59	10	1	2

Of the 25 non-compliances approximately 12.5% were categorised as low risk, while 66.7 % were ranked as medium risk (Hibbs, 2018). There were 2 high risk non-compliances were identified which involved a failure to complete previous AEMR and IEAs to the Department as required by the PA. It is noted that the outstanding documents have now been submitted as required.

In response to the identified non-conformances and recommendations of the IEA, SUEZ developed an action plan which aimed at addressing all regulatory non-conformances. Information provided by SUEZ indicates that all the corrective actions have been completed. A list of the non-compliances and associated corrective actions undertaken by SUEZ, along with correspondence with the Department regarding the corrective actions is included in *Appendix D*.

6. MONITORING PROGRAM

6.1 Roles and Responsibilities

The roles and responsibilities of all parties involved in the implementation of the environmental management requirements for the Site are identified in Table 6.1 below.

Table 6.1 Roles and Responsibilities

Role	Responsible Party
Authority	NSW EPA/NSW Department of Planning, Industry and Environment
Surface Water Monitoring	SUEZ
Leachate Monitoring	SUEZ
Noise Monitoring	Hibbs and Associates Pty Ltd
Odour Monitoring	SUEZ
Vegetation Management	The Bush Doctor
IEA	Hibbs and Associates Pty Ltd
AEMR Preparation	ERM Australia Pty Ltd

Note that ERM has not been responsible for the collection of any of the monitoring data which has been included in this report. All data was provided by SUEZ and ERM is therefore unable to comment on the appropriateness of sample collection, storage and transport techniques. Laboratory analysis for leachate and surface water samples is conducted by ALS Laboratories, which is a NATA accredited laboratory.

6.2 Leachate

Under the EPL, all leachate dams (EPL Point 2, 3 and 6) are required to be monitored at least annually for ammonia, biochemical oxygen demand (BOD), chemical oxygen demand (COD), pH and total suspended solids (TSS). The Leachate Overflow Dam (EPL Point 4) is not required to be monitored as it is operationally maintained as dry. The monitoring requirements under the EPL are summarised in *Table 1, Appendix H*.

6.3 Stormwater Discharge Monitoring

Surface water may discharge from the Site through one licenced discharge point (Monitoring Point 1). When surface water is discharging, a sample is required to be taken up to four times per year from Monitoring Point 1, which is the location where surface water overflows from the Stormwater Dam (Monitoring Point 5) to the offsite NW Sedimentation Dam. During the reporting period, SUEZ have advised that two discharge events occurred at EPL Point 1 on 10 February 2020 and 27 July 2020.

Discharge Point 1 is monitored for ammonia, BOD, conductivity (EC), oil and grease, pH, TOC and TSS. The monitoring requirements under the EPL are summarised in *Table 1, Appendix H*.

6.4 Surface water

Although the EPL does include the Stormwater Dam as a monitoring point (Monitoring Point 5), there is no requirement to monitor this point included in the licence conditions. The only specified sampling requirement for surface water at this location is during discharge via EPL Point 1. During the reporting period EPL Point 5 was sample on one occasion on 17 July 2020 after leachate was observed entering the dam (refer to Section 5.3). The sample was analysed for ammonia, BOD, conductivity (EC), oil and grease, pH, TOC, TDS and TSS.

6.5 Noise

Noise limits are prescribed in the PA and the EPL for the Site at a number of receptor locations (refer to *Section 7.2*). The PA and EPL do not specify a frequency for noise monitoring to be undertaken, only that noise generated at the Site should remain below the nominated limits. However, condition 3.16 of the PA states that a noise monitoring program must be developed which can demonstrate compliance. The EMP has recently been updated to require noise monitoring every five years to satisfy this condition.

During the reporting period, no noise monitoring was undertaken. The most recent assessment was conducted by Hibbs and Associates Pty Ltd on 25 July 2018. The 2018 Hibbs and Associates report on the noise survey is included in *Appendix I*.

6.6 Odour

SUEZ has developed an Odour Management Plan (OMP) based on a request from the NSW EPA. The OMP identifies a number of odour sources at the Site and specifies mitigation measures to reduce the impact of these sources. The OMP specifies the following odour monitoring, which aims to ensure that odour controls are effective:

- Daily and weekly checklist of controls on potential odour sources; and
- Daily odour tours of surrounding areas conducted to determine if potential odour sources are leaving the Site (refer to *Figure 3, Appendix A* for locations).

The SUEZ OMP is included in *Appendix J*.

6.7 Weather Data

The Site is required to have a meteorological station installed to monitor local weather conditions. This data can be used as required during various Site reviews and investigations. The weather station measures and records various parameters such as temperature, wind speed and precipitation.

6.8 Vegetation Monitoring

As described in *Section 4.5.4*, the Vegetation Management Plan (VMP) for the Site includes measures aimed at controlling the presence of noxious weeds to the west of the Site in the vicinity of Badgerys Creek. The VMP requires annual assessment of the nominated zones. In the event of any active vegetation management activities being undertaken, the VMP also requires an informal monthly report to be prepared by the bush regenerator.

During the reporting period vegetation monitoring and active management as required by the VMP was not conducted. Vegetation management was previously undertaken by the Bush Doctor on 25 May 2018.

7. STANDARDS AND PERFORMANCE MEASURES

The following section identifies key standards and performance measures used to screen environmental data collected at the Site. Where no criteria is listed, it can be assumed that there has been no screening of data for the particular parameter. In some cases, the Environmental Management Program is satisfied by having certain data available for review as required, or having a task performed and no further data analysis is required.

7.1 EPL Discharge Limits

The EPL specifies limits which must be met for the discharge of stormwater from the Site at EPL Point 1. The EPL discharge limits are detailed in Table 7.1 below.

Table 7.1 EPL Point 1 Discharge Limits

Analyte / Parameter	Unit	100% Percentile Concentration Limit
Ammonia	mg/L	0.9
pH	pH Units	6.5-8.5
Total Suspended Solids	mg/L	50

7.2 Noise Limits

Noise limits for the Site are included in both the EPL and the PA. The limits are identical across both documents. The EPL and PA state that noise generated at the Site must remain below the limits summarised below in Table 7.2.

Table 7.2 Noise Limits for Kemps Creek SAWT

Location	Day	Evening	Night		Morning Shoulder
	LAeq (15 minute) dB (A)	LAeq (15 minute) dB (A)	LAeq (15 minute) dB (A)	LAmix	LAeq (15 minute)
McGarvie Smith Farm	42	39	35	NA	39
1745 Elizabeth Drive	41	40	37	47	40
1669A Elizabeth Drive	38	38	35	NA	38
Caretakers Residence 1669A Elizabeth Drive	42	42	38	53	42

7.3 Odour

The EPL does not specify any specific odour assessment criteria. However, it does refer to Section 129 of the POEO Act 1997: *'the licensee must not cause or permit the emission of any offensive odour from the premises'*. The EPL goes on to state that the emission of an offensive odour is defensible if the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

The daily and weekly checklist of potential odour source controls as well as odour sources included in the OMP are designed to ensure that the required odour minimisation controls are in place and effective. The OMP does not specify any specific thresholds, rather actions to be taken under the following conditions:

- If during the daily and weekly checklist inspections controls are not in place as required by the OMP, then the controls are to be reinstated as soon as practicable; and
- If odours are detected during the daily offsite odour tour, then the controls onsite are to be reviewed for effectiveness.

8. RESULTS

8.1 Leachate

Leachate analytical results are presented in Table 2, Appendix H and leachate laboratory certificates are presented in *Appendix K*. The EPL does not specify concentrations limits for leachate dams. As the dams are closed systems with no connectivity to surface water or groundwater under the current management strategies, the data collected from the leachate dams have not been screened against any criteria.

The quality of leachate is generally as would be expected for a facility such as the SAWT, with elevated ammonia, BOD, COD and TSS. Leachate quality for a facility such as the SAWT is expected to be temporally variable based on the type of material being processed at any one time and volume of rainfall received. Therefore it is not considered useful to assess long term historical trends in leachate for the Site.

8.2 Storm Water Discharge

During the reporting period discharges occurred from EPL Point 1 on 10 February 2020 and 27 July 2020. The discharge waters were sampled, with analytical data compared to EPL discharge limits. The results of the discharge sampling events are as follows:

- 10 February 2020 – exceedances of discharge limits were recorded for ammonia and TSS. BOD, oil and grease, conductivity and TOC were not analysed in accordance with the EPL.
- 27 July 2020 – all required constituents were analysed and not exceedances of discharge limits were recorded.

Ammonia, BOD and TSS concentrations from the stormwater discharge point (Monitoring Point 1) have been plotted over time since surface water monitoring began in 2009 as an indicator of surface water quality. Also included on the plots is the available data from the stormwater dam for comparison purposes. The plots are included as Appendix L.

8.3 Noise

A noise compliance assessment was not conducted during the reporting period as required by the Sites EMP. The most recent assessment was conducted by Hibbs in August 2018 based on site measurements made on 25 July 2018. The results are discussed within the Hibbs Environmental Noise Compliance Report for Kemps Creek SAWT Facility dated August 2018 (Appendix I).

The findings of the Hibbs report identified that noise levels from the Site were in compliance with the PA and EPL noise limits at the time of assessment. However, the report states that noise levels may exceed noise limits during the morning shoulder period if the Site operates at full capacity. Suez has advised that the Site does not operate at full capacity during this time and therefore the modelling does not indicate that the noise limits were likely to have been exceeded.

It is noted that no community complaints have been received regarding noise since the operations commenced in 2009.

8.4 Odour

During the reporting period, SUEZ personnel conducted 165 offsite odour tours. Odour tours were not conducted as required on 90 days when the Site was operating under normal conditions.

Tours were generally conducted on week days under normal operating conditions. Although the Site operates at a reduced capacity on Saturdays, tours were generally not conducted on weekends. The monitoring was generally completed at locations downwind of the Site. The locations are selected based on both special coverage and nearby sensitive receptors. The Site boundary was also included in the program as a reference to whether the Site may have been causing any offsite odours. The locations monitored during the daily odour tours are presented on Figure 3, Appendix A.

When odours were detected a decision was made by Suez personnel as to whether the Site was responsible for the odour or if an offsite source may have been responsible. The decision was based on the type of odour detected, wind direction, potential other odour sources in the area and Site activities at the time. Of the 165 days when tours were conducted, offsite odours related to the Site (excluding the Site boundary) were detected on nine days with a further 10 days noted where odours were potentially Site related but could not be confirmed. Confirmed Site related odours were primarily observed at various locations within Luddenham and on Elizabeth Drive. Although offsite odours were detected offsite at various points during the year, it should be noted that the overall number of days where offsite odours were detected and the apparent relative strength of the odours observed decreased significantly based on the previous reporting period. This is supported by the lack of community complaints received during the year regarding odour.

Full records of the daily tours are tabulated on Table 4, Appendix H and on the SUEZ field sheets included in Appendix G.

8.5 Vegetation Management

Vegetation monitoring and management was not conducted within the reporting period. SUEZ have indicated that a contractor will be engaged to undertake the management of the Badgerys Creek riparian zone.

8.6 Weather Data

Meteorological data for the Site was obtained from the weather station located on site. Data collected during the annual reporting period (29 July 2019- 28 July 2020), including temperature, wind speed and precipitation is included in Table 5, Appendix H.

According to the onsite weather station, during the reporting period, the minimum recorded temperature at the Site was -1.33 degrees celsius (°C) (24 August 2019) and the maximum recorded temperature at the Site was 48.07 °C (5 January 2020). The annual rain total was 803.4mm, with the wettest day of the year being 10 February 2020, with 83.2mm rain recorded.

8.7 Availability of Data

As part of the assessment of data collected for the Site under the EPL during this reporting period, ERM has reviewed the data which is available against the EPL and/or PA requirements to assess if the data set is complete. This is considered important as any data which is required by the EPL that is not available is considered a non-compliance with licence conditions.

In summary, the data set collected over the reporting period is considered complete for all leachate and stormwater points. The following issues were noted regarding missing or incomplete data:

- During the stormwater discharge event on 10 February 2020 TSS, BOD, oil and grease, conductivity and TOC were not analysed in accordance with the EPL;
- Noise monitoring was not conducted in accordance with the EMP to demonstrate compliance with the PA and EPL noise limits for the Site;
- Odour tours were not conducted as required on 90 days when the Site was operating under normal conditions; and
- Vegetation management was not conducted during the reporting period as required by the Vegetation Management Plan.

9. SUMMARY

This AEMR has been developed to satisfy the reporting requirements of Schedule 4, Condition 5 – *Annual Reporting* of the Sites PA for the period of 29 July 2019 to 28 July 2020. The AEMR has assessed all available data collected from the environmental monitoring program during the reporting period and assessed the Site's overall environmental performance and compliance with the EPL and Project Approval (PA).

Based on the monitoring data assessed and information provided by SUEZ Site operatives, the following conclusions have been drawn:

- All required leachate data was collected in accordance with the EPL. A leachate overflow events occurred on two occasions, where separation between leachate and clean surface water was not maintained. Badgerys Creek was not negatively impacted on either occasion and the NSW EPA determined that no regulatory action was required.
- Surface water was discharged from the Site on two occasions during the reporting period. During the discharge event on 10 February 2020 EPL discharge limits were exceeded for ammonia and TSS following a period of rainfall in excess of 1:10 year event totals.
- During the February 2020 rain event leachate was also discharged from the leachate over flow dam, which is not permitted by EPL conditions. The NSW EPA were advised of this and took no further action;
- The most recent assessment was conducted by Hibbs in August 2018 based on site measurements made on 25 July 2018 which identified a potential compliance issue in the morning shoulder period if the Site was operating at full capacity at this time. Suez has advised that the Site is not fully operational during this period;
- Long term odour management issues at the Site appear to have been improved significantly based on Site upgrades which were made regarding odour management; and
- Vegetation management within the riparian zone of Badgerys Creek was not completed during the reporting period.

Based on the ongoing odour issues that the Site, it is considered four PA conditions (Condition 3.17, 3.26, 3.6 and 4.3) and two EPL conditions L12.4 and M2.1/2.2) were not complied with during the reporting period according to information provided by SUEZ. Based on the completion of this AEMR, ERM considers that the Site is in general compliance with the Condition 5 – Annual Reporting of the Sites PA for the period of 29 July 2019 – 28th July 2020.

10. STATEMENT OF LIMITATIONS

1. This report is based solely on the scope of work described in the Specification and ERM proposal P0532727 and performed by **ERM** for SUEZ Australia Pty Ltd (the **Client**). The Scope of Work was governed by a contract between ERM and the Client.
2. No limitation, qualification or caveat set out below is intended to derogate from the rights and obligations of ERM and the Client under the Contract.
3. The findings of this report are solely based on, and the information provided in this report is strictly limited to that required by, the Scope of Work. Except to the extent stated otherwise, in preparing this report ERM has not considered any question, nor provides any information, beyond that required by the Scope of Work.
4. This report was prepared between November 2019 and March 2020 and is based on conditions encountered and information reviewed at the time of preparation. The report does not, and cannot, take into account changes in law, factual circumstances, applicable regulatory instruments or any other future matter. ERM does not, and will not, provide any on-going advice on the impact of any future matters unless it has agreed with the Client to amend the Scope of Work or has entered into a new engagement to provide a further report.
5. Unless this report expressly states to the contrary, ERM's Scope of Work was limited strictly to identifying typical environmental conditions associated with the subject site(s) and does not evaluate the condition of any structure on the subject site nor any other issues. Although normal standards of professional practice have been applied, the absence of any identified hazardous or toxic materials or any identified impacted soil or groundwater on the site(s) should not be interpreted as a guarantee that such materials or impacts do not exist.
6. This report is based on correspondence with the client conducted by ERM personnel, the sampling and analyses described in the report, and information provided by the Client or third parties (including regulatory agencies). All conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved. Whilst normal checking of data accuracy was undertaken, except to the extent expressly set out in this report ERM:
 - a) Did not, nor was able to, make further enquiries to assess the reliability of the information or independently verify information provided by;
 - b) Assumes no responsibility or liability for errors in data obtained from, the Client, any third parties or external sources (including regulatory agencies).
7. Although the data that has been used in compiling this report is generally based on actual circumstances, if the report refers to hypothetical examples those examples may, or may not, represent actual existing circumstances.
8. Only the environmental conditions and or potential contaminants specifically referred to in this report have been considered. To the extent permitted by law and except as is specifically stated in this report, ERM makes no warranty or representation about:
 - a) The suitability of the site(s) for any purpose or the permissibility of any use;
 - b) The presence, absence or otherwise of any environmental conditions or contaminants at the site(s) or elsewhere; or
 - c) The presence, absence or otherwise of asbestos, asbestos containing materials or any hazardous materials on the site(s).

9. Use of the site for any purpose may require planning and other approvals and, in some cases, environmental regulator and accredited site auditor approvals. ERM offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environment works.
10. The ongoing use of the site or use of the site for a different purpose may require the management of or remediation of site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this report.
11. This report should be read in full and no excerpts are to be taken as representative of the whole report. To ensure its contextual integrity, the report is not to be copied, distributed or referred to in part only. No responsibility or liability is accepted by ERM for use of any part of this report in any other context.
12. Except to the extent that ERM has agreed otherwise with the Client in the Scope of Work or the Contract, this report:
 - a) Has been prepared and is intended only for the exclusive use of the Client;
 - b) Must not to be relied upon or used by any other party;
 - c) Has not been prepared nor is intended for the purpose of advertising, sales, promoting or endorsing any Client interests including raising investment capital, recommending investment decisions, or other publicity purposes;
 - d) Does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in or in relation to the site(s); and
 - e) Does not purport to provide, nor should be construed as, legal advice.

11. REFERENCES

Aecom (2008) *Vegetation Management Plan, Badgerys Creek Riparian Corridor Adjacent to SAWT Facility Site at Elizabeth Drive Landfill*. Ref. 20014604.07

Department of Environment and Conservation (NSW) (2005), *Approved Method for the Modelling and Assessment of Air Pollutants in NSW*

Maunsell (2008) *Vegetation Management Plan, Badgerys Creek riparian corridor adjacent to SAWT Facility site at Elizabeth Drive Landfill*. Prepared for SITA Environmental Solutions

National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B(1) – Guideline on Investigation Levels for Soil and Groundwater.

NSW Department of Planning (2008) *Project Approval, application no. 06/0185*

NSW EPA (2009), *Environment Protection Licence (EPL) 12889*

NSW EPA (2016), *Environmental Guidelines, Solid Waste Landfills*. Second edition

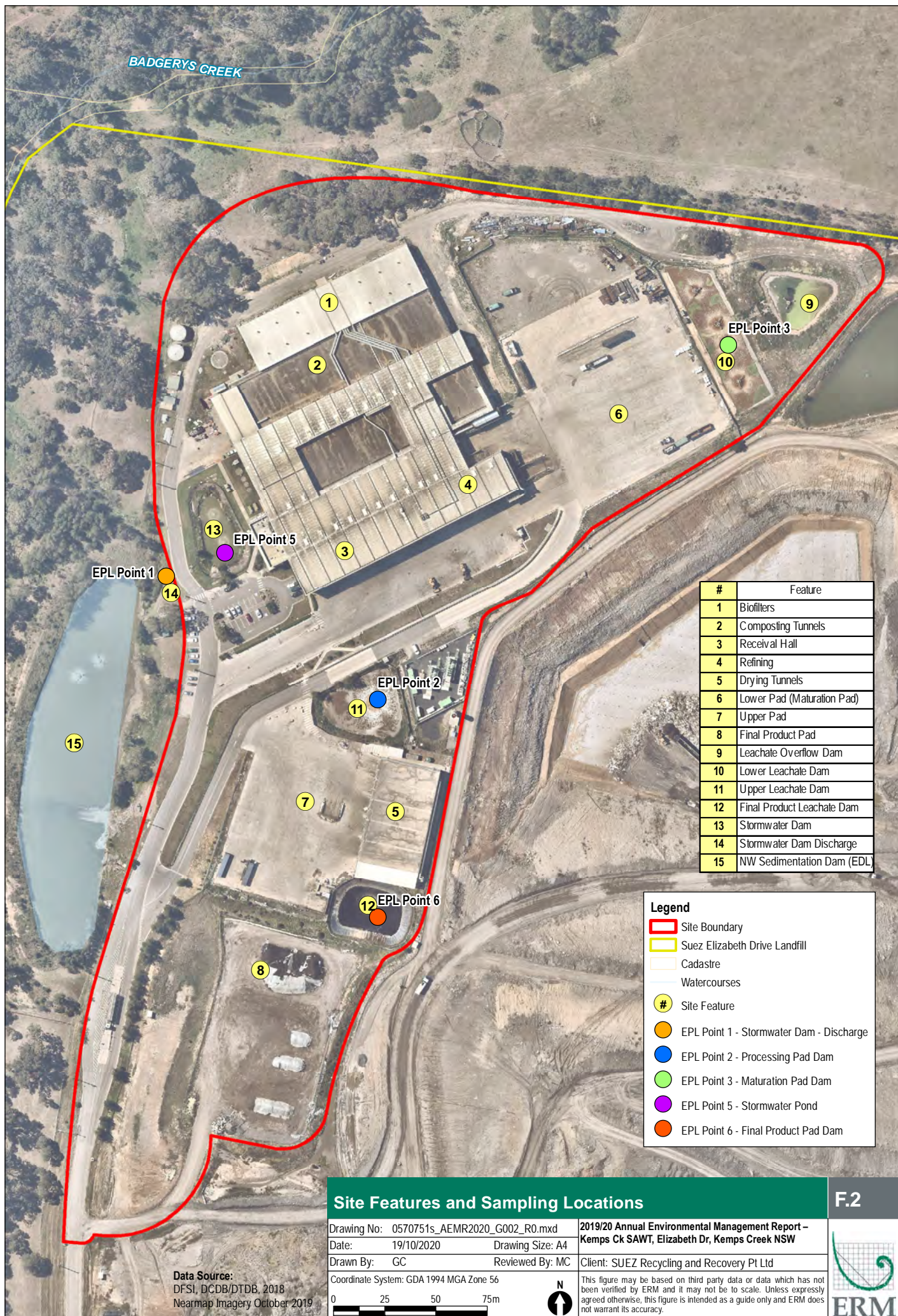
NSW Government (1997) *NSW Protection of the Environment Operations Act 1997 No 156*

SUEZ (2019) *Odour Management Plan, Kemps Creek SAWT, Version 2*

SUEZ (2018) *Environmental Management Plan, Kemps Creek SAWT ARRT, Version 2*

Hibbs and Associates (2018) *Environmental Noise Compliance, Kemps Creek SAWT Facility*. Ref. S10432-R1

APPENDIX A FIGURES



Site Features and Sampling Locations

Drawing No: 0570751s_AEMR2020_G002_R0.mxd
Date: 19/10/2020
Drawn By: GC

Drawing Size: A4

Reviewed By: MC

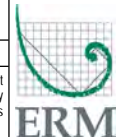
Coordinate System: GDA 1994 MGA Zone 56

2019/20 Annual Environmental Management Report –
Kemps Ck SAWT, Elizabeth Dr, Kemps Creek NSW

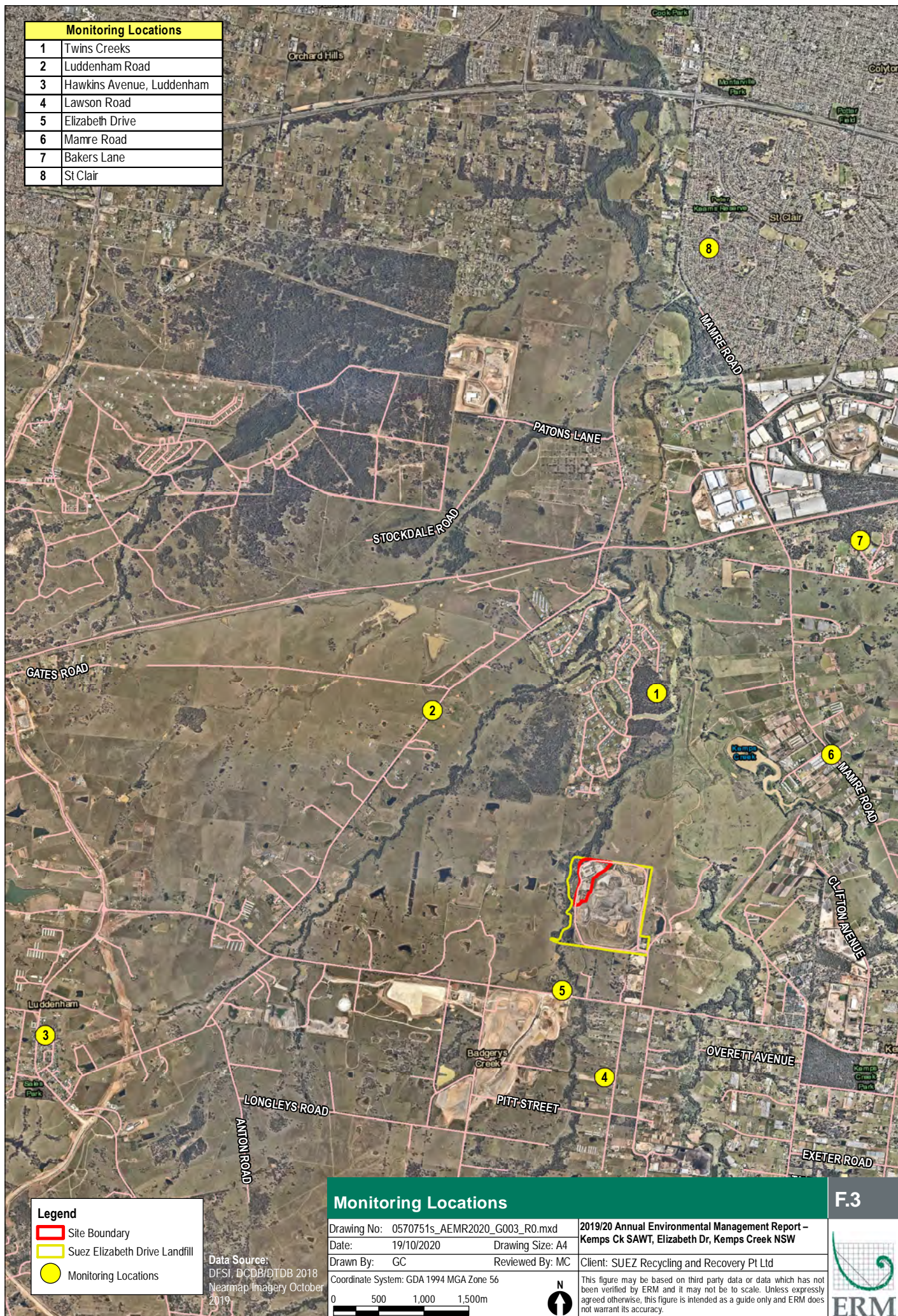
Client: SUEZ Recycling and Recovery Pt Ltd

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

F.2



Monitoring Locations	
1	Twins Creeks
2	Luddenham Road
3	Hawkins Avenue, Luddenham
4	Lawson Road
5	Elizabeth Drive
6	Mamre Road
7	Bakers Lane
8	St Clair



Legend

- Site Boundary
- Suez Elizabeth Drive Landfill
- Monitoring Locations

Data Source:
DFS, DCDB/DTDB 2018
Nearmap Imagery October
2019

Monitoring Locations

Drawing No: 0570751s_AEMR2020_G003_R0.mxd
Date: 19/10/2020 Drawing Size: A4
Drawn By: GC Reviewed By: MC

Coordinate System: GDA 1994 MGA Zone 56

0 500 1,000 1,500m

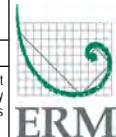


2019/20 Annual Environmental Management Report –
Kemps Ck SAWT, Elizabeth Dr, Kemps Creek NSW

Client: SUEZ Recycling and Recovery Pt Ltd

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

F.3



APPENDIX B PROJECT APPROVAL

Project Approval (Consolidated Version)

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in schedule 1, subject to the conditions in schedules 2 to 4.

These conditions are required to:

- prevent and/or minimise adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Frank Sartor MP
Minister for Planning

Sydney

2008

SCHEDULE 1

Application No:

06_0185

Proponent:

SITA Environmental Solutions

Approval Authority:

Minister for Planning

Land:

The parts of the following lots marked on the figure in Appendix 1:
- Lot 1 DP 542395; and
- Lot 740, DP 810111

Project:

SITA Advanced Waste Treatment Facility

Consolidated version incorporating:

Modification 1 – Operating hours (2010) in blue

Modification 2 – (Withdrawn)

Modification 3 – Maturation pad upgrades (2014) in taupe

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DEFINITIONS

AEMR	Annual Environmental Management Report
BCA	Building Code of Australia
Council	Penrith City Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and public holidays
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department, or delegate
EA	Environmental Assessment titled <i>Advanced Waste Treatment Facility – Elizabeth Drive, Environmental Assessment</i> , dated June 2007, and the Preferred Project Report dated October 2007
Elizabeth Drive Landfill	The waste management facility off Elizabeth Drive licensed to receive Solid Waste Class 2 and Industrial Waste
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6pm to 10pm
Garden Waste	Source separated garden or related organic waste
Hazardous Waste	See definition POEO Act
Heavy Vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Industrial Waste	See definition POEO Act
Land	The whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LGA	Local government area
Minister	Minister for Planning and Infrastructure, or delegate
Mixed Waste	Municipal solid waste or commercial and industrial waste that has been classified as inert or solid waste under schedule 1 of the POEO Act
Morning Shoulder	The period from 6am to 7am Monday to Friday
Night	The period from 10pm to 6am on Monday to Friday, and 10pm to 8am on Saturdays, Sundays and Public Holidays
NOW	NSW Office of Water
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned Land	Land not owned by the Proponent or its related companies, or where a private agreement does not exist between the Applicant and the land owner
Proponent	SITA Australia Pty Ltd or its successor
RMS	Roads and Maritime Services
Site	Land to which the project application applies (see schedule 1)
Statement of Commitments	Proponent's commitments shown in Appendix 3

SCHEDULE 2 GENERAL ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, and/or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) statement of commitments; and
 - (c) Modification application 06_0185 MOD 1;
 - (d) Modification application 06_0185 MOD 3; and
 - (e) conditions of this approval.

Note: The layout of the project is shown in Appendix 1 and Appendix 1A.

3. If there is any inconsistency between the above, then the conditions of this consent shall prevail to the extent of the inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Waste operations may only take place for 20 years from the commencement of operations on site.

Note: Under this approval the Proponent is required to decommission the project upon the completion of waste operations, and rehabilitate the site to the satisfaction of the Director-General. Consequently, this approval will continue to apply in all other respects other than the right to conduct waste operations on site until the site has been rehabilitated to a satisfactory standard.

Management Plans/Monitoring Programs

6. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.
- 6a. Within 3 months of any modification approval, the Proponent must prepare and implement a revised version of any relevant management plan or monitoring program to the satisfaction of the Director-General.

Structural Adequacy

7. The Proponent shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.
- Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of project.

Demolition

8. The Proponent shall ensure that all demolition work is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

9. The Proponent shall ensure that the plant and equipment used on site, or in connection with the project, is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Statutory Requirements

10. The Proponent shall ensure that all licences, permits and approval/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approval/consents.

SCHEDULE 3 SPECIAL ENVIRONMENTAL CONDITIONS

WASTE MANAGEMENT

Limits on Inputs

1. The Proponent shall not receive:
more than:
 - 120,000 tonnes of mixed waste and garden waste a year on site; and
 - 14,400 tonnes of biosolids from sewage treatment plants; andwaste on site that is:
 - contaminated by chemicals and/or pathogens that would not be rendered harmless by operations on site, or that may constitute a health or environmental risk, including clinical and related waste and diseased carcasses; and
 - classified as hazardous waste or industrial wastes under the *Protection of the Environment (Operations) Act 1997*.

Waste Acceptance & Screening

2. The Proponent shall:
 - (a) implement suitable procedures to:
 - ensure that the site does not accept wastes that are prohibited; and
 - screen incoming waste loads; and
 - (b) ensure that:
 - all waste sludges and wastes that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and
 - staff receive adequate training in order to be able to recognise and handle any hazardous or other unapproved waste.

Limits on Outputs

3. Except for the following, the Proponent shall dispose of all outputs produced on site to suitably licensed facility:
 - (a) recyclables extracted and delivered off-site for resource recovery purposes; and
 - (b) compost output products approved for use under the POEO Act and Regulations; or
 - (c) compost output products for approved public compost applications off SITA's land that:
 - have been composted in accordance with *Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches*;
 - comply with the limits for physical contaminants set out in Table 3.1 of *Australian Standard AS 4454-2003 Composts, Soil Conditioners and Mulches*; and
 - comply with the chemical acceptance concentration thresholds for Restricted Use (Grade A) in the NSW Environmental Guidelines: *Use and Disposal of Biosolid Products* (1997); or
 - (d) compost output products for land rehabilitation, namely mine site rehabilitation and landfill site rehabilitation, that:
 - have been composted in accordance with *Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches*;
 - comply with the limits for physical contaminants set out in Table 3.1 of *Australian Standard AS 4454-2003 Composts, Soil Conditioners and Mulches*; and
 - comply with the chemical acceptance concentration thresholds for Restricted Use (Grade B and C) in the NSW Environmental Guidelines: *Use and Disposal of Biosolid Products* (1997).
4. Within 3 years of commissioning the plant on site, or as directed by the Director-General, the Proponent shall:
 - (a) review the criteria in condition 3(c) and 3(d) above in consultation with the EPA with a view to moving to approved criteria under the POEO Act and Regulations or establishing criteria that are specifically appropriate for an identified intended use; and
 - (b) comply with any revised criteria set under the POEO Act and Regulations or by the Director-General.

Waste Monitoring

5. The Proponent shall prepare and implement a Waste Monitoring Program for the project to the satisfaction of the Director-General, prior to the commencement of operation. This program must:
 - (a) be prepared in consultation with **EPA** by a suitably qualified and experienced expert; and
 - (b) include a suitable program to monitor the:
 - quantity, type and source of waste received on site;
 - quantity, type and quality of the outputs produced on site; and
 - (c) outline contingency measures that would be implemented in the event that levels of foreign matter or contaminants in the compost output exceed acceptable levels.

ODOUR

6. The Proponent shall ensure that the project complies with Section 129 of the *Protection of the Environment Operations Act, 1997*.

Notes:

- *Section 129 of the Protection of the Environment Operations Act 1997, provides that the Proponent must not cause or permit the emission of any offensive odour from the site, but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.*

7. The project must be built and operated to minimise odours. This must include:
 - (a) all composting must be undertaken within enclosed tunnels;
 - (b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material;
 - (c) all exhaust air from the composting building and from the composting tunnels must pass through the biofilters;
 - (d) the biofilters are to be of a deep bed design and must have vented roofs; and
 - (e) a system of two leachate ponds must be used on site, to minimise the surface area of odorous leachate.
8. For the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

DUST

9. The facility is to be maintained in a condition which minimises and prevents the emission of dust from the site.

GREENHOUSE GAS

10. The Proponent must ensure that all composting is undertaken in accordance with *Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches*, Appendix N, Best practice guidelines for Composting Systems, or other practices approved by the **EPA**.
11. The Proponent is required to prepare a feasibility report for the Director-General's approval within 5 years of this approval, outlining options to capture and use greenhouse gas in the generation of electricity. The report must identify which options could be reasonably and feasibly implemented.

NOISE

Operating Hours

12. The Proponent shall comply with the operating hours in Table 1.

Table 1: AWT Site Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 4 pm
	Sunday & Public Holidays	Nil
Waste Receipt, outdoor operations and product dispatch	Monday - Friday	6 am – 6 pm
	Saturday	8 am -5 pm
	Sunday	8 am – 4 pm
Outdoor operations	Monday - Friday	6 pm -10 pm*
	Public Holidays	7 am – 4 pm
Indoor Operations	Monday - Saturday	7 am – 11 pm
Emergency	Monday - Sunday	Anytime

*Note: ...Outdoor operations between the hours of 6pm – 10pm Monday to Friday must be limited to 10 trips by a 6-tonne truck (that is 20 movements) and 12 trips by a front end loader (that is 24 movements)

Noise Limits

13. The Proponent shall ensure that noise from operation of the project does not exceed the noise limits presented in Table 2.

Table 2: Project Noise Limits

Location	Day	Evening	Night		Morning Shoulder
	L _{Aeq} (15 minute) dB(A)	L _{Aeq} (15 minute) dB(A)	L _{Aeq} (15 minute) dB(A)	L _{Amax}	L _{Aeq} (15 minute)
McGarvie Smith Farm	42	39	35	Na	39
1745 Elizabeth Drive	41	40	37	47	40
1669A Elizabeth Drive	38	38	35	Na	38
Caretakers Residence 1669A Elizabeth Drive	42	42	38	53	42

Notes:

- Morning Shoulder is defined as 6am to 7am Monday to Friday
- Noise from the premises is to be measured at the most effected point or within the residential boundary or at the most affect point within 30 metres of the dwelling (rural situations) where the dwelling is more than 30 metres from the boundary to determine compliance with the L_{Aeq}(15 minute) noise limits.
- Where it can be demonstrated that direct measurement of noise from the development is impractical, the Department and the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).
- The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- The noise limits identified in Table 1 apply under the following meteorological conditions:
 - wind speeds up to 3 m/s at 10 metres above the ground level; or
 - temperature inversion conditions up to 3°C/100m and wind speeds up to 2 m/s at 10 metres above ground level.

Construction Noise Management

14. The Proponent shall prepare and implement a Construction Noise Management Protocol for the project to the satisfaction of the Director-General. The plan shall be submitted to the Director-General prior to commencing demolition and construction, and must:
- identify specific activities to be carried out, the noise generation from these activities and timetabling of the activities;
 - identify appropriate construction noise limits;
 - identify all reasonable and feasible mitigation measures that would be implemented to minimise noise;
 - describe monitoring methods and program to ensure noise levels are limited;
 - include procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity, and procedures for managing complaints; and
 - identify site contact person to manage and follow up complaints.

Noise Mitigation

15. Prior to the commencement of operation, the Proponent shall install noise mitigation at the Caretakers Residence for 1669A Elizabeth Drive, as agreed by the owner of the property. The Proponent shall notify the Director General once installation of the noise mitigation is completed.

Operational Noise Monitoring Program

16. The Proponent shall prepare and implement a Noise Monitoring Program for the project, to the satisfaction of the EPA and the Director-General. The Noise Monitoring Program shall be submitted to the Director-General prior to commencing operation, and must include a noise monitoring protocol for evaluating compliance with the project noise limits in Table 1.

SOIL AND WATER

Discharge Limits

17. Except as may be expressly provided in an EPL for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997*.

Leachate Barrier

18. Outdoor areas where compost products or organic outputs are stored must have a leachate barrier system in the form of clay or modified soil liner (or equivalent) consisting of at least 600mm of re-compacted clay with an in-situ permeability (K) of less than 10^{-7} m/s.

Bunding

19. The Proponent shall ensure that all above ground tanks and vats, including those used for treating or processing wastewater and leachate and diesel storage, must be surrounded by a bund with a capacity to contain 110% of the tanks within the bund. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or EPA's Environmental Protection Manual *Technical Bulletin Bunding and Spill Management*.

Soil, Water and Leachate Management Plan

20. The Proponent shall prepare and implement a Soil, Water and Leachate Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be submitted to the Director-General for approval prior to carrying out any development on site;
 - (b) be prepared by a suitably qualified and experienced expert;
 - (c) be prepared in consultation with the EPA, NOW and Council; and
 - (d) include:
 - a site water balance;
 - an erosion and sediment control plan;
 - a stormwater management scheme;
 - a surface water, groundwater and leachate monitoring program; and
 - a surface water, groundwater and leachate response plan.
21. The site water balance must:
 - (a) identify the source of all water collected or stored on the site, including rainfall and stormwater; and
 - (b) include details of all water use on site and any discharges.
22. The erosion and sediment control plan must:
 - (a) be consistent with the requirements in the latest version of *Managing Urban Stormwater: Soils and Construction* (Landcom);
 - (b) identify the activities on site that could cause soil erosion and generate sediment; and
 - (c) describe what measures would be implemented to:
 - minimise soil erosion and the transport of sediment to downstream waters, including the location, function and capacity of any erosion and sediment control structures; and
 - maintain these structures over time.
23. The stormwater management scheme must:
 - (a) be consistent with the guidance in the latest version of *Managing Urban Stormwater: Council Handbook* (EPA); and
 - (b) have sufficient capacity to cater for the 90th percentile 5 day rainfall event.

24. The surface water, groundwater, and leachate monitoring program must:
 - (a) be generally consistent with the guidance in EPA's *Environmental Guidelines for Composting & Related Organics Processing Facilities*; and
 - (b) include:
 - baseline data;
 - details of the proposed monitoring network; and
 - the parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan (see below).
25. The surface water, groundwater and leachate response plan must:
 - (a) include a protocol for the investigation, notification and mitigation of any exceedances of the respective trigger levels; and
 - (b) describe the array of measures that could be implemented to respond to any surface or groundwater contamination that may be caused by the development.

FLORA AND FAUNA

26. The area between the internal road along the western boundary and Badgerys Creek as outlined in Appendix 2, is to be protected and rehabilitated as a riparian corridor.
27. The Proponent shall prepare a Vegetation Management Plan for the site, in consultation with NOW. This Plan shall be submitted and approved by the Director-General, prior to the commencement of construction. The Vegetation Management Plan shall:
 - (a) be prepared in accordance to NOW's *How to Prepare a Vegetation Management Plan Guideline*;
 - (b) include a detailed plan to protect and rehabilitate the Badgerys Creek riparian corridor on-site;
 - (c) provide details of the on-site revegetation program to offset clearing of 0.81 hectares of Cumberland Plain Woodland; and
 - (a) outline the weed management program to be implemented on-site.

TRANSPORT

28. The Proponent shall monitor the performance of the intersection of Elizabeth Drive and the landfill access road within two years of the commencement of operations, or as otherwise required by the Director-General. In the event that the performance of the intersection is found to be at LOS D or worse as a result of traffic from the landfill and AWT, the Proponent shall implement mitigation measures, as recommended by the RMS.

VISUAL AMENITY

Lighting

29. The Proponent shall ensure that all external lighting associated with the development:
 - (a) does not create a nuisance to surrounding properties or roadways; and
 - (b) complies with AS 4282(INT) 1995 – *Control of Obtrusive Effects of Outdoor Lighting*.

Rehabilitation & Closure

30. Upon the cessation of waste operations, the Proponent shall decommission the project and rehabilitate the site to the satisfaction of the Director-General.
31. The Proponent shall prepare and implement a Rehabilitation and Closure Plan for the project to the satisfaction of the Director-General. This plan must be:
 - (a) be prepared in consultation with EPA, and Council by a suitably qualified and experienced expert whose appointment has been approved by the Director-General;
 - (b) be submitted to the Director-General for approval no more than one year after the sixth independent environmental audit of the project (see schedule 4), or as directed otherwise by the Director-General;
 - (c) define the objectives and criteria for rehabilitation and closure;
 - (d) investigate options for the future use of the site;
 - (e) describe the measures that would be implemented to achieve the specified objectives and criteria for rehabilitation and closure;
 - (f) calculate the cost of implementing these measures; and
 - (g) describe how the performance of these measures would be monitored over time.

SCHEDULE 4 ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT PLAN

1. The Proponent shall prepare and implement an Environmental Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be prepared in consultation with the EPA by a suitably qualified and experienced expert;
 - (b) be submitted to the Director-General for approval prior to commencement of operations;
 - (c) describe in detail the management measures that would be implemented to address:
 - the relevant matters referred to in Section 4 and Appendix B of the EPA's *Environmental Guidelines for Composting & Related Organics Processing Facilities*; and
 - the conditions of this approval;
 - (d) include a copy of:
 - the management plans and monitoring programs required in this approval;
 - a quality assurance program for the design and installation of the leachate management system has been developed in accordance with *Australian Standard AS 3905.2*;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project; and
 - respond to emergencies; and
 - (f) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.

REPORTING

Compliance Reporting

2. Prior to carrying out any development on site, and then operations, the Proponent shall certify in writing to the Director-General that it has complied with all the relevant conditions of this approval.

Incident Reporting

3. Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval, or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and EPA of the exceedance/incident.
4. Within 6 days of notifying the Department and EPA, the Proponent shall provide a written report to the Department and EPA that:
 - (a) describes the date, time, and nature of the incident;
 - (b) identifies the cause, or likely cause, of the incident; and
 - (c) describes what action has been taken to date address the incident, and what actions are proposed to be implemented in the future to either address the consequences of the incident or avoid a recurrence of the incident.

Annual Reporting

5. Every year from the date of this approval, unless the Director-General agrees otherwise, the Proponent shall submit an AEMR to the Director-General and relevant agencies. The AEMR shall:
 - (a) identify the standards and performance measures that apply to the development;
 - (b) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (c) include a summary of the monitoring results for the development during the past year;
 - (d) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria;
 - monitoring results from previous years; and
 - predictions in the EA;
 - (e) identify any trends in the monitoring results over the life of the development;
 - (f) identify any non-compliance during the previous year; and
 - (g) describe what actions were, or are being taken to ensure compliance.
6. The Proponent is to implement continuous improvement in regard to odour emission management. As part of this, the Proponent is to submit a report annually to the Department and the EPA, unless otherwise agreed by the Director-General, outlining new developments in the field of odour control and management relevant to the operation, and detailing practices that have been implemented on the site during the previous year, to reduce odour emissions. The report must identify which

practices can be implemented in a cost effective manner and justify why the remainder are not required.

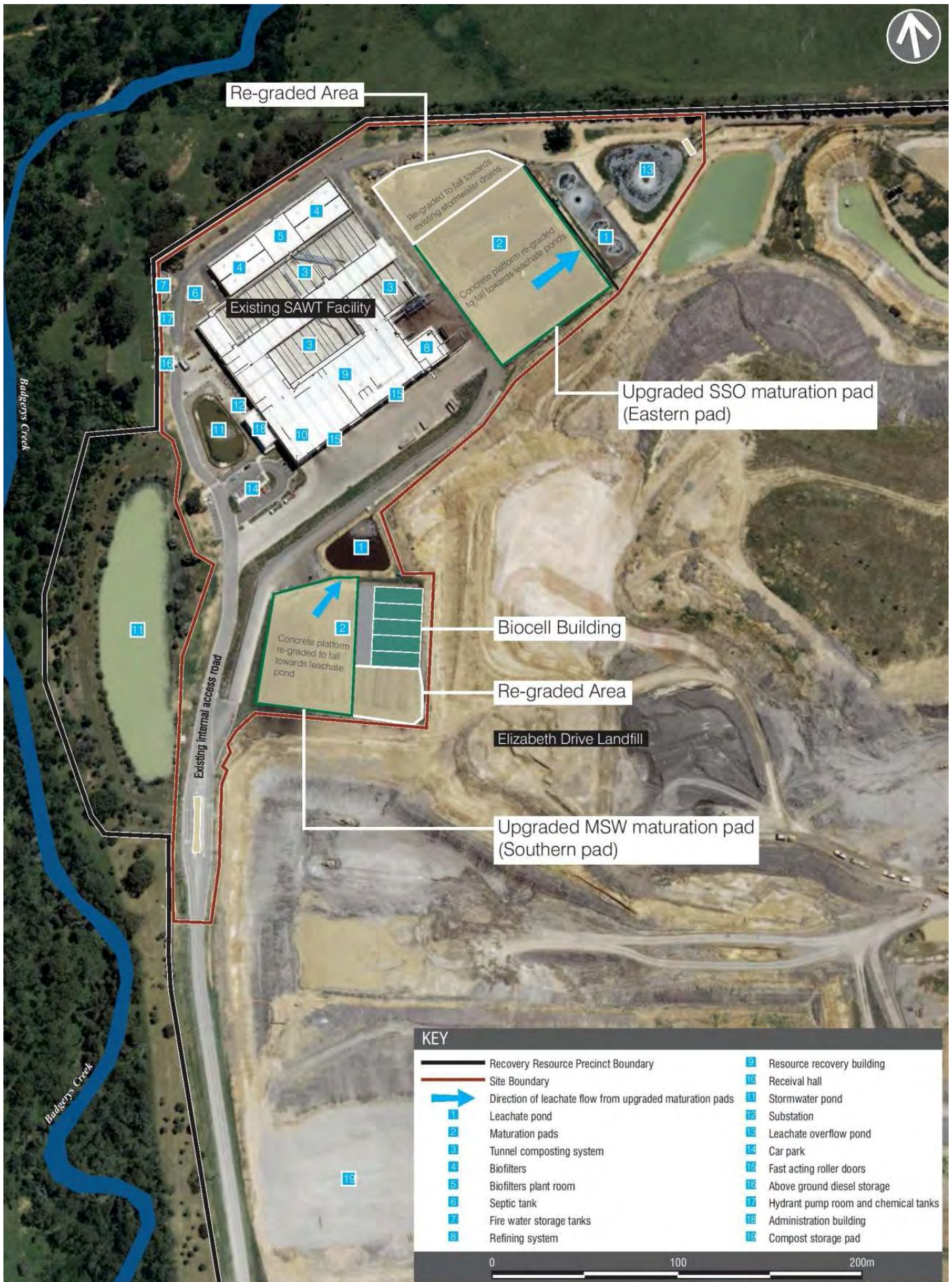
INDEPENDENT ENVIRONMENTAL AUDIT

7. Within 2 years of the commencement of operations, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
 - (a) be carried out by a suitably qualified, experienced and independent audit team containing a waste management specialist, whose appointment has been endorsed by the Director-General;
 - (b) include consultation with EPA;
 - (c) assess the environmental performance of the project, and its effects on the surrounding environment;
 - (d) determine whether the project is complying with the relevant standards, performance measures and statutory requirements;
 - (e) review the adequacy of the Environmental Management Plan for the project, compliance with the requirements of this approval, and any other licences and approvals; and, if necessary,
 - (f) recommend measures or actions to improve the environmental performance of the project, and/or any plan/program required under this approval.
8. Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, with a response to any recommendations contained in the audit report.
9. Within 3 months of submitting a copy of the audit report to the Director-General, the Proponent shall review and if necessary revise the plans/programs required under this approval to the satisfaction of the Director-General.

ACCESS TO INFORMATION

10. Within 1 month of the approval of any plan or program required under this consent, or the completion of any independent audit or AEMR required under this approval, the Proponent shall:
 - (a) ensure that a copy of the relevant documents is made publicly available on the Proponent's website; and
 - (b) provide a copy of the relevant document/s to any interested party upon request.

APPENDIX 1A: MATURATION PAD UPGRADES AND BIOCELL



[illegible]

APPENDIX 3: STATEMENT OF COMMITMENTS

Table 1: Draft Statement of Commitments for Advanced Waste Treatment Facility, Elizabeth Drive

Prior to Construction	
Environmental Outcome (commitment)	Measure (commitment)
1.1 Environmental Protection and management	1.1.1 A Construction Environmental Management Plan (CEMP) will be prepared in accordance with the conditions of approval, this Environmental Assessment and all other relevant Acts and Regulations.
1.2 Minimise impact on flooding and hydrology	<p>1.2.1 During detailed design, all facilities and roads will be elevated above the 1 in 100 year AEP flood event or sufficient bunding will be provided. Protection will be provided to areas subject to erosion or inundation during a 1 in 100 year AEP storm event.</p> <p>1.2.2 Runoff for all events up to and including the 1 in 10 year, 24 hour AEP event will be retained on site as described in Section 4.</p> <p>1.2.3 Solid waste, which could potentially pollute stormwater runoff, will be handled in an enclosed building with concrete floors to limit the generation of leachate;</p> <p>1.2.4 Sorting and composting will occur within an enclosed building. Condensate from composting tunnels will be recycled in the composting process, which will prevent leachate discharge to other parts of the SAWT facility. As the composting process is a net user of water, leachate discharge from the process is highly unlikely;</p> <p>1.2.5 Maturation and green waste storage will be carried out on specifically designed hardstand areas that have suitably low permeability to prevent infiltration of leachate into the groundwater. Any leachate from the maturation and green waste storage will be drained to the leachate pond;</p> <p>1.2.6 All drainage paths will be designed to prevent ponding and infiltration into the groundwater as a result of standing water; and</p> <p>1.2.7 Leachate storage and treatment ponds and stormwater storage ponds will be lined with a low permeability liner to control infiltration into groundwater.</p>
Minimise impact from odour emissions	<p>Odour can be generated at the SAWT facility as a result of mixed waste processing and degradation of organic components. The SAWT process requires both indoor and outdoor operations. The outdoor operations are susceptible to changes in weather and require careful attention. Several mechanisms that either limit odour generation or provide odour mitigation have been incorporated into the design of the proposed layout. These include:</p> <ul style="list-style-type: none"> • Provision of enclosed facilities for all parts of the SAWT process, except maturation and green waste shredding; • Roller doors in the Receival Building to enable the openings to be closed at all times other than loading/unloading; • Biofilters for treatment of all air within the Receival, Resource Recovery and Composting buildings;

Prior to Construction	
Environmental Outcome (commitment)	Measure (commitment)
	<ul style="list-style-type: none"> • Maintenance of oxygen and moisture levels and feedstock composition within optimum range for composting; • Aeration of the leachate and stormwater ponds as required to ensure the ponds remain aerobic; • Preferential reuse of stored leachate in the composting process to avoid long-term storage of leachate; and • Appropriate storage of biosolids (tank or covered pit) if/when they are accepted. <p>SITA will implement a transparent and efficient Neighbourhood Feedback program whereby odour complaints can be registered and investigated. An odour complaints registration, investigation and response procedure will be implemented at the SAWT facility.</p>
Minimise impact on visual amenity and landscape	<p>To address the visibility of the SAWT facility in context with the surrounding landscape, buildings have been designed to sit at an elevation as low as practicable on the SAWT Site, without compromising flood protection or drainage design.</p> <p>SITA also proposes to retain as many trees and other vegetation as practicable. This will provide screening for the completed SAWT facility, and also maintain the semi-rural character of the area.</p>

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
The proposed SAWT- facility will be constructed in accordance with the proposal contained in the Environmental Assessment, June 2007	The SAWT facility will be constructed in accordance with CEMP.
Minimise impact on geology, soils and groundwater	<p>An Erosion and Sediment Control Plan (ESCP) and/or Stormwater Management Plan (SWMP) will be prepared as part of the Construction EMP to ensure that impacts associated with construction are appropriately managed. The specific mitigation measures that will be applied to control erosion and soil related impacts are:</p> <ul style="list-style-type: none"> • An ESCP and/or SWMP will be prepared and implemented in line with Edition 4 of the Department of Housing's <i>Managing Urban Stormwater Guidelines</i> (2004) 'Blue Book' prior to the commencement of works; • Regular inspection of the work site will be undertaken during construction activities to ensure that the ESCP and/or SWMP is properly implemented and maintained; • Geofabric sediment fences will be temporarily installed down slope of disturbed areas where there is the potential

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<p>for runoff to enter Badgerys Creek;</p> <ul style="list-style-type: none"> • Temporary stockpiles will not be located adjacent to drainage lines; • Vegetation clearance and soil disturbance will be limited to areas required for construction; • Revegetation of disturbed areas will occur (where practicable) immediately after completion of works in that area; and • In the event that unexpected contaminated material is disturbed during earthworks, controls will be implemented to divert surface runoff and the material will be removed from the Site and disposed of at an approved site.
Minimise impact on surface water quality	<p>A Water Quality Management Strategy will be developed for sediment control during construction and operation. The following measures will be adopted:</p> <ul style="list-style-type: none"> • Temporary erosion controls will be provided where necessary; • Permanent stabilisation of embankments, channels, etc. will be achieved through vegetation and will be carried out promptly; and • Construction will be staged and progressive rehabilitation undertaken to minimise the area available to erosion at any one time.
Minimise impact on flora and fauna	<p>To offset the removal of some severely degraded and isolated small pockets of Cumberland Woodland, a revegetation program will be initiated in discussion with LANDCARE and DECC along the north west boundary. It is envisaged that the revegetation program will include species affiliated with Cumberland Woodland vegetation association.</p> <p>A Vegetation Management Plan including a re-planting program will be developed including details on:</p> <ul style="list-style-type: none"> • Ongoing preservation of riparian vegetation and the protection of fauna habitat; • Clearing limits will be clearly marked and fenced prior to construction to prevent accidental impacts to adjacent vegetation; • No heavy machinery will be permitted access outside of clearing limits; • No building materials (including spoil mounds) will be stored or placed outside of clearing limits; • Revegetation of areas within the 'River Flat Eucalypt Forest endangered ecological community' (Badgerys Creek Riparian Community) will be considered; • The area of Badgerys Creek Riparian Community, adjacent to the SAWT Site, will remain restricted to staff of SITA and persons will enter this area only for the purposes of vegetation management and environmental monitoring • An active program of weed management will be implemented;

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<ul style="list-style-type: none"> • The mature Angophora will be fenced prior to clearing to avoid disturbance; • Non-residual herbicides will be used, on an as-needed basis, to control weeds; • A referral will be sent to the Department of the Environment and Water Resources (DEWR) in regards to the clearing of Cumberland Plain Woodland, a listed EEC under the EPBC Act; and • Prior to construction conduct a targeted survey for threatened flora. <p>In addition to these measures, SITA have implemented a programme of revegetation along the northern boundary of the Elizabeth Drive Site with species consistent with Cumberland Plain Woodland vegetation association. This revegetation commenced in 2004 in co-operation with LANDCARE, such that 2,000 trees have already been planted in this area. Key objectives of replanting would be to replace any remnants of Cumberland Plain Woodland that have already been removed from the Elizabeth Drive Site during historical (pre-SITA) quarrying/land clearing practices. This planting will also serve as a vegetative screening barrier along this boundary.</p>
Minimise impact on air quality	<p>The following practices and procedures will be adopted to ensure that dust levels are adequately controlled:</p> <ul style="list-style-type: none"> • Regular cleaning of the site haulage and access roads; • Dust suppression on unsealed roads and work areas using a water cart; • Minimising traffic movements on exposed areas; • Minimising heavy vehicle trip distances and speed within the Elizabeth Drive Site; • Dampening of temporary stockpiles; • Removing mud from vehicles before leaving the Elizabeth Drive Site, where necessary; • Cleaning up materials that might act as dust sources, as soon as possible; • Progressive rehabilitation of cleared land; • Conducting regular maintenance of machinery and vehicles; • Ensuring any procedures for outdoor activities include a requirement for dust minimisation; and <p>Providing awareness training in the importance of minimising dust generation at its source.</p> <p>The following practices and procedures will be adopted to ensure that dust levels are adequately controlled:</p> <ul style="list-style-type: none"> • Waste handling within enclosed buildings, except for green waste; • Locating compost maturation and compost feedstock stockpiles away from sensitive receptors;

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<ul style="list-style-type: none"> • Dampening of stockpiles; • Limiting storage size of green waste to reduce potential for dust nuisance; • Conducting regular maintenance of machinery and vehicles;
Minimise impact on heritage	The riparian precinct will remain fenced and padlocked to ensure that contractors do not enter the KC/1 vicinity and that storage, building rubble and spoil materials are excluded. SITA recognises that it is an offence to remove, disturb or destroy any Aboriginal relic in NSW without the prior written consent of the Director-General of DECC. Should any Aboriginal archaeological relics, deposits or sites be located or exposed during any SAWT Site works, all works with the potential to disturb the site will cease immediately and DECC will be contacted to confirm a course of action.
Minimise impact on surface water quality	<p>Stormwater and Leachate</p> <ul style="list-style-type: none"> • Stormwater affected by the proposed SAWT facility has been divided into diverted stormwater and 'clean' site runoff. The SAWT Site will be graded to ensure that stormwater is diverted appropriately and undergoes the level of treatment as required by regulation. Roads will be graded to prevent uncontrolled runoff. All stormwater will be captured and retained on site up to and including the 1 in 10 year, 24 hour duration event; • Storage of stormwater runoff will be suitably managed to ensure as much re-use, and thereby reduction in potable water demand, as is practicable. This type of water will be used for application in the SAWT process, or it will be directly used for operational purposes (irrigation and dust suppression); • All leachate will be retained and re-used on site. Condensate leachate and leachate from cleaning will be temporarily stored in closed containers before being re-used in the composting process. Stormwater leachate will be stored on site in two leachate ponds prior to being used within the SAWT process and this will have the added benefit of reducing the demand for potable water. The ponds will be lined to a suitable permeability to prevent leachate leakage; and • Re-use of process and product-related leachate and additional use of stormwater runoff to the extent that is practicable, will prevent the discharge of untreated water from the SAWT facility, and stormwater discharged to Badgerys Creek will not increase. <p>The waste will be received under cover in the Receiving and Resource Recovery Buildings to avoid contact with stormwater and hence stop potential pathogen transfer via wind and/or water.</p>
Minimise impact from	In order to minimise the impact from greenhouse gas emissions, the following procedures will be used:

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
greenhouse gas emissions	<ul style="list-style-type: none"> The composting of waste under aerobic conditions produces less methane than the anaerobic decomposition of waste which occurs within a landfill. This greatly reduces the amount of methane being released to the atmosphere, and the magnitude of greenhouse gases produced overall; and Over the past ten years approximately 3500 new trees have been planted by SITA. SITA propose to plant a further 300 trees, further reducing the impact of any greenhouse gas emissions.
Minimise impact from noise during operation	<p>A Construction Noise Management Plan will be prepared within the CEMP.</p> <p>SITA would propose to install mitigation measures at Caretaker's Cottage after the appropriate negotiation with Council and/or affected landowner.</p> <p>SITA will commit to combined noise from the SAWT and the existing landfill not exceeding the noise limits approved for the landfill operations licence.</p> <p>SITA will undertake additional noise modelling when the facility is operational to verify the results of the predicted noise modelling. Should the predicted noise levels identified in the modelling not be capable of being achieved SITA will propose further modification to the design of the facility to further reduce the impact of noise.</p>
Minimise impact on visual amenity and landscape	<p>At the completion of construction of the SAWT facility, the riparian area will be further landscaped with native flora species endemic to the locality. SITA has previously undertaken substantial planting around the perimeter of its Elizabeth Drive Site.</p> <p>Location of new trees and native flora will be complementary with stormwater drainage design, water storage, water treatment, vehicle movements and LANDCARE advice. In addition to providing screening for buildings, the vegetation and trees will also act as a buffer to prevailing winds.</p> <p>Even though most of the machinery and equipment comprising the SAWT facility does not need to be housed for its operation, much of it has been enclosed to reduce other impacts such as noise and odour. Enclosing machinery reduces the visual impact of the SAWT Site.</p> <p>An appropriate range of building materials, colours and textures will be integrated into the current building designs and hard surfaces to take account of surrounding landscape colours, seasonal changes and variable light conditions</p>

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<p>Given the semi-rural location, SITA will take care to minimise the amount of light spill impacting on local fauna. Consideration will be given to use of directional lights that limit light spill. Mobile equipment will be fitted with headlights as opposed to permanent lighting masts, where feasible.</p>
Minimise the risk of fire hazard	<p>To minimise the risk of fire and fire hazards on and around the facility the following procedures and measures will be implemented:</p> <ul style="list-style-type: none"> • Inform staff when extreme fire danger conditions exist; • Monitoring of extreme fire danger conditions and fire bans; • Procedures written for the SAWT facility based on receiving and reporting of 'hot' loads; • Temperature monitoring and control in composting process, buildings and maturation stockpiles; • Smoking prohibited within the SAWT facility, composting areas and near equipment maintenance facilities and the use of designated smoking areas; • Strict controls over welding or other 'hot' works that may produce sparks; • Facility Evacuation Plan and procedures; • Reporting of incidents to the Emergency Co-ordinator; • Adequate provision of water supply in close proximity to the SAWT facility; • Fire fighting equipment installed within SAWT facility and staff training in its use; • A water cart will be available on site; • Contaminants that may be combustible will be stored in metal skip bins and removed before the bin is full; • Fuels and flammable solvents stored in appropriately constructed areas, including bunds and spill management equipment; • The use of appropriate fire-fighting design as required by the Building Code of Australia; • Diesel for equipment fuelling will be stored on site in a tank with associated fittings and pipelines designed to comply with Australian Standard AS1940:2004 (Storage and Handling of Flammable and Combustible Liquids.) The tank would be contained within a bunded area which would not be linked to any other part of the site. The bund would have the capacity of 110% of the tank capacity; • Maintenance of a buffer firebreak zone between built structures and natural vegetation surrounding the Elizabeth Drive site. Smoking prohibited within the SAWT facility, composting areas and near equipment maintenance facilities;

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<ul style="list-style-type: none"> • Strict controls on activities likely to generate sparks (e.g. welding); and • Adequate provision of water supply in close proximity to the SAWT facility. The SAWT facility is a net user of water and as such a supply of water will always be maintained.
Minimise potential health and safety impacts to workers and future users of the compost material	<ul style="list-style-type: none"> • The SAWT process will be maintained at a temperature to inactivate parasites and destroy most weed seeds. The temperature will be controlled to ensure that beneficial micro-organisms are not immobilised; • Temperature will also be controlled by the monitoring and control of moisture content within the composting materials. Moisture will be monitored and the addition rate of water/leachate will be controlled to maintain the required moisture content, which in turn will promote the composting process and maintain the required temperature; • Pathogens will be controlled in the SAWT process during active composting taking place within the composting tunnels; • Oxygen content will be constantly monitored during the active composting phase and airflow will be controlled by either/both the air intake or/and air extraction capacity for each tunnel; • The contents of each tunnel will be turned as required to ensure thorough mixing and hence composting of all material; • Mechanical waste handling equipment, such as front-end loaders, will be provided in the Receiving Building, the Resource Recovery Building, and for processes associated with the composting tunnels and the Maturation Pad. The loaders have air-conditioned cabins that provide filtered air to the driver; • Biosolids, if accepted at the facility, would be discharged directly into a sealed tank/pit to avoid human contact; • Provision of specifically-designed air-conditioned rooms that incorporate air-conditioned ducting systems to provide fresh air for workers in the Manual Recovery Room located within the Resource Recovery Building; • Conveyors designed to minimise heavy lifting and associated strain injuries or other movements that could result in workers falling into the waste will be installed; • The spread of disease by nuisance animals such as feral cats, rats and birds will be controlled by undertaking the entire SAWT process in fully-enclosed buildings and installing security fencing around the property; • Transportation of waste to the SAWT facility will occur in enclosed vehicles to avoid leakage and spillage onto roads and hence any potential health risks associated with the public coming in contact with material being delivered to the SAWT facility; • Appropriate authorisation from NSW Agriculture will be obtained in regard to any transfer of compost to <i>Phylloxera</i> exclusion zones; and

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
	<ul style="list-style-type: none"> Compost and recyclables exiting the SAWT facility will be transported in vehicles that comply with RTA requirements and will generally be in the type of vehicles usually associated with this form of transport. <p>A high level of plant hygiene is required to prevent incidents associated with all forms of bacteria and pathogens. Accordingly, a number of workplace, health and safety procedures will be added to the SITA Health and Safety Management System. The new procedures will be put in place to minimise risks to the workers from the material arriving at the proposed SAWT facility. These procedures will include:</p> <ul style="list-style-type: none"> Staff training prior to the commencement of work under workforce supervision; Use of gloves by all workers at all times to avoid transferring material and potentially pathogenic material from hand to mouth; Compulsory use of washing facilities prior to meal breaks and before leaving the SAWT Site; Use of facemasks as necessary by staff when working outside rooms with forced ventilation and air-conditioned mobile plant machinery cabins; Use of protective clothing such as overalls; Worker health checks and monitoring; Safe work procedures; and Hearing protection in certain areas of the SAWT facility, as required.
Pre-Operational Phase	
Environmental Outcome (commitment)	Measure (commitment)
The proposed SAWT facility will be operated in accordance with the proposal contained in the Environmental Assessment, June 2007	<ul style="list-style-type: none"> An Operational Environmental Management Plan will be prepared and implemented addressing the operational mitigation measures proposed in the Environmental Assessment, Statement of Commitments and the Conditions of Approval. This includes relevant parts of Plans made under the Statement of Commitments.

Operational Phase	
Environmental Outcome (commitment)	Measure (commitment)
The proposed SAWT facility will be operated in accordance with the proposal contained in the Environmental Assessment, June 2007	<ul style="list-style-type: none"> The SAWT facility will be operated in accordance with the OEMP.
Minimise impact from odour emissions	<ul style="list-style-type: none"> SITA will undertake odour monitoring when the facility becomes operational to verify the predicted odour emissions and should the subsequent modelling indicate odour emissions in excess of that predicted SITA will propose further mitigation measures.
Minimise impact on flora and fauna	<ul style="list-style-type: none"> To offset the removal of some severely degraded and isolated small pockets of Cumberland Woodland, a revegetation program will be initiated (in discussion with LANDCARE & DECC) along the north-west boundary. It is envisaged that the revegetation program will include species affiliated with Cumberland Woodland vegetation association. An active vegetation management program will be initiated. This will provide the buffering from the development to the riparian zone.
Organic outputs	<ul style="list-style-type: none"> SITA will ensure through its processes that all residual materials will be disposed to a facility licensed to accept them. Compost products will be processed according to Australian Standard AS4454 and the Biosolid guidelines.

KEMPS CREEK SAWT

Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
2.2	The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) statement of commitments; and (c) Modification application 06_0185 MOD 1; (d) Modification application 06_0185 MOD 3; and (e) conditions of this approval.		See below.
2.3	If there is any inconsistency between the above, then the conditions of this consent shall prevail to the extent of the inconsistency.	N/A	
2.4	The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	Compliant	All the requirements from the IEA audit which was conducted in 2018 were complied with. All the actions were completed and submitted to the Department.
2.5	Waste operations may only take place for 20 years from the commencement of operations on site.	Compliant	Currently within 20 years of commencement
2.6	With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.	Compliant	Management plans are updated and submitted as versions are finalised. During the reporting period the Operational Environmental Management Plan was updated.
2.6a	Within 3 months of any modification approval, the Proponent must prepare and implement a revised version of any relevant management plan or monitoring program to the satisfaction of the Director-General.	N/A	No modifications have been made within the reporting period
2.7	The Proponent shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	N/A	No new structures were built, nor significant additions made during the reporting period
2.8	The Proponent shall ensure that all demolition work is carried out in accordance with <i>AS 2601- 2001: The Demolition of Structures</i> , or its latest version.	N/A	No demolition works occurred during the reporting period
2.9	The Proponent shall ensure that the plant and equipment used on site, or in connection with the project, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Compliant	Plant and equipment used on site was maintained in proper and efficient condition and operated in effective manner. Suez have maintenance staff on site for any breakdowns and repairs.
2.10	The Proponent shall ensure that all licences, permits and approval/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approval/consents.	Compliant	DA approval and EPL obtained for the operation of the facility.
Special Environmental Conditions			
Waste Management			
3.1	The Proponent shall not receive: more than: <ul style="list-style-type: none"> 120,000 tonnes of mixed waste and garden waste a year on site; and 14,400 tonnes of biosolids from sewage treatment plants; and waste on site that is: contaminated by chemicals and/or pathogens that would not be rendered harmless by operations on site, or that may constitute a health or environmental risk, including clinical and related waste and diseased carcasses; and classified as hazardous waste or industrial wastes under the <i>Protection of the Environment (Operations) Act 1997</i>. 	Compliant	The Site received the following waste quantities: <ul style="list-style-type: none"> - Non-Putrescible & Putrescible = 111,453.09 Tonnes - Bio-solids = 11,650.96 Tonnes
3.2	The Proponent shall: (a) implement suitable procedures to: <ul style="list-style-type: none"> ensure that the site does not accept wastes that are prohibited; and screen incoming waste loads; and (b) ensure that: <ul style="list-style-type: none"> all waste sludge's and wastes that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and staff receive adequate training in order to be able to recognise and handle any hazardous or other unapproved waste. 	Compliant	Suez has implemented Mandalay software system. Mandalay captures all weighbridge transactions and stores vehicle and client account data. It captures & records quantity, type, source & destination of waste entering & leaving site. SUEZ's Product Quality Manual outlines contingency measures to be implemented in the event that levels of foreign matter or contaminants in the compost output exceed acceptable levels. The weighbridge are manned and staff is adequately trained in the use of the software and recording data.

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Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
3.3	<p>Except for the following, the Proponent shall dispose of all outputs produced on site to suitably licensed facility:</p> <p>(a) recyclables extracted and delivered off-site for resource recovery purposes; and</p> <p>(b) compost output products approved for use under the POEO Act and Regulations; or</p> <p>(c) compost output products for approved public compost applications off SITA's land that:</p> <ul style="list-style-type: none"> <input type="checkbox"/> have been composted in accordance with Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches; <input type="checkbox"/> comply with the limits for physical contaminants set out in Table 3.1 of Australian Standard AS 4454-2003 Composts, Soil Conditioners and Mulches; and <input type="checkbox"/> comply with the chemical acceptance concentration thresholds for Restricted Use (Grade A) in the NSW Environmental Guidelines: Use and Disposal of <i>Biosolid Products</i> (1997); or <p>(d) compost output products for land rehabilitation, namely mine site rehabilitation and landfill site rehabilitation, that:</p> <ul style="list-style-type: none"> <input type="checkbox"/> have been composted in accordance with Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches; <input type="checkbox"/> comply with the limits for physical contaminants set out in Table 3.1 of Australian Standard AS 4454-2003 Composts, Soil Conditioners and Mulches; and <input type="checkbox"/> comply with the chemical acceptance concentration thresholds for Restricted Use (Grade B and C) in the NSW Environmental Guidelines: Use and Disposal of <i>Biosolid Products</i> (1997). 	Compliant	<p>MWOO produced at the Site was produced in accordance with AS 4454-2003. Note that the Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014, The organic outputs derived from mixed waste order 2014 was revoked in October 2018 which has affected the application of output.</p> <p>Prior to the revocation MWOO was applied to land for mine rehabilitation purposes, however is now being sent to landfill for use as daily cover in agreement with the NSW EPA.</p>
3.4	<p>Within 3 years of commissioning the plant on site, or as directed by the Director-General, the Proponent shall:</p> <p>(a) review the criteria in condition 3(c) and 3(d) above in consultation with the EPA with a view to moving to approved criteria under the POEO Act and Regulations or establishing criteria that are specifically appropriate for an identified intended use; and</p> <p>(b) Comply with any revised criteria set under the POEO Act and Regulations or by the Director-General.</p>	Compliant	See above response to condition 3.3
3.5	<p>The Proponent shall prepare and implement a Waste Monitoring Program for the project to the satisfaction of the Director-General, prior to the commencement of operation. This program must:</p> <p>(a) be prepared in consultation with EPA by a suitably qualified and experienced expert; and</p> <ul style="list-style-type: none"> (b) include a suitable program to monitor the: <ul style="list-style-type: none"> quantity, type and source of waste received on site; quantity, type and quality of the outputs produced on site; and <p>(c) outline contingency measures that would be implemented in the event that levels of foreign matter or contaminants in the compost output exceed acceptable levels.</p>	Compliant	<p>According to the requirement of the Development Consent Schedule 3 Condition 5, Suez has submitted the Environmental Management Plan on 29 April 2009 which was approved by the Department on 30 April 2019. The EMP was updated on 31 July 2020. The section 4.6 of the EMP contains a detailed Waste Monitoring Program. The site's Product Quality Manual is compiled to meet the criteria of the program and the legislative requirement of the compost recovery order. Please find attached the OEMP and the correspondence regarding approval from the Department.</p>
Odour			
3.6	The Proponent shall ensure that the project complies with Section 129 of the Protection of the Environment Operations Act, 1997.	Compliant	<p>Suez have taken action to improve odour management at the Site (re-instating damaged tunnel doors, removal of FGO streams and updating the odour management plan). Improvement of odour management at the Site resulted in nil odour complaints, nil penalty notices and overall reduced frequency and strength of offsite odours.</p>
3.7	<p>The project must be built and operated to minimise odours. This must include:</p> <p>(a) all composting must be undertaken within enclosed tunnels;</p> <p>(b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material;</p> <p>(c) all exhaust air from the composting building and from the composting tunnels must pass through the biofilters;</p> <p>(d) the biofilters are to be of a deep bed design and must have vented roofs; and</p> <p>(e) a system of two leachate ponds must be used on site, to minimise the surface area of odorous leachate.</p>	Non-Compliant	<p>Composting was undertaken without tunnel doors in place during maintenance works in July-August 2019. The NSW EPA issued a show cause notice for this event. The works were being undertaken at the direction of the NSW EPA. According to Suez the facility was operated as per the required design once the upgrade was complete. MWOO was processed in accordance with relevant standards and guidelines.</p>
3.8	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.	Compliant	A meteorological station is in place at the Site

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Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
Dust			
3.9	The facility is to be maintained in a condition which minimises and prevents the emission of dust from the site.	Compliant	The processing facility is maintained under negative pressure at all times and maintained to ensure there is no build-up of dust generating material. The following control measures to limit potential for dust generation stated in the Section 4.9.1 of EMP prepared by SUEZ facility satisfy the conditions to manage dust generation: <ul style="list-style-type: none"> - Compost stockpiles on the outdoor maturation pads are connected with moisture; - All materials are received /delivered in enclosed compactor body vehicles or covered trucks; - Regular cleaning up material that may act as dust source and minimizing heavy vehicle movement.
Greenhouse Gas			
3.10	The Proponent must ensure that all composting is undertaken in accordance with Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches, Appendix N, Best practice guidelines for Composting Systems, or other practices approved by the EPA.	Compliant	All composting is undertaken in accordance with Australian Standard AS 4454-2003
3.11	The Proponent is required to prepare a feasibility report for the Director-General's approval within 5 years of this approval, outlining options to capture and use greenhouse gas in the generation of electricity. The report must identify which options could be reasonably and feasibly implemented.	Compliant	Suez submitted to the Department, The Expansion of the Advanced Waste Treatment Facility, Kemps Creek Resource Recovery Precinct- Greenhouse Gas Assessment Report which was completed in 16 January 2013 by AECOM. The report mentions that "The facility includes composting of the organic fraction of the waste in a climate controlled and aerated environment, which avoids the generation of methane and nitrous oxides." Hence the capture and use of greenhouse gas in generation of electricity is not possible which makes the condition irrelevant to the operations of the facility. The report provides a complete assessment of the green house gases produced during construction and operation of the facility. Suez will be applying for a modification request to remove this condition from the DA.
Noise			
3.12	The Proponent shall comply with the operating hours as follows: <ul style="list-style-type: none"> • Construction Monday Friday 7am – 6pm Saturday 7am – 4pm Sunday & Public Holidays Nil • Waste Receipt, outdoor operations and product dispatch Monday Friday 6am – 6pm Saturday 8am – 5pm Sunday 8am – 4pm • Outdoor operations Monday – Friday 6pm – 10pm • Indoor Operations Monday – Saturday 7am – 11pm • Emergency Monday – Sunday Anytime 	Compliant	Permitted Operating Hours have been maintained. There was no construction or emergency work being carried out during the reporting period.

