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1. INTRODUCTION

1.1. *Introduction*

The Clyde Waste Transfer Terminal (Special Provisions) Act 2003 (the Clyde Act) grants Development Consent with 128 Conditions of Consent (COCs) stipulating the requirements for the operation of the Clyde Transfer Terminal (the Terminal) at the Clyde Marshalling Yards in Auburn. A site location plan is provided in **Appendix A**.

In accordance with Section 78A of the Environmental Planning and Assessment Act (EP&A), a Development Application (DA) was submitted to the Department of Planning (DOP), supported with an Environmental Impact Statement (EIS) prepared for public exhibition (between 30 August 2001 and 22 October 2001) allowing members of the community, interest groups and government agencies to view and make written submissions on the proposed development. Following the exhibition period, the issues raised by the public and stakeholders were considered and a number of improvements to the design were made. The modifications to the design and associated improvements were outlined in the Supplementary Environmental Impact Statement (SEIS) (exhibited between 04 February 2002 and 01 March 2002).

Under section 91 of the EP&A Amendment Act the Terminal is also classified as an 'Integrated Development' because operational licensing is required under the Protection of the Environment Operations Act, 1997 (POEO) and the Roads Act, 1993. The licensing requirements are detailed in Section 3 of this report. The operation of the Terminal includes:

- Seven (7) days a week, 24 hour operation, entry to the site will be via a left turn only for both in and out movements at Parramatta Road, including the use of weighbridges;
- Receiving of 400,000 tonnes per annum of putrescible waste onto the floor of the Transfer Terminal building; and
- Loading of waste into the compactors via a chute, to form a "slug" of compacted waste. The "slug" will be pushed into a modified 40 foot shipping container;



Other activities related to, but not operated as part of the Terminal include:

- Loading of containers onto trains for transport to the Woodlawn Intermodal Facility;
- Unloading of containers at the Intermodal Facility and transporting them by road to the Woodlawn Bioreactor site, for disposal; and
- Loading of empty containers back onto the train to return to the Terminal for reloading.

This Operation Environmental Management Plan (OEMP) has been prepared in conjunction with the Environmental Protection Licence (EPL) to fulfil the requirements of the COCs relating to the operation of the Terminal. The EPL and COCs are provided in this OEMP as **Appendix B** and **Appendix C** respectively. In accordance with Condition 17 of the COCs a Pre-Operation Compliance Report that details the compliance with each COC relating to the operational activities of the Terminal is provided in **Appendix D**. Environmental monitoring at the Terminal is conducted in accordance with the Environmental Monitoring Program, which has been prepared to satisfy the requirements of the EPL and COCs, and is provided in **Appendix E**. In addition, the OEMP is supported with a number of site specific management and monitoring plans which are presented as separate documents in **Appendix F**.

To further enhance the operation and performance of the Terminal, upgrade works to the existing forced extraction ventilation system and hardstand have been carried out since the previous version of the OEMP, details of which are documented in the relevant subsequent sections and the associated Construction Environmental Management Plans (CEMPs). Accordingly, a number of the original Conditions of Consent pertaining to air and noise quality management have since been modified.

1.2. Related Documents

- “Clyde Transfer Terminal Environmental Impact Statement”, Maunsell McIntyre (August 2001);
- “Clyde Transfer Terminal Supplementary Environmental Impact Statement”, Maunsell McIntyre (December 2001);



- “Statement of Environmental Effects – Modification to the Terminal Building Forced Ventilation System Clyde Waste Transfer Station”, Environ (October 2006)
- “Clyde Transfer Terminal Construction Environmental Management Plan – Odour Control System Modification”, Veolia Environmental Services (October 2007);
- “Clyde Transfer Terminal Operation Environmental Management Plan”, Veolia Environmental Services (February 2008);
- “Clyde Transfer Terminal Construction Environmental Management Plan – Hardstand Upgrade and Extension”, Veolia Environmental Services (December 2008)

1.3. Conditions of Consent

39. *The Applicant shall prepare an EMP (Operation Stage) which is specific to the development.*
40. *The EMP (Operation Stage) shall be prepared in accordance with the Conditions of this Consent, all relevant Acts and Regulations and accepted best practice management procedures.*
41. *The EMP (Operation Stage) shall include, but is not necessarily limited to, the following plans:*
 - (a) Waste Management Plan*
 - (b) Odour Management Plan*
 - (c) Dust Management Plan*
 - (d) Traffic Management Plan (includes monitoring and enforcement of “left turn only”)*
 - (e) Vermin and Pest Control Plan (includes housekeeping measures)*
 - (f) Stormwater Management Plan*
 - (g) Site Contamination Management Plan*
 - (h) Incident Response Plan*
 - (i) Noise Management Plan*

Prior to commencement of operation of the odour control system subject to MOD-133-11-2006, the Applicant shall review the EMP (Operation) in order to update procedures, measures and monitoring requirements applicable to the modified odour control system. The revision of the EMP shall cover the relevant plans (a) – (i) outlined above, including (but not necessarily limited to) the Odour Management Plan, the Dust Management Plan and the Noise Management Plan. The revised EMP (Operation) shall be submitted to the DEC and the Director-General. The Director-



General's approval of the revised EMP (Operation) shall be obtained prior to the commencement of operation of the odour control system.

- 42. The Applicant shall address the elements outlined in Attachment 1 of this Consent when preparing the EMP (Operation Stage).*
- 43. The Applicant must not accept any uncontainerised waste at the premises until the EMP (Operation Stage) has been approved by the Director-General.*
- 44. The Applicant shall certify the EMP (Operation Stage) as being in accordance with the Conditions of Consent prior to seeking approval of the Director-General.*
- 45. All site personnel (including contractors and subcontractors) during the operational stage must be inducted and trained to ensure compliance with the approved EMP (Operation Stage).*
- 46. The approved EMP (Operation Stage) shall be made publicly available on request to the Applicant.*

1.4. Objectives

The objectives of the OEMP are to:

- Provide a working environmental management tool for the operation of the site including commissioning and operation of the modified odour control system;
- Provide a means of identifying and concentrating on the key environmental, operational issues;
- Provide a summary of monitoring and reporting regimes;
- Provide a guide for the interaction with relevant Government authorities, and other stakeholders including the members of the community; and
- Comply with the Conditions of Consent relating to the operation of the development and the odour control system modification.

This report is a working document and the management strategies outlined herein are intended for review.



2. SITE OVERVIEW

2.1. *Property Description*

The Terminal is located within a portion of the Clyde Rail Yard, at 322 Parramatta Road, and forms part of Lot 201 of DP10076683 in the Auburn Council area. The site layout and location plan is provided in **Appendix A**.

Bounded by Duck River to the west, the main Western Railway Line to the South, Parramatta Road to the North and Rawson Street to the East, the site was previously used as a freight container handling and storage facility, with surrounding land uses comprised of factory, warehouse and bulk storage areas.

Pacific National (PN), which formed when FreightCorp and National Rail were jointly bought by Toll and Lang, owns the site and State Rail Authority (SRA) owns the access way to the site, to which PN have a right of carriageway, allowing them access to their land which includes the site of the Terminal.

Veolia Environmental Services (Australia) Pty Ltd (VES) operates the road/rail Terminal and has a long-term agreement with PN, which incorporates the leasing of land for the Terminal.

2.2. *Transfer Terminal Description*

The Terminal consists of the following:

2.2.1. **Transfer Building**

The size of the tipping floor was determined by the average weekday loadings, taking into account additional spatial requirements for an emergency or breakdown situation and is capable of storing a full day's waste. The Waste Management Plan (WMP) provided in **Appendix F1** details the waste acceptance and processing procedures employed at the Terminal.



2.2.2. Office and Amenities

A re-locatable building is positioned along the west side of the transfer building to house administration offices and staff amenities.

2.2.3. Entrance/Exit Road

The entrance to the site is directly off Parramatta Road via a slip lane. All traffic is restricted to a left in and left out turn at Parramatta Road with use of the existing access roads once within the Clyde Rail Yard. The Traffic Management Plan (TMP) provided in **Appendix F4** outlines the traffic management procedures employed at the site.

All roads within the Terminal are sealed.

2.2.4. Weighbridge Office and Weighbridge

A weighbridge office and dual weighbridge is located adjacent to Track 20 approximately 250 m from Parramatta Road and approximately 45 m from Duck River. All vehicles entry and exiting the terminal building are weighed.

2.2.5. Stormwater Oil/Silt Separator and Retention Pond

A stormwater oil/silt separator and retention pond ensures that stormwater generated from the Terminal development is collected, treated and discharged in a controlled manner into Duck River via a culvert and headwall.

2.2.6. Car Parking Area

A total of 15 staff and visitor car parking spaces are provided within the site. This car parking accommodates up to six workers on each shift, two visitors and one disabled space.

2.3. *Bio Physical Environmental Characteristics*

Detailed below is a description of the historic and existing biophysical characteristics of the site. Additional information can be found in the site specific environmental management plans appended to this report, the original EIS and SEIS.

2.3.1. Soils

The site is located on the Cumberland Plain. The topography of the site and surrounds is generally flat to the Parramatta River, which is approximately 2.5 km to the north.



A significant proportion of the material identified on the site is imported fill; however the site is fully sealed through the presence of the transfer building and surrounding hardstand area.

Refer to the Site Contamination Management Plan (SCMP) in **Appendix F7** for details regarding the sealing of the site.

2.3.2. Flooding and Drainage

The previous drainage system, which had been buried, ran along the access road from Parramatta Road, and consisted of underground pits with grated openings along the road and 600 mm pipes discharging to Duck River. The flat terrain of the site, coupled with this drainage system resulted in the accumulation of ponded water during wet weather.

A stormwater system, comprising of an oil/silt separator and retention basin discharging to Duck River via an existing culvert and headwall, has since been installed at the Terminal. Following significant rainfall events greater than or equal to 34.5mm/hour, surface water monitoring is conducted at the outlet of the on-site stormwater retention pond prior to discharge into Duck River in accordance with the site EPL, which requires compliance with Section 120 of the POEO Act 1997 to ensure that surface water run-off from the facility does not adversely impact Duck River.

Based on flood profiles undertaken for the EIS, the bank of Duck River is not overtopped for the 20, 50 or 100 year storm events and accordingly, the risk of flooding of the Terminal from Duck River is low.

Further details of stormwater management are contained in the Stormwater Management Plan (SMP) provided in **Appendix F6**.



2.3.3. Flora and Fauna

The site of the Clyde Rail Yard, including the Terminal was entirely cleared of native vegetation, filled and covered with bitumen prior to the construction of the Terminal.

The flora and fauna of the adjacent Duck River corridor has been previously investigated. The flora along the river corridor was identified as mangroves with extensive areas of weed infestation. The mangroves provide habitat for a range of birds, arboreal mammals, some microchiropteran bats and insects, however no threatened species or their habitat was detected within the study area.

2.4. Socio Economic Environmental Characteristics

Detailed below is a description of the historic and existing socio economic characteristics of the site. Additional information can be found in the site specific environmental management plans appended to this report, the EIS and SEIS.

2.4.1. Non-Indigenous Heritage

The Clyde Rail Yard was constructed in 1892 and is listed as a heritage item in Schedule 2 of the Auburn Council Local Environmental Plan. The Terminal is located in the Second Up Yard, considered to have been constructed in 1909. The railway sidings have been assessed to be of regional heritage significance.

The operation of the Terminal has not had any adverse impact on heritage significance of the area. Impacts from the temporary construction works associated with the modification of the odour control system within the terminal building are also not envisaged. Heritage interpretation signage has been installed as part of the development and identifies the heritage significance of the Clyde Marshalling Yards, associated pre-use and Track 22.

2.4.2. Noise

Based on noise monitoring results and modelling for the Terminal, noise levels comply with the Department of Environment, Climate Change and Water (DECCW) 'intrusiveness' and 'amenity' criteria at the closest residential, commercial and industrial premises in accordance with the Industrial Noise Policy (EPA, 2000).



Further information is detailed in the Noise Management Plan (NMP) provided in **Appendix F9**. To ensure compliance with the operational acoustic criteria, a noise barrier has been constructed on the south-western boundary of the Terminal.

The appended NMP which is required by the COCs comprises of two plans:

- Noise Management Plan - Rail Operations: specifically relates to rail operations, and has been prepared in consultation with Pacific National, the rail operator; and
- Noise Management Plan – Terminal Operations: is concerned with the noise associated with the Terminal's operations.

2.4.3. Air Quality

Operation of the Terminal results in minimal air quality impacts. The level of impact is further minimised through effective site management, outlined in the appended management plans, so that residents and commercial industry surrounding the site are not significantly impacted. The use of air quality control measures, in addition to routine facility management practices aid in reducing potential pollutant emissions from the site.

Odour

Modification works to the Terminal's existing odour control system, to improve performance and mitigate odours to below nuisance levels for all operating and meteorological conditions were undertaken in November 2007 and completed in February 2008. The modified odour control system comprises of a central 21 metre high vent stack and associated support structures, two 75 kilowatt extraction fans and a plenum to house the system on the mezzanine level of the Terminal.

Modelling of the design parameters of the odour control system, following its commissioning, indicated that system satisfies the criteria required in the COCs, as well as DECCW's less than 2 odour contours at the nearest sensitive receiver.

Additional details on the odour control system modification and management procedures are contained in the Odour Management Plan (OMP) provided **Appendix F2**.



Dust

The operation of the Terminal results in an insignificant increase in dust concentrations at the boundary of the site. Good management practices and attention to dust suppression within the terminal building for unusually dusty loads further reduces dust levels and ensures compliance with DECCW requirements.

Additional details on the dust minimisation procedures are contained in the appended Dust Management Plan (DMP) provided in **Appendix F3**.

2.4.4. Traffic and Transport

Access to the Terminal is from the existing Parramatta Road entry to the Clyde Rail Yard. Left turn in and left turn out scenarios are mandatory for all waste vehicles. A range of trucks with varying capacities use the Terminal.

Further details regarding traffic management are contained in the Traffic Management Plan provided in **Appendix F4**.

2.4.5. Visual Assessment

The visual impact of the Terminal is considered low compared to other buildings in the vicinity of the site. Landscaping works have been used to enhance the appearance of the site, including the planting of local native species along the site's entrance road and around the office area.



3. REGULATORY AND REPORTING REQUIREMENTS

3.1. **Consent Conditions**

The Terminal operates in accordance with all relevant COCs, EPL, permits and approvals. This OEMP has been prepared as part of the Terminal's environmental management practices to manage and mitigate potential environmental impacts resulting from the Terminal's operating activities.

3.2. **Legislative Requirements**

The operation of the Terminal is controlled by:

Clyde Waste Transfer Terminal (Special Provisions) Act 2003

The Clyde Act was assented to on 08 December 2003 to enable the construction and operation of the Terminal. Attached to the Clyde Act were 137 COCs for the Terminal, a number of which have since been modified to maintain relevance with the Terminal's operations. The Pre-operation Compliance Report, detailing which COCs have been modified and the level of compliance with each COC, is provided in **Appendix D**.

Protection of the Environment Operations Act, 1997, (POEO Act, 1997)

As an integrated development, the operation of the Terminal requires licensing under the POEO Act 1997, as a Premises Based Scheduled Activity. The scheduled activity is termed "*Waste storage, transfer, separating or processing, being waste facilities that store or transfer, or recover by way of separating or processing, any waste*" and refers to sites that store, transfer separate or process waste with a threshold level of "*over 30,000 tonnes per year*".

An EPL for the Terminal has been issued by the DECCW (refer to **Appendix B**) and is renewed annually on the anniversary date from 15 January 2004. The most current version of the licence can be viewed on the public register located on the DECCW website.



Roads Act 1993

Consent for site access from Parramatta Road to the Terminal is subject to section 138 of the Roads Act 1993, which was granted for 09 March 2004

3.3. Reporting Requirements

3.3.1. Environmental Monitoring

Monitoring at the Terminal is conducted in accordance with the Environmental Monitoring Program (EMP) which is prepared to satisfy the reporting requirements of the EPL and COCs. The EMP outlines site specific environmental issues, monitoring procedures and action plans for non compliances. The annual environmental monitoring schedule is compiled to detail the monitoring parameters required to be monitored at the Terminal and is included within the EMP provided in **Appendix E**.

3.3.2. Development Consent

The reporting requirements of the COCs are in addition to the standard reporting requirements of an EPL and are detailed below.

Annual Environmental Management Report

As required by Condition 59 of the COCs, an Annual Environmental Management Report (AEMR) to review the environmental performance of the Terminal is prepared following the EPL anniversary date and submitted to the Director-General (DOP), the DECCW and the Community Consultative Committee (CCC).

Independent Environmental Audit

In accordance with Condition 60 and ISO 14010, an independent audit to assess the environmental performance and management of the Terminal and compliance with the COCs is undertaken annually and submitted to the Director-General.

Compliance Reporting

In the event that any monitoring results demonstrate an exceedance of a limit specified by COCs, VES undertakes the following measures:



- within 30 days of the monitoring, a report would be submitted to the Director-General and Auburn Council which provides details of the exceedance including any reasons, actions, timeframes for any proposed actions, and results of additional monitoring; and,
- within seven (7) days of any action taken to meet the required limit, undertake further monitoring to demonstrate compliance with the limit.

3.3.3. Environment Protection Licence

Performance reporting is required to produce systematic, comprehensive and informative reports on the environmental monitoring and operational activities of the Terminal and to provide the DECCW with information to review the level of compliance with the EPL. The reports required, in accordance with an EPL under the POEO Act 1997, are detailed below.

Annual Return

VES must provide an annual return to the DECCW within two months of the licence anniversary date, 15th of January. The return must report on the annual monitoring undertaken (where the activity results in pollutant discharges), provide a summary of complaints relating to the development, report on compliance with licence conditions and provide calculation of licence fees that are payable.

Notification and Incident Reporting

VES must notify the DECCW of incidents causing or threatening material harm to the environment as soon as practical after they become aware of the incident. Notification will initially be made by telephoning the relevant DECCW officer. This would be followed by a written report within seven (7) days of the incident occurring.

Written Report

VES must provide a written report, at the request of any authorised DECCW officer, in relation to an event that has caused, is causing or is likely to cause material harm to the environment.



3.3.4. Reporting Summary

The following table provides a summary of the reporting requirements and associated activities for both the COCs and the EPL. In addition, all records required under the COCs or EPL are to be kept in a legible form for at least 4 years after monitoring or event which may be requested by the DOP or DECCW in accordance with COC 21.