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Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
3.13	The Proponent shall ensure that noise from operation of the project does not exceed the noise limits at McGarvie Smith Farm as follows: Day – 42 LAeq (15 minute) dB(A) Evening – 39 LAeq (15 minute) dB(A) Night – 35 LAeq (15 minute)dB(A) and; Morning Shoulder – 39 LAeq (15 minute) 1745 Elizabeth Drive Day – 41 LAeq (15 minute) dB(A) Evening – 40 LAeq (15 minute) dB(A) Night – 37 LAeq (15 minute) dB(A) and 47 LAmx Morning Shoulder – 40 LAeq(15 minute) 1669A Elizabeth Drive Day – 38 LAeq (15 minute) dB(A) Evening – 38 LAeq (15 minute) dB(A) Night – 35 LAeq (15 minute) dB(A) Morning Shoulder – 38 LAeq (15 minute) Caretakers Residence 1669A Elizabeth Drive Day – 42 LAeq (15 minute) dB(A) Evening – 42 LAeq (15 minute) dB(A) Night – 38 LAeq (15 minute) dB(A) and 53 LAmx Morning Shoulder – 42 LAeq(15 minute)	Compliant	Most recent noise modelling exercise was undertaken by Hibbs and Associates in July 2018, which indicated that noise levels from the Site should generally be in compliance with the noise limits under the conditions modelled. Refer to Noise Monitoring Report - Appendix I. The current EMP requires noise monitoring to be conducted every 5 years.
3.14	The Proponent shall prepare and implement a Construction Noise Management Protocol for the project to the satisfaction of the Director-General. The plan shall be submitted to the Director- General prior to commencing demolition and construction, and must: a) identify specific activities to be carried out, the noise generation from these activities and timetabling of the activities; b) identify appropriate construction noise limits; c) identify all reasonable and feasible mitigation measures that would be implemented to minimise noise; d) describe monitoring methods and program to ensure noise levels are limited; e) include procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity, and procedures for managing complaints; and f) identify site contact person to manage and follow up complaints.	N/A	Construction at the Site was completed in 2009. No construction or demolition occurred at the Site during the reporting period.
3.15	Prior to the commencement of operation, the Proponent shall install noise mitigation at the Caretakers Residence for 1669A Elizabeth Drive, as agreed by the owner of the property. The Proponent shall notify the Director General once installation of the noise mitigation is completed.	Compliant	No noise exceedances or complaints have been recorded at the residence and therefore no mitigation is required.
3.16	The Proponent shall prepare and implement a Noise Monitoring Program for the project, to the satisfaction of the EPA and the Director-General. The Noise Monitoring Program shall be submitted to the Director-General prior to commencing operation, and must include a noise monitoring protocol for evaluating compliance with the project noise limits outlined in condition number 3.13.	Compliant	The Sites Environmental Management Plan includes the requirements for the Noise Monitoring Program (see Appendix J). Not that the program was not undertaken this reporting period (see Condition 3.13).
Soil and Water			
3.17	Except as may be expressly provided in an EPL for the project, the Proponent shall comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> .	Non-Compliant	Exceedances of discharge limits were also recorded during the reporting period, however the exceedance was during a significant rain event and its unlikely that any significant offsite impacts occurred. Multiple leachate containment incidents occurred during this reporting period (as described herein), the NSW EPA reviewed the events and did not take action based on an offence relating to pollution of water being committed.

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Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
3.18	Outdoor areas where compost products or organic outputs are stored must have a leachate barrier system in the form of clay or modified soil liner (or equivalent) consisting of at least 600mm of recompacted clay with an in-situ permeability (K) of less than 10 ⁻⁷ m/s.	Compliant	Further to section 4.8.3 of the EMP, a leachate barrier has been designed and constructed to meet the requirements.
3.19	The Proponent shall ensure that all above ground tanks and vats, including those used for treating or processing wastewater and leachate and diesel storage, must be surrounded by a bund with a capacity to contain 110% of the tanks within the bund. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or EPA's Environmental Protection Manual <i>Technical Bulletin Bunding and Spill Management</i> .	Compliant	The diesel tank on site was surrounded by a bund with a capacity to hold 110% volume of the tank. Leachate dams were provided with impermeable geotextile layer and once filled to full design capacity, the discharges are routed to overflow dam.
3.20	The Proponent shall prepare and implement a Soil, Water and Leachate Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General for approval prior to carrying out any development on site; (b) be prepared by a suitably qualified and experienced expert; (c) be prepared in consultation with the EPA, NOW and Council; and (d) include: <ul style="list-style-type: none"> a site water balance; an erosion and sediment control plan; a stormwater management scheme; a surface water, groundwater and leachate monitoring program; and a surface water, groundwater and leachate response plan. 	Compliant	The Soil, Water and Leachate Management Plan is a part of the Environmental Management Plan which was submitted to the Department on 29 April 2009 which was approved by the Department on 30 April 2019.
3.21	The site water balance must: (a) identify the source of all water collected or stored on the site, including rainfall and stormwater; and (b) include details of all water use on site and any discharges.	Compliant	The Site water balance flow chart was updated in 2019 and includes all water used, collected or stored on the site including potable water, rainfall and stormwater and leachate.
3.22	The erosion and sediment control plan must: (a) be consistent with the requirements in the latest version of <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom); (b) identify the activities on site that could cause soil erosion and generate sediment; and (c) describe what measures would be implemented to: <ul style="list-style-type: none"> minimise soil erosion and the transport of sediment to downstream waters, including the location, function and capacity of any erosion and sediment control structures; and maintain these structures over time. 	Compliant	An Erosion and sediment control plan is included in the updated EMP.
3.23	The stormwater management scheme must: (a) be consistent with the guidance in the latest version of <i>Managing Urban Stormwater: Council Handbook</i> (EPA); and (b) have sufficient capacity to cater for the 90 th percentile 5 day rainfall event.	Compliant	The EMP includes stormwater management
3.24	The surface water, groundwater, and leachate monitoring program must: (a) be generally consistent with the guidance in EPA's <i>Environmental Guidelines for Composting & Related Organics Processing Facilities</i> ; and (b) include: <ul style="list-style-type: none"> baseline data; details of the proposed monitoring network; and the parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan (see below). 	Compliant	The Sites Environmental Management Plan includes the requirements for the monitoring of surface water and leachate (see Appendix J). Groundwater is monitored in the vicinity of the Site under the adjacent Suez landfills monitoring program.
3.25	The surface water, groundwater and leachate response plan must: (a) include a protocol for the investigation, notification and mitigation of any exceedances of the respective trigger levels; and (b) describe the array of measures that could be implemented to respond to any surface or groundwater contamination that may be caused by the development.	Compliant	Suez monitors surface water and leachate and assesses data against relevant trigger levels as per the EMP and EPL. Groundwater is monitored and reported by the Suez through the adjacent landfill approvals. The data is reported to the EPA through the EPL Annual Return and AEMR. As part of this reporting process, corrective actions are formulated and reported to the relevant authorities.

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Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
Flora and Fauna			
3.26	The area between the internal road along the western boundary and Badgerys Creek, is to be protected and rehabilitated as a riparian corridor.	Non-Compliant	Management of the corridor is required annually under the Vegetation Management Plan (Maunsell, 2008), Appendix J. Management of the riparian zone was not undertaken this reporting period. Suez most recently engaged bush regeneration contractor The Bush Doctor on 25 May 2018 to assess, manage and rehabilitate the riparian corridor.
3.27	The Proponent shall prepare a Vegetation Management Plan for the site, in consultation with NOW. This Plan shall be submitted and approved by the Director-General, prior to the commencement of construction. The Vegetation Management Plan shall: (a) be prepared in accordance to NOW's <i>How to Prepare a Vegetation Management Plan Guideline</i> ; (b) include a detailed plan to protect and rehabilitate the Badgerys Creek riparian corridor onsite; (c) provide details of the on-site revegetation program to offset clearing of 0.81 hectares of Cumberland Plain Woodland; and (a) outline the weed management program to be implemented on-site.	Compliant	Refer to Vegetation Management Plan (Maunsell, 2008), Appendix J. Although the plan is in place, the actions required under the VMP were not completed (refer to Condition 3.26).
Transport			
3.28	The Proponent shall monitor the performance of the intersection of Elizabeth Drive and the landfill access road within two years of the commencement of operations, or as otherwise required by the Director-General. In the event that the performance of the intersection is found to be at LOS D or worse as a result of traffic from the landfill and AWT, the Proponent shall implement mitigation measures, as recommended by the RMS.	Compliant	TMP for the Site was prepared and issued on 31 Jan 2018.
Visual Amenity			
3.29	The Proponent shall ensure that all external lighting associated with the development: (a) does not create a nuisance to surrounding properties or roadways; and (b) complies with AS 4282 (INT) 1995 – <i>Control of Obtrusive Effects of Outdoor Lighting</i> .	Compliant	No complaints have been received to SUEZ Kemps Creek on nuisance to surrounding properties or roadways. SUEZ has adopted the AS 4282 (INT) 1995 form for the assessment of Obtrusive Effects of Outdoor lighting.
3.30	Upon the cessation of waste operations, the Proponent shall decommission the project and rehabilitate the site to the satisfaction of the Director-General.	N/A	Waste operations still occurring
3.31	31. The Proponent shall prepare and implement a Rehabilitation and Closure Plan for the project to the satisfaction of the Director-General. This plan must be: (a) be prepared in consultation with EPA, and Council by a suitably qualified and experienced expert whose appointment has been approved by the Director-General; (b) be submitted to the Director-General for approval no more than one year after the sixth independent environmental audit of the project (see schedule 4), or as directed otherwise by the Director-General; (c) define the objectives and criteria for rehabilitation and closure; (d) investigate options for the future use of the site; (e) describe the measures that would be implemented to achieve the specified objectives and criteria for rehabilitation and closure; (f) calculate the cost of implementing these measures; and (g) describe how the performance of these measures would be monitored over time.	N/A	No plans are in place to close the facility. When the closure of the site is scheduled closure plan will be prepared.
Environmental Management, Reporting and Auditing			
Environmental Management Plan			
4.1	1. The Proponent shall prepare and implement an Environmental Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with the EPA by a suitably qualified and experienced expert; (b) be submitted to the Director-General for approval prior to commencement of operations; (c) describe in detail the management measures that would be implemented to address: the relevant matters referred to in Section 4 and Appendix B of the EPA's <i>Environmental Guidelines for Composting & Related Organics Processing Facilities</i> ; and the conditions of this approval; (d) include a copy of: • the management plans and monitoring programs required in this approval; • a quality assurance program for the design and installation of the leachate management system has been developed in accordance with <i>Australian Standard AS 3905.2</i> ; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project;	Compliant	Refer to Environmental Management Plan, Appendix J

KEMPS CREEK SAWT

Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
	<ul style="list-style-type: none"> receive, handle, respond to, and record complaints; resolve any disputes that may arise during the course of the project; and respond to emergencies; and (f) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project. 		
Reporting			
4.2	Prior to carrying out any development on site, and then operations, the Proponent shall certify in writing to the Director-General that it has complied with all the relevant conditions of this approval.	N/A	No development occurred at the Site during the reporting period.
4.3	Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval, or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and EPA of the exceedance/incident.	Non-Compliant	Leachate overflow events occurred on 10 February and 16 July 2020. NSW EPA was notified with 24 hrs of February 2020 event and was onsite to observe July 2020 event. At the time of the overflow events the Department was not notified, however this has now been rectified with the Department being notified on 4 November (documentation provided in Appendix F).
4.4	Within 6 days of notifying the Department and EPA, the Proponent shall provide a written report to the Department and EPA that: <ul style="list-style-type: none"> (a) describes the date, time, and nature of the incident; (b) identifies the cause, or likely cause, of the incident; and (c) describes what action has been taken to date address the incident, and what actions are proposed to be implemented in the future to either address the consequences of the incident or avoid a recurrence of the incident. 	Compliant	All follow up reporting was undertaken, with documentation provided in Appendix F.
4.5	Every year from the date of this approval, unless the Director-General agrees otherwise, the Proponent shall submit an AEMR to the Director-General and relevant agencies. The AEMR shall: <ul style="list-style-type: none"> (a) identify the standards and performance measures that apply to the development; (b) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; (c) include a summary of the monitoring results for the development during the past year; (d) include an analysis of these monitoring results against the relevant: <ul style="list-style-type: none"> impact assessment criteria; monitoring results from previous years; and predictions in the EA; (e) identify any trends in the monitoring results over the life of the development; (f) identify any non-compliance during the previous year; and (g) describe what actions were, or are being taken to ensure compliance. 	Compliant	This AEMR satisfies this condition
4.6	The Proponent is to implement continuous improvement in regard to odour emission management. As part of this, the Proponent is to submit a report annually to the Department and the EPA, unless otherwise agreed by the Director-General, outlining new developments in the field of odour control and management relevant to the operation, and detailing practices that have been implemented on the site during the previous year, to reduce odour emissions. The report must identify which practices can be implemented in a cost effective manner and justify why the remainder are not required.	Compliant	Suez reports on odour management annually through the AEMR. The AEMR includes relevant developments at the Site during the past year regarding the improvement of environmental outcomes, including odour management. Suez undergoes constant review of odour management options both at the Kemps Ck SAWT through updates to the Odour Management Plan and across its broader portfolio of sites.
Independent Environmental Audit			
4.7	Within 2 years of the commencement of operations, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must: <ul style="list-style-type: none"> (a) be carried out by a suitably qualified, experienced and independent audit team containing a waste management specialist, whose appointment has been endorsed by the Director-General; (b) include consultation with EPA; (c) assess the environmental performance of the project, and its effects on the surrounding environment; (d) determine whether the project is complying with the relevant standards, performance measures and statutory requirements; (e) review the adequacy of the Environmental Management Plan for the project, compliance with the requirements of this approval, and any other licences and approvals; and, if necessary, (f) recommend measures or actions to improve the environmental performance of the project, and/or any plan/program required under this approval. 	Compliant	Refer to Environmental Compliance Audit Suez Advanced Waste Treatment (SAWT) Advanced Resource Recovery Technology ("ARRT") Facility (Hibbs, 2018)

KEMPS CREEK SAWT

Condition No.	Condition / Requirement	Compliance Status	Comment
General Administrative Conditions			
4.8	Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, with a response to any recommendations contained in the audit report.	Compliant	Refer to SUEZ response to recommendations, Appendix D
4.9	Within 3 months of submitting a copy of the audit report to the Director-General, the Proponent shall review and if necessary revise the plans/programs required under this approval to the satisfaction of the Director-General.	Compliant	For the last IEA, all the actions to the recommendations are completed and EMP and OMP have been updated and sent to the DPE
Access to Information			
4.10	Within 1 month of the approval of any plan or program required under this consent, or the completion of any independent audit or AEMR required under this approval, the Proponent shall: (a) ensure that a copy of the relevant documents is made publicly available on the Proponent's website; and (b) provide a copy of the relevant document/s to any interested party upon request.	Compliant	SAWT has all its documents uploaded on SUEZ website for public availability. https://www.suez.com.au/en-au/who-we-are/suez-in-australia-and-new-zealand/environmental-reporting-australia/kemps-creek-sawt

APPENDIX C EPL



Environment Protection Licence

Licence - 12889

Licence Details	
Number:	12889
Anniversary Date:	29-July
Licensee	
SUEZ RECYCLING & RECOVERY PTY LTD	
1725 ELIZABETH DRIVE	
KEMPS CREEK NSW 2171	
Premises	
SITA ADVANCED WASTE TREATMENT FACILITY	
1725 ELIZABETH DRIVE	
KEMPS CREEK NSW 2178	
Scheduled Activity	
Composting	
Resource recovery	
Waste storage	
Fee Based Activity	Scale
Composting	> 50000 T annual capacity to receive organics
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored
Region	
Waste & Resource Recovery	
59-61 Goulburn Street	
SYDNEY NSW 2000	
Phone: (02) 9995 5000	
Fax: (02) 9995 5999	
PO Box A290	
SYDNEY SOUTH NSW 1232	

Environment Protection Licence

Licence - 12889

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Licence - 12889



Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

SUEZ RECYCLING & RECOVERY PTY LTD
1725 ELIZABETH DRIVE
KEMPS CREEK NSW 2171

subject to the conditions which follow.

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Licence - 12889

1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Composting	Composting	> 50000 T annual capacity to receive organics
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
SITA ADVANCED WASTE TREATMENT FACILITY
1725 ELIZABETH DRIVE
KEMPS CREEK
NSW 2178
PART LOT 740 DP 810111
PART LOT 740 DP 810111 - HATCHED IN RED ON "PLAN SHOWING THE BOUNDARIES OF THE S.A.W.T. AREA OVER PART OF LOT 740 DP 810111 SITA - ELIZABETH DR KEMPS CREEK" DATED 14 MAY 2014

- A2.2 Monitoring points, dams, outdoor pads and buildings are shown in "SUEZ - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), Last Amended 16/06/2017" prepared by the licensee.

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

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In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Stormwater	Stormwater	Stormwater discharge from clean pond to existing sedimentation dam on NW area of the SITA Elizabeth Drive Landfill as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (N0-001), last amended 16/06/2017."
2	Leachate Monitoring		Upper Leachate Dam (also known as Leachate Pond A) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (N0-001), last amended 16/06/2017."
3	Leachate Monitoring		Lower Leachate Dam (also known as Leachate Pond B) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (N0-001), last amended 16/06/2017."

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5	Stormwater monitoring	Stormwater Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (N0-001), last amended 16/06/2017."
6	Leachate Monitoring	Final Product Leachate Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (N0-001), last amended 16/06/2017."

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

- L2.1 For each monitoring/discharge point or utilisation area specified in the table\>s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
- L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\>s.
- L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Ammonia	milligrams per litre				0.9
pH	pH				6.5-8.5

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Total suspended solids	milligrams per litre	50
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L3 Waste

- L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General solid waste (putrescible)			Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible)
NA	General solid waste (non-putrescible)			Must not receive more than 120,000t per year of general solid waste (non-putrescible and putrescible)
NA	Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the biosolids guidelines			Must not receive more than 14,400t per year

- L3.2 Only material that complies with *"The organic outputs derived from mixed waste order 2014"* can be stored on the final product pad shown in the *"Plan showing the location of the new final production pad over Lot 740 DP 810111 - 1725 Elizabeth Drive Kemps Creek"*, prepared by Matthew Freeburn Surveyors and dated 8 May 2014.
- L3.3 The authorised amount of waste permitted on the premises cannot exceed 32,100 tonnes at any one time.

L4 Noise limits

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- L4.1 Noise generated from the premises must not exceed the noise limits presented in the table(s) below. The noise limits in the table(s) represent the noise contribution from the premises.

Location	Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)	Night LAmax
McGarvie Smith Farm	42	39	35	N/A
1745 Elizabeth Drive	41	40	37	47
1669A Elizabeth Drive	38	38	35	N/A
Caretakers Residence 1669A Elizabeth Drive	42	42	38	53

Morning Shoulder Period

Location	Morning Shoulder Period LAeq (15 minute)
McGarvie Smith Farm	39
1745 Elizabeth Drive	40
1669A Elizabeth Drive	38
Caretakers Residence 1669A Elizabeth Drive	42

- Note:
- Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.
 - Morning Shoulder is defined as 6am to 7am Monday to Friday.
 - Noise from the premises is to be measured at the most effected point or within the residential boundary or at the most affected point within 30 metres of the dwelling (rural situations) where the dwelling is more than 30 metres from the boundary to determine compliance with LAeq(15 minute noise level).
 - The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
 - The noise limits identified above apply under the following metrological conditions:
 - (i) Wind speed up to 3m/s at 10 metres above the ground level; or
 - (ii) Temperature inversion conditions

L5 Hours of operation

- L5.1 The licensee must comply with the operating hours in the Table below:

Activity	Day	Hours Activity Permitted or Required
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Waste Receipt, outdoor operations & product dispatch	Monday - Friday	6am-6pm
	Saturday	8am-5pm
	Sunday	8am-4pm
Outdoor operations	Monday - Friday	6pm-10pm*
	Public Holidays	7am-4pm
Indoor operations	Monday-Saturday	7am-11pm
In case of emergency	Monday-Sunday	Anytime
Completely cover waste derived organic material, stored outside, with impervious sheeting	Everyday	4.30pm-8am
Turning, processing and refining of waste derived organic material stored outside	Monday - Saturday	8am-4.30pm
	Sunday	8am - 4pm
	Public Holidays	8am - 4pm

Note: * Outdoor operations between the hours of 6pm-10pm Monday to Friday must be limited to 10 trips by a 6-tonne truck (that is 20 movements) and 12 trips by a front end loader (that is 24 movements).

L6 Potentially offensive odour

L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

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O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Emergency response

- O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Processes and management

- O5.1 The licensee must ensure that any general solid waste (non-putrescible) and/or general solid waste (putrescible) received for processing, storage or resource recovery at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.

O5.2 Odour Management

The licensee must ensure the facility is built and operated to minimise odours.

This must include:

- a) all composting must be undertaken within enclosed tunnels;
- b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material (parameters to be agreed with the EPA);
- c) all exhaust air from the Receival Hall, Composting Tunnels and Drying Tunnels (also known as the Biocell Building) must pass through biofilters;
- d) the biofilters attached to the Receival Hall and Composting Tunnels must be of a deep bed design and have vented roofs;
- e) a system of three leachate ponds must be used on site, to minimise the surface area of odorous leachate.
- f) all composting is undertaken in accordance with "The organic outputs derived from mixed waste order 2014."
- g) All emissions generated by the pre-refinery trommel must be diverted back into the SAWT Receival Hall and pass through the biofilters.

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- O5.3 Waste derived organic material must not be stored on the unsealed area. The "unsealed area" is defined as the area adjacent to the eastern concrete maturation pad and labelled "Re-graded Area" in "Appendix 1A: Maturation Pad Upgrades and Biocell" of Project Approval (consolidated version) determined by the NSW Government Department of Planning on 24 January 2014 (application number _06-0185) (the "Planning Approval").
- O5.4 Organic material derived from Municipal Solid Waste ("MSW") must not be composted or matured outside.
- O5.5 A maximum of 8 complete windrows and 2 partially formed windrows containing maturing organic material produced from Food and Garden Organics ("FGO") is permitted to be stored outside at any one time.
- O5.6 All waste derived organic material stored outside must be placed:
 - a) in stockpiles no greater than 3 metres high; or
 - b) in windrows being no larger than 5.2 metres in width, 60 metres in length and 3 metres high.
 Note: 3 metre high stockpiles are permitted on the Upper Pad only.
- O5.7 3 (three) metre height stockpile markers must be maintained on the municipal solid waste ("MSW") maturation pad, the food and organics Waste ("FGO") maturation pad, and the final product pad.
- O5.8 The Drying Tunnels (also known as the Biocell Building) located on the Upper Pad must be enclosed except during loading and unloading and all emissions treated through the attached biofilter.

O6 Waste management

- O6.1 The licensee must implement procedures to detect any waste at the premises which not permitted by this licence to be received at the premises ("non-conforming wastes"). Non-conforming wastes must be removed from the premises as soon as possible and taken to another premises which can lawfully accept such wastes.
- O6.2 The licensee must have a leachate barrier system that is in the form of clay or modified soil liner (or equivalent) consisting of at least 600mm of compacted clay with an in-situ permeability (K) of less than 10⁻⁷ m/s for outdoor areas where compost products or organic outputs are stored.
- O6.3 The total outdoor surface area used for maturation, processing and storage of waste derived organic material must be less than 10,000m².

O7 Other operating conditions

- O7.1 The licensee shall ensure that all above ground tanks and vats, including those treating, processing and storing waste water, leachate and diesel must be surrounded by a bund with a capacity to contain 110% of the tanks within the bund. All bunding must be designed and installed in accordance with the requirements of all relevant Australian Standards and/or the EPA's "Environment Protection Manual Technical Bulletin Bunding and Spill Management".
- O7.2 The licensee shall ensure leachate levels in both the Liverpool line leachate dam and the leachate overflow dam are maintained below the design capacity as indicated on the freeboard markers.

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- O7.3 The licensee shall maintain the freeboard markers such that they indicate the volume at which leachate levels have reached design capacity within the Liverpool line leachate dam and the leachate overflow dam.
- O7.4 All Waste Receival Hall doors must be closed except when a vehicle or person is passing through the doorway.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:
- M2.2 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Biochemical oxygen demand	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample

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pH	pH	Special Frequency 1	Grab sample
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

POINT 2,3,6

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Yearly	Grab sample
Biochemical oxygen demand	milligrams per litre	Yearly	Grab sample
Chemical oxygen demand	milligrams per litre	Yearly	Grab sample
pH	pH	Yearly	Grab sample
Total suspended solids	milligrams per litre	Yearly	Grab sample

M2.3 For the purposes of the table(s) above Special Frequency 1 means the collection of samples annually and four times per year during discharge.

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

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M5 Telephone complaints line

- M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M5.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.
- R1.3 Where this licence is transferred from the licensee to a new licensee:
- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

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- R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').
- R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.
- R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
- a) the licence holder; or
 - b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

- R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee

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is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;

e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and

g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Julian Thompson

Environment Protection Authority

(By Delegation)

Date of this edition: 29-July-2008

Environment Protection Licence

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End Notes

- 1 Licence varied by notice 1099620, issued on 08-May-2009, which came into effect on 08-May-2009.
- 2 Licence varied by notice 1114442, issued on 10-Jun-2010, which came into effect on 10-Jun-2010.
- 3 Licence varied by Correction to EPA Region data record., issued on 28-Jun-2010, which came into effect on 28-Jun-2010.
- 4 Licence varied by correction to DECCW Region data record, issued on 07-Jul-2010, which came into effect on 07-Jul-2010.
- 5 Licence varied by notice 1120688, issued on 21-Oct-2010, which came into effect on 21-Oct-2010.
- 6 Licence varied by notice 1506913 issued on 27-Aug-2012
- 7 Licence varied by notice 1511557 issued on 04-Feb-2013
- 8 Licence varied by notice 1512996 issued on 20-Nov-2013
- 9 Licence varied by notice 1524373 issued on 03-Sep-2014
- 10 Licence varied by notice 1524790 issued on 11-Sep-2014
- 11 Licence varied by notice 1524790 issued on 11-Sep-2014
- 12 Licence varied by notice 1525953 issued on 28-Nov-2014
- 13 Licence varied by notice 1529767 issued on 14-Aug-2015
- 14 Licence varied by notice 1533348 issued on 07-Sep-2015
- 15 Licence varied by notice 1534998 issued on 20-Nov-2015
- 16 Licence varied by notice 1551698 issued on 07-Jul-2017
- 17 Licence varied by notice 1572016 issued on 28-May-2019

COMPLIANCE EVALUATION FORM

Site: Kemps Creek SAWT ARRT commencement Date: 2-Jul-09

Licence/Legislation Name & No: EPL 12889 Expiry Date: Perpetual

Completed by:

Date:

Period of Evaluation: 29/07/2019 - 28/07/2020

Completed by:		Date:	20/07/2019	20/07/2020												
Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required													
1	Administrative conditions															
A1.1	<p>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</p> <table><tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr><tr><td>Composting</td><td>Composting</td><td>> 50000 T annual capacity to receive organics</td></tr><tr><td>Resource recovery</td><td>Recovery of general waste</td><td>Any general waste recovered</td></tr><tr><td>Waste storage</td><td>Waste storage - other types of waste</td><td>Any other types of waste stored</td></tr></table>	Scheduled Activity	Fee Based Activity	Scale	Composting	Composting	> 50000 T annual capacity to receive organics	Resource recovery	Recovery of general waste	Any general waste recovered	Waste storage	Waste storage - other types of waste	Any other types of waste stored	COMPLIANT	Activities carried out on site is in line with schedule activities listed in the clause.	
Scheduled Activity	Fee Based Activity	Scale														
Composting	Composting	> 50000 T annual capacity to receive organics														
Resource recovery	Recovery of general waste	Any general waste recovered														
Waste storage	Waste storage - other types of waste	Any other types of waste stored														
A.2.1	<p>The licence applies to the following premises:</p> <table><tr><th>Premises Details</th></tr><tr><td>SITA ADVANCED WASTE TREATMENT FACILITY</td></tr><tr><td>1725 ELIZABETH DRIVE</td></tr><tr><td>KEMPS CREEK</td></tr><tr><td>NSW 2178</td></tr><tr><td>PART LOT 740 DP 810111</td></tr><tr><td>PART LOT 740 DP 810111 - HATCHED IN RED ON "PLAN SHOWING THE BOUNDARIES OF THE S.A.W.T. AREA OVER PART OF LOT 740 DP 810111 SITA - ELIZABETH DR KEMPS CREEK" DATED 14 MAY 2014</td></tr></table>	Premises Details	SITA ADVANCED WASTE TREATMENT FACILITY	1725 ELIZABETH DRIVE	KEMPS CREEK	NSW 2178	PART LOT 740 DP 810111	PART LOT 740 DP 810111 - HATCHED IN RED ON "PLAN SHOWING THE BOUNDARIES OF THE S.A.W.T. AREA OVER PART OF LOT 740 DP 810111 SITA - ELIZABETH DR KEMPS CREEK" DATED 14 MAY 2014	COMPLIANT	Facility operates at this address.						
Premises Details																
SITA ADVANCED WASTE TREATMENT FACILITY																
1725 ELIZABETH DRIVE																
KEMPS CREEK																
NSW 2178																
PART LOT 740 DP 810111																
PART LOT 740 DP 810111 - HATCHED IN RED ON "PLAN SHOWING THE BOUNDARIES OF THE S.A.W.T. AREA OVER PART OF LOT 740 DP 810111 SITA - ELIZABETH DR KEMPS CREEK" DATED 14 MAY 2014																
A2.2	Monitoring points, dams, outdoor pads and buildings are shown in "SUEZ - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), Last Amended 16/06/2017" prepared by the licensee.	COMPLIANT	Map is up to date.													
A3.1	<p>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to:</p> <p>a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and</p> <p>b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</p>	NOTE														
2	Discharge to air and water and applications to land															

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required																								
1	Administrative conditions																										
P1.1	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.	NOTE																									
P1.2	<p>The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.</p> <table border="1"> <thead> <tr> <th>EPA Identification no.</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Location Description</th></tr> </thead> <tbody> <tr> <td>1</td><td>Stormwater</td><td>Stormwater</td><td>Stormwater discharge from clean pond to existing sedimentation dam on NW area of the SITA Elizabeth Drive Landfill as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."</td></tr> <tr> <td>2</td><td>Leachate Monitoring</td><td></td><td>Upper Leachate Dam (also known as Leachate Pond A) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."</td></tr> <tr> <td>3</td><td>Leachate Monitoring</td><td></td><td>Lower Leachate Dam (also known as Leachate Pond B) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."</td></tr> <tr> <td>5</td><td>Stormwater monitoring</td><td></td><td>Stormwater Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."</td></tr> <tr> <td>6</td><td>Leachate Monitoring</td><td></td><td>Final Product Leachate Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."</td></tr> </tbody> </table>	EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description	1	Stormwater	Stormwater	Stormwater discharge from clean pond to existing sedimentation dam on NW area of the SITA Elizabeth Drive Landfill as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."	2	Leachate Monitoring		Upper Leachate Dam (also known as Leachate Pond A) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."	3	Leachate Monitoring		Lower Leachate Dam (also known as Leachate Pond B) as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."	5	Stormwater monitoring		Stormwater Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."	6	Leachate Monitoring		Final Product Leachate Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."	COMPLIANT	<p>1. Stormwater Pond (discharge)- Discharge occurred during the reporting period, sample was taken during discharge.</p> <p>2. Leachate Monitoring (Upper Leachate Dam) - Annual in dam sample taken at this point.</p> <p>3. Leachate Monitoring (Lower Leachate Dam) - Annual in dam sample taken at this point.</p> <p>5. Stormwater Pond - Annual in dam sample taken at this point</p> <p>6. Leachate Monitoring (Final Product Leachate Dam) - Annual in dam sample taken at this point.</p>
EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description																								
1	Stormwater	Stormwater	Stormwater discharge from clean pond to existing sedimentation dam on NW area of the SITA Elizabeth Drive Landfill as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."																								
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6	Leachate Monitoring		Final Product Leachate Dam as shown in map titled "Suez - Kemps Creek SAWT - EPL 12889 - Monitoring Locations Map Reference Number (NO-001), last amended 16/06/2017."																								
3	Limit conditions																										
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	NOTE																									
L2.1 to L2.3	For each monitoring/discharge point or utilisation area specified in the table(s) below (by a point number), the concentration of a pollutant	NOTE																									

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required																				
1	Administrative conditions																						
L2.4	<div>POINT 1</div> <table><thead><tr><th>Pollutant</th><th>Units of Measure</th><th>50 percentile concentration limit</th><th>90 percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr></thead><tbody><tr><td>Ammonia</td><td>milligrams per litre</td><td></td><td></td><td></td><td>0.9</td></tr><tr><td>pH</td><td>pH</td><td></td><td></td><td></td><td>6.5-8.5</td></tr></tbody></table> <div>Total suspended solids</div> <div>milligrams per litre</div> <div>50</div> <div>Water and /or Land Concentration Limits</div>	Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit	Ammonia	milligrams per litre				0.9	pH	pH				6.5-8.5	NON COMPLIANT	Discharge occurred during the licensing period, concentration of Total Suspended Solids and Ammonia were above discharge limits.		
Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit																		
Ammonia	milligrams per litre				0.9																		
pH	pH				6.5-8.5																		
L3.1	<div>The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below. This condition does not limit any other conditions in this licence.</div> <table><thead><tr><th>Code</th><th>Waste</th><th>Description</th><th>Activity</th><th>Other Limits</th></tr></thead><tbody><tr><td>NA</td><td>General solid waste (putrescible)</td><td></td><td></td><td>Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible)</td></tr><tr><td>NA</td><td>General solid waste (non-putrescible)</td><td></td><td></td><td>Must not receive more than 120,000t per year of general solid waste (non-putrescible and putrescible)</td></tr><tr><td>NA</td><td>Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the biosolids guidelines</td><td></td><td></td><td>Must not receive more than 14,400t per year</td></tr></tbody></table>	Code	Waste	Description	Activity	Other Limits	NA	General solid waste (putrescible)			Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible)	NA	General solid waste (non-putrescible)			Must not receive more than 120,000t per year of general solid waste (non-putrescible and putrescible)	NA	Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the biosolids guidelines			Must not receive more than 14,400t per year	COMPLIANT	Non-Putrescible & Putrescible = 83,113t No Bio-solids received
Code	Waste	Description	Activity	Other Limits																			
NA	General solid waste (putrescible)			Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible)																			
NA	General solid waste (non-putrescible)			Must not receive more than 120,000t per year of general solid waste (non-putrescible and putrescible)																			
NA	Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the biosolids guidelines			Must not receive more than 14,400t per year																			
L3.2	Only material that complies with "The organic outputs derived from mixed waste exemption 2014" can be stored on the final product pad shown in the "Plan showing the location of the new final production pad over Lot 740 DP 810111 1725 Elizabeth Drive Kemps Creek", prepared by Matthew Freeburn Surveyors and dated 8 May 2014.	COMPLIANT	Final product pad (Southern Pad) only holds material that has been processed and complies with "The organic outputs derived from mixed waste exemption 2014". The "mixed waste order & exemption 2014" has been superseded by gazetted MWO.																				
L3.3	The authorised amount of waste permitted on the premises cannot exceed 32,100 tonnes at any one time.	COMPLIANT	Internal stockpile measurements indicate that this condition was not exceeded at any one time during the reporting period . This can be confirmed using the WARRP report in which adjustments have been made to on-site stock by the EPA.																				

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required																																			
1	Administrative conditions																																					
L4.1	<p>Noise generated from the premises must not exceed the noise limits presented in the table(s) below. The noise limits in the table(s) represent the noise contribution from the premises.</p> <p>noise limits in the table(s) represent the noise contribution from the premises.</p> <table><tr><th>Location</th><th>Day LAeq(15 minute)</th><th>Evening LAeq(15 minute)</th><th>Night LAeq(15 minute)</th><th>Night LAmax</th></tr><tr><td>McGarvie Smith Farm</td><td>42</td><td>39</td><td>35</td><td>N/A</td></tr><tr><td>1745 Elizabeth Drive</td><td>41</td><td>40</td><td>37</td><td>47</td></tr><tr><td>1006A Elizabeth Drive</td><td>38</td><td>38</td><td>35</td><td>N/A</td></tr><tr><td>Caretakers Residence 1006A Elizabeth Drive</td><td>42</td><td>42</td><td>38</td><td>53</td></tr></table> <p>Morning Shoulder Period</p> <table><tr><th>Location</th><th>Morning Shoulder Period LAeq(15 minute)</th></tr><tr><td>McGarvie Smith Farm</td><td>39</td></tr><tr><td>1745 Elizabeth Drive</td><td>40</td></tr><tr><td>1006A Elizabeth Drive</td><td>38</td></tr><tr><td>Caretakers Residence 1006A Elizabeth Drive</td><td>42</td></tr></table> <p>Note: • Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period. • Morning Shoulder is defined as 6am to 7am Monday to Friday. • Noise from the premises is to be measured at the most effected point or within the residential boundary or at the most affected point within 30 metres of the dwelling (rural situations) where the dwelling is more than 30 metres from the boundary to determine compliance with LAeq(15 minute noise level). • The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable. • The noise limits identified above apply under the following metrological conditions: (i) Wind speed up to 3m/s at 10 metres above the ground level; or (ii) Temperature inversion conditions</p>	Location	Day LAeq(15 minute)	Evening LAeq(15 minute)	Night LAeq(15 minute)	Night LAmax	McGarvie Smith Farm	42	39	35	N/A	1745 Elizabeth Drive	41	40	37	47	1006A Elizabeth Drive	38	38	35	N/A	Caretakers Residence 1006A Elizabeth Drive	42	42	38	53	Location	Morning Shoulder Period LAeq(15 minute)	McGarvie Smith Farm	39	1745 Elizabeth Drive	40	1006A Elizabeth Drive	38	Caretakers Residence 1006A Elizabeth Drive	42	COMPLIANT	There has been no complaints made during this reporting period. External noise assessment was undertaken by Hibbs and Associates PTY LTD on the 25th July 2018, which confirms the compliance of the noise limits condition.
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L5.1	<p>The licensee must comply with the operating hours in the Table below:</p> <table><tr><th>Activity</th><th>Day</th><th>Hours Activity Permitted or Required</th></tr><tr><td rowspan="3">Waste Receipt, outdoor operations & product dispatch</td><td>Monday - Friday</td><td>6am-6pm</td></tr><tr><td>Saturday</td><td>8am-5pm</td></tr><tr><td>Sunday</td><td>8am-4pm</td></tr><tr><td rowspan="2">Outdoor operations</td><td>Monday - Friday</td><td>6pm-10pm*</td></tr><tr><td>Public Holidays</td><td>7am-4pm</td></tr><tr><td>Indoor operations</td><td>Monday-Saturday</td><td>7am-11pm</td></tr><tr><td>In case of emergency</td><td>Monday-Sunday</td><td>Anytime</td></tr><tr><td>Completely cover waste derived organic material, stored outside, with impervious sheeting</td><td>Everyday</td><td>4.30pm-8am</td></tr><tr><td rowspan="3">Turning, processing and refining of waste derived organic material stored outside</td><td>Monday - Saturday</td><td>8am-4.30pm</td></tr><tr><td>Sunday</td><td>8am - 4pm</td></tr><tr><td>Public Holidays</td><td>8am - 4pm</td></tr></table> <p>Note: * Outdoor operations between the hours of 6pm-10pm Monday to Friday must be limited to 10 trips by a 6-tonne truck (that is 20 movements) and 12 trips by front end loader (that is 24 movements).</p>	Activity	Day	Hours Activity Permitted or Required	Waste Receipt, outdoor operations & product dispatch	Monday - Friday	6am-6pm	Saturday	8am-5pm	Sunday	8am-4pm	Outdoor operations	Monday - Friday	6pm-10pm*	Public Holidays	7am-4pm	Indoor operations	Monday-Saturday	7am-11pm	In case of emergency	Monday-Sunday	Anytime	Completely cover waste derived organic material, stored outside, with impervious sheeting	Everyday	4.30pm-8am	Turning, processing and refining of waste derived organic material stored outside	Monday - Saturday	8am-4.30pm	Sunday	8am - 4pm	Public Holidays	8am - 4pm	COMPLIANT	All hours have been maintained.				
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Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
L6.1	<p>No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.</p> <p>Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.</p>	COMPLIANT	No odour complaints received for the reporting period
4	Operating conditions		
O1.1	<p>Licensed activities must be carried out in a competent manner. This includes:</p> <p>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</p> <p>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</p>	COMPLIANT	All workers are adequately trained to meet the expectations of their job description. Documentation of training is filed on site drive and REG004 training matrix up to date. Weekly and monthly FORM 026 are conducted to ensure compliance is maintained.
O2.1	<p>All plant and equipment installed at the premises or used in connection with the licensed activity:</p> <p>a) must be maintained in a proper and efficient condition; and</p> <p>b) must be operated in a proper and efficient manner.</p>	COMPLIANT	Doors are now installed and operational.
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	COMPLIANT	In this Annual return period, no dust complaints were received. Using the FORM026, weekly inspections are conducted to ensure compliance is achieved.
O4.1	The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.	COMPLIANT	Emergency Response Plan - PLANS003 - Kemps Creek Resource Recovery Park, is located on the Safety Noticeboard and the Emergency Response Box. Also in red emergency box at site entrance. PIRMP updated 4/5/2020. ERP reviewed 7/5/2020.
O5.1	The licensee must ensure that any general solid waste (non-putrescible) and/or general solid waste (putrescible) received for processing, storage or resource recovery at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.	COMPLIANT	<p>All material proposed for acceptance on this site goes through an assessment against the EPA waste acceptance guidelines prior to commencement of any contracts.</p> <p>It is a requirement that prior to delivery of waste, the consignor of the waste has assessed the waste in accordance with the NSW Waste Classification Guidelines.</p>

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
O5.2	<p>The licensee must ensure the facility is built and operated to minimise odours.</p> <p>This must include:</p> <p>a) all composting must be undertaken within enclosed tunnels;</p> <p>b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material (parameters to be agreed with the EPA);</p> <p>c) all exhaust air from the Receival Hall, Composting Tunnels and Drying Tunnels (also known as the Biocell Building) must pass through biofilters;</p> <p>d) the biofilters attached to the Receival Hall and Composting Tunnels must be of a deep bed design and have vented roofs;</p> <p>e) a system of three leachate ponds must be used on site, to minimise the surface area of odorous leachate.</p> <p>f) all composting is undertaken in accordance with "The organic outputs derived from mixed waste order 2014."</p> <p>g) All emissions generated by the pre-refinery trommel must be diverted back into the SAWT Receival Hall and pass through the biofilters.</p>	COMPLIANT	no odour complaints received and operations undertaken in compliance with this condition. Pre refining trommel has been decommissioned.
O5.3	Waste derived organic material must not be stored on the unsealed area. The "unsealed area" is defined as the area adjacent to the eastern concrete maturation pad and labelled "Re-graded Area" in "Appendix 1A: Maturation Pad Upgrades and Biocell" of Project Approval (consolidated version) determined by the NSW Government Department of Planning on 24 January 2014 (application number _06-0185) (the "Planning Approval").	COMPLIANT	There is no material stored on the unsealed area
O5.4	Organic material derived from Municipal Solid Waste ("MSW") must not be composted or matured outside.	COMPLIANT	MSW material is not matured or composted outside, the maturation takes place in enclosed tunnels.
O5.5	A maximum of 8 complete windrows and 2 partially formed windrows containing maturing organic material produced from Food and Garden Organics ("FGO") is permitted to be stored outside at any one time.	COMPLIANT	This licence condition has been meet. Windrows are currently not formed outside as no FGO is accepted at site.
O5.6	<p>All waste derived organic material stored outside must be placed:</p> <p>a) in stockpiles no greater than 3 metres high; or</p> <p>b) in windrows being no larger than 5.2 metres in width, 60 metres in length and 3 metres high.</p> <p>Note: 3 metre high stockpiles are permitted on the Upper Pad only.</p>	COMPLIANT	This licence condition has been meet, is checked on ongoing bases using stockpile markers installed on all pads.
O5.7	3(three)metre height stockpile markers must be maintained on the municipal solid waste ("MSW") maturation pad, the food and organics Waste("FGO") maturation pad, and the final product pad	COMPLIANT	The stockpile markers are installed and maintained on the MSW pad and FGO pad according to the licence condition.
O5.8	The Drying Tunnels (also known as the Biocell Building) located on the Upper Pad must be enclosed except during loading and unloading and all emissions treated through the attached biofilter.	COMPLIANT	This licence condition has been met, visual inspection done on walk around of site. Doors open when tunnels in use by windrow turner. Doors closed when plant not entering or exiting tunnels.

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
O6.1	The licensee must implement procedures to detect any waste at the premises which not permitted by this licence to be received at the premises ("non-conforming wastes"). Non-conforming wastes must be removed from the premises as soon as possible and taken to another premises which can lawfully accept such wastes.	COMPLIANT	Weighbridge at the EDL entrance has processes i.e. radiation detection, implemented to ensure non conforming material does not enter this site, communication at boom gate and checked by excavator operator. No non-conforming wastes received at facility. SAWT has EPA exemption to use co located weighbridge to record and monitor all loads in and out.
O6.2	The licensee must have a leachate barrier system that is in the form of clay or modified soil liner (or equivalent) consisting of at least 600mm of compacted clay with an in-situ permeability (K) of less than 10 ⁻⁷ m/s for outdoor areas where compost products or organic outputs are stored.	NOTE	
O6.3	The area used for outdoor composting, maturation and/or storage of materials must be less than a total surface area of 10,000m ² .	COMPLIANT	Less than 10,000 m ² .
O7.1	The licensee shall ensure that all above ground tanks and vats, including those treating, processing and storing waste waster, leachate and diesel must be surrounded by a bund with a capacity to contain 110% of the tanks within the bund. All bunding must be designed and installed in accordance with the requirements of all relevant Australian Standards and or the DECC's "Environment Protection Manual Technical Bulletin Bunding and Spill Management".	COMPLIANT	Diesel tank has been installed with bund at 110% of the capacity of the tank.
O7.2	The licensee shall ensure leachate levels in both the Liverpool line leachate dam and the leachate overflow dam are maintained below the design capacity as indicated on the freeboard markers.	COMPLIANT	Dams are maintained at designed capacity to accommodate rainfall.
O7.3	The licensee shall maintain the freeboard markers such that they indicate the volume at which leachate levels have reached design capacity within the Liverpool line leachate dam and the leachate overflow dam.	COMPLIANT	Freeboard markers are installed in all ponds which indicate the volume at which leachate levels have reached design capacity
O7.4	All Waste Receival Hall doors must be closed except when a vehicle or person is passing through the doorway.	COMPLIANT	All the receival hall doors are kept closed except when a vehicle or person is passing through the doorway as per licence condition.
5	Monitoring and recording conditions		
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	COMPLIANT	All the monitoring data is retained as per license requirement
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	COMPLIANT	All records are recorded and stored on the L drive, retained at least 4 years and readily retrievable.

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required																																																								
1	Administrative conditions																																																										
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	COMPLIANT	All the relevant information is documented on COC report and recorded in Process and Quality Laboratory folder.																																																								
M2.1 & M2.2	<p>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</p> <table border="1"> <thead> <tr> <th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr> </thead> <tbody> <tr> <td>Ammonia</td><td>milligrams per litre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>Biochemical oxygen demand</td><td>milligrams per litre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>Conductivity</td><td>microsiemens per centimetre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>Oil and Grease</td><td>milligrams per litre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>pH</td><td>pH</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>Total organic carbon</td><td>milligrams per litre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> <tr> <td>Total suspended solids</td><td>milligrams per litre</td><td>Special Frequency 1</td><td>Grab sample</td></tr> </tbody> </table> <p>POINT 1</p> <table border="1"> <thead> <tr> <th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr> </thead> <tbody> <tr> <td>Ammonia</td><td>milligrams per litre</td><td>Yearly</td><td>Grab sample</td></tr> <tr> <td>Biochemical oxygen demand</td><td>milligrams per litre</td><td>Yearly</td><td>Grab sample</td></tr> <tr> <td>Chemical oxygen demand</td><td>milligrams per litre</td><td>Yearly</td><td>Grab sample</td></tr> <tr> <td>pH</td><td>pH</td><td>Yearly</td><td>Grab sample</td></tr> <tr> <td>Total suspended solids</td><td>milligrams per litre</td><td>Yearly</td><td>Grab sample</td></tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	Ammonia	milligrams per litre	Special Frequency 1	Grab sample	Biochemical oxygen demand	milligrams per litre	Special Frequency 1	Grab sample	Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample	Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample	pH	pH	Special Frequency 1	Grab sample	Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample	Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample	Pollutant	Units of measure	Frequency	Sampling Method	Ammonia	milligrams per litre	Yearly	Grab sample	Biochemical oxygen demand	milligrams per litre	Yearly	Grab sample	Chemical oxygen demand	milligrams per litre	Yearly	Grab sample	pH	pH	Yearly	Grab sample	Total suspended solids	milligrams per litre	Yearly	Grab sample	NON COMPLIANT	Monitoring was undertaken at these locations. Point 1 was only tested for Ammonia, pH and TSS. No notification required during reporting period.
Pollutant	Units of measure	Frequency	Sampling Method																																																								
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M2.3	For the purposes of the table(s) above Special Frequency 1 means the collection of samples annually and four times per year during discharge.	COMPLIANT	For monitoring points above special frequency 1 this was achieved during the reporting period.																																																								
M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	COMPLIANT	Monitoring for the concentration of a pollutant discharge to waters or applied to utilization area are done in accordance with Approval Methods Publication. Samples collected are sent to a NATA accredited lab for analysis.																																																								
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	COMPLIANT	Complaints and investigations recorded in SIMS.																																																								

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
M4.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	COMPLIANT	SIMS used to recorded complaints.
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	COMPLIANT	Records maintained in SIMS.
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.	COMPLIANT	Records presented to EPA when requested.
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence	COMPLIANT	Active telephone number for complaints in operation 24X7. Advertised on the front gate of the site. Advertised on company's website. State-wide free call Environmental Report Hotline
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	COMPLIANT	Advertised on the front gate of the site. Advertised on company's website.
M5.3	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.	COMPLIANT	Above requirements implemented.
6	Reporting conditions		
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	COMPLIANT	Annual Returns are prepared and submitted to the EPA by the due date
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below.	COMPLIANT	Annual Returns are prepared and submitted for each reporting period.

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	COMPLIANT	License was not transferred during this period.
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	COMPLIANT	License was not surrendered or revoked during this period.
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	COMPLIANT	Will be submitted by the due date.
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	COMPLIANT	Copies retained as required
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period. Note: An application to transfer a licence must be made in the approved form for this purpose.	COMPLIANT	Signed by Company Director and Secretary
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	NOTE	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred. Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	COMPLIANT	EPA were notified of leachate discharge from Leachate Overflow Dam. Discharge occurred as a result of heavy rain exceeding 10 year event, during February 2020. EPA notice reference number C01890-2020

Clause No.	Summary of Clause	Compliant / Non Compliant	Site comments / evidence to support status / corrective action required
1	Administrative conditions		
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	COMPLIANT	All information requested from the EPA is available and is documented in SIMS. See item M4.1 & 2.
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	COMPLIANT	All information requested from the EPA was sent to the EPA within appropriate timeframes.
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.	COMPLIANT	Reports are sent to EPA with requested information.
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	COMPLIANT	Reports are sent to EPA with requested information
7	General conditions		
G1.1	A copy of this licence must be kept at the premises to which the licence applies.	COMPLIANT	On Site Noticeboard
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	COMPLIANT	On Site Noticeboard
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	COMPLIANT	On Site Noticeboard

APPENDIX D RESPONSE TO IEA



SUEZ SAWT ARRT Facility Kemps Creek – Independent Environmental Audit

Timeline for Completion of Actions from IEA as requested in Advisory Letter

Condition number	Recommendation	Action taken	Status	Completion by
L2.1	Cover the FGO processing Pad. Suez to review storm-water quality upon completion.	Modification Application for the SUEZ SAWT Kemps Creek Facility has been submitted to Department of Planning in March 2018.	The application has been submitted as per the action, but the facility will no longer be processing FGO material on the upper pad and hence will no longer require to cover the pad.	
DA- S 3– C 5	Gain approval from the DPE for approval of waste monitoring program in place.	Clarification to the condition provided in the attached letter. SUEZ has submitted the OEMP which includes the Waste Monitoring Program, which was approved by the department.	Completed	
DA -S 3 - C 11	SUEZ to source feasibility report submitted to the DPE. If feasibility report is	Clarification regarding the compliance to this condition is provided in the attached correspondence.	Awaiting confirmation	

	unable to be found, further consultation to occur with DPE in reference to proving compliance with this licence condition		from the Department	
DA- S3 -C 20	The OEMP was submitted to the DG for approval prior to site operation rather than prior to site development. SUEZ to get email confirmation of the intention of this licence condition from the DPE	The OEMP was submitted to the DG for approval prior to site operation rather than prior to site development.	Completed	
DA - S 3 - C 21 (d)	SUEZ to update Site Water Balance Model and update EMP.	SUEZ engaged an external consultant to conduct Site Water Model for the Site.	Completed	
DA - S3 - C 20 (d)	SUEZ to update the EMP to outline the appropriate groundwater response procedure reflected in the original OEMP. EMP to be updated to include control of sedimentation issues. Submit to DPE.	updated the EMP to outline the appropriate groundwater response procedure reflected in the original OEMP. EMP to be updated to include control of sedimentation issues.	Completed	
DA- S 4 – C 1 (d)	Include quality assurance program for design & installation of leachate management system. Investigation and update	EMP updated to include quality assurance program for design & installation of leachate management system.	Completed	

	EMP with required information.			
DA- S 4- C 5	EMP updated with the requirement to submit AEMR annually and facility members trained. AEMR has been completed for the period from 2009 - 2017. AEMR to be submitted to the department of planning.	AEMR submitted on 20 Jun 2018 and EMP updated with the requirement to submit AEMR	Completed	
DA- S 4- C 6	Continuous improvement with regard to odour management has occurred at the SAWT facility. SUEZ to submit continuous odour management improvements and proposals to the DPE.	The odour continuous improvement plan has been submitted to the department of planning 20 June 2018.	Completed	
DA- S4- C 7 (a)	EMP has been updated with this requirement and facility members trained. IEA has been completed for the period from 2014 - 2017. IEA to be submitted to the Department of Planning and Environment.	IEA was submitted to the Department of Planning and Environment on 14 May 2018.	Completed	
DA-S4- C 7(b)	SUEZ to submit IEA to the EPA, for consultation	The IEA report was submitted to EPA on 4 June 2018.	Completed	
DA-S4 - 8	SUEZ to submit IEA to DPE	IEA was submitted to the DPE on 14 May 2018.	Completed	

DA-S4 - 9	SUEZ to review and submit as required revised plans/programs to the DPE	Email sent to Paul Rutherford on 11 July 2018 identifying CAR for IEA with associated actions.	Completed	
DA-S4 - 10 (a)	SUEZ to make available on website as required revised plans/programs to the DPE (EMP, AEMR).	The AEMR and IEA have been uploaded to the SUEZ website, waiting on the EMP once reviewed.	Completed	
02.1	Maintenance schedule for roller doors and biofilter media replacement shall be kept on site for review, upon request.	Roller doors, are serviced quarterly and upon breakdown. Bio-filter sampling occurs monthly, visual inspections fortnightly and watered daily.	Completed	
DA- S3 - 24 (b)	Update EMP to identify baseline data for surface water, ground water and leachate monitoring program.	Updated EMP to identify baseline data for surface water, ground water and leachate monitoring program.	Completed	
DA- S3 - C 7(b)	Update plan to include details of frequency times of temperature and moisture levels are taken in line with MAN016.	Odour Management Plan updated to include details of frequency of temperature and moisture levels monitoring	Completed	
L3.1	Waste tonnage limits to be tracked and reported on monthly at the EQS management meeting	Waste tonnage tracked through Mandalay. This information is presented at the monthly management meeting. Data also form a part of the Process Engineer's daily monitoring log.	Completed	
L4.1	Noise Monitoring Report to be updated in Compliance with licence conditions.	Noise monitoring report conducted for the year 2018 conducted by Hibbs and	Completed	

		Associates is compliant with licence conditions.		
L5.1	SUEZ to re-train new Leading Hands in licence operating hours.	Leading hands and supervisors re-trained in Licence operating hours	Completed	
L6.1	Review and Audit of the Odour Management Plan (and submit to department planning).	Odour Management updated	Completed	
O5.2	Parameters agreed upon by the EPA (b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material (parameters to be agreed with the EPA prior to operations at the premises)	Communication has occurred with the EPA, awaiting a response. No response has yet been received.	In Review	
M1.3	Develop a Work Instruction for Monitoring and enter the training matrix (licence condition M1.3).	Work Instruction for Monitoring developed , uploaded on SIMS added to training matrix and relevant workers trained in it.	Completed	

DA -1 (a)	Gain email confirmation for Australian standards and Regulations that govern SAWT facility.	Clarification regarding the compliance to this condition is provided in the attached correspondence.	Completed	
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04/07/2019

Recycling & Recovery

Alfarid Hussain
Department of Planning and Environment
Level 22, 320 Pitt Street
Sydney NSW 2001

Dear Alfarid,

SUEZ Kemps Creek SITA Advanced Waste Treatment Facility – MP 06_0185
Clarifications on some of the actions to recommendations from Independent Environment Audit

I am writing to provide clarifications on some of the actions from the IEA audit that was conducted by SUEZ SAWT facility in 2018.

DA- S 3– C 5 - Waste Monitoring Program.

According to the requirement of the Development Consent Schedule 3 Condition 5, Suez has submitted the Operational Environmental Management Plan on 29 April 2009 which was approved by the Department on 30 April 2019. The section 4.6 of the OEMP contains a detailed Waste Monitoring Program. The site's Product Quality Manual is compiled to meet the criteria of the program and the legislative requirement of the compost recovery order. Please find attached the OEMP and the correspondence regarding approval from the Department.

DA -S 3 - C 11 – Feasibility Report

According to the requirement of the Development Consent Schedule 3 Condition 11

Suez has submitted to the Department, The Expansion of the Advanced Waste Treatment Facility, Kemps Creek Resource Recovery Precinct- Greenhouse Gas Assessment Report which was completed in 16 January 2013 by AECOM. The report mentions that "The facility includes composting of the organic fraction of the waste in a climate controlled and aerated environment, which avoids the generation of methane and nitrous oxides." Hence the capture and use of greenhouse gas in generation of electricity is not possible which makes the condition irrelevant to the operations of the facility. The report provides a complete assessment of the green house gases produced during construction and operation of the facility. Suez will be applying for a modification request to eradicate this condition from the DA.

DA -Schedule 3 4 (a)

Suez has been operating in accordance to the Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014, The organic outputs derived from mixed



waste order 2014 which superseded The organic outputs derived from mixed waste order 2010.

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of organic outputs derived from mixed waste (organic outputs) to which the 'organic outputs derived from mixed waste exemption 2014' applies. The requirements in this order apply in relation to the supply of organic outputs for application to land as a soil amendment.

Suez had been sending the final product compost to the mine sites for land rehabilitation until the order was revoked. All the requirements of the Order were complied to. Hence Suez SAWT Facility is compliant to the condition.

DA- S3 -C 20

The Soil, Water and Leachate Management Plan is a part of the Operational Environmental Management Plant which was submitted to the Department on 29 April 2009 which was approved by the Department on 30 April 2019. Please find attached the letter of approval received from the Department.

Please let me know if I can help you with any further information.

Kind Regards,
Khushboo Singh



21 February 2019
Director-General
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Recycling & Recovery Australia

Dear Sir/Madam,

RE: SUEZ Kemps Creek SITA Advanced Waste Treatment Facility - MP 06_0185

I am writing to provide the Director-General information and clarification regarding two of the conditions of approval MP06_0185.

- Schedule 3 Condition 5
- Schedule 3 Condition 11

In accordance to Schedule 3 Condition 5 of the approval, Suez manages the Mandalay Software Program as our Waste Monitoring tool. Mandalay captures all weighbridge transactions and stores vehicle and client account data. It captures & records quantity, type, source & destination of waste entering & leaving site. SUEZ's Product Quality Manual outlines contingency measures to be implemented in the event that levels of foreign matter or contaminants in the compost output exceed acceptable levels.

In accordance to Schedule 3 Condition 11 of the approval, Suez is required to prepare a feasibility report, outlining options to capture and use greenhouse gas in the generation of electricity. SUEZ Kemps Creek SITA Advanced Waste Treatment Facility does not generate greenhouse gases as a result of any onsite processes, therefore has no statistical data to support a feasibility study to meet this condition of the approval. We request the Department review this condition and advise on removal of Schedule 3 condition 11 from the consent.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "Khushboo Singh".

Khushboo Singh
Compliance Officer
SAWT ARRT Facility
SUEZ Recycling & Recovery Australia



SUEZ SAWT ARRT Facility Kemps Creek – Independent Environmental Audit

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04/07/2019

Recycling & Recovery

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Department of Planning and Environment
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21 February 2019
Director-General
Department of Planning and Environment
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Yours faithfully,

A handwritten signature in blue ink, appearing to read "Khushboo Singh".

Khushboo Singh
Compliance Officer
SAWT ARRT Facility
SUEZ Recycling & Recovery Australia

APPENDIX E PRODUCTS REGISTER

STORE MANIFEST

Business Name :	SITA NSW INFRA Kemps Creek SAWT ARRT	Address :	1725a Elizabeth Drive, KEMPS CREEK, NSW, 2178		
Emergency Contact :	Louise Saunders	Phone :	02 98263150	After Hours :	0428124288
Emergency Contact :		Phone :		After Hours :	
Manifest Date :	20/10/2020				

* List of maximum quantities, at any one time, of Dangerous Goods/Schedule Poisons/Combustible Liquids stored on premises

* Retail/stores/depots must be on separate forms, and attached

* Consignment stock and stock kept for short periods exceeding transit i.e. 18 hours should be included

Class	Class Name	PG*I	PG*II	PG*III	PG*N/A
2.1	Flammable Gases	PG is N/A for Gas	PG is N/A for Gas	0.00	200.75
2.2	Compressed Gases	PG is N/A for Gas	PG is N/A for Gas	0.00	4.00
2.3	Poison (or Toxic) Gases	PG is N/A for Gas	PG is N/A for Gas	0.00	0.00
3	Flammable Liquids	0.00	9.25	50.00	0.00
3	(sub-risk 6)	0.00	0.00	0.00	0.00
4.1	Flammable Solids	0.00	0.00	0.00	0.00
4.2	Spontaneously Combustible	0.00	0.00	0.00	0.00
4.3	Dangerous When Wet	0.00	0.00	0.00	0.00
5.1	Oxidising Substances	0.00	0.00	0.00	0.00
5.2	Organic Peroxide	0.00	0.00	0.00	0.00
6.1	Poisons (or Toxic)	0.00	0.00	0.00	0.00
6.1	(Sub-risk 3)	0.00	0.00	0.00	0.00
6.1	(Sub-risk 8)	0.00	0.00	0.00	0.00
8	Corrosives	0.00	160.00	170.00	0.00
8	(Sub-risk 6.1)	0.00	0.00	0.00	0.00
9	Miscellaneous	PG is N/A for Class 9	PG is N/A for Class 9	10140.80	0.00
Key: PG I - Packaging for the Liquid Group (I, II, III)					

COMBUSTIBLE LIQUIDS	Maximum quantity stored at any one time in Litres
(Refer to Safety Data Sheet (SDS) to determine classification)	
C1 61°C - 93°C flashpoint	10085.01
C2 >93°C - 150°C flashpoint	1364.85
Combustible Liquid (Flammable Liquid Cat. 4)	10085.01
MANUFACTURED PRODUCT	
e.g. paint with red diamond (Manufactured product means dangerous goods of Class 3 PG II or III, which have properties e.g. solid content and viscosity, as defined in the ADG)	
Manufactured Product	0.00
SCHEDULE POISONS	
(including those which are NOT dangerous goods)	
SCHEDULE 5 - Caution	10460.05
SCHEDULE 6 - Poison	80.60
SCHEDULE 7 - Dangerous Poison	0.00
AEROSOLS	
Aerosols	207.35

Business Name :	SITA NSW INFRA Kemps Creek SAWT ARRT	Address :	1725a Elizabeth Drive, KEMPS CREEK, NSW, 2178		
Emergency Contact :	Louise Saunders	Phone :	02 98263150	After Hours :	0428124288

Storage Name	KC SAWT - Storage Area Outside - Laundry			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
A-BUILD A	Integra Water Treatment Solutions	YES	6	0.00		80.00 L	
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
BALANCE	Integra Water Treatment Solutions	YES	5	0.00		80.00 L	
DEODOUR AIR Alpine 1000	Deodouriser Pty Ltd	NO	N/A	0.00		400.00 L	
EMULSIFIA	Integra Water Treatment Solutions	YES	N/A	0.00		80.00 L	
Fleetmaster CJ-4 15W/40	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		40.00 L	Combustible Liquid;
HYDRAULIC 68	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		40.00 L	Doc Superseded; Combustible Liquid;
LITHPLEX TAC GREASE	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		15.00 g	Combustible Liquid;
OASIS	Integra Water Treatment Solutions	YES	5	0.00		80.00 L	
YATES ZERO AQUA HERBICIDE *	Yates, a division of DuluxGroup (Australia) Pty Ltd	NO	5	0.00		2.00 L	

* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.

** - Poison schedule should only show 5,6,7

Storage Name	KC SAWT - Storage Area Outside - Maintenance			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
AW Hydraulic Oil	Anglo Design Pty Ltd	NO	N/A	0.00		200.00 L	Combustible Liquid;

Storage Name	KC SAWT - Storage Area Outside - Maintenance			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
Machine Oil	Anglo Design Pty Ltd	NO	N/A	0.00		200.00 L	Combustible Liquid; Gearbox oil
<p>* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.</p> <p>** - Poison schedule should only show 5,6,7</p>							

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AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
AF212	Integra Water Treatment Solutions	NO	N/A	0.00		80.00 L	Combustible Liquid;
AF520	Integra Water Treatment Solutions	NO	N/A	0.00		80.00	
CLEARFLOX 526	Integra Water Treatment Solutions	NO	N/A	0.00		420.00 L	
FOCUS LIQUID CHLORINE *	Focus Products Pty Ltd	YES	5	0.00		150.00 L	
ON 1000	Integra Water Treatment Solutions	NO	N/A	0.00		20.00 L	
<p>* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.</p> <p>** - Poison schedule should only show 5,6,7</p>							

Storage Name	KC SAWT - Storage Area Outside - Shed, Operations			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
AGCO HYDRAULIC 68 HVI	Fuchs Lubricants (Australasia) Pty Ltd	NO	N/A	0.00		205.00 L	Combustible Liquid;
Automotive Diesel Fuel *	Caltex Australia Petroleum Pty Ltd	YES	5	0.00		10000.00	Combustible Liquid;
CONCENTRATE ROUNDUP POWERMAX WEEDKILLER *	Scotts Australia Pty Ltd	NO	5	0.00		12.00 L	
Fleetmaster CJ-4 15W/40	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		205.00 L	Combustible Liquid;
HYDRAULIC 68	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		40.00 L	Doc Superseded; Combustible Liquid;
LIQUEFIED PETROLEUM GAS (LPG)	Air Liquide Australia Limited	YES	N/A	0.00		1.00 G Size Gas Cylinder	
SEASOL PLUS	Seasol International Pty Ltd	YES	N/A	0.00		3.00 L	
Small Engine Greenkeepers Two Stroke Oil	Penrite Oil Company Pty Ltd	NO	N/A	0.00		4.00 L	Combustible Liquid;
TRUCKWASH BLUE	CarChem Products Pty Ltd	NO	N/A	0.00		40.00 L	
VALPLEX EP GREASE	Valvoline (Australia) Pty Ltd	NO	N/A	0.00		260.00	Combustible Liquid;
YATES ZERO AQUA HERBICIDE *	Yates, a division of DuluxGroup (Australia) Pty Ltd	NO	5	0.00		40.00 L	
<p>* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.</p> <p>** - Poison schedule should only show 5,6,7</p>							

Storage Name	Kemps Creek SAWT ARRT (Level 1 Admin)			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code. ** - Poison schedule should only show 5,6,7							

Storage Name	Kemps Creek SAWT ARRT_1. Storage Area Outside			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code. ** - Poison schedule should only show 5,6,7							

Storage Name	Kemps Creek SAWT ARRT_2 Workshop			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
ACETYLENE (DISSOLVED)	Coregas Pty Ltd	YES	N/A	0.00		2.00 G Size Gas Cylinder	
AEROSOL - RUST NOT COLOUR RANGE	HiChem Paint Technologies Pty. Ltd.	YES	5	0.00		9600.00 g	
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
Antispatter	Cyndan Chemicals	NO	N/A	0.00		4800.00 g	Citra-Blitz - cleaner and degreaser also stock Wurex - spatter release coting
ARGON COMPRESSED	Coregas Pty Ltd	YES	N/A	0.00		2.00 G Size Gas Cylinder	
Clipsal PVC Cement N Clear	Bostik Australia Pty Ltd	YES	5	0.00		250.00 g	
Dy-Mark Ink P200 All Colours *	Dy-Mark Pty Ltd	YES	5	0.00		1.00 L	

Storage Name	Kemps Creek SAWT ARRT_2 Workshop			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
Dy-Mark Line Marking All Colours Aerosol *	Dy-Mark Pty Ltd	YES	N/A	0.00		4800.00 g	Also stock OX-spot marking paints
FOOD GRADE MACHINE 320-680	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		60.00 L	Combustible Liquid;
Galmet Rustpaint Aerosol (All Colours Except Silver) *	ITW Polymers & Fluids	YES	N/A	0.00		4200.00 g	
GALMET SPRAYPAINT AEROSOL (ALL COLOURS EXCEPT SILVER) *	ITW Polymers & Fluids	YES	5	0.00		9600.00 g	also stock Hichem - 2in1 silva gal
Galmet Spraypaint Primer Aerosol *	ITW Polymers & Fluids	YES	N/A	0.00		9600.00 g	Galmet - Rust paint metal protection, also stock Motospray - quick dry super enamel
INNERLUBE / HIGH CORE	NCH Australia Pty Ltd	YES	5	0.00		25.00 L	
Irwin Chalk - Yellow, Hi-Vis	Irwin Industrial Tool Company Pty Ltd	NO	N/A	0.00		340.00 g	High Risk Schedule 10 - Possible restricted hazardous chemicals (Refer to SDS); Irwin- Straight line and chalk powder
Lithplex Tac Grease	Hi-Tec Oil Traders Pty Ltd	NO	N/A	0.00		25.00 L	Combustible Liquid;
LOCTITE 262	Henkel Australia Pty Ltd	YES	N/A	0.00		100.00 g	Combustible Liquid; Ultra Thread locking compound
LOCTITE 277	Henkel Australia Pty Ltd	YES	N/A	0.00		100.00 mL	Combustible Liquid;
LOW ODOUR TURPENTINE	Recochem Inc.	YES	5	0.00		5.00 L	
Molytec Chain & Cable Lube	Molytec Australia	YES	N/A	0.00		100.00 L	Innerlube - chain lube
Molytec Copatec Anti-Seize Lead Free Paste	Molytec Australia	YES	N/A	0.00		1000.00 g	Combustible Liquid;
MOREYS HEAVY DUTY OIL STABILIZER	Morey Oil South Pacific (Aust) Pty Ltd	NO	N/A	0.00		100.00 L	High Risk Schedule 10 - Possible restricted hazardous chemicals (Refer to SDS); Combustible Liquid;
MORTEIN KILL AND PROTECT DIY PROFESSIONAL SURFACE SPRAY *	Reckitt Benckiser (Australia) Pty Limited	NO	N/A	0.00		4800.00 g	Combustible Liquid;
Multipurpose Grease Green	Caltex Australia Petroleum Pty Ltd	NO	N/A	0.00		4800.00 g	Combustible Liquid; Mobil polyrex EM
NC-123 EXTRA	NCH Australia Pty Ltd	YES	5	0.00		3600.00 g	
OXYGEN COMPRESSED	Coregas Pty Ltd	YES	N/A	0.00		2.00 G Size Gas Cylinder	
Parfix All Purpose Silicone Clear	DuluxGroup (Australia) Pty Ltd	YES	N/A	0.00		5000.00 g	Combustible Liquid; GSA - Silicone
Sikaflex 221	Sika Australia Pty Ltd	YES	N/A	0.00		12.00 g	Combustible Liquid;

Storage Name	Kemps Creek SAWT ARRT_2 Workshop			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
SPRAY & WIPE	CLEAN PLUS CHEMICALS PTY LTD	NO	N/A	0.00		1.00 L	
TREFOLEX	CRC Industries (Aust) Pty Limited	NO	N/A	0.00		50.00 g	Combustible Liquid;
UVEX Lens Cleaning Fluid 9992	UVEX Safety Australia Pty Ltd	YES	N/A	0.00		225.00 mL	
WD-40 Bulk Liquid	WD-40 Company Australia Pty Ltd	YES	5	0.00		20.00 L	
WOOLUBE CITRA-BLITZ AEROSOL *	Woolube Laboratories Pty Ltd	YES	N/A	0.00		12.00 G Size Gas Cylinder	
YIELD AEROSOL	NCH Australia Pty Ltd	YES	N/A	0.00		9600.00 g	Yield previously know as Pentron,, also stock OZspray - multi purpose liquid lanoline
<p>* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.</p> <p>** - Poison schedule should only show 5,6,7</p>							

Storage Name	Kemps Creek SAWT ARRT_3 Lower Level Admin			Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
30 Seconds - BBQ Cleaner	Tradeware Group Pty Ltd	YES	N/A	0.00		10.00 L	
AEROSOL ALL SURFACES PRIMER *	HiChem Paint Technologies Pty. Ltd.	YES	N/A	0.00		2400.00 g	
Air Wick Aerosol Air Freshener - Lavender *	Reckitt Benckiser (Australia) Pty Limited	YES	N/A	0.00		1044.00 g	
BATHMAID	Chemicals at Work	NO	N/A	0.00		20.00 L	
BLEACH 6%	CLEAN PLUS CHEMICALS PTY LTD	YES	5	0.00		20.00 L	
Deb InstantFOAM	Deb Australia Pty Ltd	YES	N/A	0.00		8.00 L	
DISHWASHING LIQUID - ECONOMY	CLEAN PLUS CHEMICALS PTY LTD	NO	N/A	0.00		5.00 L	
ECOMIST ODOUR NEUTRALISER-IMPROVED FORMULA *	Ecomist Australia Pty	YES	N/A	0.00		20.00 L	
ESTESOL LOTION PURE	Deb Australia Pty Ltd	NO	N/A	0.00		10.00 L	

Storage Name		Kemps Creek SAWT ARRT_3 Lower Level Admin		Storage Address		1725 Elizabeth Drive, KEMPS CREEK, 2178, NSW	
Product Name (Trade Name)	Company Name	Hazardous	Poison Schedule**	Peak Qty	Product Code	Total Quantity	Comments
Fast Action Ratsak Bait Station	Yates, a division of DuluxGroup (Australia) Pty Ltd	NO	6	0.00		600.00 g	
Raid Commercial Insecticide Odourless Fly and Insect Killer	Diversey Australia Pty Limited	YES	N/A	0.00		3.00 L	
RAID EARTH OPTIONS FLY & MOSQUITO KILLER - AEROSOL, RAID EARTH OPTIONS MULTI INSECT KILLER - AEROSOL *	S.C. Johnson & Son Pty. Ltd.	NO	N/A	0.00		1110.00 g	
Refresh Azure Foam	SC Johnson Professional Pty Ltd	NO	N/A	0.00		10.00 L	
Refresh Hair & Body	SC Johnson Professional Pty Ltd	YES	N/A	0.00		10.00 L	
Scouring Powder	C.W.B. Investments Pty Ltd	YES	N/A	0.00		5.00 kg	High Risk Schedule 10 - Possible restricted hazardous chemicals (Refer to SDS);
Selleys Original Sugar Soap	Selleys Australia, a division of DuluxGroup (Australia) Pty Ltd	YES	N/A	0.00		9.00 L	
SPRAY & WIPE	CLEAN PLUS CHEMICALS PTY LTD	NO	N/A	0.00		20.00 L	
SWARFEGA PLUS/SUPREGA PLUS/SWARFEGA CITRUS	Deb Australia Pty Ltd	YES	N/A	0.00		32.00 L	
WINDOW CLEANER	Chemworks	NO	N/A	0.00		100.00 L	
YATES ZERO AQUA HERBICIDE *	Yates, a division of DuluxGroup (Australia) Pty Ltd	NO	5	0.00		2.00 L	
<p>* Note - The product is either a Dangerous Goods with Special Provisions or Not a dangerous goods for rail/road but dangerous if shipped by sea/air. Therefore it may or may not be subject to the ADG (Australian Dangerous Goods) Code, depending on whether the criteria outlined in its Special Provision(s) are met or exceeded. You should refer to the SDS for Special Provision(s) which apply to this product and check it against the criteria provided in the ADG Code.</p> <p>** - Poison schedule should only show 5,6,7</p>							

APPENDIX F REGULATORY CORRESPONDANCE

Show Cause Letter

Licence - 12889



SUEZ RECYCLING & RECOVERY PTY LTD
ABN 70 002 902 650 ACN 002 902 650
1725 ELIZABETH DRIVE
KEMPS CREEK NSW 2171

Our Reference 1584192
File Number EF13/4424
Date 21-Aug-2019

Dear Mr Ken Johnson,

Invitation to show cause

Suspected water pollution incident and breach of licence conditions on 16 July 2019.

Please read this notice carefully and provide a response by 5pm on 2 September 2019

Why is the EPA writing to you?

The EPA believes that you have not complied with section 120 and 64 of the *Protection of the Environment Operations Act 1997 (the Act)*. The purpose of this letter is to invite you to explain, in writing, why the EPA should not take regulatory action in response to the alleged non-compliance with a notice issued by the EPA.

The EPA alleges that on 16 July 2019 you breached the following sections of the Act:

- section 120 by polluting waters when leachate from the composting building escaped and flowed onto an outdoor area that drains to waters;
- section 120 by polluting waters when allowing leachate to contaminate waters; and
- Section 64 by failing to comply with Condition O5.2 of the licence by conducting composting in waste tunnels that were not enclosed.

What do I do now?

Read this letter carefully. You should respond to this letter as it is your chance to explain the alleged breach. The alleged breach is detailed in the background of this letter. Your response should provide any information, fact, or circumstance that you would like the EPA to consider when deciding whether to take further regulatory action in relation to the breach.

Show Cause Letter

Licence - 12889



BACKGROUND

- A. SUEZ RECYCLING & RECOVERY PTY LTD (**Licensee**) is the holder of Environment Protection Licence No. 12889 (**Licence**) issued under the Act. The licence authorises the carrying out of activities at 1725 Elizabeth Drive, KEMPS CREEK, NSW, 2178 (**Premises**).

Suspected water pollution incident on 16 July 2019

- B. On 16 July 2019 Environment Protection Authority (**EPA**) officers observed leachate pooling within the Waste Processing building and discharging under the building roller doors onto the hard stand surface that drains to the premises stormwater dam. Refer to the attached photos 1 and 2.
- C. It is an offence under section 120 of the Act to pollute waters.
- D. The water within the premises stormwater dam meets the definition of water in the Act's Dictionary.
- E. The Act's Dictionary also defines water pollution as including "placing any matter in a position where it is likely to be washed into any waters."
- F. The EPA believes that the Licensee has breached s120 of the Act by allowing leachate to discharge to an area that drains to waters, as described above.
- G. Ammonia is an indicator of leachate contamination within waters.
- H. EPA Analysis of a sample of water collected from the stormwater dam on the 16 July 2019 identified an ammonia concentration of 5.36 mg/L.
- I. EPA Analysis of a sample of water collected from the leachate pooled under and around a Waste Processing Building roller door on the 16 July 2019 identified an ammonia concentration in that liquid of 276 mg/L.
- J. The EPA reasonably suspects that the Licensee has breached s120 of the Act by allowing an onsite stormwater dam to become contaminated with leachate.