DOCUMENT/ ACTIVITY	RESPONSIBILITY	PREPARATION	COMPLETION	DISTRIBUTION
<u>Environmental Monitoring Program</u>				
Monitoring of environmental parameters and recording data	Environmental Monitoring Technician (EMT)	As required	In accordance with the Terminal's Environmental Monitoring Program	Environmental Management Representative (EMR) and Environmental Monitoring Manager (EMM) for reporting
<u>Development Consent</u>				
Annual Environmental Management Report	EMR in conjunction with EMM	15 January of each year	14 March of each year	Director-General, DECCW, Community Consultative Committee or public on request.
Independent Environmental Audit	EMR to engage independent auditor	15 March of each year	14 May of each year	Director-General
Compliance Reporting	EMR / Site Manager	Incident date	Written report within thirty days of incident date.	Director-General and Auburn Council
<u>Environment Protection Licence 11763</u>				
Annual Reporting	EMR	15 January of each year	14 March of each year	DECCW
Notification of environmental harm	Site Manager or EMR	As soon as practicable telephone DECC	Written report within seven days of incident date.	DECCW

3.3.5. Identification of Potential Adverse Environmental Impacts

The identification of any potential environmental incident on site would be facilitated through:



- Conducting of monitoring – coordinated by the Environmental Monitoring Manager (EMM) and undertaken by the Environmental Monitoring Technician (EMT) in accordance with the Terminal's Environmental Monitoring Program (**Appendix E**)
- Review of monitoring results – monitoring results are reported to the EMR, and potential non-compliances are reported to the Site Manager for corrective actions;
- Weekly Site Inspection Checklist – a formal walk-through of the site against set parameters allows for the identification of actual or potential environmental risk. This checklist includes provision for the application of corrective measures once an event is identified and sign-off on the measures by the Site Manager;
- Toolbox meetings – monthly meetings with site staff permit discussion in general site status, environmental/safety concerns and general information sharing; and
- Audits – The Terminal is incorporated into the VES internal environmental auditing program, which assesses the site against compliance of the development, due diligence and best practice.

An Incident Response Plan (IRP) has been prepared for the Terminal to identify potential environmental and public health hazards that may occur as a result of the Terminal's operations and is provided in Appendix F8. Refer to the IRP for further details regarding the investigation of any incident.

3.3.6. National Integrated Management System

To maintain a position of leadership amongst competitors, VES has committed to the highest possible levels of environmental and safety standards, auditing and reporting standards, in addition to compliance with legislative requirements. This has involved reviewing existing management systems and operations, developing policies and procedures on all aspects of our activities, established communications systems, gaining requisite accreditations and constantly reviewing our achievements. To meet these objectives, VES has developed a National Integrated Management System (NIMS), known internally as “HIPPO Station”, which brings together elements of Environmental, Occupational Health and Safety and Quality.



VES has ISO 9001, AS 4801 and ISO14001 accreditation across all sites in the country. The system is consistent with the requirements of a number of relevant standards including but is not limited to:

- ISO14001 Environmental Management Systems;
- ISO9001 Quality Management Systems
- AS/NZS4801 OHS Management Systems;
- AS3806 Compliance Standard;
- AS4269 Complaints Handling Standard;
- AS4360 Risk Management Standard;
- NSW Self Insurers Model;
- Knowledge Management Standard; and
- Other relevant Client models as required by commercial situation.

NIMS allows each VES employee to 'tune in' and have access to the latest and best available information regarding VES policies and processes including how to efficiently manage environment, and health and safety at VES sites. The system also provides an automated review process for all documents with nominated personnel involved in those processes responsible for the review and authorising of any changes. The OEMP is integrated into NIMS and thus conforms to VES' existing system including standard review processes and document control. All procedures and forms that are referred to in this plan form part of the NIMS, and therefore controlled versions can be viewed on site (see Appendix G).

3.4. Community Liaison and Complaints Handling

VES aims to ensure that the local community is kept informed of the progress of the project in a pro-active and responsive manner.

3.4.1. Community Consultative Committee

A Community Consultative Committee (CCC) has been established comprising representatives from VES, Auburn Council, Parramatta Council and the community. The CCC is maintained as per Conditions 134, 135 and 136. An independent chairperson has been appointed to the satisfaction of the DOP. The Chairperson is



responsible for taking and providing copies of the minutes for each meeting and providing an agenda for the next meeting to all CCC members within a few weeks of each meeting. The agenda includes the opportunity for members to request information and discuss any issues arising, general business and questions. All requests are minuted along with timeframes for actions and responses. This approach has satisfied the needs of the CCC since its establishment, and will continue on this basis, unless otherwise agreed by the committee.

The CCC meets periodically, as required by the EPL. The CCC has access to relevant plans and/or studies to enable them to make comments and recommendations about the operation of the Terminal.

3.4.2. Additional Community Liaison

The CCC is the primary means of liaising with the community and is supported by additional measures including local newsletters, leaflets, newspaper advertisements, and community notice boards as deemed appropriate.

3.4.3. Complaints Handling Procedure

Complaints or adverse reports received by the site from any external source are deemed to be Public Complaints. Receiving public comments from the impacted community is possible through the 24-hour operated weighbridge office. The telephone number is (02) 8868 7400. The Site Manager and/or EMR are notified of all public complaints.

All public complaints received (either written or verbal) are documented in the online Complaints Register which contains the following information:

- The nature and extent of the complaint;
- The details of the person lodging the complaint;
- Details of location, date, time and effects of the complaint;
- The action taken to address the complaint including follow up contact with the complainant.



The Register is kept updated to ensure any complaints are correctly recorded and addressed.

3.4.4. Corrective Action

An initial response is provided to the complainant by the next working day following the date of the complaint, where possible. The corrective action may involve supplementary monitoring to identify the source of the non-conformance, and/or may involve modification of operational techniques to avoid any recurrence or minimise its adverse effects.

The Site Manager or EMR investigates and determines appropriate corrective/preventive actions to be taken to address all complaints. The complainant is informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken the reasons why is recorded. The Site Manager or EMR will make available a report on complaints to the CCC and relevant government agencies upon request.



4. IMPLEMENTATION OF THE OEMP

4.1. Roles and Responsibilities

Staffing of the Terminal is as follows:

- Weighbridge Operators (day and night shifts)
- 1 x Leading Hand;
- 4 x Forklift/Compactor operators;
- 1 x Site Manager

Additional staff involved with the operation of the Terminal includes:

- Environmental Management Representative (EMR);
- Environmental Monitoring Technician (EMT)
- Environmental Monitoring Manager (EMM)
- Sydney Region Facilities Manager

A summary of the authorities and environmental responsibilities of key personnel for the operation of the Terminal is provided below, followed by an organisational chart.

Site Manager

- Approve and implement the OEMP;
- Report to senior management on the performance of the system and environmental issues/breaches etc;
- Allocate project resources to handle environmental issues;
- Take action to resolve major non-conformances;
- Ensure suppliers and subcontractors comply with requirements; and
- Ensure that site personnel receive appropriate environmental awareness training, in consultation with the EMR.



Environmental Management Representative

- Report to the Site Manager on the performance of the system and improvement opportunities;
- Provide support to the site to ensure they are aware of their environmental obligations and enable them to meet their environmental commitments;
- Ensure that non-conformances are recorded and actioned; and
- Prepare the Annual Environmental Management Report.

Environmental Monitoring Manager

- Review and update the OEMP and associated documentation;
- Ensure that environmental records and files are maintained;
- Coordinate environmental monitoring requirements of the licence;
- Provide support to the site with environmental operations and performance

Environmental Monitoring Technician

- Undertake environmental monitoring requirements of the licence;
- Ensure environmental monitoring data accurately reported;
- Assisting with environmental performance reporting requirements;

Subcontractors

- Comply with all legal and contractual requirements.
- Comply with management / supervisory directions.
- Participate in induction and training as directed.

All Personnel

- Comply with the relevant Acts, Regulations and Standards.



- Comply with VES Environment Policy and Sustainable Development Policy and procedures.
- Promptly report to management on any non-conformances and/or breaches of the system.
- Undergo induction and training in environmental awareness as directed by management.

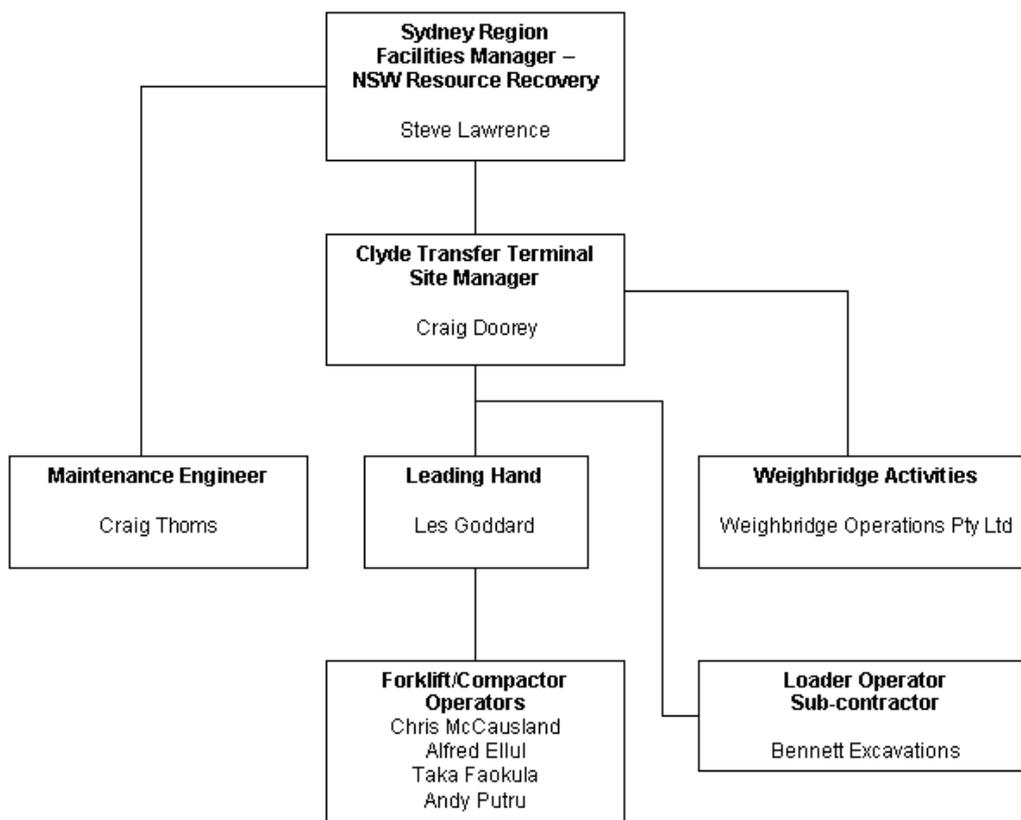


Figure 1. Clyde Transfer Terminal Organisation Chart

4.2. Induction and Training

4.2.1. General Induction

All employees receive suitable environmental training, to ensure they are aware of their responsibilities and are competent to carry out their work. The Induction Review Checklist provides details of induction aspects undertaken by all site personnel to ensure all induction requirements are met. Components of the induction program are as follows:

- VES Induction Booklet



- Environmental Induction
- OH&S Induction

All employees are required to undertake a questionnaire for each induction component, excluding the booklet, and satisfactory completion of this induction program is recorded on the Clyde Training Plan, which forms part of the NIMS. All employees are required to satisfactorily complete a three month probationary period.

4.2.2. Site Training

Employees

In addition to the general induction in section 4.2.1, all employees (including subcontractors) will receive site specific training in the following areas:

- OEMP and related documents;
- Site environmental objectives and targets;
- Understanding individual authorities and responsibilities;
- Significant project aspects, impacts and controls;
- Potential consequences of departure from procedures;
- Emergency procedure and response; and
- Understanding the legal obligations.

Satisfactory completion of this training is recorded in the Clyde Training Plan, which forms part of the NIMS. The Clyde Training Plan is reviewed on an annual basis. All staff will be reassessed twice within the first year to ensure they maintain the required level of training, including compliance with relevant procedures.

Drivers and Visitors

A compulsory site training program has been established for drivers and visitors accessing the site. This training program includes but is not limited to the following conditions of entry:

- Safety in the Terminal is a number one priority;
- Non-conforming wastes not accepted at the Terminal ;



- Requirement to remove non-conforming waste from the Terminal;
- Left turn only both in and out from Parramatta Road only;
- Driving practices to minimise noise impacts;
- Prior authorisation before delivering to site during restricted hours;
- Consideration of neighbouring businesses;
- All Waste Drivers reporting to weighbridge personnel;
- Use of Personal Protective Equipment (PPE's);
- Visitor restrictions;
- No smoking on site except in designated areas;
- All loads must remain covered until reaching the tipping location;
- Obeying traffic signs;
- On-Site machinery has right of way;
- Safety precautions when dealing with Heavy Machinery;
- Following instructions from site staff;
- Washing of vehicles and bins;
- Reporting accidents and incidents;
- Punitive action for non-compliance with Conditions of Entry;
- Importance of your cooperation.

Following this training program all drivers are required to undertake a Driver Induction Quiz, to ensure competency.

4.3. Communication

Internal communication methods include the following, as applicable:

- Monthly toolbox meetings;
- Annual risk management audit reports;
- Non-conformance reports, refer to section 3.2.3;
- Noticeboards;
- Employee induction and training, refer to section 4.2.



External communication methods and their respective timeframes include the following, as applicable:

- Annual regulatory reports, refer to section 3.2.3;
- At least quarterly Community Consultative Committee meetings, refer to section 3.4.1;
- Annual public notices and announcements, refer to section 3.4.2;
- Meetings and correspondence with appropriate regulatory authorities, as required;
- Quarterly meetings with adjoining land owners / neighbours; and
- Prompt response to complaints, refer to section 3.4.4.

4.4. Review of OEMP

The OEMP is designed to be a “living document” and along with all supporting plans will be constantly updated by the EMM if any aspects of the operation are altered that may affect the management plans. This may include, but not be limited to any changes to conditions by the various regulatory authorities. The EMM will also review the OEMP on an annual basis in conjunction with the EMR after the completion of the AEMR, particularly if any non-conformances are recorded.

The Revision History table is updated at these times and controlled versions of the OEMP are kept at the Terminal and the State Office at Rosehill.



5. SUPPORTING MANAGEMENT PLANS

This section details Site Specific Environmental Management Plans that deal with all aspects of the operation of the Terminal, which have been prepared in accordance with the COCs.

5.1. Waste Management Plan

The Waste Management Plan (WMP) provides information on control and management of incoming/outgoing waste, including the identification and removal of unauthorised waste from the general waste stream. Refer to **Appendix F1**.

5.2. Odour Management Plan

The Odour Management Plan (OMP) details odour management and monitoring procedures when the Terminal is in operation. Refer to **Appendix F2**.

5.3. Dust Management Plan

The Dust Management Plan (DMP) details techniques for dust management and monitoring and incorporates the Ambient Air Quality Plan during the operation of the Terminal. Refer to **Appendix F3**.

5.4. Traffic Management Plan

The Traffic Management Plan (TMP) provides information on managing programs and control strategies for traffic movement on site while the Terminal is in operation. Refer to **Appendix F4**.

5.5. Vermin and Pest Control Plan

The Vermin and Pest Control Plan (VPCP) details management techniques whilst the Terminal is in operation. Refer to **Appendix F5**.



5.6. Stormwater Management Plan

The Stormwater Management Plan (SMP) was prepared in accordance with the Upper Parramatta Trust *Stormwater Management Plan (draft)* 1999. The plan addresses all aspects of stormwater drainage, collection, treatment and discharge. Refer to **Appendix F6**.

5.7. Site Contamination Management Plan

The Site Contamination Management Plan (SCMP) includes recommendations in the environmental report by the site auditor that apply to the operational phase of the development. Refer to **Appendix F7**.

5.8. Incident Response Plan

The Incident Response Plan (IRP) provides procedures for controlling and minimising potential risk for the Clyde Transfer Terminal in the event of an emergency and incorporates the Fire Management Procedures for the site. Refer to **Appendix F8**.

5.9. Noise Management Plan

The Noise Management Plan – Rail Operations (RNMP) and Terminal Operations (TNMP) detail measures and strategies for managing noise at the Terminal arising from both rail operations associated with the Terminal and waste operations occurring within the Terminal. Refer to **Appendix F9**.



VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

WASTE MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Waste Management Plan (WMP) has been prepared to comply with Conditions 9, 47, 62 – 69 of the Conditions of Development Consent (COCs) for the Clyde Transfer Terminal (the Terminal).

1.2. Conditions of Consent

9. *The volumes of waste accepted at the development shall not exceed the annual waste input rates in Table 1, approved for acceptance at the Woodlawn Bioreactor, unless otherwise approved by the Minister. The Minister shall give such approval if the need for additional capacity at the Woodlawn Bioreactor is demonstrated by an independent public assessment of landfill capacity and demand in the Sydney Region. The assessment shall:*
- (a) take into account the status of alternative technologies for putrescible waste management and be undertaken at five-yearly intervals;*
 - (b) be completed one year before commencement of each five year period from the date of operational commencement of the Woodlawn Bioreactor, or at any other time at the request of the Applicant, with the first review due four years from the date of operational commencement of the Woodlawn Bioreactor; and*
 - (c) be undertaken by an independent person or organisation, to be appointed by the Minister, with the costs to be funded by the Applicant.*

Table 1: Maximum Waste Input Rates

<i>Years from date of operations commencement of Woodlawn Bioreactor</i>	<i>Maximum input rate (tonnes per annum)</i>
<i>0 - 5</i>	<i>400,000</i>
<i>6 - 10</i>	<i>360,000</i>
<i>11 - 15</i>	<i>325,000</i>
<i>16 - 20</i>	<i>290,000</i>

47. *The Waste Management Plan must address, but is not necessarily limited to, the following issues:*



- (a) *Procedures for inspecting and recording each load of uncontainerised waste received at the terminal and for separating and disposing of any component of the waste that is not permitted to be accepted*
 - (b) *Priority waste handling given to the most offensive wastes, otherwise “first in/first out” waste handling*
 - (c) *Procedures for cleaning vehicles before they leave the premises in a manner that prevents the tracking of waste from the premises*
 - (d) *An education program for all drivers of waste vehicles using the site, about waste types permitted to be received at the premises and the need to ensure their vehicle does not track waste from the premises*
 - (e) *The inclusion of conditions in contracts with waste transporters addressing acceptable waste types and punitive measures for non-compliances*
 - (f) *An enforcement program to be maintained for the duration of the development which includes the imposition of punitive measures for delivering unacceptable waste types*
 - (g) *Procedures for minimising wind blown litter from leaving the premises and for regular patrols of surrounding areas to collect any litter that has been carried from the premises*
 - (h) *Procedures for preventing washdown waters and any other liquid that has been in contact with waste from entering the stormwater system*
 - (i) *An operational contingency plan to be implemented in the event of equipment failure, industrial action or other situation that prevents the containerisation of waste that has been in the terminal building in excess of 18 hours*
 - (j) *Fire management procedures including the management of fire water in a manner that will not pollute waters.*
62. *The Applicant must not cause, permit or allow any waste generated outside the premises to be received at the premises unless permitted to do so by an environment protection licence.*
63. *The Applicant must ensure that waste received at the premises is restricted to inert and solid waste as defined in Schedule 1, Part 3 of the Protection of the Environment Operations Act 1997 or is assessed as inert waste or solid waste following the technical assessment procedure outlined in Technical Appendix 1 of the Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (EPA, 1999).*



64. *No waste shall be removed from the premises except:*
- (a) construction waste arising from activities during the construction stage of the development*
 - (b) waste in sealed shipping containers to be transported by rail for disposal at the Woodlawn Bioreactor*
 - (c) small quantities of waste not permitted by the EPL to be received at the terminal, that have been separated out from the incoming waste stream through a documented operational procedure of regular waste inspections and associated control measures: these wastes are to be disposed of to a lawful waste facility*
 - (d) waste generated from onsite activities such as plant maintenance and repairs, that is not suitable for acceptance at the Woodlawn Bioreactor: these wastes are to be disposed of to a lawful waste facility*
 - (e) wastewater generated onsite: these wastes are to be disposed of to sewer*
 - (f) leachate generated from the onsite management of waste: these wastes are to be disposed of to sewer or a lawful liquid waste treatment plant*
 - (g) recyclable materials generated from the onsite office: these wastes are to be directed to a suitable recycling facility.*
65. *The Applicant shall implement the approved Waste Management Plan to the satisfaction of the Director-General.*
66. *The Applicant will not accept asbestos at the premises. The Waste Management Plan must make provision for identification of asbestos in waste not knowingly received at the premises and for the proper and safe disposal of any asbestos so identified.*
67. *Records shall be made and maintained of each load of waste entering the premises, including the identification of the vehicle, weight, nature and origin of the waste received, and whether the waste was received in pre-packaged shipping containers or for on-site containerisation.*
68. *Records shall be made and maintained of any waste leaving the premises by motor vehicle, including the identification of the vehicle, and the weight, classification and destination of the waste.*
69. *Records shall be made and maintained of all events involving the removal of any waste received at the premises which is not permitted to be accepted at the premises.*



1.3. Objectives

The purpose of this plan is to outline procedures for the control of waste entering the Terminal including the identification and removal of unauthorised waste from the general waste stream.

1.4. Responsibilities

Action	Responsibility
Overall implementation of the WMP	Site Manager
Actioning Operational contingency plan	Site Manager
Identify non conforming waste and notify Site Manager	Plant Operator or Weighbridge Operator
Informing customer of any non-conforming waste	Site Manager



2. WASTE CLASSIFICATION

2.1. *Acceptable Waste*

Waste defined as General Solid Waste (Putrescible), under Schedule 1 of the Protection of the Environmental Operations Act (POEO) 1997, including any other wastes approved by the Department of Environment, Climate Change and Water (DECCW) in accordance with the Terminal's Environmental Protection Licence are accepted at the facility.

2.2. *Unacceptable Waste*

The following waste types are not accepted at the Terminal:

- Radioactive wastes;
- Toxic wastes including any;
 - Material containing arsenic, cyanide or sulphide.
 - Toxic soluble salts of the following metals: barium, boron, cadmium, copper, chromium, lead, manganese, mercury, selenium, silver or zinc.
- Pesticide or weedicide, in particular any of the following:
 - Chlorinated hydrocarbons.
 - Fluorinated hydrocarbons.
 - Organophosphates.
 - Carbamates.
 - Phenols.
- Soluble acid or alkali or acidic or basic compounds;
- Liquid wastes;
- Hazardous wastes e.g. Asbestos;
- Any flammable liquid or material deriving from grease, oil, tar petroleum, shale or coal;
- Any sludge or material (unless it can be shown to be innocuous and harmless) being the refuse from any industrial process carried out in any:



- Tanning or leather processing plant.
- Petroleum or petrochemical plant.
- Chemical plant.
- Paint manufacturing plant.
- Metal treatment plant.
- Vegetable oil or mineral oil processing plant.
- Pharmaceutical or drug manufacturing plant.
- Medical and quarantine wastes; and
- Dead animals.

The following waste types may be targeted for removal from the general waste stream as they have the potential limit the effectiveness and/or damage the slug compactors:

- Timber waste;
- Bricks;
- Concrete;
- Batteries;
- Ferrous metals; and
- Non-ferrous metals.



3. WASTE RECEIVAL PROCEDURES

3.1. *Screening of Waste*

There are 2 checks for the screening of waste. They are the weighbridge operator through the CCTV and the loader driver, both viewing the unloading point on the terminal building floor. Details of the waste received, including identification of the vehicle, weight, nature and origin of the waste, are recorded at the weighbridge, and inspection of the load is undertaken at the unloading point to verify information provided at the weighbridge.

Waste is screened in accordance with the Procedure for Screening and Recording of Waste Received, which forms part of Veolia Environmental Services' (VES) National Integrated Management Systems (NIMS) and is accessible on-site. An uncontrolled copy of this procedure is provided in **Appendix A**.

3.2. *Waste Rejection*

If any waste is detected that is not acceptable through the screening process, it shall be rejected and shall not be disposed of without further investigations, assessment and appropriate statutory consent.

The Procedure for Waste Rejection provides details regarding the identification of any unacceptable wastes and how to deal with these materials, which forms part of the NIMS and is accessible on site. An uncontrolled copy of this procedure is provided in **Appendix B**.



4. CONTROLS AND PROGRAMS

4.1. *Priority Handling of Waste*

Waste delivered to the Terminal is unloaded in a section of the building as directed by the weighbridge operator. This enables waste to be loaded into the compactors on a first in / first out basis.

Employees are trained in identifying offensive odours and their origin such that recognition of regular deliveries can be achieved. If a load is identified as offensive (odorous or dusty) it is prioritised for compaction and loading into the sealed containers and recorded using an Incident Management System, which forms part of the NIMS.

This is supplemented with spot checks by the Site Manager or Environmental Management Representative (EMR) to ensure employees are appropriately trained.

4.2. *Waste Delivery Control Programs*

4.2.1. Education Program

In accordance with Condition of Development Consent 47(d), an education program has been developed to ensure all drivers accessing the site are trained in the conditions of site entry. Details regarding this training program are provided in section 4.2.2 of the OEMP.

The induction program is supported by the following measures:

- Verbal advise from weighbridge operator;
- Printed material to be handed to the driver at the weighbridge;
- Spot checks by Site Manager or EMR;
- Tool box meetings; and
- Site entry signage.



4.2.2. Contracts with Waste Transporters

Contracts undertaken with waste transporters include conditions addressing acceptable and unacceptable waste types and possible enforcement programs. These contracts are based on existing service agreements for customers.

4.2.3. Enforcement Program

In accordance with condition 47(f), an enforcement program has been developed which includes imposition of punitive measures for delivering unacceptable wastes. This enforcement program is based on a three strikes principle, which is consistent with VES's policy for disciplinary measures. The following table outlines the measures to be implemented for any breach of waste acceptance requirements.

Offence	Action – Veolia Environmental Services (VES) employee	Action – external driver
First	Verbal warning	Verbal warning
Second	Written warning and re-attendance to induction training session	Written warning and re-attendance to induction training session
Third	Re-posting to another site or retrenchment	Refused entry to site for driver

4.3. Environmental Controls

The environmental control measures in relation to management of all operational aspects of the Terminal have been detailed in their respective site specific management plans.

Detailed below are a number of issues relating specifically to the delivery of waste.

4.3.1. Cleaning of Vehicles

The cleaning of vehicles is an activity not permitted at the Terminal site under normal circumstances. Measures in place to minimise the likelihood of this requirement include the following:



- The weighbridge operator directs the driver to the appropriate area of the Terminal building ensuring that the vehicle does not track over waste located within the building;
- The building floor is cleaned regularly;
- All VES Company vehicles are regularly cleaned at other depots; and
- Commercial Contracts with other vehicle include requirements of regular cleaning at an approved facility.

However, in rare circumstances, where the condition of the vehicle is such that the exterior is significantly unclean arising from the tipping of waste matter in the building, and has created the possibility of environmental contamination, vehicle washing is permitted. This involves:

- Parking the vehicle in the “hot load” area or away from other vehicles in the building; and
- Hosing down the exterior of vehicle to remove offending matter.

Use of the “hot load” area or an area within the building ensures any run-off is captured and disposed of at an approved facility.

4.3.2. Wind Blown Matter

Wind blown matter is addressed by using the following controls:

- All waste is unloaded within the Terminal building
- Daily litter patrols of the site are conducted by site personnel

Results of the litter patrol, including corrective actions taken to ensure wind blown litter does not leave the premises, are recorded on the Weekly Site Inspection Checklist, which forms part of the NIMS.

4.3.3. Stormwater Management

The Terminal building floor has been designed so that any water that may come into contact with the waste is directed to the leachate sump for collection and appropriate



disposal offsite. Refer to the Stormwater Management Plan for additional details on the stormwater system.

4.3.4. Fire Water Management

Procedures for the management of fire water, to minimise potential pollution of surface water is detailed in the Incident Response Plan.

4.3.5. Operational Contingency

In accordance with conditions 47(i) and 48(g), the Operational Contingency Plan will be implemented in the event that waste containerisation is prevented in excess of 18 hours, such as equipment failure, an emergency or industrial action. Refer to **Appendix C** for an uncontrolled copy of the plan; a current version is accessible on site via NIMS.

The Site Manager will be informed of any such event and provide further direction in accordance with the plan.

In addition, the Site Manager will also be mindful of the volumes of waste accepted at the Terminal in accordance with the maximum waste input rates per annum stated in COC 9. Exceedance in waste input rates will be reporting in the Annual Environmental Management Report of the relevant reporting period.



Appendix A Screening and Recording of Waste

NSW Clyde Transfer Terminal Screening and Recording of Waste

Objective

There are two main screening points when waste is delivered to the site:

- Weighbridge operator questions driver as to contents of load, with follow up inspection if necessary, before allowing vehicle to proceed to the tipping facility.
- Site Plant Operator inspection of waste as it is discharged from vehicle, to check for non-conforming waste.

The weighbridge operator is also responsible for recording all details of the waste accepted onto the site.

Activity

2.1 Weighbridge

- 2.1.1 As the vehicle approaches the weighbridge the weighbridge operator will check the customer details by entering the vehicle's registration number on COPS. If there are any concerns or queries, the site manager will be contacted and the driver's office may be contacted.
- 2.1.2 In the case of a new or infrequent user, the weighbridge operator will follow the Procedure for New Customers.
- 2.1.3 The driver will indicate to the weighbridge operator the waste type that is in the load. The weighbridge operator will be trained in the waste types that are not permitted at the site.
- 2.1.4 From visual inspection, knowledge of the customer (if appropriate), driver response and weight of the waste, the weighbridge operator will assess whether the load is suitable to be allowed on the site.
- 2.1.5 Should there be any reason to not permit the load onto the site, the customer will be informed and a log of waste rejected will be kept. The Procedure for Waste Rejection will be followed.
- 2.1.6 Once the weighbridge operator is satisfied that the waste appears acceptable, the following details will be recorded on the site database:
- Date
 - Time
 - Vehicle Registration
 - Customer
 - Gross weight
 - Waste type

An open ticket will be processed on COPS with the above details.



NSW Clyde Transfer Terminal Screening and Recording of Waste

- 2.1.7 The weighbridge operator will direct the driver to front of the tipping facility where he will stop at the STOP sign and wait for a signal from the Plant Operator as to where to tip his load
- 2.1.8 Once the load has been tipped the vehicle will proceed to the weighbridge on the exit side (where applicable) and a tare weight will be recorded. A transaction docket will be produced confirming the key details above, and the weighbridge operator will obtain the driver's signature (where applicable) to confirm the details. A copy will be given to the driver, and copies will be retained on the site for invoicing and records.

2.2 Inspection at Unloading Point

- 2.2.1 Site operators are trained to recognise wastes that are not to be accepted at the site. In addition, operators will be trained to recognise wastes discharged in an incorrect part of the site.
- 2.2.2 As the waste truck discharges its load, if the site operator sees a non-conforming waste, the truck driver will be informed and asked to wait at the weighbridge area. The site manager will be immediately informed who will arrange for the customer to be notified.
- 2.2.3 Where a non-conforming waste is identified, if appropriate, the site operator will isolate the load, either by leaving it or by moving it to a separate place so as not to cause hazard or disruption to others. The operator should follow the Procedure for Waste Rejection.
- 2.2.4 If the operator is in any doubt as to the contents of the load, the load will be left in place and the Site Manager consulted. If possible, the driver will be asked to provide any further information on the contents.
- 2.2.5 In the event that part or the entire load is to be rejected, Procedure for Waste Rejection will be followed.

End of Procedure

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Appendix B Waste Rejection

NSW Clyde Transfer Terminal Waste Rejection

Objective

This procedure is a guide to ensure that the Transfer Facility only accepts waste that are permitted to be received under EPL11763. The wastes that are permitted into the site are only “non- liquid wastes” classified as “Inert” or “Solid”, including putrescible wastes, as defined under the *Protection of the Environment Operations Act 1997*. It also ensures that any offences are dealt with by notifying customers of any non-conforming loads they may have brought in and such wastes are removed and disposed of appropriately.

Responsibility

It is the responsibility of all personnel onsite, weighbridge operators, loader operators, leading hands and management to ensure that this procedure is adhered to.

It is the responsibility of management to ensure that this procedure is conveyed to staff.

Procedure

All weighbridge and site operators will be trained to recognise non-conforming wastes – see below : Examples of Non-Conforming waste.

Weighbridge operators will visually inspect vehicles at the weighbridge. Site operators will inspect loads of waste while they are being unloaded. If any non-conforming wastes or suspected non-conforming wastes are detected the driver will be asked to stop immediately.

The site operator will immediately inform the Leading Hand & Site Manager.

If the non-conforming waste cannot be taken off site immediately, the site operator is to segregate the non-conforming waste in a dedicated & safe area so that operational activities can continue whilst the customer is being notified & advised to remove the non-conforming waste. If the vehicle is still onsite, the waste is to be reloaded.

The Site Manager or nominated representative is to complete the “Non-conforming waste” form, detailing all information pertaining to such a non-conformance. This form includes the action that

NSW Clyde Transfer Terminal Waste Rejection

is to be taken (including cost if applicable) to dispose of the non-conforming waste in the most efficient and appropriate manner.

A copy of the form is to be given to the customer immediately so that appropriate action can be taken. A copy is to be retained on site in the dedicated folder.

The customer is to undertake the action specified in the form for the removal of the offending waste.

Should the customer for any reason not comply with such a direction, Collex will arrange for the collection, transport and disposal of such waste at a cost to be borne by the customer. Any cost will be clearly communicated to the customer.

In addition to this, any remediation works required as a result of the disposal of such waste shall also be borne by the customer

The waste is to be removed from the site as practically as possible.

If unsure of the waste & its suitability to be accepted, contact site manager or EMR immediately.

Examples of Non-conforming wastes

- Liquid wastes, including pesticide, weedicide
- 'Stabilised asbestos waste in bonded matrix.'
- 'Asbestos fibre and dust waste (eg waste resulting from the removal of thermal or acoustic insulating materials or from processes involving asbestos material, and dust from ventilation collection systems).'
- 'Any non-liquid radioactive waste that: (a) contains a substance that emits ionising radiation spontaneously, and (b) has a specific activity ratio or a total activity ratio (as determined in accordance with the procedures set out in the Waste Guidelines that is greater than one.'
- 'Any waste that meets the criteria for assessment as dangerous goods under the Australian Code for the *Transport of Dangerous Goods by Road and Rail*, and categorised as one of the following:
 - (a) explosives,

NSW Clyde Transfer Terminal Waste Rejection

- (b) gases (compressed, liquefied or dissolved under pressure),
 - (c) flammable solids (excluding organic waste, and all physical forms of carbon such as activated carbon and graphite),
 - (d) flammable liquids,
 - (e) substances liable to spontaneous combustion (excluding organic waste, and all physical forms of carbon such as activated carbon and graphite),
 - (f) substances which in contact with water emit flammable gases,
 - (g) oxidising agents and organic peroxides,
 - (h) toxic substances,
 - (i) corrosive substances, including acids or alkalis.'
- 'Pharmaceuticals and poisons (being waste generated by activities carried out for business or other commercial purposes and that consists of pharmaceutical or other chemical substances specified in the Poisons List under the Poisons and Therapeutic Goods Act 1966).'
 - 'Clinical waste.'
 - 'Cytotoxic waste.'
 - 'Sharps waste.'
 - 'Any radioactive waste, being waste that:
 - (a) contains a substance that emits ionising radiation spontaneously, and
 - (b) has a specific activity greater than 100 becquerels per gram, and
 - (c) consists of, or contains more than the prescribed activity of any radioactive element listed in Schedule 1 to the Radiation Control Regulation 1993.'
 - 'Any liquid radioactive waste, being waste that:
 - (a) contains a substance that emits ionising radiation spontaneously, and
 - (b) has a specific activity ratio or a total activity ratio (as determined in accordance with the procedures set out in the Waste Guidelines [these guidelines]) that is greater than one.'
 - 'Any declared chemical waste that:

NSW Clyde Transfer Terminal Waste Rejection

(a) is the subject of a chemical control order under the *Environmentally Hazardous Chemicals Act 1985*, and

(b) is not permitted to be disposed of to a landfill site because of such an order.'

- 'Quarantine waste.'

End of Procedure

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Appendix C Operational Contingency Plan

NSW Clyde Transfer Terminal Operational Contingency Plan

Aim:

The operations at Clyde may be disrupted by various internal and external factors. Some disruptions may be planned, such as maintenance work on the rail infrastructure, whilst others may be without notice. These factors, and their respective control measures, are listed below.