Suspected breach of licence condition O5.2 on 16 July 2019

- K. Condition O5.2 of the licence states:
- "the licensee must ensure the facility is built and operated to minimise odours. This must include:*
- a) all composting must be undertaken within enclosed tunnels;*
- b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and moisture levels so that the composted material has been fermented properly and is adequately stabilised prior to any outdoor storage of the composted material (parameters to be agreed with the EPA);"*
- L. On 16 July 2019 the Licensee was composting waste in the Waste Processing Building in tunnels without doors. Leachate and vapour were discharging from the tunnels. Refer to the attached photos 3 and 4.
- M. The leachate and vapour condensate were pooling within the Waste Processing Building causing the discharge of leachate described above.

Show Cause Letter

Licence - 12889



N. The EPA reasonably suspects SUEZ has contravened condition O5.2 of the licence as without doors the tunnels are not enclosed.

INVITATION TO SHOW CAUSE

The purpose of this letter is to invite SUEZ RECYCLING & RECOVERY PTY LTD to explain, in writing, why the EPA should not take regulatory action in response to the suspected water pollution incident and breach of licence conditions on 16 July 2019. Your letter should provide any information, fact, or circumstance that you would like the EPA to consider when deciding whether to take further action in relation to the incident.

Any submissions you wish to make must be provided to:

Mr Greg Sheehy
Director Waste Compliance, Environment Protection Authority
PO Box A290, SYDNEY SOUTH, NSW 1231

at email: waste.operations@epa.nsw.gov.au

and received no later than **5pm on 2 September 2019**

Further information on the EPA's approach to compliance and enforcement can be found in the EPA's Compliance Policy at <http://www.epa.nsw.gov.au/legislation/130251epacompl.htm>

Should you have any queries in relation to the above please contact Damien Rose on 9995 5586.

Yours sincerely

A handwritten signature in black ink, appearing to read 'T. Wilson'.

.....
Trevor Wilson

Unit Head

Waste & Resource Recovery

Environment Protection Authority

Show Cause Letter

Licence - 12889



1. Leachate on external pad emanating from the Processing Building roller doors

Show Cause Letter

Licence - 12889



2. Leachate pooling against the roller door



3. Leachate discharging from tunnels without doors

Show Cause Letter

Licence - 12889



3 September 2019

Recycling & Recovery

Mr Trevor Wilson
Unit Head
Waste & Resource Recovery
Environment Protection Authority

By email: waste.operations@epa.nsw.gov.au

Dear Mr Wilson

Show Cause Letter dated 21 August 2019 –Environment Protection Licence 12889 (Show Cause Letter)
SAWT Facility – 1725 Elizabeth Drive, Kemps Creek, NSW
Your Reference: 1584192
File Number: EF13/4425

I refer to your letter dated 21 August 2019 (Show Cause Letter) inviting SUEZ Recycling & Recovery Pty Ltd (SUEZ) to explain why the EPA should not take regulatory action in response to the suspected water pollution incident and breach of licence condition O5.2 of Licence No. 12889 (Licence) for the facility at 1725 Elizabeth Drive, Kemps Creek (Premises).

Unless otherwise defined in this letter, all defined terms are the same as those in the Show Cause Letter.

1. Background

- 1.1 The Show Cause Letter alleges that SUEZ breached Condition O5.2 by composting waste in the Waste Processing Building in tunnels without doors. Condition O5.2 requires that all composting must be undertaken within enclosed tunnels.
- 1.2 SUEZ notes the background as set out in the Show Cause Letter.
- 1.3 SUEZ advises that it has been taking steps to replace the 30 tunnel doors at the Premises (“the Works”). The Works were the subject of Penalty Notice 3173525805 and SUEZ also self reported to the EPA in its 2018 Annual Return with its undertaking that it would be undertaking a refurbishment of the Tunnels which would include either repair or replacement of the tunnel doors
- 1.4 At the time of the EPA’s inspection of the Premises, the Works were underway.

2. Unforeseeable Events



- 2.1 SUEZ had planned for the Works to take place in the warmer months as the visibility in the composting facility was much improved than if the Works were to take place in the cooler months.
- 2.2 Originally only a number of tunnel doors were to be worked on at the same time, however because of the unforeseen events explained below SUEZ was pressed to commence work on all 30 tunnels at the same time.
- 2.3 To prepare for the installation of the doors, SUEZ reduced the quantities of compost in the tunnels by ceasing composting and continuing to allow trucks access to remove the compost from the tunnels. It was pressured by the unforeseen events and by its licence conditions not to store compost outdoors to have an amount of compost still piled in the tunnels.

Unforeseen Events

- 2.4 SUEZ engaged Able Doors to supply a revised quote for the tunnel doors on 10 February 2019
- 2.5 SUEZ contracted with H&S Electrical to provide the electrical works and run cable trays. As the electrical works were nearing completion, SUEZ contacted Able Doors on {11th April 2019 } to confirm their attendance on Site. It was at that time Able Doors advised SUEZ that would not proceed with the supply and delivery of the tunnel doors.
- 2.6 Thompson Doors were then engaged to produce and supply the tunnel doors on 11th May 2019. On 20 May 2019 Thompson Doors returned SUEZ's deposit and advised SUEZ that it would not be completing the order.
- 2.7 SUEZ then contracted with Austral Moon to produce and supply the tunnel doors on 29 May 2019 and the tunnel doors were manufactured and delivered to the Site on 16 July 2019.
- 2.8 Flash Doors attended the Site on 23 July 2019 to commence the installation of the tunnel doors. On 24 July 2019, Flash Doors advised that it would not be completing the installation of the tunnel doors.
- 2.9 The repeated cancelling of the Works after acceptance by third party contractors was unforeseeable and delayed the undertaking of the Works.
- 2.10 In order to comply with its undertaking to EPA, the Penalty Notice and to avoid any further delays, SUEZ was pressed to perform the Works itself. SUEZ enlisted the assistance of its employees to undertake the Works.
- 2.11 SUEZ staff commenced installation of the tunnel doors on 24 July 2019 and with the assistance of H&S Electrical installed the head drums, motors, shutters, guides and guards on all 30 tunnels.
- 2.12 The Works were completed on 29 August 2019.
- 2.13 As the Works were now being undertaking in the cooler months (due to the ongoing delays and unforeseen events), SUEZ found it difficult to determine the consistency of and amounts of leachate. SUEZ had the mistaken opinion that it had done enough to prevent any leachate emitting from the tunnels.

Mitigation



2.14 After the Incident of the leachate draining into the stormwater dam SUEZ promptly emptied the stormwater dam and sent this stormwater to its Spring Farm facility to be treated and disposed.

2.15 The stormwater dam is manmade and fully lined. It is not connected to any natural waterways and there was no threat of the leachate from the storm water dam entering into natural waterways.

2.16 To prevent the overflow of the stormwater dam after any rain, SUEZ promptly drained the stormwater dam to prevent this from happening.

Reoccurrence

The Works are now complete. A repeat of this event will not take place.

Conclusion

SUEZ had relied on specialist third party contractors to conduct the Works in the warmer months however due to unforeseeable cancellation by SUEZ's specialist third party contractors it was pressured to complete the Works itself in the cooler months. SUEZ had underestimated the levels and concentration of leachate that drained from the tunnels during the undertaking of the Works into the stormwater dam.

SUEZ regrets the circumstances which led the EPA to issue this Show Cause Letter.

SUEZ states that the matters brought to its attention in the Show Cause Letter have been inadvertent and unintentional. There has been no environmental harm caused or risk to human or wildlife health and safety as a result of the inadvertent non-compliance. As noted above, SUEZ took prompt mitigation measures to ensure that incident was contained.

Please contact Paul Maier on 0439 136 780 if you have any further questions on this matter.

Yours faithfully,

Louise Saunders

Kemps Creek SAWT Resource Recovery Manager



17/2/2020

Damien Rose

Recycling & Recovery

Senior Operations Officer – Waste Compliance
Waste and Resource Recovery,
NSW Environment Protection Authority

**RE, Leachate - Stormwater Overflow at SUEZ Kemps Creek EPR Refence
Number C01890-2020**

Dear Damien,

Further to our Incident Notification on 10 February 2020, EPA incident number C01890-2020, please find following information.

Due to the abnormal rain over the weekend, the Leachate Pond “Liverpool”, at SUEZ Advanced Waste Treatment (SAWT), Licence Number 12889, overflowed into the Leachate Overflow Dam, which in turn overflowed and met with the licenced stormwater discharge Point ADP001 of the Elizabeth Drive Landfill (EDL) Licence number 4068.

EPA were notified when it was found that the leachate was entering the stormwater discharge.

It should be noted that the Leachate Overflow Dam was designed to hold a 1 in 10-year rain event and was empty on Friday, 7 February 2020. While we had a total of 7430 m³ available storage on site, prior to the rain event, there was an estimated 76 000 m³ of rain within the SAWT catchment.

From the Bureau of Meteorology website, a 1 in 10-year rain event for Kemps Creek is 144 mm.

The following rain data was recorded.

Weather Station: SUEZ Kemps Creek		
Daily Summary		
Date	Time	TOTAL Rain Gauge (mm)
8/02/2020	9:00:00	8.4
9/02/2020	9:00:00	65.6
10/02/2020	9:00:00	200

Source: Bureau of Meteorology



Further information as required by section R3.3 of both the EPL 12889 and Elizabeth Drive Landfill EPL 4068, respectively, can be found below:

a) the cause, time and duration of the event;

Cause	High rainfall
Time	The heavy rain started approximately 4 am on 9/2/20 (Sun)
Duration	Lasted for about 24 hours until 3-4 am on 10/2/20 (Mon)

b) the type, volume and concentration of every pollutant discharged as a result of the event;

Type of Discharge

Leachate overflow from the SAWT Overflow Dam.

Volume

We estimate there was 76 000 m³ of rain within the SAWT catchment over the weekend, with 7 430 m³ available storage on Friday 7 February.

Pollutant

Ammonia

Concentration

Ammonia from the SAWT OFD was measured at 7.6 mg/l.

The EDL site was also discharging from the Wet Weather Discharge Point Surface water monitoring point - ADP-001, the ammonia was being diluted on discharge and measured <0.8 mg/l, below the ELD licence limit of 0.9 mg/l. for point 35, (ADP-001).

The Total Suspended Solids were 124 mg/l, above the EDL Licence limit of 50 mg/l, noting that section L2.5 of the licence allows exceedance of TSS, if the discharges occur solely as a result of rainfall at the premises exceeding a total of 48 millimetres over any consecutive five day period.

c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;

Ken Telfer
NSW Environmental and Sustainability Manager
Address: New Illawarra Road, Lucas Heights NSW 2234 Australia
Mobile: +61 (0) 437 643 116
Email: ken.telfer@suez.com

Louise Sanders
Site Manager – Kemp's Creek SAWT



Address: Kemps Creek SAWT, 1725 Elizabeth Drive, Kemps Creek NSW 2178 Australia
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Email: louise.saunders@suez.com

Mike Banasaz
Process & Production Manager – Kemp's Creek SAWT
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Mobile: +61 (0) 439 539 419
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Address: 70 Anzac Street, Chullora NSW 2190
Mobile: +61 (0) 438 184 537
Email: jazib.farid@suez.com

d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;

Mamdoh Ibrahim
Landfill Manager – Kemp's Creek Landfill
Address: Kemps Creek SAWT, 1725 Elizabeth Drive, Kemps Creek NSW 2178 Australia
Mobile: +61 (0) 408 972 305
Email: mamdoh.ibrahim@suez.com

Dozie Egeonu
Environmental & Sustainability Business Partner – Kemp's Creek Landfill
Address: Kemps Creek SAWT, 1725 Elizabeth Drive, Kemps Creek NSW 2178 Australia
Mobile: +61 (0) 417 825 290
Email: dozie.egeonu@suez.com

e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

We have continued to pump out Leachate from the Liverpool Dam and truck offsite. As of Friday 15th February **XXX** tonnes have been transported offsite.

A complaint was received from Sydney University on 12th February, the complainant was contacted by SUEZ and the situation explained.

f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;

Prior to the rain event, between 4th and 7th February, we pumped 446 tonnes = 21 loads offsite from



Liverpool Dam.

We are now investigating options to further separate on site water storages including installation of tanks at Leachate Collection Pit, Composting Tunnel and Drying tunnels to segregate the higher concentration leachate produced in the cells.

This will be taken directly offsite, lowering the ammonia concentrations in the leachate dam.

g) any other relevant matters.

With further rain since the event it is expected that the EDL stormwater will continue to discharge for some time and removed any residual ammonia.

Please have no hesitation in contacting the undersigned you require any further information.

Regards

Ken Telfer

NSW Environmental and Sustainability Manager

SUEZ Recycling & Recovery Australia

Tel : +61 (0) 2 8525 4105

Mob: +61 (0) 437 643 116

Email: Ken.Telfer@suez.com


New Illawarra Road

Lucas Heights NSW 2234


suez.com.au

APPENDIX G ODOUR REPORT SHEETS


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	31 July 2019	Start Time:	8:00	Finish Time:	9:25
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:53	N				
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:10	N				
5.	Mamre Road	8:29	N Y	fresh sebbish like odour			
6.	Bakers lane	8:25	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:25	N				
Additional Comments and Observations: no material stored stored outdoors . no processing being conducted.							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	30 July 2019	Start Time:	8:15	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
						 WSW	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:57	Y	Animal manure odour.			
3.	Lawson Road	9:20	N				
4.	Elizabeth Drive	9:15	Y	fgo odour in the section close to ANL			
5.	Mamre Road	8:20	Y				
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road		Y	very mild mild garbage like odour for about 100 mts of the access road.			
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	29 July 2019		Start Time:	8:00	Finish Time:	9:15
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:48	N					
2.	Luddenham Road	8:40	N					
3.	Lawson Road	9:10	N					
4.	Elizabeth Drive	9:15	Y	Smell close to the Creek				
5.	Mamre Road	8:20	N					
6.	Bakers lane	8:16	N					
7.	St Clair	8:00 am	N					
8.	Internal Landfill Boundary Road	9:20.	Y	mild odour consistent with garbage. 2/10				
Additional Comments and Observations:								

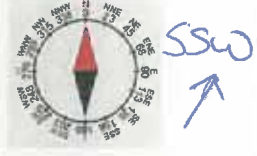
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	1 August 2019		Start Time:	8:00	Finish Time:	9:15
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:45	N					
2.	Luddenham Road	8:55	N					
3.	Lawson Road	9:15	N					
4.	Elizabeth Drive	9:10	N					
5.	Mamre Road	8:20	N					
6.	Bakers lane	8:15	N					
7.	St Clair	8:00	N					
8.	Internal Landfill Boundary Road							
Additional Comments and Observations: <p style="text-align: center;">No odours detected.</p>								

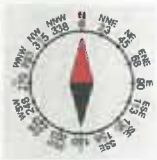
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	2 August 2019		Start Time:	8:15	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:50	N					
2.	Luddenham Road	8:40	N					
3.	Lawson Road	8:10	N					
4.	Elizabeth Drive	9:15	N					
5.	Mamre Road	8:20	N					
6.	Bakers lane	8:25	N					
7.	St Clair	8:15	N					
8.	Internal Landfill Boundary Road	9:20	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	5/8/19	Start Time:	7:15	Finish Time:	8:00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:50	N				
2.	Luddenham Road	7:56	N				
3.	Lawson Road	8:05	N				
4.	Elizabeth Drive	8:00	Y	fgo like smell coming from ANL possibly			
5.	Mamre Road	7:20	N				
6.	Bakers lane	7:25	N				
7.	St Clair	7:15	N				
8.	Internal Landfill Boundary Road	8:10	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	6/8/19	Start Time:	7:15 am	Finish Time:	8:15 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:45	N				
2.	Luddenham Road	7:40	N	farm like odour. Not offensive at all			
3.	Lawson Road	7:55	N				
4.	Elizabeth Drive	7:50	N				
5.	Mamre Road	7:25	N				
6.	Bakers lane	7:30	N				
7.	St Clair	7:15	N				
8.	Internal Landfill Boundary Road	8:15	N				
Additional Comments and Observations: There is no processing or stored compost outside at SNAWT - Very low Tonnage received							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	7 August	Start Time:	1:00 pm	Finish Time:	2:00 pm
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	1:37	N				
2.	Luddenham Road	1:30	N				
3.	Lawson Road	2:00	N				
4.	Elizabeth Drive	1:55	N				
5.	Mamre Road	1:10	N				
6.	Bakers lane	1:15	N				
7.	St Clair	1:00	N				
8.	Internal Landfill Boundary Road	2:10	N				
Additional Comments and Observations:							
Hot Warm weather conditions							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	8 th August		Start Time:	8:10 am	Finish Time:	9:10 am
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:27	Y	Stale rubbish odour very mild in the air closer to the asset				
2.	Luddenham Road	8:20	Y	Animal manure spread on a section of the road				
3.	Lawson Road	8:50	N					
4.	Elizabeth Drive	8:45	N					
5.	Mamre Road	8:10	N					
6.	Bakers lane	8:18	N					
7.	St Clair	8:00 am	N					
8.	Internal Landfill Boundary Road	9:00 am	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	12 August 2019		Start Time:	8:00 am		Finish Time:	9:00 am	
Wind Speed		Rain			Weather Conditions (tick all that apply)				Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme			<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold				<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
										
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments						
1.	Twins Creeks	8:25	N							
2.	Luddenham Road	8:33	N							
3.	Lawson Road	8:50	N							
4.	Elizabeth Drive	8:45	N							
5.	Mamre Road	8:15	N							
6.	Bakers lane	8:10	N							
7.	St Clair	8:00	Y	mild fuel like odour						
8.	Internal Landfill Boundary Road	9:10	N							
Additional Comments and Observations: no processing being done on the site. No waste received										

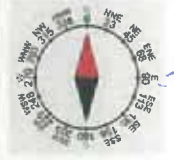
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	13/08/19	Start Time:	8:15 am	Finish Time:	9:15 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:58	N				
3.	Lawson Road	9:13	N				
4.	Elizabeth Drive	9:10	N				
5.	Mamre Road	8:25	N				
6.	Bakers lane	8:27	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road		N				
Additional Comments and Observations: no waste being accepted at SAWT today. No processing being carried out							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	15 August	Start Time:	8:50	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:55	N				
3.	Lawson Road	9:10	N				
4.	Elizabeth Drive	9:08	N				
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:20	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations: no waste received on the facility. Tunnel doors being installed & waste audit carried out.							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	16 August		Start Time:	8:00	Finish Time:	9:15
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:30	N					
2.	Luddenham Road	8:40	N					
3.	Lawson Road	8:55	N					
4.	Elizabeth Drive	8:50	N					
5.	Mamre Road	8:15	N					
6.	Bakers lane	8:18	N					
7.	St Clair	8:00	N					
8.	Internal Landfill Boundary Road	9:05	N					
Additional Comments and Observations: No odours emitted from the site. No waste received & only tunnel doors installation & new pre-roofing commissioning.								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	19/8/19	Start Time:	7:30 am	Finish Time:	8:30 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
11.6							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:15	N				
2.	Luddenham Road	8:20	N				
3.	Lawson Road	7:30	N				
4.	Elizabeth Drive	8:35	N				
5.	Mamre Road	8:00	N				
6.	Bakers lane	8:05	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	9:40	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	20 / 8 / 19	Start Time:	7:30	Finish Time:	8:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds <i>4.09</i>		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:25	N				
2.	Luddenham Road	8:20	N				
3.	Lawson Road	7:45	N				
4.	Elizabeth Drive	7:30	N				
5.	Mamre Road	8:05	N				
6.	Bakers lane	8:10	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road	9:40	N				
Additional Comments and Observations: <i>minimal material processed</i>							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	21/08/19	Start Time:	7:25	Finish Time:	8:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
8.09							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:15	N				
2.	Luddenham Road	8:20	N				
3.	Lawson Road	7:40	N				
4.	Elizabeth Drive	7:25	N				
5.	Mamre Road	7:55	N				
6.	Bakers lane	8:05	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road	9:35	N				
Additional Comments and Observations:							
no odours detected. Re-refining restarted indoors & material received on site							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	22/8/19		Start Time:	7:15	Finish Time:	8:20
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
8-3								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:20	N					
2.	Luddenham Road	8:10	N					
3.	Lawson Road	7:35	N					
4.	Elizabeth Drive	7:15	N					
5.	Mamre Road	7:50	N					
6.	Bakers lane	7:57	N					
7.	St Clair	8:30	N					
8.	Internal Landfill Boundary Road	9:25	N					
Additional Comments and Observations: No odours detected except of natural grassy odour near Luddenham road								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	23/8/19		Start Time:	7:30	Finish Time:	8:30
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
8-01								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:25	N					
2.	Luddenham Road	8:27	N					
3.	Lawson Road	7:45	N					
4.	Elizabeth Drive	7:30	N					
5.	Mamre Road	8:00	N					
6.	Bakers lane	8:05	N					
7.	St Clair	8:35	N					
8.	Internal Landfill Boundary Road	9:25	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	20/8/19	Start Time:	8:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
8.29							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:35	N				
2.	Luddenham Road	8:44	N				
3.	Lawson Road	9:05	N				
4.	Elizabeth Drive	9:00	N				
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:19	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:15	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	27/8/19	Start Time:	8:00 am	Finish Time:	9:15 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
10.5							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:42	N				
2.	Luddenham Road	8:55	Y	mild sweet rubbish like odour but not very offensive (strength 2/10)			
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:10	Y	same as ^{on} Luddenham Road			
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:20	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	4/9/19	Start Time:	8:10	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:40	N				
2.	Luddenham Road	8:450	N				
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:07	N				
5.	Mamre Road	8:23	N				
6.	Bakers lane	8:27	N				
7.	St Clair	8:10	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	5/9/19	Start Time:	7:45 am	Finish Time:	8:45
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:20	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:57	N				
4.	Elizabeth Drive	8:50	N				
5.	Mamre Road	7:58	N				
6.	Bakers lane	8:05	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	9:00	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	9/9/19 Mon	Start Time:	8:00 am	Finish Time:	9:45 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:40	N				
2.	Luddenham Road	8:55	N				
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:10	N				
5.	Mamre Road	8:18	N				
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:25	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	10/9/19 Tue	Start Time:	8:15 am	Finish Time:	9:15 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:48	N				
2.	Luddenham Road	8:43	Y	Organic material odour			
3.	Lawson Road	9:08	N				
4.	Elizabeth Drive	8:57	N				
5.	Mamre Road	8:30	N				
6.	Bakers lane	8:25	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:15	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	11/9/19 wed		Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:40	N					
2.	Luddenham Road	8:47	Y	Animal waste about mild				
3.	Lawson Road	9:30	N					
4.	Elizabeth Drive	9:25	N					
5.	Mamre Road	9:05	N					
6.	Bakers lane	9:09	N					
7.	St Clair	8:30	N					
8.	Internal Landfill Boundary Road	9:31	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	12/09/19 Thu		Start Time:	8:00 am	Finish Time:	9:00 am
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:43	N					
2.	Luddenham Road	8:55	N					
3.	Lawson Road	9:05	N					
4.	Elizabeth Drive	8:00	N					
5.	Mamre Road	8:15	N					
6.	Bakers lane	8:19	N					
7.	St Clair	8:00	N					
8.	Internal Landfill Boundary Road	9:10	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	13/9/19 Fri	Start Time:	7:45	Finish Time:	8:45
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:10	N				
2.	Luddenham Road	8:18	N				
3.	Lawson Road	8:39	N				
4.	Elizabeth Drive	8:30	N				
5.	Mamre Road	7:55	N				
6.	Bakers lane	7:59	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	8:45	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	16/9/19 Mon	Start Time:	8:00 am	Finish Time:	9:00 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:10 am	N				
2.	Luddenham Road	8:00 am	N				
3.	Lawson Road	8:42	N				
4.	Elizabeth Drive	8:40 am	N				
5.	Mamre Road	8:23	N				
6.	Bakers lane	8:25	N				
7.	St Clair	8:55	N				
8.	Internal Landfill Boundary Road	9:00	N				
Additional Comments and Observations:							

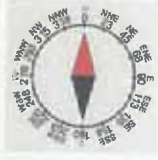
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	17/9/19 Tue	Start Time:	8:00 am	Finish Time:	9:00 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:15	N				
2.	Luddenham Road	8:25	N				
3.	Lawson Road	8:55	N				
4.	Elizabeth Drive	9:00	N				
5.	Mamre Road	8:40	N				
6.	Bakers lane	8:36	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:05	N				
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	18/9/19 wed		Start Time:	8:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							 SW	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:33	N					
2.	Luddenham Road	8:45	N					
3.	Lawson Road	9:01	N					
4.	Elizabeth Drive	8:55	N					
5.	Mamre Road	8:20	N					
6.	Bakers lane	8:15	N					
7.	St Clair	8:00	N					
8.	Internal Landfill Boundary Road	9:15	N					
Additional Comments and Observations:								

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	Thursday 19/9/19		Start Time:	8:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:35	N					
2.	Luddenham Road	8:45	N					
3.	Lawson Road	8:55	N					
4.	Elizabeth Drive	9:05	N					
5.	Mamre Road	8:15 am	N					
6.	Bakers lane	8:25 am	N					
7.	St Clair	8:00 am	N					
8.	Internal Landfill Boundary Road	9:15	N					
Additional Comments and Observations:								

KCSAWT - Daily Monitoring Rounds Record Sheet

Friday

Assessor:	Khushboo Singh	Date:	20/9/19	Start Time:	8:15	Finish Time:	9:15
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Wind Speed	Rain	Weather Conditions (tick all that apply)	Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds	<input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold	<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm




SW ↗

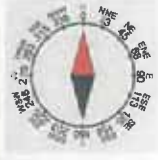
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments
1.	Twins Creeks	8:40	N	
2.	Luddenham Road	8:50	Y	Grass odour
3.	Lawson Road	9:00	N	
4.	Elizabeth Drive	9:08	N	
5.	Mamre Road	8:23	N	
6.	Bakers lane	8:25	N	
7.	St Clair	8:15	N	
8.	Internal Landfill Boundary Road	9:18	N	

Additional Comments and Observations:


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	23/09/2019	Start Time:	10:30 am	Finish Time:	11:40 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	11:05	N				
2.	Luddenham Road	11:10	N				
3.	Lawson Road	11:25	N				
4.	Elizabeth Drive	11:20	N				
5.	Mamre Road	10:45	N				
6.	Bakers lane	10:50	N				
7.	St Clair	10:30	N				
8.	Internal Landfill Boundary Road	11:36	N				
Additional Comments and Observations:							
No odours detected							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	24/9/19	Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	9:10	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:20	N				
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:57	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road	9:33	N				
Additional Comments and Observations:							

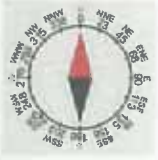
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	25/9/19	Start Time:	8:00	Finish Time:	9:10
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
						 SW 7	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:27	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:55	N				
4.	Elizabeth Drive	8:50	N				
5.	Mamre Road	8:12	Y	Animal waste odour			
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:05	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	27/9/2019	Start Time:	7:45	Finish Time:	8:50
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:59	N				
2.	Luddenham Road	8:05	N				
3.	Lawson Road	8:54	N				
4.	Elizabeth Drive	8:47	N				
5.	Mamre Road	8:20	N				
6.	Bakers lane	8:24	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road						
Additional Comments and Observations: <p style="text-align: center;">no odours detected</p>							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	1st Oct 2019	Start Time:	7:15	Finish Time:	8:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:45	Y	Near the entrance - rubbish like odour . Sweet			
2.	Luddenham Road	7:55 8:15	Y	Animal manure odour			
3.	Lawson Road	8:15 8:14	N				
4.	Elizabeth Drive	8:10 8:15	N				
5.	Mamre Road	7:27	N				
6.	Bakers lane	7:33 8:15	N				
7.	St Clair	7:15	N				
8.	Internal Landfill Boundary Road	8:25	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	2 nd Oct 2019	Start Time:	8:15	Finish Time:	9:15
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:48	N	Mild fgo like odour detected near the entrance			
2.	Luddenham Road	8:42	Y	fgo like odour detected along part of the road			
3.	Lawson Road	9:08	N				
4.	Elizabeth Drive	8:57	N				
5.	Mamre Road	8:20	N				
6.	Bakers lane	8:25	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:15	N.				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	3 rd Oct 2019	Start Time:	08:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:27	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:55	N				
4.	Elizabeth Drive	8:50	Y	Fgo (rotten) odour along the drive. Likely from ANL			
5.	Mamre Road	8:12	N				
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:00	Y	Mild fgo odour when entering the facility & along the access road, but did not originate from the facility.			
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	4 th Oct 2019	Start Time:	8:10	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:55	N				
2.	Luddenham Road	8:59	N				
3.	Lawson Road	8:20	N				
4.	Elizabeth Drive	8:10	Y	Rotten Rubbish odour on a section of ED closer to creek			
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:40	N				
7.	St Clair	9:10	N				
8.	Internal Landfill Boundary Road	9:25	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	8/10/19	Start Time:	8:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:30	N				
2.	Luddenham Road	8:37	N				
3.	Lawson Road	8:57	N				
4.	Elizabeth Drive	8:55	N				
5.	Mamre Road	8:12	N				
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:05	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	9/10/19	Start Time:	7:45	Finish Time:	9:45
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:15	N				
2.	Luddenham Road	8:22	N				
3.	Lawson Road	8:35	N				
4.	Elizabeth Drive	8:40	N				
5.	Mamre Road	7:54	N				
6.	Bakers lane	8:00	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	8:45	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	14/0ct	Start Time:	8:00	Finish Time:	9:10
Wind Speed <input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions <i>(tick all that apply)</i> <input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		Wind direction <i>(Mark Direction)</i> 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:33	N				
2.	Luddenham Road	8:40	N				
3.	Lawson Road	8:55	N				
4.	Elizabeth Drive	8:50	N				
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:20	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:05	N				
Additional Comments and Observations: 							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	21 Oct 2019	Start Time:	7:45	Finish Time:	8:50
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:25	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:45	N				
4.	Elizabeth Drive	8:40	N				
5.	Mamre Road	8:00	N				
6.	Bakers lane	8:10	N				
7.	St Clair	7:45 8:00	N				
8.	Internal Landfill Boundary Road	9:00	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	22 Oct 2019	Start Time:	8.00 am	Finish Time:	9:00 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:37	N				
2.	Luddenham Road	8:42	N				
3.	Lawson Road	9:04	N				
4.	Elizabeth Drive	8:58	N				
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:20	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:10	N				
Additional Comments and Observations: <p style="text-align: center;">no odours detected</p>							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	23 Oct 2019	Start Time:	8:00 am	Finish Time:	9:10 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:35	N				
2.	Luddenham Road	8:30	N				
3.	Lawson Road	8:50	N				
4.	Elizabeth Drive	8:59	N				
5.	Mamre Road	8:16	N				
6.	Bakers lane	8:19	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:05	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	24/10/19		Start Time:	8:15	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:47	N					
2.	Luddenham Road	8:53	N					
3.	Lawson Road	9:20	N					
4.	Elizabeth Drive	9:12	N					
5.	Mamre Road	8:32	N					
6.	Bakers lane	8:30	N					
7.	St Clair	8:15	N					
8.	Internal Landfill Boundary Road	9:30	N					
Additional Comments and Observations: <p style="text-align: center;">No odours detected.</p>								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	25/10/19	Start Time:	8:15	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:40	N				
3.	Lawson Road	9:10	N				
4.	Elizabeth Drive	9:00	N				
5.	Mamre Road	8:25	N				
6.	Bakers lane	8:30	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations:							


KQSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	25/10/19	Start Time:	8.30	Finish Time:	9.35
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9:10	N				
2.	Luddenham Road	9:05	N				
3.	Lawson Road	9:35	N				
4.	Elizabeth Drive	9:40	N				
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:50	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road		N				
Additional Comments and Observations: <p>no odours detected</p>							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	29/10/19	Start Time:	7:45 am	Finish Time:	8:50 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:25	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:45	N				
4.	Elizabeth Drive	8:40	N				
5.	Mamre Road	8:00	N				
6.	Bakers lane	8:10	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	9:00	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	30/10/19	Start Time:	8:00	Finish Time:	9:50
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:55	N				
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:10	N				
5.	Mamre Road	8:20	N				
6.	Bakers lane	8:15	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	31/10/19	Start Time:	7:00	Finish Time:	8:15
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:50	N				
2.	Luddenham Road	7:56	N				
3.	Lawson Road	8:00	N				
4.	Elizabeth Drive	7:20	Y	Stale air but not very offensive			
5.	Mamre Road	7:25	N				
6.	Bakers lane	7:15	N				
7.	St Clair	7:00	N				
8.	Internal Landfill Boundary Road	8:10	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	1/11/19	Start Time:	8:00	Finish Time:	9:15
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:27	N				
2.	Luddenham Road	8:20	N				
3.	Lawson Road	9:00	N				
4.	Elizabeth Drive	8:48	N				
5.	Mamre Road	8:15	N				
6.	Bakers lane	8:19	N				
7.	St Clair	8:00	N				
8.	Internal Landfill Boundary Road	9:15	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	04/11/19	Start Time:	8:20	Finish Time:	9:25
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:30	N				
2.	Luddenham Road	8:28	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:15	N				
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:59	N				
7.	St Clair	8:20	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	5/11/19	Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9:05	N				
2.	Luddenham Road	9:00	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:20	N				
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:50	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road	9:30	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	6/11/19	Start Time:	8:15	Finish Time:	9:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:45	N				
2.	Luddenham Road	8:55	N				
3.	Lawson Road	9:15	N				
4.	Elizabeth Drive	9:10	N				
5.	Mamre Road	8:30	N				
6.	Bakers lane	8:35	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:25	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	7/11/19	Start Time:	8:10	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input checked="" type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:55	N				
2.	Luddenham Road	9:00	N				
3.	Lawson Road	8:20	N				
4.	Elizabeth Drive	8:15	N				
5.	Mamre Road	8:37	N				
6.	Bakers lane	8:40	N				
7.	St Clair	8:15	N				
8.	Internal Landfill Boundary Road	9:20	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	8/11/19	Start Time:	8:20	Finish Time:	9:35
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
						 NW	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:53	N				
2.	Luddenham Road	9:05	N				
3.	Lawson Road	9:20	N				
4.	Elizabeth Drive	9:15	N				
5.	Mamre Road	8:35	N				
6.	Bakers lane	8:40	N				
7.	St Clair	8:20	N				
8.	Internal Landfill Boundary Road	9:35	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	11/11/19	Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input checked="" type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:59	N				
2.	Luddenham Road	9:09	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:20	N				
5.	Mamre Road	8:45	N				
6.	Bakers lane	8:48	N				
7.	St Clair	8:30	N				
8.	Internal Landfill Boundary Road	9:35	N				
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet


Assessor:	Khushboo Singh	Date:	14/11/19	Start Time:	7:45	Finish Time:	9:10 8:55 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	8:25	N				
2.	Luddenham Road	8:35	N				
3.	Lawson Road	8:45	N				
4.	Elizabeth Drive	8:40	N				
5.	Mamre Road	8:00	N				
6.	Bakers lane	8:10	N				
7.	St Clair	7:45	N				
8.	Internal Landfill Boundary Road	9:00	N				
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

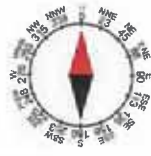
Assessor:	Khushboo Singh	Date:	15/11/19	Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9:05	N				
2.	Luddenham Road	9:15	N				
3.	Lawson Road	9:36	N				
4.	Elizabeth Drive	9:25	N				
5.	Mamre Road	8:57	N				
6.	Bakers lane	8:55	N				
7.	St Clair	8:35	N				
8.	Internal Landfill Boundary Road	9:30	N				
Additional Comments and Observations: Atmosphere full of smoke from the bushfire.							

KCSAWT - Daily Monitoring Rounds Record Sheet


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Assessor:	Khushboo Singh	Date:	18/11/19	Start Time:	8:30	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9:00	N				
2.	Luddenham Road	9:05	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:20	N				
5.	Mamre Road	8:40	N				
6.	Bakers lane	8:44	N				
7.	St Clair	8:25	N				
8.	Internal Landfill Boundary Road	9:30	N				
Additional Comments and Observations: Very smoky, burning smell due to ongoing bushfires							

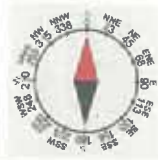
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	19/11/19	Start Time:	8:25	Finish Time:	9:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9:00	N				
2.	Luddenham Road	9:05	N				
3.	Lawson Road	9:25	N				
4.	Elizabeth Drive	9:20	N				
5.	Mamre Road	8:40	N				
6.	Bakers lane	8:42	N				
7.	St Clair	8:25	N				
8.	Internal Landfill Boundary Road	9:30	N				
Additional Comments and Observations: Air heavy with smoke.							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	20/11/19		Start Time:	8:00	Finish Time:	9:00
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	8:33	N					
2.	Luddenham Road	8:40	N					
3.	Lawson Road	8:52	N					
4.	Elizabeth Drive	8:45	N					
5.	Mamre Road	8:00	N					
6.	Bakers lane	8:15	N					
7.	St Clair	8:00	N					
8.	Internal Landfill Boundary Road	9:00	N					
Additional Comments and Observations:								

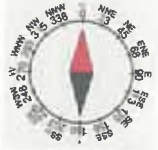
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	21.11.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	9.30	Y	Smoke			
2.	Luddenham Road	9.45	Y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	10.00	Y	Smoke.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	22.11.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

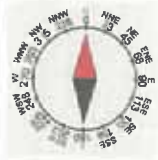
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	25.11.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	7.30	Y	Smoke.			
5.	Mamre Road	7.00	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	26-11-19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke			
5.	Mamre Road	8.00	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	27.11.18	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	6.45	Y	Smoke.			
5.	Mamre Road	7.45	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	28.11.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	8.30	Y	Smoke			
5.	Mamre Road	7.45	Y	Smoke			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	29.11.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	9.00	Y	Smoke			
5.	Mamre Road	7.45	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

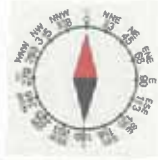
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	2.12.19		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	7.00	Y	Smoke				
2.	Luddenham Road	7.15	Y	Smoke				
3.	Lawson Road							
4.	Elizabeth Drive	9.00	Y	Smoke				
5.	Mamre Road	7.45	Y	Smoke				
6.	Bakers lane							
7.	St Clair							
8.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	3-12-19		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	7:00	Y	Smoke				
2.	Luddenham Road	7:15	Y	Smoke				
3.	Lawson Road							
4.	Elizabeth Drive	8:00	Y	Smoke				
5.	Mamre Road	7:45	Y	Smoke				
6.	Bakers lane							
7.	St Clair							
8.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	4.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00am.	Y	Smell of Smoke overpowering anything else.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	5-12-19		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	7-00	Y	Smoke very strong				
2.	Luddenham Road	7-45	Y	Smoke very strong				
3.	Lawson Road							
4.	Elizabeth Drive	7-45	Y	Smoke				
5.	Mamre Road	7-45	Y	Smoke.				
6.	Bakers lane							
7.	St Clair							
8.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	6.12.19.		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	7.00	Y	Smoke				
2.	Luddenham Road							
3.	Lawson Road							
4.	Elizabeth Drive	9.00	Y	Smoke				
5.	Mamre Road	7.45	Y	Smoke				
6.	Bakers lane							
7.	St Clair							
8.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	9-12-19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	y	Smoke			
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	y	Smoke			
5.	Mamre Road	7.45	y	Smoke .			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	10.12.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road	7.00	y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	8.00	y	Smoke			
5.	Mamre Road	7.45	y	Smoke .			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	11.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke			
5.	Mamre Road	7.45.	Y	Smoke			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	12.12.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	y	Smoke.			
2.	Luddenham Road	7.15	y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	2.00pm	y	Smoke			
5.	Mamre Road	7.45	y	Smoke			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	13.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	11.00	Y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	11.30	Y	Smoke			
5.	Mamre Road	7.45	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	16.12.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	y	Smoke.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	17.12.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	12.30	y	Smoke.			
5.	Mamre Road	12.00	y	Smoke			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	18.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke.			
3.	Lawson Road						
4.	Elizabeth Drive	9.30	Y	Smoke			
5.	Mamre Road	7.45	Y	Smoke.			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	19.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	y	Smoke			
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	10.30	y	Smoke			
5.	Mamre Road	7.45	y	Smoke .			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	20.12.19.		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Twins Creeks	7.00	Y	Smoke .				
2.	Luddenham Road							
3.	Lawson Road							
4.	Elizabeth Drive	8.00	Y	Smoke .				
5.	Mamre Road							
6.	Bakers lane							
7.	St Clair							
8.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	23.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7:00	Y	Smoke			
2.	Luddenham Road	7:45	Y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	8:00	Y	Smoke .			
5.	Mamre Road	7:45	Y	Smoke .			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	24.12.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	27.12.19.	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke -			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	30.11.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	y	Smoke			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

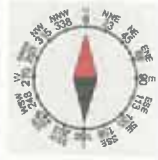
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	31.11.19	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks						
2.	Luddenham Road						
3.	Lawson Road						
4.	Elizabeth Drive	8.00	y	Smoke.			
5.	Mamre Road						
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	2.1.20	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	Y	Smoke			
2.	Luddenham Road	7.15	Y	Smoke			
3.	Lawson Road						
4.	Elizabeth Drive	8.00	Y	Smoke			
5.	Mamre Road	7.45	Y	Smoke .			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	31. 20	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	7.00	y	Slight Smoke			
2.	Luddenham Road	7.15	y	"			
3.	Lawson Road						
4.	Elizabeth Drive	9.00		Slight Smoke			
5.	Mamre Road	7.45		Slight Smoke			
6.	Bakers lane						
7.	St Clair						
8.	Internal Landfill Boundary Road						
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Khushboo Singh	Date:	21/1/20	Start Time:	9:40	Finish Time:	10:45
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Twins Creeks	10:10	N				
2.	Luddenham Road	9:55	N				
3.	Lawson Road	9:52	N				
4.	Elizabeth Drive	9:49	N				
5.	Mamre Road	10:25	N				
6.	Bakers lane	10:28	N				
7.	St Clair	10:15	N				
8.	Internal Landfill Boundary Road	9:45	N				
Additional Comments and Observations: Hawkins Avenue → No odour							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Josh tonga	Date:	20/02/2020	Start Time:	9:30am	Finish Time:	10:15am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Lawson Road						
2.	Hawkins Avenue						
3.	Luddenham Road		yes	Intersection of Luddenham road Elizabeth drive smell cow manure.			
4.	Twins Creeks		no				
5.	Farmingdale Court						
6.	St Clair						
7.	Mamre Road		no				
8.	Bakers Lane						
9.	Elizabeth Drive		no				
10.	Internal Landfill Boundary Road						
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	25/2/20		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road	1.30pm	N					
8.	Bakers Lane							
9.	Elizabeth Drive	1.50pm	N					
10.	Internal Landfill Boundary Road	2.00pm	N					
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

4


Assessor:	Jazib Farid	Date:	26/2/20	Start Time:	14:37	Finish Time:	15:49
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Hawkins Avenue (15)	14:52	N				
2.	Luddenham Road	15:02	N				
3.	Medinah Ave	15:06	N				
4.	Woodhall Place (3)	15:10	N				
5.	Halmstad Boulevard	15:13	N				
6.	Farmingdale Court (22)	15:15	N				
7.	Twins Creek Drive	15:17	N				
8.	Mandalong Close	15:27	N				
9.	Bakers Lane (45)						
10.	Elizabeth Drive						
11.	Western Road						

11


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	26 / 2 / 20	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Lawson Road						
2.	Hawkins Avenue						
3.	Luddenham Road						
4.	Twins Creeks						
5.	Farmingdale Court						
6.	St Clair						
7.	Mamre Road						
8.	Bakers Lane						
9.	Elizabeth Drive	7.30	N				
10.	Internal Landfill Boundary Road	7.50	N.				
Additional Comments and Observations:							

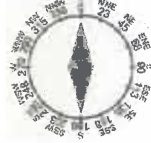
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	2/3/20	Start Time:	11:23	Finish Time:	12:21
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Hawkins Avenue (15)	11:35	N				
2.	Luddenham Road	11:45	N				
3.	Medinah Ave	11:48	N				
4.	Woodhall Place (3)	11:50	N				
5.	Halmstad Boulevarde	11:54	N				
6.	Farmingdale Court (22)	11:56	N				
7.	Twins Creek Drive	11:59	N				
8.	Mandalong Close	12:06	N				
9.	Bakers Lane (45)	12:10	N				
10.	Elizabeth Drive	11:20	N				
11.	Western Road	12:21	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	23/20	Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Lawson Road						
2.	Hawkins Avenue						
3.	Luddenham Road						
4.	Twins Creeks						
5.	Farmingdale Court						
6.	St Clair						
7.	Mamre Road						
8.	Bakers Lane						
9.	Elizabeth Drive	8.20	N				
10.	Internal Landfill Boundary Road	8.40	N				
Additional Comments and Observations:							


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	3/3/20		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road							
8.	Bakers Lane							
9.	Elizabeth Drive	1-30pm.	N	No odour detected.				
10.	Internal Landfill Boundary Road							
Additional Comments and Observations:								

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	4/3/20		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road							
8.	Bakers Lane							
9.	Elizabeth Drive	5:45	NO	No Smell from Kemps Creek to SAWT				
10.	Internal Landfill Boundary Road							
Additional Comments and Observations:								

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	5/3/20.		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road							
8.	Bakers Lane							
9.	Elizabeth Drive	8.10	1					
10.	Internal Landfill Boundary Road							
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	6 / 3 / 20		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road							
8.	Bakers Lane							
9.	Elizabeth Drive	7:40	N	Mike, Albert				
10.	Internal Landfill Boundary Road	7:45	N	Mike, Albert				
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Jazib Farid	Date:	9/3/20		Start Time:		Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	Lawson Road							
2.	Hawkins Avenue							
3.	Luddenham Road							
4.	Twins Creeks							
5.	Farmingdale Court							
6.	St Clair							
7.	Mamre Road							
8.	Bakers Lane							
9.	Elizabeth Drive	7:50/8:10	N/N	Mike, Earthy smell due to rain				
10.	Internal Landfill Boundary Road	7:55	N	Mike,				
Additional Comments and Observations:								


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dozie E	Date:	10.3.2020	Start Time:	8.48	Finish Time:	10.45
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8.51	N	no obvious odour.			
2.	Luddenham Road	9.00	N	"			
3.	Medinah Ave	9.05	N	"			
4.	3 Woodhall Place	9.07	N	"			
5.	Halmstad Boulevard	9.11	N	"			
6.	22 Farmingdale Court	9.18	N	"			
7.	Twins Creek Drive	9.13	N	"			
8.	Mandalong Close	9.25	N	"			
9.	45 Bakers Lane	9.30	N	"			
10.	Elizabeth Drive	10.35	N	"			
11.	Western Road (northern tip near ELD)	10.05	f	Slight / faint odour			


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	14/4/20	Start Time:	10:00 AM	Finish Time:	11:17
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	10:15	N	little damp odour (1/5)			
2.	Luddenham Road	10:27	N				
3.	Medinah Ave	10:30	N				
4.	3 Woodhall Place	10:33	N	Garbage Collection Day (Twins Creek)			
5.	Halmstad Boulevard	10:37	N				
6.	22 Farmingdale Court	10:39	N				
7.	Twins Creek Drive	10:42	N				
8.	Mandalong Close	10:51	N				
9.	45 Bakers Lane	10:55	N				
10.	Elizabeth Drive	11:15	N				
11.	Western Road (northern tip near ELD)	11:17	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	15/4/20	Start Time:	7:30 AM	Finish Time:	8:25 AM
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
						 WNW	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	7:43	N				
2.	Luddenham Road	7:51	N				
3.	Medinah Ave	7:54	N				
4.	3 Woodhall Place	7:57	N				
5.	Halmstad Boulevard	7:58	N				
6.	22 Farmingdale Court	8:02	N	1/5 → little damp odour.			
7.	Twins Creek Drive	7:53	N				
8.	Mandalong Close	—	—				
9.	45 Bakers Lane	8:14	N				
10.	Elizabeth Drive	8:25	N				
11.	Western Road (northern tip near ELD)	7:32	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JALIB	Date:	16/04/20	Start Time:	8:15	Finish Time:	9:18
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8:44	N				
2.	Luddenham Road	8:54	N				
3.	Medinah Ave	8:58	N				
4.	3 Woodhall Place	9:01	N				
5.	Halmstad Boulevarde	9:02	N				
6.	22 Farmingdale Court	9:06	N				
7.	Twins Creek Drive	8:57	N				
8.	Mandalong Close	—	—				
9.	45 Bakers Lane	9:18	N				
10.	Elizabeth Drive	8:32	N				
11.	Western Road (northern tip near ELD)	8:30	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	17/4/20	Start Time:	7:40 AM	Finish Time:	
Wind Speed <input checked="" type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions <i>(tick all that apply)</i> <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm		Wind direction <i>(Mark Direction)</i> 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8:03	N				
2.	Luddenham Road	8:11	N				
3.	Medinah Ave	8:13	N				
4.	3 Woodhall Place	8:15	N				
5.	Halmstad Boulevard	8:18	N				
6.	22 Farmingdale Court	8:20	N				
7.	Twins Creek Drive	8:13	N				
8.	Mandalong Close	-	-				
9.	45 Bakers Lane	8:30	N				
10.	Elizabeth Drive	7:52	N				
11.	Western Road (northern tip near ELD)	7:51	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	20/4/20	Start Time:	7:45	Finish Time:	8:40
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8:16	N				
2.	Luddenham Road	8:25	N				
3.	Medinah Ave	8:27	N				
4.	3 Woodhall Place	8:30	N				
5.	Halmstad Boulevard	8:31	N				
6.	22 Farmingdale Court	8:35	N				
7.	Twins Creek Drive	8:36	N				
8.	Mandalong Close	—	—				
9.	45 Bakers Lane	7:50	N				
10.	Elizabeth Drive	8:02	N				
11.	Western Road (northern tip near ELD)	8:00	N	1/5 → very mild odour of waste.			

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	21/04/20	Start Time:	7:00AM	Finish Time:	8:00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	7:15	N				
2.	Luddenham Road	7:24	N				
3.	Medinah Ave	7:27	N				
4.	3 Woodhall Place	7:30	N				
5.	Halmstad Boulevard	7:32	N				
6.	22 Farmingdale Court	7:35	N				
7.	Twins Creek Drive	7:37	N				
8.	Mandalong Close	—	I				
9.	45 Bakers Lane	7:51	N				
10.	Elizabeth Drive	7:04	N				
11.	Western Road (northern tip near ELD)	7:01	N				

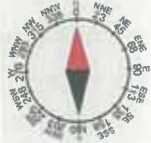
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	22/4/20	Start Time:	9:00	Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road						
3.	Medinah Ave						
4.	3 Woodhall Place						
5.	Halmstad Boulevard						
6.	22 Farmingdale Court						
7.	Twins Creek Drive						
8.	Mandalong Close						
9.	45 Bakers Lane						
10.	Elizabeth Drive						
11.	Western Road (northern tip near ELD)						


KCSAWT - Daily Monitoring Rounds Record Sheet

	(if required)			
12.	The Grandstand, St Clair			
13.	Swallow Drive, St Clair			
14.	Cockatoo Rd, Erskine Park			
<p>Additional Comments and Observations: Mike → Internal odour detected at back pad of SAWT facility. Wind blowing SW at 9:50am at time of reporting. (windy.com)</p>				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	JAZIB	Date:	23/4/20	Start Time:	4:00 PM	Finish Time:	4:45 PM
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
						 NNE	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	-	-				
2.	Luddenham Road	4:07	N				
3.	Medinah Ave	4:13	N				
4.	3 Woodhall Place	4:18	N				
5.	Halmstad Boulevard	4:21	N				
6.	22 Farmingdale Court	4:22	N				
7.	Twins Creek Drive	4:25	N				
8.	Mandalong Close	-	-				
9.	45 Bakers Lane	4:35	N				
10.	Elizabeth Drive	4:00	N				
11.	Western Road (northern tip near ELD)	4:45	N				

KCSAWT - Daily Monitoring Rounds Record Sheet


Assessor: JAZIB		Date: 24/4/20		Start Time: 8:00 AM		Finish Time: 8:46	
Wind Speed <input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions <i>(tick all that apply)</i> <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm			Wind direction <i>(Mark Direction)</i> 
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	—	—				
2.	Luddenham Road	8:08	N				
3.	Medinah Ave	8:15	N				
4.	3 Woodhall Place	8:19	N				
5.	Halmstad Boulevard	8:21	N				
6.	22 Farmingdale Court	8:22	N				
7.	Twins Creek Drive	8:28	N				
8.	Mandalong Close	—	—				
9.	45 Bakers Lane	8:37	N				
10.	Elizabeth Drive	8:00	Y	1-2 out of 5 ; mild odour of rubbish/waste			
11.	Western Road (northern tip near ELD)	8:46	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	<i>Doie</i>	Date:	<i>1/5/2020</i>	Start Time:	<i>10:00 am</i>	Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	<i>—</i>	<i>—</i>				
2.	Luddenham Road	<i>10:18 am</i>	<i>N</i>				
3.	Medinah Ave	<i>10:05</i>	<i>N</i>				
4.	3 Woodhall Place	<i>10:08</i>	<i>Y</i>	<i>slight organic odour</i>			
5.	Halmstad Boulevard	<i>10:10</i>	<i>N</i>				
6.	22 Farmingdale Court	<i>10:15</i>	<i>N</i>				
7.	Twins Creek Drive	<i>10:00 am</i>	<i>N</i>				
8.	Mandalong Close	<i>10:25</i>	<i>N</i>				
9.	45 Bakers Lane	<i>10:30</i>	<i>N</i>				
10.	Elizabeth Drive	<i>10:40</i>	<i>N</i>				
11.	Western Road (northern tip near ELD)	<i>10:45</i>	<i>N</i>				

Heleen

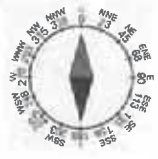
KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	K. Te/Re	Date:	9.5.2020	Start Time:	11.29	Finish Time:	12.30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	11.55	-				
2.	Luddenham Road	12.00	-				
3.	Medinah Ave	12.02	-				
4.	3 Woodhall Place	12.11	-				
5.	Halmstad Boulevard	12.12	-				
6.	22 Farmingdale Court	12.15	-				
7.	Twins Creek Drive	12.18	-				
8.	Mandalong Close	12.27	-				
9.	45 Bakers Lane	12.30	-				
10.	Elizabeth Drive	11.32	-				
11.	Western Road (northern tip near ELD)	11.29	-				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor: <i>K T P/A</i>		Date: <i>5 May 2020</i>		Start Time: <i>8.15</i>		Finish Time: <i>9.10</i>	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #		Monitoring Point		Time	Odour Y/N	Comments	
1.		15 Hawkins Avenue		<i>8.31</i>	<i>1</i>	<i>wood fire - no odours in surrounding area</i>	
2.		Luddenham Road		<i>8.40</i>	<i>-</i>		
3.		Medinah Ave		<i>8.45</i>	<i>-</i>		
4.		3 Woodhall Place		<i>8.47</i>	<i>1</i>	<i>wood fire</i>	
5.		Halmstad Boulevard		<i>8.50</i>	<i>-</i>		
6.		22 Farmingdale Court		<i>8.52</i>	<i>-</i>		
7.		Twins Creek Drive		<i>8.53</i>	<i>-</i>		
8.		Mandalong Close		<i>9.03</i>	<i>1</i>	<i>wood fire</i>	
9.		45 Bakers Lane		<i>9.07</i>	<i>-</i>		
10.		Elizabeth Drive		<i>8.15</i>	<i>1</i>	<i>compost at Roloduct - Earthy 1km west of ELD</i>	
11.		Western Road (northern tip near ELD)		<i>8.18</i>	<i>-</i>		

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	K. To Ra	Date:	6. May 2020	Start Time:	8.10	Finish Time:	9.15
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8.38	-				
2.	Luddenham Road	8.45	-				
3.	Medinah Ave	8.49	-				
4.	3 Woodhall Place	8.50	-				
5.	Halmstad Boulevard	8.51	1	smoke - fire			
6.	22 Farmingdale Court	8.52	-				
7.	Twins Creek Drive	8.50	-				
8.	Mandalong Close	9.00	1	smoke			
9.	45 Bakers Lane	9.03	1	smoke - fire noted near Caltex			
10.	Elizabeth Drive	8.12	1	Rubbish at Caltex - not at Mite 10 ^x			
11.	Western Road (northern tip near ELD)	8.18	1	Fire - back burning x Rubbish at Rolladuct			

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	D021P	Date:	7/5/2020	Start Time:	10:10	Finish Time:	11:25
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	10:15	N				
2.	Luddenham Road	10:40	N				
3.	Medinah Ave	10:47	N				
4.	3 Woodhall Place	10:49	N				
5.	Halmstad Boulevard	11:02	N				
6.	22 Farmingdale Court	11:05	N				
7.	Twins Creek Drive	10:44	N				
8.	Mandalong Close	11:20	N				
9.	45 Bakers Lane	11:25	N				
10.	Elizabeth Drive	10:10	N				
11.	Western Road (northern tip near ELD)	10:02	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	<i>Dore</i>	Date:	<i>8/5/2020</i>	Start Time:	<i>10:00</i>	Finish Time:	<i>14:15</i>
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	<i>10:30</i>	<i>N</i>				
2.	Luddenham Road	<i>10:35</i>	<i>N</i>				
3.	Medinah Ave	<i>10:40</i>	<i>N</i>				
4.	3 Woodhall Place	<i>10:43</i>	<i>N</i>				
5.	Halmstad Boulevard	<i>10:46</i>	<i>N</i>				
6.	22 Farmingdale Court	<i>10:50</i>	<i>N</i>				
7.	Twins Creek Drive	<i>10:38</i>	<i>N</i>				
8.	Mandalong Close	<i>11:00</i>	<i>N</i>				
9.	45 Bakers Lane	<i>11:15</i>	<i>N</i>				
10.	Elizabeth Drive	<i>10:50</i>	<i>N</i>				
11.	Western Road (northern tip near ELD)	<i>10:5</i>	<i>N</i>				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dozie	Date:	11/5/2020	Start Time:	11:00 am	Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	11:15 am	N				
2.	Luddenham Road	11:00 am	N				
3.	Medinah Ave	11:22 am	N				
4.	3 Woodhall Place	11:46 am	N				
5.	Halmstad Boulevard	11:50 am	N				
6.	22 Farmingdale Court	11:53 am	N				
7.	Twins Creek Drive	11:20 am	N				
8.	Mandalong Close	11:59 am	N				
9.	45 Bakers Lane	12:08 pm	N				
10.	Elizabeth Drive	11:00 am	N				
11.	Western Road (northern tip near ELD)	12:20 pm	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dozie	Date:	13.05.2020	Start Time:	10:03 am	Finish Time:	11:05 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour:Y/N	Comments			
1.	15 Hawkins Avenue	11:35 am	N				
2.	Luddenham Road	11:00 am	N				
3.	Medinah Ave	10:39 am	N				
4.	3 Woodhall Place	10:42 am	N				
5.	Halmstad Boulevard	10:53 am	N				
6.	22 Farmingdale Court	10:45 am	N				
7.	Twins Creek Drive	10:37 am	N				
8.	Mandalong Close	10:32 am	N				
9.	45 Bakers Lane	10:27 am	N				
10.	Elizabeth Drive	10:03 am	N				
11.	Western Road (northern tip near ELD)	10:18 am	N				


KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dozie	Date:	15.5.2020	Start Time:	9.00 am	Finish Time:	10.10 am
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	9.20 am	N				
2.	Luddenham Road	9.30 am	N				
3.	Medinah Ave	9.35 am	N				
4.	3 Woodhall Place	9.40 am	N				
5.	Halmstad Boulevard	9.43 am	N				
6.	22 Farmingdale Court	9.47 am	N				
7.	Twins Creek Drive	9.53 am	N				
8.	Mandalong Close	9.55 am	N				
9.	45 Bakers Lane	10.10 am	N				
10.	Elizabeth Drive	9.50 am	N				
11.	Western Road (northern tip near ELD)	9.00 am	N				

KCSAWT - Daily Monitoring Rounds Record Sheet


Assessor: <u>Dore</u>		Date: <u>18/5/2020</u>		Start Time: <u>10.00 am</u>	Finish Time: <u>11.20 am</u>
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
				Wind direction (Mark Direction) 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	11.20	N		
2.	Luddenham Road	11.05	N		
3.	Medinah Ave	10.37	N		
4.	3 Woodhall Place	10.38	N		
5.	Halmstad Boulevard	10.52	N		
6.	22 Farmingdale Court	10.48	N		
7.	Twins Creek Drive	10.37	N		
8.	Mandalong Close	10.33	N		
9.	45 Bakers Lane	10.29	N		
10.	Elizabeth Drive	10.00	N		
11.	Western Road (northern tip near ELD)	10.05	N		

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	DATE - E	Date:	20/5/2020	Start Time:	9.00am	Finish Time:	10.20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	9.23	N				
2.	Luddenham Road	9.25	N				
3.	Medinah Ave	9.40	N				
4.	3 Woodhall Place	9.42	N				
5.	Halmstad Boulevard	9.45	N				
6.	22 Farmingdale Court	9.50	N				
7.	Twins Creek Drive	9.33	N				
8.	Mandalong Close	9.58	N				
9.	45 Bakers Lane	10.20	N				
10.	Elizabeth Drive	9.00	N				
11.	Western Road (northern tip near ELD)	9.05	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

1

Assessor:	Dozie	Date:	21.5.2020	Start Time:	9.10	Finish Time:	10.30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	9.20	N				
2.	Luddenham Road	9.33	N				
3.	Medinah Ave	9.38	N				
4.	3 Woodhall Place	9.40	N				
5.	Halmstad Boulevard	9.43	N				
6.	22 Farmingdale Court	9.48	N				
7.	Twins Creek Drive	9.55	N				
8.	Mandalong Close	9.56	N				
9.	45 Bakers Lane	10.30	N				
10.	Elizabeth Drive	9.10	N				
11.	Western Road (northern tip near ELD)	9.14	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dozie Egonu	Date:	25/5/2020	Start Time:	8.30 am	Finish Time:	10.15
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input checked="" type="checkbox"/> Freezing <i>slightly</i> <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	8.45 am	N				
2.	Luddenham Road	8.56 am	N				
3.	Medinah Ave	9.05	N				
4.	3 Woodhall Place	9.15 am	N				
5.	Halmstad Boulevard	9.25 am					
6.	22 Farmingdale Court	9.26 am	N				
7.	Twins Creek Drive	9.29 am	N				
8.	Mandalong Close	10.05 am	N				
9.	45 Bakers Lane	10.15 am	N				
10.	Elizabeth Drive	8.30 am	N				
11.	Western Road (northern tip near ELD)	8.30 am	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor: Dozie		Date: 27/5/2020		Start Time: 9.50		Finish Time: 2.55	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	9.15	N				
2.	Luddenham Road	9.26	N				
3.	Medinah Ave	9.31	N				
4.	3 Woodhall Place	9.33	N				
5.	Halmstad Boulevard	9.40	N				
6.	22 Farmingdale Court	9.43	N				
7.	Twins Creek Drive	9.50	N				
8.	Mandalong Close	9.45	N				
9.	45 Bakers Lane	9.50	N				
10.	Elizabeth Drive	9.00	N				
11.	Western Road (northern tip near ELD)	9.05	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Donic P	Date:	28.5.2020	Start Time:	8:15	Finish Time:	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input checked="" type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	✓	✓				
2.	Luddenham Road	8:55	N				
3.	Medinah Ave	9.02	N				
4.	3 Woodhall Place	9.04	N				
5.	Halmstad Boulevard	9.08	N				
6.	22 Farmingdale Court	9.14	N				
7.	Twins Creek Drive	8.57	N				
8.	Mandalong Close	8.53	N				
9.	45 Bakers Lane	8.48	N				
10.	Elizabeth Drive	8.15	N				
11.	Western Road (northern tip near ELD)	8.20	N				



KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	<i>Dorik Egecom</i>	Date:	<i>29.5.2020</i>	Start Time:	<i>8:30</i>	Finish Time:	<i>9:03</i>
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input checked="" type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	<i>—</i>	<i>—</i>				
2.	Luddenham Road	<i>8:40</i>	<i>N</i>				
3.	Medinah Ave	<i>8:43</i>	<i>N</i>				
4.	3 Woodhall Place	<i>8:46</i>	<i>N</i>				
5.	Halmstad Boulevard	<i>8:50</i>	<i>N</i>				
6.	22 Farmingdale Court	<i>8:53</i>	<i>N</i>				
7.	Twins Creek Drive	<i>8:52</i>	<i>N</i>				
8.	Mandalong Close	<i>8:55</i>	<i>N</i>				
9.	45 Bakers Lane	<i>9:03</i>	<i>N</i>				
10.	Elizabeth Drive	<i>8:30</i>	<i>N</i>				
11.	Western Road (northern tip near ELD)	<i>8:53</i>	<i>N</i>				

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	Dorrie-E	Date:	2/6/2020	Start Time:	11-46	Finish Time:	12-00
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input checked="" type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	—	—				
2.	Luddenham Road	12:10	N				
3.	Medinah Ave	12:13	N				
4.	3 Woodhall Place	12:19	N				
5.	Halmstad Boulevard	12:23	N				
6.	22 Farmingdale Court	12:25	N				
7.	Twins Creek Drive	12:17	N				
8.	Mandalong Close	12:45	N				
9.	45 Bakers Lane	12:50	N				
10.	Elizabeth Drive	11:46	N				
11.	Western Road (northern tip near ELD)	11:50	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: louise		Date: 3/6/20	Start Time: 8.10	Finish Time: 8.20
Wind Speed <input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	Weather Conditions (tick all that apply) <input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
		Wind direction (Mark Direction) 		
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments
1.	15 Hawkins Avenue			
2.	Luddenham Road			
3.	Medinah Ave			
4.	3 Woodhall Place			
5.	Halmstad Boulevard			
6.	22 Farmingdale Court			
7.	Twins Creek Drive			
8.	Mandalong Close			
9.	45 Bakers Lane			
10.	Elizabeth Drive	8.10	N	
11.	Western Road (northern tip near ELD)	8.20	N	

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 4/6/20		Start Time: 7.50	Finish Time: 8.00
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	7.50	N		
11.	Western Road (northern tip near ELD)	7.55	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 5/6/20		Start Time: 8.30	Finish Time: 8.40
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	8.30	N		
11.	Western Road (northern tip near ELD)	8.35	N.		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise.		Date: 8/6/20		Start Time: 9.00	Finish Time: 9.10.
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	9.00	N		
11.	Western Road (northern tip near ELD)	9.10	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 9/6/20		Start Time: 8.00		Finish Time: 8.20	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road						
3.	Medinah Ave						
4.	3 Woodhall Place						
5.	Halmstad Boulevard						
6.	22 Farmingdale Court						
7.	Twins Creek Drive						
8.	Mandalong Close						
9.	45 Bakers Lane						
10.	Elizabeth Drive	8.15	N				
11.	Western Road (northern tip near ELD)	8.20	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 10/6/20		Start Time: 9.00		Finish Time: 9.10	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road						
3.	Medinah Ave						
4.	3 Woodhall Place						
5.	Halmstad Boulevard						
6.	22 Farmingdale Court						
7.	Twins Creek Drive						
8.	Mandalong Close						
9.	45 Bakers Lane						
10.	Elizabeth Drive	9.00	N				
11.	Western Road (northern tip near ELD)	9.10	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 11/6/20		Start Time: 8.30	Finish Time: 8.45
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	8.30	N		
11.	Western Road (northern tip near ELD)	8.45	N.		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 12/6/20.		Start Time: 8.45	Finish Time: 9.00
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	8.45	N		
11.	Western Road (northern tip near ELD)	9.00	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise.		Date: 15/6/20		Start Time: 8.00		Finish Time: 8.10	
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road						
3.	Medinah Ave						
4.	3 Woodhall Place						
5.	Halmstad Boulevard						
6.	22 Farmingdale Court						
7.	Twins Creek Drive						
8.	Mandalong Close						
9.	45 Bakers Lane						
10.	Elizabeth Drive	8.00	N				
11.	Western Road (northern tip near ELD)	8.10	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor:		Date: 16/6/20		Start Time: 8:30	Finish Time: 8:40
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	8:30	N		
11.	Western Road (northern tip near ELD)	8:40	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Louise		Date: 17/6/20		Start Time: 8.30pm	Finish Time: 8.40pm
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
				Wind direction (Mark Direction) 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road				
3.	Medinah Ave				
4.	3 Woodhall Place				
5.	Halmstad Boulevard				
6.	22 Farmingdale Court				
7.	Twins Creek Drive				
8.	Mandalong Close				
9.	45 Bakers Lane				
10.	Elizabeth Drive	8.30pm	N		
11.	Western Road (northern tip near ELD)	8.40pm	N.		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet




Document #: FORM026.4.69

Assessor: Louise		Date: 18 / 6 / 20		Start Time: 8.00	Finish Time: 9.00
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input checked="" type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue				
2.	Luddenham Road	8.20	2		
3.	Medinah Ave	8.30	2		
4.	3 Woodhall Place	8.33	2		
5.	Halmstad Boulevard	8.35	2		
6.	22 Farmingdale Court	8.37	2		
7.	Twins Creek Drive	8.38	2		
8.	Mandalong Close	8.40	2		
9.	45 Bakers Lane	8.45	2		
10.	Elizabeth Drive	8.00/9.00	2		
11.	Western Road (northern tip near ELD)	8.10	2		


Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet

Document #: FORM026.4.69

Assessor:	Louise Saunders	Date:	21/6/20	Start Time:	4:25	Finish Time:	5:17
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road	4:40	n				
3.	Medinah Ave	4:45	y	Grass Cutting			
4.	3 Woodhall Place	4:51	n				
5.	Halmstad Boulevard	4:55	n				
6.	22 Farmingdale Court	4:57	n				
7.	Twins Creek Drive	5:00	y	Manure			
8.	Mandalong Close	5:05	n				
9.	45 Bakers Lane	5:07	n				
10.	Elizabeth Drive	4:30 & 5:14	n				
11.	Western Road (northern tip near ELD)	5:17	n				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet

Document #: FORM026.4.69

Assessor:	Louise Saunders	Date:	22/6/20	Start Time:	12:45	Finish Time:	1:30
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue						
2.	Luddenham Road	1:50	n				
3.	Medinah Ave	1:15	n				
4.	3 Woodhall Place	1:08	n				
5.	Halmstad Boulevard	1:06	n				
6.	22 Farmingdale Court	1:08	n				
7.	Twins Creek Drive	1:05	n				
8.	Mandalong Close	1:20	n				
9.	45 Bakers Lane	1:22	n				
10.	Elizabeth Drive	1:25	n				
11.	Western Road (northern tip near ELD)	1:27	n				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet




Document #: FORM026.4.69

Assessor:	Mike Banasaz	Date:	23/06/2020	Start Time:	14:30	Finish Time:	15:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	14:30	N				
2.	Luddenham Road	14:40	N				
3.	Medinah Ave	14:45	N				
4.	3 Woodhall Place	14:47	N				
5.	Halmstad Boulevard	14:50	N				
6.	22 Farmingdale Court	14:51	N				
7.	Twins Creek Drive	14:53	N	Slight smell of cutting grass			
8.	Mandalong Close	14:59	N				
9.	45 Bakers Lane	15:04	N				
10.	Elizabeth Drive	15:11	N				
11.	Western Road (northern tip near ELD)	15:15	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet

Document #: FORM026.4.69

Assessor:	Kathleen Ho		Date:	24/6/20		Start Time:	2:30pm		Finish Time:	15:30	
Wind Speed			Rain			Weather Conditions (tick all that apply)			Wind direction (Mark Direction)		
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds			<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme			<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm		
											
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments							
1.	15 Hawkins Avenue										
2.	Luddenham Road	2:40	N								
3.	Medinah Ave	2:46	N								
4.	3 Woodhall Place	2:48	N								
5.	Halmstad Boulevard	2:50	N								
6.	22 Farmingdale Court	2:52	N								
7.	Twins Creek Drive	2:55	N								
8.	Mandalong Close	3:00	N								
9.	45 Bakers Lane	3:05	N								
10.	Elizabeth Drive	3:20	N								
11.	Western Road (northern tip near ELD)	3:22	N								

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>David McCutcheon</u>		Date: <u>25-6-20</u>		Start Time: <u>14:00</u>		Finish Time: <u>15:15</u>		
Wind Speed <input checked="" type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions (tick all that apply) <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			Wind direction (Mark Direction) 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	15 Hawkins Avenue	/						
2.	Luddenham Road	15:10	N					
3.	Medinah Ave	15:05	N					
4.	3 Woodhall Place	15:00	N	Pine smell				
5.	Halmstad Boulevard	14:48	W					
6.	22 Farmingdale Court	14:50	N	Dirt smell excavation				
7.	Twins Creek Drive	14:40	W					
8.	Mandalong Close	/						
9.	45 Bakers Lane	/						
10.	Elizabeth Drive	14:15	N					
11.	Western Road (northern tip near ELD)	14:25	N					

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 26.06.2020		Start Time: 15:18		Finish Time: 16:24		
Wind Speed <input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions (tick all that apply) <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			Wind direction (Mark Direction) 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	15 Hawkins Avenue	15:18	N	Slight pile bum smell				
2.	Luddenham Road	15:28	N					
3.	Medinah Ave	15:45	N					
4.	3 Woodhall Place	15:41	N					
5.	Halmstad Boulevard	15:38	N					
6.	22 Farmingdale Court	15:36	N					
7.	Twins Creek Drive	15:43	N					
8.	Mandalong Close	15:55	N					
9.	45 Bakers Lane	16:01	N					
10.	Elizabeth Drive	16:24	N					
11.	Western Road (northern tip near ELD)	16:19	N	Swamp smell smell, localised				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Hollingshead</u>		Date: <u>29 06 20</u>		Start Time: <u>12:40</u>		Finish Time: <u>13:30</u>	
Wind Speed <input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions (tick all that apply) <input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm			Wind direction (Mark Direction)
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	13:30	N				
2.	Luddenham Road	13:22	N				
3.	Medinah Ave	13:17	N				
4.	3 Woodhall Place	13:14	N				
5.	Halmstad Boulevard	13:12	N				
6.	22 Farmingdale Court	13:10	N				
7.	Twins Creek Drive	13:15	N				
8.	Mandalong Close	13:00	N				
9.	45 Bakers Lane	12:54	N				
10.	Elizabeth Drive	12:40	N				
11.	Western Road (northern tip near ELD)	12:43	N				


Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 30.06.2020		Start Time: 12:45		Finish Time: 13:32	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	13:32	N				
2.	Luddenham Road	13:23	N				
3.	Medinah Ave	13:11	N				
4.	3 Woodhall Place	13:14	N				
5.	Halmstad Boulevard	13:15	N				
6.	22 Farmingdale Court	13:17	N				
7.	Twins Creek Drive	13:13	N				
8.	Mandalong Close	13:03	N				
9.	45 Bakers Lane	12:58	N				
10.	Elizabeth Drive	12:45	N				
11.	Western Road (northern tip near ELD)	12:47	N				

KCSAWT - Daily Monitoring Rounds Record Sheet

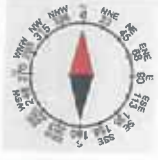
Assessor:	Jazib Farid	Date:	30/6/20	Start Time:	12.35	Finish Time:	1.25
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
							
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	Lawson Road						
2.	Hawkins Avenue						
3.	Luddenham Road	12.40	N				
4.	Twins Creeks	12.42	N				
5.	Farmingdale Court						
6.	St Clair						
7.	Mamre Road	1.05	N				
8.	Bakers Lane						
9.	Elizabeth Drive	1.21	N				
10.	Internal Landfill Boundary Road	1.23	N				
Additional Comments and Observations:							

KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	MIKE BANASAZ	Date:	01.07.2020	Start Time:	14:20	Finish Time:	15:20
Wind Speed		Rain		Weather Conditions (tick all that apply)		Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	15:20	N				
2.	Luddenham Road	15:15	N				
3.	Medinah Ave	15:05	N				
4.	3 Woodhall Place	15:03	N				
5.	Halmstad Boulevard	15:01	N				
6.	22 Farmingdale Court	14:58	N				
7.	Twins Creek Drive	14:55	N				
8.	Mandalong Close	14:41	N				
9.	45 Bakers Lane	14:36	N				
10.	Elizabeth Drive	14:30	N				
11.	Western Road (northern tip near ELD)	14:34	N				




KCSAWT - Daily Monitoring Rounds Record Sheet

Assessor:	D. [Signature]		Date:	2-7-20		Start Time:	15-30		Finish Time:	16-30	
Wind Speed			Rain			Weather Conditions (tick all that apply)				Wind direction (Mark Direction)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds			<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme			<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold				<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
											
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments							
1.	15 Hawkins Avenue										
2.	Luddenham Road	15:45	SM	Smoke							
3.	Medinah Ave	15:50	Y	Sewer - Golf Club							
4.	3 Woodhall Place	15:55	N								
5.	Halmstad Boulevard	16:00	N								
6.	22 Farmingdale Court	16:02	N								
7.	Twins Creek Drive	16:05	N								
8.	Mandalong Close	16:15	N								
9.	45 Bakers Lane	15:40	N								
10.	Elizabeth Drive	15:30	N								
11.	Western Road (northern tip near ELD)	16:30	N								

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet

Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 06.07.20		Start Time: 12:59	Finish Time: 13:46
Wind Speed		Rain		Weather Conditions (tick all that apply)	
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
				Wind direction (Mark Direction) 	
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	13:46	N		
2.	Luddenham Road	13:39	N		
3.	Medinah Ave	13:25	N		
4.	3 Woodhall Place	13:29	N		
5.	Halmstad Boulevard	13:32	N		
6.	22 Farmingdale Court	13:34	N		
7.	Twins Creek Drive	13:27	N		
8.	Mandalong Close	13:18	N		
9.	45 Bakers Lane	13:13	N		
10.	Elizabeth Drive	12:59	N		
11.	Western Road (northern tip near ELD)	13:01	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 07.07.2020		Start Time: 12:40		Finish Time: 13:27	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	13:27	N				
2.	Luddenham Road	13:20	N				
3.	Medinah Ave	13:06	N				
4.	3 Woodhall Place	13:09	N				
5.	Halmstad Boulevard	13:12	N				
6.	22 Farmingdale Court	13:13	N				
7.	Twins Creek Drive	13:08	N				
8.	Mandalong Close	12:57	N				
9.	45 Bakers Lane	12:53	N				
10.	Elizabeth Drive	12:40	N				
11.	Western Road (northern tip near ELD)	12:43	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Hollingshead</u>		Date: <u>10.07.20</u>		Start Time: <u>13:00</u>		Finish Time: <u>13:45</u>	
Wind Speed <input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions <i>(tick all that apply)</i> <input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm			Wind direction <i>(Mark Direction)</i>
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	13:45	N				
2.	Luddenham Road	13:36	N				
3.	Medinah Ave	13:26	N				
4.	3 Woodhall Place	13:29	N				
5.	Halmstad Boulevard	13:30	N				
6.	22 Farmingdale Court	13:31	N				
7.	Twins Creek Drive	13:28	N				
8.	Mandalong Close	13:18	N				
9.	45 Bakers Lane	13:12	N				
10.	Elizabeth Drive	13:00	N				
11.	Western Road (northern tip near ELD)	13:03	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Mollingshead</u>		Date: <u>13.07.2020</u>		Start Time: <u>11:56</u>		Finish Time: <u>12:36</u>	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	12:36	N				
2.	Luddenham Road	12:30	N				
3.	Medinah Ave	12:22	N				
4.	3 Woodhall Place	12:25	N				
5.	Halmstad Boulevard	12:26	N				
6.	22 Farmingdale Court	12:27	N				
7.	Twins Creek Drive	12:24	N				
8.	Mandalong Close	12:24	N				
9.	45 Bakers Lane	12:08	N				
10.	Elizabeth Drive	11:56	N				
11.	Western Road (northern tip near ELD)	11:58	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Hollingshead</u>		Date: <u>14.07.2020</u>		Start Time: <u>14:55</u>		Finish Time: <u>15:39</u>	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input checked="" type="checkbox"/> Strong Winds		<input type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input checked="" type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	15:39	N				
2.	Luddenham Road	15:33	N				
3.	Medinah Ave	15:21	N				
4.	3 Woodhall Place	15:24	N				
5.	Halmstad Boulevard	15:28	Y	Moderate - Low			
6.	22 Farmingdale Court	15:26	Y	Strong Strong			
7.	Twins Creek Drive	15:23	N				
8.	Mandalong Close	15:13	N				
9.	45 Bakers Lane	15:07	N				
10.	Elizabeth Drive	14:55	N				
11.	Western Road (northern tip near ELD)	14:57	N				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 15.07.2020		Start Time: 12:42	Finish Time: 13:52
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	13:32	N		
2.	Luddenham Road	13:26	N		
3.	Medinah Ave	13:09	N		
4.	3 Woodhall Place	13:12	N		
5.	Halmstad Boulevard	13:14	N		
6.	22 Farmingdale Court	13:16	N		
7.	Twins Creek Drive	13:11	N		
8.	Mandalong Close	13:03	N		
9.	45 Bakers Lane	12:59	N		
10.	Elizabeth Drive	12:42	N		
11.	Western Road (northern tip near ELD)	12:44	N	smell of farmland/livestock	

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



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Assessor: Mollie Hollingshead		Date: 17.07.2020		Start Time: 13:25	Finish Time: 14:14
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	14:14	N		
2.	Luddenham Road	14:04	N		
3.	Medinah Ave	13:49	N		
4.	3 Woodhall Place	13:51	N		
5.	Halmstad Boulevard	13:53	N		
6.	22 Farmingdale Court	13:54	N		
7.	Twins Creek Drive	13:56	N		
8.	Mandalong Close	13:43	N		
9.	45 Bakers Lane	13:39	N		
10.	Elizabeth Drive	13:25	N		
11.	Western Road (northern tip near ELD)	13:27	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Hollingshead</u>		Date: <u>20.07.2020</u>	Start Time: <u>13:59</u>	Finish Time: <u>14:52</u>
Wind Speed <input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	Weather Conditions (tick all that apply) <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
		Wind direction (Mark Direction) 		
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments
1.	15 Hawkins Avenue	14:52	N	
2.	Luddenham Road	14:42	N	
3.	Medinah Ave	14:25	N	
4.	3 Woodhall Place	14:27	N	
5.	Halmstad Boulevard	14:30	N	
6.	22 Farmingdale Court	14:31	N	
7.	Twins Creek Drive	14:28	N	
8.	Mandalong Close	14:19	N	
9.	45 Bakers Lane	14:15	N	
10.	Elizabeth Drive	13:59	N	farm / livestock smell (manure)
11.	Western Road (northern tip near ELD)	14:01	N	farm / livestock smell (manure)

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: Mollie Hollingshead		Date: 20.07.2020		Start Time: 12:16	Finish Time: 12:59
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	12:59	N		
2.	Luddenham Road	12:50	N		
3.	Medinah Ave	12:40	N		
4.	3 Woodhall Place	12:42	N		
5.	Halmstad Boulevard	12:45	N		
6.	22 Farmingdale Court	12:46	N		
7.	Twins Creek Drive	12:43	N		
8.	Mandalong Close	12:34	N		
9.	45 Bakers Lane	12:29	N		
10.	Elizabeth Drive	12:16	N		
11.	Western Road (northern tip near ELD)	12:19	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



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Assessor: Mollie Hollingshead		Date: 22.07.2020		Start Time: 11:20	Finish Time: 12:04
Wind Speed		Rain	Weather Conditions (tick all that apply)		Wind direction (Mark Direction)
<input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold		<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments	
1.	15 Hawkins Avenue	12:04	N		
2.	Luddenham Road	11:55	N		
3.	Medinah Ave	11:43	N		
4.	3 Woodhall Place	11:45	N		
5.	Halmstad Boulevard	11:47	N		
6.	22 Farmingdale Court	11:48	N		
7.	Twins Creek Drive	11:50	N		
8.	Mandalong Close	11:37	N		
9.	45 Bakers Lane	11:34	N		
10.	Elizabeth Drive	11:20	N		
11.	Western Road (northern tip near ELD)	11:23	N		

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



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Assessor: <u>Mollie Hollingshead</u>		Date: <u>23.07.2020</u>	Start Time: <u>14:44</u>	Finish Time: <u>15:28</u>
Wind Speed <input checked="" type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme	Weather Conditions (tick all that apply) <input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold <input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
		Wind direction (Mark Direction) 		
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments
1.	15 Hawkins Avenue	15:28	N	
2.	Luddenham Road	15:20	N	
3.	Medinah Ave	15:07	N	slight smell of manure
4.	3 Woodhall Place	15:09	N	
5.	Halmstad Boulevard	15:11	N	
6.	22 Farmingdale Court	15:12	N	
7.	Twins Creek Drive	15:08	N	
8.	Mandalong Close	15:01	N	
9.	45 Bakers Lane	14:58	N	
10.	Elizabeth Drive	14:44	N	
11.	Western Road (northern tip near ELD)	14:47	N	

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



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Assessor: Mollie Hollingshead		Date: 24.07.2020		Start Time: 13:00		Finish Time: 13:47	
Wind Speed		Rain		Weather Conditions (tick all that apply)			Wind direction (Mark Direction)
<input type="checkbox"/> Calm <input checked="" type="checkbox"/> Light Breeze <input type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		<input checked="" type="checkbox"/> None <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		<input checked="" type="checkbox"/> Mostly Sunny <input type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments			
1.	15 Hawkins Avenue	13:47	Z				
2.	Luddenham Road	13:40	Z				
3.	Medinah Ave	13:28	Z				
4.	3 Woodhall Place	13:30	Z				
5.	Halmstad Boulevard	13:33	Z				
6.	22 Farmingdale Court	13:34	Z				
7.	Twins Creek Drive	13:31	Z				
8.	Mandalong Close	13:22	Z				
9.	45 Bakers Lane	13:18	Z				
10.	Elizabeth Drive	13:00	Z				
11.	Western Road (northern tip near ELD)	13:03	Z				

Kemps Creek RRP Daily Odour Monitoring Rounds Record Sheet



Document #: FORM026.4.69

Assessor: <u>Mollie Hollingshead</u>		Date: <u>28.07.2020</u>		Start Time: <u>15:00</u>		Finish Time: <u>15:46</u>		
Wind Speed <input type="checkbox"/> Calm <input type="checkbox"/> Light Breeze <input checked="" type="checkbox"/> Moderate Wind <input type="checkbox"/> Strong Winds		Rain <input type="checkbox"/> None <input checked="" type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> Extreme		Weather Conditions (tick all that apply) <input type="checkbox"/> Mostly Sunny <input checked="" type="checkbox"/> Mostly Cloudy <input type="checkbox"/> Moderate <input type="checkbox"/> Hazy <input type="checkbox"/> Cold			<input type="checkbox"/> Partly Sunny <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Overcast <input type="checkbox"/> Freezing <input type="checkbox"/> Warm	
Wind direction (Mark Direction) 								
Map Ref #	Monitoring Point	Time	Odour Y/N	Comments				
1.	15 Hawkins Avenue	15:46	N					
2.	Luddenham Road	15:38	N					
3.	Medinah Ave	15:25	N					
4.	3 Woodhall Place	15:27	N					
5.	Halmstad Boulevard	15:30	N					
6.	22 Farmingdale Court	15:31	N					
7.	Twins Creek Drive	15:28	N					
8.	Mandalong Close	15:19	N					
9.	45 Bakers Lane	15:15	N					
10.	Elizabeth Drive	15:00	N					
11.	Western Road (northern tip near ELD)	15:03	N					

APPENDIX H TABULATED MONITORING DATA



Table 1. Sampling and Analysis Plan
Suez Kemps Creek SAWT
0570751 Kemps Ck 2019/20AEMR

SAWT Monitoring Point 1	Frequency	SAWT Monitoring Point 2,3,6	Frequency
Ammonia	Special Frequency 1*	Ammonia	Yearly
BOD	Special Frequency 1*	BOD	Yearly
Conductivity	Special Frequency 1*	COD	Yearly
Oil and Grease	Special Frequency 1*	pH	Yearly
pH	Special Frequency 1*	Total suspended solids	Yearly
Total organic carbon	Special Frequency 1*		
Total suspended solids	Special Frequency 1*		

** Collection of samples annually and four times per year during discharge.*



Table 2 - Analytical Results - Leachate Dams
SUEZ Kemps Creek AEMR
0570751 - AEMR 2020

	pH	Conductivity	Ammonia as N	BOD	COD	Total Dissolved Solids (Calc.)	Oil and Grease	TSS	TOC
	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.01	0.01	2	10	1	5	5	1

Field_ID	Location	EPL Point	Sampled_Date-Time	Lab_Report_Number									
EPA Compliance Sample Point 2	Upper Leachate Dam	EPL Point 2	17/07/2020	ES2024682	6.02	3740	5.7	36	414	2430	<5	253	106
EPA Compliance Sample Point 3	Lower Leachate Dam	EPL Point 3	17/07/2020	ES2024680	8.11	2920	3.6	13	386	1900	6	71	144
EPA Compliance Sample Point 4	Leachate Overflow Dam	EPL Point 4	17/07/2020	ES2024681	8.73	2120	0.1	25	292	1380	7	102	100
200211-LOD-01	Leachate Overflow Dam	EPL Point 4	11/02/2020	20/0159	7.5	-	7.6	-	-	-	-	84	-
EPA Compliance Sample Point 6	Final Product Leachate Dam	EPL Point 6	17/07/2020	ES2024685	8.53	5920	0.21	4	512	3850	<5	196	146

Statistical Summary													
Number of Results					5	5	5	5		5	5	5	5
Number of Detects					5	5	5	5		5	3	5	5
Minimum Concentration					6.02	2120	0.1	4		1380	<5	71	100
Minimum Detect					6.02	2120	0.1	4		1380	6	71	100
Maximum Concentration					8.73	5920	7.6	36		3850	7	253	146
Maximum Detect					8.73	5920	7.6	36		3850	7	253	146
Average Concentration					7.8	3675	3.4	20		2390	4.5	141	124
Median Concentration					8.11	3330	3.6	19		2165	4.25	102	125
Standard Deviation					1.1	1636	3.3	14		1064	2.3	79	24
Number of Guideline Exceedances					0	0	0	0		0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0		0	0	0	0



Table 3 - Analytical Results - Wet Weather Discharge
SUEZ Kemp Creek SAWT
0570751 - AEMR 2020

					pH	Ammonia as N	BOD	Oil and Grease	TSS	TOC	Total Dissolved Solids (Calc.)	Electrical conductivity *(lab)
					pH Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
EQL					0.01	0.01	2	5	5	1	1	10
Discharge Criteria					6.5-8.5	0.9			50			

Field_ID	Location	EPL Point	Sampled_Date-Time	Lab_Report_Number								
200210-SWDDischarge-1	Discharge Point	EPL Point 1	10/02/2020	20/0150	7.2	1.1	-	-	61	-	-	-
SP 1 DISCHARGE	Discharge Point	EPL Point 1	27/07/2020	734266	7.3	0.61	6.8	<10	31	<25	-	250
SP 1 OVERFLOW**	Discharge Point	EPL Point 1	27/07/2020	734266	7.8	0.19	<5	<10	24	26	-	1100

EPA Compliance Sample Point 1*	Stormwater Dam	EPL Point 5	17/07/2020	ES2024684	8.23	0.17	3	<5	129	26	443	681
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Statistical Summary

Number of Results	3	3	3	3	3	3	1	3
Number of Detects	3	3	2	0	3	2	1	3
Minimum Concentration	7.3	0.17	3	<5	24	<25	443	250
Minimum Detect	7.3	0.17	3	ND	24	26	443	250
Maximum Concentration	8.23	0.61	6.8	<10	129	26	443	1100
Maximum Detect	8.23	0.61	6.8	ND	129	26	443	1100
Average Concentration	7.8	0.32	4.1	4.2	61	22		677
Median Concentration	7.8	0.19	3	5	31	26	443	681
Standard Deviation	0.47	0.25	2.4	1.4	59	7.8		425
Number of Guideline Exceedances	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0

*Note: Sample mislabelled - taken from stormwater dam not discharge monitoring

** Sample taken from NW Sedimentation dam during discharge

Date	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
29/07/2019	S		N	N	N	Y	N	N	N		Y	
30/07/2019	WSW		N	Y	N	Y	Y	N	N		Y	Mild odour at Site boundary, FGO odour at Elizabeth Dr more likely from ANL
31/07/2019	WSW		N	N	N	N	Y	N	N		N	Fresh rubbish odour - no odour at site boundary, no material stored outdoors, no processing
1/08/2019	W		N	N	N	N	N	N	N			
2/08/2019	SW		N	N	N	N	N	N	N		N	
3/08/2019												
4/08/2019												
5/08/2019	SSW		N	N	N	Y	N	N	N		N	FGO odour at Elizabeth Dr possibly from ANL
6/08/2019	SW		N	Y	N	N	N	N	N		N	
7/08/2019	-		N	N	N	N	N	N	N		N	
8/08/2019	NW		Y	Y	N	N	N	N	N		N	Mild rubbish odour
9/08/2019												
10/08/2019												
11/08/2019												
12/08/2019	SW		N	N	N	N	N	N	Y		N	Mild fuel like odour - St Clair. No waste onsite
13/08/2019	NW		N	N	N	N	N	N	N		N	
14/08/2019												
15/08/2019	-		N	N	N	N	N	N	N		N	
16/08/2019	WSW		N	N	N	N	N	N	N		N	
17/08/2019												
18/08/2019												
19/08/2019	NW		N	N	N	N	N	N	N		N	
20/08/2019	S		N	N	N	N	N	N	N		N	
21/08/2019	ESE		N	N	N	N	N	N	N		N	
22/08/2019	WSW		N	N	N	N	N	N	N		N	
23/08/2019	WSW		N	N	N	N	N	N	N		N	
24/08/2019												
25/08/2019												
26/08/2019	SSW		N	N	N	N	N	N	N		N	
27/08/2019	WSW		N	Y	N	Y	N	N	N		N	Mild sweet refuse odours (2/10)
28/08/2019												
29/08/2019												
30/08/2019												
31/08/2019												
1/09/2019												
2/09/2019												
3/09/2019												
4/09/2019	SSW		N	N	N	N	N	N	N		N	
5/09/2019	NW		N	N	N	N	N	N	N		N	
6/09/2019												
7/09/2019												
8/09/2019												
9/09/2019	WSW		N	N	N	N	N	N	N		N	
10/09/2019	WSW		N	Y	N	N	N	N	N		N	Organic material odour - cross wind of site
11/09/2019	S		N	Y	N	N	N	N	N		N	Animal Waste odour
12/09/2019	E		N	N	N	N	N	N	N		N	
13/09/2019	SSW		N	N	N	N	N	N	N		N	
14/09/2019												
15/09/2019												
16/09/2019	ENE		N	N	N	N	N	N	N		N	
17/09/2019	WSW		N	N	N	N	N	N	N		N	
18/09/2019	SW		N	N	N	N	N	N	N		N	
19/09/2019	ENE		N	N	N	N	N	N	N		N	
20/09/2019	SW		N	Y	N	N	N	N	N		N	Cut grass odour - Luddenham Rd
21/09/2019												
22/09/2019												
23/09/2019												
24/09/2019	WSW		N	N	Y	N	N	N	N		N	No odour description - location cross wind from site.
25/09/2019	SW		N	N	N	N	Y	N	N		N	Animal waste odour - Mamre Rd.
26/09/2019	-		N	N	N	N	N	N	N			
27/09/2019												
28/09/2019												
29/09/2019												
30/09/2019												
1/10/2019	SW		Y	Y	N	N	N	N	N		N	Rufuse odour - Twin Creeks. Manure odour - Lawson Rd
2/10/2019	SSW		Y	Y	N	N	N	N	N		N	FGO odour offsite
3/10/2019	S		N	N	N	Y	N	N	N		Y	FGO odours upwind of site - likely ANL
4/10/2019	-		N	N	N	Y	N	N	N		N	Rufuse odour
5/10/2019												
6/10/2019												

Legend:	
N	Odour Patrol conducted, No odour detected
Y	Odour Detected but not likely site related
Y	Odour Detected - Potentially Site Related
Y	Odour detected - Confirmed site related
	Week day tour not conducted
	Weekend/public holiday, monitoring not required



	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
Date												
7/10/2019												
8/10/2019	-		N	N	N	N	N	N	N		N	
9/10/2019	-		N	N	N	N	N	N	N		N	
10/10/2019												
11/10/2019												
12/10/2019												
13/10/2019												
14/10/2019	-		N	N	N	N	N	N	N		N	
15/10/2019												
16/10/2019												
17/10/2019												
18/10/2019												
19/10/2019												
20/10/2019												
21/10/2019	WSW		N	N	N	N	N	N	N		N	
22/10/2019	SW		N	N	N	N	N	N	N		N	
23/10/2019	W		N	N	N	N	N	N	N		N	
24/10/2019	N		N	N	N	N	N	N	N		N	
25/10/2019	SW		N	N	N	N	N	N	N		N	
26/10/2019												
27/10/2019												
28/10/2019	SW		N	N	N	N	N	N	N		N	
29/10/2019	WSW		N	N	N	N	N	N	N		N	
30/10/2019	SW		N	N	N	N	N	N	N		N	
31/10/2019	SW		N	N	N	Y	N	N	N		N	Stale odour - upwind of Site
1/11/2019	SSW		N	N	N	N	N	N	N		N	
2/11/2019												
3/11/2019												
4/11/2019	WSW		N	N	N	N	N	N	N		N	
5/11/2019	SW		N	N	N	N	N	N	N		N	
6/11/2019	SW		N	N	N	N	N	N	N		N	
7/11/2019	NW		N	N	N	N	N	N	N		N	
8/11/2019	NW		N	N	N	N	N	N	N		N	
9/11/2019												
10/11/2019												
11/11/2019	SE		N	N	N	N	N	N	N		N	
12/11/2019												
13/11/2019												
14/11/2019	SW		N	N	N	N	N	N	N		N	
15/11/2019	ESE		Y	Y	Y	Y	Y	Y	Y	Y	Y	Bushfire smoke
16/11/2019												
17/11/2019												
18/11/2019	NE		Y	Y	Y	Y	Y	Y	Y	Y	Y	Bushfire smoke
19/11/2019	SE		Y	Y	Y	Y	Y	Y	Y	Y	Y	Bushfire smoke
20/11/2019	SSW		Y	Y	Y	Y	Y	Y	Y	Y	Y	Bushfire smoke
21/11/2019	-		Y	Y		Y						Bushfire smoke
22/11/2019	-					Y						Bushfire smoke
23/11/2019												
24/11/2019												
25/11/2019	-					Y	Y					Bushfire smoke
26/11/2019	-		Y	Y		Y	Y					Bushfire smoke
27/11/2019	-		Y	Y		Y	Y					Bushfire smoke
28/11/2019	-		Y	Y		Y	Y					Bushfire smoke
29/11/2019	-		Y	Y		Y	Y					Bushfire smoke
30/11/2019												
1/12/2019												
2/12/2019	-		Y	Y		Y	Y					Bushfire smoke
3/12/2019	-		Y	Y		Y	Y					Bushfire smoke
4/12/2019	-					Y						Bushfire smoke
5/12/2019	-		Y	Y		Y	Y					Bushfire smoke
6/12/2019	-		Y			Y	Y					Bushfire smoke
7/12/2019												
8/12/2019												
9/12/2019	-		Y			Y	Y					Bushfire smoke
10/12/2019	-			Y		Y	Y					Bushfire smoke
11/12/2019	-		Y	Y		Y	Y					Bushfire smoke
12/12/2019	-		Y	Y		Y	Y					Bushfire smoke
13/12/2019	-		Y	Y		Y	Y					Bushfire smoke
14/12/2019												
15/12/2019												
16/12/2019	-					Y						Bushfire smoke
17/12/2019	-					Y	Y					Bushfire smoke



	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
Date												
18/12/2019	-		Y	Y		Y	Y					Bushfire smoke
19/12/2019	-		Y			Y	Y					Bushfire smoke
20/12/2019	-		Y			Y						Bushfire smoke
21/12/2019												
22/12/2019												
23/12/2019	-		Y	Y		Y	Y					Bushfire smoke
24/12/2019	-					Y						Bushfire smoke
25/12/2019												
26/12/2019												
27/12/2019	-					Y						Bushfire smoke
28/12/2019												
29/12/2019												
30/12/2019	-					Y						Bushfire smoke
31/12/2019	-					Y						Bushfire smoke
1/01/2020												
2/01/2020	-					Y						Bushfire smoke
3/01/2020	-					Y						Bushfire smoke
4/01/2020												
5/01/2020												
6/01/2020												
7/01/2020												
8/01/2020												
9/01/2020												
10/01/2020												
11/01/2020												
12/01/2020												
13/01/2020												
14/01/2020												
15/01/2020												
16/01/2020												
17/01/2020												
18/01/2020												
19/01/2020												
20/01/2020												
21/01/2020	-		N	N	N	N	N	N	N		N	
22/01/2020												
23/01/2020												
24/01/2020												
25/01/2020												
26/01/2020												
27/01/2020												
28/01/2020												
29/01/2020												
30/01/2020												
31/01/2020												
1/02/2020												
2/02/2020												
3/02/2020												
4/02/2020												
5/02/2020												
6/02/2020												
7/02/2020												
8/02/2020												
9/02/2020												
10/02/2020												
11/02/2020												
12/02/2020												
13/02/2020												
14/02/2020												
15/02/2020												
16/02/2020												
17/02/2020												
18/02/2020												
19/02/2020												
20/02/2020	-	N	N	Y		N	N					Manure odour
21/02/2020												
22/02/2020												
23/02/2020												
24/02/2020												
25/02/2020	-					N	N				N	
26/02/2020	N	N	N	N	N	N					N	
27/02/2020												

Date	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
28/02/2020												
29/02/2020												
1/03/2020												
2/03/2020	N	N	N	N		N	N	N		N	N	
3/03/2020	-					N						
4/03/2020	-					N						
5/03/2020	-					N						
6/03/2020	-					N					N	
7/03/2020												
8/03/2020												
9/03/2020	-					N					N	
10/03/2020	SE	N	N	N		N	N			N		
11/03/2020												
12/03/2020												
13/03/2020												
14/03/2020												
15/03/2020												
16/03/2020												
17/03/2020												
18/03/2020												
19/03/2020												
20/03/2020												
21/03/2020												
22/03/2020												
23/03/2020												
24/03/2020												
25/03/2020												
26/03/2020												
27/03/2020												
28/03/2020												
29/03/2020												
30/03/2020												
31/03/2020												
1/04/2020												
2/04/2020												
3/04/2020												
4/04/2020												
5/04/2020												
6/04/2020												
7/04/2020												
8/04/2020												
9/04/2020												
10/04/2020												
11/04/2020												
12/04/2020												
13/04/2020												
14/04/2020	-	N	N	N		N	N	N		N		
15/04/2020	WNW	N	N	N		N	N	N		N		
16/04/2020	N	N	N	N		N	N	N		N		
17/04/2020	SW	N	N	N		N	N	N		N		
18/04/2020												
19/04/2020												
20/04/2020	NNW	N	N	N		N	N	N		N		
21/04/2020	-	N	N	N		N	N	N		N		
22/04/2020	SW										Y	
23/04/2020	NNE											
24/04/2020	NW	N	N	N		Y	N	N		N		Mild refuse odour
25/04/2020												
26/04/2020												
27/04/2020												
28/04/2020												
29/04/2020												
30/04/2020												
1/05/2020	-	Y	N	N		N	N	N		N		Slight Organic Odour
2/05/2020												
3/05/2020												
4/05/2020	-	N	N	N		N	N	N		N		
5/05/2020	-	Y	N	N		Y	N	N		N		Smoke from motel fire. Compost odour at Elizabeth Dr
6/05/2020	-	Y	N	N		Y	N	Y		N		Smoke from motel fire. Refuse odour at Elizabeth Dr
7/05/2020	-	N	N	N		N	N	N		N		
8/05/2020	-	N	N	N		N	N	N		N		

Date	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
9/05/2020												
10/05/2020												
11/05/2020	-	N	N	N		N	N	N		N		
12/05/2020												
13/05/2020	-	N	N	N		N	N	N		N		
14/05/2020												
15/05/2020	-	N	N	N		N	N	N		N		
16/05/2020												
17/05/2020												
18/05/2020	-	N	N	N		N	N	N		N		
19/05/2020												
20/05/2020	-	N	N	N		N	N	N		N		
21/05/2020	-	N	N	N		N	N	N		N		
22/05/2020												
23/05/2020												
24/05/2020												
25/05/2020	-	N	N	N		N	N	N		N		
26/05/2020												
27/05/2020	-	N	N	N		N	N	N		N		
28/05/2020	-	N	N	N		N	N	N		N		
29/05/2020	-	N	N	N		N	N	N		N		
30/05/2020												
31/05/2020												
1/06/2020												
2/06/2020	-	N	N	N		N	N	N		N		
3/06/2020	-					N						
4/06/2020	-					N						
5/06/2020	-					N						
6/06/2020												
7/06/2020												
8/06/2020	-					N						
9/06/2020	-					N						
10/06/2020	-					N						
11/06/2020	-					N						
12/06/2020	-					N						
13/06/2020												
14/06/2020												
15/06/2020	-					N						
16/06/2020	-					N						
17/06/2020	-					N						
18/06/2020	-					N						
19/06/2020												
20/06/2020												
21/06/2020	-	Y	Y	N		N	N	N		N		Grass cutting/manure odours.
22/06/2020	-	N	N	N		N	N	N		N		
23/06/2020	-	N	Y	N		N	N	N		N		Grass cutting - Twin Creek Dr
24/06/2020	-	N	N	N		N	N	N		N		
25/06/2020	-	Y	N	N		N	N	N		N		Cut pine/earth odours - not site related
26/06/2020	SSW	N	N	N		N	N	N		N		
27/06/2020												
28/06/2020												
29/06/2020	SE	N	N	N		N	N	N		N		
30/06/2020	N	N	N	N		N	N	N		N		
1/07/2020	-	N	N	N		N	N	N		N		
2/07/2020	-	Y	N	Y		N	N	N		N		Sewer odour at Twins Ck Golf Club, smoke at Luddenham Rd
3/07/2020												

	Wind Direction	Luddenham Rounds	Twins Creek Drive	Luddenham Road	Lawson Road	Elizabeth Drive	Mamre Road	Bakers lane	St Clair	Hawkins Ave Luddenham	Internal Landfill Boundary Road	Comments
Date												
4/07/2020												
5/07/2020												
6/07/2020	SW	N	N	N		N	N	N		N		
7/07/2020	SW	N	N	N		N	N	N		N		
8/07/2020												
9/07/2020												
10/07/2020	N	N	N	N		N	N	N		N		
11/07/2020												
12/07/2020												
13/07/2020	N	N	N	N		N	N	N		N		
14/07/2020	SW	Y	N	N		N	N	N		N		Various Luddenham locations slight to strong odours
15/07/2020	SW	N	N	N		N	N	N		N		
16/07/2020												
17/07/2020	SW	N	N	N		N	N	N		N		
18/07/2020												
19/07/2020												
20/07/2020	SW	N	N	N		Y	N	N		N		Manure odour - Elizabeth Dr
21/07/2020												
22/07/2020	E	N	N	N		N	N	N		N		
23/07/2020	ESE	N	N	N		N	N	N		N		
24/07/2020	NNE	N	N	N		N	N	N		N		
25/07/2020												
26/07/2020												
27/07/2020	SSW	N	N	N		N	N	N		N		

Date	MAXIMUM Wind Speed km/h	AVERAGE Wind Speed km/h	AVERAGE Wind Direction Degs	AVERAGE Wind Direction	MAXIMUM Peak Wind Gust km/h	MAXIMUM Relative Humidity %	MINIMUM Relative Humidity %	AVERAGE Relative Humidity %	MAXIMUM Air Temperature 2m Deg C	MINIMUM Air Temperature 2m Deg C	AVERAGE Air Temperature 2m Deg C	TOTAL Rain Gauge mm
28/06/2019	12.13	3.63	187.21	S	13.01	95.67	63.17	85.56	19.23	5.53	11.97	0
29/06/2019	20.17	4.99	155.52	SSE	27.21	95.83	62.66	85.89	19.1	4.13	11.53	0.2
30/06/2019	27.98	8.5	113.63	ESE	40.23	95.83	53.5	75.84	19.83	6.53	13.33	0
1/07/2019	17.57	6.35	225.13	SW	22.48	91.17	41.49	64.44	17.83	1.13	9.69	0
2/07/2019	10	3.2	185.33	S	11.83	94.5	43	76.08	16.57	1.33	8.69	0
3/07/2019	11.89	4.24	227.17	SW	13.01	94.5	31.66	68.4	19.87	3.23	9.45	0
4/07/2019	20.65	8.8	215.09	SW	24.85	92.33	63.49	79.08	18.33	8.9	13.18	0
5/07/2019	22.66	8.95	210.11	SSW	28.4	95.83	79.15	92.64	15.87	11.96	13.03	19.4
6/07/2019	20.05	5.66	200.58	SSW	23.66	96.17	88	94.28	16.47	8.53	12.01	4.4
7/07/2019	10.82	4.59	191.51	SSW	18.93	96.33	69	88.4	18.76	9.2	12.81	2.4
8/07/2019	11.3	3.85	174.62	S	14.2	96.33	69.82	91.87	17.37	9.36	12.07	0.2
9/07/2019	23.01	8.01	204.97	SSW	28.4	96	67.49	79.39	19.07	6.96	13.13	0.2
10/07/2019	22.72	7.42	227.48	SW	29.58	90.32	49.17	71.69	18.07	4.17	10.33	0
11/07/2019	51.53	12.21	152	SSE	68.63	86.83	47.32	61.9	17.06	7.66	12.37	0
12/07/2019	42.66	16.46	200.61	SSW	56.8	65.17	30.5	50.22	18.8	11.13	14.09	0
13/07/2019	42.48	18.99	279.77	W	55.61	59.83	42.83	49.14	19.9	10.16	15.67	0
14/07/2019	50.17	16.25	244.45	WSW	66.26	80.82	33.5	52.58	14.5	2.1	9.88	0
15/07/2019	38.28	13.79	232.76	SW	50.88	72.5	35.82	54.63	16.7	5.66	11.18	0
16/07/2019	40.7	10.95	233.11	SW	49.7	90.65	36.5	59.45	16.86	2.77	10.49	0
17/07/2019	33.9	9.83	188.71	S	46.15	89.33	30.16	62.76	20.57	3.63	11.63	0
18/07/2019	34.49	9.78	209.25	SSW	43.78	81.83	38.17	57.03	19.8	4.06	12.27	0
19/07/2019	26.68	7.82	202.78	SSW	34.31	83.83	22.99	57.98	19.9	1.27	10.17	0
20/07/2019	29.7	6.26	210.62	SSW	39.05	94.33	41	69.1	18.86	1.03	10.12	0
21/07/2019	13.13	3.58	187.32	S	15.38	95.17	41.33	75.03	19.43	0.67	9.36	0
22/07/2019	29.76	6.38	220.21	SW	40.23	94.83	26.67	55.45	23.2	6.57	13.69	0
23/07/2019	16.03	4.28	179.63	S	18.93	94.17	36.5	71.55	21.73	2	12.01	0
24/07/2019	37.15	11	182.98	S	43.78	92.67	23.33	43	22.6	8.23	15.98	0
25/07/2019	22.89	7.33	223.15	SW	28.4	89	25.82	60.1	19.5	1.2	10.65	0
26/07/2019	12.78	3.89	169.75	S	14.2	92.67	35	70.56	19.1	2.17	9.93	0
27/07/2019	10.35	4.53	214.3	SW	13.01	90.67	54.67	73.14	17.03	7.23	12.09	0
28/07/2019	18.63	4.94	217.69	SW	23.66	95.33	43.83	77.57	19.77	2.43	11.41	0
29/07/2019	25.56	6.01	227.01	SW	31.95	95.15	33.67	73.53	19.07	0.8	10.05	0
30/07/2019	13.84	5.32	217.55	SW	18.93	93.82	44.49	68.56	19.4	7.36	14.05	0
31/07/2019	18.28	9.08	216.38	SW	22.48	83.67	49.49	71.28	16.8	7.5	11.11	0
1/08/2019	19.88	6.38	203.11	SSW	24.85	95.67	NA	76.53	23.6	NA	10.62	0.2
2/08/2019	17.92	5.05	172.6	S	21.3	92.33	41.67	72.86	19.8	5.47	12.2	0
3/08/2019	15.62	4.63	154.41	SSE	20.11	97.17	49.33	77.8	18.93	0.8	10.49	0
4/08/2019	22.36	6.74	179.09	S	28.4	96.5	27	67.09	21.57	5.1	11.07	0
5/08/2019	15.26	4.41	201.35	SSW	18.93	96.49	46.66	74.85	18.6	4.87	12.12	0
6/08/2019	16.92	4.38	172.35	S	21.3	95.5	45.5	75.41	20.23	0.47	10.75	0
7/08/2019	9.88	3.44	172.06	S	11.83	90.33	26.5	60.07	20.27	-1.23	9.45	0
8/08/2019	25.32	5.79	217.27	SW	31.95	84.17	17.33	50.15	23.2	1.83	11.7	0
9/08/2019	63.42	28.04	278.29	W	80.46	65.99	32.17	40.77	20.16	9	14.88	0.2
10/08/2019	59.1	32.71	290.27	WNW	75.73	61.83	32.66	43.65	16.7	7.9	11.89	0.2
11/08/2019	47.09	20.63	289.96	WNW	67.45	56.33	31.33	46.02	15	8.13	10.92	0
12/08/2019	42.18	17.24	255.57	WSW	49.7	64.5	34.82	50.74	14.87	8.23	10.81	0
13/08/2019	29.11	7.8	238.07	WSW	34.31	86.99	29.5	55.58	18.77	0.97	10.76	0
14/08/2019	15.14	4.9	193.8	SSW	17.75	92.32	29.82	65.41	18.37	2.1	10.17	0
15/08/2019	11.59	4.05	159.82	SSE	14.2	90.83	20.67	63.64	18.93	-0.5	9.46	0
16/08/2019	23.66	5.59	207.2	SSW	27.21	88.65	21.16	52.94	21.2	-0.8	10.26	0
17/08/2019	28.4	8.84	187.89	S	35.5	65.16	14.5	38.62	25.03	6.73	15.15	0
18/08/2019	20.05	6.13	204.35	SSW	26.03	96.17	37.33	72.61	20	2.93	11.24	0
19/08/2019	42.83	12.28	165.93	SSE	50.88	88.5	36.17	57.6	23.27	8.43	15.37	0
20/08/2019	49.7	16.92	241.17	WSW	57.98	73.65	26.99	44.65	16.43	2.53	10.29	0
21/08/2019	43.72	13.04	214.86	SW	53.25	76.67	22.5	47.39	20.8	5.33	13.12	0
22/08/2019	49.28	16.02	230.35	SW	62.71	58.67	30.83	44.1	21.7	12.17	16.56	0
23/08/2019	51.89	13.98	218.38	SW	68.63	72	33.83	53.47	19.77	3.9	11.05	0
24/08/2019	18.22	4.19	167.73	SSE	21.3	94.5	34.16	63.38	18.33	-1.33	9.18	0
25/08/2019	41.77	10	225.14	SW	48.51	73.83	18.66	39.56	24.87	3.5	15.23	0
26/08/2019	30.7	9.23	188.23	S	41.41	81.33	19.83	64.85	24.13	11.66	14.95	0
27/08/2019	20.23	8.42	212.83	SSW	26.03	91.33	73.49	84.67	14.5	10.43	12.32	1
28/08/2019	22.48	8.03	206.69	SSW	28.4	94.17	54.82	79.35	18.33	7.17	12.35	0
29/08/2019	28.75	7.28	224.63	SW	37.86	76.33	30	53.15	21.97	6.93	14.14	0
30/08/2019	32.78	14.68	222.06	SW	43.78	93.5	58.16	83.22	14.83	9.23	11.05	17
31/08/2019	37.09	18.42	211.85	SSW	50.88	79.17	53	69.5	15.57	10.43	12.71	0
1/09/2019	25.26	8.48	197.16	SSW	30.76	96	52.83	74.6	19.06	5.4	12.87	0
2/09/2019	14.02	4.53	178.32	S	17.75	93.5	30.83	66.9	23.63	5.93	14.97	0
3/09/2019	33.01	8.2	206.84	SSW	37.86	95.67	28.5	71.51	22.2	7.06	13.58	0
4/09/2019	23.9	5.05	187.44	S	27.21	92.83	23.67	59.56	25.27	5.23	14.85	0
5/09/2019	40.76	9.68	230.45	SW	55.61	72.82	12.83	44.06	28.2	10.06	18.67	0
6/09/2019	26.74	5.86	164.69	SSE	31.95	94.67	33.67	73.09	24.57	10.36	15.9	0
7/09/2019	75.79	22.88	237.23	WSW	99.4	87.49	9.83	49.57	30.4	10.73	16.52	0.2
8/09/2019	47.33	23.55	265.14	W	60.35	52.67	26.32	39.81	18.1	10.73	14.16	0
9/09/2019	42.83	20.15	247.96	WSW	55.61	58.67	26.67	42.63	19	9.2	13.49	0
10/09/2019	46.15	19.52	238.37	WSW	62.71	59.5	31.17	45.97	17.87	6.23	11.95	0
11/09/2019	34.31	8.67	204.85	SSW	42.6	94.15	34.49	65.64	18.97	3.77	11.15	0
12/09/2019	17.04	4.84	159.54	SSE	21.3	94.67	29.83	68.56	21.8	3.4	12.69	0
13/09/2019	29.28	8.16	216.63	SW	34.31	68.99	14.5	38.11	27.06	9.13	17.06	0
14/09/2019	20.76	6.67	162.45	SSE	24.85	96	37.99	64.26	23.17	6.77	15.33	0
15/09/2019	26.39	6.76	192.04	SSW	30.76	95.33	26.83	68.91	23.26	3.93	13.14	0
16/09/2019	16.45	5.85	97.57	E	18.93	70.32	16.33	40.65	29.33	11.93	19.86	0
17/09/2019	38.04	14.11	173.2	S	59.16	93.49	10	67.6	29.93	7.26	15.11	19
18/09/2019	36.74	17.52	218.81	SW	46.15	95.5	69.99	88.38	13.77	7.96	11.22	48.4
19/09/2019	31.36	11.93	194.72	SSW	40.23	96	85.67	92.93	15.63	12.53	13.97	15.8
20/09/2019	19.05	5.32	123.07	ESE	24.85	96.33	63.67	85.91	21.9	12.67	16.77	3.6
21/09/2019	22.72	7.35	82.48	E	27.21	93.5	61.16	81.6	22.57	15	18.16	0
22/09/2019	32.3	9.59	118.51	ESE	39.05	88.32	46.99	71.53	25.63	15.73	19.84	0
23/09/2019	30.29	8.34	199.34	SSW	36.68	94.83	43.49	72.29	25.47	9.13	16.02	0
24/09/2019	44.31	11.41	239.64	WSW	56.8	86.99	26.33	49.93	21.8	4.53	13.58	0
25/09/2019	22.13	4.9	178.01	S	24.85	90.33	27.83	62.15	21.63	5.66	13.67	0
26/09/2019	28.4	7.58	192.92	SSW	36.68	92.83	42	71.98	20.63	10	15.12	0
27/09/2019	25.38	7.05	137.28	SE	31.95	96.32	39.99	74.53	22.9	10.33	16.75	0
28/09/2019	26.33	9.3	192.62	SSW	34.31	81	19.67	41.5	26.7	10.7	19.02	0
29/09/2019	27.51	8.73	206.82	SSW	31.95	91.17	26.66	63.82	22.43	7.83	14.27	0
3												



Table 5. Site Weather Data
Suez Kemps Creek SAWT
0570751 Kemps Ck 2019/20AEMR

Date	MAXIMUM Wind Speed km/h	AVERAGE Wind Speed km/h	AVERAGE Wind Direction Degs	AVERAGE Wind Direction	MAXIMUM Peak Wind Gust km/h	MAXIMUM Relative Humidity %	MINIMUM Relative Humidity %	AVERAGE Relative Humidity %	MAXIMUM Air Temperature 2m Deg C	MINIMUM Air Temperature 2m Deg C	AVERAGE Air Temperature 2m Deg C	TOTAL Rain Gauge mm
5/10/2019	40.76	12.3	191.42	SSW	54.43	95.15	14.5	67.86	33.73	14.63	20.47	9.4
6/10/2019	16.27	6.11	116.05	ESE	18.93	95.5	72.32	84.2	17.83	14.53	16.18	0
7/10/2019	19.34	6.66	126.42	SE	23.66	95.82	52.49	79.61	26.6	15.77	19.68	0
8/10/2019	22.01	6.86	155.9	SSE	26.03	95.67	53.83	77.95	25.33	13.66	19.09	0
9/10/2019	58.63	16.94	244.7	WSW	74.55	91.17	28.5	56	23.3	9.3	14.95	0
10/10/2019	30.35	11.37	207.06	SSW	39.05	81.83	37.32	60.35	20.4	9.67	14.35	0
11/10/2019	25.26	8.36	189.44	S	33.13	96	42.16	72.34	20.63	11.2	15.15	2
12/10/2019	24.37	7.99	211.68	SSW	30.76	95	66.33	88.31	17.8	10.76	12.5	17.2
13/10/2019	35.38	10.95	196.73	SSW	40.23	90.49	57.33	79.75	18.03	9.16	13.12	0.4
14/10/2019	23.25	6.21	141.62	SE	27.21	95.83	43.16	72.75	20.93	8.33	14.47	0
15/10/2019	16.62	4.83	164.94	SSE	20.11	95.83	26.82	71.32	25.5	11.33	17.72	0
16/10/2019	24.79	7.26	157.76	SSE	28.4	96.33	35	71.03	28.87	13.07	19.98	0
17/10/2019	36.09	8.16	186.77	S	46.15	91.33	36.16	63.41	26.17	14.2	20.32	0
18/10/2019	55.91	19.58	250.01	WSW	69.81	66.32	18.67	37.51	27.2	8.03	18.09	0
19/10/2019	24.08	7.59	160.56	SSE	36.68	83	14.33	46.47	26.73	7.23	17.54	0
20/10/2019	54.79	15.72	239.89	WSW	68.63	82.65	17.67	41.43	28.83	7.16	18.77	0
21/10/2019	29.05	7.48	189.48	S	36.68	84	21.66	54.77	23.83	8.16	15.35	0
22/10/2019	26.21	6.04	171.52	S	33.13	94.99	32.83	65.79	25.7	8.6	16.72	0
23/10/2019	28.1	7.23	155.58	SSE	34.31	93.67	22.5	67.14	29.47	13.1	19.21	0
24/10/2019	22.78	7.11	144.78	SE	28.4	94.67	29.16	67.46	31.17	13.03	21.44	0
25/10/2019	29.4	6.15	156.63	SSE	34.31	95.17	27	66.89	32.73	12.5	21.73	0
26/10/2019	66.09	14.09	200.22	SSW	89.93	59.5	13.33	30.96	36.77	21.13	28.37	0
27/10/2019	60.05	21.87	268.17	W	78.1	52.32	17	30.06	30.46	10.13	21	0
28/10/2019	31.47	8.36	182.18	S	35.5	85	13.83	51.29	26.47	8.87	16.94	0
29/10/2019	27.27	8.47	160.04	SSE	33.13	93.67	41.66	70.18	23.63	10.66	17	0
30/10/2019	24.73	6.94	141.51	SE	29.58	91.49	20.16	63.46	29.83	13.56	20.51	0
31/10/2019	23.13	7.27	157.57	SSE	28.4	94.17	24.49	64.19	32.57	13.8	22.12	0
1/11/2019	27.51	7.68	159.53	SSE	33.13	96.67	29.33	68.71	32.5	12.9	21.54	0
2/11/2019	24.79	7.31	155.47	SSE	29.58	95.33	27.5	71.09	30.93	14.36	21.31	0
3/11/2019	37.09	9.06	135.33	SE	42.6	92.67	25	62.31	34.37	14.76	23.46	0
4/11/2019	56.97	8.24	204.59	SSW	68.63	96.5	32.16	71.91	32.57	15.73	22.04	17.6
5/11/2019	31.06	10.65	207.46	SSW	40.23	94.33	26.17	62.63	28.63	14.43	19.75	0
6/11/2019	27.86	9.42	208.34	SSW	34.31	94.17	37.32	67.52	21.4	7.86	14.54	0
7/11/2019	37.39	13.43	170.12	S	54.43	63.99	15	26.52	30.7	16.83	24.4	0
8/11/2019	43.07	19.81	279.89	W	63.9	38.49	12.49	25.94	31.07	19.3	25.01	0
9/11/2019	53.07	23.67	263.96	W	68.63	59.66	17.33	37.96	31.03	11.03	19.73	0
10/11/2019	37.51	14.68	241.54	WSW	48.51	48.16	15.16	31.43	22.1	13.63	17.42	0
11/11/2019	32.07	9.12	190.91	S	40.23	93	25.66	59.11	27.4	10.03	17.95	0
12/11/2019	24.55	6.54	126.65	SE	29.58	93.82	21	58.8	30.5	10.36	20.67	0
13/11/2019	58.34	22.02	233.6	SW	71	87	7.33	35.08	36.87	11.67	24.25	0
14/11/2019	41.24	10.49	230.4	SW	66.26	58.83	8.33	30.42	27.63	12.2	19.63	0
15/11/2019	24.97	6.7	140.75	SE	31.95	86.33	20.16	47.51	29.53	10.6	20.39	0
16/11/2019	39.7	13.99	234.04	SW	48.51	85.33	9.33	35.64	34.27	13.26	24.84	0
17/11/2019	31.3	9.74	135.42	SE	37.86	86.67	39.5	66.32	24.63	15.5	19.86	0
18/11/2019	37.27	11.57	176.41	S	44.96	87.33	49.17	69.68	24.4	13.23	18.05	0
19/11/2019	24.02	7.07	124.43	SE	31.95	92.67	24.49	61.91	30.47	11.5	20.73	0
20/11/2019	35.5	13.54	200.19	SSW	48.51	75.32	8.5	46.97	38.3	17.33	25.33	0
21/11/2019	25.26	7.21	153.36	SSE	30.76	92.33	44.67	67.6	26.2	12.56	19.48	0
22/11/2019	25.2	7.85	145.73	SE	31.95	94.5	16.33	66.67	36.07	16.03	24.25	0
23/11/2019	30.53	8.11	163.67	SSE	35.5	93.33	45.99	76.9	28.5	16.2	20.53	0.2
24/11/2019	19.94	7.82	154.59	SSE	24.85	94.65	65.66	81.6	23.5	17.1	19.66	7
25/11/2019	18.34	6.12	176.84	S	21.3	90.5	53.83	74.86	24.56	16.56	19.84	0
26/11/2019	49.34	9.4	126.33	SE	60.35	92.33	29.49	66.75	34	17.5	23.72	6.4
27/11/2019	68.51	19.47	220.9	SW	97.03	67.99	16.99	37.07	34.87	10.3	22.09	0
28/11/2019	26.33	7	152.42	SSE	41.41	92.33	16.99	56.39	27.36	10.73	18.38	0
29/11/2019	30.65	8.71	139.76	SE	36.68	88.67	22.83	63.71	31.6	17.16	22.47	0
30/11/2019	26.56	7.45	153.7	SSE	29.58	91.5	21.5	64	34.67	16.73	24.26	0
1/12/2019	23.43	9.94	153.34	SSE	30.76	79	51.17	69.23	26.17	15.03	19.99	0
2/12/2019	38.75	15.1	194.61	SSW	48.51	68.33	23.99	48.74	26.53	15.57	20.51	0
3/12/2019	54.31	20.93	277.95	W	72.18	54	24.67	36.68	23.17	12.83	17.61	0
4/12/2019	34.61	13.65	229.68	SW	47.33	55.83	16.16	31.48	30.93	14.3	22.78	0
5/12/2019	32.6	9.8	177.65	S	40.23	93.33	9.67	55.36	32.06	12.36	21.45	0
6/12/2019	40.7	13.51	213.1	SSW	52.06	89.5	10.16	37.48	35.16	15.86	26.26	0
7/12/2019	33.66	10.18	196.94	SSW	40.23	94.83	6.49	60.13	35	14.06	23.12	0
8/12/2019	29.82	8.48	136.76	SE	37.86	91.67	26.33	64.03	29.63	16.23	21.91	0
9/12/2019	27.98	9.02	107.06	ESE	33.13	83.17	47.32	68.04	27.27	19.36	21.94	0
10/12/2019	23.01	6.88	154.93	SSE	29.58	95.49	42.99	73.45	30.8	15.83	22.67	0
11/12/2019	30.59	10.48	156.49	SSE	39.05	81.83	15.49	62.48	39.93	15.06	22.79	0
12/12/2019	26.33	8.99	173.39	S	37.86	84.17	45.5	67.4	26.63	17.2	20.09	0
13/12/2019	27.33	9.21	170.45	S	33.13	92.15	45	71.33	25.9	15.7	19.36	0
14/12/2019	29.82	8.13	155.4	SSE	36.68	86.15	44.33	68.52	25.47	16.23	20.44	0
15/12/2019	34.67	9.03	166.71	SSE	41.41	90.33	26.67	67.64	32.43	17.57	22.9	0
16/12/2019	21	7.84	145.62	SE	24.85	81.67	21.67	56.52	32.63	18.53	25.49	0
17/12/2019	29.94	10.98	173.57	S	35.5	91.33	48.17	65.59	25.5	12.63	19.55	0
18/12/2019	24.26	7.26	151.96	SSE	30.76	89.5	38.32	62.6	27.53	12.73	20.03	0
19/12/2019	25.38	7.35	146.53	SSE	31.95	85.83	16.83	56.28	34.7	16.5	23.96	0
20/12/2019	41.83	7.97	185.49	S	53.25	75.33	9.67	37.24	42.57	13.36	25.51	0
21/12/2019	24.55	8.28	125.03	SE	31.95	93.5	37.99	68.56	29.57	15.73	22.45	0
22/12/2019	46.86	11.77	142.88	SE	55.61	75.5	20.17	55.07	41.93	17.7	25.52	0
23/12/2019	27.98	9.82	195.04	SSW	33.13	78.17	44.83	65.74	23.3	15.6	18.3	0
24/12/2019	28.04	8.1	119.11	ESE	31.95	87.33	47.49	69.13	26.73	19.13	22.03	0
25/12/2019	32.89	10.15	147.9	SSE	39.05	95.17	58.83	80.43	28.37	19.37	22.77	3.2
26/12/2019	28.93	9.95	125.85	SE	35.5	92.65	45.17	70.35	29.2	17.13	22.88	0
27/12/2019	31.47	8.88	134.52	SE	37.86	91	31.33	60.32	33.4	16	24.2	0
28/12/2019	26.68	8.37	121.23	ESE	34.31	93.83	28.5	62.33	32.7	15.73	23.96	0
29/12/2019	22.6	7.65	147.56	SSE	29.58	87.33	14.5	53.67	38.93	18.23	27.04	0
30/12/2019	21.47	6.63	153.79	SSE	23.66	93.33	30.16	62.84	35.46	18.63	25.98	0
31/12/2019	21.24	6.36	153.24	SSE	28.4	84.67	17.5	52.13	39.4	18	27.5	0
1/01/2020	48.4	13	192.44	SSW	60.35	66.5	6.83	42.96	44.7	18.86	28.03	0
2/01/2020	29.88	11.65	159.45	SSE	39.05	74.83	40.49	63.65	29.93	19.63	22.83	0
3/01/2020	26.86	8.87	155.15	SSE	33.13	82	45.66	67.96	28.6	21.06	23.41	0
4/01/2020	34.25	8.36	144.3	SE	39.05	91.33	38.32	65.61	35.47	20.2	26.61	0
5/01/2020	41.35	15.14	197.31	SSW	52.06	64.83	9.33	30.68	48.07	21.57	33.59	0
6/01/2020	38.99	13.12	184.28	S	48.51	81.82	43.32	63.05	27			



Table 5. Site Weather Data
Suez Kemps Creek SAWT
0570751 Kemps Ck 2019/20AEMR

Date	MAXIMUM Wind Speed km/h	AVERAGE Wind Speed km/h	AVERAGE Wind Direction Degs	AVERAGE Wind Direction	MAXIMUM Peak Wind Gust km/h	MAXIMUM Relative Humidity %	MINIMUM Relative Humidity %	AVERAGE Relative Humidity %	MAXIMUM Air Temperature 2m Deg C	MINIMUM Air Temperature 2m Deg C	AVERAGE Air Temperature 2m Deg C	TOTAL Rain Gauge mm
13/01/2020	20.17	7.68	198.99	SSW	24.85	94.83	69.17	84.94	20.83	15.5	17.77	1.2
14/01/2020	24.55	7.82	155.18	SSE	31.95	92.83	44.83	72	26.83	17	21.35	0
15/01/2020	26.33	8.36	148.2	SSE	34.31	95.17	48.99	71.29	29.83	16.27	22.92	0
16/01/2020	24.61	7.4	150.74	SSE	30.76	94.99	38.66	72	31.73	20.43	24.83	10.2
17/01/2020	43.72	8.69	173.6	S	59.16	95.67	50	86.4	29.83	19	21.82	8
18/01/2020	24.49	11.32	212.25	SSW	30.76	94.67	78.5	87.43	22.1	18	20.42	22.8
19/01/2020	29.99	8.52	219.24	SW	37.86	96.17	64	82.09	24.2	18.73	20.96	5.4
20/01/2020	12.07	5.3	207.03	SSW	14.2	96.17	78.65	88.4	23.73	19.56	21.76	2.2
21/01/2020	40.7	8.38	168.58	SSE	47.33	91.83	48.5	75.45	32	17.8	23.65	1.2
22/01/2020	28.99	7.09	192.15	SSW	34.31	94.33	31.32	64.26	32.8	17.7	24.23	0
23/01/2020	32.24	8.74	137.7	SE	40.23	89.32	29.33	60.3	35.1	18.07	26.29	0
24/01/2020	53.48	17.07	173.73	S	69.81	83.67	16.83	39.89	41.66	22.4	32.97	0.6
25/01/2020	23.49	7.68	150.06	SSE	28.4	91.33	61.17	80.49	27.77	20.76	23.36	2.2
26/01/2020	22.6	6.52	143.57	SE	26.03	93.67	53.67	77	31.03	23.17	26.39	0
27/01/2020	32.83	11.74	137.14	SE	42.6	82.17	24.5	62.62	38.8	24.03	29.55	0
28/01/2020	25.68	8.78	146.29	SSE	30.76	92.5	54.17	74.88	32.43	22.16	26.87	0
29/01/2020	32.18	11.46	160.98	SSE	41.41	86.5	48.49	71.99	35.07	23.1	26.96	0
30/01/2020	25.02	8.17	157.9	SSE	30.76	94.33	53.49	73.21	29.93	17.5	23.68	0
31/01/2020	20.53	7.18	114.44	ESE	27.21	94.17	35.99	72.29	34.17	20.93	26.17	0
1/02/2020	21.89	7.05	134.88	SE	26.03	92.33	33.82	67.33	39.47	22.56	29.45	0
2/02/2020	29.7	7.13	133.53	SE	37.86	75.5	16.17	47.05	47.03	26.03	34.92	0
3/02/2020	33.25	9.27	132.24	SE	37.86	96.5	45.17	81.07	35.93	22.5	25.76	11.2
4/02/2020	38.87	13.85	193.71	SSW	52.06	96.5	19.33	56.61	35.4	16.46	23.13	0
5/02/2020	24.31	8.18	157.01	SSE	29.58	88.83	44.82	63.34	23.37	15.63	20.01	0
6/02/2020	23.72	8.32	133.74	SE	30.76	94	40.32	69.48	27.83	18.93	22.4	0.4
7/02/2020	19.94	6.6	160.98	SSE	24.85	95.67	75.32	89.31	22.87	18.27	20.22	6.2
8/02/2020	31.77	11.54	162.98	SSE	41.41	96.5	91.15	95.05	20.23	18.53	19.36	62
9/02/2020	46.38	18.03	143.74	SE	57.98	96.17	90.17	94.4	21.66	19.33	20.19	34.2
10/02/2020	52.54	21.1	127.65	SE	69.81	97.65	94.15	95.86	21.6	19.33	20.51	83.2
11/02/2020	25.2	4.7	155.51	SSE	31.95	97.5	62.82	86.79	28.93	19.83	23.39	12.2
12/02/2020	26.68	7.16	169.28	S	31.95	94.99	47.5	78.17	31.77	22.03	25.34	0.4
13/02/2020	24.49	8.77	159.17	SSE	30.76	97.15	70.65	89.47	27.97	21.43	23.43	19
14/02/2020	31.89	8.71	170.32	S	40.23	96.5	83.99	91.23	25.6	19.43	22.51	19.6
15/02/2020	25.08	7.74	199.43	SSW	33.13	95.67	49.67	76.8	28.43	16.7	21.92	0
16/02/2020	46.86	6.76	192.72	SSW	54.43	95.83	58.17	81.9	28.73	19.83	22.96	16.8
17/02/2020	18.99	6.33	177.47	S	24.85	96	54	80.78	27.3	19.83	22.43	0.4
18/02/2020	15.26	5.27	121.8	ESE	18.93	94.83	71.65	86.33	25.73	21.07	22.82	0
19/02/2020	37.21	9.24	115.43	ESE	44.96	95	48.49	74.34	32.9	18.4	25.34	6.6
20/02/2020	31.59	10.94	242.14	WSW	40.23	92	33.83	57.65	28.87	14.6	21.83	0
21/02/2020	27.15	7.26	177.74	S	33.13	87	46.99	68.56	26.03	18.23	21.08	0
22/02/2020	23.96	10.3	163.87	SSE	31.95	86.17	54.16	73.93	25.73	17.7	21.15	0
23/02/2020	14.85	4.35	207.6	SSW	17.75	94.33	69.65	84.76	22.6	18.8	20.18	0
24/02/2020	18.04	5.68	144.48	SE	22.48	94.67	59.5	77.63	26.27	17.4	21.38	0
25/02/2020	22.66	6.99	130.39	SE	28.4	95.49	47.16	74.53	29.03	17.7	22.88	0
26/02/2020	27.15	5.97	126.18	SE	31.95	93.17	34.99	69.4	32.2	19.53	25.16	0
27/02/2020	39.58	11.73	188.68	S	46.15	81.17	42.82	66.97	32.6	18.13	23.88	0
28/02/2020	25.26	7.35	146.74	SSE	31.95	97.15	50.49	75.33	27.63	14.03	20.98	0.2
29/02/2020	25.38	8.67	194.67	SSW	35.5	89.82	28.99	64.73	26.97	16.5	21.02	0
1/03/2020	23.55	6.14	129.73	SE	28.4	94.32	44.16	72.25	28.36	17.23	22.35	0
2/03/2020	26.03	6.18	148.98	SSE	34.31	96.33	35.17	72.34	33.5	16.8	24.71	0
3/03/2020	43.9	10.24	154.95	SSE	54.43	82	16.5	62.91	37.7	18.7	24.38	0
4/03/2020	13.49	5.73	215.27	SW	16.56	96.67	71.65	87.66	20.97	17.8	18.9	22
5/03/2020	31.3	5.32	110.86	ESE	40.23	97	81.83	90.13	22.63	18.87	21.48	11
6/03/2020	21.06	5.39	117.79	ESE	28.4	97.33	91.82	95.21	22.33	20.5	21.19	25
7/03/2020	25.32	10.7	185.79	S	31.95	96.17	65.49	77.4	28.7	19.03	22.26	0
8/03/2020	26.74	9.56	187.36	S	34.31	95.5	57.83	80.68	25.13	16.06	19.44	3.6
9/03/2020	25.38	6.93	181.69	S	30.76	95	63.66	81.78	22.57	16.73	18.66	1
10/03/2020	25.14	7.84	200.4	SSW	29.58	93.49	62.16	80.29	22.9	15	18.35	0
11/03/2020	20.41	6.63	187.19	S	26.03	95.5	50.5	77.58	23.43	13.43	18.29	0
12/03/2020	21.47	6.71	183.73	S	29.58	95.33	48.99	76.13	25.36	14.26	19.21	2.2
13/03/2020	23.49	5.94	174.54	S	31.95	97.17	50.32	77.9	25.97	12	18.52	0
14/03/2020	31.06	8.1	141.43	SE	42.6	95.83	32.83	70.43	27.23	14.26	20.31	0.2
15/03/2020	28.1	11.76	230.03	SW	35.5	93.33	65.32	80.24	16.9	12.03	14.42	9.8
16/03/2020	24.26	11.12	200.88	SSW	30.76	95.83	56.83	78.6	21	13.83	16.85	6.2
17/03/2020	29.64	12.36	203.9	SSW	41.41	96.5	45.32	84.08	21.43	14.8	17.2	5
18/03/2020	20.65	5.23	193.35	SSW	26.03	96.99	61.33	83.09	23.67	11.86	17.58	0
19/03/2020	17.51	4.54	141.51	SE	21.3	96.67	44.99	74.63	26.9	13.6	20.05	0
20/03/2020	11.95	4.09	139.59	SE	15.38	90.49	27.49	63.07	32.23	17.13	24.01	0
21/03/2020	37.51	10.81	226.6	SW	46.15	93.83	24.99	57.95	34.57	14.57	24.76	0
22/03/2020	25.2	6.45	180.83	S	29.58	95.17	46	75.86	26.83	15.6	20.36	0
23/03/2020	25.14	8.88	185.34	S	34.31	90.83	27.17	65.62	29.7	16.6	21.54	0
24/03/2020	20.59	7.44	193.02	SSW	26.03	92.5	56.5	75.69	22.3	14.93	18.07	0
25/03/2020	18.93	5.29	110.46	ESE	23.66	95.15	62.99	80.61	23.6	15.3	19.5	0
26/03/2020	34.85	8.55	192.84	SSW	43.78	96	61.49	87.73	26.07	14.76	18.81	39.2
27/03/2020	23.37	8.08	199.86	SSW	29.58	96.15	62.33	84.15	22.23	14.27	17.42	3.2
28/03/2020	20.47	7.34	189.62	S	24.85	95.67	52.32	77.36	22.86	14	17.83	0
29/03/2020	15.68	5.04	166.96	SSE	18.93	96.83	53.33	81.19	23.6	16.6	19.12	2.2
30/03/2020	19.29	5.91	123.97	SE	22.48	97	59.17	84.15	25.43	17.93	20.81	1
31/03/2020	16.33	3.93	175.89	S	20.11	96.83	65.66	88	24.7	14.67	19.38	0.2
1/04/2020	21.95	5.71	194.32	SSW	27.21	96.33	50.67	82.15	28	17.76	21.59	0.2
2/04/2020	18.04	5.48	117.12	ESE	20.11	97	78.17	89.85	23.86	16.97	20.51	1
3/04/2020	16.27	5.23	144.2	SE	21.3	97.67	78.32	93.69	23.07	16	19.05	6.6
4/04/2020	28.22	8.54	104.16	ESE	36.68	98.17	65.67	90.81	25.56	16.63	20.33	6.4
5/04/2020	51.71	18.14	253.48	WSW	68.63	93.83	33.82	55.04	25.33	10.9	18.54	0.2
6/04/2020	33.19	11.89	237.51	WSW	41.41	86.67	33.67	57.51	23.9	10.93	17.41	0
7/04/2020	23.25	8.37	206.71	SSW	30.76	88.83	44	71.99	23.53	13.93	17.99	0



Table 5. Site Weather Data
Suez Kemps Creek SAWT
0570751 Kemps Ck 2019/20AEMR

Date	MAXIMUM Wind Speed km/h	AVERAGE Wind Speed km/h	AVERAGE Wind Direction Degs	AVERAGE Wind Direction	MAXIMUM Peak Wind Gust km/h	MAXIMUM Relative Humidity %	MINIMUM Relative Humidity %	AVERAGE Relative Humidity %	MAXIMUM Air Temperature 2m Deg C	MINIMUM Air Temperature 2m Deg C	AVERAGE Air Temperature 2m Deg C	TOTAL Rain Gauge mm
8/04/2020	17.45	5.33	179.1	S	21.3	92.5	56.33	78.18	21.2	13.87	16.68	0
9/04/2020	14.67	5.56	229.66	SW	18.93	91.17	78.33	85.19	18.33	15.3	16.75	0
10/04/2020	15.2	4.38	163.02	SSE	18.93	96.33	59.99	83.48	22.63	15.33	18.05	1.2
11/04/2020	40.17	7.59	115.35	ESE	52.06	96.99	57.66	88.87	22.73	10.53	15.72	13.8
12/04/2020	58.81	21.35	255.23	WSW	74.55	74	31.83	48.16	25.9	9.26	17.32	0.2
13/04/2020	20.94	4.92	201.98	SSW	27.21	95.5	32	67.84	21.83	7.43	14.2	0
14/04/2020	11.18	3.75	191.17	S	14.2	96.49	44.17	76.26	22.8	9.56	15.69	0
15/04/2020	12.48	3.84	176.61	S	14.2	95.82	31.16	73.68	26.27	11.47	18.18	0
16/04/2020	17.45	3.87	174.79	S	22.48	95.83	38.33	73.72	29	13.5	20.34	0
17/04/2020	19.05	8.86	131.27	SE	23.66	83.33	48.83	64.33	25.4	16.1	21.08	0
18/04/2020	29.52	8.58	235.07	SW	35.5	82	18.33	45.95	26.96	8.83	18.23	0
19/04/2020	18.22	5.31	208.23	SSW	23.66	92.5	30.66	67.69	23.83	9.23	15.56	0
20/04/2020	21.89	5.47	175.12	S	26.03	95.99	47.66	79.66	23.07	10.53	15.94	0
21/04/2020	16.45	4.68	170.19	S	21.3	95.17	56.82	82.01	19.26	10.13	14.7	0
22/04/2020	16.98	5.07	161.93	SSE	20.11	94.5	40.82	68.75	25.17	10	18.03	0
23/04/2020	27.39	7.39	217.27	SW	35.5	90.17	35	62.98	25.37	8.7	16.77	0
24/04/2020	17.87	5.09	134.37	SE	22.48	91.17	35.66	63.67	24.47	13	18.3	0
25/04/2020	22.42	5.71	217.56	SW	29.58	94.33	33.99	66.19	27.3	10.57	18.56	0
26/04/2020	16.09	5.5	144.12	SE	22.48	93.17	37.66	69.13	27.5	9.4	18.3	0
27/04/2020	38.4	11.44	238.24	WSW	44.96	92	36.99	64.73	26.37	10.8	18.53	0
28/04/2020	15.2	3.65	171.94	S	17.75	95.83	55.66	83.11	22.3	16.13	18.3	0
29/04/2020	17.1	4.94	111.95	ESE	20.11	96.67	67	84.46	22.47	14.23	18.47	0
30/04/2020	25.38	7.06	144.83	SE	33.13	97	56.82	84.36	25.7	15.23	19.21	15
1/05/2020	34.55	11.63	212.04	SSW	43.78	95.82	52.32	77.58	17	9.33	11.99	13
2/05/2020	49.64	22.72	283.77	WNW	61.53	65.17	40.5	53.68	16.1	11.3	13.56	0
3/05/2020	48.75	20.48	260.98	W	61.53	63.83	36.16	51.21	17.83	10.53	13.64	0
4/05/2020	30.76	7.28	222.72	SW	41.41	93.99	39.33	67.88	19.1	5	11.99	0
5/05/2020	20.59	7.64	213.92	SW	24.85	83.33	38.67	70.28	19	10.1	13.74	0
6/05/2020	17.21	4.67	195.62	SSW	21.3	97	51.66	80.97	21.2	5.83	13.3	0
7/05/2020	12.13	3.59	174.71	S	16.56	96.5	46.83	80.02	21.9	5.8	13.65	0
8/05/2020	37.33	8.11	117.45	ESE	41.41	96.17	47.66	74.02	23.2	10.2	16.33	0.2
9/05/2020	19.34	6.61	166.59	SSE	23.66	92.99	33.49	64.15	27.07	8.53	18.08	0
10/05/2020	32.72	11.49	215.76	SW	41.41	77	36.5	53.45	26.4	6.7	17.18	0
11/05/2020	28.63	9.82	230.57	SW	34.31	87.67	26.66	55.27	17.17	3.63	10.92	0
12/05/2020	19.29	5.18	212.37	SSW	24.85	95.33	37.66	69.92	18.27	3.37	10.52	0
13/05/2020	18.87	4.62	159.62	SSE	23.66	94.83	43.82	74.46	19.83	5.07	11.75	0
14/05/2020	14.97	5.42	215.68	SW	18.93	92	60.67	81.44	16.6	6.8	10.97	0
15/05/2020	22.6	11.04	215.72	SW	28.4	82.65	55	70.55	17.97	8.53	13.26	0
16/05/2020	28.28	8.3	217.74	SW	31.95	95.83	58.82	83.8	17.73	11.13	13.54	0.8
17/05/2020	16.56	4.65	204.51	SSW	21.3	97.17	59.83	83.69	19.43	7.03	12.81	0.2
18/05/2020	16.74	5.93	204	SSW	20.11	96.83	50.17	81.47	21.5	8.83	14.16	0
19/05/2020	15.08	3.42	195.69	SSW	18.93	96.83	71.5	89.62	19.4	11.16	14.79	0.6
20/05/2020	16.92	5.18	137.81	SE	21.3	97.33	51	83.39	20.9	9	14.25	0.2
21/05/2020	32.01	8.09	170.75	S	39.05	97	44	74.54	24.76	12.43	17.48	0.2
22/05/2020	37.15	13.51	220.92	SW	46.15	95.33	65.82	88.6	16.7	8.33	12.11	45.6
23/05/2020	41.24	20.23	252.83	WSW	49.7	77.17	59.33	65.86	15.87	11.8	13.92	0.4
24/05/2020	37.09	13.65	244.71	WSW	43.78	85.5	55.66	71.51	17.73	12.83	14.18	1
25/05/2020	41	16.32	231.1	SW	56.8	79.67	53	66.05	18.37	9.73	13.79	0
26/05/2020	38.22	20.49	222.61	SW	48.51	88.32	63	73.19	17.73	13.43	15.11	0
27/05/2020	28.93	9.83	216.66	SW	35.5	93.5	60.67	84.87	18.53	10.16	14.17	0.2
28/05/2020	11.71	3.28	203.28	SSW	14.2	97.17	54.5	83.21	19.7	7.73	13.61	0
29/05/2020	18.99	6.29	220.49	SW	22.48	96.5	50.33	79.61	21.33	8.67	13.98	0
30/05/2020	15.44	4.63	203	SSW	18.93	97.17	72.32	87.53	17.56	7.63	12.84	0.2
31/05/2020	21.24	5.68	106.63	ESE	26.03	97.15	57.83	85.38	19.57	8.43	13.25	0
1/06/2020	13.43	3.93	168.15	SSE	16.56	96.67	55.66	82.34	20.2	7.4	13.1	0
2/06/2020	41.3	12.64	238.41	WSW	52.06	82.49	32.16	59.42	22.53	5.43	12.81	0
3/06/2020	39.34	13.06	225.25	SW	49.7	87	NA	61.72	18.13	NA	10.87	0.4
4/06/2020	32.72	12.48	222.86	SW	42.6	82.82	36.16	61.63	18.2	7.43	12.03	0
5/06/2020	20.65	4.8	208.27	SSW	24.85	98.83	48.16	77.15	16.57	2.23	9.31	0
6/06/2020	11.18	4.63	208.96	SSW	13.01	95.5	49.67	78.25	17.53	3.77	9.56	0
7/06/2020	13.43	3.78	206.9	SSW	16.56	99.83	54.49	82.51	18.03	3.83	10.27	0
8/06/2020	18.63	6.63	223.1	SW	24.85	98.5	57.5	83.4	17.96	7.43	12.17	0.2
9/06/2020	22.72	9.86	229.68	SW	28.4	96.33	52.16	77.08	17.83	9.8	13.3	0.2
10/06/2020	13.43	5.04	188.19	S	15.38	97.5	62.66	85.49	19.7	11.73	14.69	0.8
11/06/2020	10.35	3	198.98	SSW	14.2	100	87.33	97.23	16.63	10.33	14.22	0.2
12/06/2020	21.65	8.96	217.63	SW	26.03	100	51.82	79.01	21.53	10.7	14.54	0
13/06/2020	13.96	5.11	220.8	SW	17.75	100	77.82	94.51	16	9.43	12.61	2.4
14/06/2020	16.09	4.23	151.71	SSE	18.93	100	71.83	92.97	19.06	11.53	14.4	7
15/06/2020	27.33	9.3	231.11	SW	34.31	100	35.83	65.27	20.63	5.43	12.85	0
16/06/2020	15.5	6.07	199.36	SSW	18.93	96.83	46.67	74.36	19.76	5.73	12.36	0
17/06/2020	19.52	6.07	214.05	SW	23.66	96.67	40.99	71.47	20.77	5.43	12.67	0
18/06/2020	22.89	8.78	216.06	SW	26.03	96.83	69.33	89.06	16.3	10.97	12.48	2.8
19/06/2020	11.89	3.09	196.01	SSW	14.2	100	46.67	80	18.5	4.2	11.45	0
20/06/2020	15.56	4.3	148.06	SSE	18.93	100	61.49	87.35	18.5	6	11.4	0
21/06/2020	17.1	5.36	111.2	ESE	22.48	100	58.83	84.12	18.73	7.76	13.19	11
22/06/2020	17.75	6.73	188.53	S	21.3	98.99	64.66	80.67	17.3	5	11.08	0
23/06/2020	24.73	7.23	210.8	SSW	29.58	91.33	46.82	74.25	16.2	3.53	9.14	0
24/06/2020	28.16	7.39	200.32	SSW	36.68	98.5	44.66	74.75	16.07	2.63	8.79	0
25/06/2020	31.95	9.83	227.3	SW	43.78	91.83	50.99	72.91	18.53	6.23	11.94	0
26/06/2020	25.68	7.35	217.42	SW	33.13	96.33	48	73.04	17.9	3.4	10.61	0
27/06/2020	13.78	5.13	218.29	SW	18.93	85.83	39.49	71.16	18.2	7.9	11.62	0
28/06/2020	17.63	5.38	222.4	SW	20.11	94.17	58.66	77.7	16.33	6.56	11.26	0
29/06/2020	13.19	5.93	208.21	SSW	16.56	98	52.83	76.37	16	8.43	11.57	0

APPENDIX I NOISE REPORT

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SUEZ RECYCLING & RECOVERY AUSTRALIA

ENVIRONMENTAL NOISE COMPLIANCE KEMPS CREEK SAWT FACILITY

REFERENCE No. S10432-R1

AUGUST 2018

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Hibbs & Associates Pty Ltd.



REPORT
for
ENVIRONMENTAL NOISE COMPLIANCE
KEMPS CREEK SAWT FACILITY
1725 ELIZABETH DRIVE
KEMPS CREEK NSW 2178

Prepared for
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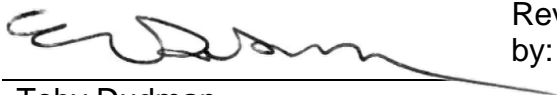
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KEMPS CREEK SAWT FACILITY ENVIRONMENTAL NOISE COMPLIANCE

EXECUTIVE SUMMARY

SUEZ Recycling & Recovery Australia (SUEZ) commissioned an Environmental Noise Compliance Assessment of the SUEZ Advanced Waste Treatment (SAWT) facility at Kemps Creek from Hibbs & Associates Pty Ltd (H&A). The principal objectives of this study are to compare noise emissions from the site with the noise criteria set out in the Project Approval (06_0185) and Environmental Protection Licence (EPL) 12889. This report provides the results of the Environmental Noise Compliance assessment based on site measurements made on 25 July 2018.

The results of the noise assessments indicate that the noise impacts do not exceed the EPL noise limits at most receptors most of the time for both the upper level and common assessments. The noise impact at 1669A Elizabeth Drive could exceed the EPL noise limits by about 2 dB during the mornings between 06:00 and 07:00 hours. We suggest it is reasonable and feasible for SUEZ to avoid operating more than one trommel and one loader in the open area between 06:00 and 07:00 hours to minimise the noise impact. In conclusion, the site is compliant with the conditions of its EPL and Project Approval as interpreted with the EPA's intention that the NPI conveys.

KEMPS CREEK SAWT FACILITY ENVIRONMENTAL NOISE COMPLIANCE

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1.0 INTRODUCTION

SUEZ Recycling & Recovery Australia (SUEZ) commissioned an Environmental Noise Compliance Assessment of the SUEZ Advanced Waste Treatment (SAWT) facility at Kemps Creek from Hibbs & Associates Pty Ltd (H&A). The principal objectives of this study are to compare noise emissions from the site with the noise criteria set out in the Project Approval (06_0185) and Environmental Protection Licence (EPL) 12889. This report provides the results of the Environmental Noise Compliance assessment based on site measurements made on 25 July 2018.

The study follows the procedures and methodology outlined in our approved SQ7315 *Proposal for Noise Assessment, Kemps Creek SAWT Facility*, July 2018 and was authorised by Kelly Gee, Compliance Manager at SUEZ Recycling & Recovery Australia. Mr Toby Dudman MAAS MIOA AASA, Principal Acoustics Engineer from H&A conducted the site work and assessment. We wish to acknowledge, and express our gratitude, for the assistance provided by Kelly Gee and all the staff at Kemps Creek SAWT Facility with conducting the surveys and assessments.

2.0 REPORT LIMITATIONS AND DISCLAIMER

This report was prepared for SUEZ Recycling & Recovery Australia solely for the purposes set out herein and it is not intended that any other person use or rely on the contents of the Report. The information contained in this report is based on a limited review of the site, interviews with site personnel and review of documentation provided to Hibbs & Associates Pty Ltd at the time of the review. Whilst the information contained in the Report is accurate to the best of our knowledge and belief, Hibbs & Associates Pty Ltd cannot guarantee the completeness or accuracy of any of the descriptions or conclusions based on the information supplied to it or obtained during the investigations, site surveys, visits and interviews. Furthermore, conditions can change within limited periods of time, and this should be considered if the Report is to be used after any elapsed period after its issue.