Procedure:

External Factor	Potential Impact	Remedial Measure
Power disruption	Compactors inoperative; Lighting inoperative; Data and communication facilities inoperative.	CTT located on the end of electricity loop. Power disruption may be overcome by alternative power feed. However, in the event total power failure is experienced, the following procedure shall be adopted: Continue to receive waste matter until Terminal Shed capacity has been reached. The Generator in the Weighbridge should be activated immediately to maintain power. Advise clients to re-direct vehicles to alternative sites for Class 1 waste.
Rail Service disruption (scheduled)	Unable to transport loaded containers to Woodlawn; Unable to receive empty containers from Woodlawn.	Schedule transportation of additional containers from Woodlawn to Clyde to increase storage capacity of compacted waste. Continue to receive waste matter until Terminal Shed capacity has been reached. Advise clients to re-direct loads to alternative Transfer Facilities or Landfill Sites.
Rail Service disruption (unscheduled)	Unable to transport loaded containers to Woodlawn; Unable to receive empty containers from Woodlawn.	Continue to receive waste matter until Terminal Shed capacity has been reached. Advise clients to re-direct loads to alternative Transfer Facilities or Landfill Sites.
Failure of Front-end Loader	Inability to push waste into compactor opening and produce compacted slug	The site contractor is to utilize the second (spare) Front-end loader to address the immediate situation. In the case of the second Front-end loader failing, the site contractor has within 4 hours to provide an alternative unit If one of the Front-end loaders is going to be



NSW Clyde Transfer Terminal Operational Contingency Plan

External Factor	Potential Impact	Remedial Measure
		unavailable for over 24 hours, then the site contractor must supply another suitable unit.
Failure of Container Handler	Inability to load and unload containers	Equipment supplier contracted to provide on-site breakdown maintenance service; Sufficient quantity of containers to continue compaction process. Remaining Unit can continue to retrieve and supply containers; Engagement of contractor on “wet-hire” basis. Second Unit to be purchased to ensure efficient continuity of operation;
Failure of Sweeper	Inability to provide ongoing site sweeping	Equipment supplier contracted to provide on-site breakdown maintenance service; Use Skidsteer unit with sweeper attachment; Hiring of alternative unit; Engagement of contractor on “wet-hire” basis.
Failure of the Boom-Gate at the entry to the Terminal Shed	Disruption to the safe flow of traffic at the site	Operator to be positioned at the entry to the Terminal Shed – where the boom-gate usually operates; Operator to direct traffic movements in and out of the Terminal shed; Operator to be in constant contact, via two-way radio, with the Loader operator in the Terminal Shed.

End of Procedure.

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ODOUR MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Odour Management Plan (OMP) has been prepared in compliance with Conditions of Development Consent 48, 70 to 72, 76 to 83, 87, 88, 90 and 91 for the Clyde Transfer Terminal (the Terminal) and outlines procedures for odour mitigation and monitoring.

1.2. Conditions of Consent

48. *The Odour Management Plan shall address, but not necessarily limited to, the following issues:*
- a. *detailed description of the odour control system subject to MOD-133-11-2006, including (but not necessarily limited to) scaled drawings of the system and its location, technical specifications and operational methods;*
 - b. *procedures for the management of waste at the premises at all times to minimise the generation of odours;*
 - c. *protocols for the operation of the odour control mechanisms for the terminal building, including the forced air extraction system, to minimise the risk of any adverse impact on surrounding commercial and residential areas;*
 - d. *procedures for the maintenance and repair of the forced air extraction system on the terminal;*
 - e. *an emission monitoring program designed to determine compliance with the DEC's odour goal of less than 2OU at the nearest sensitive receiver and to establish the efficiency of the forced air extraction system and appropriate equipment maintenance schedules. The program is to include odour emission monitoring using dynamic olfactometry in much as to allow determination of the performance of the odour control system;*
 - f. *an odour audit program which provides for a comprehensive odour audit of the premises and nearby commercial and residential areas, by an independent, appropriately qualified and experienced person, to be conducted 3-monthly for the initial 24 months of receiving uncontainerised waste at the terminal, 3-monthly for the 12 months following commissioning the odour control system subject to MOD-133-11-2006, and 6-monthly thereafter, unless otherwise approved in writing by the Director-General.*
 - g. *an operation contingency plan to be initiated in the event of equipment failure, industrial action or any other situation that prevents the containerisation of any waste that has been*



in the terminal building in excess of 18 hours. Such a plan shall include suspending the acceptance of further uncontainerised waste at the premises;

- h. a testing program designed to determine appropriate maintenance schedules for replacement of odour absorption material in the pressure relief vents of the waste containers;*
- i. procedures for the maintenance and repair of the odour adsorption and pressure relief vents of the waste containers, including the replacement of the odour adsorption material; and*
- j. a community consultation program on odour. The community consultation program may include a community survey to be developed in conjunction with the community consultative committee.*

70. *The Applicant shall install a forced ventilation system in the Terminal Building in accordance with MOD-133-11-2006, the design specified in the report Addendum to Final Report – Odour Mitigation Study – Clyde Waste Transfer Terminal – Collex Pty Ltd prepared by the Odour Unit Ltd and dated July 2006, and drawing N3630/100 titled Clyde Transfer Terminal Roof and Gallery Level Proposed Ducting Layout Details prepared by Turnkey Environmental Systems Pty Ltd. The system shall include a single air exhaust stack to discharge all air from the waste Reveal and compaction/loading building, in accordance with the following specifications:*

Minimum Stack Height (metres above existing ground level)	Minimum Stack Height above the tip of the roof (metres)	Minimum Stack Diameter (metres)	Minimum Stack Exit Velocity (m/s)	Minimum Stack Exit Volumetric Flow rate (m ³ /s)	Location Coordinate (X)	Location Coordinate (Y)
21	4	2.64	20	109.48	317145	6254129

The six original fans drawing air from the building through the odour control system shall be replaced with six fans of at least 18kW capacity (each) as per MOD-133-11-2006. The forced air extraction system installed under MOD-133-2006 shall be capable of operating in a proper and efficient manner under continuous duty.

Any variation of the design and specifications indicated above resulting from the detailed design of the odour control system shall be approved by the Director-General, in consultation



with the DEC, prior to the commencement of construction. As part of such approval, the Director-General may require the Application to provide information demonstrating that the final design will not result in increased impacts as those predicted in the documents referred to under condition 1(e).

71. *Construction of the Terminal Building forced ventilation system in accordance with MOD-133-11-2006 shall be undertaken under continuous operation of the original forced ventilation system (as per design approved by the Director-General in correspondence to Collex dated 5 January 2003). Forced ventilation in the Terminal Building, by the operation of the original system or the new system subject to MOD-133-1—2006, shall not be interrupted at any time during the period of transferring odour control systems, unless otherwise approved by the Director-General following a written application for temporary stoppage of the ventilation system during that period. Such application shall provide details of stoppage time required, impacts predicted, and proposed mitigation measures and notification requirements. This condition does not apply at times when waste is not contained within the building.*

72. *Prior to commencement of construction of the works required under MOD-133-11-2006, the Applicant shall notify the Director-General, Auburn Council, the DEC and the Community Consultative Committee in writing of the date of commencement of construction, details of the main construction activities and anticipated duration of construction and times of the main construction activities.*

76. *The Applicant shall continuously operate the forced ventilation system subject to MOD-133-11-2006 (and original forced ventilation system until the system subject to MOD-133-11-2006 becomes operational) whenever waste is contained within the building, unless otherwise approved by the Director-General. As part of such approval, the Director-General may require the Applicant to carry out additional investigations and implement additional measures to mitigate any off-site impacts that may be anticipated or identified from such investigations.*

77. *Within three months of the commissioning of the forced ventilation system subject to MOD-133-11-2006, the Applicant shall conduct:*
 - a. *Odour emission rate sampling and analysis from the single stack (conducted in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, January 2007); and*



- b. *Odour dispersion modelling for the stack odour discharge conducted in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC, August 2005) and the Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW (DEC, November)*
78. *The results of any odour performance testing and modelling conducted in accordance with the conditions of this consent, including those required under condition 77, shall be submitted to the Community Consultative Committee, the DEC, the Director General and shall be made publicly available, within eight weeks of the testing and modelling having been completed.*
79. *Following the review of the investigations required under condition 77, or any other odour related investigations and documentation required under this consent, the Director-General in consultation with the DEC may require the Applicant to carry out additional investigations and implement additional measures to mitigate any identified off-site odour impacts.*
80. *All odour monitoring and management plans shall be made available to the public on request to the Applicant.*
81. *Any containerised waste shall not be exposed to the atmosphere at the site, except via a pressure release mechanism and odour filtration system on a container maintained and operated in accordance with the Conditions of this Consent.*
82. *The design of the pressure release mechanism and odour filtration system on the waste containers shall be approved by the Director-General prior to the acceptance of any uncontainerised waste at the premises.*
83. *Any waste that has been packed into containers on the site, shall not be re-exposed to the atmosphere at the site, except via a pressure release mechanism and odour filtration system on a container maintained and operated in accordance with the Conditions of Consent.*
87. *The Applicant shall carry out monitoring of the forced ventilation system subject to MOD-133-11-2006 (including air emissions monitoring or other) as may be required under any*



Environmental Protection Licence. The monitoring results shall be reported in the Annual Environmental Management report required under condition 59.

88. Monitoring for the concentration of a pollutant emitted to the air must be done in accordance with:
- any methodology which is required by or under the Protection of the Environment Operations Act 1997 to be used for the testing of the concentration of the pollutant; or
 - if no such requirement is imposed by or under the Protection of the Environment Operations Act 1997, any methodology which the general terms of approval or a condition of the license (as the case may be) requires to be used for that testing; or
 - if no such requirement is imposed by or under the Protection of the Environment Operations Act 1997 or by the general terms of approval or a condition of the licence (as the case may be), any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.
90. Prior to the installation of the forced ventilation system subject to MOD-133-11-2006, the Applicant shall provide to the DEC manufacturer's performance guarantees, demonstrating to the satisfaction of the DEC that the equipment will comply with the design parameters specified in this consent and/or the Environmental Protection Licence.
91. A meteorological station must be sited and operated at the premises in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW. The Applicant shall undertake the sampling and analysis of the meteorological parameters specified in table below. Sampling and analysis of meteorological parameters shall be carried out strictly in accordance with the methods and references specified in the table.

Parameter	Units of measure	Averaging Period	Method¹	Frequency
Wind Speed @ 10 m	m/s	1 hour	AM-2 & AM-4	Continuous
Wind Direction @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Sigma Theta @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Temperature @ 10 m	K	1 hour	AM-4	Continuous
Temperature @ 2 m	K	1 hour	AM-4	Continuous
Solar Radiation	W/m ²	1 hour	AM-4	Continuous
Rainfall	mm	24 hours	AM-4	Continuous
Evaporation	mm	24 hours	Note ²	Continuous
Additional Requirements		Method¹		



Siting	AM-1 & AM-4
Measurement	AM-2 & AM-4

Note: ¹ All methods are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Note: ² Method approved by the EPA in writing.

1.3. Objectives

The objectives of the OMP include minimising any potential and perceived odour impacts at sensitive receivers, and providing details of ongoing odour management of the Terminal whilst it remains in operation.

1.4. Responsibilities

Action	Responsibility
Overall implementation of the OMP	Site Manager
Implement methodology for avoiding odour emissions	Site Manager
Coordinate monitoring and compile reports	Environmental Monitoring Manager (EMM)
Undertake monitoring and maintain internal records	Environmental Monitoring Technician (EMT)
Collate and maintain records of complaints, respond to complainant	Environmental Monitoring Manager (EMM)
Identify Non Conformances	Site Manager & Environmental Management Representative
Authorise and confirm the implementation of mitigation measures	Site Manager



2. ODOUR CONTROL SYSTEM

The modified odour control system for the Terminal was constructed and commissioned in February 2008 under the approval of the Director-General. The Department of Planning (DOP), Department of Environment, Climate Change and Water (DECCW), Auburn Council and the Community Consultative Committee (CCC) were notified in writing of all construction-related activities, duration and times of construction works in accordance with Condition 72 of the Development Consent, as well as informed of all the monitoring and results undertaken to satisfy the post-commissioning requirements of the COCs .

2.1. Odour Control System Design

The modified odour control system comprises a plenum on the mezzanine level of the terminal building, a central vent stack and support structures, and two 75 kilowatt fans.

The former ventilation system consisted of six adjacent fans and stacks number 1 – from the entrance of the terminal building. The modifications works included fan number 2 being isolated and removed, to be replaced by fan number 4 with the new fans installed in the former position of fan 4 and power was transferred from the original system to the new one. Detailed components of modified system are as follows.

2.2. Odour Control System Components

Extraction Fans

The installation of two 75 kW extraction fans designed to extract a total of 109.48 m³/s in accordance with Condition 70 included fan controls wired into a new switchboard for the variable speed drives (VSDs) positioned on the mezzanine level of the terminal building. The VSDs were integrated into the electrical controls of the modified odour control system.



Plenum

An insulated plenum to house the extraction fans was installed along the mezzanine level of the terminal building with the following dimensions: Length 46 m x Width 4.2 m x Height 2.2 m. Grilles, dampers and lino flooring were also installed to enable controlled air flow through the each grille in the plenum.

Stack and Support Structure

A support platform was constructed to bear the fans and comprises two horizontal and two vertical steel sections fastened to the mezzanine and building structure of the Terminal. The air discharge stack diameter equals 2.64 m and extends to 4 m about the peak of the roof, 21 m above ground to meeting the requirements of Condition 70. The support structure for the stack consists of four galvanised support legs.

2.2.1. Additional Information

In accordance with Condition 48(a), detailed description of the modified odour control system design including site location, system drawings, technical specifications and operational methods are provided in **Appendix A**.

A monitoring data management system is used to contain all the environmental monitoring information for the Terminal. The following information is also collected and can be correlated with the general monitoring information to provide a better understanding of site conditions relevant to odour management:

- automatic weather monitoring station data, including temperature, wind speed and direction
- odour emission rate data;
- estimate of waste surface area on tipping floor;
- details regarding odorous loads including time, date and nature of waste
- pollution complaints register information
- weighbridge information relating to incoming waste, including type, time and weight; and



- compactor information relating to compacted waste, including time and weight for each load.

This information is used to assist in establishing Condition settings and quantitatively support operating procedures by documenting the most appropriate course of action to reduce the potential for odour complaints. Outcomes of this process include the implementation of additional odour related procedures since the commencement of operations.

2.3. Odour Control System Operation Protocol

In accordance with Condition 48(c), the Procedure for the Operation of the Odour Control System has been implemented to minimise the risk of any adverse impact on surrounding commercial and residential areas by detailing the activities required to effectively maintain the modified odour control system. This protocol ensures that the fans are operated effectively and in accordance with the COCs and is provided in **Appendix B** . The protocol is also accessible on site via Veolia Environmental Services' (VES) National Integrated Management System (NIMS).



3. CONTROL MEASURES

Control measures that have been implemented for the management of odour whilst the Terminal is operating are detailed below.

3.1. Management of Waste

In accordance with Condition 48 (b) the Procedure for Minimising Odour has been implemented to ensure waste is managed to minimise the generation of odours. The NSW Clyde Transfer Terminal Container Maintenance Procedure has also been implemented to further assist by providing operators with clear tasks aimed at eliminating potential sources of odour. Refer to **Appendix C** for uncontrolled copies of the Procedures for Minimising Odour and Container Maintenance, however current versions of both these procedures are accessible on site via NIMS.

3.2. Maintenance and Repair

Subject to the requirements of Condition 48, the following operation and maintenance procedures are in place for odour management at the Terminal. These procedures and testing programs outline protocols aimed at improving operating safety and to minimise the risk of adverse impact on surrounding sensitive receivers such as odour exceedances.

3.2.1. Odour Control System Operation and Maintenance

In accordance with Condition 48(d), procedures for the maintenance and repair of the modified odour control system mechanisms are detailed in the Operation and Maintenance Manual for the Odour Ventilation System Upgrade provided in **Appendix D**.

3.2.2. Container Filter Maintenance

In accordance with Conditions 48 (h) and (i), the container filter maintenance is conducted following the procedure outlined in **Appendix C**. This procedure includes inspection of containers and regular carbon filter replacement and forms part of NIMS which is accessible on site.



Container Filtration

An odour adsorption material is contained in the sealed modified shipping containers fitted with a hatch with louvers as required by Condition 81. The design of the filtration system on the containers has been approved by the Director-General to satisfy Condition 82. Compacted waste that has been packed into containers will not be exposed to the atmosphere.

Filter replacement

Carbon filters are changed out every 9 weeks, based on the results of the testing program outlined in section 3.1. A Ventilation System Carbon Filtration Efficiency and Replacement Study and a Container Filter Life Assessment (dated 15 February 2005) were undertaken in the initial 6 months of commencement of operations of the Terminal in accordance with Condition 48 (h) to determine the appropriate replacement interval for the container carbon filters. The study involved retrieving a sample of filters from service for a range of different timeframes. The filters were weighed before and after use to record the percentage increase in weight and determine the appropriate removal efficiency. Results showed that the mass increase did not exceed 33% until at least 100 days in service.

3.3. Additional Measures

Additional odour control measures that relate to the Terminal's operations include the following:

3.3.1. Truck Controls

Waste delivery trucks entering the Terminal are to be fully enclosed or covered. Therefore any odour emissions generated by the trucks are considered to be insignificant and not expected to cause nuisance to sensitive areas. Further details regarding the requirements of operational traffic and waste deliver are found in the Waste Management Plan (WMP) and Traffic Management Plan (TMP).



3.3.2. Odour Control System Management

In accordance with Condition 76, following commissioning, the modified odour control system subject to MOD-133-11-2006 shall be operated continuously whenever waste is contained within the building.

Within three months of commissioning of the modified odour control system, VES conducted odour emission rate sampling and analysis, as well as odour dispersion modelling to demonstrate compliance with the Condition 77 to achieve DECCW's Approved Methods (see Section 4.3) criteria of less than 2 Odour Units (OU) at the nearest sensitive receiver.

Odour performance testing and modelling, as required under Conditions 77 and 78, were also submitted to the DOP, the DECC and CCC within eight weeks of monitoring and indicated the design parameters of the modified odour control system met the requirements of COCs to adequately managed odour in the terminal building.

3.4. *Operational Contingency Plan*

In accordance with Condition 47(i) and 48(g), an Operational Contingency Plan has been prepared in the event that containerisation of waste is prevented in excess of 18 hours due to incidents such as equipment failure, emergencies or industrial action. Refer to the WMP for an uncontrolled copy of the plan, a current version of which is accessible on site via NIMS.



4. ODOUR MONITORING

4.1. Air Emissions Monitoring Program

The requirements of Condition 48(e) and 77 are to ensure the operation of the modified stack design meets the DECCW's odour goal of less than 2 OU at the nearest sensitive receiver. To verify this, an odour emission rate sampling and analysis from the single stack to determine the performance of the modified odour control system was conducted in accordance with the DECCW's Approved Methods (see Section 4.3) and submitted to the DOP and DECCW in October 2008..

4.2. Air Quality Study Program

An odour dispersion modelling study for the stack odour discharge was undertaken following commissioning of the modified odour control system subject to MOD-133-11-2006 in accordance with the Approved Methods (see Section 4.3) specified in Condition 77.

An Odour Mitigation Study was undertaken for the Terminal to model the likely dispersion rate of the modified odour control system and odour impact on the local area (dated August 2007). The report presents the findings of four operation scenarios where the design flow rate of the single stack varies depending on environmental wind direction. The report was commissioned by VES to identify operation regimes that would achieved the DECCW's odour performance criteria as well as aiming to reduce the Terminal's power consumption and greenhouse gas emissions.

4.3. Odour Monitoring

In accordance with Condition 56, an Environmental Monitoring Program is in place for the Terminal. This program supports the Construction Environmental Management Plan (CEMP) and the Operation Environmental Management Plan (OEMP) in identifying environmental issues to be monitoring, details the monitoring schedule, calendar and locations for all environmental aspects, including odour. The following section provides details that are specific to odour.



4.3.1. General Requirements

The measurement procedures employed throughout the monitoring program are guided by the requirements contained in the following documents:

- AS 4323.1 -1995 “Selection of Sampling Positions”
- USEPA (1997) Method 2 or 2C (as appropriate) - “Velocity and Volumetric Flow Rate”
- USEPA (1997) Method 4 - “Moisture Content in Stack Gases”
- USEPA (1997) Method 3 - “Dry Gas Density/Molecular Weight of Stack Gases”
- AS4323.3 (2001) - Australian Standard for Odour Assessment Using Dynamic Olfactometry
- NSW Department of Environment and Climate Change, “Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales” (2007)
- NSW Department of Environment and Climate Change, “Approved Methods for the Modelling and Assessment of Air Pollutants in NSW” (2005)
- NSW Department of Environment and Climate Change, “Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW” (2006)

4.3.2. Weather Monitoring Requirements

A weather station is installed on site, and will remain in place throughout the operation of the Terminal. All odour measurements are accompanied by quantitative measurement of prevailing local weather conditions throughout the monitoring period.

Meteorological measurements are guided by the following documents:

- AS 2922-1987 “Ambient air – Guide for the Siting of Sampling Units”
- AS 2923-1987 “Ambient Air-Guide for Measurements of Horizontal Wind for Air Quality Applications”
- USEPA 454/R-99-005 “Meteorological Monitoring Guidance for Regulatory Modelling Applications”



The weather station is programmed to continuously record the meteorological parameters required by Condition 91.

4.3.3. Monitoring Schedule

The following table provides details regarding odour monitoring requirements at the Terminal following commissioning of the modified odour control system. Further monitoring details are provided in the Environmental Monitoring Program.

Action	Schedule
Odour auditing of premises and nearby receivers	Ongoing 6-monthly

4.4. Odour Reporting

Odour monitoring forms an important part of the overall odour management plan and any measured contributed emissions shall be evaluated and assessed against the criteria given in the Conditions of Consent. Any non-compliance will be reported in accordance with section 3.2.3 of the OEMP.

Odour monitoring results are documented as required, and reported in the Annual Return for Environment Protection Licence 11763 and the Annual Environmental Management Report (AEMR) required by Conditions 59 and 87.

4.5. Odour Audit Program

In accordance with Condition 48(f) a comprehensive odour audit of the premises and nearby commercial and residential areas is undertaken by an independent, appropriately qualified and experienced person on a 6-monthly basis.

4.6. Community Consultation Program

Community consultation for odour is consistent with the general program for community consultation outlined in section 4.3 of the OEMP, which is primarily managed through the CCC.

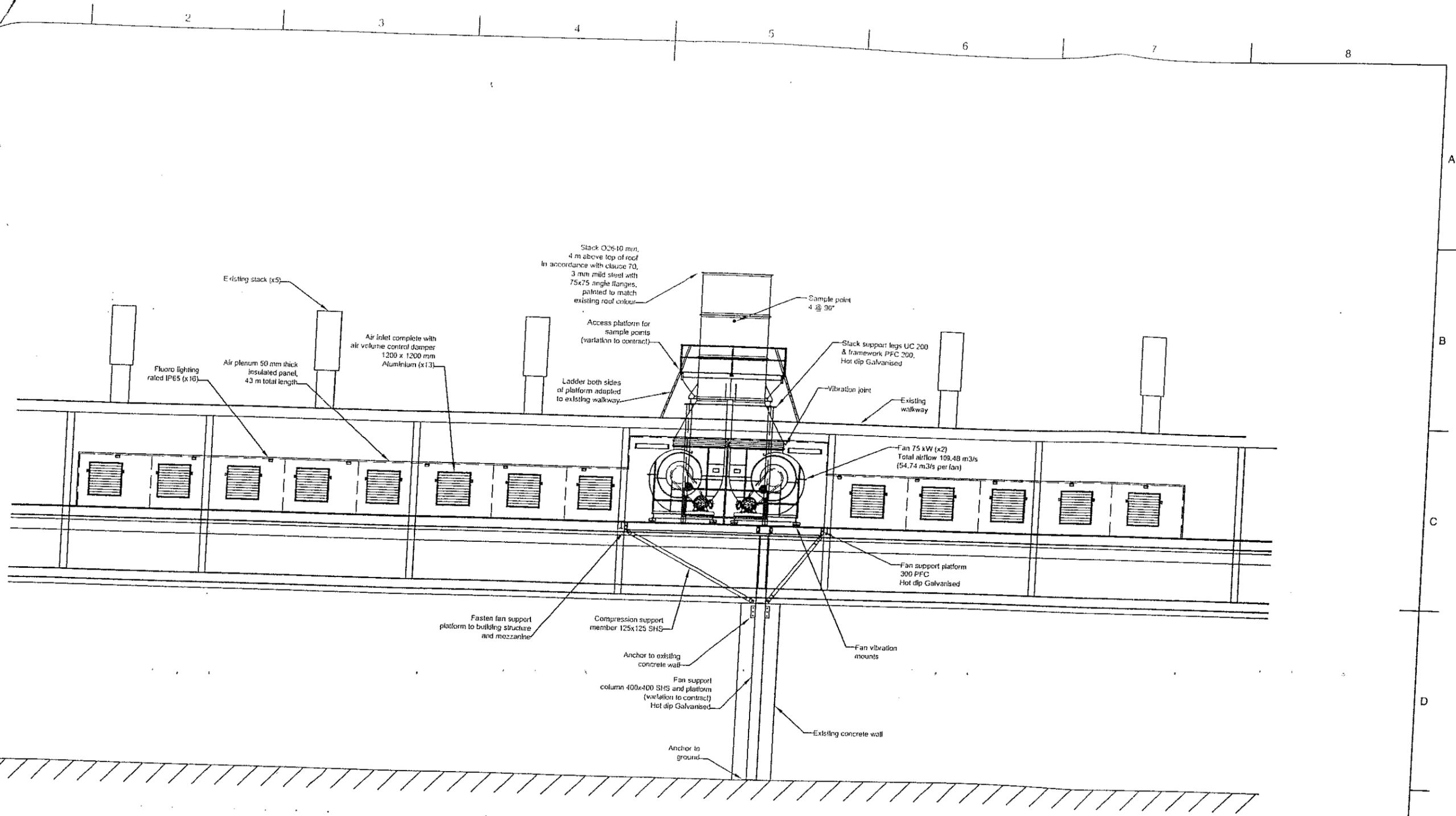


In addition to these measures, and in accordance with condition 48(j), comments will be sought from the CCC regarding the effectiveness of the OMP and the process implemented to deal with odour complaints. This process would include discussions regarding proposed alterations to the odour management system, including any performance testing programs.

Consideration will also be given to the development of a community survey regarding odour. Any agreed outcomes from the CCC regarding a community survey would be incorporated into subsequent versions of this plan.



Appendix A Odour Control System Drawings and Specifications



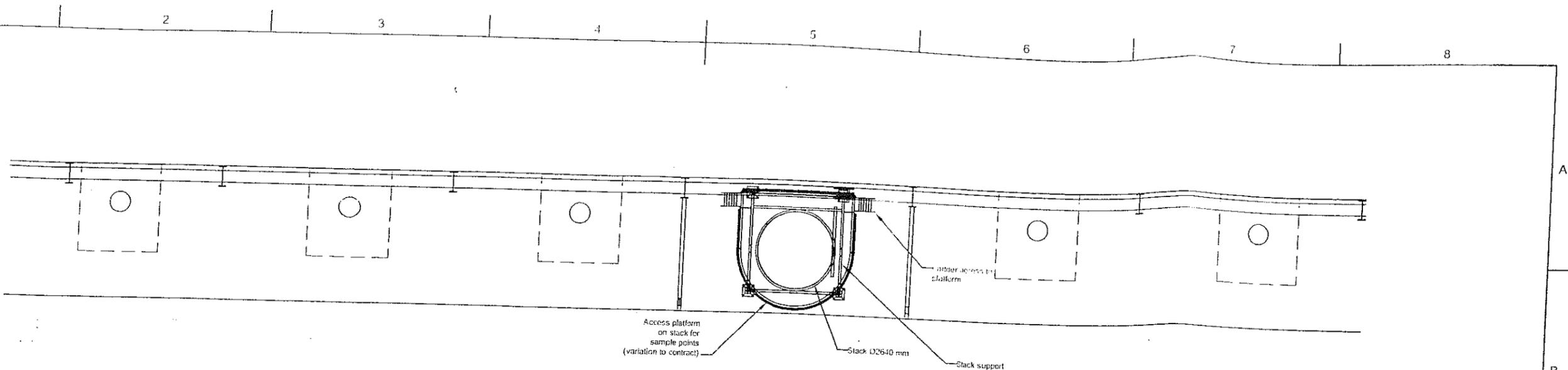
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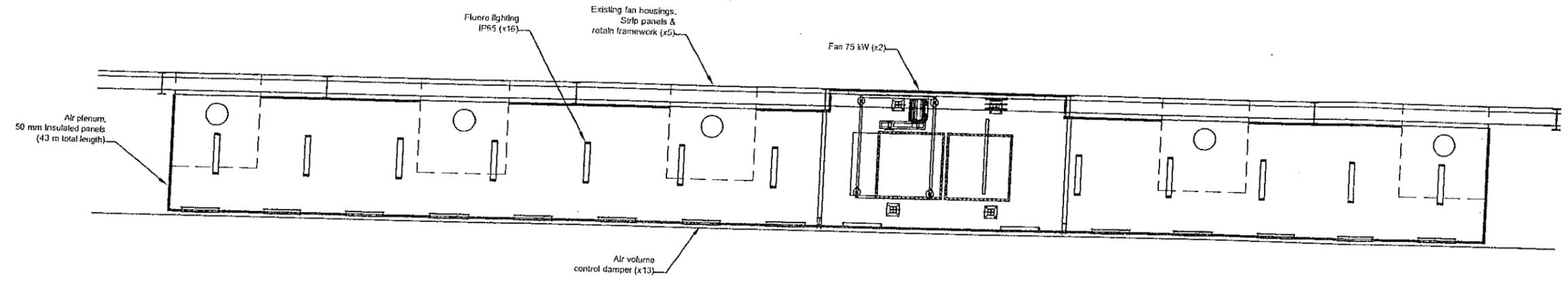
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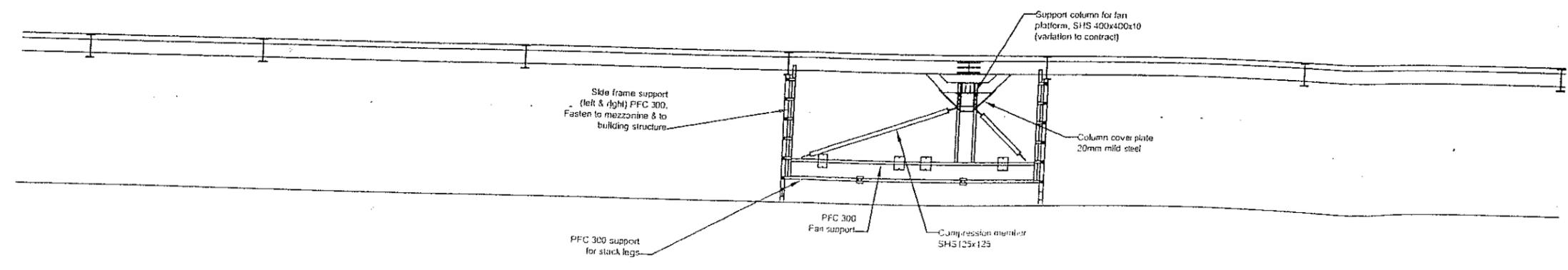
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Polex Environmental Engineering Pty Ltd 343-345 Chisholm Rd, Auburn, NSW 2144, Australia. Ph +61-02-9738-1777, Fax +61-02-9738-1999 Email grant@polex.com.au			VEOLIA ENVIRONMENTAL SERVICES GENERAL ASSEMBLY - FRONT ELEVATION		
DRAWING NUMBER V001				REV	



PLAN VIEW - ROOF LEVEL



PLAN VIEW - MEZZANINE LEVEL



PLAN VIEW - BELOW MEZZANINE

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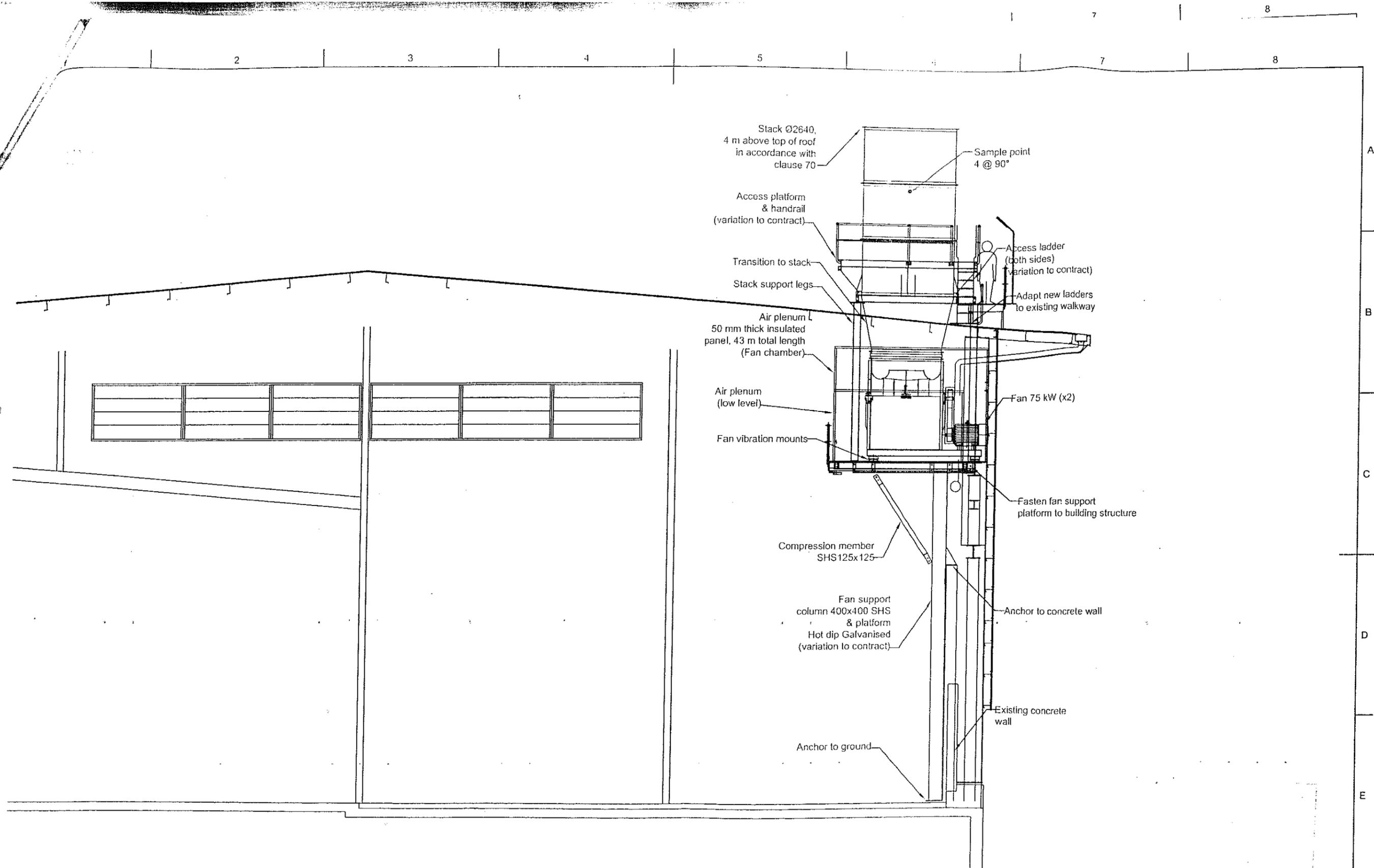
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VEOLIA ENVIRONMENTAL SERVICES
GENERAL ASSEMBLY - PLAN
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SIDE ELEVATION

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T. HEALEY

Approved by

A3

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21 Oct 07

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Polex Environmental Engineering Pty Ltd

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Email grant@polex.com.au

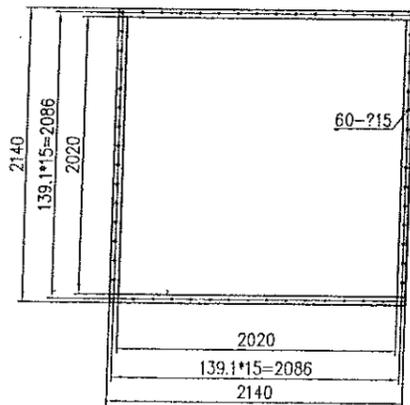
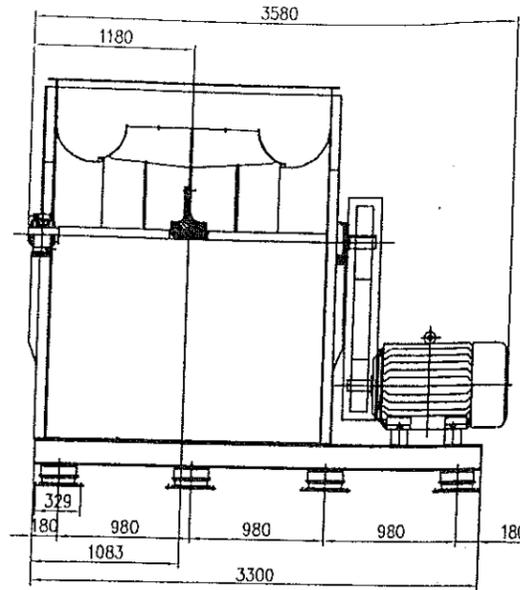
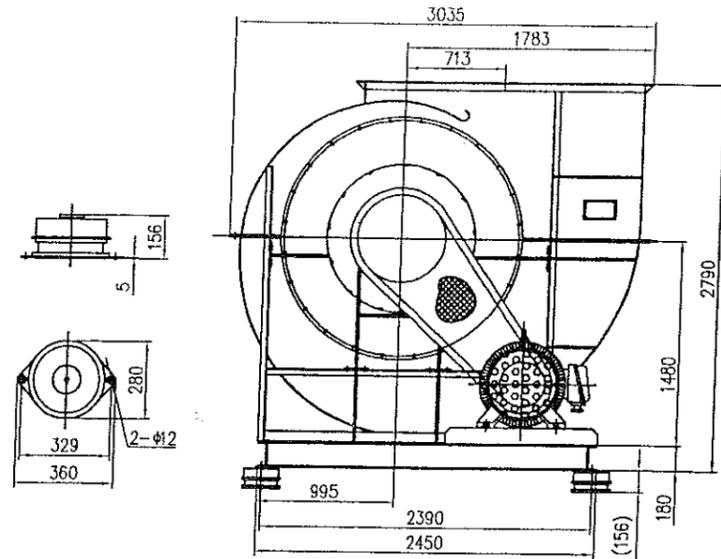
VEOLIA ENVIRONMENTAL SERVICES
GENERAL ASSEMBLY - SIDE ELEVATION