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Data collected were representative of the working and environmental conditions on the day. Operational or environmental variability can affect results significantly. Conclusions and recommendations are based upon data collected. The Report must be read in its entirety and must not be copied, distributed or referred to in part only.

3.0 SITE AND SURROUNDINGS

3.1 Kemps Creek SAWT Facility

SUEZ Recycling & Recovery Australia is a resource recovery, recycling and waste management company that operates over 100 sites in Australia. Their website [1] describes Kemps Creek SAWT Facility as follows:

SUEZ developed the SAWT facility in Kemps Creek, NSW to manage two different waste streams - food and garden organics from Penrith City Council (PCC) and mixed solid waste (MSW) from Liverpool City Council (LCC). The SAWT facility is a mechanical and biological treatment facility with two separate processing lines. One is dedicated to processing MSW and small amounts of commercial & industrial waste by separating organic material from the waste using trommels (large rotating cylindrical sieves), then recovering ferrous (iron-based) metals (mainly aluminium) using overbelt magnets and eddy current separators. The second processing line is dedicated to removing contaminants from source-separated food and garden organics to prepare it for composting.

The organic material from each line is rapidly composted to produce mixed source and source-separated recycled organics products. This is achieved using sophisticated tunnel composting technology, which controls those elements of the composting process with the greatest impact on breakdown of the organic waste: temperature, moisture content, and aeration. Tunnel composting is followed by refinement of the material, with any contaminants (usually plastic) sifted out of the composted organics using a large trommel.

...

The Kemps Creek SAWT Facility is currently licenced to process up to 134,000 tonnes of waste per annum, with approximately 55% of incoming material diverted from landfill.

Figure 1 shows a plan of site and the four Noise Sensitive Receptors (NSRs) listed in the EPL and Project Approval. The SAWT is in the northwest corner of the Kemps Creek Resource Recovery Precinct. The Elizabeth Drive smart cell (landfill) occupies the rest of the precinct. Table 1 lists the consented operational hours contained within the EPL.

1 SUEZ Recycling & Recovery Australia company website. <http://www.sita.com.au/facilities/map-of-australia/kemps-creek/> [Accessed 26/07/2018]

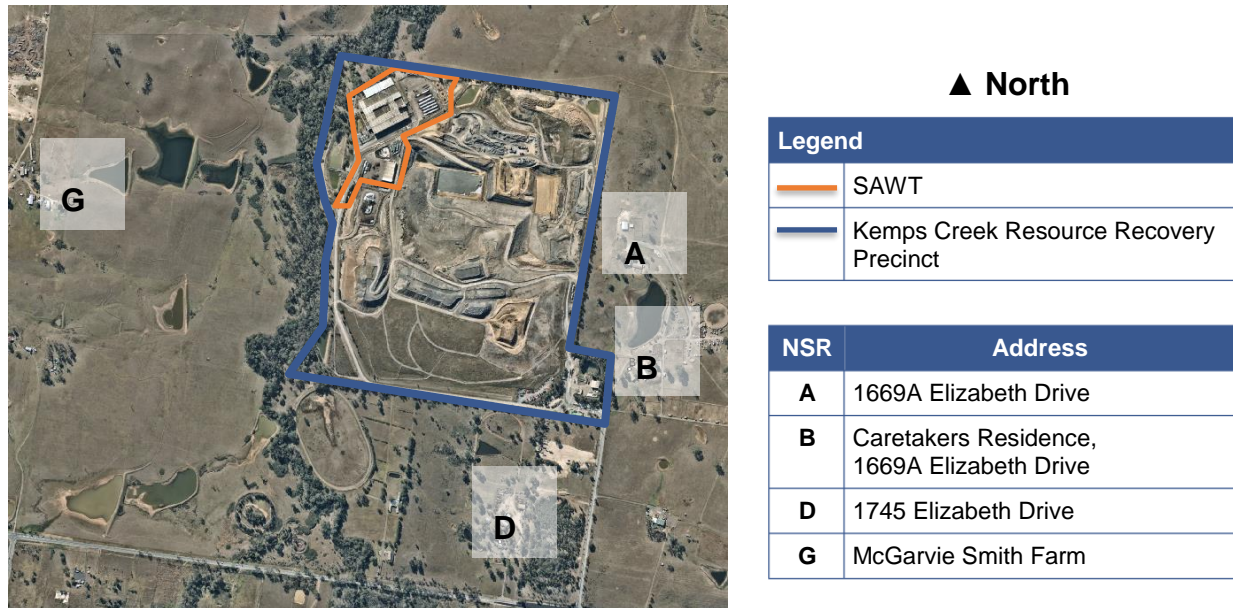


Figure 1: Site Plan and NSRs

The land outside the precinct is predominantly flat. The landfill is a large and deep bowl to the southeast of the SAWT and a hill on the southern boundary of the precinct. Figure 2 shows the locations of the key noise sources at the SAWT. The most significant noise sources are:

- Plant room
- Trommels and vehicles in the open area
- Plant on the eastern façade of the composting tunnels in the open area



Figure 2: SAWT and Noise Sources

Table 1: Consented Operational Hours

Activity	Day	Hours
Waste Receipt, outdoor operations and product dispatch	Monday - Friday	6 am – 6 pm
Waste Receipt, outdoor operations and product dispatch	Saturday	8 am -5 pm
Waste Receipt, outdoor operations and product dispatch	Sunday	8 am – 4 pm
Outdoor operations (See Note 1)	Monday - Friday	6 pm -10 pm
Outdoor operations	Public Holidays	7 am – 4 pm
Indoor Operations	Monday - Saturday	7 am – 11 pm
Emergency	Monday - Sunday	Anytime

Note 1: Outdoor operations between the hours of 6pm – 10pm Monday to Friday must be limited to 10 trips by a 6-tonne truck (that is 20 movements) and 12 trips by a front-end loader (that is 24 movements)

4.0 NOISE ASSESSMENT

Appendix 1 contains a brief conceptual introduction to environmental noise and noise impact assessments.

4.1 Methodology

This assessment uses a site-specific 3D noise model built using iNoise software implementing International Standard methods [2 and 3] as cited by the Noise Policy for Industry (NPI) [4]. We derived source definitions from on-site measurements and weighbridge data. We verified the model with the results of an attended noise survey on 25 July 2018.

Table 2 contains the noise criteria set out in Project Approval 06_0185 and EPL 12889. The EPL states that the noise limits apply under the metrological conditions of wind speed up to 3 m/s at 10 metres above the ground level or during a temperature inversion. The EPL does not state a wind direction. Figure 3 provides a wind rose for wind speeds less than 5 m/s obtained from the Western Sydney Airport Usability Report [5]. The model for assessment adopts a worst-case wind speed of 3 m/s, the most common wind direction of 230 degrees and temperature inversion conditions when appropriate.

Table 2: Noise Criteria

Location	Day, L _{Aeq,15min} (dB)	Evening, L _{Aeq,15min} (dB)	Night, L _{Aeq,15min} (dB)	Night, L _{Amax} (dB)	Morning Shoulder, L _{Aeq,15min} (dB)
A: 1669A Elizabeth Drive	38	38	35	Na	38
B: Caretakers Residence 1669A Elizabeth Drive	42	42	38	53	42
D: 1745 Elizabeth Drive	41	40	37	47	40
G: McGarvie Smith Farm	42	39	35	Na	39

2 ISO 9613-2:1996 Acoustics -- Attenuation of sound during propagation outdoors -- Part 2: General method of calculation.

3 CONCAWE Report 4/81. (1981) The Propagation of Noise from Petroleum and Petrochemical Complexes to Neighbouring Communities.

4 Environmental Protection Agency (2017) *NSW Noise Policy for Industry* (NPI) replaced Environmental Protection Agency (2000) *NSW Industrial Noise Policy* (INP)

5 Western Sydney Airport Usability Report Meteorological Impacts (2015) Head of Aviation and Defence Weather Services Bureau of Meteorology

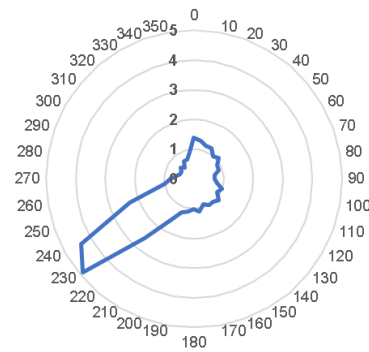


Figure 3: Wind Rose (1 to 5 m/s)

The noise criteria are low. For comparison, the NPI recommends amenity noise levels of 50, 40 and 35 $L_{Aeq,15min}$ and stipulates minimum project intrusiveness noise levels of 40, 35 and 35 dB $L_{Aeq,15min}$ during the daytime, evening and night-time, respectively. Furthermore, the NPI clarifies the EPA's on project noise levels as follows:

The project noise trigger level provides a benchmark or objective for assessing a proposal or site. It is not intended for use as a mandatory requirement. The project noise trigger level is a level that, if exceeded, would indicate a potential noise impact on the community, and so 'trigger' a management response; for example, further investigation of mitigation measures.

4.2 Results

Table 3 provides the upper level noise impact assessment. That model includes two trommels and two loaders working continuously in the open area and windrow turning in the maturation area. This assessment represents the worst case and infrequent noise impact. The maximum (L_{Amax}) noise level prediction is of truck horns during the night-time. The only period of the night-time during which the EPL permits truck movements is the morning shoulder between 06:00 and 07:00 hours.

Table 4 provides the most common noise impact assessment. That model includes one trommel and one loader working intermittently in the open area, no windrow turning and no truck horns between 06:00 and 07:00 hours. This assessment represents the noise impact occurring most often and for most of the operational hours.

Both models contain continuous noise emission from the SAWT, plant room, open area open area composting tunnel fans, all aeration lagoons and delivery trucks. The night-time assessment applies to the period between 22:00 and 23:00 hours. No plant or activity runs on the site between 23:00 and 06:00 hours. The evening and shoulder assessments of both models include meteorological conditions favourable to acoustic propagation commensurate with a temperature inversion.

Table 3: Upper Level Noise Impact

Location	Day, L _{Aeq,15min} (dB)	Evening, L _{Aeq,15min} (dB)	Night, L _{Aeq,15min} (dB)	Night, L _{Amax} (dB)	Morning Shoulder, L _{Aeq,15min} (dB)
A: 1669A Elizabeth Drive	38	35	33	25	40
B: Caretakers Residence 1669A Elizabeth Drive	37	33	28	27	39
D: 1745 Elizabeth Drive	33	28	25	24	32
G: McGarvie Smith Farm	37	34	33	30	36

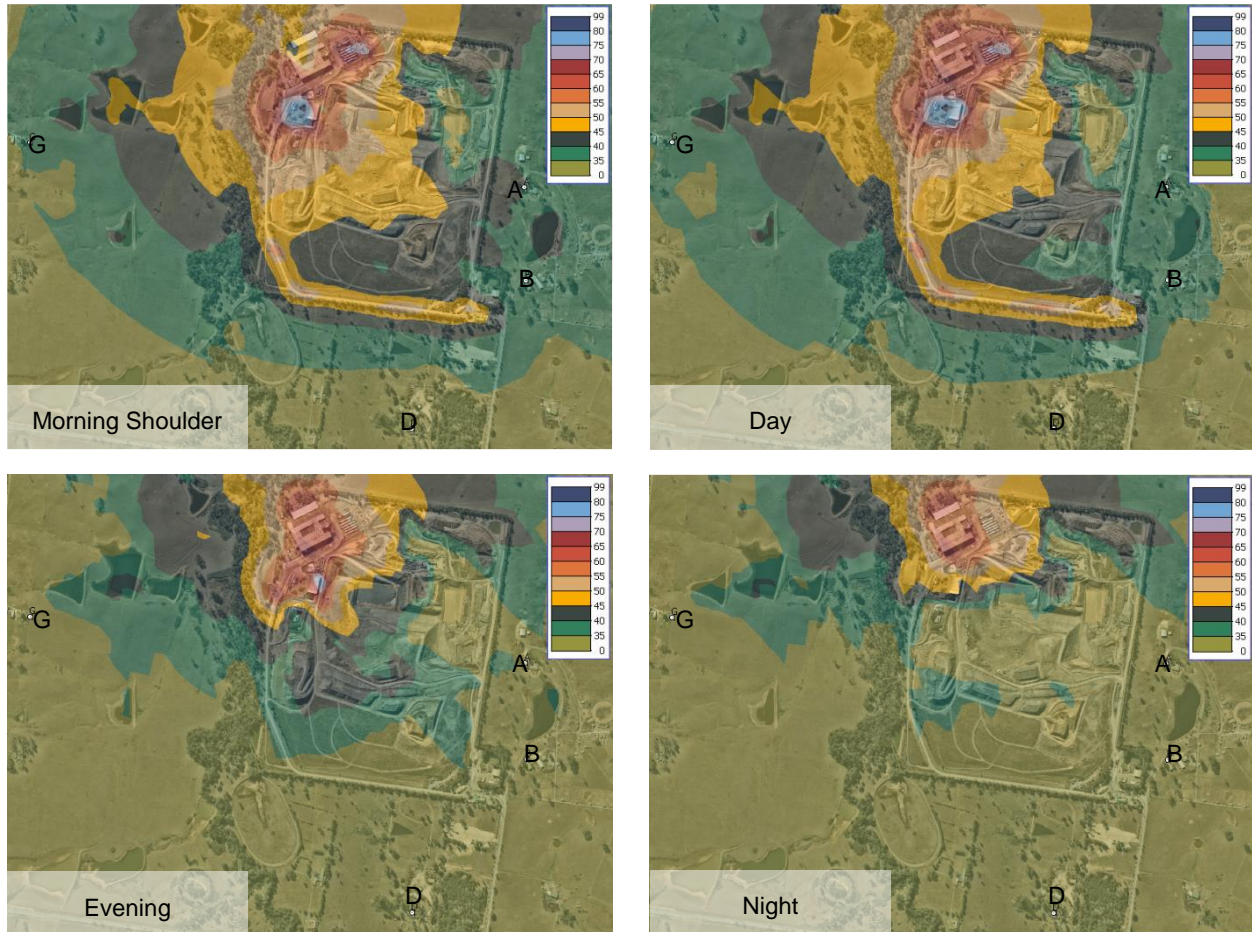


Figure 4: Noise Contours (Upper Level Impact)

Table 4: Common Noise Impact

Location	Day, L _{Aeq,15min} (dB)	Evening, L _{Aeq,15min} (dB)	Night, L _{Aeq,15min} (dB)	Night, L _{Amax} (dB)	Morning Shoulder, L _{Aeq,15min} (dB)
A: 1669A Elizabeth Drive	35	35	33	0	34
B: Caretakers Residence 1669A Elizabeth Drive	34	33	28	0	34
D: 1745 Elizabeth Drive	30	28	25	0	27
G: McGarvie Smith Farm	34	34	33	0	29

4.3 Discussion

Significant temporal variability in environmental noise immissions is inevitable. ISO 9613-2:1998 suggests that the prediction method is accurate to around ± 3 dB for long-term averages of immission and situations with approximately flat terrain and no screening. We estimate the variations in source emission due to activity to be around ± 3 to 5 dB. We have adopted meteorological conditions favourable to acoustic propagation for these assessments and expect the results of our models to tend towards over-estimation.

The results of the noise assessments indicate that the noise impacts do not exceed the EPL noise limits at most receptors most of the time for both the upper level and common assessments. The results of the upper level assessment indicate that the noise impact at 1669A Elizabeth Drive could exceed the EPL noise limits by about 2 dB during the mornings between 06:00 and 07:00 hours. The exceedance is from the open area, which assumes two trommels and two loaders operating continuously. We consider this high activity level unlikely.

Based on the above, the site is compliant with the conditions of its EPL and Project Approval as interpreted with the EPA's intention that the NPI conveys. Nevertheless, the NPI requires that operators implement controls to achieve EPL limits if reasonable and feasible. We suggest it is reasonable and feasible for SUEZ to avoid operating more than one trommel and one loader in the open area between 06:00 and 07:00 hours to minimise the noise impact.

5.0 CONCLUSION

The results of the noise assessments indicate that the noise impacts do not exceed the EPL noise limits at most receptors most of the time for both the upper level and common assessments. The noise impact at 1669A Elizabeth Drive could exceed the EPL noise limits by about 2 dB during the mornings between 06:00 and 07:00 hours. We suggest it is reasonable and feasible for SUEZ to avoid operating more than one trommel and one loader in the open area between 06:00 and 07:00 hours to minimise the noise impact. In conclusion, the site is compliant with the conditions of its EPL and Project Approval as interpreted with the EPA's intention that the NPI conveys.

KEMPS CREEK SAWT FACILITY ENVIRONMENTAL NOISE COMPLIANCE

Appendix 1 ENVIRONMENTAL NOISE

Acousticians commonly define noise as ‘unwanted sound’. The seminal Wilson Report [6] adopted a similar definition:

For the purposes of this Report we accept the definition of noise as "sound which is undesired by the recipient."

In Guidelines for Community Noise [7], the WHO defined environmental (or community) noise as follows:

Community noise includes the primary sources of road, rail and air traffic, industries, construction and public works and the neighbourhood.

Unlike many other pollutants, noise pollution depends not just on the physical aspects of the sound itself, but also the human reaction to it. An environmental noise assessment must consider not only the level of noise but also its temporal and acoustic characteristics in the context of those of the background acoustic environment, as experienced by people, and what that means to them. This approach is the consideration of soundscape as defined in ISO 12913-1:2014 [8].

Noise may audible at a level significantly lower than that likely to cause measurable health effects, such as sleep disturbance. The attitude of the receptor to the source can affect the outcomes of noise intrusion, such as annoyance. In some circumstances, receptors can moderate adverse effects by adopting realistic expectations of the acoustic environment. That is, by accepting that some noise impact to some people for some of the time is an inevitable and tolerable consequence of a technologically developed society.

Notwithstanding the above, the most effective method of impact reduction is to control the source. Responsible operators of noise-generating sites should minimise their noise impacts by the appropriate combination of noise management tools and engineering design of the source. The Polluter Pays Principle (PPP) states that those who create pollution should bear the costs of it. The PPP is a principle of international environmental law and is a fundamental policy of the Organisation for Economic Co-operation and Development. Quiet is vital resource that is necessary for a healthy society. In some circumstances, operators need to accept that there are places and/or times into which regulators should not permit noise to intrude.

6 Committee on the Problem of Noise. *Noise – Final Report*. HMSO 1963.

7 Berglund B. *et al.* (eds.) *Guidelines for Community Noise*. WHO 1999.

8 International Standard. ISO 12913-1:2014. *Acoustics — Soundscape — Part 1: Definition and conceptual framework*.

APPENDIX J MANAGEMENT PLANS



Vegetation Management Plan

Badgerys Creek riparian corridor adjacent to SAWT Facility
site at Elizabeth Drive Landfill

SITA Environmental Solutions

06 March 2008

Vegetation Management Plan

Prepared for

SITA Environmental Solutions

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06 March 2008

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Quality Information

Document Vegetation Management Plan

Ref 20014604.07

Date 06 March 2008

Prepared by Paul Rossington, Krista Rankmore

Reviewed by Gillian Eckert

Revision History


Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
	06/03/2008	Final	Lee Sellick Project Manager	

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1.0 Introduction

This Vegetation Management Plan (VMP) has been prepared by Maunsell Australia Pty Ltd on behalf of SITA Environmental Solutions (SITA) as part of the Development Application 06-185 for the SITA Advanced Waste Treatment Facility (SAWT) at Elizabeth Drive Landfill Site, Kemps Creek, NSW (**Figure 1**).

This VMP has been designed to guide the vegetation clearing activities within the proposed SAWT construction site, the rehabilitation activities within the adjacent section of the Badgerys Creek riparian corridor within the Elizabeth Drive Landfill Site and revegetation within the proposed biodiversity offset area.

1.1 SITA Elizabeth Drive Landfill Site

SITA proposes to build the SAWT facility at its existing 84ha landfill site on Elizabeth Drive in Western Sydney. This site is 5 km west of Kemps Creek and approximately 41 km west of Sydney CBD. The existing landfill is licensed by NSW Department of Environment and Climate Change (DECC) under the Protection of the Environment Operations Act 1997 (POEO Act) to receive Solid Waste Class 2 and Industrial Waste.

At full capacity, the SAWT facility will be capable of treating up to 134,400 tpa of waste, comprising up to 120,000 tpa of municipal solid, commercial, industrial and green waste plus up to 14,400 tpa of biosolids from sewage treatment plants.

The SAWT facility site is adjacent to an operating solid waste landfill and has been subject to considerable disturbance and modification. An access road leads directly to the SAWT facility site encouraging weed invasion and anthropogenic disturbance. Historical clearing of the understorey is apparent, with limited evidence of regeneration. The vegetation remaining on the SAWT site has been identified as Cumberland Plain Woodland which is listed as an endangered ecological community listed under NSW and Commonwealth legislation.

In order to offset the removal of this vegetation, SITA will fund the rehabilitation of vegetation adjacent to the SAWT site and within the Badgerys Creek riparian corridor.

1.2 Badgerys Creek Riparian Corridor

The SAWT site is situated adjacent to the Badgerys Creek riparian corridor (hereafter referred to as the riparian corridor) (**Figure 1**). Badgerys Creek, which forms part of the Hawkesbury-Lower Nepean River System, borders the Elizabeth Drive Site to the west and north. A vegetative buffer is maintained along much of its length.

The vegetation of the riparian corridor has been mapped as River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions (River-Flat Eucalypt Forest) which is an endangered ecological community listed under the *Threatened Species Conservation Act 1995* (**Figure 2**). This community was found to vary from highly degraded to relatively intact condition. The present condition of the vegetation is described in section 4.3. Badgerys Creek has been identified as a flora and fauna corridor in the Penrith City Council *Draft LEP 1999 (Flora and Fauna Conservation)*.

As an approval condition for the development, the Department of Water and Energy (DWE) requires that a 50 metre wide riparian zone (including a 10 metre buffer) along the section of the Badgerys Creek adjacent to the SAWT facility site is preserved and rehabilitated in accordance with an approved VMP to reduce possible impacts of the built environment and operations on the quality of the riparian vegetation.

In addition to this, the Department of Environment and Climate Change (DECC) requires that an offset plan is implemented involving revegetation using indigenous vegetation to compensate for the clearing of 0.81 hectares of Cumberland Plain Woodland.

SITA currently conducts a program of vegetation management activities within the entire section of the riparian corridor on SITA property in accordance with the recommendations of the *Riparian Management Report SITA Australia Pty Ltd Badgerys Creek (Appendix A)* under a funding agreement with Hawkesbury-Nepean Catchment Management Authority (CMA) and the Natural Heritage Trust. This program involves weed management and revegetation activities additional to the legislative requirements related to noxious weeds and landfill operations.

1.3 VMP aims and objectives

The aims of this plan are to:

- provide a description of the existing vegetation composition and condition within the riparian corridor, SAWT site and biodiversity offset area;
- delineate zones in which vegetation clearing, revegetation, weed removal, habitat augmentation would be undertaken;
- describe the staging and timing of works;
- guide the selection and procurement of locally indigenous native plants species for revegetation;
- guide the protection and enhancement of biodiversity and habitat values of the site;
- provide guidelines for the treatment of noxious and environmental weeds, revegetation and habitat enhancement;
- recommend a program of ongoing vegetation management and maintenance;
- describe the monitoring required to ensure the successful of the implementation of the VMP and
- provide adaptive management principles.

The planned outcomes of the VMP are:

- a reference document for the detailed design of revegetation and weeding activities,
- enhanced condition of native vegetation within Badgerys Creek riparian corridor,
- protection of biodiversity and habitat values of the site through best-practice regeneration methods which are relevant to the condition and constraints of the site, and
- the establishment and maintenance of an on-site revegetation and regeneration program to offset clearing of 0.81 hectares of Cumberland Plain Woodland.

1.4 Government and Community Consultation

Maunsell and SITA have consulted with the Department of Water and Energy (DWE), Landcare Australia and the Department of Environment and Climate Change with regard to the content and scope of the activities proposed and feedback from these stakeholders has been considered and appropriately reflected in the preparation of the VMP.

1.5 VMP Preparation Methodology

The following methods were undertaken for the preparation of this VMP:

- Literature review of relevant technical information including the previous site assessment by Environmental Appraisal and Planning (2004);
- Site assessment and survey by two ecologists using random meander vegetation survey techniques; and
- Liaison with DWE, DECC and SITA.

The publication *Recovering bushland on the Cumberland Plain: best practice guidelines for the management and restoration of bushland* (DEC 2005) was an important source of information and guidance in the preparation of this VMP. This publication is available for free from the NSW Department of Environment and Climate Change (DECC) website (http://www.nationalparks.nsw.gov.au/npws.nsf/Content/cumberland_plain_management_guidelines) and should be read in conjunction with the VMP by anyone supervising vegetation management works at the Elizabeth Drive Landfill Site.

The VMP has been prepared in accordance with the DWE *How to Prepare a Vegetation Management Plan Guideline* (DRAFT Version 7: March 2007).

2.0 Constraints to Rehabilitation

The techniques and approach used for managing the vegetation of the site must be appropriate for the local biophysical conditions and must take into account surrounding land uses. Whilst the focus of the VMP is the improvement of the condition of native vegetation, the impact of management activities on other environmental values such as water quality, threatened species and fauna habitat has to be considered. The impact of site conditions also needs to be taken into account to maximise the likelihood of success of management activities. The presence of exotic fauna, adverse soil conditions and highly resilient weed species restricts the use of some techniques and approaches.

2.1 Flora

2.1.1 Endangered Ecological Communities

Two vegetation communities have been mapped by NPWS (2002) as occurring within the study site and surrounding areas (**Figure 1**). Descriptions of the communities are given below.

As all of the native vegetation of the site is included in one or other EEC, a NPWS scientific license (license to pick or harm) is required by any person who is supervising works on the site as some off-target impacts on native wildlife are likely to occur.

Cumberland Plain Woodland (Shale Plains Woodland form)

Cumberland Plain Woodland, listed under the TSC Act and the EPBC Act, is located towards the north east corner of the study site. This vegetation which is isolated from other woodlands in the locality will be affected by the construction of the SAWT facility. Shale Plains Woodland within the study site forms part of the Cumberland Plain Woodland EEC (DECC NSW 2004).

A previous survey by Environmental Appraisal and Planning (1994) identified 26 species of flora, of which 9 (35%) were exotic. The tree species recorded included *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus amplifolia* (Cabbage Gum), *Eucalyptus moluccana* (Grey Box), *Eucalyptus eugenioides* (Thin-leaved Stringybark), *Angophora floribunda* (Rough-barked Angophora), *Melaleuca styphelioides* (Prickly Paperbark), *Melaleuca nodosa* (Honey-ball Myrtle), *Melaleuca decora*, *Acacia parramattensis* and *Casuarina glauca* (Swamp Oak).

However, due to prior disturbance and clearing, few native understorey species were recorded. Species recorded include *Bursaria spinosa* (Blackthorn), *Acacia falcata* (Sickle Wattle), *Hakea sericea* (Needlebush) and *Dillwynia sieberi*. Other species recorded on site included *Hardenbergia violacea* (False Sarsaparilla), *Themeda australis* (Kangaroo Grass), *Cynodon dactylon* (Couch), *Typha orientalis* (Bullrush) and numerous exotic weeds and grasses.

River-Flat Eucalypt Forest (Alluvial Woodland form)

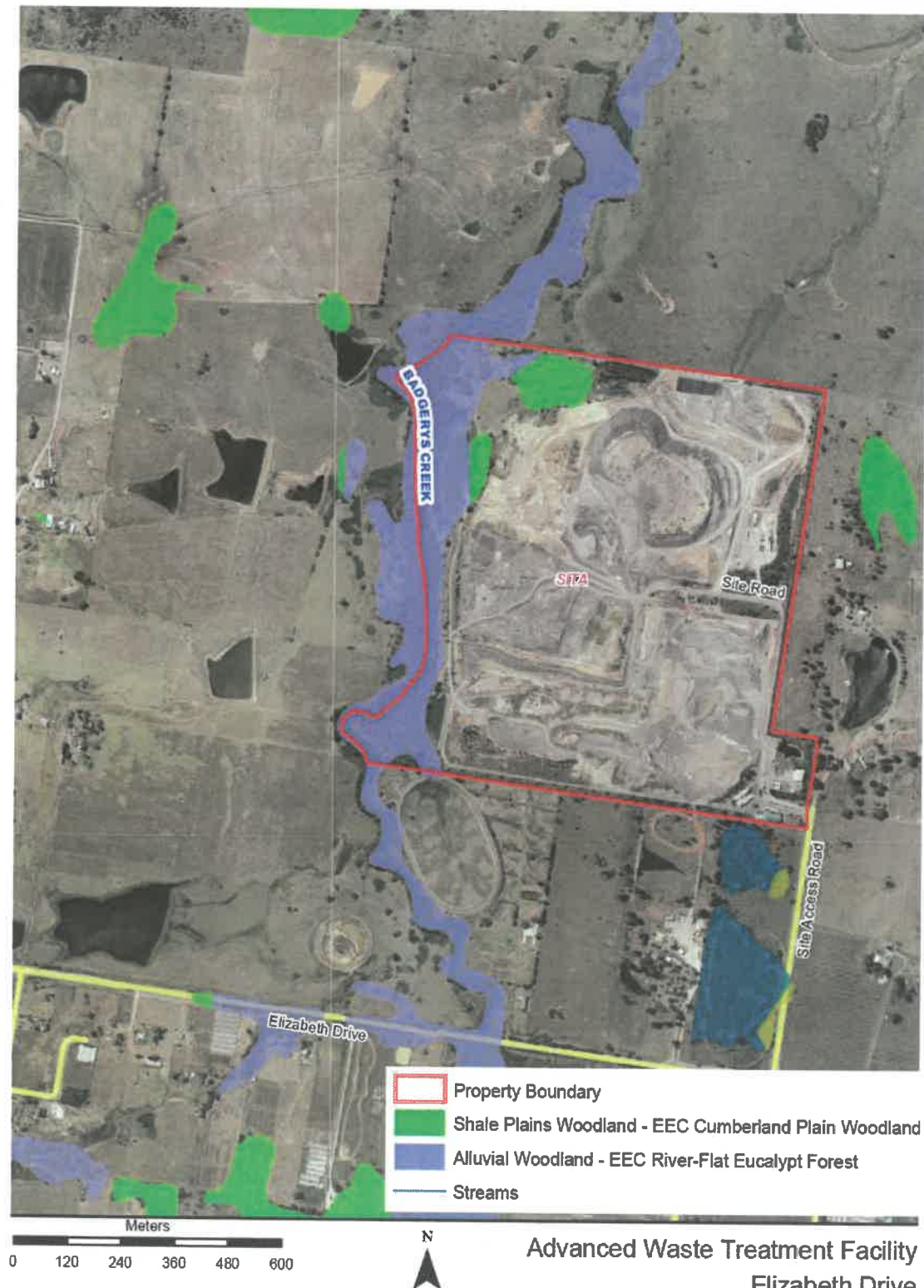
River-Flat Eucalypt Forest, listed under the TSC Act, is located within the western portion of the study site, forming the Badgerys Creek riparian corridor. Alluvial Woodland within the study site forms part of the "River-Flat Eucalypt Forest" EEC (DECC NSW 2004)

A recent survey by Maunsell (2008) identified 97 species of flora, of which 35 (36%) were exotic.

The tree species recorded included *Angophora floribunda* (Rough-barked Apple), *Angophora subvelutina* (Broad-leaved Apple), *Eucalyptus amplifolia* (Cabbage Gum), *Eucalyptus eugenioides* (Thin-leaved Stringybark), *Eucalyptus fibrosa* (Red Ironbark), *Eucalyptus moluccana* (Grey Box), *Eucalyptus tereticornis* (Forest Red Gum), *Melaleuca decora* and *Melaleuca linariifolia* (Flax-leaved Paperbark), *Melaleuca styphelioides* (Prickly-leaved Tea Tree), *Olea europaea* (African Olive), *Exocarpos cupressiformis* (Cherry Ballart) and *Brachychiton populneus* (Kurrajong).

The most common native understorey species present was Blackthorn *Bursaria spinosa* with Weeping Rice Grass *Microlaena stipoides* being the dominant species in the ground layer.

Figure 1 – Site context and vegetation communities



Advanced Waste Treatment Facility
Elizabeth Drive
FIGURE 2: Vegetation Communities

Source: Maunsell, 2006; NPWS, 2002

2.1.2 Threatened Species

A search of the Atlas of NSW Wildlife database and the Schedules of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) revealed that 11 flora species of conservation significance have been recorded within five kilometres of the Study Site (Table 3).

Table 1 Results of Threatened Flora Species Database Searches

Family Name	Scientific Name	Legislation and Code (Description)	
		<i>Threatened Species Conservation Act 1995*</i>	<i>EPBC Act 1999*</i>
Apocynaceae	<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i>	E2 (Endangered population)	n/a
Mimosaceae	<i>Acacia pubescens</i>	V (Vulnerable)	Vulnerable
Fabaceae	<i>Dillwynia tenuifolia</i>	E2 (Endangered population)	Vulnerable
Fabaceae	<i>Pultenaea parviflora</i>	E1 (Endangered)	Vulnerable
Proteaceae	<i>Grevillea parviflora</i>	V (Vulnerable)	n/a
Proteaceae	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	V (Vulnerable)	Vulnerable
Proteaceae	<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	V (Vulnerable)	n/a
Proteaceae	<i>Persoonia nutans</i>	E1 (Endangered)	Endangered
Lobeliaceae	<i>Hypsela sessiliflora</i>	E1 (Endangered)	n/a
Asclepiadaceae	<i>Cynanchum elegans</i>	E1 (Endangered)	Endangered
Thymelaeaceae	<i>Pimelea spicata</i>	E1 (Endangered)	Endangered
Rhamnaceae	<i>Pomaderris brunnea</i>	Vulnerable	Vulnerable

**Threatened Species Conservation Act 1995* (Schedule 2) and (Schedule 1, Part 1) *EPBC Act 1999*

Field investigations did not locate any threatened plant species however, it is possible that some of these species may occur within the area.

Descriptions of these plant species must be held by contractors working on the site to enable accurate identification of these species such that they can be specially protected from accidental impacts associated management activities. Vegetation management staff working on the site must receive an induction in which the identifying features of these species are illustrated in order to aid in the recognition of these species during works.

Should any of these species be encountered, their location should be marked with flagging tape and should subsequently be recorded using a GPS device. The location of the plants should then be reported to the NSW National Parks and Wildlife Service.

2.1.3 Weed Species

The riparian corridor contains a number of environmental and noxious weeds. Several of these species are particularly difficult to control. These include Blackberry *Rubus fruticosus* species complex, Wandering Jew *Tradescantia albiflora*, Madeira Vine *Anredera cordifolia* and Alligator Weed *Alternanthera philoxeroides*. These species are difficult to control due to their resistance to standard application rates of Glyphosate-based herbicides. These species are all capable of vegetative reproduction and tend to regrow from storage organs following initial treatment and thus usually require several repeat treatments to be effective. Areas containing these species require the use of alternative methods of Glyphosate application such as higher application rates and/or the use of surfactants and penetrants. Alternatively, other herbicides may be used to control these species or

mechanical methods may be utilised. Surfactants and herbicides other than Glyphosate however should be used sparingly and with caution, especially around watercourses as these chemicals are likely to have a greater impact on aquatic life and terrestrial fauna than Glyphosate. Mechanical removal of these species also has potential drawbacks due to the soil disturbance and potential for erosion created.

2.2 Fauna

2.2.1 Threatened Species

A search of the Atlas of NSW Wildlife database and the Schedules of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) revealed that 33 fauna species of conservation significance occur within five kilometres of the Study Site (**Table 2**).

Table 2 Results of Threatened Fauna Species Database Searches

Species	Legislation and Code		Evaluation of Potential Habitat within study site
	Threatened Species Conservation Act 1995 (Schedule 2)	EPBC Act 1999	
Mammals			
*Eastern (Common) Bent-winged Bat <i>Miniopterus schreibersii</i>	Vulnerable	-	Potential foraging habitat and roosting habitats (tree hollows) present on-site.
*Eastern Free-tailed Bat <i>Mormopterus norfolcensis</i>	Vulnerable	-	
Large eared Pied Bat, <i>Chalinolobus dwyeri</i>	Vulnerable	Vulnerable	
Little Bent-winged Bat <i>Miniopterus australis</i>	Vulnerable	-	
Greater Broad-nosed Bat <i>Scoteanax rueppellii</i>	Vulnerable	-	
Yellow-bellied Sheath-tailed Bat <i>Saccolaimus flaviventris</i>	Vulnerable	-	No suitable habitat present.
Brush-tailed Rock Wallaby <i>Petrogale penicillata</i>	Endangered	Vulnerable	
Long-nosed Potoroo <i>Potorous tridactylus tridactylus</i>	Vulnerable	Vulnerable	
Koala <i>Phascolarctos cinereus</i>	Vulnerable	-	
Spotted-tailed (Tiger) Quoll <i>Dasyurus maculatus</i>	Vulnerable	-	
Squirrel Glider <i>Petaurus norfolcensis</i>	Vulnerable	-	Potential foraging habitat present within nearby riparian community, however Squirrel Gliders are likely extinct in the region.
Large-footed Myotis <i>Myotis adversus</i>	Vulnerable	-	Potential marginal foraging habitat present only.

*Known to occur within a 5km radius

Species	Legislation and Code		Evaluation of Potential Habitat within study site
	Threatened Species Conservation Act 1995 (Schedule 2)	EPBC Act 1999	
Birds			
Bush Stone Curlew <i>Burhinus grallarius</i>	Endangered	-	Marginal habitat present.
Glossy Black Cockatoo <i>Calyptorhynchus lathami</i>	Vulnerable	-	Marginal foraging or breeding habitat present. Species may traverse through study site.
Swift Parrot <i>Lathamus discolor</i>	Endangered	Endangered	Potential feeding habitat only.
Turquoise Parrot <i>Neophema pulchella</i>	Vulnerable	-	Marginal habitat present.
Powerful Owl <i>Ninox strenua</i>	Vulnerable	-	Foraging & roosting habitat present within riparian community.
Barking Owl <i>Ninox connivens</i>	Vulnerable	Vulnerable	Foraging and roosting habitat present within riparian community.
Masked Owl <i>Tyto novaehollandiae</i>	Vulnerable	Vulnerable	Foraging and roosting habitat present within riparian community.
Regent Honeyeater <i>Xanthomyza phrygia</i>	Endangered	Endangered	Potential feeding habitat only.
Australian Painted Snipe <i>Rostratula australis</i>	-	Vulnerable	Marginal habitat present.
White Bellied Sea Eagle <i>Haliaeetus leucogaster</i>	Protected	Migratory	The White Bellied Sea Eagle is present within the adjacent riparian community and is nesting within this habitat.
White-throated Needletail <i>Hirundapus caudacutus</i>	Protected	Migratory	Potential habitat within the riparian corridor.
Black-faced Monarch <i>Monarcha melanopsis</i>	Protected	Migratory	
Satin Flycatcher <i>Myiagra cyanoleuca</i>	Protected	Migratory	
Speckled Warbler <i>Pyrrholaemus sagittatus</i>	Vulnerable	-	Potential foraging, roosting and nesting habitat present within riparian community.

Species	Legislation and Code		Evaluation of Potential Habitat within study site
	Threatened Species Conservation Act 1995 (Schedule 2)	EPBC Act 1999	
Amphibians			
Giant Burrowing Frog <i>Heleioporus australiacus</i>	Vulnerable	Vulnerable	No suitable habitat present.
Giant Barred Frog <i>Mixophyes iteratus</i>	Endangered	Endangered	No suitable habitat present.
Red-crowned toadlet <i>Pseudophryne australis</i>	Vulnerable	-	No suitable habitat present.
Green & Golden Bell Frog <i>Litoria aurea</i>	Vulnerable	Endangered	Potential habitat present in nearby Badgerys Creek and sedimentation ponds.
Reptiles			
Broad-headed snake <i>Hoplocephalus bungaroides</i>	Endangered	Vulnerable	Key habitat resources (sandstone outcrops and tree hollows) absent. Unlikely to occur on site.
Invertebrates			
*Cumberland Plain Land Snail <i>Meridolum corneovirens</i>	Endangered		Species recorded within the riparian community.

*Known to occur within a 5km radius

A comprehensive fauna survey was not undertaken however, a habitat evaluation for threatened fauna species has been undertaken and is reported in **Table 2**.

The only threatened fauna species detected on the site was the Cumberland Land Snail *Meridolum corneovirens* located during the 2004 survey by Environmental Appraisal and Planning. The threats to this species are not well understood and thus a precautionary approach is necessary. Vegetation management staff working on the site must receive an induction in which the identifying features of this snail are illustrated.

Given the lack of knowledge with regard to the effects of herbicides on the snail, herbicide spraying should be limited to use on larger patches of noxious weeds in which mechanical treatment or cut/scrape/paint techniques are impractical. If Cumberland Land Snails are encountered within work areas, care should be taken to minimise the potential for accidental injury to snails. Weed management in these areas should be restricted to careful hand-weeding.

Other threatened species, especially birds and microbats may occur on the site. Most of these species are unlikely to be adversely affected by the activities proposed in the VMP. Some smaller bird species could potentially be affected by excessive vegetation clearance. However given the lack of extensive areas of woody weed growth and the proposed revegetation negative impacts on birds are unlikely to occur.

Should any threatened fauna species be encountered, the location should be marked with flagging tape and should subsequently be recorded using a GPS device. The location of the animals should then be reported to the NSW National Parks and Wildlife Service using the Atlas of NSW Wildlife field data book (<http://www.environment.nsw.gov.au/resources/nature/scientificLicenceDatasheet.xls>).

2.3 Soils, Erosion and Groundwater

Soils and Erosion

The soil on the floodplain of Badgerys Creek is composed of structured loams, consisting of clay loam topsoil underlain by two alluvial soils: a layer of clay loam over a layer of medium clay. The topsoils are often hard setting, with high fine sand and silt content and high to moderate organic content. The undisturbed soils within the Site are generally in a stable condition. However, due to the type of A2 horizon in the soil profile (fine sandy clay loam with low organic matter content), the potential for erosion to occur is significant if this material is left exposed at the surface, particularly where it is dispersible and associated with high salinity.

No potential acid sulphate soils have been identified during excavations connected with the existing Landfill. The Site generally lies above RL 44m AHD and the Department of Land and Water Conservation (now the Department of Infrastructure, Planning and Natural Resources -DIPNR) considers the Site to have low potential for acid soils to exist. As a consequence, the Site has not been specifically mapped for potential acid sulphate soils (Maunsell 2007)

The erosive potential of the soil of the site limits the use of mechanical weed control techniques that would expose large areas of soil surface, especially in creek-bank areas that are difficult to stabilise.

The tendency for surface flow on the site has implications for mulching activities as this flow could carry away mulch during rain events leaving the soil surface exposed to erosion. A coarse mulch is thus recommended which is less easily displaced by surface flows.

Groundwater

The claystones, siltstones and sandstones encountered under the Site are rocks of negligible primary porosity and permeability. As a result they are highly resistant to the movement of groundwater. Groundwater recharge is also minimal because of surface clays, which form a capping layer over the Site and this restricts rainfall infiltration in those areas. For this reason a large proportion of rainfall becomes surface runoff that flows directly to Badgerys Creek or is held in local depressions as ponded

water. Although limited in quantity, the flow direction of groundwater reflects the surface topography with groundwater flow directed towards Badgerys Creek.

Previous EIS reports have documented that groundwater under the Landfill Site has very high salinity (Maunsell 2007).

The salinity of the groundwater of the site may influence the success of revegetation should it affect the growth of the plant species chosen. The species for revegetation should be chosen predominantly from the list of species recorded on the site as these species have shown their ability to grow in the prevailing conditions. Species found in nearby areas may also be used but these should be planted in small numbers initially to determine their likelihood of success on the site.

2.4 Hydrology, Water Quality & Drainage

Hydrology

Badgerys Creek is located immediately west and north of the SAWT facility site and is surrounded by rural and commercial developments. A vegetated buffer, with a general width of approximately 50m is maintained along the waterway and provides substantial amelioration of any pollution entrained in stormwater runoff. The buffer provides habitat, water flow features and stream shading. The 1 in 100 year flood level coincides also with the western boundary of the SAWT facility site.

The potential for flooding of revegetation areas and the resulting damage to plants and loss of mulch should be considered in the timing of planting. Mulching should be conducted in relatively dry conditions to allow mulch to settle prior to any significant rain events. Planting is best conducted during dry weather but within a few days after rainfall when soil is moist but not water-logged. Planting should not be conducted if heavy rain is predicted to occur in the weeks following planting.

Surface Water Quality

Badgerys Creek, a tributary of South Creek and the Hawkesbury-Nepean River, forms the western property boundary of the Elizabeth Drive Site and therefore runs to the west and north of the SAWT facility. It is the receiving environment for runoff and discharge from the existing Landfill. These flows are dominated by overland flow on the existing undisturbed ground. A sedimentation basin is located to the west of the proposed SAWT facility. This basin is used to manage stormwater runoff from the existing Landfill and, under intense rainfall conditions, the basin discharges via an overland flow regime to Badgerys Creek. Other smaller sedimentation ponds are situated around the perimeter of the Elizabeth Drive Site and control runoff from areas where there is high sediment load. A small catchment in the north-western corner of the Elizabeth Drive Site discharges directly to Badgerys Creek via thick vegetation over an undisturbed portion of the site.

Currently, a vegetation buffer of approximately 50m is maintained along much of the creek's length. The Elizabeth Drive Site's fence line is set back approximately 50m from Badgerys Creek. This buffer provides substantial amelioration of any pollution entrained in stormwater runoff as well as habitat, water flow features and stream shading. Existing Landfill operations have been carried out to avoid impacts on the creek by constructing all infrastructure away from the creek banks.

Water quality monitoring has been regularly conducted in designated locations along Badgerys Creek as part of the environmental monitoring program specified in the existing Landfill Licence. Monitoring indicates that the waterway typically maintains moderate water quality for usual water quality parameters including suspended solids, turbidity and biological oxygen demand (BOD). However samples analysed during routine monitoring show elevated nutrient levels (total nitrogen and total phosphorus above the adopted site criteria for surface waters) both up and down stream of the existing Landfill Site.

The existence of elevated nutrient levels within surface water is likely to promote the growth of weeds at the expense of many native species. Increased nutrient levels may be detrimental to some native plants whilst the growth of others may be stimulated. Consideration should be given to the choice of plants for revegetation in areas prone to increased nutrient levels such as low points, drainage lines

and creek banks. Plants that are able to utilise increased nutrients should be considered for these areas.

2.5 Aboriginal and European Heritage

The riparian areas within the local region tend to contain the highest density of Aboriginal sites. Rhoads and Dunnett (1985) noted that in their archaeological studies within the Penrith Local Government Area that Aboriginal sites do cluster towards seasonal streams or gully rises (Kohen 1991). Badgerys Creek is likely to contain Aboriginal sites along its series of meanders and dense riparian vegetation.

Locally, during previous surveys, one archaeological site was identified (Kohen 1991). This site type is an open campsite consisting of a surface scatter of stone artefacts located near the north-western corner of the SAWT Site, adjacent to Badgerys Creek. Kohen (op cit) coded the Aboriginal site as *Site KC/1 (Kemps Creek 1)*.

During heritage assessment conducted in May 2004 for the SAWT site, attempts to relocate KC/1 by a specialist consultant (Environmental Appraisal and Planning) were not successful. Due to the passage of time, the Aboriginal site is now well covered with a dense layer of riparian vegetation and weeds and the KC/1 site is no longer visible or exposed to the surface.

Searches of the Federal Register of the National Estate, State Heritage Register, State Heritage Inventory and AHIMS revealed no sites of European heritage, historic or archaeological significance within a 1.5km radius of the Site. Several within a 5km radius were found but these are too distant to be relevant to the VMP.

Stone artefacts may be located during weed control works in the riparian corridor. Should artefacts be uncovered, works should be restricted to those that will have minimal impacts on the soil containing the artefacts. Careful hand-weeding involving the use of small hand tools should be used in preference to the use of larger tools such as mini-mattocks which are more likely to damage artefacts. If artefacts are found in areas for which revegetation is proposed, methods such as direct-seeding should be used in preference to methods that require substantial digging.

2.6 Health and Safety Considerations

The health and safety of personnel involved in vegetation management activities should be considered in conjunction with issues such as cost-effectiveness and potential adverse environmental impacts when choosing appropriate management techniques. Some weed management techniques involve greater risks to personnel due to the use of chemicals, repetitive strain on joints or the potential for disease or infection. Examples of higher risk activities include wading in potentially polluted water, the use of herbicides other than Glyphosate and repetitive use of manual techniques such as sawing and weed pulling without sufficient variation in tasks. Other risks associated with the site include bites and stings from snakes, spiders and venomous insects.

It is important that staff are adequately trained and equipped with protective equipment, and that a variety of manual and chemical weed control techniques are employed in order to minimise the risks to health and safety. Safe work method statements should be prepared and vegetation management staff should receive health and safety inductions prior to commencing work on the site.

2.7 Bushfire Hazard

Revegetation works and changes to vegetation management could result in an increase in the bushfire hazard to the proposed SAWT facility if this issue is not considered in the implementation of the plan. The current management of the vegetation adjacent to the SAWT facility site (Zone 2a, **Figure 2**) involves regular mowing of grass to reduce fire hazard. Some areas which are currently mown would be revegetated and hence mowing would have to cease in these areas. Prior to the

designation of planting areas, SITA should be consulted to ensure that these are not placed such that they would restrict access to monitoring points. Mowing for the purpose of maintaining access to monitoring points should be permitted.

Revegetation also has the potential to decrease the distance between tree canopies and increase connectivity between vegetation strata which would increase the ability of fire to spread. Given that the riparian corridor is relatively narrow and not continuous with larger areas of vegetation, the bushfire hazard here is considered to be moderate to low. SITA continually operates water carts for dust suppression and these are available for fire prevention and fire-fighting activities. Nonetheless, a number of simple measures are recommended to further reduce the risk of fire. It is recommended that no trees or shrubs are planted within 8m of the fence between Zones 2 and 3. Furthermore, within the next 20m away from the fence, trees should be planted and managed such that their canopies remain separated by at least 2m and shrub species which are less flammable should be chosen. Shrubs that contain oil in their leaves or tend to retain dead twigs should be avoided in this area in favour of species with soft leaves which have relatively high moisture content. Appropriate species include *Breynia oblongifolia*, *Phyllanthus gunnii*, *Bursaria spinosa* and *Dodonea viscosa* ssp. *cuneata*.

2.8 Impact of Herbivores and Insect Pests

Both native and feral herbivores can impact on the success of revegetation and regeneration activities. One feral herbivore, the brown hare *Lepus capensis* was recorded on the site. No other evidence of herbivore activity was found on the site and given the extent of grass and forb growth, herbivory is not considered likely to be a major constraint to vegetation management at this time. The recent reduction in rabbit numbers in the Sydney region as a result of the introduction of the rabbit calicivirus has temporarily reduced the impact of rabbits. Although not detected during investigations for the VMP, rabbits are expected to occur on the site and sightings of the species should be recorded as part of the monitoring program to detect any population trends in the species.

Large areas of young trees and shrubs may attract herbivorous insects which could cause extensive damage if natural predators, such as birds, do not occur in sufficient numbers.

Monitoring of revegetation areas must therefore include assessment of insect damage. If excessive damage is detected, infestations may require treatment with an insecticide. To minimise off-target impacts on biodiversity, a non-residual insecticide such as Pyrethrum should be used. No insecticides of any kind should be used in the vicinity of waterways or standing water however as even natural insecticides such as Pyrethrum can be damaging to aquatic ecosystems.

2.9 Seed Availability for Revegetation

Revegetation activities on the site may require an appropriate source of seeds for plant propagation. Plants grown from locally collected seed may be available through specialist nurseries or may need to be grown from seed collected especially for the project. Seed should be collected from plants within the SAWT facility site prior to the commencement of vegetation clearance and construction activities. This seed should be provided to a specialist nursery for use in revegetation within the Elizabeth Drive site or elsewhere in the local area.

Due to variation between species in the season in which seed set occurs and the rate at which germination and growth occurs, some plant species desired for revegetation may not be able to be planted during the first stage of revegetation. Revegetation should thus be conducted in several stages over the first 1-2 years of the vegetation management program in order to ensure that a high diversity of species can be propagated and planted.

2.10 Key Threatening Processes

A number of key threatening processes (KTP) are known or considered likely to be occurring on the site. The potential interaction of the management actions recommended in the VMP and these

processes must be considered. Management actions, though designed to reduce the impact of these KTP, could potentially exacerbate them if carried out incorrectly. Some KTP may also act as constraints to the effectiveness of management works, such as the impact of rabbits on revegetation efforts.

Schedule 3 of the TSC Act contains a list of key threatening processes. A process is considered to be a KTP if:

- a) *it adversely affects threatened species, populations or ecological communities, or*
- b) *it could cause species, populations or ecological communities that are not threatened to become threatened.*

Table 3 provides a list of key threatening processes, which are likely to be relevant to the study site and provides comment on their relevance to the VMP.

Table 3 Key Threatening Processes

Key Threatening Process	Comments
Clearing of native vegetation	The proposed SAWT development involves the removal of a small amount of disturbed native vegetation. This VMP outlines a strategy to offset the impact of this clearing through revegetation and rehabilitation of degraded areas.
Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)	The control of this species requires a regional strategy which is beyond the scope of this assessment. However, the proposed development is unlikely to increase the impact of this process. The impact of this process on the success of the VMP has been considered in the development of the recommended methodology.
Invasion of native plant communities by exotic perennial grasses	This Vegetation Management Plan (VMP) outlines management activities to manage exotic perennial grasses.
Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)	The control of this species requires a regional strategy which is beyond the scope of this assessment. However, the proposed development is unlikely to increase the impact of this process.
Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)	The control of this species requires a regional strategy which is beyond the scope of this assessment. However, the proposed development is unlikely to increase the impact of this process.
Loss of hollow bearing trees	This Vegetation Management Plan (VMP) outlines management activities to protect fauna habitat attributes within the study site.
Infection of native plants by <i>Phytophthora cinnamomi</i> .	No indications of dieback were noted within the study area. Mulch would be sourced from vegetation clearance on site or from a supplier with a quality control system to minimise the likelihood of importing plant pathogens.
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	The restoration program considers the impact of altered flow regimes on the appropriateness of vegetation management options. Considerations include the choice of plants species for revegetation and the impact of weed control on bank stability.
Removal of dead wood and dead trees	All dead (and live) wood and trees to be removed from

Key Threatening Process	Comments
	the SAWT site will be used to create additional habitat within the riparian corridor.
Invasion and establishment of exotic vines and scramblers	This Vegetation Management Plan (VMP) outlines management activities to manage exotic vines and scramblers.
Predation by the plague minnow (<i>Gambusia holbrooki</i>)	Total removal of <i>Gambusia</i> from the environment is not feasible at this time. Care should be taken, however, to ensure that this species is not spread into areas in which it is not currently present.

2.11 Funding and Duration of Works

Given the extent of weed invasion on the site, complete removal of weeds is not a realistic or cost-effective option. Funding should thus be allocated preferentially to the control of target weed species including declared noxious weeds and other environmental weeds considered to represent the greatest threat to local biodiversity. Funding should also be allocated to revegetation of areas in which natural regeneration is considered unlikely.

In order for vegetation management to be effective, sufficient funding is required not only for initial weed removal and revegetation but also for ongoing maintenance of reduced weed densities and maturing vegetation.

SITA currently undertakes weed control activities in order to address legislative requirements relating to noxious weeds and maintains areas rehabilitated under a funding agreement with the Hawkesbury-Nepean CMA and the Natural Heritage Trust. Under this agreement SITA has agreed to maintain the vegetation of the riparian corridor for a period of 10 years from the 8th of September 2006. The maintenance period for the works described in this document has been set at 8th of September 2016 in order to remain consistent with these activities. It is recommended that a re-assessment of the VMP be conducted at the completion of this period.

An indicative cost estimate for the implementation of the VMP is provided in section 4.6

3.0 Vegetation Management Methods and Principles

3.1 Restoration Approach

McDonald (1999) suggests that developing restoration strategies for plant communities involves predicting whether the pre-existing species in a particular landscape unit could recover naturally or whether some higher degree of intervention (up to complete reconstruction) is needed.

The capacity of a species to regenerate after natural disturbance is referred to as its 'resilience'. This resilience is derived from the exposure of the individual species to natural disturbances during its evolution (Holling, 1973; Westman, 1978). It can be assumed that this resilience to natural disturbance also functions after anthropogenic disturbance provided the latter disturbance resembles the natural disturbances to which the species has adapted (McDonald, 1999).

McDonald (1999) suggests that areas with lower levels of disturbance have a higher resilience and regeneration potential and thus an increased potential for a regeneration approach. Zones with high levels of disturbance have a low regeneration potential and thus an increasing need for a reconstruction approach. Between the two extremes lies an intermediate zone where assisted regeneration techniques are appropriate.

3.2 Regeneration Guidelines

3.2.1 Minimising disturbance

Low impact weed management strategies are preferred to minimise disturbance of existing habitat characteristics. The bush regeneration contractors' experience, knowledge and discretion is considered important in deciding upon site specific methods to be utilised.

It is recommended that bush regeneration methods discussed in Bradley (1997) and Buchanan (1989) are employed where feasible. The Bradley method of bush regeneration employs four basic principles;

- Work outwards from good bush areas towards areas of weed,
- Make minimal disturbance to the environment,
- Weed control should involve primary, consolidation and long term maintenance, and
- Do not over clear, let native plant regeneration dictate the rate of weed removal.

Manual removal of herbaceous weeds, regrowth and seedlings is preferred where possible with minimal disturbance to soil stability and existing native species. Areas where weeds are removed manually should be stabilised or planted by the end of each working day. Removal work should ideally be undertaken outside the seeding period of weeds that produce large quantities of seed. If any work is undertaken within these periods, seed should be collected, bagged and disposed of off site. Chemical removal is only considered appropriate for larger weeds and areas of dense infestation containing few natives. This is recommended given that felling and digging up roots can be dangerous, expensive, time consuming and could potentially increase erosion.

3.2.2 Target Weed Species

Given the disturbance and weed invasion adjacent and upstream of the site, the creek-line on the site is susceptible to future weed invasion. To ensure a thorough approach to weed control, the management plan should be co-ordinated with other any other weed control activities in the local area. Weed control activities should be conducted concurrently to avoid reinfestation from adjacent areas.

Noxious Weeds

Three noxious weeds, listed under the Noxious Weeds Act (1993) were recorded on the study site. These species include Alligator Weed *Alternanthera philoxeroides*, Blackberry *Rubus. fruticosus* species complex and Broad-leaf Privet *Ligustrum lucidum*. Of these, Alligator Weed and Blackberry are considered to be weeds of national significance.

These species must be prevented from spreading and the number and distribution reduced. An appropriately qualified person must undertake removal of such weeds with consultation with the Hawkesbury River County Council Noxious Weeds Control Officer.

Table 4 Noxious weeds and control measures

Alligator Weed	
Status	<ul style="list-style-type: none"> Declared as a Class 3 weed in the Hawkesbury River County Council area and in the Penrith LGA under the Noxious Weeds Act 1993 Weed of National Significance (WONS) under the National Weed Strategy (2006)
Features	Alligator weed (<i>Alternanthera philoxeroides</i>) is a potentially devastating aquatic and terrestrial weed affecting waterways, poorly drained and floodplain areas. It is a native of South America and a major problem in south-eastern United States, China, New Zealand, Burma, Thailand, Indonesia and India. Alligator weed has not reached its potential range in Australia, but has the potential to devastate the environment and agriculture if unchecked. Alligator weed has extremely vigorous growth and great tolerance to normal control measures which makes it a major threat to wetlands, rivers and irrigation systems.
Legal requirement for control	<p>The plant must be fully and continuously suppressed and destroyed.</p> <p>Available management techniques for controlling alligator weed include:</p> <ul style="list-style-type: none"> mechanical (e.g. weed harvesters in water bodies) physical (e.g. digging all material out to a depth of one metre) chemical (several herbicides registered for use on land or water) biological (e.g. the flea beetle attacks alligator weed growing in water).
Reference	<i>Alligator weed (Agfact P7.6.46)</i> NSW Department of Primary Industries 2004

Blackberry	
Status	<ul style="list-style-type: none"> Declared as a Class 4 weed throughout NSW under the Noxious Weeds Act 1993 Weed of National Significance (WONS) under the National Weed Strategy (2006)
Features	Blackberry has invaded the banks of watercourses, roadsides, pastures, orchards, plantations, forests and bushland throughout temperate Australia. On farms blackberries reduce pasture production, restrict access to water and land, and provide food and shelter for pest animals such as foxes. In some cases the cost of plantation forestry may be increased, especially during establishment, because blackberries impede access for manual operations.
Legal requirement for control	The growth and spread of the plant must be controlled according to the measures specified in the management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed.
Reference	<i>Weed profile: Blackberry</i> NSW Department of Primary Industries 2005

Green Cestrum	
Status	<ul style="list-style-type: none"> Declared as a Class 3 weed in the Hawkesbury River County Council area under the Noxious Weeds Act 1993
Features	Green Cestrum has is an increasingly problematic weed in the Sydney area. The plant is known to be toxic and can cause the death of livestock. The seeds of the plant are spread by birds that eat the berries.
Legal requirement for control	The growth and spread of the plant must be controlled according to the measures specified in the management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed.
Reference	<i>Green cestrum (Agfact P7.6.44)</i> NSW Department of Primary Industries 2004

Broad-leaf Privet	
Status	<ul style="list-style-type: none"> Declared as a Class 4 weed in the Hawkesbury River County Council area and in the Penrith LGA under the Noxious Weeds Act 1993
Features	There are about 50 species of privet which, with the exception of common privet, <i>Ligustrum vulgare</i> (which is native to Europe), occur naturally in eastern Asia. Privet is a member of the Oleaceae (olive) family. Broad leaf (or large leaf) privet, <i>L. lucidum</i> , and small leaf (or Chinese) privet, <i>L. sinense</i> , which were introduced from Asia, are now widespread weeds on the New South Wales north and central coast. They infest disturbed land, native bushland and gardens and the pollen produces allergic reactions in many people.
Legal requirement for control	<p>The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed.</p> <p>Broadleaf privet is generally easier to control than small-leaf privet, but in both cases control requires:</p> <ul style="list-style-type: none"> Preventing spread and infestation of new areas Removing privet from infested areas. The removal of seed trees and young seedlings before they are well-grown and become seed trees.
Reference	<i>Privet (Agfact P7.6.8)</i> NSW Department of Primary Industries 2004

Serious Environmental Weeds

Several of the weed species which most threaten the biodiversity of the site are not listed as noxious weeds in the Penrith LGA or in the Hawkesbury River County Council area. Exotic vines and scramblers are particularly capable of causing degradation to native ecosystems through their ability to smother native vegetation and prevent the regeneration of native plants.

The worst weeds in this category are Wandering Jew *Tradescantia albiflora*, Madeira Vine *Anredera cordifolia* and Moth Vine *Araujia sericifera*.

3.2.3 Herbicides

Factors that should be taken into consideration when choosing herbicide include;

- The safety of the particular herbicide to users, desirable plants, invertebrates, fish, amphibians, birds and mammals.
- The economics and time constraints of using herbicides versus other methods.

Any herbicide to be used on the site must be registered with the National Registration Authority for use on the targeted species in the relevant environment. For example, herbicides must be registered for

use in aquatic situations and natural areas if they area to be used in these situations. For some herbicides off-label permits exist which allow for these to be used in situations and on species not listed in the instructions for the herbicide.

Directions for herbicide use shown on labels and in off-label permits must be strictly adhered to and all precautions followed.

If spraying is necessary, it should be undertaken in suitable conditions and left for the recommended period. The best time to apply systemic poisons is when water and sugars are being rapidly moved (translocated) around the plant. This is usually in the growing season, when the plant is not stressed, and at a time of the day when transpiration is rapid. Plants which sucker easily from roots, in addition to plants with underground reproductive organs, must be treated just after flowering to ensure sugars (and hence herbicides) are moving down to the bulbs, or tuber. Treatment when sugars are moving upward from the underground organ to form the new seasons shoot will be of little effect (Buchanan, 1989).

Appropriate occupational health and safety practices should be in place to ensure accidents or pesticide spillages do not occur. These should also include the preparation of contingency plans in the event of any accidents.

3.2.4 Soil Stabilisation, Weed Suppression and Mulching

Physical soil stabilisers should be applied in areas where there is an erosion risk. The choice of method would depend on the appearance of stabiliser, the effect on soil aeration, water penetration and soil temperature and its weed suppressing and native plant germination properties (Buchanan, 1989).

Weeds suppression materials may include;

- Mulched, weed-free tree loppings;
- Brush matting;
- *Eucalyptus* mulch;
- Commercially available weed suppressant matting;
- Hay or straw; and

Erosion control could include chicken wire pegged on to steeper bank sections. Small to large logs and rocks from the site can be pegged or wedged into place to prevent erosion (Buchanan, 1989).

3.2.5 Revegetation

Considering the levels of weed infestation and low density of natives in some areas, additional planting will be necessary, especially in areas of extensive weed removal. Only species native to the area, appropriate to the landscape and compatible with the surrounding vegetation community should be utilised. Denser plantings are considered necessary where the weed density is thickest and/or native vegetation is absent.

3.2.5.1 Plant Stock

Naturally occurring remnant vegetation, preferably from the site or as locally as possible, is the best source of seed and/or vegetative material for revegetation. Generally these plants will have evolved to suit local environmental conditions and have a desirably broad genetic base. Ecologically and genetically, local seed complements other plants and animals in the area, and poses the least potential threat of genetic contamination (Mortlock, 1998).

Seed should be sourced from an approved local supplier. Seed should be collected from good parent specimens. It is important to ensure that recognised seed/cutting collection guidelines, such as those produced by Florabank (www.florabank.org.au), are held by the contractors appointed to this project.

Species selected to be planted should consist of those currently present on the site and/or those likely to have naturally occurred there before disturbance. This can be determined by referral to the site species list (Appendix B), the DECC scientific committee determinations for the endangered communities and/or other surveys undertaken within other natural bushland remnants in the local area.

3.2.5.2 Plant Specifications

Quantities should allow for 5% contingency to cover plant failures or damage during the establishment period. At the completion of the maintenance and monitoring period a continuous vegetative cover is to be achieved.

Plants to be supplied should be vigorous and free from pests and disease. Plants should be stored in trays of like species and labelled for ease of identification.

3.2.5.3 Planting Densities

Planting densities in areas prone to erosion are required to achieve quick vegetative cover and root mass to maximise bed and bank stability (DWE 2007). A variety of planting patterns should be used at the discretion of the bushland regeneration contractor in accordance with the VMP where native flora coverage is minimal and large areas of weeds are to be removed.

3.2.5.4 Planting Techniques

Soil should be prepared to allow for plant root penetration. Spacing will depend on the form of the species the vegetation structure to be re-created. Planting should be in groups or clustered whenever possible. The suitability of the species for the conditions within any area should be considered prior to planting.

Mulches should be applied around plants to control water loss, soil temperature fluctuation and weed invasion. Weed control is essential around plantings as many weeds can compete with seedlings for nutrients and water. Weed control should be carried out around planting for at least four years. An area of 1-2 metres diameter around each plant should be maintained weed free (Buchanan, 1989).

3.2.5.5 Establishment

The most important factors for plant establishment are;

- Plants actively growing at the time of planting,
- The surrounding soil is moist at the time of planting,
- Sufficient rain occurs and/or watering is provided in the following months, and
- The plants are free of weed competition.

3.2.5.6 Fertilisers

Given that local species would be planted, and increased nutrient load in surface water are apparent, the use of fertiliser is considered to be unnecessary. Additionally, plant containers (virocells and tubes) are generally pre-fertilised at the nursery. If monitoring shows that fertilisers are necessary these should be of a type formulated specifically for native species, in pellet form and incorporated into the soil to avoid run-off.

3.2.5.7 Tree Guards and Fencing

Rabbits, native animals and wind may pose a threat to newly planted seedlings. If necessary, each tree and shrub could be protected by a clear plastic sleeve and stakes or entire areas fenced off. The

use of tree guards and fencing should initially be at the discretion of the bushland regeneration contractor/supervisor and the requirement for any changes should be determined during monitoring.

3.2.5.8 Watering

The aim is to produce a community that can tolerate the local conditions. Watering frequency will depend on the species, weather conditions, soil type and plant size. If the soil is dry at the time of planting each plant should be given 10 to 20 litres with follow-up maintenance watering. Plants should be watered well at least two (2) to three (3) times a year whether by natural heavy rain or by artificial means. This would encourage development of deep root systems and a self-sufficient plant. By comparison, frequent light watering encourages development of a shallow root system and plants that are likely to die in subsequent dry periods, (Buchanan, 1989).

To avoid mortality, plants should be delivered and planted on the same day. In the event that plants cannot be planted on the day of delivery, they should be planted as soon as possible but be kept moist at all times.

Prior to planting a temporary irrigation system such as a water tanker should be available, so plants can be watered immediately after planting. Watering should take place within two hours of planting or less in dry conditions.

Watering of seedlings should be continued as required until all plants are established. Weather and site conditions should determine the frequency of watering for plants over the maintenance period to ensure they do not perish. Moisture levels and plant health should be monitored fortnightly during drier periods.

Any Penrith City Council water use restrictions should be adhered to. Watering should be undertaken early morning or late afternoon to avoid the hottest part of the day and unnecessary water loss.

3.2.5.9 Plant Replacement

A dense vegetation cover should be maintained. For areas where vegetation has failed, been damaged or is suffering from pests and/or disease, replanting should occur twice a year in spring and late summer/early autumn when temperatures are milder and the risk of frost is reduced.

Plants lost or damaged should be replaced. Plants should be replaced at the size originally specified and in accordance with all planting methods as previously described.

If a particular species is performing poorly it should be substituted with plants of similar growth form from species in the recommended planting list (**Appendix B**).

3.2.6 Litter Removal

Litter should be removed by hand opportunistically when bush regeneration contractors are on the site. All litter collected should be removed from the site and disposed of appropriately.

Natural debris such as brush, logs and rocks should be left in-situ or set aside and reused for wildlife habitat with Badgerys Creek riparian corridor and the biodiversity offset area.

Any non-biodegradable materials used in the regeneration process such as virocells and pots and tree guards should be removed on a daily basis when no longer required.

3.2.7 Primary weed treatment

The term primary weed treatment describes the initial removal of weeds in a specific location. This usually involves treating all the reproductively mature specimens of a weed species (or group of species). Care must be taken during this stage to ensure that weeding does not have too great an adverse impact on habitat for native species or soil stability. It is also important that the extent of

weed treatment is such that time and funds are available for effective secondary and maintenance weeding.

3.2.8 Secondary weed treatment

Secondary weed removal is usually required to remove weed seedlings and regrowth such that the gains made through primary weed treatment are not lost due the rapid regrowth and colonisation of disturbed ground. Care must be taken to ensure that any regeneration of native plant species is identified and protected, both from weed regrowth and from accidental damage during secondary weed treatment.

3.2.9 Maintenance weeding

Maintenance should aim to prevent the regrowth of weeds and protect regenerating native plants. Maintenance activities should be timed such that weed species are unable to reach maturity and begin to reproduce in the interval between maintenance sessions. This approach will require a different maintenance frequency depending on the weed species treated. Using this approach, the amount of time required for maintaining a low density of target weeds will decrease over time as the abundance of weed seeds, bulbs and rhizomes within the soil is reduced.

4.0 Vegetation Management Program

The development of the SAWT facility will retain the existing creek-line alignment, profile and vegetation within the 50m riparian corridor with the associated ecological values. This area and the proposed biodiversity offset area will be protected and enhanced through weed removal and planting works.

Regeneration works should be undertaken before, during and after construction of the SAWT facility and involve the following;

- Primary and secondary weed removal and management within Zone 1 and 2;
- Collection of seeds and other propagative material from Zone 3;
- Use of tree branches and logs from vegetation clearance in Zone 3 for the enhancement of habitat in Zone 1 and Zone 2;
- Sourcing locally occurring and grown native species;
- Erosion control measures;
- Retention of rocks, fallen brush within the riparian zone to provide soil stabilisation and as a habitat niche.

The program herein assumes that;

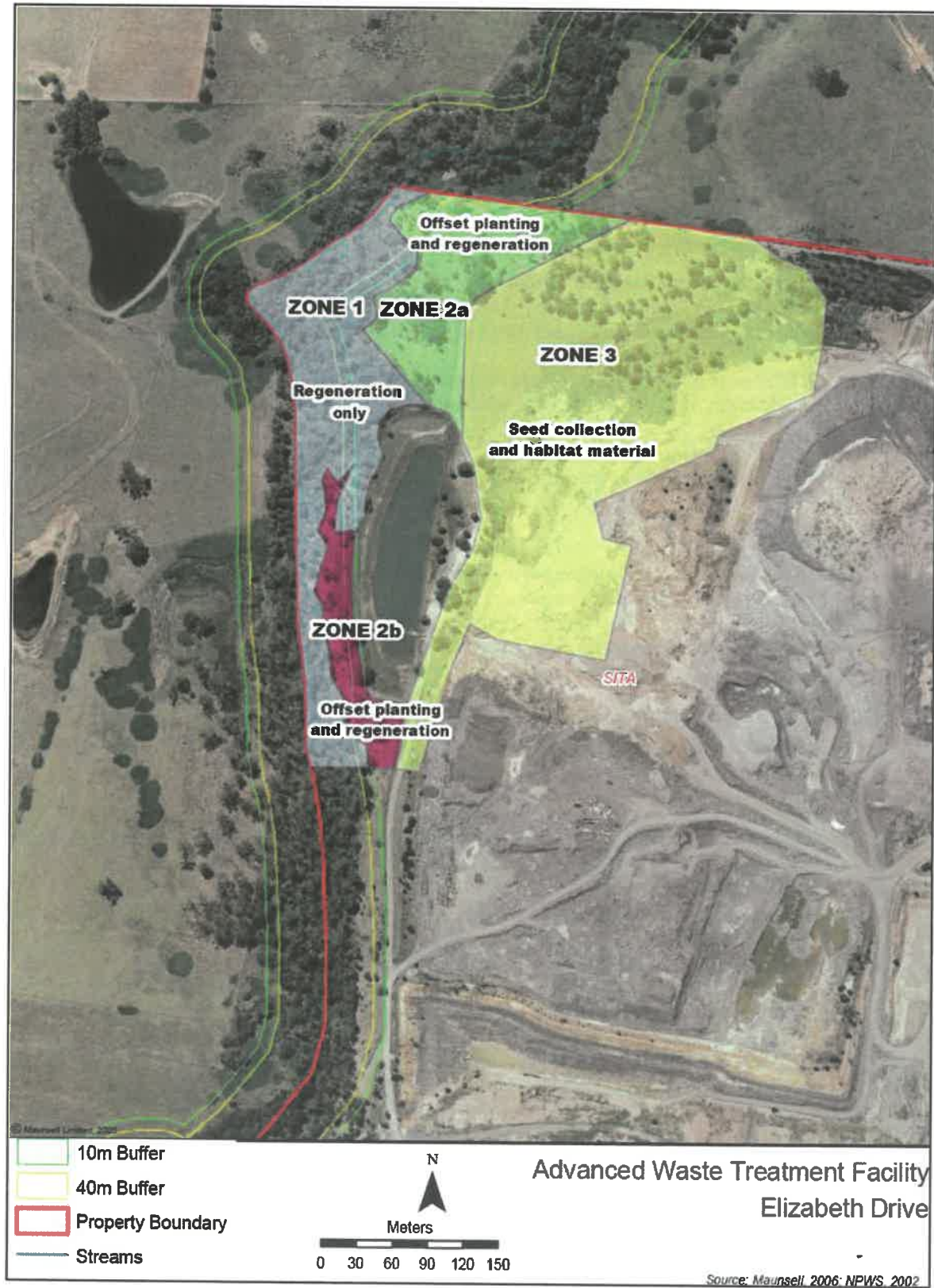
- Primary, secondary and revegetation works would occur over a five (5) year period with an additional three (3) years of maintenance;
- All ongoing regeneration work would be carried out by suitably qualified and experienced contractors and/or volunteers with appropriate qualifications or experience in bushland regeneration;
- The bush regeneration contractors and/or volunteer's knowledge and experience would contribute to the final implementation of the regeneration program; and
- The habitat restoration and enhancement works would be fully funded by SITA.

4.1 Management Zones

The riparian corridor has been sectioned into Zones for feasibility of this Vegetation Management Plan. Zone 1 is located within the western section of the study area where Badgerys Creek defines the western the boundary of this zone. This zone contains the higher density vegetation within the riparian corridor. Zone 2 is split into Zone 2a (northern section) and Zone 2b (southern section) and contains relatively sparse tree and understorey vegetation cover. Zone 3 represents the area where the SAWT facility will be constructed (**Figure 2**).

The area required for rehabilitation (Appendix 2 of the conditions of consent) corresponds with Zones 1, 2a and 2b of Figure 2 in the VMP.

Figure 2 – Vegetation Management Zones



4.2 Pre Construction Management

4.2.1 Zone 3 – AWT Facility Construction Site

Pre-construction vegetation management is confined to **Zone 3**. The vegetation management in this zone will chiefly involve the salvage of native plant seeds and other propagative material and the stockpiling of cleared vegetation for use in the rehabilitation and enhancement of Zone 1 and Zone 2. Details of the tasks required are provided in **Appendix C**.

4.3 Management During and After Construction

4.3.1 Zone 1 – Riparian Corridor

Through its involvement in the River Restoration Program with HNCMA, SITA has conducted extensive primary, secondary and maintenance weeding of environmental weed species such as Wandering Jew *Tradescantia albiflora* in addition to the control of noxious weeds.

SITA currently maintains this vegetation and is committed through a funding agreement with HNCMA to maintain the improved condition of the vegetation of the riparian corridor until 2016.

The information and recommendations below are designed to guide this ongoing maintenance to ensure that is effective in achieving the desired vegetation management outcomes.

4.3.1.1 Current Condition

The bulk of the relatively intact vegetation within the site is included in Zone1. The canopy stratum here is of moderate to high density but shows signs of previous partial clearing in the form of groves of eucalypt regrowth and the lower than natural abundance of large old trees. The canopy consists entirely of native species of the genera *Eucalyptus*, *Angophora* and *Casuarina*. Abundant species include *Eucalyptus. teriticornis*, *E. amplifolia*, *E. eugenioides*, *E. creba*, *Angophora subvelutina*, *A. floribunda* and *Casuarina glauca*. The sub-canopy stratum is patchy and sparse and consists of sub-adult specimens of the canopy species and occasional specimens of *Melaleuca* species including *M. decora* and *M. linariifolia*. The tall shrub stratum consists primarily of occasional patches of *Acacia decurrens* and occasional specimens of the weeds Broad Leaved Privet *Ligustrum lucidum* and African Olive *Olea europaea* subsp. *cuspidata*.

The understorey here is also patchy and is dominated by *Bursaria spinosa* with occasional occurrences of other native shrubs including *Dodonaea viscosa* subsp. *cuneata* and Scrubby Spurge *Phyllanthus gunnii* and weeds including Arsenic Bush *Senna septemtrionalis* and Green Cestrum *Cestrum parqui*.

The groundcover stratum is composed of native and exotic grasses and forbs. The native grass *Microlaena stipoides* is the dominant groundcover species through much of this zone but is replaced in places by exotic grasses such as *Paspalum dilatatum* and the scrambling forb Wandering Jew *Tradescantia albiflora*. A variety of other native and exotic grasses and forbs are also found in this stratum throughout the zone. Several species of vine occur in this zone and can be found creeping through the groundcover and climbing through the shrub layers of the vegetation. Native vines here include *Clematis aristata*, *Glycine microphylla*, *Convolvulus erubescens* and *Parsonsia straminea* while exotic vines include *Araujia sericifera*, *Passiflora edulis* and *Anredera cordifolia*. *A. sericifera* is the most abundant exotic vine with *P. edulis* occurring sporadically and *A. cordifolia* only recorded in two places near the creek and northern boundary of the zone.

Leaf-litter cover is low in this zone with the ground surface predominantly covered by lush grass and forb growth.

The western barrier of this zone is the bank of Badgerys Creek and hence the aquatic vegetation of the riverbed is not included in this zone. A number of native and exotic submerged, floating and emergent plants occur within the creek with some of these species extending for a short distance up the creek banks. The serious aquatic weed Alligator Weed *Alternanthera philoxeroides* occurs both within the waterway and on the bank.

Photograph 1 – Zone 1 Vegetation



4.3.1.2 Regeneration Approach

Weed Management

This zone contains most of the infestations of noxious weeds and highly invasive environmental weeds. Of particular concern is the presence of Alligator Weed. Control of this species is difficult due to its relatively high tolerance to Glyphosate, its presence in sensitive aquatic habitats and its ability to regrow and spread vegetatively from swollen underground stems or broken floating stems. A mapping and control program is currently being undertaken for this and four other aquatic weed species within the Sydney catchment area by the Sydney Metropolitan Catchment Management Authority (SMCMA). Attempts at control of this weed independently within the Elizabeth Drive Landfill Site are unlikely to be successful due to the ability of the species to rapidly re-colonise the area from the opposite creek bank and from broken sections of stem carried from further upstream. Given the difficulty in controlling this species and the associated environmental risks, it is recommended that the presence of the infestation on the site is reported to SMCMA and that SITA continues to liaise with the Hawkesbury-Nepean Catchment Management Trust, the Natural Heritage Trust and adjacent land managers to control this species in the area.

Other noxious weeds within this zone that should be targeted include Blackberry, Green Cestrum and Broad-leaf Privet.

Broad-leaf Privet should be controlled through the hand removal of seedlings, application of neat Glyphosate to the cut stumps of medium-sized specimens and the drilling/chiselling and injection of Glyphosate into the base of large specimens. These techniques are also applicable to the other exotic trees and shrubs found on the site. Green Cestrum is best controlled by cutting and injecting the root ball of the plant with neat Glyphosate. Repeat treatment may be required.

Serious environmental weeds on the site that are not listed as noxious include Wandering Jew *Tradescantia albiflora*, Moth Vine *Araujia sericifera* and Madeira Vine *Anredera cordifolia*.

Madeira Vine is a particularly difficult species to control once established and is capable of smothering all vegetation strata. As this species is currently only present as a few small infestations, opportunity exists for the eradication of the species from the site. A combination of hand-weeding and spot-spraying of regrowth is recommended for this species. Hand-weeding should involve the digging up and disposal off site of rhizomes and the removal of smothering growth from trees. Spot-spraying with an appropriate herbicide should only be used where rhizomes are inaccessible due to their depth or proximity to tree roots or other obstructions.

Wandering Jew is capable of forming dense mats of growth that exclude native groundcover species and prevent the germination of the seeds of indigenous plants including trees and shrubs. This species is the dominant groundcover species in some areas of the zone while in other areas it occurs at lower density in a mixture with other weeds and indigenous plant species. Priority should be given to treating Wandering Jew in areas of lower density to allow patches of indigenous species to increase in density and expand in area.

Moth Vine grows over and smothers shrubs and small trees. It is a fast growing species that spread via wind-dispersed seeds. Control of Moth Vine should take the form of hand-pulling and scrape-and-paint methods. Hand-pulling can be successful if soils are soft enough to allow the removal of stem and the tap root. In hard soils the stem will snap near ground level allowing the plant to re-shoot. In these conditions, scraping of the stem and the application of neat Glyphosate is more effective.

A program of Blackberry control has been undertaken in this zone and should be continued to prevent regrowth of this species and further reduce its abundance.

Weed control for all target weed species should be undertaken to prevent these species from becoming more abundant and spreading to nearby areas. Eradication of some target weed species that currently occur in low density such as Green Cestrum, Arsenic Bush and Broad-leaf Privet is achievable within the proposed maintenance period though re-infestation from nearby areas is likely to require ongoing maintenance.

The maintenance program should also aim to gradually reduce the current extent of species such as Wandering Jew and Moth Vine. Eradication or large-scale removal of these species is not considered feasible at present due to the large scale of infestations, the ability of these species to regrow from small fragments and/or recolonise from surrounding areas and environmental constraints such as fauna habitat and erosion potential. The rate at which natural regeneration is expected to occur on the site is also a constraint to the feasibility of extensive removal of exotic groundcover species.

Infill Planting

Planting within this zone should be minimal and is considered necessary in the form of infill planting for erosion control only where weed removal has resulted in bare areas and native species cover is minimal. It is envisaged that the planting scheme could include clumps of locally occurring ground-layer species to maintain the understorey vegetation. Areas likely to regenerate naturally would not require planting.

Any planting on the banks of Badgerys Creek should include a combination of sedges where they occur close to the water level with grasses, herbs, shrubs and trees to the middle and upper banks.

This approach to continued weed management in the riparian corridor should result in the maintenance and gradual improvement to the current environmental values of this area.

4.3.2 Zone 2 – Biodiversity Offset Area

The regeneration works in this zone are designed to offset the clearing of 0.81 ha of Cumberland Plain Woodland within the proposed SAWT facility site through a combination of weed control, revegetation and habitat augmentation.

Current vegetation management practice in this zone consists of the control of noxious weeds and mowing of grassed areas to minimise bushfire hazard.

4.3.2.1 Biodiversity Offset Principles

The publication *Guidelines for Biodiversity Certification of Environmental Planning Instruments (Working Draft)* (DECC 2007) lists the following principles that DECC uses to assess the appropriateness of proposed biodiversity offsets:

The way in which the proposed offset adheres to these principles is shown in **Table 5** below.

Table 5 - adherence to offset principles

Offset Principles	Adherence to principle
1. Impacts must be avoided first by using prevention and mitigation measures.	Direct impacts to the AWT facility construction site are unavoidable. Indirect impacts to the adjacent retained habitat will be minimised through the installation of sediment control devices. Construction activities will be excluded from areas containing retained remnant vegetation using new and existing fences.
2. All regulatory requirements must be met.	The offset will not be used to satisfy approvals or assessments under other legislation. The proposed offset is additional to the vegetation management works required to protect Badgerys Creek and the regular noxious weed control currently undertaken by SITA.
3. Offsets must never reward ongoing poor performance.	The proposed offset would not reward poor performance. Poor performance of offset measures would result in increased ongoing maintenance costs to SITA.
4. Offsets will complement other government programs.	The proposed offset measures will be undertaken in consultation with Landcare and the Hawkesbury-Nepean Catchment Management Authority to ensure that they are consistent with other programs in the region such as the <i>River Restoration Project</i> .
5. Offsets must be underpinned by sound ecological principles.	The planting scheme proposed for the offset would be designed to mimic the natural vegetation of the site while considering site constraints such as soil conditions and bushfire hazard. Other measures such as weed control and habitat augmentation are designed to reduce the impact of key threatening processes which have been identified as affecting the biodiversity of the site. The habitat value of the offset for the Cumberland Land Snail is an important aspect of the offset program. The vegetation recreated will include two endangered ecological communities, Cumberland Plain Woodland and River-flat Eucalypt Forest and will be consistent with the structure and composition of these communities. The offset program will improve habitat values within the offset area. It will also contribute to the functioning of the riparian wildlife corridor by increasing its width and reducing edge effects.
6. Offsets should aim to result in a net improvement in biodiversity over time.	Revegetation and habitat augmentation measures would increase the structural diversity of habitat. The aim of these measures is to create opportunities for indigenous flora and fauna species from nearby areas to expand their range, thereby increasing the biodiversity of the offset site and the adjacent riparian corridor. The maintenance activities conducted within the offset area will serve to protect the biodiversity values of the riparian corridor by acting as a buffer against weed invasion.

Offset Principles	Adherence to principle
7. Offsets must be enduring – they must offset the impact of the development for the period that the impact occurs.	The impact of the development is permanent. The offset measures are thus designed to create a permanent area of wildlife habitat that will eventually develop into a self-sustaining ecological system. Given the nature of the surrounding areas, it is envisaged that ongoing vegetation management will be required to achieve this goal. The extent and frequency of maintenance activities is expected to decrease over time.
8. Offsets should be agreed prior to the impact occurring.	No further clearing activities will be conducted until the offset plan has been approved.
9. Offsets must be quantifiable – the impacts and benefits must be reliably estimated.	The offset program is designed to offset the clearing of 0.81Ha of Cumberland Plain Woodland endangered ecological community. The program would involve revegetation, weeding and habitat augmentation over an area of approximately 3.5Ha. Revegetation would involve the planting of 300 trees, 150 shrubs, and 100 groundcovers and broadcasting of native grass seeds to enhance existing vegetation and increase the biodiversity of this area which contains both Cumberland Plain Woodland and River-Flat eucalypt Forest endangered ecological communities. The habitat to be removed from the SAWT facility site is in comparable condition to that of the offset area. The offset area would be retained for biodiversity for the lifetime of the SAWT facility and beyond, and afforded protection through the existing fencing and limitations to access.
10. Offsets must be targeted.	The offset program is targeted to improve the condition and in places, recreate the relevant endangered ecological communities. Habitat measures are aimed at improving habitat for threatened species such as the Cumberland Land Snail and threatened microbats that may occupy the site and surrounds and improving connectivity within the locality.
11. Offsets must be located appropriately.	The offset is located such that it is continuous with retained vegetation and contributes to wildlife corridor values.
12. Offsets must be supplementary.	The works within the offset area are additional to the vegetation management works which SITA already undertakes within the riparian corridor and additional to those measures described in the VMP for Zone 1.
13. Offsets and their actions must be enforceable through development consent conditions, licence conditions, conservation agreements or a contract	SITA would sign an agreement with DECC which lists the tasks required to be conducted for the offset and describes the monitoring that is required to determine that the actions are leading to positive biodiversity outcomes.

4.3.2.2 Current Condition

The woodland vegetation of this zone has been partially cleared. Trees are widely spaced and the very little remains of the mid-storey and understorey vegetation strata. The ground layer is dominated by grasses and forbs and exists as a mosaic of patches of dominated by indigenous plants in some areas and weeds in others. In many areas indigenous and exotic species are approximately equal in abundance. The native species *Microlaena stipoides* and *Themeda australis* and the exotic species *Paspalum dilatatum* are abundant in this zone. Many of the target weeds including exotic vines and shrubs and Wandering Jew are less abundant here than in Zone 1.

Photograph 2 – Zone 2 Vegetation – Scattered trees with a mosaic of indigenous and exotic grasses



4.3.2.3 Regeneration Approach

Weed Management

The focus of weed management in this zone should be the preparation of areas for revegetation. Revegetation using indigenous species should be used to connect and expand existing patches in which indigenous groundcover species are dominant. Due to the disturbed nature and simplified structure of this vegetation it is considered less likely to be occupied by the endangered Cumberland Land Snail. A weeding approach involving a combination of hand-weeding and herbicide spraying is thus considered appropriate. Where spraying is employed, it should be followed by mowing or slashing to create a mulch layer to prevent erosion, suppress weed growth and retain soil moisture. Where soil is laid bare due to hand-weeding, mulching may be required. Weeding should also be conducted within patches of better condition to maintain the dominance of indigenous species. Seedlings of the target species identified in Zone 1 should also be removed where they are encountered in this zone.

Revegetation

The aim of revegetation in this zone should be the re-creation of the natural vegetation structure and composition by connecting and expanding existing patches in which indigenous groundcover species are dominant. Prior to the designation of planting areas, SITA should be consulted to ensure that these are not placed such that they would restrict access to monitoring points.

Given its location on the edge of the riparian zone, adjacent to the remnant Cumberland Plain Woodland patches of Zone 3, the original vegetation of this zone is likely to have been intermediate in structure and composition between River-Flat Eucalypt Forest (RFEF) and Cumberland Plain

Woodland (CPW) endangered ecological communities. Thus a combination of species consistent with each of these vegetation communities should be used. The species used for a particular location should be dependent on the distance from the creek and the elevation from the creek bank of the location concerned. Species confined to the CPW community should be used in better-drained, more elevated locations whilst riparian species such as *Melaleuca spp.* should be used in areas prone to water-logging.

Revegetation within this zone should chiefly consist of tree and shrub planting as the canopy and understorey strata here is sparse. Patches of trees, shrubs and groundcovers should be planted adjacent to but not within areas containing chiefly native grasses such that native species are able to expand into these areas as weeds are suppressed during the maintenance period of the plantings.

Hand-broadcasting of native grass seed collected from Zone 3 may also be conducted in these areas.

Recommended planting numbers are as follows:

- 300 trees
- 150 shrubs
- 100 groundcovers

Mowing should cease in areas prepared for revegetation. Mowing should still be available as a vegetation management tool but should be conducted by or in close co-operation with the bushland regeneration contractor to ensure that it is consistent with the management of the area for biodiversity. Mowing for the purpose of maintaining access to monitoring points should be permitted.

Habitat Augmentation

Habitat for terrestrial fauna within Zone 2 is limited due to the current lack of structural complexity in the form of woody debris low vegetation and leaf litter. Weeding and revegetation works should result in an increase in the complexity of the vegetation and result in the accumulation of leaf litter. Further habitat augmentation through the use of all tree branches and trunks produced by the vegetation clearing on the SAWT facility site (Zone 3). Tree trunks and branches in excess of 10cm in diameter should be strategically placed within this zone to act as fauna habitat. This woody debris should be placed in clusters within and adjacent to areas proposed for revegetation and adjacent to areas currently dominated by indigenous vegetation. Placement of debris here aims to maximise its potential as fauna habitat for the native terrestrial reptiles, amphibians and invertebrates, including the endangered Cumberland Land Snail, which occupy the site. Practical considerations such as access for maintenance, safety and bushfire hazard should also be considered during this process. Smaller branches should be mulched for use in revegetation works. Mulch created by this process will also help to simulate natural leaf-litter.

4.4 Monitoring, Reporting and Review Process

Monitoring of the implementation of vegetation management measures is necessary in order to determine which measures are successful in achieving desired outcomes. This information can be used to modify practices in order to maximise the success of future management works. This may require the management plan to be amended.

Informal monitoring should be conducted by the bush regeneration contractor during management tasks. Brief monthly reports should be provided to SITA by the bush regeneration contractor such that management activities are documented. These monthly reports should be summarised in an annual report.

An annual monitoring survey should be conducted by an independent ecological consultant or suitably qualified bushland regenerator. This survey should involve a qualitative assessment of the condition of the vegetation and a quantitative assessment of plant species composition and abundance along a

Rhoads and Dunnett (1985), *Aboriginal Resources Planning Study: City of Penrith*. Prepared for National Parks and Wildlife Service. Department of Anthropology. Sydney University.

Robinson, L (1991) *Field Guide to the Native Plants of Sydney 2nd Edition*. Kangaroo Press. Sydney.

Westman, W.E. (1978) *Measuring the inertia and resilience of ecosystems*. Bioscience 28: pp 705-10
Cited in R.J. Hobbs and C.J. Yates (eds) (1999) *Temperate Eucalypt Woodlands in Australia: Biology, Conservation, Management And Restoration*. Surrey Beatty & Sons. Chipping Norton.

Appendix A Project Proposal Form, Riparian Management Report and Funding Agreement

pre-designated transect within each of Zone 1 and Zone 2. A brief report on vegetation condition should be produced for each annual monitoring survey, building on the results of the previous survey to show the trends in vegetation condition over time.

The results of these reports should be considered in conjunction with annual bushland regeneration reports to identify any changes to practices that may improve management outcomes.

Permanent photographic points could be established and used to provide a visual record of vegetation growth and structural diversity over time.

4.5 Summary of Tasks

Table 4 Summary of Tasks

Restoration Activity	Zone	Frequency	Responsibility
Pre-construction Management <ul style="list-style-type: none"> Threatened flora survey Collection of seeds Salvage of woody debris Fencing 	Zone 3	Once only	SITA, EC
Weed Management-	Zone 1	Every 6 months until 2016.	BR, SITA
Revegetation	Zone 2	Two sessions within first two years	BR
Maintenance of Revegetated Areas – <ul style="list-style-type: none"> Plant replacement Watering Weeding 	Zone 2	Fortnightly for first 8 weeks, monthly until 6 months after planting, then every 3 months until 2016. NB: Fortnightly maintenance is recommended for watering during initial stages after planting. The actual frequency required will depend on prevailing rainfall conditions and should be increased or decreased to suit conditions.	BR
Habitat augmentation	Zone 2	Once only	BR
Litter removal	Zone 1, 2	Opportunisticly	BR
Monitoring	Zone 1, 2	Annually	EC

KEY TO ABBREVIATIONS

BR – Bushland Regeneration Contractor

SITA – SITA Environmental Solutions

EC – Ecological Consultant

4.6 Indicative Cost

NB: This cost estimate includes all vegetation management works required for the implementation of the VMP including the control of noxious weeds from the beginning of construction works until 2016 and all maintenance works within the section of the riparian corridor within the Elizabeth Drive Landfill site during this period.

Unit	Cost	Frequency	Subtotal
Materials	\$1,500	Once only	\$1,500
Planting & watering labour	\$4,000	Once only	\$4,000
Weed management labour	\$380	Every six months	\$10,700
Monitoring	\$400	Annual	\$2,800
Total			\$19,000

5.0 References and Information Sources

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- Penrith City Council (1999) *Penrith Local Environmental Plan 1999. (Flora and Fauna Conservation) (Draft)*.

Project Proposal Form



RIVER RESTORATION PROJECT

PROJECT PROPOSAL FORM

CATEGORY 1 APPLICANTS (INDIVIDUAL PROPERTY OWNER)

Name of applicant: Kim Ross (for SITA Environmental Solutions)
Name of landowner (s): SITA Australia Pty Ltd
Property name (s):
Property address: 1725 Elizabeth Drive, Kemps Creek
Postal Address: PO Box 50, Kemps Creek NSW 2171
Phone: 4774 8866 Fax: 4774 9385 E-mail: Kim_Ross@sita.com.au ABN: 70 002 902 650

CATEGORY 2 APPLICANTS (GROUP, COUNCIL OR NON-GOVERNMENT ORGANISATION)

Please use spaces to indicate additional partners in the project. Projects involving a range of stakeholders may be advantaged in assessment

Name	Organisation and ABN (if applicable)	Position	Contact details Phone and email
(Project manager)			
1.			
2.			
3.			
4.			

IS THE PROPONENT OR A PROJECT PARTNER AN INDIGENOUS GROUP OR ORGANISATION?

If "YES", please provide details

LOCATION DETAILS

Town, Suburb or nearest town (and approximate distance): Penrith 15km
Portions/Lots: 740 DP: 810111
Parish: Claremont County: Cumberland (refer to council rate notices)
Subcatchment: Badgerys Creek River/Creek: South Creek
River Health Strategy Reach Identification Number: Property size: 86 ha
Adjoining landuse: Pastoral, residential, open space (some bushland)

PROJECT PROPOSAL

Page 1



INELIGIBILITY CRITERIA

ISSUE	CRITERIA	ANSWER	ELIGIBILITY	COMMENTS
Development application	Is there a Development Application or Remediation Notice associated with the property and are the proposed works associated with any consent conditions?	Yes DA on property not related to works No	Ineligible Eligible Eligible	
Statutory obligation	Are the proposed works considered to be the statutory obligation of the landowner (eg. Noxious weed control)?	Yes No	Ineligible Eligible	

BRIEF PROJECT DESCRIPTION

Please provide in dot point form a brief outline of the project

Project Description:

- The applicant would like to improve the health of the riparian bushland present on the property by employing professional bush regenerators to control weeds and encourage natural regeneration of native species.
- The main weeds present are vines (Moth vine, Madeira Vine, Morning Glory, etc) with scattered Olive, and herb species.
- The native vegetation present in the riparian area is comprised of remnant Cumberland Plain Woodland species.
- The applicant will be controlling invasive, noxious aquatic species as part of their normal requirements.

Anticipated Start Date:	August 2006 (Month/Year)	Anticipated Finish Date:	August 2007 (Month/Year)
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Has other funding been sought for this project?	Yes/No
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IF YES, INDICATE HOW THIS WILL BE RESOLVED IF BOTH APPLICATIONS ARE SUCCESSFUL

Has previous environmental work been carried out on the site by the applicant or others?	No/Yes
--	--------

IF YES, PLEASE DETAIL: SOME WEED CONTROL BY APPLICANT

If the applicant has had previous funding, has all reporting been completed?	N/A
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IF NO, APPLICATION CANNOT BE PROCESSED UNTIL REPORTING COMPLETED

BASED ON THE ELIGIBILITY CRITERIA AND THE PROJECT DESCRIPTION, IS THIS AN ELIGIBLE PROJECT?	No/Yes
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IF YES, PROCEED TO SITE ASSESSMENT

**SITE RATING SHEET – TO BE FILLED OUT BY CMA PROJECT OFFICER
ON SITE**

Inspecting Officer: Trish Chadwick	Inspection date: 12th May, 2006
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ISSUE	CRITERIA	CATEGORIES	SCORE (Circle)	COMMENTS
PHYSICAL CONDITION AND RECOVERY POTENTIAL				
1. Channel Stability	Bed or bank erosion impacting channel stability and in-stream habitat	None Minor Significant Severe	5 4 <u>3</u> 2 1	
2. Geomorphic recovery potential	What is the potential for recovery in the channel?	Low Moderate High Very High	1 2 <u>3</u> 4 5	(If not degraded, rate "very high")
3. Native vegetation condition	What is the condition of the native vegetation community on the site	Poor Moderate Good Excellent	1 <u>2</u> 3 4 5	
4. Weed invasion level	What is the level of weed invasion across the site	Low Moderate High Extreme	5 4 <u>3</u> 2 1	
5. Potential for natural regeneration	What is the potential for natural regeneration on the site	Low Moderate High Very high	1 <u>2</u> 3 4 5	
6. In-stream habitat	How would you rate the presence / condition of the in-stream habitat?	Poor Moderate Good Very good	2 <u>3</u> 3 4	
7. Intervention required	What is the anticipated level of intervention required for the site?	Low Moderate High Very high	4 <u>3</u> 2 1	
8. Site length	What is the length of the riparian site to be improved?	<50m 50-100m 100-500m >500m	1 3 <u>4</u> 5	
9. Connectivity	Will works increase connectivity to other high conservation value sites?	Low Moderate High	1 <u>2</u> 3 10	
10. Condition improvement	What is the anticipated change on the site	Primary ¹ management only – Secondary ² management for a range of processes High degree of ecosystem function and resilience	<u>1</u> 2 3 4 5	

11. Buffer width	What is the width of the buffer (existing or to be created)?	<10m 10-20m 20-50m >50m	1 2 4 5	
SUB TOTAL			32/58	
DESKTOP PRIORITIES				
12. River Health Strategy	What priority has the reach been assigned by the R483?	Not a priority reach Priority reach High priority reach Severe immediate threat	1 6 12 15	
13. EEC	Does the site contain an identified EEC?	Yes No but has high potential No	10 5 2	
14. Key species	Does the site contain endangered or regionally significant species?	Yes No	10 2	
SUB TOTAL			135	
LANDHOLDER CRITERIA (not applicable to category 2 applicants)				
15. Landcare	Is the applicant part of a landcare or community environmental group?	Yes No	5 1	
16. Previous works	Has the landholder carried out previous successful works on site?	Yes No	5 2	
18. Connectivity with previous works	Will these works connect with work on the property or adjacent properties?	Yes No	5 2	
19. Commitment	Demonstrated commitment to the principles of the R483?	Yes No	5 1	
20. Capacity	Are the funds requested a reflection of the ability of the landholder to carry out works?	Yes No	3 1	
SUB TOTAL			18/23	
FINAL TOTAL			50/81	

21. Additional comments from inspecting officer:

Although Badgerys Creek does not rate high on the River Health Strategy system, this patch of remnant vegetation is providing habitat for a White Bellied Sea Eagle to nest. This nest has been used each year for the past years, according to the Site Manager. The nesting tree is not actually on the Applicant's land but is immediately across the creek on the neighbouring property. This property shows a high level of connectivity to the property with the Eagle's nest.

White-bellied Sea
Eagle's nest



Improving the health of this patch of habitat may be important to the welfare of the Sea Eagles. It is necessary for them to have bushland adjacent to creeks. It is best if these creeks also have waterfowl present for them to feed upon.

MAP OF THE SITE SHOWING EXISTING FEATURES AND INTENDED WORKS, SCALE
MEASUREMENTS AND SLOPE OF BANK WHERE POSSIBLE





22. BUDGET

Budget Item	Details / Description of proposed works	CMA Funds (\$) Requested	Matching contributions			Total (\$)
			Source	Cash (\$)	In-Kind (\$) ¹⁰	
<i>Fencing</i>	N/A					
<i>Off-river stock watering</i>	N/A					
<i>Bush Regeneration</i>	Hire of professional bush regenerators for 3 weeks – Spring (2) and Autumn (1 followup)	\$4,900.00	Applicant contribution – slashing & disposal of woody weed debris; 192 hrs (over 12 weeks) + 1 week of bush regen \$2450	\$2,450.00	\$3,340.00	\$11,190.00
<i>Weed Control</i>						
<i>Plants</i>	N/A					
TOTAL FUNDING		\$4,900.00		\$2,450.00	\$3,840.00	\$11,190.00

23. PROJECT OUTPUTS

(THE CMA HAS INCLUDED THE ANNUAL TARGETS LISTED IN THE TABLE IN THEIR INVESTMENT STRATEGY. PLEASE INDICATE THE CONTRIBUTION THAT YOUR PROJECT WILL MAKE IN RELEVANT ACTIVITIES TO THESE TARGETS.

NOTE: NOT ALL OUTPUTS WILL BE RELEVANT TO INDIVIDUAL PROJECTS)

Annual HNCMA Catchment Output Targets	Planned outputs from your project
60,000 plants established through revegetation or assisted regeneration in priority riparian areas	
35 Ha of riparian vegetation and wetland protected by fencing	
20 alternate water systems provided to landholder projects	
100 Ha of riparian zone revegetated or rehabilitated through bush regeneration to link corridors and buffers	10.58 rehabilitated through bush regeneration
60km of riverbank undergoing intensive rehabilitation	
60 km of riverbank treated for pest plant control including riverbank willow, olive, privet, <i>Gleditsia</i> and other woody weed control	1 km woody weed control
60 site management plans developed with landholders/ local government	1
10 sites treated for erosion control through structures and/or installation of vehicle/stock crossings	
2 sub-catchments with low level of community/landholder activity supported for riparian improvement activity and community capacity building	
Strategic control of outbreaks of aquatic weed including <i>Salvinia molesta</i> and Alligator Weed.	
Community education program to identify aquatic weeds and targeted control on farm dams	
Research activity and controlled trials for aquatic weed control including biological control of <i>Salvinia molesta</i> with <i>Salvinia</i> weevil	1 <i>Salvinia</i> weevil release site
Minimum 10 non-training days demonstrations and field days	
Minimum 20 Media opportunities and press releases	

24. Heritage Assessment

Are there any Aboriginal or European Heritage values that may preclude the intended works being carried out on the site?

If "YES" or "UNSURE", assessment cannot proceed until resolved.

25. Endangered species/communities

Have necessary licences or permits been obtained if required under DEC Legislation?

If "NO" or "UNSURE", assessment cannot proceed until resolved.

30. Site photographs:

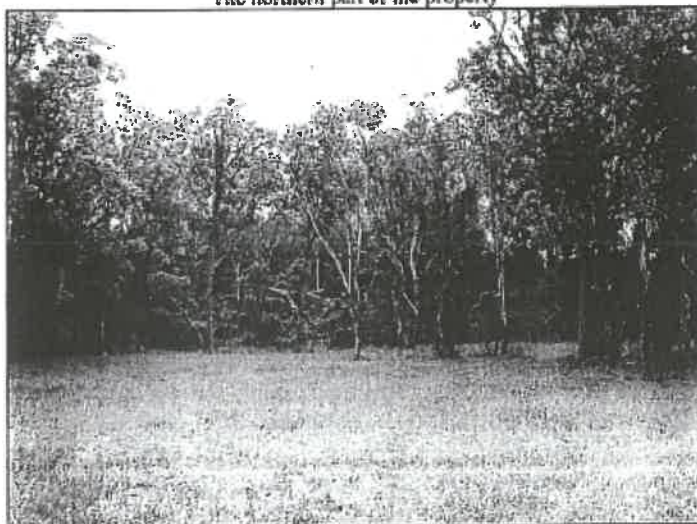


Towards the south of the property





The northern part of the property



26. Risk management

What factors may impact on achieving the planned outputs and how can this risk be reduced?

Identified risk	Response to manage risk factor
<i>Eg Unforeseen drought conditions</i>	<i>Eg Delay of planting seedlings for a set period</i>
Flood during project period	Delay of project

Is there a risk that the implementation of this project may create negative impacts on social, economic or environmental assets?
If so, how can these risks be managed?

Identified risk	Response to manage risk factor
<i>Eg Woody weeds felled on this property wash downstream in flood</i>	<i>Eg Woody weeds removed from flood zone after confirmation of complete death</i>
Woody weeds felled on the property may cause negative impact on downstream areas	Remove woody weeds from flood zone after complete death

27. Monitoring and evaluation

How will you know if the project is successful?

Please indicate how you will measure/report the proposed outputs and what outcomes that will arise from the project implementation. This may include both qualitative and quantitative measures.

Project output or outcome	How this will be evaluated and reported
<i>Eg OUTPUT 100 native plants established</i>	<i>Eg At completion of project, 100 native plants established</i>
<i>Eg OUTCOME Improvement to riparian vegetation</i>	<i>Eg Restoration of riparian vegetation (give area size)</i>
Improvement to riparian vegetation through protection of existing native vegetation	Restoration of riparian vegetation – 10.58 Ha
Conservation of habitat for threatened species	Protection of existing native vegetation (habitat) – 10.58 Ha

28. Capacity building

How will the project increase the capacity of the applicant and partners (if relevant) in environmental management?

Eg Increased awareness of riparian management issues and possible mitigation methods.

Increase awareness of bushland management and involvement of neighbouring properties in similar works.

29. Maintenance

How will the project be maintained beyond the period of funding to deliver a long-term environmental benefit?

Agreement by property owner to maintain plants and fencing for a period of at least 10 years after the completion of the project.

The weed control and maintenance program will be incorporated into the normal property maintenance programme for the next 10 years.

30. Payment / Invoice Details

If successful in having this project approved by the Assessment Panel....

- How do you wish to receive your grant funds? Please circle.... Cheque / Direct Deposit into your account
- Which account do you wish to be paid into? Account Name: SITA AUSTRALIA

Account No.: 113 549

BSB No.: 032 373

Bank Name: WESTPAC 260 QUEEN ST. BRISBANE QLD 4000.

NB: The name on the Proposal and Funding Agreement must be the same as that on the Bank Account for payment to be processed.

- Do you have an Australian Business Number (ABN) you will be using for this purpose? Please circle... Yes / No
- If so, what is the Number 70 002 902 650
- If you have an ABN are you or your group registered for GST? Please circle.... Yes / No

NB: If you do not have an ABN you must complete an Australian Taxation Office "Statement by a Supplier" form to accompany your invoice.

For more information visit <http://www.ato.gov.au>

I/We acknowledge that the information provided by us towards the completion of the above Project Proposal is true and correct to the best of my/our knowledge. I/We agree that this Project Proposal will be submitted to an Assessment Panel for consideration for grant funding. The information provided in the above Project Proposal will not be publicly available.

Note: This project plan may be subject to variation by the Assessment Panel in which case the applicant will be asked to review and sign a new version.

Signature of Property Owner

Date

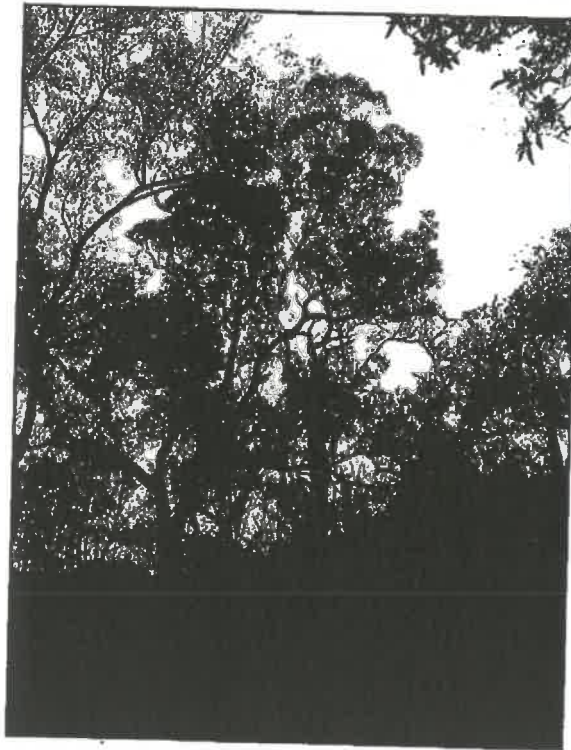
Signature of Project Officer

Date

Riparian Management Report



RIPARIAN MANAGEMENT REPORT



Sita Australia Pty Ltd Badgerys Creek

Prepared by the Hawkesbury Nepean River Restoration Project
May 2006

HNCMA PO Box 556 Windsor NSW 2756
68 Mileham Street South Windsor
Ph: 02 45774243
Web: www.hn.cma.nsw.gov.au

River Restoration Project –improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

SITE DETAILS

Property Owner and Address:
Pacific Waste Management
1725 Elizabeth Drive
Kemps Creek NSW 2171

Date of Assessment:
12th May, 2006.

Assessment Team:
Trish Chadwick

Main Issues:
Riparian and aquatic weed invasion.

Landuse:
Commercial / conservation

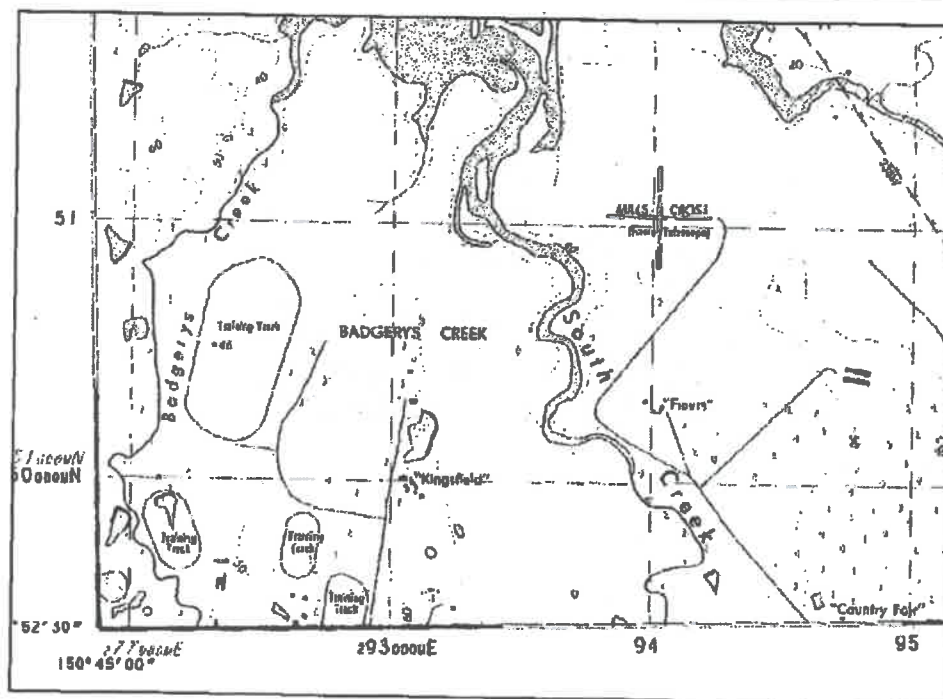
Report prepared by:
Trish Chadwick

Aim of this Report:

This report is the result of a River Restoration Project Site Assessment. It aims to:

- outline the current state of the riverbank covering issues such as riverbank erosion, native plants on the riverbank, and weed invasion
- show differences across your riverbank site
- highlight the major management issues on the riverbank and
- provide suggestions and recommendations to help you improve the condition of your riverbank

The report may make reference to a number of *Information Sheets* and other Attachments. These will have been provided during the site visit or attached at the end of the report.



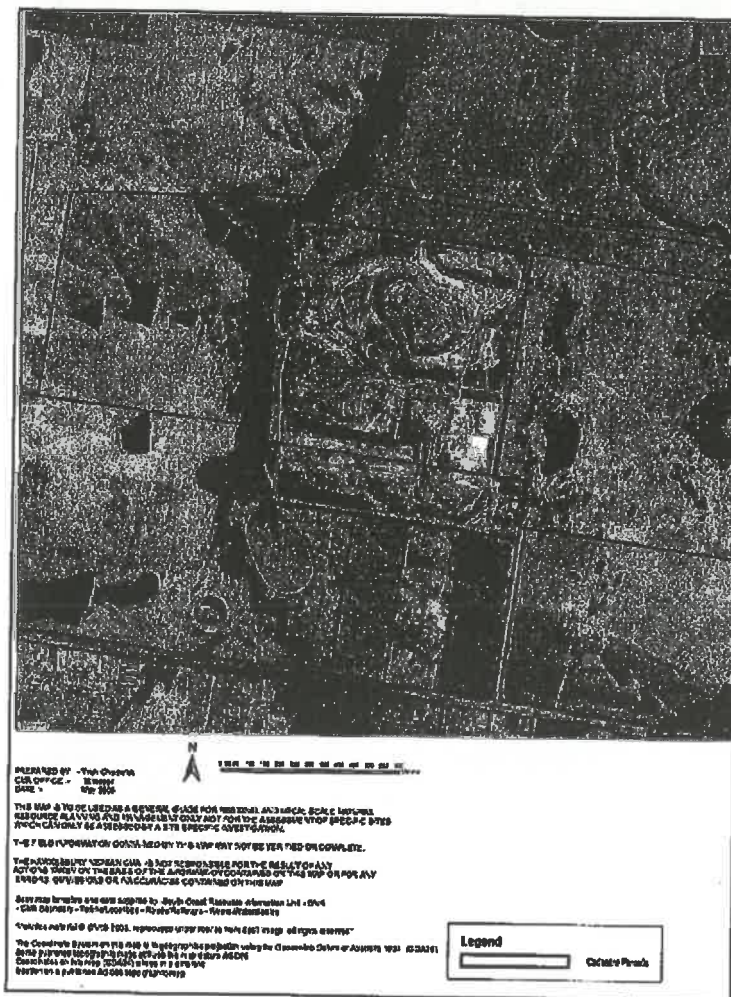
Extract from Prospect Topographic Map 90302N

River Restoration Project – improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

Description

The property consists of approximately 86 hectares with Badgerys Creek forming the western boundary. The owners are involved in industrial/commercial waste management at this site and the majority of the property presents as an open cut waste disposal site for non-putrescible by-products.

There is a native vegetation buffer along Badgerys Creek of about 20-50 metres in width which displays some good remnant Cumberland Plain Woodland vegetation species. This buffer zone is also kept clear for the purposes of fire protection. Weed control is part of the on-going property management regime.



Aerial photography of the site.

NATIVE VEGETATION

There is a large amount of very fairly good quality native vegetation present in the riparian zone of the property. The capacity of the riverbank to regenerate from naturally available seed is quite good, if left undisturbed and if weed levels are kept low. The vegetation structure is in fact to a certain extent with scattered canopy trees, shrubs and ground covers all present. This means that replanting is probably unnecessary, but may be used to speed up the regeneration process if desired.



Towards the southern boundary of the property (Badgerys Creek).

It is important to protect the native vegetation from threats such as weed invasion and disturbance by stock or machinery.

The following list shows some species recorded during the site visit:

Common Name	Scientific Name	Form
Rough barked Apple	<i>Angophora floribunda</i>	Tree to 30m
Thin-leaved Stringybark	<i>Eucalyptus eugenoides</i>	Tree to 25m
Black Wattle	<i>Acacia parramattensis</i>	Shrub to 10m
She Oak	<i>Casuarina glauca</i>	Tree to about 10m
White Cedar	<i>Melia azedarach</i>	Tree to 8m
Juncus	<i>Juncus ursitatus</i>	Grass to 0.5m
Bracken	<i>Pteridium esculentum</i>	Fern to 1m
Glycine	<i>Glycine tabacina</i>	Fine climber
Snakevine	<i>Stephania japonica</i> var <i>discolour</i>	Climber
Forest Red Gum	<i>Eucalyptus tereticornis</i>	Tree to 30m
Grey Box	<i>Eucalyptus moluccana</i>	Tree to 30m
Blackthorn	<i>Bursaria spinosa</i>	Shrub to 5m
Mat Rush	<i>Lomandra longifolia</i>	Grass to 1m
Prickly Paperbark	<i>Melaleuca styphelioides</i>	Tree to 15m
Common Reed	<i>Phragmites australis</i>	Reed to 4m

River Restoration Project – Improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

WEEDS

The native vegetation along the creek banks is heavy infested with a range of weeds. The watercourse is also heavily infested with Alligator Weed and Water Hyacinth. The following table lists the weeds that were noted during the site visit:

Common Name	Scientific Name	Form
Purple Top	<i>Verbena bonariensis</i>	Herb to 1.5m
Wandering jew	<i>Tradescantia albiforma</i>	Groundcover
Moth Vine	<i>Araujia sericiflora</i>	Climber with choko-like pod
Paddys Lucerne	<i>Sida rhombifolia</i>	Herb to 1.5m
Giant Paspalum	<i>Paspalum urvillei</i>	Grass to 2m
Madeira Vine	<i>Anredera cordifolia</i>	Climber
Cobblers Pegs	<i>Bidens pilosa</i>	Herb to 1.5m
Senna / Cassia	<i>Senna X Floribunda</i>	Shrub to 4m
Blackberry	<i>Rubus fruticosus</i>	Scrambler to 3m
Jerusalem Cherry	<i>Solanum pseudocapsicum</i>	Herb to 1m
Green Cestrum	<i>Cestrum parqui</i>	Shrub to 3m (Noxious)
Morning Glory	<i>Ipomoea indica</i>	Climber
African Olive	<i>Olea europaea subsp. africana</i>	Tree to 4m
Rhodes Grass	<i>Chloris virgata</i>	Grass to 1m
Alligator Weed	<i>Alternanthera philoxeroides</i>	Floating aquatic (Noxious)
Water Hyacinth	<i>Eichhornia crassipes</i>	Floating aquatic (Noxious)

Noxious Weed Act (1993)

There is a responsibility on property owners to control certain weeds because of their rating as highly noxious, invasive or threatening. On your property you have three (3) of these weeds that must be "...fully and continuously suppressed and destroyed...". They are Alligator Weed, Water Hyacinth and Green Cestrum.

Weed Control

A long-term program to control weeds and allow their replacement with naturally occurring native plants, is recommended. The most important thing to consider with weed removal on riverbanks is that it MUST be done as a slow and long-term process. Do not expose too much bare riverbank at once and it is essential that the area treated be kept to a minimum. Only small areas of weeds should be treated at a time. If required, planting native species can be beneficial to speed up the process. These should be grown from local seed wherever possible.

Do not use machinery to rip out weeds. Riverbanks are the most unstable and sensitive parts of the landscape and should not be subject to heavy interference. The recommended approach to treating woody weeds is to use the "cut and paint" bush regeneration method. This method involves locating the central trunk of the weed and cutting it by hand, then immediately applying herbicide (Roundup Bi-Active) to the cut stump. The key to successful weed kill using the cut and paint method is timing. The herbicide must be

River Restoration Project—Improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

applied to the cut stump immediately after the cut is made, during their growing period. Plants will shut down their transport systems within 30 seconds of being cut. This means the herbicide will not be transported to the roots and will not kill the plant. Most plants are less active through the cooler months.

RECOMMENDATIONS

We recommend that:

- The native vegetation be protected and maintained in its present condition, or improved by:
 - Controlling invasive weeds through the employment of professional bush regenerators.
- The aquatic weeds be controlled.

After discussions with the Hawkesbury River County Council (HRCC) regarding the aquatic weeds that fall under your control, we have been informed that assistance and advice has been provided to other property owners in your area, including Sydney University, so that a cooperative approach to controlling these weeds may be achieved. It is imperative that all land owners participate at this time. We would like to make the following recommendations with regard to controlling these particular weeds and remind you of your legislative responsibility to control Noxious Weeds:

1. Water Hyacinth

Water Hyacinth (*Eichhornia crassipes*) is a highly invasive floating aquatic weed. Heavy infestations of Hyacinth result in the water beneath being deprived of oxygen and light which results in a loss of habitat for aquatic wildlife as well as those birds and other fauna that feed on them. It is important to control this species because of its capacity to spread to downstream sites during periods of increased flow in the creek.



We recommend that the Water Hyacinth be sprayed immediately, the optimum timing for spraying is during Autumn so that the winter frosts assist with keeping any new growth under control. The best herbicide to use for this purpose is Roundup Bi-Active according to the directions on the label.

After initial control (May, 2006), it will be necessary to monitor and continually suppress regrowth of Hyacinth by checking the creek weekly from September until next Autumn.

River Restoration Project – Improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

2. Green Cestrum

This is a terrestrial weed that produces yellow flowers, turning to green then black berries. It is a highly toxic plant which has been known to cause death in livestock on numerous occasions. The plant is spread by birds eating and carrying the seeds during their non-toxic phase. New plants are sprouting over a wide area around Sydney.

We recommend that the few individuals of Green Cestrum be treated immediately by the cut and inject root ball method. This involves exposing the root ball just beneath the surface of the dirt and making several cuts with a chisel into this ball, inject undiluted Roundup Bi-Active. This should result in death for each plant, however, should the plant re-sprout in Spring, the method could be repeated.



3. Alligator Weed

This highly invasive aquatic weed is capable of becoming terrestrial and spreading very quickly. There is a bio-control agent working in the Hawkesbury-Nepean area and this appears to be keeping the Alligator Weed under some control on your property.

We recommend that nothing be done about this weed until further instructed by the Hawkesbury River County Council.



4. Salvinia (*Salvinia molesta*)

Although there is no Salvinia present on your part of the creek at present, there is some upstream of your property. The HRCC has noted this situation and the best possible approach to control of Salvinia in Badgerys Creek near your property is to introduce the weevil into the system immediately adjacent to those patches of creek where Salvinia is. The HRCC would like to introduce the weevil into the southern part of your property, immediately downstream of an infestation. This would result in a more constant source of

River Restoration Project - Improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

food for the weevils and allow them to become established and prevent the spread of *Salvinia* in the warmer months (after September).

We recommend employing HRCC to introduce the weevil on the southern part of your property to maintain control and stop *Salvinia* re-infesting your part of the creek in future.

Some Other General Information

Bush Regeneration techniques

There are a number of general rules to keep in mind when removing weeds from riverbanks.

1. Protect existing native vegetation. It is important to maintain the current native plant population for its role in bank stabilisation, habitat for fauna and as a source of future natural regeneration of the riverbank following any future weed management.
2. Don't remove a plant if you are not sure what it is. It could be a native.
3. Be aware that every bit of riverbank from which you remove weeds is likely to experience some level of weed regrowth. You should be prepared to revisit the area, carry out follow up weed control and keep it maintained over time.
4. Start in a small area - do not embark on removing weeds over a large area unless you will be able to keep up with the maintenance (see above).
5. Keep in mind that even though some plants may be weeds, they are also often very good habitat for native wildlife including birds and possums. Be sure to check for things like nests and possum drays before removing any weeds.
6. In general, work from your areas in best condition to the areas in the worst condition. Sites with the lowest amount of weed invasion are the easiest to clean up, and you will get the maximum benefit from the work you put in.
7. Do not expose large areas of bare soil at one time. Bare soil, particularly soft sandy riverbank sediment, is easily washed away by rain or by river flow.
8. The use of heavy machinery is not recommended for weed control on riverbanks. It exposes too much bare soil at a time and does not distinguish between native plants and weeds.

Potential Funding Opportunities

Every year the River Restoration Project advertises for Expressions of Interest from landholders that would like to apply for funding for their riverbank. The Program will consider funding best practice works such as:

- Fencing of riverbanks from stock

River Restoration Project – improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

- Off-river stock watering systems
- Revegetation of riverbanks with local native plants
- Bush regeneration and weed control

This funding is not available to property owners to carry out their legislative responsibilities (ie control of noxious weeds, etc.), however, it could be used to carry out bush regeneration in your creek bank remnant Cumberland Plain Woodland vegetation. This might involve weed control and protection of existing native plants.

We have prepared a Project Proposal that may suit your property and this is attached.

River of Landcare

It has been demonstrated again and again that when a number of landholders work together to address common natural resource issues that synergies occur which make the work easier for everyone.

Weed control becomes much easier when many adjacent landholders are actively controlling weeds. Erosion is less likely to occur when many adjacent properties have well vegetated banks. Importantly, being registered as a Landcare group opens you up to many more opportunities for grant assistance through a variety of community environmental grant programs.

The River Restoration Project is working closely with Landcare to encourage landholders to either join or form Landcare Groups. If you are interested in the idea of becoming involved in Landcare, contact our Landcare Coordinator Alex Muir at Windsor on (02) 45774243.

Regional Habitat Network

Many landholders in the Hawkesbury involved in bush regeneration, revegetation, salinity management and erosion control meet together 4 times a year through the Hawkesbury Landcare and Bushcare Network, one of a number of Regional Habitat Networks supported by the Hawkesbury Nepean Catchment Management Authority, local councils and Landcare. Speak with us to obtain further details.

Permits for weed removal

In the past, a permit was required to remove woody weeds from riverbank areas, however, recent changes to the Native Vegetation Conservation Act 2003 now permit removal of weeds so long as the methods involved adhere to the Guidelines attached.

River Restoration Project – Improving the health of rivers, creeks & wetlands in the Hawkesbury Nepean Catchment

Database Report

18 May 2006 11:32

This report includes places of national environmental significance that are registered in the Department of the Environment and Heritage's databases, for the selected area. The information presented here has been provided by a range of groups across Australia, and the accuracy and resolution varies.

Search Type: Area
Buffer: 1 km
Coordinates: -33.86103,150.75239, -33.86719,150.75239, -
33.86719,150.75381, -33.8610,150.75381



Report Contents: [Summary](#) >> [Details](#) >> [Caveat](#) >> [Acknowledgment](#)

Biodiversity

Threatened Species: 18
Migratory Species: 8
Listed Marine Species: 12
Invasive Species: None
Whales and Other Cetaceans: None
Threatened Ecological Communities: 1

Heritage

World Heritage Properties: None
Australian Heritage Sites: None
Wetlands
Ramsar sites: None
(Internationally important)
Nationally Important Wetlands: None

National Pollutant Inventory

Reporting Facilities: None

Airsheds: 1

Catchments: 1

Protected Areas

Reserves and Conservation Areas: None

Regional Forest Agreements: None

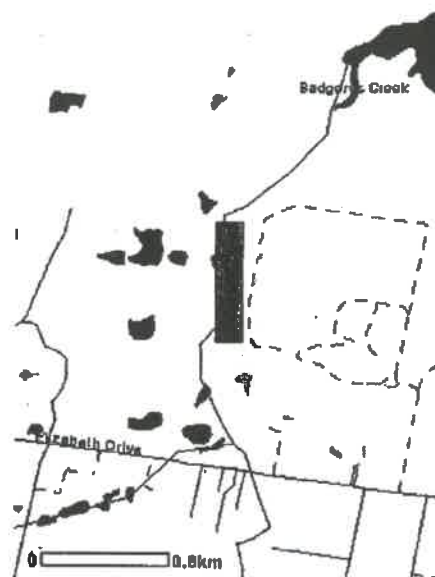
Biodiversity

Threatened Species [[Dataset Information](#)]

Birds

	Status	Comments
<u>Lathamus discolor</u> Swift Parrot	Endangered	Species or species habitat may occur within area
<u>Rostratula australis</u> Australian Painted Snipe	Vulnerable	Species or species habitat may occur within area
<u>Xanthomyza phrygia</u> Regent Honeyeater	Endangered	Species or species habitat likely to occur within area

Frogs



Funding Agreement



Hawkesbury Nepean River Restoration Project Rehabilitation Grant - 2006/2007

FUNDING AGREEMENT

Reference No.	RM9-86
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This is an Agreement between:

- Sita Environmental Solutions (also known as The Applicant) and
- The Hawkesbury Nepean Catchment Management Authority (HNCMA)

This Funding Agreement refers specifically to activities detailed in the attached "Project Proposal Form" for the project located on *Badgerys Creek*, at *1725 Elizabeth Drive, Kemps Creek*.

Date: 8th September 2006.

1. Introduction

The purpose of this funding agreement is to clarify expectations, project management arrangements and accountabilities for works associated with the HNCMA funded component of the project.

2. Parties to the Agreement

The Project within this Funding Agreement is recognised as a joint project between:

- *The Applicant* as the proponent group or individual managing the implementation and ongoing maintenance of the project and its outcomes;
- *The Hawkesbury Nepean Catchment Management Authority* as the project funding partner;
- *The River Restoration Project* as the technical adviser on issues of riverbank management in the Hawkesbury-Nepean catchment.

3. Partner Responsibilities

3.1 *The Applicant* will be responsible for the implementation and ongoing management, monitoring and reporting of project outcomes as outlined within the *Project Proposal and Work Plan*. Project management responsibilities, including reporting requirements are outlined below. The applicant will also contribute to the project as detailed in (7) below and in the *Project Proposal Form*.

3.2 *HNCMA* will be supplying the amount of funding shown in (7) below, which is to be spent on the items as detailed in the *Project Proposal Form*.

3.3 *River Restoration Project Staff* will be available for technical advice and assistance to assist with the monitoring and evaluation of project outcomes. The River Restoration Project will review progress reports and report to HNCMA management and our funding body.

4. Technical conditions

4.1 All works will follow the *Project Proposal Form* for this Project. Any changes to this Proposal must only be made in conjunction with the HNCMA and confirmed in writing.

4.2 All works must conform to the principles of the Hawkesbury Nepean River Restoration Project as outlined in the report titled *Hawkesbury-Nepean Riverbank Management Program (Penrith to Wisemans Ferry) 1997* and in its *Information Package for Landholders*. All revegetation must comply with the guidelines in the Benson & Howell Report titled '*A Strategy for the Rehabilitation of the Riparian Vegetation of the Hawkesbury-Nepean River*' and the Riverbank Management Program brochures titled '*Riverbank planting guides for the Hawkesbury-Nepean River*'. Species selection will be based on any existing lists of the local native vegetation of the area.

4.3 In regards to revegetation, all plants must be sourced from local genetic stock. The Project can provide advice about suppliers of plants and will give details on suggested planting strategies.

4.4 All bush regeneration/weed control activities should comply with the techniques described in the *Bush Regenerators Handbook* published by the National Trust. A copy of this book is available for loan from the HNCMA.

4.5 Best Management Practice must be adhered to when carrying out works in riparian (riverbank) areas, to comply with the *Native Vegetation Conservation Act (2003)*. A copy of the *Guidelines for Clearing* will be provided by River Restoration Project staff if relevant to your project.

4.6 When working in riparian areas, there is a high likelihood that consideration will be required to be given to the *Threatened Species Conservation Act (1995)* which involves the disturbance etc of habitat and endangered ecological communities, as well as the NPWS Act which protects areas of Aboriginal and European cultural heritage. A bush regeneration checklist will be filled out with CMA staff to comply with the Threatened Species licensing requirements. All conditions which form part of the licence with the Department of Environment and Conservation must be complied with. CMA staff will also assist in assessing the cultural values of the site and any special conditions and approvals that are required.

5. General Conditions

- All signage, advertising, information or interpretive material released in relation to the project must include acknowledgment of the support provided by the Hawkesbury Nepean Catchment Management Authority and the Hawkesbury Nepean River Restoration Project (including logos).
- The project must be consistent with the goals and objectives of the Hawkesbury Nepean River Restoration Project. These are:
 - *Rehabilitate the riverbanks of the Hawkesbury Nepean River system*
 - *Rehabilitate riverbanks by removing threatening weeds and re-vegetating where appropriate using local native plant species*
 - *Controlling stock access to waterways by constructing fencing and providing alternative off-river stock watering points*
 - *Improve the ecological and scenic value of riverbanks and the river system as a whole*
- The applicant will manage the project and ensure that all statutory, legislative, regulatory and Occupational Health and Safety requirements are fulfilled. The HNCMA will advise on permit issues.
- The applicant agrees to follow the budget details outlined in the *Project Proposal* for this project. No significant changes are to be made without the written permission of the River Restoration Project.
 - The applicant must complete a 6-monthly report which shall be forwarded to the River Restoration Project at the HNCMA office in Windsor. The standard reporting pro-forma to record this information will be included in the *Riverbank Diary* given to each grant recipient.
- A final report is to be supplied within 2 months of the completion of the project. The pro-forma for this report will also be contained in the *Riverbank Diary*. The Final Report is to be accompanied by a Statutory Declaration stating that the details contained in the Final Report are true and correct and that funds were used for the purposes of the project as specified.

- Random audits will be carried out on projects every year. This is to ensure that funds are being spent appropriately and that the outcomes of the project are met wherever possible. The audits will involve a site assessment during which the applicant must demonstrate how and where the funds have been spent. The applicant must also be able to verify the amount of in-kind resources that have been invested in the project. For this purpose we ask you keep all receipts and documentation relating to your project and complete the *Riverbank Diary* (or similar) regularly to document your in-kind contributions.
- Any information generated from the project must be freely available and not used for profit.
- The applicant agrees that they have read and understood the Funding Agreement.
- Please keep a copy of the signed funding agreement for your records.

6. Other Conditions

• Period of Agreement

The period of this agreement in terms of an undertaking to reasonably maintain the investment made by the HNCMA will be ten (10) years following the date it is signed, however, it is expected that all funded works will be completed within one (1) year or in accordance with the project proposal.

• Project Maintenance

The applicant agrees to provide reasonable ongoing management and maintenance of the project following the completion of the HNCMA contribution. For example, it is the property owner's responsibility to maintain plants by keeping them weed-free and watered when necessary, as well as keeping fencing in a functional condition. Staff from the River Restoration Project at HNCMA will continue to be available for technical advice and assistance into the future.

• Publicity

Acknowledgement of the funding sources (Hawkesbury Nepean Catchment Management Authority and the Natural Heritage Trust) must be provided at all times.

• Fencing and Stock Watering Systems

All items including fencing and off-river stock watering systems become the property of the land owner and will be maintained in functional condition and working order by the owners with any future repairs the responsibility of the landholder.

• Grazing

Grazing within the rehabilitation site will be kept to an absolute minimum to reduce the impact of stock on natural vegetation and riverbank soils.

• Aboriginal Heritage

Special care should be taken to avoid disturbing any shell or bone deposits. If any of these are found during the project, please immediately inform the CMA office.

8. Financial details

Agreement No.

This agreement is between

The Hawkesbury Nepean Catchment Management Authority (HNCMA) and	<p>*Name Sita Environmental Solutions Address 1725 Elizabeth Drive, KEMPS CREEK NSW 2171</p> <p>Applicant Name (if not the owner): *as the legal owner of the land to which this agreement applies</p>
	<p>Contact: John Klepetko, Kim Ross</p> <p>Phone: 47748866</p> <p>Fax: 47749385</p> <p>Mobile: -</p> <p>Site location: 1725 Elizabeth Drive, Kemps Creek</p> <p>Lot/Portion/DP: 740/810111</p> <p>Local Govt Area: Penrith</p>
HNCMA Contribution \$4900.00	Landowner Contribution \$ 6290.00
TOTAL Project Value \$11190.00	Other contribution \$0

Project Approval

Approved by Riverbank Restoration Project staff:

Paul Bennett

Approved by Assessment Panel:

Paul Bennett

Date:

15-9-06

With the following changes or conditions:



Applicant Declaration

I / we.....Sita Environmental Solutions.....(the applicant/property owner) have read and understood this funding agreement and accept the conditions stated above. Furthermore I / we agree to comply with the Project Proposal for this project, carry on maintenance into the future, supply the necessary in-kind contributions to this project as stated and also provide two (2) reports to the HNCMA.

APPLICANT

Signature: Andrew Kosciuszko

Name: Andrew Kosciuszko

DATE: 28 Sept 06.

Landowner Declaration (if different to the applicant)

LANDOWNER

Signature:

DATE:

Name:

HNCMA Declaration

The HNCMA undertakes to provide the agreed amount of funding as approved by an independent Assessment Panel.

HNCMA

Signature: Neville Pavan

Name:

Neville Pavan

DATE:

18/9/06

Position:

Catchment Co-ordinator

Appendix B Species Lists



Appendix B.1

Flora Species List – Indigenous and Exotic

Family	Scientific name	Common name	Growth Form	Native or Weed
Amygdalaceae	<i>Prunus sp.</i>	-	Shrub/Subshrub	Weed
Adiantaceae	<i>Cheilanthes distans</i>	Bristly Cloak Fern	Herb/Forb	Native
Alismataceae	<i>Damasonium minus</i>	Starfruit	Herb/Forb	Native
Amaranthaceae	<i>Alternanthera denticulata</i>	Lesser Joyweed	Herb/Forb	Native
Amaranthaceae	<i>Alternanthera philoxeroides</i>	Alligator Weed	Herb/Forb	Weed
Anthericaceae	<i>Tricoryne elatior</i>	Yellow rush lily	Herb/Forb	Native
Apiaceae	<i>Centella asiatica</i>	Indian Pennywort	Herb/Forb	Native
Apocynaceae	<i>Araujia sericifera</i>	Moth Vine	Vine/Scrambler	Weed
Apocynaceae	<i>Parsonsia straminea</i>	Common Silkpod	Vine/Scrambler	Native
Asteraceae	<i>Aster subulatus</i>	Wild Aster	Herb/Forb	Weed
Asteraceae	<i>Bidens pilosa</i>	Cobblers Pegs	Herb/Forb	Weed
Asteraceae	<i>Bidens subalternans</i>	Greater Beggar's Ticks	Herb/Forb	Weed
Asteraceae	<i>Cirsium vulgare</i>	Spear Thistle	Herb/Forb	Weed
Asteraceae	<i>Conyza bonariensis</i>	Flaxleaf Fleabane	Herb/Forb	Weed
Asteraceae	<i>Eclipta platyglossa</i>	-	Herb/Forb	Native
Asteraceae	<i>Hypochaeris radicata</i>	Catsear, Flatweed	Herb/Forb	Weed
Asteraceae	<i>Lactuca serriola</i>	Prickly Lettuce	Herb/Forb	Weed
Basellaceae	<i>Anredera cordifolia</i>	Madeira Vine	Vine/Scrambler	Weed
Campanulaceae	<i>Wahlenbergia communis</i>	Tufted Bluebell	Herb/Forb	Native
Campanulaceae	<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	Herb/Forb	Native
Casuarinaceae	<i>Casuarina glauca</i>	Swamp Oak	Tree	Native
Chenopodiaceae	<i>Einadia hastata</i>	Berry Saltbush	Herb/Forb	Native
Chenopodiaceae	<i>Einadia polygonoides</i>	-	Herb/Forb	Native
Commelinaceae	<i>Tradescantia albiflora</i>	Trad, Wandering Jew	Herb/Forb	Weed
Convolvulaceae	<i>Calystegia sepium</i>	-	Vine/Scrambler	Native
Convolvulaceae	<i>Convolvulus erubescens</i>	Blushing Bindweed	Vine/Scrambler	Native
Cyperaceae	<i>Carex appressa</i>	Tall Sedge	Rush/Sedge	Native
Cyperaceae	<i>Cyperus eragrostis</i>	-	Rush/Sedge	Weed
Cyperaceae	<i>Eleocharis gracilis</i>	-	Rush/Sedge	Native
Euphorbiaceae	<i>Phyllanthus gunnii</i>	Scrubby Spurge	Herb/Forb	Native
Euphorbiaceae	<i>Poranthera microphylla</i>	-	Herb/Forb	Native
Fabaceae - Caesalpinioideae	<i>Senna septemtrionalis</i>	Arsenic Bush	Shrub/Subshrub	Weed
Fabaceae - Faboideae	<i>Desmodium rhytidophyllum</i>	-	Herb/Forb	Native
Fabaceae - Faboideae	<i>Glycine microphylla</i>	Small-leaf glycine	Vine/Scrambler	Native
Fabaceae - Faboideae	<i>Glycine tabacina</i>	-	Vine/Scrambler	Native
Fabaceae - Mimosoideae	<i>Acacia decurrens</i>	Black Wattle	Shrub/Subshrub	Native
Fabaceae - Mimosoideae	<i>Acacia falcata</i>	-	Shrub/Subshrub	Native
Fabaceae - Mimosoideae	<i>Acacia parramattensis</i>	Parramatta Wattle	Herb/Forb	Native
Gentianaceae	<i>Centaurium sp.</i>	Centaury	Herb/Forb	Uncertain
Geraniaceae	<i>Geranium homeanum</i>	-	Herb/Forb	Native
Juncaceae	<i>Juncus usitatus</i>	-	Rush/Sedge	Native
Lamiaceae	<i>Plectranthus parviflorus</i>	-	Herb/Forb	Native
Lobeliaceae	<i>Pratia purpurascens</i>	Whiteroot	Herb/Forb	Native
Lomandraceae	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	Grass/Graminoid	Native

Family	Scientific name	Common name	Growth Form	Native or Weed
Malvaceae	<i>Sida *rhombifolia</i>	Paddy's Lucerne	Shrub/Subshrub	Weed
Myrtaceae	<i>Angophora floribunda</i>	Rough-barked Apple	Tree	Native
Myrtaceae	<i>Angophora subvelutina</i>	Broad-leaved Apple	Tree	Native
Myrtaceae	<i>Eucalyptus amplifolia</i>	Cabbage Gum	Tree	Native
Myrtaceae	<i>Eucalyptus eugenioides</i>	Thin-leaved Stringybark	Tree	Native
Myrtaceae	<i>Eucalyptus fibrosa</i>	Red Ironbark	Tree	Native
Myrtaceae	<i>Eucalyptus moluccana</i>	Grey Box	Tree	Native
Myrtaceae	<i>Eucalyptus tereticornis</i>	Forest Red Gum	Tree	Native
Myrtaceae	<i>Melaleuca decora</i>		Tree	Native
Myrtaceae	<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	Tree	Native
Myrtaceae	<i>Melaleuca styphelioides</i>	Prickly-leaved Tea Tree	Tree	Native
Oleaceae	<i>Ligustrum lucidum</i>	Large Leaved Privet	Tree	Weed
Oleaceae	<i>Olea europaea</i>	African Olive	Tree	Weed
Oxalidaceae	<i>Oxalis perennans</i>	-	Herb/Forb	Native
Passifloraceae	<i>Passiflora edulis</i>	Common Passionfruit	Vine/Scrambler	Weed
Phormiaceae	<i>Dianella longifolia</i> var. <i>longifolia</i>	-	Herb/Forb	Native
Pittosporaceae	<i>Bursaria spinosa</i>	Blackthorn, Boxthorn, Sweet Bursaria	Herb/Forb	Native
Plantaginaceae	<i>Plantago lanceolata</i>	Lamb's Tongues	Herb/Forb	Weed
Poaceae	<i>Aristida ramosa</i>	Purple Wiregrass	Grass/Graminoid	Native
Poaceae	<i>Axonopus fissifolius</i>	Narrow-leaved Carpet Grass	Grass/Graminoid	Weed
Poaceae	<i>Briza subaristata</i>	-	Grass/Graminoid	Weed
Poaceae	<i>Bromus catharticus</i>	Prairie Grass	Grass/Graminoid	Weed
Poaceae	<i>Chloris gayana</i>	Rhodes Grass	Grass/Graminoid	Weed
Poaceae	<i>Cortaderia selloana</i>	Pampas Grass	Grass/Graminoid	Weed
Poaceae	<i>Cynodon dactylon</i>	Couch	Grass/Graminoid	Native
Poaceae	<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	Grass/Graminoid	Native
Poaceae	<i>Entolasia marginata</i>	Bordered Panic	Grass/Graminoid	Native
Poaceae	<i>Eragrostis leptostachya</i>	Paddock Lovegrass	Grass/Graminoid	Native
Poaceae	<i>Imperata cylindrica</i>	Blady Grass	Grass/Graminoid	Native
Poaceae	<i>Microlaena stipoides</i>	Weeping Grass	Grass/Graminoid	Native
Poaceae	<i>Oplismenus aemulus</i>	-	Grass/Graminoid	Native
Poaceae	<i>Paspalum dilatatum</i>	Paspalum	Grass/Graminoid	Weed
Poaceae	<i>Paspalum distichum</i>	Water Couch	Grass/Graminoid	Native
Poaceae	<i>Pennisetum clandestinum</i>	Kikuyu Grass	Grass/Graminoid	Weed
Poaceae	<i>Phalaris aquatica</i>	Phalaris	Grass/Graminoid	Weed
Poaceae	<i>Themeda australis</i>	Kangaroo Grass	Grass/Graminoid	Native
Polygonaceae	<i>Persicaria decipiens</i>	Slender knotweed	Herb/Forb	Native
Polygonaceae	<i>Rumex crispus</i>	Curled Dock	Herb/Forb	Weed
Ranunculaceae	<i>Clematis aristata</i>	Old Man's Beard	Vine/Scrambler	Native
Rosaceae	<i>Rubus fruticosus</i> species complex	Blackberry	Shrub/Subshrub	Weed
Rubiaceae	<i>Asperula conferta</i>	Common Woodruff	Herb/Forb	Native
Rubiaceae	<i>Opercularia diphylla</i>	-	Herb/Forb	Native
Santalaceae	<i>Exocarpos cupressiformis</i>	Cherry Ballart, Native Cherry	Tree	Native
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>cuneata</i>	Wedge-leaf Hop-bush	Shrub/Subshrub	Native
Solanaceae	<i>Cestrum parqui</i>	Green Cestrum, Green Poisonberry	Shrub/Subshrub	Weed

Family	Scientific name	Common name	Growth Form	Native or Weed
Solanaceae	<i>Solanum americanum</i>	Glossy Nightshade	Herb/Forb	Native
Solanaceae	<i>Solanum nigrum</i>	Black-berry Nightshade	Herb/Forb	Weed
Solanaceae	<i>Solanum prinophyllum</i>	Forest Nightshade	Herb/Forb	Native
Solanaceae	<i>Solanum pseudocapsicum</i>	Madeira Winter	Shrub/Subshrub	Weed
Sterculiaceae	<i>Brachychiton populneus</i>	Kurrajong	Tree	Native
Typhaceae	<i>Typha orientalis</i>	Broadleaf Cumbungi	Rush/Sedge	Native
Verbenaceae	<i>Verbena rigida</i>	Veined Verbena	Herb/Forb	Weed
Verbenaceae	<i>Verbena bonariensis</i>	Purpletop	Herb/Forb	Weed

Appendix B.2

Indigenous Flora List

Plant Family	Scientific name	Common name	Growth Form
Lomandraceae	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	Grass/Graminoid
Poaceae	<i>Aristida ramosa</i>	Purple Wiregrass	Grass/Graminoid
Poaceae	<i>Cynodon dactylon</i>	Couch	Grass/Graminoid
Poaceae	<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	Grass/Graminoid
Poaceae	<i>Entolasia marginata</i>	Bordered Panic	Grass/Graminoid
Poaceae	<i>Eragrostis leptostachya</i>	Paddock Lovegrass	Grass/Graminoid
Poaceae	<i>Imperata cylindrica</i>	Blady Grass	Grass/Graminoid
Poaceae	<i>Microlaena stipoides</i>	Weeping Grass	Grass/Graminoid
Poaceae	<i>Oplismenus aemulus</i>	-	Grass/Graminoid
Poaceae	<i>Paspalum distichum</i>	Water Couch	Grass/Graminoid
Poaceae	<i>Themeda australis</i>	Kangaroo Grass	Grass/Graminoid
Adiantaceae	<i>Cheilanthes distans</i>	Bristly Cloak Fern	Herb/Forb
Alismataceae	<i>Damasonium minus</i>	Starfruit	Herb/Forb
Amaranthaceae	<i>Alternanthera denticulata</i>	Lesser Joyweed	Herb/Forb
Anthericaceae	<i>Tricoryne elatior</i>	Yellow rush lily	Herb/Forb
Apiaceae	<i>Centella asiatica</i>	Indian Pennywort	Herb/Forb
Asteraceae	<i>Eclipta platyglossa</i>	-	Herb/Forb
Campanulaceae	<i>Wahlenbergia communis</i>	Tufted Bluebell	Herb/Forb
Campanulaceae	<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	Herb/Forb
Chenopodiaceae	<i>Einadia hastata</i>	Berry Saltbush	Herb/Forb
Chenopodiaceae	<i>Einadia polygonoides</i>	-	Herb/Forb
Euphorbiaceae	<i>Poranthera microphylla</i>	-	Herb/Forb
Fabaceae - Faboideae	<i>Desmodium rhytidophyllum</i>	-	Herb/Forb
Fabaceae - Mimosoideae	<i>Acacia parramattensis</i>	Parramatta Wattle	Herb/Forb
Gentianaceae	<i>Centaurium sp.</i>	Centaury	Herb/Forb
Geraniaceae	<i>Geranium homeanum</i>	-	Herb/Forb
Lamiaceae	<i>Plectranthus parviflorus</i>	-	Herb/Forb
Lobeliaceae	<i>Pratia purpurascens</i>	Whiteroot	Herb/Forb
Oxalidaceae	<i>Oxalis perennans</i>	-	Herb/Forb
Phormiaceae	<i>Dianella longifolia</i> var. <i>longifolia</i>	-	Herb/Forb
Pittosporaceae	<i>Bursaria spinosa</i>	Blackthorn, Boxthorn, Sweet Bursaria	Herb/Forb
Polygonaceae	<i>Persicaria decipiens</i>	Slender knotweed	Herb/Forb
Rubiaceae	<i>Asperula conferta</i>	Common Woodruff	Herb/Forb
Rubiaceae	<i>Opercularia diphylla</i>	-	Herb/Forb
Solanaceae	<i>Solanum americanum</i>	Glossy Nightshade	Herb/Forb
Solanaceae	<i>Solanum prinophyllum</i>	Forest Nightshade	Herb/Forb
Cyperaceae	<i>Carex appressa</i>	Tall Sedge	Rush/Sedge
Cyperaceae	<i>Eleocharis gracilis</i>	-	Rush/Sedge
Juncaceae	<i>Juncus usitatus</i>	-	Rush/Sedge
Typhaceae	<i>Typha orientalis</i>	Broadleaf Cumbungi	Rush/Sedge
Euphorbiaceae	<i>Phyllanthus gunnii</i>	Scrubby Spurge	Shrub/Subshrub
Fabaceae - Mimosoideae	<i>Acacia decurrens</i>	Black Wattle	Shrub/Subshrub
Fabaceae - Mimosoideae	<i>Acacia falcata</i>	-	Shrub/Subshrub
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>cuneata</i>	Wedge-leaf Hop-bush	Shrub/Subshrub
Casuarinaceae	<i>Casuarina glauca</i>	Swamp Oak	Tree

Plant Family	Scientific name	Common name	Growth Form
Myrtaceae	<i>Angophora floribunda</i>	Rough-barked Apple	Tree
Myrtaceae	<i>Angophora subvelutina</i>	Broad-leaved Apple	Tree
Myrtaceae	<i>Eucalyptus amplifolia</i>	Cabbage Gum	Tree
Myrtaceae	<i>Eucalyptus eugenioides</i>	Thin-leaved Stringybark	Tree
Myrtaceae	<i>Eucalyptus fibrosa</i>	Red Ironbark	Tree
Myrtaceae	<i>Eucalyptus moluccana</i>	Grey Box	Tree
Myrtaceae	<i>Eucalyptus tereticornis</i>	Forest Red Gum	Tree
Myrtaceae	<i>Melaleuca decora</i>		Tree
Myrtaceae	<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	Tree
Myrtaceae	<i>Melaleuca styphelioides</i>	Prickly-leaved Tea Tree	Tree
Santalaceae	<i>Exocarpos cupressiformis</i>	Cherry Ballart, Native Cherry	Tree
Sterculiaceae	<i>Brachychiton populneus</i>	Kurrajong	Tree
Apocynaceae	<i>Parsonsia straminea</i>	Common Silkpod	Vine/Scrambler
Convolvulaceae	<i>Calystegia sepium</i>	-	Vine/Scrambler
Convolvulaceae	<i>Convolvulus erubescens</i>	Blushing Bindweed	Vine/Scrambler
Fabaceae - Faboideae	<i>Glycine microphylla</i>	Small-leaf glycine	Vine/Scrambler
Fabaceae - Faboideae	<i>Glycine tabacina</i>	-	Vine/Scrambler
Ranunculaceae	<i>Clematis aristata</i>	Old Man's Beard	Vine/Scrambler

Appendix B.3

Exotic Flora Species List

Plant Family	Scientific name	Common name	Growth Form
Oleaceae	<i>Ligustrum lucidum</i> *	Broad Leaved Privet	Tree
Oleaceae	<i>Olea europaea</i> subsp. <i>cuspidata</i> *	African Olive	Tree
Amygdalaceae	<i>Prunus</i> sp.*	-	Shrub/Subshrub
Fabaceae - Caesalpinioideae	<i>Senna septemtrionalis</i> *	Arsenic Bush	Shrub/Subshrub
Malvaceae	<i>Sida *rhombifolia</i>	Paddy's Lucerne	Shrub/Subshrub
Rosaceae	<i>Rubus fruticosus</i> species complex*	Blackberry	Shrub/Subshrub
Solanaceae	<i>Cestrum parqui</i> *	Green Cestrum, Green Poisonberry	Shrub/Subshrub
Solanaceae	<i>Solanum pseudocapsicum</i> *	Madeira Winter	Shrub/Subshrub
Apocynaceae	<i>Araujia sericifera</i> *	Moth Vine	Vine/Scrambler
Basellaceae	<i>Anredera cordifolia</i> *	Madeira Vine	Vine/Scrambler
Passifloraceae	<i>Passiflora edulis</i> *	Common Passionfruit	Vine/Scrambler
Amaranthaceae	<i>Alternanthera philoxeroides</i> *	Alligator Weed	Herb/Forb
Asteraceae	<i>Aster subulatus</i> *	Wild Aster	Herb/Forb
Asteraceae	<i>Bidens pilosa</i> *	Cobblers Pegs	Herb/Forb
Asteraceae	<i>Bidens subalternans</i> *	Greater Beggar's Ticks	Herb/Forb
Asteraceae	<i>Cirsium vulgare</i> *	Spear Thistle	Herb/Forb
Asteraceae	<i>Conyza bonariensis</i> *	Flaxleaf Fleabane	Herb/Forb
Asteraceae	<i>Hypochaeris radicata</i> *	Catsear, Flatweed	Herb/Forb
Asteraceae	<i>Lactuca serriola</i> *	Prickly Lettuce	Herb/Forb
Commelinaceae	<i>Tradescantia albiflora</i> *	Trad, Wandering Jew	Herb/Forb
Gentianaceae	<i>Centaurium</i> sp.	Centaury	Herb/Forb
Plantaginaceae	<i>Plantago lanceolata</i>	Lamb's Tongues	Herb/Forb
Polygonaceae	<i>Rumex crispus</i> *	Curled Dock	Herb/Forb
Solanaceae	<i>Solanum nigrum</i> *	Black-berry Nightshade	Herb/Forb
Verbenaceae	<i>Verbena bonariensis</i> *	Purpletop	Herb/Forb
Verbenaceae	<i>Verbena rigida</i> *	Veined Verbena	Herb/Forb
Poaceae	<i>Axonopus fissifolius</i> *	Narrow-leaved Carpet Grass	Grass/Graminoid
Poaceae	<i>Briza subaristata</i> *	-	Grass/Graminoid
Poaceae	<i>Bromus catharticus</i>	Prairie Grass	Grass/Graminoid
Poaceae	<i>Chloris gayana</i> *	Rhodes Grass	Grass/Graminoid
Poaceae	<i>Cortaderia selloana</i> *	Pampas Grass	Grass/Graminoid
Poaceae	<i>Paspalum dilatatum</i> *	Paspalum	Grass/Graminoid
Poaceae	<i>Pennisetum clandestinum</i> *	Kikuyu Grass	Grass/Graminoid
Poaceae	<i>Phalaris aquatica</i> *	Phalaris	Grass/Graminoid
Cyperaceae	<i>Cyperus eragrostis</i> *	-	Rush/Sedge

Appendix B.2

Fauna Species List

Family	Scientific name	Common name	Type of animal	Native or Exotic
Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie	Bird	Native
Corvidae	<i>Corvus coronoides</i>	Australian raven	Bird	Native
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike	Bird	Native
Pardalotidae	<i>Acanthiza reguloides</i>	Buff-rumped thornbill	Bird	Native
Columbidae	<i>Ocyphaps lophotes</i>	Crested pigeon	Bird	Native
Artamidae	<i>Cracticus torquatus</i>	Grey butcherbird	Bird	Native
Passeriformes	<i>Manorina melanocephala</i>	Noisy minor	Bird	Native
Anatidae	<i>Anas superciliosa</i>	Pacific black duck	Bird	Native
Artamidae	<i>Strepera graculina</i>	Pied currawong	Bird	Native
Passeridae	<i>Neochmia temporalis</i>	Red browed firetail finch	Bird	Native
Psittacidae	<i>Psephotus haematonotus</i>	Red rumped parrot	Bird	Native
Zosteropidae	<i>Zosterops lateralis</i>	Silvereye	Bird	Native
Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	Bird	Native
Ardeidae	<i>Egretta novaehollandiae</i>	White-faced heron	Bird	Native
Dicruridae	<i>Rhipidura leucophrys</i>	Willy wag-tail	Bird	Native
Hylidae	<i>Litoria dentata</i>	Bleating Tree Frog	Frog	Native
Leporidae	<i>Lepus capensis</i>	Hare	Mammal	Exotic
Agamidae	<i>Pogona barbata</i>	Bearded dragon	Reptile	Native
Varanidae	<i>Varanus varius</i>	Lace Monitor	Reptile	Native

Appendix B.2 Endangered Ecological Communities – DEC community profile list

River-Flat Eucalypt Forest	Cumberland Plain Woodland
Scientific Name	Scientific Name
<i>Acacia floribunda</i>	<i>Acacia decurrens</i>
<i>Acacia parramattensis</i>	<i>Acacia falcata</i>
<i>Acmena smithii</i>	<i>Acacia implexa</i>
<i>Adiantum aethiopicum</i>	<i>Acacia parramattensis</i>
<i>Angophora floribunda</i>	<i>Aristida ramosa</i>
<i>Angophora subvelutina</i>	<i>Aristida vagans</i>
<i>Austrostipa ramosissima</i>	<i>Arthropodium milleflorum</i>
<i>Backhousia myrtifolia</i>	<i>Asperula conferta</i>
<i>Breynia oblongifolia</i>	<i>Brunoniella australis</i>
<i>Bursaria spinosa</i>	<i>Bursaria spinosa</i>
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	<i>Cheilanthes sieberi</i>
<i>Casuarina glauca</i>	<i>Chloris truncata</i>
<i>Cayratia clematidea</i>	<i>Chloris ventricosa</i>
<i>Centella asiatica</i>	<i>Commelina cyanea</i>
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	<i>Cyperus gracilis</i>
<i>Clematis aristata</i>	<i>Daviesia ulicifolia</i>
<i>Clematis glycinoides</i>	<i>Dianella longifolia</i>
<i>Commelina cyanea</i>	<i>Dianella revoluta</i>
<i>Cymbopogon refractus</i>	<i>Dichelachne micrantha</i>
<i>Desmodium varians</i>	<i>Dichondra repens</i>
<i>Dichelachne micrantha</i>	<i>Dillwynia sieberi</i>
<i>Dichondra repens</i>	<i>Echinopogon caespitosus</i>
<i>Digitaria parviflora</i>	<i>Echinopogon ovatus</i>
<i>Doodia aspera</i>	<i>Entolasia marginata</i>
<i>Echinopogon caespitosus</i> var. <i>caespitosus</i>	<i>Eragrostis leptostachya</i>
<i>Echinopogon ovatus</i>	<i>Eremophila debilis</i>
<i>Einadia hastata</i>	<i>Eucalyptus crebra</i>
<i>Einadia trigonos</i>	<i>Eucalyptus eugenioides</i>
<i>Entolasia marginata</i>	<i>Eucalyptus fibrosa</i>
<i>Entolasia stricta</i>	<i>Eucalyptus maculata</i>
<i>Eragrostis leptostachya</i>	<i>Eucalyptus moluccana</i>
<i>Eucalyptus amplifolia</i>	<i>Eucalyptus tereticornis</i>
<i>Eucalyptus baueriana</i>	<i>Exocarpos cupressiformis</i>
<i>Eucalyptus benthamii</i>	<i>Glycine clandestina</i>
<i>Eucalyptus botryoides</i>	<i>Glycine tabacina</i>
<i>Eucalyptus elata</i>	<i>Goodenia hederacea</i>
<i>Eucalyptus grandis</i>	<i>Hardenbergia violacea</i>
<i>Eucalyptus longifolia</i>	<i>Hibbertia diffusa</i>
<i>Eucalyptus moluccana</i>	<i>Hypericum gramineum</i>
<i>Eucalyptus ovata</i>	<i>Hypoxis hygrometrica</i>
<i>Eucalyptus saligna</i>	<i>Indigofera australis</i>
<i>Eucalyptus tereticornis</i>	<i>Lepidosperma laterale</i>
<i>Eucalyptus viminalis</i>	<i>Lissanthe strigosa</i>
<i>Euchiton sphaericus</i>	<i>Lomandra filiformis</i>
<i>Eustrephus latifolius</i>	<i>Lomandra multiflora</i>
<i>Galium propinquum</i>	<i>Melaleuca decora</i>
<i>Geitonoplesium cymosum</i>	<i>Microlaena stipoides</i>

River-Flat Eucalypt Forest	Cumberland Plain Woodland
Scientific Name	Scientific Name
<i>Geranium solanderi</i>	<i>Oplismenus aemulus</i>
<i>Glycine clandestina</i>	<i>Oxalis exilis</i>
<i>Glycine microphylla</i>	<i>Panicum simile</i>
<i>Glycine tabacina</i>	<i>Phyllanthus filicaulis</i>
<i>Hardenbergia violacea</i>	<i>Pratia purpurascens</i>
<i>Hydrocotyle peduncularis</i>	<i>Solanum pungetium</i>
<i>Hymenanthera dentata</i>	<i>Themeda australis</i>
<i>Hypolepis muelleri</i>	<i>Tricoryne elatior</i>
<i>Imperata cylindrica</i> var. <i>major</i>	<i>Vernonia cinerea</i>
<i>Livistona australis</i>	<i>Wahlenbergia gracilis</i>
<i>Lomandra filiformis</i>	
<i>Lomandra longifolia</i>	
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	
<i>Melaleuca decora</i>	
<i>Melaleuca linariifolia</i>	
<i>Melaleuca styphelioides</i>	
<i>Melia azedarach</i>	
<i>Microlaena stipoides</i> var. <i>stipoides</i>	
<i>Opercularia diphylla</i>	
<i>Oplismenus aemulus</i>	
<i>Oxalis perennans</i>	
<i>Ozothamnus diosmifolius</i>	
<i>Pandorea pandorana</i>	
<i>Paspalidium distans</i>	
<i>Persicaria decipiens</i>	
<i>Phyllanthus gunnii</i>	
<i>Plectranthus parviflorus</i>	
<i>Poranthera microphylla</i>	
<i>Pratia purpurascens</i>	
<i>Pteridium esculentum</i>	
<i>Rubus parvifolius</i>	
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	
<i>Solanum prinophyllum</i>	
<i>Stephania japonica</i> var. <i>discolor</i>	
<i>Themeda australis</i>	
<i>Trema aspera</i>	
<i>Tristaniopsis laurina</i>	
<i>Vernonia cinerea</i>	
<i>Veronica plebeia</i>	
<i>Viola hederacea</i>	
<i>Wahlenbergia gracilis</i>	

Appendix C Pre-construction Vegetation Management - Zone 3

Advanced Waste Treatment Facility - Elizabeth Drive

Pre-construction vegetation management plan

1.0 Introduction

This plan provides measures that are recommended for implementation prior to the clearing of the Cumberland Plain Woodland (CPW) of the site. These measures are designed to salvage vegetation material for use in the restoration of the adjacent riparian corridor. This material would be used to propagate seedlings for revegetation, as mulch for soil stabilisation and for the enhancement of fauna habitat.