DRAWING NUMBER V003

REV

REV	BY	DATE

REVISIONS



MODEL DHF-KH 1600 ACW 90	SPC 630-4-90
197000 m3/h	SPC 325-4-90
500 rpm	SPC 4250
500 Pa	22222HK 2 (NSK)
75 kW*6 P (Y315S), 415 V, 50 Hz, IP 65, F	ZT33-106 8

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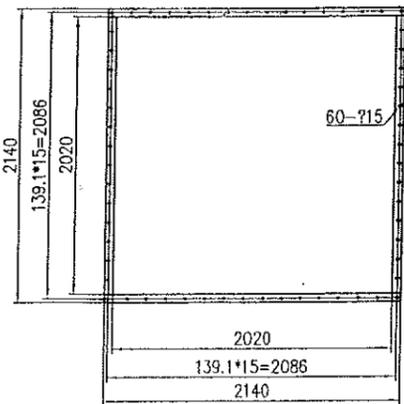
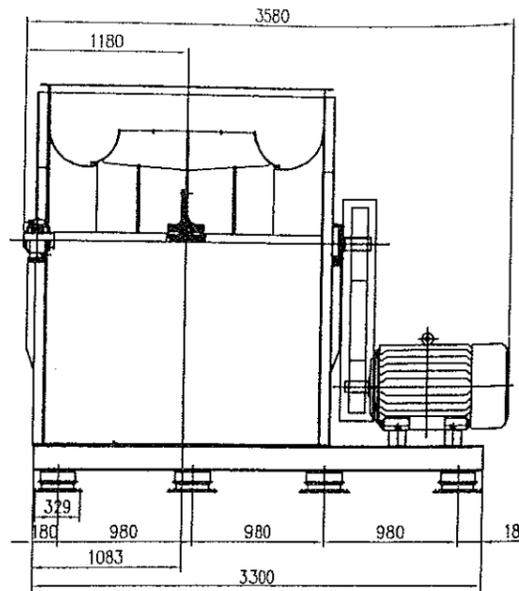
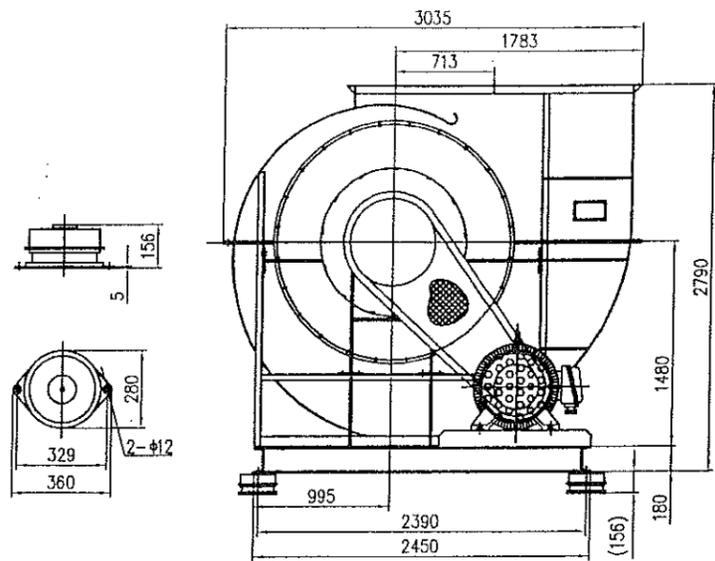
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VEOLIA ENVIRONMENTAL SERVICES
FAN (LEFT)

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MODEL DHF-KH 1600 ACW 90	SPC 630-4-90
197000 m3/h	SPC 325-4-90
500 rpm	SPC 4250
500 Pa	22222HK 2" (NSK)
75 kW*6 P (Y315S), 415 V, 50 Hz, IP 65, F	ZT33-106 8

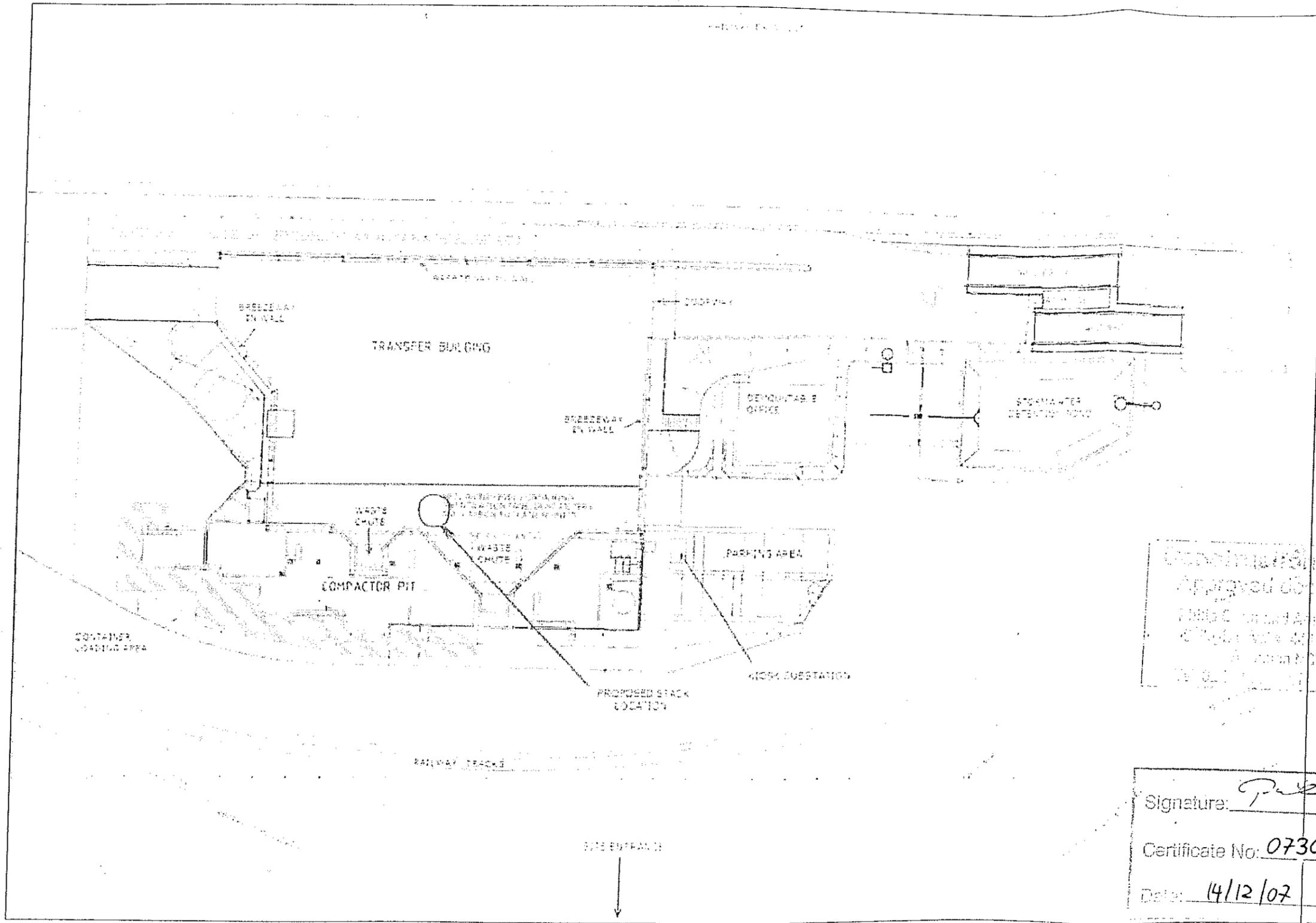
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Approved documentation
 Table Contract Approval Pty Ltd
 40/41 Macquarie Street, Sydney NSW 2000
 Tel: 02 9251 2433

Signature: *[Handwritten Signature]*
 Certificate No: 07305cc2
 Date: 14/12/07

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VEOLIA ENVIRONMENTAL SERVICES
 SITE PLAN

DRAWING NUMBER V045

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Polex Environmental Engineering Pty Ltd
ACN 121 129 842

VEOLIA ODOUR VENTILATION SYSTEM UPGRADE

Technical Equipment Specification

1.0 General

This specification includes construction and installation items, (ie plenum, fans and supporting structure) required for the new odour ventilation system at Clyde transfer terminal.

2.0 Plenum

The plenum shall cover 46m along the mezzanine level x 4.2m deep x 2.2m high. In the area where the fans are located the plenum height will be adjusted to cover the additional height of the fans.

The plenum will be fabricated using Retracom panels 75mm thick. Each panel comprises two external skins 0.6mm prepainted CRP- Colourbond Steel bonded both sides to an insulating core of fire retardant treated, expanded polystyrene foam (EPS).

Panel Specifications:

- Finished module width : 1200mm
- Jointing System "Flushline" self jointing system
- Panel Spans, engineer certified to safe load requirements.

The plenum will be provided with Aluminium trimmings. Access doors will be provided at both ends of the plenum.

3.0 Grilles and air dampers

Twenty four (24) cutouts 1200x1200mm in the front face of the plenum will be provided to accommodate grilles and air and volume control balancing dampers. During commissioning dampers will be adjusted to provide equal airflow through each grille. Each grille will be fabricated from extruded Aluminium.

Air Control Damper Specifications:

- Shaft: 10mm Plated mild steel
- Frame: 2mm Extruded Aluminium
- Linkages: 3mmx20mm Aluminium
- Corners: Screwed and Welded

4.0 Flooring

Lino flooring will be provided to prevent air leakage through the existing flooring. The main purpose of the lino is to enable accurate air flow measurements to be taken during commissioning to confirm the design airflow through each grille. The airflow measurements taken will therefore not be influenced by air entering from gaps in the floor.

5.0 Fans

Two fans will be provided, designed to extract a total of 109.48m³/s and operate at the following specific duty.

Model	Airflow (m ³ /h)	Pressure (Pa)	Motor Power (kW)	Absorbed Power (kW)	Current (A)	Fan Speed (rpm)	Motor Speed (rpm)
DHF-KH 1600 ACW 90	197,064	500	75	55	90	500	1000

Each fan will be of the double inlet centrifugal type with backward inclined blades on the impeller. The impeller will be statically and dynamically balanced to ISO 1940 G4.0. The fans will be belt driven and supplied complete with belt guards. Each fan motor will have IP54 protection.

Rubber vibration mounts will be fitted to the base of each fan. A vibration joint will also be provided on the discharge of each fan. The two fans will be centred along the length of the plenum and separated by a centre wall. The fans will discharge into individual 1.6mm thick Galvanised sheetmetal ducts that will connect to the underside of the 2640mm dia stack. A drain socket will be fitted to each fan and will be plumbed to nearby guttering.

6.0 Electrical Controls

Fan control shall be wired into a new VSD switchboard positioned on the mezzanine level. Power to operate the fans will be distributed through a circuitbreaker (Schneider electric/Merlin Gerin moulded case circuit breaker - 3 pole-36 KA-160-630amp W5630N) off the main site electrical board isolator and submain to the VSD board. Refurbishment of the main board shall also include two (2) main isolators and circuit breakers for each variable speed drive (VSD) motor. The option to isolate each fan motor at ground level (on/off switches) will also be engineered as part of the control system.

7.0 Variable Speed Drives (Frequency inverter)

Variable speed drives (VSD) will be integrated into the electric controls of the ventilation system to reduce the airflow in order to achieve the design airflow and minimise power consumption.

VSD Specifications:

Make: Danfoss
Model: VLT HVAC FC102 P75KO
Frequency Control: (PWM)
Motor Size: 75kW
Full load Current (Amp): 147
Application: HVAC
Carrier Frequency(Hz): 4.5KHz
Input Signals ((0-10Volts /4-20m Amp): both
Enclosure Protection: IPS 54
Number of Presettable Speed Settings: 20

8.0 Support Structure for Fans

The 75kW fans will be mounted upon a support platform of four (4) 300x300 Parallel Flanged Channel (PFC) prefabricated steel sections bolt fastened to the mezzanine and building structure. Two (2) sections will be secured horizontally and 2 vertically to form the sides of the frame support.

The self weight of the exhaust fans and transition duct will be transferred to ground via a 400x400 SHS support column anchored back to the existing concrete guide wall and terminal building floor, as well as two (2) cross braced SHS 125x125 compression members bolt fastened to the column and underside of the platform. A cover plate will be welded around the lower half of the support column to protect against contact with waste trucks and loaders. Prior to mounting, the mezzanine and support structure will be tested under design loads to ensure support structure load integrity.

The design of the structure and loading on the mezzanine has been checked and certified by a suitably qualified structural engineer.

9.0 Lighting

Fluorescent lighting will be provided at approximately 3m intervals throughout the plenum (ie. One only twin fluorescent per 3m). Each light will be provided with casing of increased weather protection to minimise the ingress of dust.

Lighting specifications:

Code: BWP236H

Version: 2 x 36W

Dimensions: 1300 x 170 x 110

Weight (kg): 3.6

10.0 Stack

The air discharge stack will be 2.64 in diameter and extend to 4m above the peak of the roof. The stack will be fabricated from 6mm thick mild steel and hot dip Galvanised.

11.0 Support structure for stack

Four support legs will be provided, fabricated from universal column and coupled with Parallel Flange Channel horizontal supports to sit beneath the 2640mm dia stack.

The support will be hot dip Galvanised.

The design of the structure and loading on the mezzanine has been checked and certified by a suitably qualified structural engineer.

12.0 Measurement of design airflow

Design airflow requirement of $109.48\text{m}^3/\text{s}$ from the stack will be determined by flow measurement samples taken the cross-sectional plane of flow in accordance with prescribed standard AS4323.1-1995. Using these measurements as well as measurements derived from the fan curve and air velocity over each air intake grilles in the plenum airflow requirements will be verified.

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Appendix B Operation of the Odour Control System

NSW Clyde Transfer Terminal Operation of the Odour Control System

Objective

This procedure is aimed to effectively maintain and operate the Clyde Transfer Terminal Odour Control System, in accordance with design specifications and approved Conditions of Development Consent, to ensure maximum efficiencies and minimise the risk of any adverse impact on surrounding commercial and residential areas.

Responsibility:

- It is the responsibility of the Clyde Transfer Terminal Site Manager and Environmental Management Representative to ensure this procedure is communicated to Site Operators and complied with.
- It is the responsibility of Site Operators to ensure that their actions mirror this procedure.

Procedure:

- Ensure the odour control system is in operation whenever waste is contained on the floor of the Terminal building;
- Maintain records in accordance with manufacturer's recommendations;
- Ensure the Procedure for Minimising Odour is communicated to all staff and adhered to;
- Ensure through Veolia's monitoring regimes that odour control measures remain effective and capable of minimising offensive odours from the site; and
- Ensure adequate maintenance schedules are in place to reduce the likelihood of system failures or breakdown.

Reference Documents

Procedure for Minimising Odour

Incident Report Form

Procedure for Screening and Recording of Waste Received

Site Conditions of Entry



NSW Clyde Transfer Terminal Odour Control System Operation Protocol

This document replaces

- PRO-NSW-219-014-4 NSW Clyde Transfer Terminal Operation of the Odour Control System
- PRO-NSW-219-027-2 NSW Clyde Transfer Terminal Extraction Fans Shut Down Procedure
- FOR-NSW-219-011-2 NSW Clyde Extraction Fans Shut Down

End of Procedure

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Appendix C Procedures for Minimising Odour

NSW Clyde Transfer Terminal Minimising Odour Procedure

1. Objective

This procedure is designed to minimise the generation and emission of odour from activities associated with the Clyde Transfer Terminal. This procedure has been developed to comply with the Conditions of Development Consent governing the operation of the Terminal.

2. Procedure

- Only fully enclosed and appropriately sealed vehicles will be permitted to dispose of waste at the Terminal;
- The Odour Control System will be operational whenever waste is contained on the floor within the Terminal building;
- The Dust Suppression System (DSS) will be operated as required to minimise the potential for particulates to become airborne;
- Waste to be loaded in the compactors on a first in / first out basis, providing that where a load is identified as offensive (odorous or dusty) it will be prioritised for compaction and loading into sealed containers;
- All waste received at the terminal will be compacted and containerised in a timely fashion to ensure the tipping floor is clear of waste where possible;
- Following the compaction of waste and subsequent loading into containers, the container will be sealed immediately; and
- The compactor pit area will be inspected daily to ensure the area is free from residual waste and debris.

3. Reference Documents

Operation of the Odour Control System

Incident Report

Screening and Recording of Waste Received

Site Conditions of Entry

End of Procedure

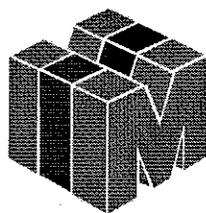
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Appendix D Odour Control System Operation and Maintenance Manual

Operation & Maintenance Manual
for
Odour Ventilation System Upgrade
for
Clyde Transfer Terminal
322 Parramatta Road, Clyde, NSW 2142

Prepared By:



TRIPLE 'M'

GROUP OF COMPANIES

'the team you can trust'

Triple 'M' Mechanical Services Pty Ltd
Unit 5, 47 - 51 Day Street Silverwater 2128

Telephone: 9737 - 8711
Facsimile: 9737 - 9715



Project: Clyde Waste Transfer Terminal	
Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

<< Document Name >>

Address: Parramatta Road, CLYDE 2142	Supplier:
Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

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Project Manager: Utpal Chakrabarty	

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SECTION 1 - WARRANTY & BREAKDOWN SERVICE

The plant described in this manual is covered for a period of twelve months from the date of contract completion, against defects in material and workmanship.