The plan also addresses the commitments relating to the minimisation of impact on flora and fauna prior to construction listed in the *Draft Statement of Commitments for Advanced Waste Treatment Facility, Elizabeth Drive* shown in **Table 1** below.

2.0 Protection of retained vegetation

Clearing limits should be clearly marked and fenced prior to construction to prevent accidental impacts to adjacent vegetation. Fencing is required between the construction area and retained vegetation to the west and north-west of the AWT site. Fencing should also be placed around any retained individual trees (including the mature Angophora) or stands such that construction activities are excluded from the drip-zone (canopy width) of these areas.

Fences are currently in place to the west, north-west and north of the AWT facility site which define the clearing limits and the extent of the construction area. These fences are sufficient for the protection of the adjacent vegetation. Contractors involved in construction should be made aware of restrictions applying to these areas through measures such as site inductions and presence of signs at fences gates. Fencing is not required to the south and south-east of the site as the AWT facility site is adjacent to the operational areas of the landfill site in these areas. The north-east boundary of the AWT facility site is adjacent to an area in which a landfill cell has been capped and revegetated with indigenous vegetation. This area, though not a naturally-occurring vegetation community, warrants protection. A fence or other form of marking such as bright-coloured tape should be installed to mark the clearing limit in this location to prevent accidental excessive clearing of this vegetation.

No heavy machinery should be permitted access outside of clearing limits and building materials (including spoil mounds) should not be stored or placed outside of clearing limits or within fenced stands of vegetation.

Access to the area of Badgerys Creek Riparian Community, adjacent to the AWT site should remain restricted to staff of SITA or other authorised persons with access allowed only for the purposes of vegetation management and environmental monitoring.

3.0 Salvaging of vegetation for restoration purposes

3.1 Survey for threatened species and identification of plants for translocation

In line with the commitments, a targeted survey for threatened flora should be conducted prior to construction. This would provide an opportunity to detect any threatened species which may have been missed during the previous surveys due to seasonal variation in ease of detection. If any threatened species are detected, translocation of these into restoration areas may be an option. This survey would also provide an opportunity for the identification of other native plant species which may be able to be translocated and hence assist in the restoration of Cumberland Plain Woodland to the north-west of the AWT site.

3.2 Tree removal and seed collection

Any trees which are to be removed should be retained for use in CPW restoration. A contractor who holds a current DECC scientific licence (licence to pick or harm) and has experience in seed-collection should be present on site during tree-felling to collect seed for use in revegetation. After seed has been collected from felled trees, the remaining material should be mulched or cut into lengths for use in habitat augmentation and revegetation.

Branches with a diameter less than 100mm should be mulched for use in revegetation for weed suppression and moisture retention around establishing plants. Branches and tree-trunks with diameters greater than 100mm should be cut into lengths for use as habitat for ground-dwelling fauna within retained vegetation and restored areas. The diameter of these branches will dictate the lengths to which they should be cut. Longer lengths of branch are preferred. The ability to move large heavy branches without excessive risk to staff and without causing damage to existing vegetation and soil due to the use of heavy machinery will, however, limit the size to which branches should be cut. Branches should be cut into the maximum lengths which can be safely lifted by two people and placed in the tray of an average sized utility for transportation.

Seed collection from felled trees must be conducted on the same day that felling is conducted as seed is released as the vegetation begins to dry. The cutting of felled trees into manageable lengths for use in habitat augmentation and the mulching of smaller branches may be conducted either during vegetation clearance or at a later date as part of the rehabilitation of adjacent vegetation. The use of this material, obtained on-site is preferable to the importation of mulch as it eliminates the risk of introducing weed seeds and plant diseases that may not occur on the site such as *Phytophthora* root rot fungus *Phytophthora cinnamomi*.

Tree branches and mulch should be stored in an appropriate area outside the AWT construction area in a location that is readily accessible to contractors and/or volunteers involved in vegetation restoration. The location for such stockpiles should be in an area that will minimise the impact on retained vegetation. This location should be identified by the contractor responsible for threatened species survey and/or seed collection.

Seeds of native grasses, herbs and shrubs should also be collected for use in revegetation.

4.0 Summary of measures required prior to earthworks

- Fencing and marking of retained individual tree/s within AWT facility site including the mature Angophora
- Marking of the clearing limits in the north-east corner of the AWT facility site adjacent to the revegetated area
- Targeted flora survey
- Felling of trees, seed collection and storage of tree branches for use in adjacent vegetation
- Inductions for contractors regarding retained vegetation.

Table 1: Excerpt from Draft Statement of Commitments for Advanced Waste Treatment Facility, Elizabeth Drive

Construction Phase	
Environmental Outcome (commitment)	Measure (commitment)
Minimise impact on flora and fauna	<p>To offset the removal of some severely degraded and isolated small pockets of Cumberland Woodland, a revegetation program will be initiated in discussion with LANDCARE and DECC along the north west boundary. It is envisaged that the revegetation program will include species affiliated with Cumberland Woodland vegetation association.</p> <p>A Vegetation Management Plan including a re-planting program will be developed including details on:</p> <ul style="list-style-type: none"> • Ongoing preservation of riparian vegetation and the protection of fauna habitat; • Clearing limits will be clearly marked and fenced prior to construction to prevent accidental impacts to adjacent vegetation; • No heavy machinery will be permitted access outside of clearing limits; • No building materials (including spoil mounds) will be stored or placed outside of clearing limits; • Revegetation of areas within the 'River Flat Eucalypt Forest endangered ecological community' (Badgerys Creek Riparian Community) will be considered; • The area of Badgerys Creek Riparian Community, adjacent to the SAWT Site, will remain restricted to staff of SITA and persons will enter this area only for the purposes of vegetation management and environmental monitoring • An active program of weed management will be implemented; • The mature Angophora will be fenced prior to clearing to avoid disturbance; • Non-residual herbicides will be used, on an as-needed basis, to control weeds; • A referral will be sent to the Department of the Environment and Water Resources (DEWR) in regards to the clearing of Cumberland Plain Woodland, a listed EEC under the EPBC Act; and • Prior to construction conduct a targeted survey for threatened flora. <p>In addition to these measures, SITA have implemented a programme of revegetation along the northern boundary of the Elizabeth Drive Site with species consistent with Cumberland Plain Woodland vegetation association. This revegetation commenced in 2004 in co-operation with LANDCARE, such that 2,000 trees have already been planted in this area. Key objectives of replanting would be to replace any remnants of Cumberland Plain Woodland that have already been removed from the Elizabeth Drive Site during historical (pre-SITA) quarrying/land clearing practices. This planting will also serve as a vegetative screening barrier along this boundary.</p>

Appendix D Checklist for Selection of Bush Regeneration Contractors

Appendix D Checklist for Selection of Bush Regeneration Contractors

Bush regeneration contractors should have the following:

- supervisory staff with suitable training and experience in bush regeneration and plant identification,
- occupational health and safety systems including an OHS committee and method statements,
- a scientific licence from the National Parks and Wildlife Service (license to pick or harm),
- suitable equipment including utility vehicles, watering equipment, chainsaws, brush-cutters etc,
- suitably trained staff including staff with chemical application training, and
- Experience in conducting regeneration works in Cumberland Plain Woodland and River-Flat Eucalypt Forest communities.

Odour Management Plan

Kemps Creek SAWT

Document # PLANS004.1.1.1

Issue date 5 Sep 2019

Version 3



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Objectives

The objective of this Odour Management Plan is to ensure that SUEZ is operating the SAWT Kemps Creek Advanced Resource Recovery Facility (ARRT) in a manner that minimises the potential impacts of odour within the site vicinity and neighbouring communities.

The requirements for the Odour Management Plan is to include a description of all potential odour sources and identify how odour control measures will be adopted to limit odour release.

Activities to manage potential odours from the operations will include identification of odour sources, odour monitoring, odour controls, complaint procedures, contingency planning and consultation.

The requirement is to 'implement the plan', which means that all operations must use the odour control facilities provided in design and document the procedures to be followed in operations and maintenance to keep odour emissions within the levels necessary to meet the objective.

Continual Improvement

A goal of continuous improvement in regards to odour emission management is adopted at the facility. Regular review of odour management controls, through review of the risk register will occur with feedback to the relevant parties.

Approval

As part of the continuous improvement in regard to odour emission management, Kemps Creek SUEZ must submit a report annually to the Department and the EPA (Approval Schedule 4 Condition 6), refer to Environmental Management Plan, "Environmental Auditing and Review".

Potential Odour Sources

Following a detailed review of site operations SUEZ has identified potential odour sources that could occur and has quantified the potential impact of these odour sources using the SUEZ internal risk management procedure. The potential odour sources have been ranked according to their inherent risk rating and is reflected in the list below.

1. Maturation Pad – Maturation of FGO material
2. Bio-Filters – Composting Tunnels and Drying Tunnel
3. Waste Receival and Storage in the Facility
4. Top Pad – Processing of FGO material
5. Leachate and Stormwater Dam
6. Pre-refining – Processing, Residual waste, MSW derived material
7. Final Product Pad – Storage of Final Product
8. Drying Tunnels – Air Extraction
9. Refining – Storage of MSW material in the bunker

Odour Monitoring (Detection)

The following odour monitoring will occur to ensure that all controls are effective

- Daily and weekly checklist of controls on potential odour sources
- Daily odour tours of surrounding areas conducted to determine if potential odour sources are leaving the site (*Daily Odour Checklist*)

Controls of Potential Odour Sources / Detection / Controls

As part of the risk management procedure controls have been identified and implemented to ensure that all potential odour sources are controlled and do not impact on neighbouring properties. The controls have been broken down into areas of potential odour sources which are listed below.

Maturation Pad – Maturation of FGO material

- Regular windrow turning in accordance with weekly processing schedule, early identification and prioritisation of windrows with high moisture and/or odour for windrow turning
- Covering of windrows in accordance with *Kemps Creek SAWT ARRT Environment Protection Licence (EPL12889)*
- Operation of the odour fence

Bio-Filters – Composting Tunnels and Drying Tunnel

- Maintenance and replacement of bio-filters material must be done in accordance with the *Bio-filter manual*

Waste Receival and storage in the facility

- All waste received are to be delivered within the confines on the waste receivables hall in order to control the potential for odour release.
- All exhaust air from the Receival Hall, Composting Tunnels and Drying Tunnels (also known as the Biocell Building) must pass through biofilters
- All Waste Receival Hall doors must be closed except when a vehicle or person is passing through the doorway in accordance with *Kemps Creek SAWT ARRT Environment Protection Licence (EPL12889)*.

Upper Pad - Processing of FGO material

- Material is not to be transferred for processing if odorous (continue windrow turning). Employees onsite trained in the use of the nasal ranger for off/on-site monitoring.
- Operation of the odour fence

Leachate and Stormwater Dams

- During site walk arounds observation of aerator operation, prompt follow-up with any issues as per the *Contingency Plan*
- Manage leachate dams as specified in *Environmental Management Plan*

Desludging dams

- Material from the de-sludging of onsite dams to be de-watered and composted within internal composting tunnels
- This material is to be transferred to the drying tunnel if required

Pre-refining – Processing, Residual waste, MSW derived material

- The pre-refining trommel must be covered and all emissions generated by the pre-refinery trommel be diverted back into the SAWT Receival Hall and pass through the bio-filters as per *Kemps Creek SAWT ARRT Environment Protection Licence (EPL12889)*
- Pre-refining MSW derived material must be transferred to the drying tunnel during that operational day
- Residual waste to be transferred directly to landfill

Storage of final product

- Covering of windrows in accordance with *Kemps Creek SAWT ARRT Environment Protection Licence (EPL12889)*
- Odour fence operation

Drying Tunnels

- Drying tunnel doors must be closed except during loading and unloading as per *Kemps Creek SAWT ARRT Environment Protection Licence (EPL12889)*

Refining – Storage of MSW material in the bunker

- Material in the refining bunker must be refined during that operational day. If the refining bunker cannot be emptied during the operational day the bunker must be covered with an impervious sheeting by the end of the day.

Moisture and Temperature monitoring requirement in different stages

PROCESS STAGE	TYPE OF WASTE	FREQUENCY	TEST	INTERNAL/ EXTERNAL	NOTES
Raw / Incoming Waste	MSW	3 Monthly	Moisture Content	Internal	
	FGO	3 Monthly	Moisture Content	Internal	
Tunnel	MSW	Daily	Temperature	Internal	
	MSW	If Required	Moisture Content	Internal	
	FGO	Daily	Temperature	Internal	
	FGO	If Required	Moisture Content	Internal	
Pre-Refining	MSW	Daily	Moisture Content	Internal	If production is operating
	FGO	Daily	Moisture Content	Internal	If production is operating
Maturation	MSW	Weekly	Temperature	Internal	
	MSW	In & out	Moisture Content	Internal	
	FGO	If required	Temperature	Internal	If pasteurization process hasn't completed
	FGO	When a batch forms	Moisture Content	Internal	Refer to related pre-refining batch
Refining	MSW	Daily	Moisture Content	Internal	
	FGO	Daily	Moisture Content	Internal	

Complaint Handling

A free call telephone line through SUEZ's Customer Service department operates 24 hours a day 7 days per week (Suez Hotline 13 13 35). The details of all complaints received and actions taken in response to the complaints are kept on the SUEZ database through the SIMS system. Complaints received via the hotline are investigated and responded to within the allocated time frame.

The information to be recorded as part of the investigation includes;

- Name of complainant;
- Contact details of complainant (e.g. telephone, email, postal address);
- Location, date and time at which alleged environmental impact occurred (street address);
- A general description of the nature of the environmental impact, including the following where applicable:
 - Duration and any pattern;
 - Character of odour;
- Whether there were any adverse health effects related to the environmental impact;
- What response has been requested or expected by complainant from SUEZ (e.g. a return phone call);
- The likely source(s) of the cause of the complaint; and
- What the weather conditions (e.g. wind speed, wind direction, temperature) were like at the time of the alleged environmental impact.

All records of complaints are kept for a minimum of 4 years after the complaint is made, and can be produced upon request.

Contingency Plan

Ref No.	Description	Risk Rating	Operational Control (s)	Asset Mgmt Control (s)	Responsibility	Measure of Success	Photo (ie of Good Practice)
1.	Significant Rain Event – Storm or Severe Forecast	19	Upon alert from Bureau of Meteorology, review the site to ensure it is prepared for the rain event. This includes amongst other actions: Ensure all leachate and storm water dam aerators are operating correctly; cover windrows and stockpile with an impermeable sheeting, to minimise rainwater ingress;		Operations Supervisors & operators/maintenance personnel	Operational readiness plans in place according to BOM forecast Operational Aerators. Covered windrows and stockpiles during wet weather.	
2.	Odour from Material on the Lower Pad	19	The compost may not have been turned frequently enough to incorporate fresh air and reduce anaerobic conditions in the windrow or pile. Ensure that the compost is turned to prevent anaerobic conditions developing in the windrow. Cover the windrow at the end of daily operations (4.30 pm and do not remove the cover until the agreed time 8am). If there is an odour fence available ensure that it is working correctly to minimise offsite odours.		Operations Supervisors & operators.	Windrow turns completed as per schedule. Minimal odour detection from windrows on pads. No detectable odour at site boundaries.	
3.	Biofilter Fan failure – Failure of fan or motor	14	Replace or repair fan/motor using site spares	Ensure spares are in stock and labelled as per Mainpac stocking levels.	Maintenance	Fan replacement work planned and completed within 24 – 72 hours.	
4.	Biofilter Media Moisture level too low (i.e. too dry)	13	Repair the faulty water sprays and wet the biofilter media using a hose to reinstate the correct moisture level. Check the surface of the media after several days of operation to ensure that the moisture across the biofilter is being maintained and that preferential air channelling is not occurring as evidenced by dry areas.	The biofilter requires regular testing to ensure odour levels at the surface are uniform and at the expected low level so that channelling of air is not occurring.	Process Engineer & Compliance Officer	Earthy, woody, natural smell detected around bio-filters. Uniformly wet bio-filter media.	

5.	Odour Fence not operating correctly	12	Repair odour fence pump and any blocked spray nozzles. Check supply of deodorant product and order more if required.	Keep spare nozzles and deodorant product on site.	Supervisors & Operators	Prompt repair of odour fence. Spare nozzles on site. Maintenance of 1 month's stock level of de-odouriser product on site.	
6.	Leachate Dam sludge build-up	12	Particulate matter in leachate precipitates over time to form sludge at the bottom of the dam. This sludge can be very odorous when removed.	Monitor sludge levels every 6mths and schedule desludging works during warmer months, but not during peak season. All sludge material must be dewatered within the internal or drying tunnels.	Process Engineer & Compliance Officer	Dam level maintained below 80% mark. Odorous desludging material transferred directly to internal tunnels. No odours identified during this process.	
7.	Waste Receival doors damaged and cannot close	12	Ensure that the main waste receival doors are always operational and closed except when a person or vehicle is passing through. Damaged doors are repaired within 72 hours. Door opening to be closed off using tarpaulin or similar until door repaired.	Spare door parts (eg panels, actuator motors, controls) to be held on site or by supplier to ensure quick supply and repair.	Supervisors, Operators, Maintenance & Compliance Officer	Doors are closed unless a vehicle is passing through. Door repair completed within 72 hours, otherwise temporary covering installed.	
8.	Odour from the Compost Material on the Final product pad. Cancellation of contracts, inhibiting exportation of final product material.	12	If the finished product is to remain on site for a significant period of time for whatever reason, it may need to be turned. Covering of the finished compost product is required when not filling or loading out. A minimum of two potential outlets for export must be available at all times. If cancellation of the main contract occurs, the Resource Processing Business Manager must be notified immediately to expediate the commencement of an alternative outlet. Monthly reporting during Resource Processing Business meetings must occur, on the amount of final product onsite and the amount exported to ensure stockpile levels are minimised.		Site Manager, Supervisors & Process Engineer	Early identification of odorous material, & frequent windrow turning (according to temperature). Covered windrows within licence conditions.	
9.	Odour Complaint received	12	If an odour complaint is received from the community, EPA or Council, follow the Suez Complaints procedure.		Compliance Officer	Compliance with complaints procedure.	

10.	Dam Aerator failure (stormwater and leachate)	11	Remove faulty aerator and repair or replace with spare parts	Ensure spares are in stock and labelled as per Mainpac stocking levels.	Supervisors & Maintenance	Immediate identification of failed aerators, repair undertaken with onsite stock (no downtime).	
11.	Excess waste received at the facility and processing capacity is exceeded and storage is not available	11	Divert waste loads to an alternate facility or send to suitably licensed landfill.	Review process performance and planned production weekly	Facility Manager & Process Engineer	Monthly processing capacity matches or exceeds incoming.	
12.	Facility Negative pressure level reduces. This can be caused by problems with biofilter fans biofilters or other fans within the facility	11	Check that the biofilter fans are operating correctly by measuring the flow rate or pressure rise across the fan. If the biofilter fans are operating correctly then check other fans within the facility in the area where the negative pressure is not at the correct level and repair the fans and/or ductwork.		Supervisors, Maintenance & Process Engineer	Prompt identification of reduced pressure and root cause(s).	
13.	Other doors in the SAWT Facility	11	Doors to remain closed unless person or equipment transiting	Ensure all pedestrian doors have self-closing mechanisms which are operating correctly. Inspect and service on a regular basis.	Supervisors & Operators	Facility doors are closed unless a person or equipment is passing through.	
14.	Pre refining line Trommel Failure	5	Repair trommel and hire a replacement mobile trommel if required.	Routine inspection, cleaning and maintenance should reduce failure to a low level of occurrence	Supervisors & Maintenance	Immediate repair of trommel or procurement of mobile trommel where required.	
15.	Windrow Turner Failure	5	Turn maturation pads using front end loader until windrow turner repaired	The windrow turner requires regular inspection and maintenance as it operates in a harsh environment	Supervisors & Maintenance	Windrow turns completed as per schedule allowing sufficient time to effect repair.	
16.	Refining Line Failure	5	Hire Mobile Trommel with 6mm or 8mm screen.	The refining area requires regular inspection and maintenance, including cleaning of hard to access areas.	Supervisors & Maintenance	Procurement of Mobile Trommel.	
17.	Facility Odour Tour	5	Every day the Compliance Officer or nominated person should walk around the site to check for any unusual level of odour around the site. If such an odour is detected the Facility Manager should be notified so that the source can be determined and repaired.	This odour survey procedure should be undertaken when the Compliance Officer first arrives on site while their sense of smell is most sensitive.	Compliance Officer & Facility Manager.	Odour tour completed and recorded daily.	

18.	Electrical Power Supply Failure	4	Contain all odours within the facility. Upon power supply restoration check that all odour control plant is operating. Some may need to be reset.			Facility doors closed during power failure	
19.	Front End Loader Failure can limit compost tunnel operations	3	All Front End Loaders are on a lease arrangement. If downtime is longer than 24 hours, the supplier is required to provide a replacement.		Supervisors & Maintenance	Front End Loader replacement within 48 hours, if required.	
20.	Pre-treatment processing Line equipment failure	2	Repair faulty equipment. Critical spares to be kept on site. Capable of storing 2 days of general waste supply. Divert to other facility or Landfill if storage volume exceeded.	Routine inspection, cleaning and maintenance should reduce failure to a low level of occurrence	Supervisors & Maintenance	Repair of processing line equipment failure with 72 hours.	
21.	Truck Failure, unable to transport material	2	Hire a replacement truck, or schedule additional walking floor loads. With remaining truck prioritise the transportation of material outside to reduce odour profile. Material must be covered as per licence conditions.		Supervisors & Maintenance	Timely replacement of truck. No material stored in internal bunkers.	

Consultation Plan

The need to consult.

The consultation plan addresses the following criteria:

1. The future operation of the SAWT facility and the need for the facility to meet community environmental expectations.
2. The facility preparedness for any operational or environmental issue that could result in a potential odour emission.
3. Suez's desire to be a good corporate citizen and have good community and regulatory authority relationships.

Aim of consultation

- To provide the community, Council and EPA with information to assist them in understanding the nature of the operations, the potential impacts from specific works proposed or in progress and the proposed odour management measures.
- To provide an opportunity for the public to be informed of potential site developments and any operational issues on a regular basis.

It would be desirable to focus on the proposed improvements at the SAWT facility for this consultation, to ensure that this purpose is not obscured by previous incidents.

Goal

- Provide the community, EPA and Council with information on the proposed facility and developments to improve odour issues.
- Obtain community feedback on any possible concerns in relation to the proposed improvements.
- To gain wide community understanding and acceptance and support for the facility.

Consultation/communication messages

- Suez aims to achieve best practice in facility odour management and the best outcome for the community.
- Suez wants to share information of its plans with the community.
- Suez values feedback from the community to ensure that all matters are considered and addressed in the operation of the facility.

Target audience (Stakeholders)

- Landholders and residents in the vicinity of the SAWT site
- Penrith City Council and community in general
- NSW Environment Protection Authority (EPA)

Objectives and performance indicators

- To ensure that the stakeholders are informed of the proposed plans and strategies to improve odour outcomes for the facility.
- To ensure that the target audience feel their views have been considered.

Activities

- Advise the EPA, Council and neighbours of any activity that has the potential to cause higher than normal odour as the issue arises.

- Suez Management to organise meet with Penrith City Council on need basis to discuss SAWT related issues. Keep minutes of meeting.
- Suez Management to meet with the EPA on need basis to discuss issues around all Suez Sydney facilities. Keep minutes of meeting.
- Make relevant information available on Suez's website.
- Community tours are available through our Stakeholder Engagement department - website

Feedback and evaluation of process

- Each contributor will receive acknowledgement of his/her comments in the meeting minutes.
- Internal review, audit of processes and practices.
- Review by consultants appointed for task as required.
- Outcomes communicated to the contributors at the next meeting of any actions from previous meetings.

Responsibilities

Site Manager

The site manager has responsibility for:

- ☐ Implementation of this plan
- ☐ Conforming with plan
- ☐ Training of staff in the plan
- ☐ Communication of the plan
- ☐ Reporting of incidents
- ☐ Ensuring corrective actions are taken

Site Supervisor

The site supervisor has the responsibility for:

- ☐ Ensuring adherence to this plan
- ☐ Conforming with site plan
- ☐ Reporting of incidents
- ☐ Implementing corrective actions

Site office staff

Site office staff has the responsibility for:

- ☐ Informing site manager/supervisor of non-conformity to the plan
- ☐ Reporting of incidents

Site staff

All site staff have the responsibility for:

- ☐ Ensuring adherence to this plan
- ☐ Conforming with site rules
- ☐ Reporting of maintenance defects
- ☐ Reporting of incidents

Related Documents

DOCUMENT NAME	REFERENCE NUMBER
Risk Management Procedure	PROC006
SAWT Risk Register	REG011
Site Maintenance – Infrastructure Facilities	SOP041
Kemps Creek SAWT ARRT Environment Protection Licence	EPL12889
Kemps Creek SAWT ARRT Environment Management Plan	PLANS004
Kemps Creek SAWT ARRT Pollution Incident Response Management Plan	PLAN003.1.3.1

Review and Document Control

VERSION	CHANGE	REVIEWED	AUTHORISED	DATE ISSUED
1	Initial Issue	Nicholas Bhugon, Laura Rossi, Brian Konkoly	Brian Konkoly	30 July 2016
2	Minor Adjustments including, Approval condition, EPA reference receival doors and nasal ranger training.	Laura Rossi, Louise Saunders		30 May 2018
3	Moisture and temperature monitoring requirements at different stages, Licence variation to remove reference to receival door numbers, addition of odour fence as a control measure for odour from maturation pad and minor updates	Khushboo Singh	Louise Saunders	5 September 2019

Environmental Management Plan

Kemps Creek SAWT ARRT

Document #. PLANS004.2.1

Issue date 31 July 2020

Version 4



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1. Introduction

1.1. Purpose

The purpose of this document is to describe the environmental management of operational activities at the Kemps Creek SUEZ Advanced Waste Treatment (SAWT) Advanced Resource Recovery Technology ("ARRT") facility that have, or are likely to have, an impact on the environment. This document sets out detailed procedures and measures that must be taken to eliminate, minimise and mitigate environmental impact. Furthermore, to ensure compliance with relevant legislation, regulatory requirements and undertakings given by SUEZ. This document also assists internal and external stakeholders in assessing environmental performance and ensures transparency across environmental operations.

SUEZ's Environmental, Quality and Safety ("EQS") Management System is structured in accordance with the requirements of the following standards:

- AS/NZS 4801:2001 Occupational Health and Safety Management Systems;
- ISO 14001:2011 Environmental Management Systems; and
- ISO 9001:2000 Quality Management System.

SUEZ's EQS system is certified to the above standards by an independent third-party.



Figure 1 Aerial view of Kemps Creek SAWT ARRT – taken 07 October 2016

“SUEZ is committed to undertaking all activities in an environmentally responsible way, preventing pollution and proactively developing environmentally sustainable activities.” – *Environment Policy*

1.2. Scope

This document applies to all activities undertaken at the Kemps Creek SAWT ARRT.

It is not intended that this Environmental Management Plan (EMP) repeat the wide range of environmental matters that were assessed leading to the issuing of the approval and licence. However, where it is helpful to clarify or draw to attention of the reader an issue discussed in the various reference documents the EMP either a.) refers to the respective document and relevant section; or b.) repeats relevant text.

1.3. Statutory Requirements

The steps for ensuring legal and regulatory compliance is set out in the *Legislative and Other Requirements Procedure*. This procedure outlines key responsibilities for updating and communicating statutory requirements. Relevant statutory requirements are maintained in the *Legislative Register – Environmental*.

The environmental aspects of the construction and operation of the SAWT facility were assessed in accordance with planning laws and in the context of legislation and guidelines applicable to each of those aspects. Each of the specialist studies documented in the EA and Preferred Project Report list the legal and guideline documents considered in those studies.

1.4. Environmental Protection Licence (12889)

Kemps Creek SAWT ARRT operates under an Environment Protection Licence (“EPL”) (refer to *Appendix 3. “Current environmental protection licence”* for further information on this EPL) issued by the New South Wales Environment Protection Authority (“EPA”).

On 30 July 2008, the Department of Environment and Climate Change (DECC) and the Environment Protection Authority (EPA – exercising its statutory functions as part of DECC), issued [draft] Environment Protection Licence (EPL) No 12889 for the SAWT. The licence was issued in accordance with Section 55 of the Protection of the Environment Operations Act 1997 (POEO Act) and covers the Scheduled and related activities of composting, waste storage, transfer, separating or processing. The operation of the landfill is subject to a separate EPL.

1.5. Environmental Assessment

The process leading to the issuing of the Minister’s approval and the EPL involved detailed design, rigorous environmental assessment (“EA”) and agency and community consultation.

This EMP draws on the primary EA for its content and guidance, namely:

- Environmental Assessment – Advanced Waste Treatment Facility – Elizabeth Drive, Maunsell, June 2007; and
- Preferred Project Report – Advanced Waste Treatment Facility – Elizabeth Drive, Maunsell, October 2007

Note that the Preferred Project Report supersedes certain aspects of the EA, following assessment of the responses to public and agency submissions.

1.6. Development Consent

A Condition of Consent was granted for the development of the ARRT facility by the Minister for Planning in April 2008, and a subsequent additional development approval was granted in January 2014 for the construction of maturation tunnels and concreting of the maturation pads. A summary and location of the relevant site documents are contained in the *Site Document Manifest*.

Under schedule 4 of the Minister’s approval, SUEZ is required to prepare an Environmental Management Plan for the operational phase of SAWT that addresses all the conditions referred to in the Environmental Protection Licence.

The principal features of the Minister’s approval include:

- Permit for 20 years the annual receipt and processing of: (a) 120,000 tonnes of mixed and garden waste; and (b) 14,400 tonnes of biosolids
- Set out the requirement to develop, have approved and implement several management plans designed to protect the environment during both construction and operation;
- Allow the progressive/staged submission of management plans and monitoring programmes – intended mainly to allow construction-related environment documentation to be submitted in advance of operations-related documentation; and
- The conditions of approval take precedence over, but do not replace, environmental assessment documents and the commitments made.

The Construction Environmental Management Plan (CEMP) and associated documents were approved by the Department of Planning (DoP). Prior to the commencement of operation of the SAWT, an Operational Environmental Management Plan (OEMP) dated 29th April 2009 was developed by Manusell on behalf of SUEZ and approved by DoP with reference to EPA.

1.7. Environmental Management Plan Requirements

Schedule 4 of the Minister's approval requires the preparation of an EMP for the operational phase of SAWT.

1.8. Organisational Structure at Kemps Creek SAWT ARRT

Refer to Intranet SUEZ Australia.

1.9. Staffing and Training Requirements

The Facility Manager ensures the provision of adequate training for workers on-site to ensure that all requirements described in this EMP are met. It is also the Facility Manager's responsibility to provide adequate training to all workers performing critical tasks, such as inspection and direction of incoming wastes, operation of the equipment and environmental management on-site.

An environment, quality and safety (EQS) system has been implemented by SUEZ. It provides SUEZ's employees with information about their environmental responsibilities which are outlined in specific procedures.

1.10. Environmental Auditing and Review

SUEZ evaluates the performance of Kemps Creek SAWT ARRT in accordance with *Management Systems Review Procedure*, *Monitoring and Measurement Procedure*, *Audit Procedure* and in conjunction with the Annual return process required of the EPL. The Annual Return records complaints received, testing and activation of the Pollution Incident Response Management Plan (PIRMP), documenting the results of environmental monitoring that has been conducted as a requirement of the EPL and recording non-compliances and remedial actions taken or proposed for the non-compliances.

The Development Consent outlines the following reporting and audit requirements:

- Annual Environmental Management Report (AEMR) (*Development Consent Condition 5*)
- Continuous improvement report (*Development Consent Condition 6*)
- Independent Environmental Audit, 3 yearly (*Development Consent Condition 6*)

These reports must be undertaken at the specified frequency and meet the requirements as outlined in the *Development Consent*.

1.11. Update and Version Control Requirements

This document is version controlled. All updates to this document must be made in accordance with the *Document Control Procedure*.

As the documents are "live", changes can be initiated at any time regular reviews will be undertaken of all documents relevant to the operation and management.

2. Site Overview

2.1. Site Description and Layout

Kemps Creek SAWT ARRT is in the Penrith Local Government Area and is located within the existing Elizabeth Drive Landfill site (87,600 square meters). Surrounding land use is predominantly rural and rural residential development, as shown in Figure 2. The site is located approximately 41km west of the Sydney Central Business District and 5km west of Kemps Creek.

The EMP applies to facility operations within the SAWT exercised area plan located in *Appendix 1. "SAWT Area Plan"*, which shows the general layout of the SAWT facility (shown in red) in relation to the landfill.

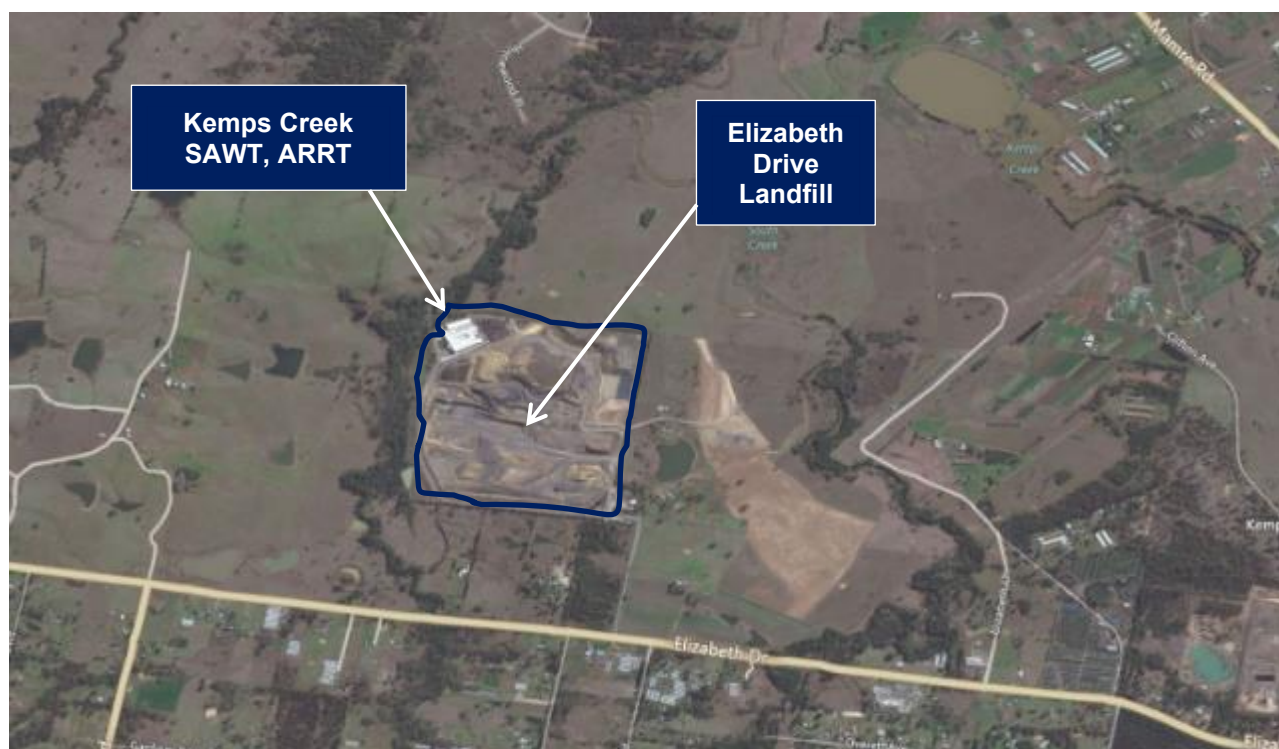


Figure 2 Kemps Creek SAWT ARRT Facility and Elizabeth Drive Landfill.

The north-western corner of the Elizabeth Drive site was selected as the preferred location because of geotechnical stability, undisturbed land and distance from sensitive receptors. The corner location is the most distant position (on-site) from the residential dwelling to the east and from Elizabeth Drive South. Since facility construction, increased residential development in Twin Creeks has resulted in increased proximity of sensitive receptors.

The SAWT facility is located within a fenced compound at the end of the dedicated road between the facility and the main entrance to the broader SUEZ site.

The purpose of the SAWT facility is to minimise the amount of recyclable and putrescible waste disposed of to the Landfill by the implementation of sustainable waste management processes including sorting, recovery and composting, all by mechanical equipment.

The SAWT facility is capable of processing approximately 120,000 tpa of waste. Whilst not essential to the composting operation, the facility also has the capability to receive and treat up to 14,000 tpa of biosolids in addition to the waste.

The SAWT facility is designed to recover recyclable materials (steel, aluminium, glass, paper and cardboard), and produce compost. Inert residual material will be disposed of in SUEZ's adjacent Waste Non-Putrescible Landfill.

The SAWT site layout and location of various components of the facility (including leachate and sediment ponds) is shown in *Appendix 2. "SAWT site map"*.

2.2. Environmental Management Programme Development

Upon the original development of SUEZ environmental management program, through consultation and assessment strategy involved the identification of environmental issues associated with the SAWT facility. It was concluded that some issues required no further action as they were covered by the Landfill Environmental Management Plan (LEMP) while other issues would require the preparation and implementation of environmental management programmes. Some of the issues can be dealt with through simple administrative actions such as the setting of the hours of operation of information of compliance with building codes, while others require more comprehensive and detailed guidance include the specification of criteria and monitoring actions.

The list of environmental issues requiring either: a.) the development of management measures; b.) explanation or simple instruction.

2.3. Infrastructure

The main components of the Kemps Creek SAWT ARRT site include:

- Access road and weigh bridge;
- Main building which consists of:
 - Administration Office;
 - Production Offices;
 - Staff amenities;
 - Receivable hall;
 - Processing lines for material sorting (Processing Building);
 - Thirty composting tunnels (pasteurisation process);
 - Designated refining area;
 - Residual loading and transport area;
 - Maintenance Workshop;
 - Transformer and switch room;
 - Four Bio filtration odour neutralising filters;
- Pre-refining
- Eastern maturation pad;
- Southern maturation pad;
- Three leachate collection dams;
- One leachate overflow catchment dam;
- Additional maturation tunnels and bio filtration system for the southern pad;
- Storm water collection pond;
- Two back up fire protection tanks;
- Final product storage and loading area
- Mobile plant wheel wash area
- Vehicle and Plant Refuelling Area
- Staff and Visitor Car Parking Areas.

Elizabeth Drive Landfill is located east-south to Kemps Creek SAWT ARRT and operates under a separate Environment Protection Licence to Elizabeth Drive Landfill (refer to the Environmental Management Plan, Elizabeth Drive Landfill for further details).

2.3.1. Hours of operation

In accordance with the EPL, Kemps Creek SAWT ARRT operates between the hours listed in *Appendix 4. "Hours of Operation"* Note that there are limiting conditions on the outdoor movements of vehicles during night time hours.

2.3.2. Traffic management

A range of vehicles and mobile plant are used at Kemps Creek SAWT ARRT to conduct operations, including the transfer and transport of materials in around the facility. Refer to the *Traffic Management Plan* for further details of traffic types and movements.

2.3.3. Drainage

All frequently trafficable areas for waste delivery are sealed surfaces with drainage networks to control and minimise the potential for sediment immobilisation. All water falling on hardstand areas is directed to the on-site storm water dam. In accordance with section O7 of EPL licence all above ground tanks and vats, including those used for treating of process wastewater, leachate and diesel have been designed and constructed so that the bunding of the tanks is a minimum of 110% of the tank volume in that bund.

2.3.4. Security

The Kemps Creek ARRT forms part of the Kemps Creek Advanced Resource Recovery Park and as such a 2-meter-high chain-wire fence surrounds the facility. The weighbridge workers supervise the main entrance into Kemps Creek Resource Recovery Park. Other entrance and exits which are not normally trafficable are locked to prevent unauthorised access and security is provided outside of operational hours. Refer to the SOP041 *Site Maintenance - Infrastructure Facilities* for further information.

2.3.5. Services

The facility is connected to mains water, telephone and power lines. Septic tank systems are adopted at the facility for the collection, treatment and disposal of effluent from the site. Disposal of solid waste collected in the septic tanks is conducted by approved contractors. For information on safely conducting work around utility services, refer to the *SOP 102 Utility Services*.

2.4. Overview of Kemps Creek SAWT ARRT Operations

SUEZ's Kemps Creek SAWT ARRT operations, including process flow information is contained in the *Product Quality Manual – Kemps Creek SAWT ARRT*.

3. Environmental Incident Management and Stakeholder Engagement

3.1. Community Complaints

A free call telephone line is operated on behalf of SUEZ. The telephone line, 1800 368 737, operates 24 hours a day, 7 days per week. Complaints about the site can be registered on this line. Complaints can also be lodged with the NSW EPA on 131 555 and directly to the site management. The details of all complaints received, and actions taken in response to the complaints are maintained on the SUEZ integrated management system. All complaints received are investigated and responded to within the allocated time frame set out in *Environmental Complaints Management SOP*.

3.2. Stakeholder Engagement Process

Kemps Creek Advanced Resource Recovery Park (“ARRP”) has developed an External Stakeholder Engagement process. The following activities are undertaken to ensure consultation occurs with all stakeholders:

- Advise the EPA and neighbours of any activities that has the potential to cause an environmental impact
- Meetings with key stakeholders (i.e. EPA and Penrith City Council), (outlined in odour management plan)
- Make relevant information available on Suez's website
- Community tours are available through our Stakeholder Engagement department - website

3.3. Environmental Incident Management

All environmental incidents are to be recorded in accordance with the *Incident Reporting and Corrective Action Procedure*. Environmental complaints are handled in accordance with *SOP066 Environmental Complaints Management*. Where a pollution incident occurs the Pollution Incident Response Management Plan for Kemps Creek SAWT ARRT must be activated.

Note that all contact with a regulatory body must be approved by the relevant Facility Manager or Business Line Manager.

3.4. Environmental Reporting

In accordance with the *Protection of the Environment (Waste) Regulation 2014*, all environmental monitoring required by the licence is published to the [SUEZ website](#).

Monitoring data must be made available within 14 working days of obtaining the data or laboratory results.

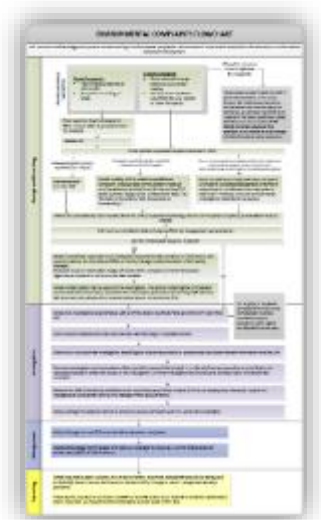
3.5. Emergency Preparedness

In accordance with the *Emergency Management Procedure*, an *Emergency Response Plan* (“ERP”) and PIRMP have been developed for Kemps Creek ARRP (which includes Kemps Creek SAWT ARRT).

Emergency drills are to be conducted in accordance with the *Emergency Management Procedure*. In the event of an emergency involving potential environmental damage the PIRMP must be activated. It is a requirement of the *Protection of the Environment Operations Act 1997* (“POEO Act”) that the PIRMP is tested at minimum of 12 monthly intervals.

3.6. Reporting to Regulatory Authorities

All incidents of pollution will be recorded in accordance with **Section M4** of the EPL; Recording of pollution complaints and reported in accordance with **Section R2** of the EPL, Notification of environmental harm must be immediate.



Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval, or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and EPA of the exceedance/incident.

Within 6 days of notifying the Department and EPA, the Proponent shall provide a written report to the Department and EPA that:

- a) describes the date, time, and nature of the incident;
- b) identifies the cause, or likely cause, of the incident; and
- c) describes what action has been taken to date to address the incident, and what actions are proposed to be implemented in the future to either address the consequences of the incident or avoid a recurrence of the incident. Waste Acceptance, Stockpiling and Material Export

Waste Acceptance, Stockpiling and Material Export

3.7. Wastes accepted at Kemps Creeks SAWT ARRT



The EPL for Kemps Creek SAWT ARRT lists wastes which are acceptable for disposal. For a list of the wastes accepted at Kemps Creek SAWT ARRT, refer to *Appendix 5 "Waste Accepted at Kemps Creek SAWT"*. For information on weighbridge operation (e.g. money handling, computer systems, and contact numbers) refer to the *Weighbridge Operations SOP*.

3.8. Acceptance of Waste

Prior to delivery of waste it is a requirement that the consignor of the waste has assessed the waste in accordance with the NSW *Waste Classifications Guidelines*. On entry to the facility, the delivery driver must state the contract or consignment number to the weighbridge operator. The weighbridge operator will then record the weight of the vehicle into the Mandalay system against the contract or consignment number.

Vehicles destined only for the landfill are directed in accordance with the location and identity of the active cell. Vehicles with loads assigned to the Kemps Creek SAWT ARRT are directed onto the dedicated access road. Those vehicles arrive at the facility entry control point and are directed to the marshalling area from which they reverse into the respective building roller door entrance and thence to a point at which the load is discharged.

Kemps Creek SAWT ARRT must only accept wastes in accordance with the EPL. Any waste that does not meet a certified waste category, contained within the EPL must not be accepted.

3.9. Stockpiles

There are limits on the stockpiles of waste that can be held on site. For information on these limits, refer to *Appendix 6 "Stockpile limits"*. Only material that complies with *"The organic outputs derived from mixed waste order 2014"* can be stored on the final product pad. Now operating under Government Gazette Reference number: n2020-1124.

Waste derived organic material must not be stored on the unsealed area of the Lower pad. Organic material derived from Municipal Solid Waste ("MSW") must not be composted or matured outside.

A maximum of 8 complete windrows and 2 partially formed windrows containing maturing organic material produced from Food and Garden Organics ("FGO") is permitted to be stored outside at any one time.

The total outdoor surface area used for maturation, processing and storage of waste derived organic material must be less than 10,000m².

4. Environmental Management Programs and Monitoring

All monitoring activities set out in this section must comply with the requirements of the *Monitoring and Measuring Procedure* and the *Incident Reporting and Corrective Actions Procedure*.

4.1. General

SUEZ's consultation and assessment strategy involved the identification of environmental issues associated with the operation of the SAWT facility. It was concluded that some issues required no further action as they were covered by the Landfill Environmental Management Plan (LEMP) while other issues would require the preparation and implementation of environmental management programmes. Some of the issues can be dealt with through simple administrative actions such as the setting of the hours of operation of information of compliance with building codes, while others require more comprehensive and detailed guidance include the specification of criteria and monitoring actions.

The listing of environmental issues requiring either: a.) the development of management measures; b.) explanation or simple instruction.

In order to improve cross-referencing of environmental protection measures to the instrument/s in which the particular issue is raised (that is, EPL, approval, commitment), various measures in the Environmental Management Plans (EMPs) in the following sub-sections include abbreviations which refer the reader to the subject instrument/s.

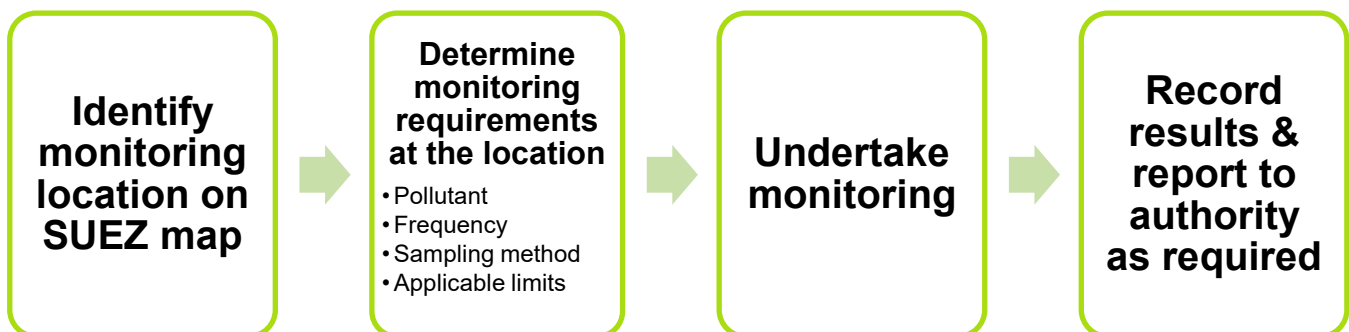


Figure 3 Summary of the monitoring process at Kemps Creek SAWT ARRT.

The responsibilities of SUEZ workers are outlined within the relevant Standard Operating Procedures (SOPs) and Work Instructions (WIs) outlining the operations. The responsibilities of actions within this Environmental Management Plan fall to the Facility Manager.

This provides increased certainty that, coupled with experienced site management and supervisory staff, operations will be carried out in a competent manner as outlined in *Appendix 12. "Activities carried out in a competent manner"*.

4.2. Environmental Commitments

In addition to the environmental issues identified in the EA process and for which Environmental Management Programmes are set out in the following section of this OEMP, SUEZ has made a commitment to enhance its environmental performance through a range of measures. Those additional measures were implemented during the design and construction phases. This section of the Environmental Management Plan identifies the commitments applicable to the operational phase of the SAWT.

The broad areas of commitment are to minimise impacts on:

- Geology, soils and groundwater;
- Flooding and hydrology;
- Odour emissions;

- Visual amenity and landscape.
- Surface water quality;
- Flora and fauna;
- Dust;
- Heritage;
- Surface water quality;
- Greenhouse gas emissions;
- Noise during operation;
- Minimise the risk of fire hazard; and
- Minimise potential health and safety impacts to workers and future users of the compost material.

4.3. Records



All monitoring records referenced in this section must be maintained in accordance with the *Records Management Procedure* and:

- Be in a **legible form**, or in a form that can readily be reduced to a legible form;
- Kept for a least **4 years** after the monitoring or the event to which they relate took place; and
- Be able to be **produced** in a legible form **to any authorised officer of the EPA** who asks to see them.

All samples taken in this section must contain:

- The **date(s)** the sample was taken;
- The **time(s)** at which the sample was collected;
- The **point/location** at which the sample was taken; and
- The **name of the person** who collected the sample.

4.4. Limiting Conditions

All operations undertaken by SUEZ must **not** pollute waters (other than where permitted by the Environment Protection Licence – e.g. ammonia, total suspended solids). Refer to *Appendix 8. "Pollute waters and related definitions"* for further information on what it means to pollute waters.

The Environment Protection Licence also provides measurable limits on certain pollutants as well as limits on wastes that are permitted on site.

For details of the limiting conditions, refer to the relevant section which outlines management of that issue.

4.5. Operational Requirements

All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

4.6. Soil, Water and Leachate Management

Section 120 of the POEO Act 1997 requires the establishment of an EPL if the activity has the potential to pollute waters.

The primary objectives of soil, water & leachate management are to ensure that the maximum amount of water is retained for use and re-use on site, and to ensure that the quality of water runoff from the site is maintained to ensure that there is no potential to pollute.

Please refer to *Appendix 20. "Water Balance diagram"* – Flow diagram of the clean water and leachate on site.

The operational objectives of this plan are the following:

- Avoid impact to water quality in groundwater and creeks and rivers downstream of the facility, especially Badgerys Creek;

- Control surface water runoff on-site by site grading and strategic placement and sizing of water management ponds;
- Manage leachate such that it neither overflows into the surrounding environment nor contaminates groundwater.

In addition to the EPL 12889 and the PEOP Act 1997, this plant must be consistent with the following documents (as outlined *Section 20 of the Development Consent*):

- Compliance with Edition 4 of the Landcom's Managing Urban Stormwater Guidelines (2004) (the Blue Book) prior to the commencement of operations;
- Compliance with DECC's Environmental Guidelines for Composting and Related Organics Processing Facilities (2004) (Composting Guidelines.)
- Compliance with the latest version of DECC's Managing Urban Stormwater: Council Handbook

4.7. Stormwater

Stormwater affected by the proposed SAWT facility has been divided into diverted stormwater from maturation areas and clean site runoff.

4.8. Management Strategy

- The SAWT facility has been designed such that the main bulk of site runoff is clean, consisting of rain that has fallen within the SAWT facility boundaries (for example on the roofs of buildings) but has not been in contact with areas where waste, organic material or compost have been handled or stored.
- The remainder of the clean stormwater will come from roadways and other surfaces which do not contain waste.
 - The runoff from both areas will be diverted to the Stormwater Pond;
 - Stored stormwater runoff from this pond will be managed to ensure as much reuse as is practicable;
 - This reuse water will be used for application in the SAWT facility processes in preference to potable water or will be directly used for operational purposes such as irrigation, dust suppression and firefighting.
- The Stormwater pond has been designed to remove coarse particulates from runoff, including two grease traps, prior to (a) use on-site; or (b) discharge via overland flow;
- The SAWT facility has also been designed to be protected from upstream Diverted Stormwater which is stormwater generated up-gradient of the SAWT facility.
- This stormwater will be diverted around the SAWT facility and ultimately discharged, in accordance with the landfill's EPL, to Badgerys Creek via the existing North-Western (NW) Sedimentation Pond, the Stormwater and/or overland discharge;
- Water from these sedimentation ponds will be used for operational purposes such as use in the composting process, irrigation, dust suppression and in reserve for firefighting.
- All Sedimentation ponds have been lined with a low permeability liner to control infiltration of stored water into groundwater;
- EPA-licensed points of overflow discharge, namely the sediment pond and leachate overflow pond have been designed to flow only in periods of heavy or extended periods of rainfall;
- Badgerys Creek is the only receiving stream for stormwater from the SAWT facility. Stormwater will only be discharged to Badgerys Creek if the capacity of all other water capture and management measures is exceeded;
- All facilities and roads are elevated above the 1 in 100-year AEP flood event level or are bunded such that they are protected from that flood event;

- Protection shall be provided to areas that have the potential to experience erosion or inundation during a 1 in 100-year AEP storm event;
- Runoff for all events up to and including the 1 in 10-year, 24-hour AEP event will be retained on site;
- All drainage paths have been designed and constructed to prevent ponding and infiltration into the groundwater;
- Permanent stabilisation of embankments, channels has been achieved through vegetation and shall be maintained to remain effective;
- The SAWT site has been graded to ensure that stormwater is diverted appropriately and undergoes the level of treatment as required by regulation;
- Storage of stormwater runoff will be managed to ensure as much re-use, and there by reduction in potable water demand, as is practicable;
- Waste for the SAWT will be received in the Receiving and Resource Recovery Buildings to avoid contact with stormwater.

4.8.1. Infrastructure and Collection

Stormwater collected from the grounds of the facility are directed to the storm water collection pond at the front of the facility. This water can be re-used in the site operations or used for cleaning of roadways, hardstand areas or dust suppression.

4.8.2. Leachate

The management of leachate is to be conducted in accordance with the requirements set out in the *Leachate Management SOP*. There are three main sources where leachate is produced:

- *Condensate Leachate*: - highest concentration of chemical and biological contaminated leachate produced during the composting of organic materials within the Composting Tunnels.
- *Leachate from Cleaning*: - small volumes of moderate concentration leachate which will be generated within the facility through using small amounts of water to clean floors and equipment.
- *Stormwater Leachate*: - large volumes of low concentration of leachate which will be generated when rain falls on material handling, vehicle movement areas, maturation windrows and compost product stockpiles.

The purpose of effective leachate management is to ensure that leachate does not contaminate local water courses or ground water sources.

4.8.3. Management Strategy

To minimise stormwater impacts during site operations SUEZ will undertake the following management strategies:

- Leachate generated is to be retained and treated, evaporated or in some way disposed of, rather than discharged. In order to meet this requirement, the design of the SAWT facility captures and reuses leachate preferentially.
- Regular monitoring and treatment of leachate runoff contained in the leachate and leachate overflow dams is undertaken
- Treated leachate will be stored in Final Product (M6), Upper (M2) and Lower Leachate Dams (M3). All leachate capture will be treated using an aeration system to treat high levels of COD and BOD. Treated leachate will be reused in the composting process at both the composting tunnels and maturation pads.
- Leachate dam capacity will be capable of holding runoff from 1 in 10-year, 24-hour duration storm event. Expected rainfall is to be monitored weekly and assessment of dam capacities is to occur. During rainfall events transfer of leachate via a tanker is to occur if required.
- Excess leachate water which does not meet OE&H quality specifications for water irrigation and reuse will be transported offsite for treatment at a licensed liquid waste treatment plant.
- Untreated leachate must not be discharged to Badgerys Creek

- Leachate storage and treatment ponds have been lined with low permeability liner to control infiltration to groundwater.
- Untreated leachate must not be discharged to Badgerys Creek unless it meets the requirements as stipulated in the EPL (see *Appendix 9. "Concentration Limits"*).

Approval - The leachate barrier has been designed and constructed to meet the requirements of Schedule 3, Condition 18.

EPL - The leachate barrier has been designed and constructed to meet the requirements of Condition O9.

4.8.4. Baseline Data

Surface Water Quality

- Water quality monitoring has been regularly conducted in designated locations along Badgerys Creek as part of the environmental monitoring program specified in the existing landfill EPL and surface water criteria have been adopted for the site;
- Monitoring indicates that the waterway typically maintains acceptable water quality for suspended solids, turbidity and BOD;
- Water quality data reported in studies for the Second Sydney Airport NSW (Tuft, 1997), indicated that Badgerys Creek, upstream of the site, was a disturbed ecosystem with elevated levels of nitrogen and chlorophyll A and low levels of oxygen;
- Non-ionised ammonia was above the toxic threshold. The creek also supported plants characteristic of eutrophic ecosystem and a wide variety of invertebrates with a high proportion of pollution tolerant species. Introduced pest fish species, such as Gambusia and European Carp were reported as common.

4.8.5. Sampling Equipment and Instructions

Water monitoring is conducted by gathering a sample of the leachate into laboratory bottles from the points as specified in the EPL. The samples are sent to the laboratory for analyses and a report is attained. For details on the methodology for leachate sample collection refer to the WI072.1 Environmental Site Monitoring (SAWT ARRF Kemps Creek).

Refer to *Appendix 13. "Monitoring points"* for a list of the monitoring points.

A groundwater monitoring and response procedure is in place for the landfill. The EPA carries out independent reviews of monitoring data. If in their opinion, there is evidence of groundwater contamination by leachate, an investigation programme will be implemented, and remedial works carried out as required.

4.8.6. Monitoring Requirements

Appendix 14. "Monitoring requirements (all monitoring points)" outlines the pollutants and the frequency of sampling for regulatory purposes. All samples for regulatory compliance purposes are analysed by a National Association of Testing Authorities (NATA) accredited laboratory.

Grab Sample is the sampling method set as the requirement of EPL. The samples collected in relevant sample bottles required for testing are contained within *Appendix 15. "Leachate Sampling Bottles (corresponds to 'grab samples')"*.

Monitoring of leachate management is undertaken to ensure that no untreated leachate leaves the site. Monitoring will involve Inspection of leachate pond level weekly and after any significant rainfall event. In addition to this monitoring requirements, process team undertakes regular monitoring, if there is significant odour issue the leachate rectification process is initiated, refer to *Appendix 17. "Leachate process rectification"*.

Dam Levels are monitored daily by the process team and issues identified are actioned promptly according to the priority and are also recorded using the *Kemps Creek SAWT Weekly Checklist*.

EDL measures the Badgery's Creek watercourse in three locations each quarter as part of its monitoring program. Samples are tested for BOD, conductivity, Nitrogen (ammonia), TOC, TSS and pH.

Monitoring of the discharge water from the stormwater pond to the existing sedimentation dam and from the overflow pond is to be conducted at all times where discharge from the pond occurs.

No offsite release of pollutants and contaminants to storm water above acceptable levels in accordance with the monitoring conditions of EPL 12889, as identified in *Appendix 9. "Concentration Limits"*.

All incidents of pollution will be recorded in accordance with **Section M4** of the EPL; Recording of pollution complaints and reported in accordance with **Section R2** of the EPL, Notification of environmental harm.

4.9. Air and Dust

The management of dust is to be conducted in accordance with the requirements of the SOP041 *Site Maintenance - Infrastructure Facilities*. The premises must be maintained in a condition which minimises or prevents the emission of dust. The purpose of dust management is to ensure that neighbouring properties are not adversely affected by dust, from operations attributed to the Kemps Creek SAWT ARRT.

4.9.1. Management Strategy

The following control measures will be in place to limit the potential for dust generation:

- The main site access roads at the KCSFACILITYARRT are sealed, which are designed to keep heavy vehicle movement to a minimum and has designated speed limits.
- The receipt of waste and all mechanical processing is to occur within enclosed building;
- All materials are delivered in enclosed compactor body vehicles;
- Pre-treated waste materials removed from the site are transported off site in covered trucks.
- Minimise heavy vehicle movements on unsealed areas
- Sealed roads are regularly cleaned using a street sweeper.
- Continually spraying of maturation and compost storage pads to increase moisture content while the material is turned or transferred
- Cleaning up material that may act as a dust source as soon as possible,
- Conduct regular cleaning of machinery and vehicles.

4.9.2. Monitoring

Dust monitoring will be in the form of visual checks carried out throughout the day. These checks undertaken by the Site Supervisor responsible for that area of the operation. During high winds or storm conditions the windrow turning, and shredding should be stopped temporarily to avoid the emission and dispersion of dust.

4.9.3. Performance Indicators

No dust complaints received for the ARRT. This will be monitored by the complaints CAR's that are raised within the SIMS system. All complaints are to be recorded into the SIMS system as per the requirements of *Incident Reporting and Corrective Action Procedure*. Refer to Section 3 for further information on the receipt and handling of complaints.

4.10. Soil Erosion and Sediment Control Plan

Due to the nature of site operation, the site requires effective soil erosion management to ensure the impact to the environment is kept to a minimum.

4.10.1. Management Strategy

- All main access roads, maturation, processing and storage pads have been sealed to minimise erosion and other areas have been graded.
- To minimise stormwater impacts during site operations SUEZ will undertake continual landscaping of the facility and surrounding areas with native species and suitable mulch.
- Implementation of Vegetation Management Plan.

4.10.2. Monitoring

Ongoing monitoring by site personnel will include debris within stormwater drains around facility, visual inspections of unsealed areas, stormwater channels for erosion. Dry sweeping of all manoeuvring areas occurs on a weekly basis to reduce high amounts of Total Suspended Solids within the Stormwater Pond.

4.11. Odour

It is intended that no offensive odours be emitted from the site under *S129 of the Protection of the Environment Operations Act 1997, (POEO Act)*. This provision of the POEO Act also includes provisions under the Act that provide a mechanism to deal with any potential breaches of the odour criteria and to provide a framework for dealing with the potential odour impacts.

The purpose of odour management is to prevent the degradation of local amenity from potential odour emissions or odorous activities associated with SAWT operations.

4.11.1. Management Strategy

The management of odour is to be conducted in accordance with the requirements set out in Odour Management SOP. For site specific management strategies and monitoring the *Odour Management Plan Kemps Creek SAWT* is to be followed. Odour Management requirements set out in EPL outlined *Appendix 19. "Odour Management"* must be met.

Leachate dams must be maintained to minimise odours, including the use of Bio-wish. In-process problems and the way they are rectified are documented in *Appendix 17. "Leachate process rectification"*.

A regular maintenance and cleaning schedule will be in place in order to avoid blockage or damage to the tunnel tubes resulting in pooling of leachate outside the tunnels contributing to the odour. The following control measures should be included in the tunnel maintenance schedule:

- Schedule to replace damaged tunnel tubes as soon as identified.
- Cleaning of the tunnel tubes and drains using a suction truck as required and directed by Process and Quality Team.
- Scrap and clean the tunnels after being emptied.
- Pressure clean the air locks and tunnel tubes.
- The mesh at the back of the tunnels to be cleaned regularly to ensure adequate suction to the biofilters.
- Tunnel doors to be cleaned monthly and maintained according to the manufacturer's maintenance specifications.
- Any damage to the doors or structural damage to the facility building to be reported immediately and to be rectified as a priority to avoid release of odour from the facility.
- The bunded area in the fan room to be maintained clean and the scrubbers to be cleaned at least every 3 months.

4.12. Litter

The management of litter is to be conducted in accordance with the requirements of the *Site Maintenance – Infrastructure Facilities SOP*.

4.13. Noise

The management of noise is to be conducted in accordance with the requirements of the *Site Maintenance – Infrastructure Facilities SOP*. The purpose of noise management is to ensure that no loss of amenity is caused to neighbours from noisy operations associated with the Kemps Creek SAWT operations.

The main sources of noise and the ARRT are:

- Main building housing processing lines, screens and trommels to separate recyclables;
- Fans for extraction of air from facility to bio-filter beds;

- Fans for provision of air to tunnel aeration floor;
- Plant and machinery operating in and around the facility;
- Waste disposal vehicles delivering waste materials;
- Compost transport vehicles transporting compost to customers

4.13.1. Management Strategy

The following mitigation measures are adopted by the ARRT:

- All waste processing is conducted within the confines of the main building;
- Operations of the facility are conducted within approved hours;
- Regular maintenance of all plant and equipment onsite

4.13.2. Monitoring Requirements

Section L4 of the EPL requires that the facility does not to exceed specified noise limits and in order to determine if exceedance of specified limits may occur the facility undertakes periodic noise monitoring at the specified locations as specified in *Appendix 10. "Noise Limits"*.

To ensure compliance with noise limits specified in the EPL Section L4, 5 yearly noise monitoring must be undertaken or upon significant change in operations (e.g. operating hours, equipment or machinery).

4.14. Pests and Vermin

The management of pests and vermin is to be conducted in accordance with the requirements of the *Site Maintenance – Infrastructure Facilities SOP and Environmental Monitoring Manual*. The purpose of pest and vermin management is to reduce the impact on amenity to neighbours and the community caused from the attraction of vermin and pests to waste materials.

4.14.1. Management Strategy

Pest and vermin may be attracted to the MSW waste stored onsite or from litter that is generated during operations. The following mitigation measures are adopted at the ARRT:

- Regular cleaning of litter from site operations
- Regular use of road sweeper to clean trafficable areas and roadways
- Regular pest control and inspection by a licensed operator
- Security fencing installed around the perimeter of the site
- Pest control contractor engaged monthly
- Rat and mouse baiting

Periodic inspections are carried out by the EQS team to ensure that the ARRT is maintaining the requirements of this procedure.

4.15. Vegetation

Vegetation Management is to be conducted in accordance with the requirements of the *Site Maintenance – Infrastructure Facilities SOP* and the *Vegetation Management Plan*. The purpose of appropriate vegetation management is to ensure that no weed outbreaks occur to local areas due to activities undertaken at the ARRT.

4.15.1. Management Strategy

The following activities will be utilised to monitor and maintain vegetation on the ARRT:

- Regular inspection of grassed areas for weed infestations; and
- Planted areas will be regularly inspected, where depressions are noted these will be filled, reseeded and mulched.

4.15.2. Monitoring Requirements

A combination of weekly, monthly and 6 monthly monitoring will be conducted in accordance with the *Monitoring and Measurements Procedure* and records retained on the applicable *Inspection Checklist*.

4.16. Quality assurance program for the design and installation of the leachate management system

We have contacted all involved with the leachate pond installation, while we have not been able to collect all relevant information please see below and attached in *Appendix 21. "Leachate Management System Drawings"* the information that we are able to collect

There are three ponds, to the north of the site the Leachate, Overflow and Sedimentation Ponds, there is one to the north of the Penrith Maturation Pond and one to the west of main building, as shown in attachment – Construction Drawing (Construction Certificate) attached in **Appendix 21**.

- File 310PDEXH show the depth of the original excavations of the Leachate, Overflow and Sedimentation Ponds, to the north of the site.
- The Leachate pond was lined with compacted clay and HDPE liner as shown in 21-17956-CO14, while the overflow pond had compacted clay covered with a layer of soil.
- File 310PDTSH shows the depth after installation of the clay liner in the Overflow Pond, the clay used for liner construction was from onsite and used as it typically displays very high impermeability.
- File 310PDCLH show the depths after the installation of topsoil in the overflow pond.
- CQA results for the Leachate Pond are shown in the file SKMBT-C2500906.
- We have not been able to recover CAQ data for the Overflow and Sedimentation Ponds, however as the overflow pond is for emergency use only and the surface water pond is not for leachate, we cannot determine if a CQA report would have been required.
- The pond north of the Penrith Maturation Pond and one to the west of main building, as shown in attachment – Construction Drawing attached were lined with 1050mm compacted Clay Liner over a Trim and Compact subgrade to superintendent's approval.
- File FPD is the Certificate for Conformance for Final Product Leachate Pond

4.17. Surface Water, Groundwater and Leachate Response Plan

As groundwater is not applicable to the operation of the SAWT, a Response Plan for Groundwater will not be required.

Ground water monitoring would be required to be carried out as part of the landfill site and is requirement under the Elizabeth Drive Landfill EPL which will cover both site operations.

4.17.1 Groundwater Response Plan

A groundwater monitoring and response procedure is in place for the landfill. The EPA carries out independent reviews of monitoring data. If in their opinion, there is evidence of ground water contamination by leachate, an investigation programme will be implemented, and remedial works carried out as required.

Should there be any groundwater contamination detected, response will be documented as part of the annual report AEMR in compliance with Condition 10.

4.17.2 Surface Water Response Plan

Contamination of surface water resulting from leachate generated from waste that is left outside the building or other contaminants.

The surface water, groundwater and leachate response plan must meet the condition with the Approval, Schedule 3 Condition 10.

Surface Water Contingency Plan

Contingency operations for non-complying discharges are in two stages including:

1. Re-circulating, treating or removing and treating the contaminated water, followed by
2. Pumping water back into leachate pond with later removal and treatment of stored stormwater.

In the event of sedimentation pond overflow and where further discharges are likely (such as in an unlikely case of the sedimentation dam breach during a major storm event) the water will be diverted into another pond. Any excess stormwater will only have the effect of significantly diluting already relatively clean water.

Given the substantial volume available in each of the ponds onsite, such contingency provisions are expected to be adequate for most storm events where a “contain and treat” approach will be adopted in the case of any accidental spillages or contamination events (for example, spillage on site).