All malfunctions must be reported to:

Main Mechanical Plant

The Service Manager
Triple M Mechanical Services Pty Ltd
Unit 5, 47 -51 Day Street
Silverwater NSW 2128

Telephone: (02) 9737 8711 (Business Hours)

0414 737 666 (After Hours)

Facsimile: (02) 9737 9715

Control Systems

(Refer Section 11.0)

The Service Manager

Landis & Staefa
14-16 Suakin Street
Pymble NSW 2073

Telephone: (02) 9855 1200

Facsimile: (02) 9855 1254

Note:

1. Calls out for defects which prove to be in work or equipment provided under other contracts or for normal operational routines, will be charged for at current rates.
2. Security clearances and access to the site must be arranged prior to call out. Triple M Mechanical Services service representative will endeavour to co-ordinate security access, however time spent waiting, or on futile visits, may be charged for at current rates.
3. Maintenance and warranty during defects liability period will be provided in accordance with the contractual obligations of the project specification.



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Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
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SECTION 2 - DEFECTS LIABILITY PERIOD

The twelve months defects liability period is effective for a period of 12 months from the date of practical completion.

The Operational Maintenance Period is concurrent with The Defects Liability Period.

Maintenance of the plant during The Defects Liability Period is provided, however the operation of the plant is an owner responsibility. During this period, the owner should ensure that the proper operational routines are followed at all times and all defects must be reported promptly to Triple M Mechanical Services Pty Ltd.

Prior to reporting any breakdown the operator should ensure that all systems have been operated correctly and checked for abnormalities (such as chiller air inlet blocked by wind blown debris) since futile visits will be charged for.

It must be emphasised that all service and maintenance should only be carried out by suitably qualified and experienced personal and that correct procedures must be followed at all times. Considerable damage can be occasioned if this is not observed.

Each service visit will be recorded in a company service book and an authorised representative of the owner will be required to be on hand for endorsement and receipt of owner's copy.

Note:

Warranty does not cover damage, or the effects of wear and tear, during 'The defects Liability Period'. Repairs necessary due to damage will be charged for at current rates.



Project: Clyde Waste Transfer Terminal	
Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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SECTION 3 - GENERAL DESCRIPTION

3.1 GENERAL DESCRIPTION

The work carried out under this Mechanical Service Contract comprises the design, documentation, delivery and installation on site of mechanical services and plant, and includes testing, commissioning, defects liability and maintenance of all equipment as specified, together with the preparation of the Operating and Maintenance Manual including "As Installed" drawings.

3.2 SCOPE OF WORKS

Design, supply and installation of mechanical ventilation system for Transfer Terminal

3.2.1 Mechanically Ventilated Spaces

The mechanical ventilation system has been designed to discharge a total of 109.48 m³/s of odour laden air at 20 m/s discharge velocity 2.64 m diameter discharge stack at 4 m above the existing roof.

3.2.2 Air Conditioning Systems

Not applicable / included

3.2.3 Automatic Controls

Not applicable / included. The fans have been provided with variable frequency drives for manual operation

3.3 ESSENTIAL SERVICES

Not applicable / included



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Project Manager: Utpal Chakrabarty	

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SECTION 4 - DESIGN CRITERIA

As per clause 3.2.1 above



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SECTION 5 - SCHEDULE OF EQUIPMENT & SUPPLIERS



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Project Manager: Utpal Chakrabarty	

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SECTION 6 - OPERATION OF PLANT

The mechanical ventilation plant installed under this contract is designed for manual operation from the mechanical switchboard installed near the fans.



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Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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SECTION 7 - SAFETY

The owner should be aware that in operating mechanical services plant the following general safety precautions, as applicable, should be observed, in order to maintain the safety of personnel, buildings and equipment.

1. Do not use plant enclosures as storage space.
2. Keep all belt and drive guards in position.
3. Regularly check the operation of safety devices and controls. (Refer to maintenance of electrical heater boxes, and/or air handling units including suppliers information).
4. Under no circumstances place obstructions in passage ways or egress ways.
5. Do not store combustible material near hot plant.
6. Plant room areas must be kept clean. All grease and oil spills must be removed
7. Never by-pass, or interfere with settings of safety devices.
8. Always keep switchboards locked.
9. Do not work on plant without isolating to ensure that it cannot be accidentally turned on.
10. Maintain all fire extinguishers and fire fighting equipment where installed.
11. Hazardous chemicals or cleaning agents must not be used in confined spaces. Safety amenities such as eye and skin washing and showering should be provided by the client.
12. Ensure that fans are off before entering any pressurised compartments.
13. Post all necessary warning signs and notices and maintain them in legible condition.
14. Ensure that all relief and discharge openings are not obstructed.
15. Provide and maintain adequate signs warning of restrictive access and/or inadequate height clearance for vehicle and personnel.
16. Fix warning signs on panels or switches for equipment under service. This is to prevent operation while service personnel are absent.
17. Ensure that all tools and service equipment are in good condition and not liable to failure during use. Provide and maintain all safety equipment and service facilities necessary for safe access to all parts of the plant.
18. Use protective clothing and apparatus when handling chemicals or carrying out operations which may be hazardous.
19. Ensure access to first aid facilities. Ensure help is available in the immediate areas of any service operation.
20. Inspect the plant regularly and keep all data records as recommended by equipment manufacturers and local authorities.
21. Ensure that, at no time, the fresh air intakes to the plant are likely to be subjected to presence of contaminated air.



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Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

22. Extreme care should be taken when working adjacent to high and medium voltage electrical power.
23. Ensure that all drains are maintained in an operational state and tundish trap assemblies topped up with water at all times.
24. Ensure that all pressure vessels are inspected in accordance with DIR regulations and certificates are prominently displayed.
25. Extreme care is necessary when handling refrigerants and pressurised gases. Provide ventilation in confined area and use approved refrigerant pump out, storage and handling procedures at all times (refer also to the Australian Refrigeration and Air Conditioning Code of Good Practice HB40/1992 Government Information Service or Association of Fluoro-carbon consumers and manufactures).
26. Ensure that all water treatment is carried out by specialised sub-contractors through out the entire life of the plant fully in accordance with the instructions contained within the manual and relevant Australian Standards, Codes of Practice etc. (refer also to the following Governing Standards issued by the Government Information Services. Public Works Department NSW, or Standards Association of Australia).
 - Control of microbial growth in air handling and water systems in building (Standard Australia HB 32).
 - Air Handling and water systems of Building-Microbial Control (Standards Australia AS 3666-1989)
 - NSW Code of Practice for the control of Legionnaires Disease (NSW Health Department).
 - Control of legionnaires disease and some of the health hazards (Public Works Department NSW)
 - Public Health ACT 1991 No. 10
 - Public Health ACT 1991 - Regulation
 - Water ACT 1912 No. 44
 - Clean Waters ACT 1970 No. 78
 - Waterboard ACT 1987 No.141



Project: Clyde Waste Transfer Terminal	
Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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SECTION 8 - MAINTENANCE

The following instructions must be read in conjunction with manufacturer's instructions included herewith and all work is to be carried out by suitably qualified and experienced personnel.

8.1 Tools

Generally the equipment is designed to be maintained using standard instruments, hand tools and lubrication equipment. Where any special items are required, they are highlighted. A maintenance mechanic's standard tool kit should include the following:

- Set of screw drivers including Phillips head
- Set of allen keys
- Hammers
- Set of socket spanners
- Multi-grips
- Filter manometer
- Tong tester
- Grease gun
- Oil can
- Thermometers
- 1.8m ladder
- Cleaning Solvents, brushes and waste rag
- Mercury manometer

8.2 General Procedures

The maintenance instructions which follow are general in nature and assume adequate trade knowledge on the part of personnel engaged in work.

More detailed information on the individual plant items should be obtained from the manufacturers instructions provided with this manual.

The schedules for routine preventative maintenance activities are based on the expected plant usage rates for a fifty two (52) week period.

8.3 Electrical Maintenance

The majority of faults occurring with air handling plants are due to inadequate electrical maintenance and it is most advisable that such maintenance be carried out by qualified electricians. Periodically (three monthly) check all terminal connections for tightness and keep switchboards clean and free of rust. Investigate any chattering switchgear and replace if necessary.

Investigate and re-set any overload trips on major equipment and ancillary items.

8.4 Electrical Motors



Project: Clyde Waste Transfer Terminal	
Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

Check for motor casing temperature rise, visual vibration, or audible noise. Blow through motor terminal boxes to remove accumulated dust and, annually check motors for current input at full load and for insulation resistance. Check the operation of motor overloads and if not satisfactory replace with new components.

8.5 V-Belt Drive Maintenance

V-Belts should be tightened only sufficiently to prevent slip on starting. Too tight a drive will cause undue bearing wear, possible bearing failure and higher drive losses. Correct tension may be gauged approximately by depressing the belts with the hand when deflection should be 12mm to 25mm, depending on the length of the drive. (Trade experience will prevail).

When adjusting the tension, make sure alignment of pulleys is maintained. In renewing belts, renew all in the one drive with a matched set to obtain even tension. The size of belts is stamped into the top of each belt.

8.6 Bearings

Where manufacturers instruction issued herewith give specific procedures they should be adhered to. However, for general purposes the following instructions can be followed:

Grades of grease acceptable for general lubrication of bearings such as for fans and pump etc.

Castrol	EPL2
Castrol	EPL3
Shell Oil Co. Australia Ltd	Alvania No. 2
Shell Oil Co. Australia Ltd	Alvania No. 3

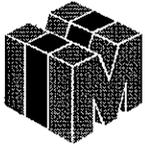
8.6.1 Lubrication Interval

Lubrication of all rotating equipment is required at the intervals detailed below. They do vary depending on the machinery use and are affected by the following factors:

1. The grade of grease used.
2. Temperature at which the bearing operates
3. The size and speed of the bearings.
4. The hours and severity of use.

It is not possible to give definite figures because grease in a bearing does not suddenly lose its lubricating ability, rather the loss is gradual. Lubrication intervals should be determined by experience but the following table may be used as a guide. It may be found that the intervals established could be safely extended, particularly where the unit is operated intermittently but it is possible that they may be found to be too long where operating conditions are extremely severe.

<u>Type of Service</u>	<u>K.W. of Drive</u>	<u>Max. Intervals</u>
Standard	To 3.75	12 months
(8 hours per day	To 30	9 months
5 days per week)	To 37	3 to 6 months
Severe	To 3.75	12 months
(8 hours per day	To 30	3 months
7 days per week)	To 37	2 months



Project: Clyde Waste Transfer Terminal	
Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

The above table applies to motors of fans, pumps, etc. as generally installed on air handling plants, except "Greased for Life" bearings.

8.6.2 Washing Out and Re-packing Bearings

Generally, all bearings should be at least completely washed out and re-packed every three (3) years. This can be satisfactorily done by washing out housings, bearings and caps with solvent free detergents and petrol or other degreaser. Before opening up the bearings, all dirt and foreign matter should be removed from the vicinity of the bearing caps.

After washing, the bearing should be examined for signs of wear. If in good condition, it should be re-packed by pressing fresh grease well into the case, race and balls and rollers and all spaces within the bearing itself, should be completely filled. After re-packing the bearing, any surplus grease should be wiped off. The Labyrinth grooves (shaft seals) in the bearing, should be scraped out, cleaned with petrol and when dry, refilled with fresh grease. The bearing caps should be filled half to two-thirds full with grease.

8.6.3 Greased for Life Bearings

These bearings require no servicing as they are sealed and are to be replaced completely when no longer serviceable. These bearings need only to be checked regularly for unusual noise, vibration or overheating, which if evident, indicates that the bearing requires replacement. For equipment undergoing a general overhaul (eg. 3 years) it may be advisable at that time to replace all such bearings.

8.7 Fan Maintenance

Before starting up any fan, make sure the instructions regarding bearings and v-belt drives have been complied with. Check also that the fan is satisfactorily bolted down and will rotate freely by hand without any binding or other obvious fault.

General maintenance on fans consists of the following points:

1. Keep fan clean and free of dirt and rust.
2. Lubrication of bearing as necessary. It is preferable to add grease while the shaft is slowly turned. (Care is to be taken to ensure that bearing are not over greased).
3. Checking of vee-belt drive, or coupling
4. Refer also to motor maintenance

8.8 Spare Parts and Consumables

Spare parts are generally available at short notice from the various equipment suppliers, however, where lists are given in equipment instructions attached and if required, items may be selected and purchased directly by the owner or owners agent.

The following consumables should be kept on hand:

- Shell Alvania No. 2 or Castrol EPL2 Grease (General Purpose)
- Shell Alvania No. 3 or Castrol EPL3 Grease (Fans and General)
- Castrol CRF20 (S.A.E20) Oil (General Purpose)
- Detergents (General Purpose)
- Filter Media as applicable (International Filter TPAC/DP2 Media)



TRIPLE 'M'
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'the team you can trust'

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Project Manager: Utpal Chakrabarty	

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NOTE:

Oils and greases of different brands should not be mixed without prior confirmation from the manufacturers that it is possible to do so without impairing lubrication characteristics.

8.9 Spare Parts and Tools to be provided to the Client (Free of Charge) During the Warranty Period

- Spare electrical and control fusing devices as applicable



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Job No: 300353	Client: Veolia Environmental Services (Australia) Pty Ltd
Project Manager: Utpal Chakrabarty	

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Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

SECTION 9 - SCHEDULES FOR ROUTINE PREVENTATIVE MAINTENANCE NOTES

1. Carry out three (3), six (6) and twelve (12) monthly activities co-incident with the monthly programme.
2. Read these schedules in conjunction with instruction supplied by the manufacturers for individual equipment.
3. The "Activities indicated in the schedules are self explanatory. More detailed instructions giving necessary procedures etc. are found under "General Maintenance" (Section 8) and in the manufacturers instructions.(Section 11)
4. Record all major repair and service work carried out in the log provided.



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SECTION 10 - OUTLET TEST DATA



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SECTION 11 - AS INSTALLED DRAWINGS



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Project Manager: Utpal Chakrabarty	

<< Document Name >>

Address: Parramatta Road, CLYDE 2142	Supplier:
Drawing Numbers: TBA	Area/Level/Zone: Transfer Terminal

SECTION 12 - MANUFACTURERS LITERATURE

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ENVIRONMENTAL SERVICES

Technical and Engineering Division

DUST MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Dust Management Plan (DMP) incorporates the Ambient Air Quality Monitoring Plan and has been prepared for the Clyde Transfer Terminal (the Terminal) in accordance with conditions 49 and 91 to 96 of the Conditions of Development Consent.

1.2. Conditions of Consent

49. *The Dust Management Plan must include, but not necessarily be limited to, control strategies to achieve compliance with any dust emission limits in this Consent and any applicable environment protection licence. The Dust Management Plan shall adopt the recommendations made by Turnkey Environmental Services Pty Ltd (dated 13 Feb 2006) and provided in Appendix D of the Statement of Environmental Effects Modification to the Terminal Building Forced Ventilation System Clyde Waste Transfer Station (Environ, Oct 2006) in relation to the dust suppression spray system at the terminal. The Dust Management Plan shall provide for the monitoring of the performance of the dust suppressions system and for improving its performance as it may be necessary. Following the receipt of any dust related complaints, the Director-General may require the Applicant to undertake further investigations, monitoring or implement measures aimed to mitigate identified dust impacts on residential areas associated with the operation of the terminal.*
91. *A meteorological station must be sited and operated at the premises in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW. The Applicant shall undertake the sampling and analysis of the meteorological parameters specified in table below. Sampling and analysis of meteorological parameters shall be carried out strictly in accordance with the methods and references specified in the table.*



Parameter	Units of measure	Averaging Period	Method¹	Frequency
Wind Speed @ 10 m	m/s	1 hour	AM-2 & AM-4	Continuous
Wind Direction @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Sigma Theta @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Temperature @ 10 m	K	1 hour	AM-4	Continuous
Temperature @ 2 m	K	1 hour	AM-4	Continuous
Solar Radiation	W/m ²	1 hour	AM-4	Continuous
Rainfall	mm	24 hours	AM-4	Continuous
Evaporation	mm	24 hours	Note ²	Continuous
Additional Requirements		Method¹		
Siting		AM-1 & AM-4		
Measurement		AM-2 & AM-4		

Note: ¹ All methods are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Note: ² Method approved by the EPA in writing.

92. The Applicant shall implement the Dust Management Plan (Construction Stage) and the approved Dust Management Plan (Operation Stage) to the satisfaction of the Director-General.
93. All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.
94. All trafficable areas and vehicle manoeuvring areas in or on the premises shall be maintained at all times in a condition that will minimise the generation or emission from the premises, of wind-blown or traffic generated dust.
95. Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading. (EPA)
96. The Applicant must prepare and implement an Ambient Air Quality Monitoring Plan. The Plan must address, but not necessarily be limited to, the following:
- a) Monitoring methodologies and standards (sampling and analysis);
 - b) Monitoring for concentrations of total suspended particulates (TSP) and dust deposition rates;
 - c) Locations where monitoring will be carried out;
 - d) Detailed monitoring cycle and the duration of each monitoring cycle; and
 - e) Reporting.



97. The Applicant shall undertake sampling and analysis for ambient air pollutants in accordance with the methods and the frequencies detailed in the table below. Ambient air pollutant monitoring sites shall be selected in accordance with Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Pollutant	Location	Method¹	Frequency
Particulate matter (TSP)	Nearest residence or public space and background	AM-1, AM-15	As per AM-15
Particulates (Deposited matter)	Nearest residence or public space and background	AM-1, AM-19	As per AM-19

Note: ¹ All methods are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW and all monitoring must be conducted strictly in accordance with the requirements outlined in this document.

1.3. Objective

The primary goal of the Dust Management Plan (DMP) is to document strategies to minimise potential dust emissions from the site whilst the Terminal is in operation.

1.4. Responsibilities

Action	Responsibility
Overall implementation of the DMP	Site Manager
Implement methodology for avoiding excessive dust emissions	Site Manager
Coordinate monitoring and compile reports	Environmental Monitoring Manager (EMM)
Conduct monitoring and maintain internal records	Environmental Monitoring Technician (EMT)
Collate and maintain records of complaints	Environmental Monitoring Manager (EMM)
Respond to complainant	Site Manager
Identify Non Conformances and notify Site Manager	Environmental Management Representative (EMR) or site nominee
Authorise and confirm the implementation of mitigation measures	Site Manager



2. CONTROL MEASURES

Both preventative and responsive control measures are employed for the operation of the Terminal, as detailed below.