Similar procedures will apply in respect of Badgery’s Creek monitoring. Should any stream monitoring results exceed set values, then discharges from the site will be curtailed until either the cause is clearly identified, or investigation has demonstrated that further exceedance of set/standard values can be prevented.

In the event of sedimentation pond overflow the following steps will be undertaken:

- i.) Re-direct in flows to an alternative pond or the landfill
- ii.) Pump out sufficient sedimentation pond water to temporary dam to enable restoration of dam failure
- iii.) Recommission sedimentation pond

4.17.3 Leachate Response Plan

Excess Leachate

The composting Guidelines allow for discharge of leachate directly to receiving waters for storm events with greater than a 1 in 10-year Annual Exceedance Probability (AEP). Any leachate that overflows during major storm events is significantly diluted. Dam levels will be maintained to allow capture of 1 in 10 AEP events, the overflow, maintained at empty. Excess leachate water which does not meet quality specifications for water irrigation and reuse will be transported offsite for treatment at a licensed liquid waste treatment plant.

5 Definitions

Act – Means the [Protection of the Environment Operations Act 1997](#)

activity – Means a scheduled or non-scheduled activity within the meaning of the *Protection of the Environment Operations Act 1997*

actual load – Has the same meaning as in the [Protection of the Environment Operations \(General\) Regulation 2009](#)

anniversary date – The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the [Protection of the Environment Operations Act 1997](#), the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.

Approved Methods Publication – Has the same meaning as in the [Protection of the Environment Operations \(General\) Regulation 2009](#)

Assessable pollutants – Has the same meaning as in the [Protection of the Environment Operations \(General\) Regulation 2009](#)

BOD – Means biochemical oxygen demand

COD – Means chemical oxygen demand

cond. – Means conductivity

environment – Has the same meaning as in the [Protection of the Environment Operations Act 1997](#)

environment protection legislation – Has the same meaning as in the [Protection of the Environment Administration Act 1991](#)

EPA – Means Environment Protection Authority of New South Wales.

fee-based activity classification – Means the numbered short descriptions in Schedule 1 of the [Protection of the Environment Operations \(General\) Regulation 2009](#).

general solid waste (non-putrescible) – Has the same meaning as in Part 3 of Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

general solid waste (putrescible) – Has the same meaning as in Part 3 of Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

grab sample – Means a single sample taken at a point at a single time

hazardous waste – Has the same meaning as in Part 3 of Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

licensee – Means the licence holder described at the front of EPA licence 4068.

load calculation protocol – Has the same meaning as in the [Protection of the Environment Operations \(General\) Regulation 2009](#)

local authority – Has the same meaning as in the [Protection of the Environment Operations Act 1997](#)

MBAS – Means methylene blue active substances

Minister – Means the Minister administering the [Protection of the Environment Operations Act 1997](#)

mobile plant – Has the same meaning as in Part 3 of Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

motor vehicle – Has the same meaning as in the [Protection of the Environment Operations Act 1997](#)

O&G – Means oil and grease

percentile [in relation to a concentration limit of a sample] – Means that percentage [e.g. 50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period. In the relevant licence, the specified period is the Reporting Period.

plant – Includes all plant within the meaning of the [Protection of the Environment Operations Act 1997](#) as well as motor vehicles.

pollution of waters [or water pollution] – see Appendix 8. “Pollute water and related definitions”

premises – Kemps Creek SAWT ARRT

public authority – Has the same meaning as in the [Protection of the Environment Operations Act 1997](#)

regional office – Means the relevant EPA office referred to in the Contacting the EPA document accompanying EPA licence 4068.

reporting period – For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the [Protection of the Environment Operations Act 1997](#), the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.

restricted solid waste – Has the same meaning as in Part 3 of Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

scheduled activity – Means an activity listed in Schedule 1 of the [Protection of the Environment Operations Act 1997](#)

TM – Together with a number, means a test method of that number prescribed by the [Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales](#).

TSP – Means total suspended particles

TSS – Means total suspended solids

Type 1 substance – Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements

Type 2 substance – Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements

utilisation area – Means any area shown as a utilisation area on a map submitted with the application for EPA licence 4068

waste – Has the same meaning as in the [Protection of the Environment Operations Act 1997](#)

waste type – Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste.

6 Related Documents

DOCUMENT NAME	REFERENCE
Bio-filters Manual	MAN030
Development Consent	
Environmental Protection Licence	12889
Legislative and Other Requirements	PROC001
Legislative Register – Environmental	REG005
Site Document Manifest	REG013
Document Control Procedure	PROC004
Environmental Management Plan	PLANS004
Traffic Management Plan	PLANS002
Site Management – Infrastructure Facilities	SOP041
Utility Services	SOP102
Environmental Complaints Management	SOP066
Incident Reporting and Corrective Action Procedure	PROC008
Monitoring and Measuring Procedure	PROC007
Leachate Management	SOP036
Contractor and Visitor Control Procedure	PROC013
Records Management	PROC009
Contractor and Visitor Control Procedure	PROC013
Leachate Management	SOP029
Water Management	SOP069
Odour Management	SOP065
Snakes, Spiders, Ticks and Fire Ants	SOP054
Emergency Management	PROC005
Emergency Response Plan	PLANS003
Management Systems Review	PROC012
Audit Procedure	PROC010

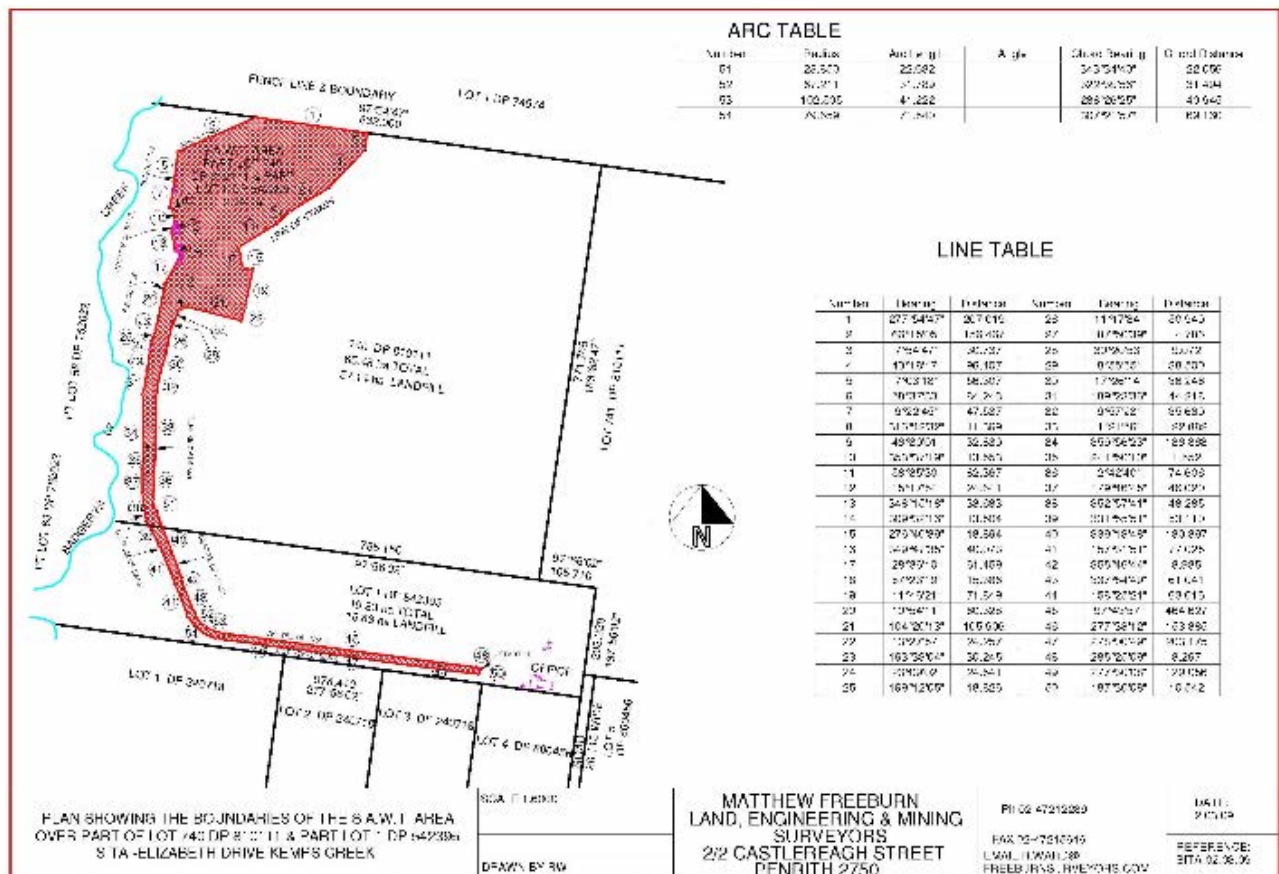
Product Quality Manual	MAN016
Operational Environmental Management Plan (OEMP) 17 th August 2017	
Kemps Creek SAWT Weekly Checklist	FORM026.4.21

7 Review and Document Control

VERSION	CHANGE	REVIEWED	AUTHORISED	DATE ISSUED
1	Initial Issue	-	-	31 October 2016
2	Environmental Licence Variation Update, Leachate Management and Community Consultation	L Rossi	L Saunders	
3	Updated with addition of Baseline Data, Sampling Equipment, Monitoring points, Monitoring requirements, Soil erosion and sediment control plan, Surface Water, Groundwater and Leachate Response Plan, appendices and minor updates. Environmental Licence Update on 28 May 2019. All changes in the licence variation reflected on the plan	K Singh	L. Saunders	31 July 2019
4	Updated organisational structure (compliance officer removed)	M Hollingshead	M Banasaz	22 September 2020

8 Appendices

APPENDIX 1. - SAWT Area Plan



Referenced: Referenced in the SAWT Environmental Protection Licence 12889 (Condition A2; Condition L3.2)
Licence Version Number: 7th July 2017

APPENDIX 2. - SAWT site map

SUEZ – KEMPS CREEK SAWT – EPL 12889 – Monitoring Locations

Map Reference Number (N0-001), Last Amended 16/06/2017



Monitoring Point 1 – Stormwater Pond	
Monitoring Point 2 – Processing Pad Dam	
Monitoring Point 3 – Maturation Pad Dam	
*Monitoring Point 4 – Overflow Pond Dam	
Monitoring Point 5 – Stormwater Dam - Discharge	
Monitoring Point 6 – Final Product Pad Dam	

Referenced: Referenced in the SAWT Environmental Protection Licence 12889 (Condition A2.1; Condition P1.2)

*According to the current licence there is no monitoring requirement for Point 4

Licence Version Number: 28 May 2019

APPENDIX 3. - Current environmental protection licence

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 12889



Licence Details

Number:	12889
Anniversary Date:	29-July

Licensee

SUEZ RECYCLING & RECOVERY PTY LTD
1725 ELIZABETH DRIVE
KEMPS CREEK NSW 2171

Premises

SITA ADVANCED WASTE TREATMENT FACILITY
1725 ELIZABETH DRIVE
KEMPS CREEK NSW 2178

Scheduled Activity

Composting
Resource recovery
Waste storage

Fee Based Activity

Composting
Recovery of general waste
Waste storage - other types of waste

Scale

> 50000 T annual capacity to receive organics
Any general waste recovered
Any other types of waste stored

Region

Waste & Resource Recovery
59-61 Goulburn Street
SYDNEY NSW 2000
Phone: (02) 9995 5000
Fax: (02) 9995 5999
PO Box A290
SYDNEY SOUTH NSW 1232

APPENDIX 4. - Hours of operation at Kemps Creek SAWT ARRT

Activity	Day	Hours
Waste Receipt, outdoor operations & product dispatch	Monday to Friday	6:00AM to 6:00PM
	Saturday	8:00PM to 5:00PM
	Sunday	8:00AM to 4:00PM
Outdoor operations	Monday to Friday	6:00PM to 10:00PM*
	Public holidays	7:00AM to 4:00PM
Indoor operations	Monday to Saturday	7:00AM to 11:00PM
In case of emergency	Monday to Sunday	Anytime
Completely cover waste derived organic material, stored outside, with impervious sheeting	Everyday	4:30PM to 8:00AM
Turning, processing and refining of waste derived organic material stored outside	Monday - Saturday	8:00AM to 4:30PM
	Sunday and Public Holidays	8:00AM to 4:00PM

Note: * Outdoor operations between the hours of 6pm-10pm Monday to Friday must be limited to 10 trips by a 6-tonne truck (that is 20 movements) and 12 trips by front end loader (that is 24 movements).

Source: Environment Protection Licence, 12889

Licence version date: 28 May 2019

APPENDIX 5. - Waste accepted at Kemps Creek SAWT

Waste	Description	Other limits
General solid waste (non-putrescible)	Refer to full definition in Appendix 16 “General solid waste (non-putrescible) definition” Source: <u><i>Protection of the Environment Operations Act 1997 – Schedule 1, s50.</i></u>	Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible).
General solid waste (non-putrescible)	Refer to full definition in Appendix 16 “General solid waste (non-putrescible) definition” Source: <u><i>Protection of the Environment Operations Act 1997 – Schedule 1, s50.</i></u>	Must not receive more than 120,000t per year of general solid waste (putrescible and non-putrescible).
Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the biosolids guidelines	Refer to full definition in Appendix 16 “General solid waste (non-putrescible) definition” . And to the EPA Biosolid Guidelines for more information. Source: <u><i>Protection of the Environment Operations Act 1997 – Schedule 1, s50.</i></u>	Must not receive more than 14,400t per year.

Source: Environment Protection Licence, 12889

Licence version date: 28 May 2019

APPENDIX 6 - Stock pile limits

All waste derived organic material stored outside must be placed:

- a) in stockpiles no greater than 3 metres high; or
- b) in windrows being no larger than 5.2 metres in width, 60 metres in length and 3 metres high.

Note: 3-metre-high stockpiles are permitted on the Upper Pad only.

Source: Environment Protection Licence, 12889 Licence Condition 05.6

Licence version date: 28 May 2019

APPENDIX 7 - List of testing requirements

[Approved methods for the sampling and analysis of water pollutants in NSW](#) (March 2004 edition)

[Approved methods for the sampling and analysis of air pollutants in NSW](#) (January 2007 edition)

[Contaminated Sites: Sampling Design Guidelines](#) (September 1995)

[Guidelines for the Assessment and Management of Groundwater Contamination](#) (March 2007)

[Australia and New Zealand Guidelines for Fresh and Marine Water Quality](#) (October 2000)

APPENDIX 8 - Pollute waters and related definitions

"water pollution" or "pollution of waters" means:

- (a) placing in or on, or otherwise introducing into or onto, waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, so that the physical, chemical or biological condition of the waters is changed, or
- (b) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any refuse, litter, debris or other matter, whether solid or liquid or gaseous, so that the change in the condition of the waters or the refuse, litter, debris or other matter, either alone or together with any other refuse, litter, debris or matter present in the waters makes, or is likely to make, the waters unclean, noxious, poisonous or impure, detrimental to the health, safety, welfare or property of persons, undrinkable for farm animals, poisonous or harmful to aquatic life, animals, birds or fish in or around the waters or unsuitable for use in irrigation, or obstructs or interferes with, or is likely to obstruct or interfere with persons in the exercise or enjoyment of any right in relation to the waters, or
- (c) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, that is of a prescribed nature, description or class or that does not comply with any standard prescribed in respect of that matter,

and, without affecting the generality of the foregoing, includes:

- (d) placing any matter (whether solid, liquid or gaseous) in a position where:
 - i. it falls, descends, is washed, is blown or percolates, or
 - ii. it is likely to fall, descend, be washed, be blown or percolate,
 into any waters, onto the dry bed of any waters, or into any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, or
- (e) placing any such matter on the dry bed of any waters, or in any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted,

if the matter would, had it been placed in any waters, have polluted or have been likely to pollute those waters.

"waters" means the whole or any part of:

- (a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea), or
- (b) any water stored in artificial works, any water in water mains, water pipes or water channels, or any underground or artesian water.

Source: [*Protection of the Environment Operations Act 1997 – Dictionary*](#)

Information retrieved at: 29 October 2015 – 6:00PM EST

APPENDIX 9 - Concentration Limits

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

Monitoring Point 1

Pollutant	Units of Measure	100 percentile concentration limit
Ammonia [NH₃]	Milligrams per litre	0.9
pH	pH	6.5-8.5
Total suspended solids (TSS)	Milligrams per litre	50

Source: [Environment Protection Licence, 12889](#)

Licence version date: 28 May 2019

APPENDIX 10 - Noise Limits

L4

Noise limits

L4.1

Noise generated from the premises must not exceed the noise limits presented in the table(s) below. The noise limits in the table(s) represent the noise contribution from the premises.

Location	Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)	Night L _{Amax}
McGarvie SmithFarm	42	39	35	N/A
1745 Elizabeth Drive	41	40	37	47
1669A Elizabeth Drive	38	38	35	N/A
Residence 1669A Elizabeth Drive	42	42	38	53

Location	Morning shoulder Period LAeq (15 minute)
McGarvie SmithFarm	39
1745 Elizabeth Drive	40
1669A Elizabeth Drive	38
Caretakers Residence 1669A Elizabeth Drive	42

Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.

- Morning Shoulder is defined as 6am to 7am Monday to Friday.
- Noise from the premises is to be measured at the most effected point or within the residential boundary or at the most affected point within 30 metres of the dwelling (rural situations) where the dwelling is more than 30 metres from the boundary to determine compliance with LAeq (15-minute noise level).
- The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- The noise limits identified above apply under the following metrological conditions:
 - (i) Wind speed up to 3m/s at 10 metres above the ground level; or
 - (ii) Temperature inversion conditions

Source: [Environment Protection Licence, 12889](#)

Licence version date: 28 May 2019

APPENDIX 11 - Odour Limits

L7 Potentially offensive odour

L7.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the *Protection of the Environment Operations Act 1997*.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant Environment Protection Licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

Source: Environment Protection Licence, 12889

Licence version date: 28 May 2019

APPENDIX 12- Activities carried out in a competent manner

As outlined in Part 4, Clause O1 of the Environment Protection Licence:

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) The processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) The treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Source: [Environment Protection Licence, 12889](#)

Licence version date: 28 May 2019

APPENDIX 13 - Monitoring points

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Biochemical oxygen demand	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

POINT 2,3,6

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Yearly	Grab sample
Biochemical oxygen demand	milligrams per litre	Yearly	Grab sample
Chemical oxygen demand	milligrams per litre	Yearly	Grab sample
pH	pH	Yearly	Grab sample
Total suspended solids	milligrams per litre	Yearly	Grab sample

Source: [Environment Protection Licence, 12889](#)

Licence version date: 28 May 2019

APPENDIX 14 - Monitoring requirements (all monitoring points)			
Point 1:			
Pollutants	Units of Measure	Frequency of Sampling	Method
Ammonia	milligrams per Litre	Special Frequency 1	Grab sample
Biochemical oxygen demand	milligrams per Litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per Litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Total organic carbon	milligrams per Litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per Litre	Special Frequency 1	Grab sample
Point 2,3,6			
Pollutants	Units of Measure	Frequency of Sampling	Method
Ammonia	milligrams per Litre	Yearly	Grab sample
Biochemical oxygen demand	milligrams per Litre	Yearly	Grab sample
Chemical oxygen demand	milligrams per Litre	Yearly	Grab sample
pH	pH	Yearly	Grab sample
Total suspended solids	milligrams per Litre	Yearly	Grab sample

For the purposes of the table(s) above Special Frequency 1 means the collection of samples annually and four times per year during discharge.

Source: [Environment Protection Licence, 12889](#)
Licence version date: 28 May 2019

APPENDIX 15 - Leachate Sampling Bottles (corresponds to 'grab samples')

Pollutants	Bottles required for NATA laboratory (e.g. ALS)
Ammonia	250ml Purple Bottle
Biochemical oxygen demand	1000ml Natural Bottles
Conductivity	1000ml Natural Bottles
Oil and Grease	500ml Purple Amber Bottles
pH	1000ml Natural Bottles
Total organic carbon	2 x 40ml purple vials
Total suspended solids	1000ml Natural Bottles

Source: [Environment Protection Licence, 12889](#)

Licence version date: 20 November 2015

APPENDIX 16 - General solid waste (non-putrescible) definition

"general solid waste (non-putrescible)" means waste (other than special waste, hazardous waste, restricted solid waste, general solid waste (putrescible) or liquid waste) that includes any of the following:

- (a) glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal,
- (b) paper or cardboard,
- (c) household waste from municipal clean-up that does not contain food waste,
- (d) waste collected by or on behalf of local councils from street sweeping,
- (e) grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices or stormwater management systems, that has been dewatered so that it does not contain free liquids,
- (f) grit and screenings from potable water and water reticulation plants that has been dewatered so that it does not contain free liquids,
- (g) garden waste,
- (h) wood waste,
- (i) waste contaminated with lead (including lead paint waste) from residential premises or educational or childcare institutions,
- (j) containers, having previously contained dangerous goods, from which residues have been removed by washing or vacuuming,
- (k) drained oil filters (mechanically crushed), rags and oil absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids,
- (l) drained motor oil containers that do not contain free liquids,
- (m) non-putrescible vegetative waste from agriculture, silviculture or horticulture,
- (n) building cavity dust waste removed from residential premises, or educational or childcare institutions, being waste that is packaged securely to prevent dust emissions and direct contact,
- (o) synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste,
- (p) virgin excavated natural material,
- (q) building and demolition waste,
- (r) asphalt waste (including asphalt resulting from road construction and waterproofing works),
- (s) biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the Biosolids Guidelines,
- (t) cured concrete waste from a batch plant,
- (u) fully cured and set thermosetting polymers and fibre reinforcing resins,
- (v) fully cured and dried residues of resins, glues, paints, coatings and inks,
- (w) anything that is classified as general solid waste (non-putrescible) pursuant to an EPA Gazettal notice,
- (x) anything that is classified as general solid waste (non-putrescible) pursuant to the Waste Classification Guidelines,
- (y) any mixture of anything referred to in paragraphs (a)-(x).

Source: [*Protection of the Environment Operations Act 1997 – Schedule 1, s49*](#)

Information retrieved at: 28 October 2015 – 4:30PM ES

APPENDIX 17 - Leachate process rectification

Table 1: Leachate process rectification

Leachate Dam/Pond	Problem	Potential Cause	Actions / Suggestions
Lower Dam	Excessive Odour	High ammonia concentration	Adding four (4) packets of Biowish supplied by Integra Water. Ensure that the aerators are operational. If not, a maintenance request should be raised.
		Deodoriser fences not operational	Ensure deodoriser fences are operational. Contact Integra Water to solve issue.
		Anaerobic conditions	Ensure that the aerators are operational. If not, a maintenance request should be raised. Increase aeration in the dam by adding additional aerators. Relocation of aerators to dead zones.
Overflow Dam	Excessive Odour	High ammonia concentration	Ensure that the aerators are operational. If not, a maintenance request should be raised. Adding four (4) packets of Biowish supplied by Integra Water.
		Anaerobic conditions	Ensure that the aerators are operational. If not, a maintenance request should be raised. Increase aeration in the dam by adding additional aerators or recycling the leachate through a pump. Relocation of aerators to dead zones.
		Algal bloom	Increase aeration in the dam by adding additional aerators.
Upper Dam	Excessive Odour	High ammonia concentration	Ensure that the aerators are operational. If not, a maintenance request should be raised. Adding three (3) packets of Biowish supplied by Integra Water.
		Anaerobic conditions	Ensure that the aerators are operational. If not, a maintenance request should be raised. Increase aeration in the dam by adding additional aerators or recycling the leachate through a pump. Relocation of aerators to dead zones. Add additional aerators if needed.
		Algal bloom	Increase aeration in the dam by adding additional aerators or recycling the leachate through a pump.
Storm water	Excessive Odour	High ammonia concentration	Ensure that the aerators are operational. If not, a maintenance request should be raised. Adding three (3) packets of Biowish supplied by Integra Water.
		Anaerobic conditions	Ensure that the aerators are operational. If not, a maintenance request should be raised.

			Increase aeration in the dam by adding additional aerators Relocation of aerators to dead zones.
Final Product Dam	Excessive Odour	High ammonia concentration	Ensure that the aerators are operational. If not, a maintenance request should be raised. Adding of three (3) packets of Biowish supplied by Integra Water.
		Deodoriser fences not operational	Ensure deodoriser fences are operational. Contact Integra Water to solve address and solve the issue.
		Anaerobic conditions	Ensure that the aerators are operational. If not, a maintenance request should be raised. Increase aeration in the dam by adding additional aerators. Relocation of aerators to dead zones.
		Algal bloom	Increase aeration in the dam by adding additional aerators.

APPENDIX 18 - Other Operating Conditions

O7.1 The licensee shall ensure that all above ground tanks and vats, including those treating, processing and storing wastewater, leachate and diesel must be surrounded by a bund with a capacity to contain 110% of the tanks within the bund. All bunding must be designed and installed in accordance with the requirements of all relevant Australian Standards and or the DECC's "Environment Protection Manual Technical Bulletin Bunding and Spill Management".

O7.2 The licensee shall ensure leachate levels in both the Liverpool line leachate dam and the leachate overflow dams are maintained below the design capacity as indicated on the freeboard markers.

O7.3 The licensee shall maintain the freeboard markers such that they indicate the volume at which leachate levels have reached design capacity within the Liverpool line leachate dam and the leachate overflow dam.

O7.4 All Waste Receival Hall doors must be closed except when a vehicle or person is passing through the doorway

Source: [Environment Protection Licence, 12889](#)

Licence version date: 28 May 2019

APPENDIX 19 - Odour Management

The licensee must ensure the facility is built and operated to minimise odours.

This must include:

- a) all composting must be undertaken within enclosed tunnels;
- b) composting must be undertaken for set periods of time and at certain temperatures, oxygen and
- c) moisture levels so that the composted material has been fermented properly and is adequately stabilised
- d) prior to any outdoor storage of the composted material (parameters to be agreed with the EPA);
- e) all exhaust air from the Receival Hall, Composting Tunnels and Drying Tunnels (also known as the Biocell Building) must pass through biofilters;
- f) the biofilters attached to the Receival Hall and Composting Tunnels must be of a deep bed design and have vented roofs;
- g) a system of three leachate ponds must be used on site, to minimise the surface area of odorous leachate.
- h) all composting is undertaken in accordance with the organic outputs derived from mixed waste order 2014.
- i) All emissions generated by the pre-refinery trommel must be diverted back into the SAWT Receival Hall and pass through the biofilters.

O5.3. Waste derived organic material must not be stored on the unsealed area. The "unsealed area" is defined as the area adjacent to the eastern concrete maturation pad and labelled "Re-graded Area" in "Appendix 1A: Maturation Pad Upgrades and Biocell" of Project Approval (consolidated version) determined by the NSW Government Department of Planning on 24 January 2014 (application number _06-0185) (the "Planning Approval").

O5.4 Organic material derived from Municipal Solid Waste ("MSW") must not be composted or matured outside.

O5.5 A maximum of 8 complete windrows and 2 partially formed windrows containing maturing organic material produced from Food and Garden Organics ("FGO") is permitted to be stored outside at any one time.

O5.6 All waste derived organic material stored outside must be placed:

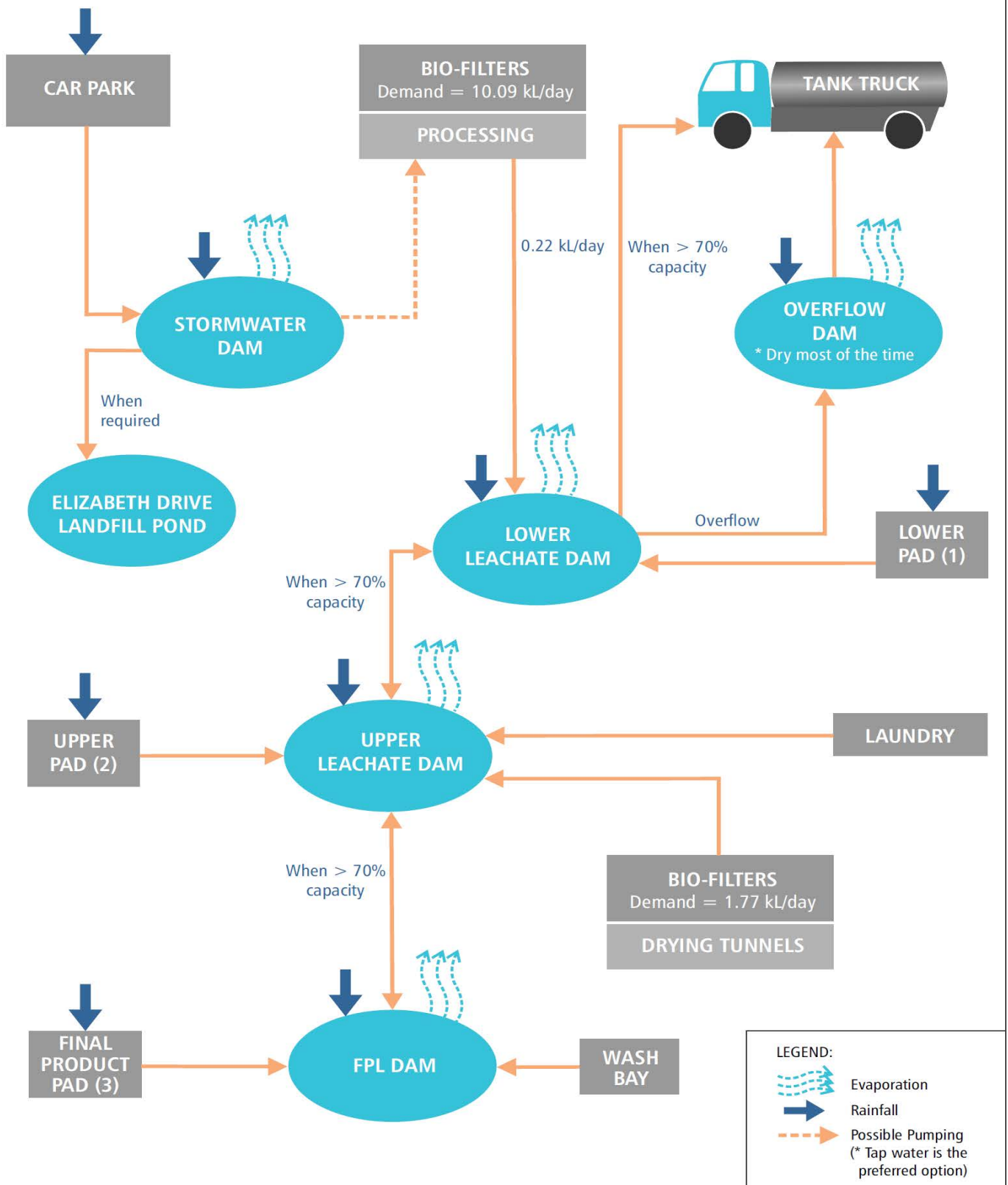
- a) in stockpiles no greater than 3 metres high; or
- b) in windrows being no larger than 5.2 metres in width, 60 metres in length and 3 metres high.

Note: 3-metre-high stockpiles are permitted on the Upper Pad only.

O5.7 3 (three) metre height stockpile markers must be maintained on the municipal solid waste ("MSW") maturation pad, the food and organics Waste ("FGO") maturation pad, and the final product pad.

O5.8 The Drying Tunnels (also known as the Biocell Building) located on the Upper Pad must be enclosed except during loading and unloading and all emissions treated through the attached biofilter.

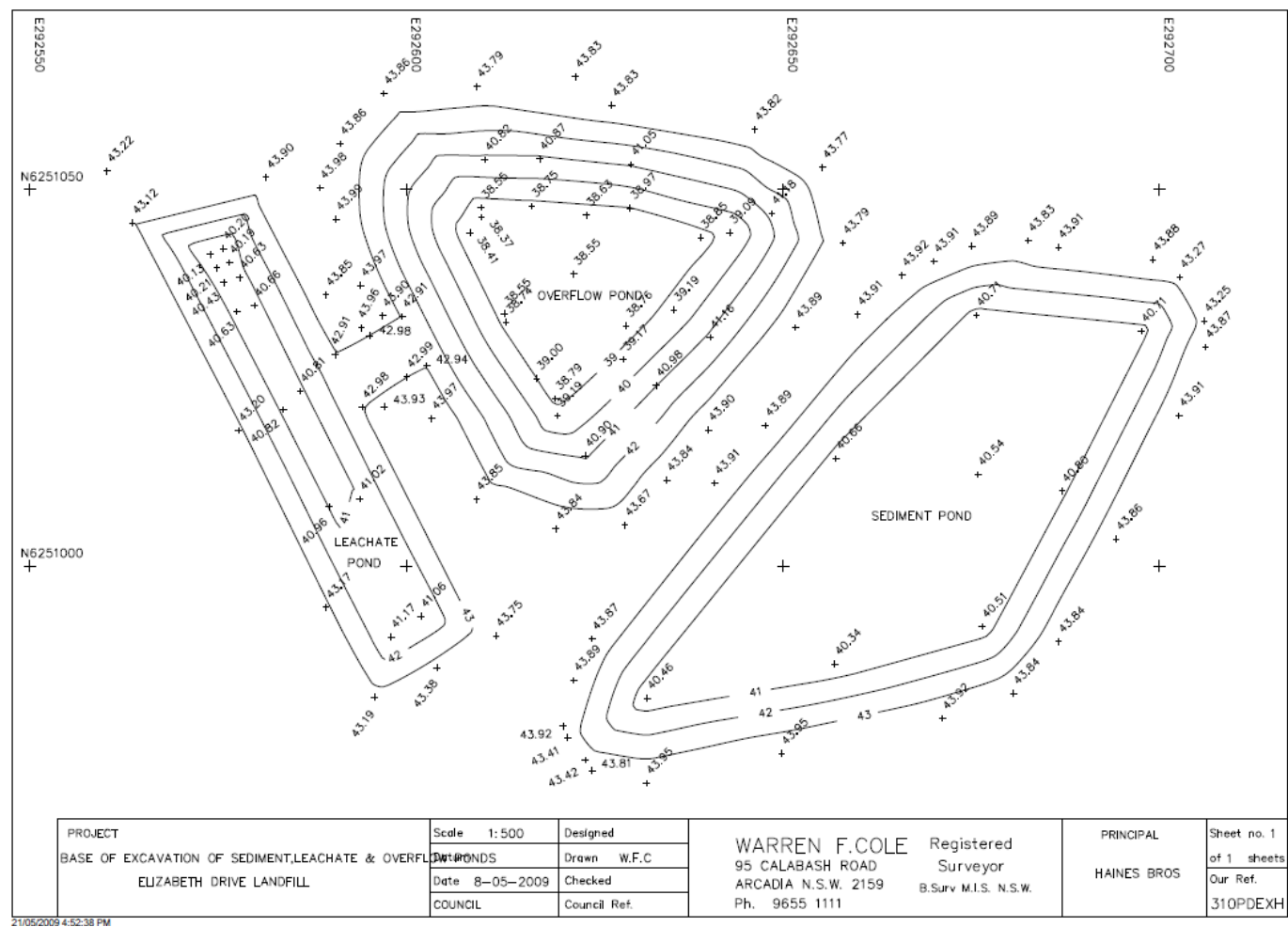
APPENDIX 20 - Water Balance Diagram



Construction Drawing (Construction Certificate)

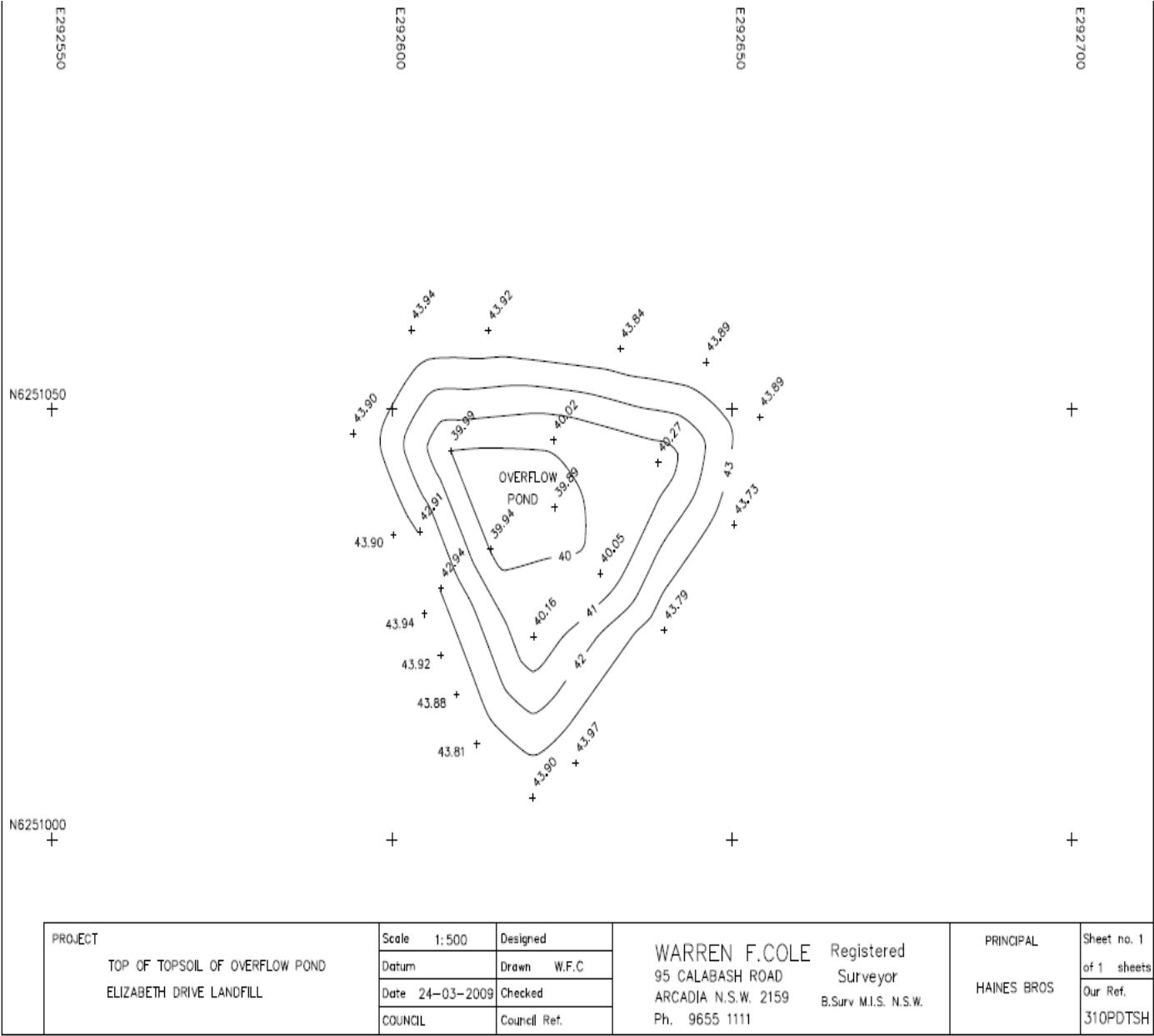


File 310PDEXH - the depth of the original excavations of the Leachate, Overflow and Sedimentation Ponds, to the north of the site.

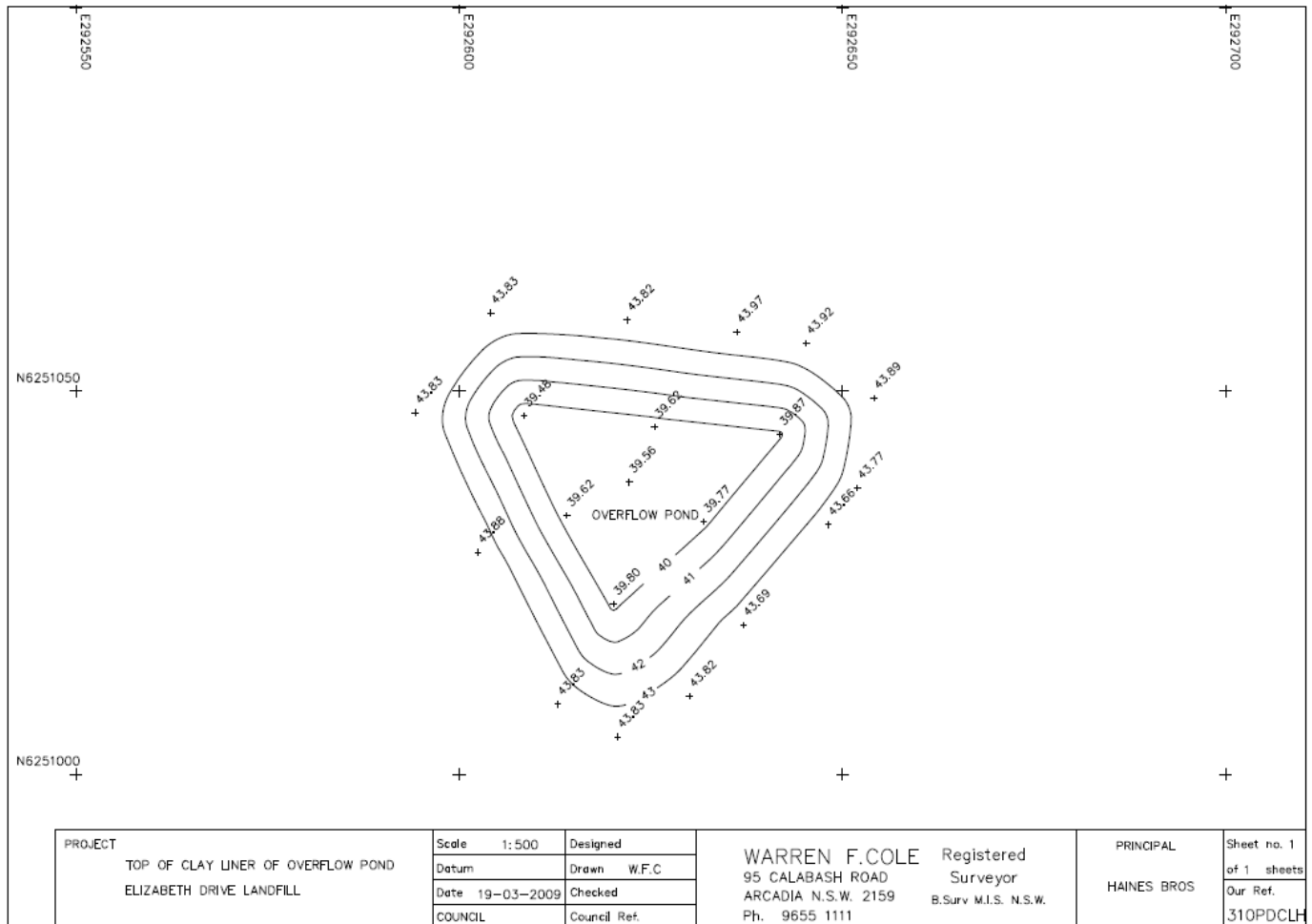


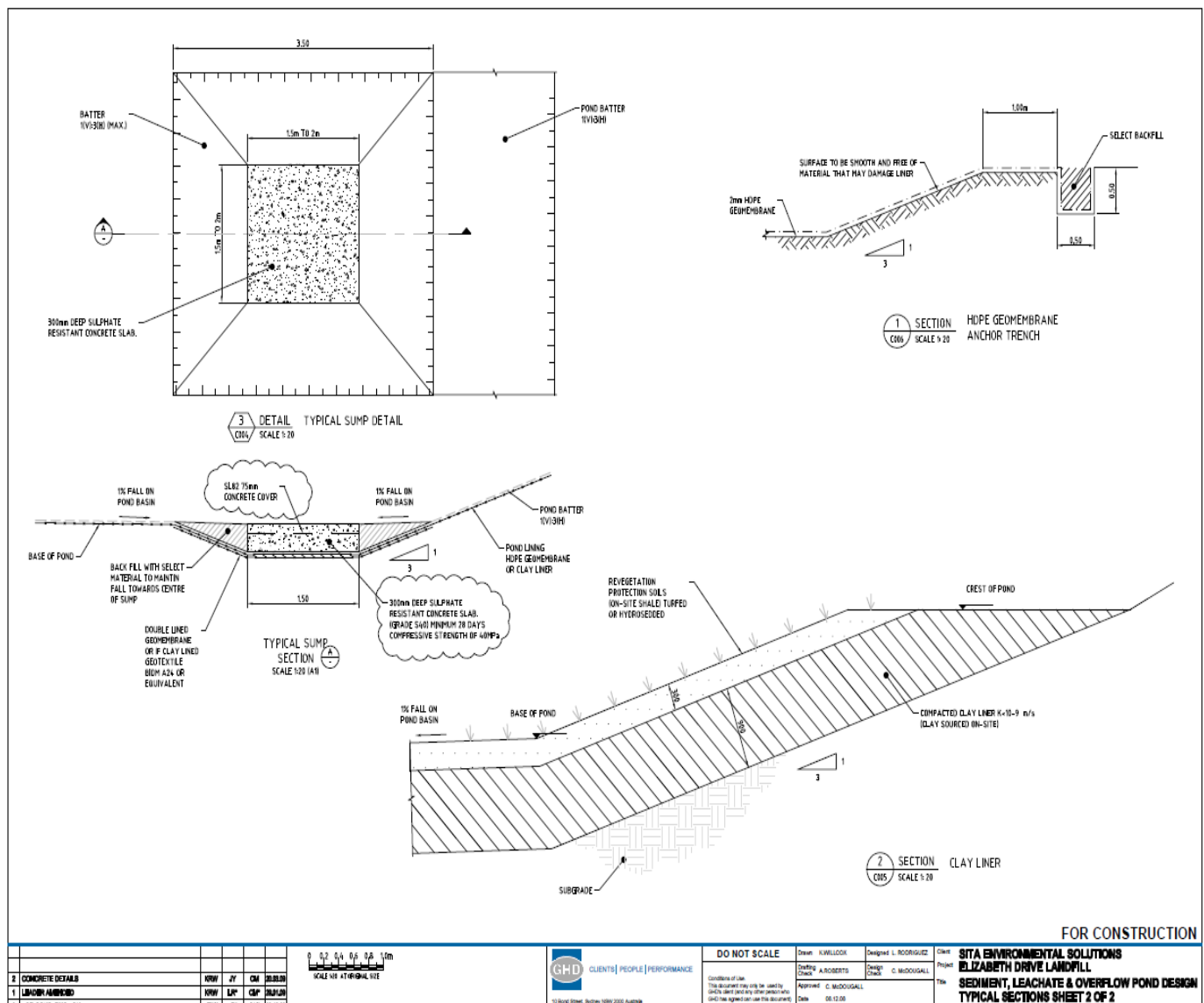
21/05/2009 4:52:38 PM

File 310PDTSH: The depth after installation of the clay liner in the Overflow Pond, the clay used for liner construction was from onsite and used as it typically displays high permeability.



File 310PDCLH: The depths after the installation of topsoil in the overflow pond





Testrite ABN 92 114 364 046
Ph. 9736 3922 Fax: 9743 5860

TESTRITE
CONSTRUCTION MATERIALS TESTING

4 Rothwell Ave. (P.O. Box 329)
CONCORD WEST NSW 2138

**REPORT ON COMPACTION
CONTROL TESTS**

REPORT NO : 33044

PAGE NO : 1 of 3

TOTAL TESTS 10

CLIENT : SITA AUSTRALIA PTY. LTD.
ADDRESS : P.O. BOX 50
KEMPS CREEK NSW 2171



This document is issued
in accordance with
NATA's accreditation
requirements.
Laboratory Accreditation
No. 844

PROJECT : ELIZABETH DRIVE LANDFILL
KEMPS CREEK.

DATE TESTED : 13-Mar-09

TEST NUMBER	1	2	3	4	5
RETEST OF NO.	--	--	--	--	--
TIME TESTED	10.45	10.55	11.05	11.15	11.25
ELEMENT TESTED	LEACHATE SETTLING POND. EAST WALL.	LEACHATE SETTLING POND. EAST WALL.	LEACHATE SETTLING POND. EAST WALL.	LEACHATE SETTLING POND. NORTH WALL.	LEACHATE SETTLING POND. NORTH WALL.
LOCATION	10m North from South Wall. O/S: 4m off East Wall.	20m North from South Wall. O/S: 4m off East Wall.	45m North from South Wall. O/S: 5m off East Wall.	12m West of East Wall. O/S: 6m South of North Wall 1.	16m West of East Wall. O/S: 6m South of North Wall 1.
LEVEL AT TOP OF HOLE	Layer 1.	Layer 1.	Layer 1.	Layer 1.	Layer 1.
MATERIAL DESCRIPTION	Gravelly Clay.	Gravelly Clay.	Gravelly Clay.	Gravelly Clay.	Gravelly Clay.
LAYER THICKNESS (mm)	300+	300+	300+	300+	300+
PROBE DEPTH (mm)	300	300	300	300	300
FIELD DRY DENSITY (t/m ³)	1.93	1.95	1.96	1.98	1.92
FIELD MOISTURE CONTENT (%)	14.5	14.5	14.5	14.5	16.0
OVERSIZE CONTENT, WET BASIS (%)	NIL	NIL	NIL	NIL	NIL
OVERSIZE CONT., OVEN DRY BASIS (%)	NIL	NIL	NIL	NIL	NIL
OVERSIZE SCREENING SIEVE (mm)	19.0	19.0	19.0	19.0	19.0
MAXIMUM DRY DENSITY (t/m ³)	1.86 Standard	1.87 Standard	1.89 Standard	1.90 Standard	1.87 Standard
ADJUSTED MAX. DRY DENSITY (t/m ³)	--	--	--	--	--
OPTIMUM. MOIST. CONTENT (%)	15.0 Standard	16.5 Standard	14.0 Standard	14.5 Standard	18.0 Standard
ADJUSTED OPTIMUM MOIST. CONT. (%)	--	--	--	--	--
MAXIMUM VIBRATED DENSITY (t/m ³)	--	--	--	--	--
MINIMUM DENSITY (t/m ³)	--	--	--	--	--
MAX. / MIN. DEN. MOULD VOLUME (t)	--	--	--	--	--
COMPACTION NUMBER	1	2	3	4	5
COMPACTION MATERIAL SOURCE	DENSITY HOLE	DENSITY HOLE	DENSITY HOLE	DENSITY HOLE	DENSITY HOLE
DENSITY RATIO (%)	103.5	104.0	104.0	104.5	102.5
MOISTURE VARIATION FROM O.M.C. (%)	0	2.0 dry	0	0	2.0 dry
MOISTURE RATIO (%)	98.5	88.0	100.5	98.5	90.0
DENSITY INDEX (%)	--	--	--	--	--

STANDARDS AS1289

FIELD DENSITY - 5.8.1, MOISTURE CONTENT - 2.1.1,

DRY DENSITY / MOISTURE CONT. RELATIONSHIP: STANDARD - 5.1.1, MODIFIED - 5.2.1, MAXIMUM & MINIMUM DENSITY - 5.5.1

DENSITY RATIO, MOISTURE VARIATION, MOISTURE RATIO - 5.4.1, DENSITY INDEX - 5.6.1

SIGNED: J. T. Purcell

THIS REPORT WAS PRODUCED UNDER CONDITIONS SET OUT IN 'BASIS OF TESTING 33044.

NAME OF APPROVED SIGNATORY: J. PURCELL

Date: 17.3.2009

THIS REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL.



Certificate of Conformance

20th May 2014

Project Name: SITA EDL, Leachate Pond for Final Product Pad
Project Code: E 0031

Supply and Installation of 2.0mm Smooth HDPE Geomembrane

Eco Line Solutions Pty Ltd is an experienced supplier and installer of Geomembranes and Geosynthetics.

At time of installation the liner supplied for the above-mentioned project complied with GRI GM13 2.0mm smooth HDPE liner. Refer to attached MQC for those rolls installed onsite #803549905 and #803549909.

The installation was completed complying with industry best practices.

If any further information is required on this project, feel free to contact the undersigned.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Andrew Hawkins'.

Andrew Hawkins



Eco Line Solutions Pty Ltd
Office; Suite 203, 486 Pacific Highway
St Leonards, NSW, 2065
Phone – (02) 8068 0366 Mob. – 0448 394 816
ahawkins@ecolinesolutions.com

APPENDIX K LABORATORY REPORTS

SUEZ Recycling and Recovery
Level 3, 3 Rider Boulevard
Rhodes
NSW 2138



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Naureen Akhter**

Report **734266-W**
Project name **WET WEATHER DISCHARGE**
Received Date **Jul 27, 2020**

Client Sample ID			SP 1 DISCHARGE	SP 1 OVERFLOW
Sample Matrix			Water	Water
Eurofins Sample No.			S20-JI44567	S20-JI44568
Date Sampled			Jul 27, 2020	Jul 27, 2020
Test/Reference	LOR	Unit		
Ammonia (as N)	0.01	mg/L	0.61	0.19
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	6.8	< 5
Conductivity (at 25°C)	10	uS/cm	250	1100
Oil & Grease (HEM)	10	mg/L	< 10	< 10
pH (at 25°C)	0.1	pH Units	7.3	7.8
Total Organic Carbon	5	mg/L	< 25	26
Total Suspended Solids Dried at 103–105°C	5	mg/L	31	24

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Ammonia (as N) - Method: LTM-INO-4200 Ammonia by Discrete Analyser	Sydney	Jul 28, 2020	28 Days
Biochemical Oxygen Demand (BOD-5 Day) - Method: LTM-INO-4010 Biochemical Oxygen Demand (BOD5) in Water	Melbourne	Jul 29, 2020	2 Days
Conductivity (at 25°C) - Method: LTM-INO-4030 Conductivity	Sydney	Jul 28, 2020	28 Days
Oil & Grease (HEM) - Method: LTM-INO-4180 Oil and Grease (APHA 5520B)	Melbourne	Jul 29, 2020	28 Days
pH (at 25°C) - Method: LTM-GEN-7090 pH in water by ISE	Sydney	Jul 28, 2020	1 Days
Total Organic Carbon - Method: LTM-INO-4060 Total Organic Carbon in water and soil	Melbourne	Jul 29, 2020	28 Days
Total Suspended Solids Dried at 103–105°C - Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry	Sydney	Jul 28, 2020	7 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au e-mail: EnviroSales@eurofins.com

Company Name: SUEZ Recycling and Recovery NSW
Address: Level 3, 3 Rider Boulevard
Rhodes
NSW 2138
Project Name: WET WEATHER DISCHARGE

Order No.:
Report #: 734266
Phone: 02 9826 3159
Fax:

Received: Jul 27, 2020 6:07 PM
Due: Aug 3, 2020
Priority: 5 Day
Contact Name: Naureen Akhter

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Ammonia (as N)	Biochemical Oxygen Demand (BOD-5 Day)	Conductivity (at 25°C)	Oil & Grease (HEM)	pH (at 25°C)	Total Organic Carbon	Total Suspended Solids Dried at 103–105°C
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X		X	
Sydney Laboratory - NATA Site # 18217						X		X		X		X
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Newcastle Laboratory												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	SP 1 DISCHARGE	Jul 27, 2020	10:20AM	Water	S20-JI44567	X	X	X	X	X	X	X
2	SP 1 OVERFLOW	Jul 27, 2020	10:40AM	Water	S20-JI44568	X	X	X	X	X	X	X
Test Counts						2	2	2	2	2	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Conductivity (at 25°C)				uS/cm	< 10		10	Pass	
Oil & Grease (HEM)				mg/L	< 10		10	Pass	
Total Suspended Solids Dried at 103–105°C				mg/L	< 5		5	Pass	
LCS - % Recovery									
Conductivity (at 25°C)				%	86		70-130	Pass	
Total Suspended Solids Dried at 103–105°C				%	92		70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
					Result 1				
Total Organic Carbon	S20-JI47621	NCP		%	72		70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
					Result 1	Result 2	RPD		
Ammonia (as N)	S20-JI47663	NCP		mg/L	2.6	2.7	3.0	30%	Pass
Biochemical Oxygen Demand (BOD-5 Day)	M20-JI48479	NCP		mg/L	1200	1600	27	30%	Pass
Conductivity (at 25°C)	S20-JI44567	CP		uS/cm	250	220	10	30%	Pass
Oil & Grease (HEM)	S20-JI47663	NCP		mg/L	< 10	< 10	<1	30%	Pass
Total Organic Carbon	B20-JI47591	NCP		mg/L	55	55	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	S20-JI47384	NCP		mg/L	40	42	4.0	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CERTIFICATE OF ANALYSIS

11/02/2020

Client Details:

SAWT Advanced Resource Recovery Facility
1725 Elizabeth Drive
Kemps Creek NSW 2178

Laboratory Details:

SAWT Laboratory
SUEZ Recycling & Recovery
1725 Elizabeth Drive
Kemps Creek NSW 2178
Australia

Attention:

Albert Chen

Job Reference :

20/0150

Sample Login Details:

Client Reference: SAWT Advanced Resource Recovery Facility
No of Samples: 2
Date Sample Received: 10/02/2020

Analysis Details:

- The results apply to the samples as received unless otherwise stated in the report.
- Samples will be disposed after 7 days from issuing final report unless prior arrangements are made.
- This document is not to be reproduced except in full without written approval of the laboratory.

Report Details:

Date Report Issued: 11/02/2020

This report supersedes any previous report(s) with this reference.

Results Approved By:

Colin Chen
Laboratory Supervisor

Job Reference: 20/0150
Client Reference: SAWT Advanced Resource Recovery Facility

Test Description	Units	METHODREFERENCE	20/0150-1 200210- EDLDischarge-01	20/0150-2 200210-SWDDischarge- 01
pH in Water		APHA-4500 H+B	7.7	7.2
Ammonia-NH3-N	mg/L	USEPA-350.3	<0.8	1.1
Total Suspended Solids	mg/L	APHA-2540 D	124	61

Note: * NATA Accreditation does not cover the performance of this service.

CERTIFICATE OF ANALYSIS

Work Order	: ES2024680	Page	: 1 of 3
Amendment	: 1		
Client	: SUEZ RECYCLING & RECOVERY PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR ISAAC TSUI	Contact	: Customer Services ES
Address	: 1725 ELIZABETH DRIVE KEMPS CREEK NSW, AUSTRALIA 2178	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4774 8866	Telephone	: +61-2-8784 8555
Project	: ---	Date Samples Received	: 17-Jul-2020 14:00
Order number	: 4500231509	Date Analysis Commenced	: 17-Jul-2020
C-O-C number	: ---	Issue Date	: 03-Aug-2020 13:45
Sampler	: ---		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ashesh Patel	Senior Chemist	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- TSS by EA025H may bias low due to fine particulate matter passing through the prescribed filter.
- Amendment (29/07/2020): This report has been amended and re-released to allow the reporting of additional analytical data.
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				EPA Compliance Sample Point 3	----	----	----	----
Client sampling date / time				17-Jul-2020 11:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2024680-001	-----	-----	-----	-----
Result				----	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	8.11	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2920	----	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)								
Total Dissolved Solids (Calc.)	----	1	mg/L	1900	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	71	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	3.60	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	144	----	----	----	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	6	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	386	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	13	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: ES2024681	Page	: 1 of 3
Amendment	: 1		
Client	: SUEZ RECYCLING & RECOVERY PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR ISAAC TSUI	Contact	: Customer Services ES
Address	: 1725 ELIZABETH DRIVE KEMPS CREEK NSW, AUSTRALIA 2178	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4774 8866	Telephone	: +61-2-8784 8555
Project	: ---	Date Samples Received	: 17-Jul-2020 14:00
Order number	: 4500231509	Date Analysis Commenced	: 17-Jul-2020
C-O-C number	: ---	Issue Date	: 03-Aug-2020 13:46
Sampler	: ---		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ashesh Patel	Senior Chemist	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- TSS by EA025H may bias low due to fine particulate matter passing through the prescribed filter.
- Amendment (29/07/2020): This report has been amended and re-released to allow the reporting of additional analytical data.
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	EPA Compliance Sample Point 4	----	----	----	----
Client sampling date / time					17-Jul-2020 11:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2024681-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		8.73	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		2120	----	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)									
Total Dissolved Solids (Calc.)	----	1	mg/L		1380	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		102	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.10	----	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		100	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		7	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	----	10	mg/L		292	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		25	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: ES2024682	Page	: 1 of 3
Amendment	: 1		
Client	: SUEZ RECYCLING & RECOVERY PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR ISAAC TSUI	Contact	: Customer Services ES
Address	: 1725 ELIZABETH DRIVE KEMPS CREEK NSW, AUSTRALIA 2178	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4774 8866	Telephone	: +61-2-8784 8555
Project	: ---	Date Samples Received	: 17-Jul-2020 14:00
Order number	: 4500231509	Date Analysis Commenced	: 17-Jul-2020
C-O-C number	: ---	Issue Date	: 03-Aug-2020 13:46
Sampler	: ---		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results

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Signatories

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<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Senior Chemist	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- TSS by EA025H may bias low due to fine particulate matter passing through the prescribed filter.
- Amendment (29/07/2020): This report has been amended and re-released to allow the reporting of additional analytical data.
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	EPA Compliance Sample Point 2	----	----	----	----
Client sampling date / time					17-Jul-2020 11:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2024682-001	Result	-----	-----	-----	-----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit	6.02	----	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm	3740	----	----	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)									
Total Dissolved Solids (Calc.)	----	1	mg/L	2430	----	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L	253	----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	5.70	----	----	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	106	----	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L	<5	----	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	----	10	mg/L	414	----	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L	36	----	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order : **ES2024684**
Client : **SUEZ RECYCLING & RECOVERY PTY LTD**
Contact : MR ISAAC TSUI
Address : 1725 ELIZABETH DRIVE
 KEMPS CREEK NSW, AUSTRALIA 2178
Telephone : +61 02 4774 8866
Project : ----
Order number : 4500231509
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/222
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 2
Laboratory : Environmental Division Sydney
Contact : Customer Services ES
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 17-Jul-2020 14:00
Date Analysis Commenced : 17-Jul-2020
Issue Date : 24-Jul-2020 12:47



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Signatories

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Ashesh Patel	Senior Chemist	Sydney Inorganics, Smithfield, NSW



General Comments

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Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 Ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

- TSS by EA025H may bias low due to fine particulate matter passing through the prescribed filter.
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.

Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				EPA Compliance Sample Point 1	----	----	----	----
Client sampling date / time				17-Jul-2020 11:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2024684-001	-----	-----	-----	-----
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	8.23	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	681	----	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)								
Total Dissolved Solids (Calc.)	----	1	mg/L	443	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	129	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.17	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	26	----	----	----	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	3	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: ES2024685	Page	: 1 of 3
Amendment	: 1		
Client	: SUEZ RECYCLING & RECOVERY PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR ISAAC TSUI	Contact	: Customer Services ES
Address	: 1725 ELIZABETH DRIVE KEMPS CREEK NSW, AUSTRALIA 2178	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4774 8866	Telephone	: +61-2-8784 8555
Project	: ---	Date Samples Received	: 17-Jul-2020 14:00
Order number	: 4500213509	Date Analysis Commenced	: 17-Jul-2020
C-O-C number	: ---	Issue Date	: 03-Aug-2020 13:46
Sampler	: ---		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ashesh Patel	Senior Chemist	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- TSS by EA025H may bias low due to fine particulate matter passing through the prescribed filter.
- Amendment (29/07/2020): This report has been amended and re-released to allow the reporting of additional analytical data.
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	EPA Compliance Sample Point 6	----	----	----	----
Client sampling date / time					17-Jul-2020 11:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2024685-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		8.53	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		5920	----	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)									
Total Dissolved Solids (Calc.)	----	1	mg/L		3850	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		196	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.21	----	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		146	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	----	10	mg/L		512	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		4	----	----	----	----

CERTIFICATE OF ANALYSIS

11/02/2020

Client Details:

SAWT Advanced Resource Recovery Facility
1725 Elizabeth Drive
Kemps Creek NSW 2178

Laboratory Details:

SAWT Laboratory
SUEZ Recycling & Recovery
1725 Elizabeth Drive
Kemps Creek NSW 2178
Australia

Attention:

Albert Chen

Job Reference :

20/0159

Sample Login Details:

Client Reference: SAWT Advanced Resource Recovery Facility
No of Samples: 1
Date Sample Received: 11/02/2020

Analysis Details:

- The results apply to the samples as received unless otherwise stated in the report.
- Samples will be disposed after 7 days from issuing final report unless prior arrangements are made.
- This document is not to be reproduced except in full without written approval of the laboratory.

Report Details:

Date Report Issued: 11/02/2020

This report supersedes any previous report(s) with this reference.

Results Approved By:

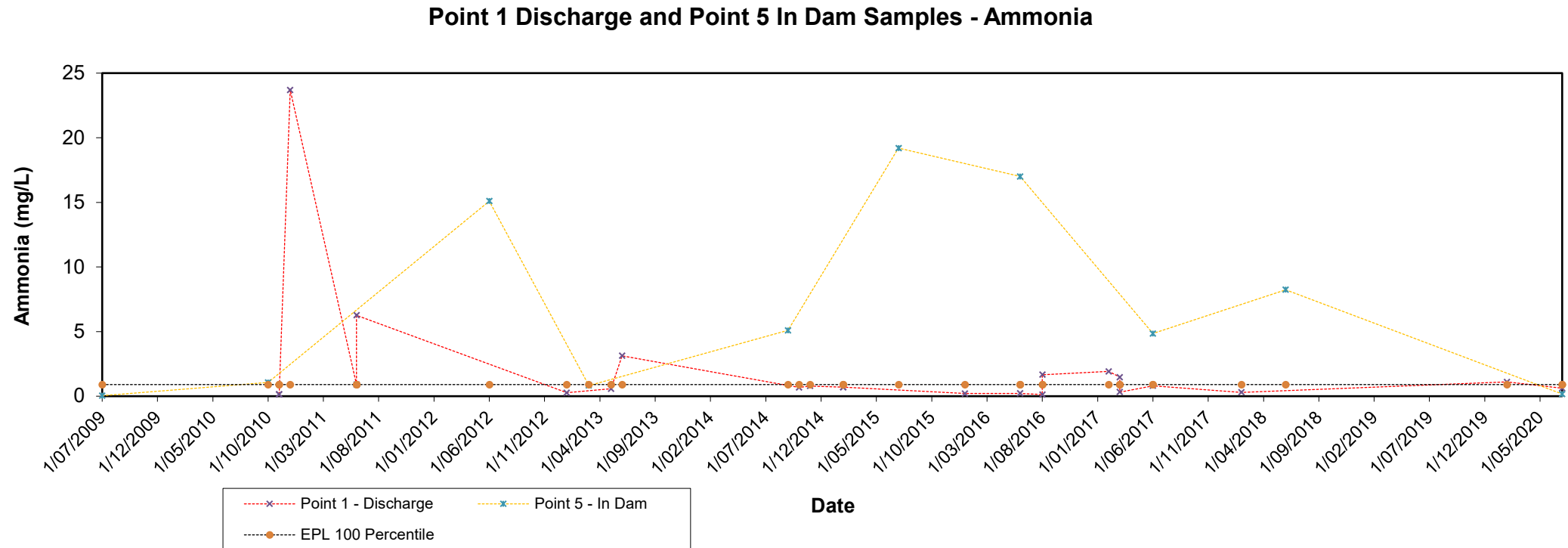
Colin Chen
Laboratory Supervisor

Job Reference: 20/0159
Client Reference: SAWT Advanced Resource Recovery Facility

Test Description	Units	METHODREFERENCE	20/0159-1 200211-LOD-01
pH in Water		APHA-4500 H+B	7.5
Ammonia-NH3-N	mg/L	USEPA-350.3	7.6
Total Suspended Solids	mg/L	APHA-2540 D	84

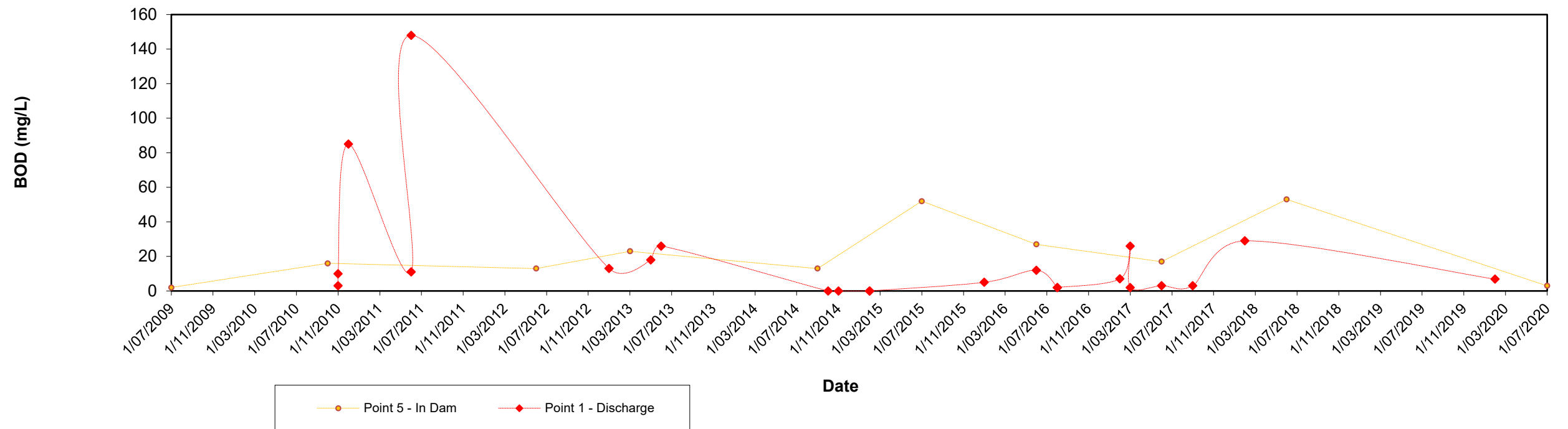
Note: * NATA Accreditation does not cover the performance of this service.

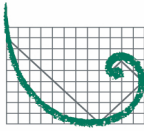
APPENDIX L TREND GRAPHS



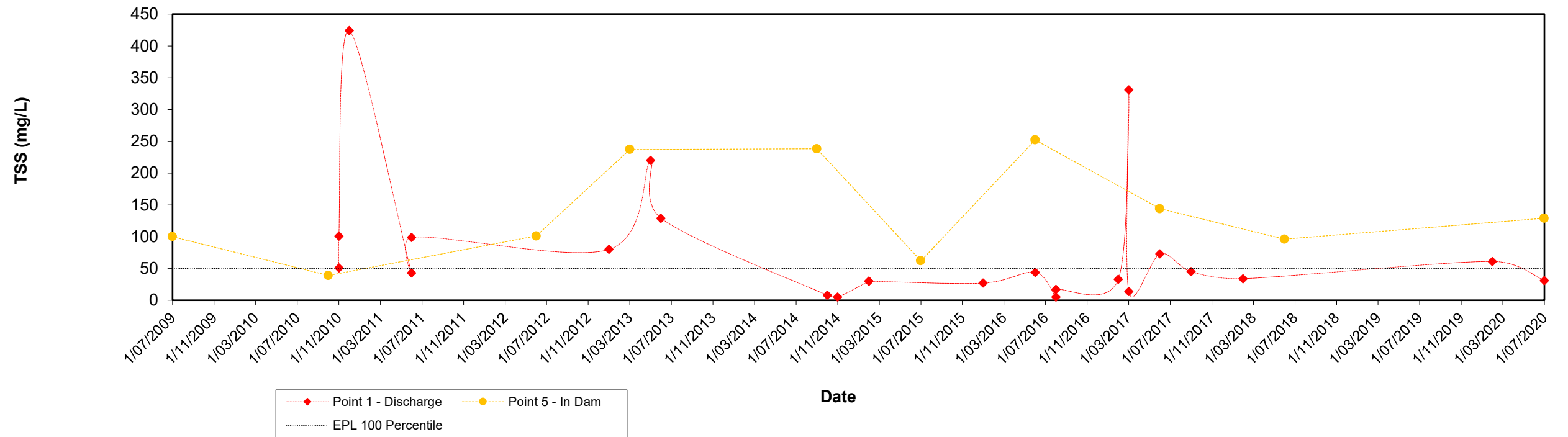


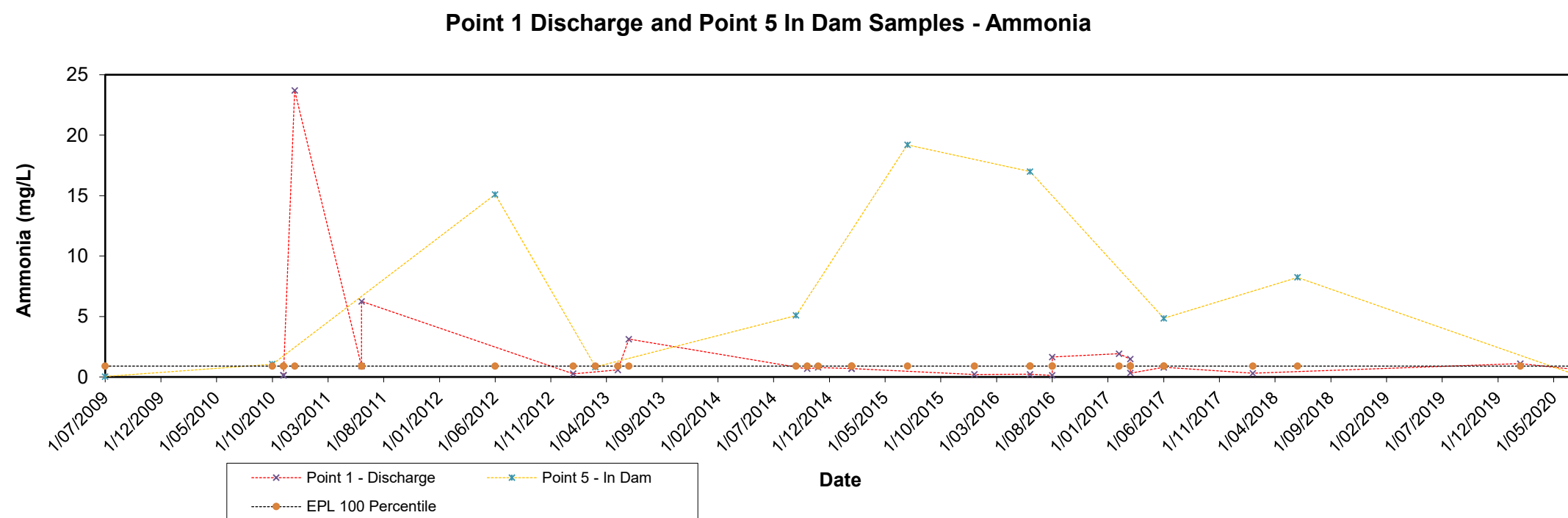
Point 1 Discharge and Point 5 In Dam Samples - BOD

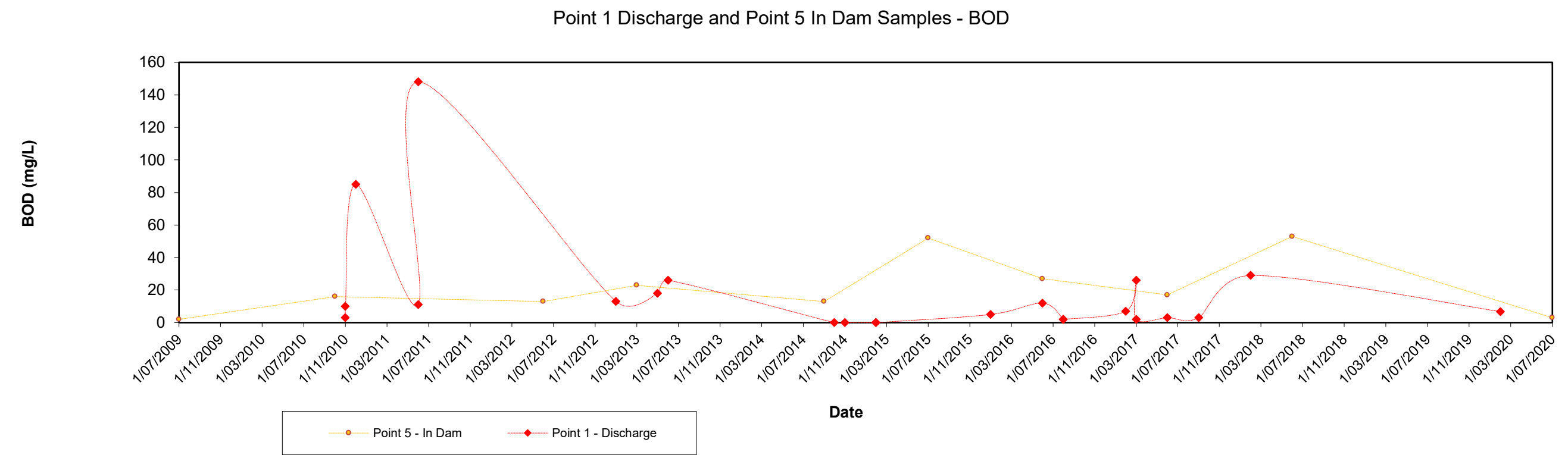


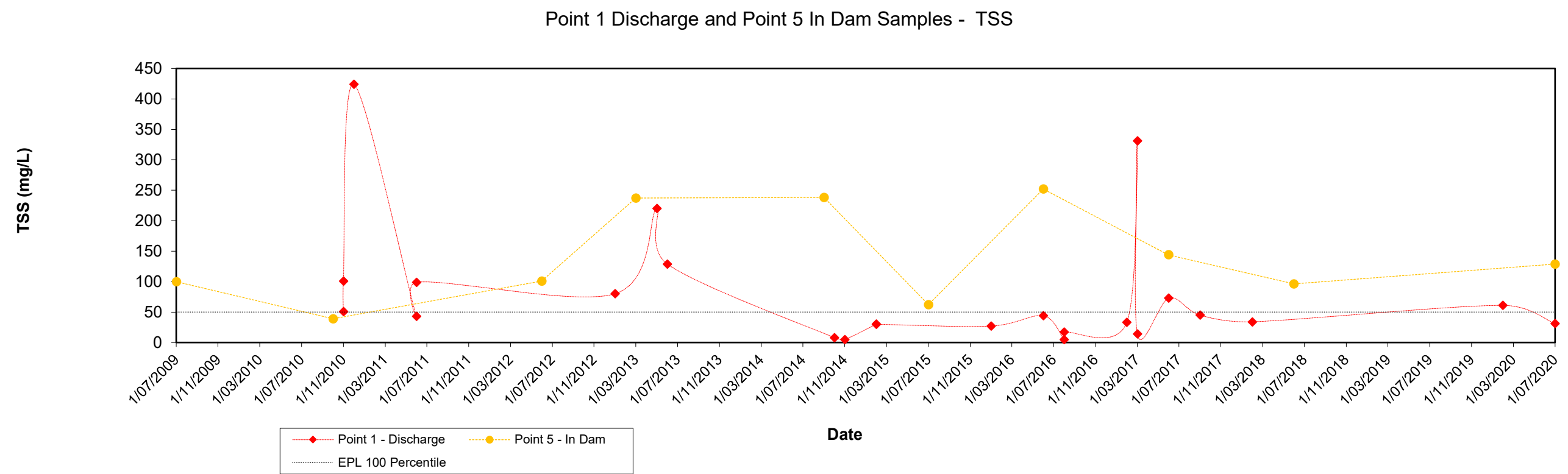


Point 1 Discharge and Point 5 In Dam Samples - TSS









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