2.1. Preventative Measures

Preventative measures include, but are not limited to the following:

- All areas where trucks drive are sealed to minimise the potential for dust generation;
- All trucks entering and leaving the premises carrying loads are covered at all times, except during loading and unloading.
- Good dust management procedures within the Terminal building including regular sweeping and washing down, as required.
- Good dust management procedures outside of the Terminal building, and the general site including regular sweeping to remove dust and other debris.
- Training of all staff in the need to minimise dust generation and the operation of the dust suppression system.

2.2. Responsive Measures

Responsive measures include the following:

- Use of a fine mist dust suppression system within the building, when there are particularly dust loads or noticeable dust levels, as required.
- Review of any complaints received relating to dust and reports from monitoring conducted as a result.
- Monthly toolbox meetings to discuss any dust issues that have arisen since the previous meeting



3. AMBIENT AIR QUALITY MONITORING PLAN

3.1. *Air Quality Monitoring Procedures*

In accordance with condition 56 of the Development Consent, an Environmental Monitoring Program (EMP) has been developed for the Terminal, which details the monitoring schedule, calendar and locations for all environmental aspects, including air quality and is provided in Appendix D of the Operational Environmental Management Plan (OEMP). The following section provides details that are specific to air quality.

3.1.1. **General Requirements**

The measurement procedures employed throughout the EMP are guided by the requirements contained in the following documents:

- AS 2922-1987 “Ambient air – Guide for the siting of sampling units”
- AS/NZS 3580.9.3:2003 “Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method”
- AS/NZS 3580.10.1:2003 “Determination of particulate matter – Deposited matter – gravimetric method”
- NSW Environment Protection Authority, “Approved Methods for the Sampling and Analysis of Air Pollution in New South Wales” (2007)

3.1.2. **Weather Monitoring Instrumentation**

A weather station has been installed on site, and will remain in place throughout the operation of the Terminal. Dust measurements are accompanied by quantitative measurement of prevailing local weather conditions throughout the monitoring period.

Meteorological measurements are guided by the following documents:

AS 2922-1987 “Ambient air – Guide for the siting of sampling units”

AS 2923-1987 “Ambient Air-Guide for Measurements of Horizontal Wind for Air Quality Applications”

USEPA 454/R-99-005 “Meteorological Monitoring Guidance for Regulatory Modelling Applications”



The weather station is programmed to continuously record the following meteorological parameters:

Parameter	Units of measure	Averaging Period	Method ¹	Frequency
Wind Speed @ 10 m	M/s	1 hour	AM-2 & AM-4	Continuous
Wind Direction @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Sigma Theta @ 10 m	°	1 hour	AM-2 & AM-4	Continuous
Temperature @ 10 m	K	1 hour	AM-4	Continuous
Temperature @ 2 m	K	1 hour	AM-4	Continuous
Solar Radiation	W/m ²	1 hour	AM-4	Continuous
Rainfall	Mm	24 hours	AM-4	Continuous
Evaporation	Mm	24 hours	Note ²	Continuous

Note: ¹ All methods are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Note: ² Method approved by the EPA in writing.

3.1.3. Air Quality Goals

Based on the information provided in **Appendix A**, the air quality goals adopted for this site are:

- TSP: 90µg/m³ as an annual average
- DD: 4 g/m²/month for residential areas; and 5 g/m²/month for commercial and industrial areas (to follow up dust complaints, or as required).

3.2. Recording Site Conditions

The following data is also recorded to assist in assessing site dust conditions:

- Details regarding unusually dusty loads including approximate volume, type of waste and time of delivery; and,
- Visual assessment of dust levels on site through the Weekly Site Inspection Checklist.

The recording of data is aimed at gaining a good understanding of the air quality impacts, and ensuring that the control measures are being implemented and are effective. The information is designed to provide quick identification of poor air quality episodes and to enable effective remedial action to be undertaken. This information is able to be correlated with dust monitoring results, if required.



3.3. Dust Monitoring

3.3.1. Dust Deposition (DD)

- A dust deposition gauge is located at the Terminal.
- Deposited dust samples will be collected and reported, in the event of a dust complaint received or as required,

3.3.2. Total Suspended Particulates (TSP)

- A high volume sampler is used to measure TSP.
- Where required, 24 hourly averaged TSP samples are taken over a 6 day period every six (6) months.

3.3.3. Monitoring Schedule

The following table provides details regarding dust monitoring requirements at the Terminal. Further monitoring details are provided in the EMP.

Parameter	Location	Schedule
Dust deposition	Terminal	On receipt of dust complaints, as required
Total suspended particles	Within fenced enclosure of the on site retention pond	On receipt of dust complaints, as required

3.4. Data Reporting

In the event of a dust complaint received at the Terminal, DD monitoring will be conducted, the results of which will be reported in the Annual Environmental Management Report (AEMR) and annual returns, along with the TSP results, as required.

Air quality monitoring forms an important part of the overall air quality management of the Terminal site. As part of this monitoring, the results are evaluated and assessed against the air quality goals given in section 3.1.3. If any exceedance of air quality goals or complaints does occur, the information will be correlated with any site conditions recorded that relate to dust.



In the event of an exceedance of the relevant criteria, the EMR or site nominee is informed of the location, margin of exceedance and source of emission. The pollutant, weather conditions and all relevant operating data are documented and forwarded to the EMR or nominee for an appropriate management response.

3.5. Complaints Handling

In the event of a complaint relating to dust, dust monitoring shall be conducted and the results correlated with the complaint details, any relevant site condition data and meteorological conditions for further assessment.

Refer to Section 3.4 of the Operational Environmental Management Plan (OEMP) for further details on the handling of complaints.



4. DUST SUPPRESSION SYSTEM

4.1. Objectives and Responsibilities

In accordance with consent condition 49, the DMP must provide for the monitoring of the performance of the dust suppression spray system (DSS) and for improving its performance as necessary.

Site personnel are trained to operate the DSS in accordance with Section 4.2 of the OEMP. Loader operators will need to turn on the DSS to wet waste before moving the waste on the Terminal building floor. As part of the Weekly Site Inspection Checklist, site operators need to monitor the performance of the DSS to check if any maintenance may be required.

4.2. Operation Procedure

A standard operating procedure (SOP) has been prepared for site personnel to operate the DSS in accordance with design conditions and is included in **Appendix B**. The SOP also provides guidance for maintenance protocol of the DSS.

4.3. Maintenance and Monitoring

Following the receipt of any dust related complaints, the Director-General may require the Applicant to undertake further investigations, monitoring or implement measures aimed to mitigate identified dust impacts on residential or commercial areas associated with the operation of the Terminal.



Appendix A Ambient Air Quality Criteria

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Ambient Air Quality Criteria

Table B.1 presents the relevant goals that form the basis of the Air Quality Environmental Management Plan outlined in the NSW Government's "Action for Air" (1998).

Table A.1 Regional Ambient Air Quality Goals

Pollutant	Averaging Time	Previous NSW Goal	"Action for Air" Interim Goal	Long-term Reporting Goal
Total suspended particulates (TSP)	Annual	90 $\mu\text{g}/\text{m}^3$	90 $\mu\text{g}/\text{m}^3$	

Nuisance Impacts of Fugitive Emissions

The preceding sections are concerned with the health impacts of particulate matter. Nuisance impacts need also need to be considered. In NSW, accepted practice regarding the nuisance impact of dust is when annual average Dust Deposition (DD) levels exceed 4g/m²/month, dust related nuisance can be expected to impact on residential areas.

Table A.2 presents standard EPA criteria showing the allowable increase in dust deposition level over the ambient (background) level which would be acceptable so that dust nuisance could be avoided.

Table A.2 EPA Criteria for Allowable Dust Deposition

Existing (Background) Dust Fallout Level (g/m ² /month)	Maximum Acceptable Increase over Existing Fallout Levels (g/m ² /month)	
	Residential Suburban Areas	Commercial and Industrial Areas
2	2	2
3	1	2
4	0	1

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Appendix B Dust Suppression System Operation

NSW Clyde Transfer Terminal Dust Suppression System

DUST SUPPRESSION SYSTEM DAILY START PROCEDURE AT THE OUTSIDE CONTROL PANEL AND VALVE STATION

The dust suppression control panel and valve station are located on the eastern (Auburn) end of the Transfer Terminal building.

When reading the procedure refer to the diagram for the item locations described below.

Loader operators need to turn the system and check if all nozzles are working and to wet the waste before moving the waste on the terminal floor.

Site operators need to conduct the following checklist on a daily basis and as part of the daily site inspection checklist:

Check the Level Indicator on Item 11, 3000 litre tank to ensure it is full.

Check that Isolating Valves Item 5. either side of Strainer Item 6 are open, refer to Control System Piping picture.

Check Item 13 gate valve to Pump Inlet is OPEN

Check that field isolation switch for Hydrovar and SV2-16F22T is in the 'ON' position.

Turn the MAN. – OFF - AUTO to MANUAL position.

Press GREEN button on SOLENOID VALVE 1 to activate ZONE 1.

Press GREEN button on SOLENOID VALVE 2 to activate ZONE 2.

The Booster Pump should START automatically providing water to both Zone 1 and Zone 2 Spray Systems on the Waste Floor.

The RUN TIMER has an adjustable setting 0 – 30 minutes.

When Zone 1 or Zone 2 are activated the Booster Pump will run for the period of time set and then turn OFF.

Please note that the RUN TIMER is provided to ensure that the BOOSTER PUMP only operates while waste is being delivered on the floor, then turns OFF automatically to both conserve water usage and prevent over saturating the waste on the floor.

If CHUTE 1 is the only ZONE being operated then only ZONE 1 button needs to be pressed.

If CHUTE 2 is the only ZONE being operated then only ZONE 2 button needs to be pressed.

If CHUTE 1 and CHUTE 2 are being operated together then BOTH ZONE 1 and ZONE 2 buttons are pressed.

REMOTE CONTROL START PROCEDURE (Loader Operators and Site Staff)

The operator may use the ELSEMA GIGALINK Controller for REMOTE START during waste plant operation.

The following buttons START and STOP the system.

Button No 1 STARTS	ZONE 1
Button No 3 STOPS	ZONE 1
Button No 2 STARTS	ZONE 2
Button No 4 STOPS	ZONE 2

NOTE

There is no need to turn Field Isolator OFF during times when system is not operational as the HYDROVAR automatically STOPS and STARTS the pump on pressure demand from the system



NSW Clyde Transfer Terminal Dust Suppression System

THE DUST SUPPRESSION SYSTEM COMPRISES THE FOLLOWING MAIN COMPONENTS

Main Supply Header For Zone 1, Chute No 1
Range pipes for a total of 23 Spray Nozzles Zone 1
Main Supply Header For Zone 2, Chute No 2
Range pipes for a total of 11 Spray Nozzles Zone 2
3000 litre buffer tank.
Control Panel for Zone sequencing.
Booster Pump for spray system.

TECPRO SPRAY NOZZLES

Chute No 1 consisting of 23 spray nozzles.
Chute No 2 consisting of 11 spray nozzles.

This provides the following coverage per Zone.

5 BAR PRESSURE

This provides the following coverage per Zone.

Zone 1 @ 5 bar pressure total volume 11 x 118.8 l/hr	= 1307 l/hr
Zone 2 @ 5 bar pressure total volume 23 x 118.8 l/hr	= <u>2732 l/hr</u>
TOTAL	= <u>4039 l/hr</u>

ELECTRONIC ZONE CONTROLLER

Kenrahn control centre including Thermal Overload Protection.
24v Control circuit for Zone switching
Push Button Station for manual local operation
Remote Control Handset for operation by the front end loader (or other) operator.

BOOSTER PUMP FOR SPRAY SYSTEM

SV2-16F22T vertical multistage pressure pump station complete with 2.2kW Motor 3ph/415v/50hz and controls.
Hydrovar controller for constant pressure/volume.



NSW Clyde Transfer Terminal Dust Suppression System

PLANT MAINTENANCE

LOWARA PUMP and HYDROVAR

Daily inspection of PUMP and HYDROVAR Skid.

Simple visual daily to ensure there are no leaks or unexplainable noises coming from the unit.

Refer to Brown Brothers LOWARA Maintenance literature for details covering the BOOSTER PUMP.

Refer to Brown Brothers HYDROVAR Maintenance literature for details covering the HYDROVAR which is attached to the top of the Pump Motor.

CONTACTS

Brown Brothers Engineers Australia Pty Ltd.
5/1A Gibbon Road, PO Box 6120.
Baulkham Hills, NSW 2153.

Email: gosporb@brownbros.com.au.

Ph (02) 9624 2577 Fax (02) 9624 2561

SPRAY NOZZLES

In the event of a Spray Nozzle not operating correctly by not spraying or dripping maintenance is required. The Model CAY1153-T1 Brass Spray Nozzles need not be removed from the Nozzle Holders (Nylon construction) Pt No 402-565.

Using a PHILLIPS P2 Type screw driver remove the Nozzle Holder from the range pipe and service spray head according to requirement, disassembling further if necessary.

NOTE:- There is an 'O' ring inside the Nozzle Holder that must be in position when re-installing the Spray Nozzle.

CONTACTS

Spray Nozzle Supplier.
Technical Projects.
4/44 Carrington Road,
Castle Hill, NSW., 2154

Contact Graeme Cooper.

Email: graeme@tecpro.com.au

Ph (02) 9634 3370 Fax (02) 9634 6418

GENERAL MAINTENANCE NOTES

During inspection of the system observe the Pressure Gauges on the supply header. Should there be a large difference between the pressure on the two gauges, **Item 3**, on either zone one (top run) or zone 2 (bottom run) this indicates the 'Y' Type Strainer, **Item 6**, is blocked and requires cleaning.

Turn **Ø50 GREY PVC Ball Valve** immediately after the HYDROVAR/PUMP UNIT **Item No 1** to **OFF position. (Handle horizontal)**

Relieve pressure in Valve Header by cracking Drain Valve **Item No 2**

Turn the isolation valves **Item No 5** either side of strainer **OFF**.

Unscrew the end of the element containing strainer mesh.

Pull to remove mesh "retaining ring" (item 6 on strainer data sheet)

Clean basket and replace into strainer.

Replace retaining ring and re-install mesh unit into strainer body.

SLOWLY Turn isolation valves back **ON**.

SLOWLY re pressurise the system by turning **Ø50 GREY PVC Ball Valve ON (Handle Vertical)**.

Check for leaks at any of the joints disturbed by the above actions.

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TRAFFIC MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

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1. INTRODUCTION

1.1. *Introduction*

This Traffic Management Plan (TMP) has been prepared in accordance with conditions 50, 118 – 124 of the Conditions of Consent for the Clyde Transfer Terminal (the Terminal).

1.2. *Conditions of Consent*

50. *The Traffic Management Plan must address, but is not necessarily limited to, the following issues:*
- (a) *An education program for all drivers and owners of waste vehicles using the site, about the “left turn only” restrictions on entering and leaving the premises via Parramatta Road*
 - (b) *A monitoring and recording program to identify and record any waste vehicle and its driver that breaches the “left turn only” restriction upon entering or leaving the premises via Parramatta Road.*
 - (c) *An education program for all drivers and owners of waste vehicles using the site, about the waste transport routes permitted to be used in the vicinity of the development*
 - (d) *A monitoring and recording program to identify and record any waste vehicle and its driver that breaches the permitted transport routes*
 - (e) *An enforcement program including the imposition of identified punitive measures against any driver or vehicle owner whenever the above restrictions are breached*
 - (f) *Contracts with waste transporters to include conditions addressing entry and exit restrictions and permissible waste transport routes and punitive measures for non-compliances.*
 - (g) *Measures to minimise trucks and other heavy vehicles from entering or exiting the premises between the following hours: 10pm and 5am Mondays to Saturdays; 10pm and 7am Sundays and public holidays.*
118. *All access to the development shall be via a sealed access road from Parramatta Road. No vehicle shall enter or exit the development via the internal road connecting the Clyde Marshalling Yards to Rawson Street.*



119. *No vehicle entering the development shall turn right off Parramatta Road.*
120. *No vehicle exiting the development shall turn right onto Parramatta Road.*
121. *The Traffic Management Plan must be implemented for the duration of the operation of the development, to the satisfaction of the Director-General.*
122. *Prior to the commencement of construction activities, the Applicant shall demonstrate to the satisfaction of the Director-General, it has reasonable arrangements in place in respect of its use of the right of carriageway, concerning traffic sharing, protection of underground and above-ground services in the vicinity of the carriageway and the potential impacts on the existing weighbridge.*
123. *The Applicant must ensure no trucks or other heavy vehicles enter or exit the premises between the hours 10pm to 5am Mondays to Saturdays and 10pm to 7am Sundays and public holidays, unless otherwise provided in the Traffic Management Plan approved by the Director-General.*
124. *The Applicant shall fund a traffic study, to be conducted by an independent, suitably qualified person. The study is to be completed and submitted to the Director General within 14 months from commencement of operations, review the operation of the access road in the first 12 months of the development and recommend any future actions to ensure sufficient future capacity of the access road. The Applicant shall provide a reasonable financial contribution towards any upgrade of the access road recommended by the study.*

1.3. Objectives

The objectives of this document are to establish monitoring programs and control strategies for the delivery of waste to the Terminal by the drivers and owners of waste delivery vehicles.



1.4. Responsibilities

Action	Responsibility
Overall implementation of the TMP	Site Manager
Implementation of Education Program for: <ul style="list-style-type: none">• Left in/out• Transport routes	Site Manager or Site nominee(s)
Implementation of Monitoring/recording program for: <ul style="list-style-type: none">• Left in/out• Transport routes	Site Manager or Site nominee(s)
Implementation of Enforcement Program: <ul style="list-style-type: none">• Breaches of restrictions	Site Manager or Site nominee(s)
A traffic study to review the first 12 month of operation has been completed and submitted.	Site Manager or nominee(s) to organise an independent study



2. TRAFFIC CONTROL PLAN

2.1. Site Description

Entering or exiting the Terminal site is via a left turn from the slip lane on Parramatta Road, into the sealed right of carriageway. Arrangements have been made with neighbouring users, in regard to traffic sharing on the right of carriageway. Access to the site from Rawson Street is not allowed.

The Terminal services commercial vehicles only, for both Veolia Environmental Services (VES) and contracted customers, so any waste delivered by private vehicles will not be accepted.

2.2. Operation Hours

Operation of the Terminal is up to 24 hours, seven days a week, with truck movements peaking in the morning and early afternoon.

The Terminal noise levels are to comply with the Department of Environment, Climate Change and Water (DECCW) 'intrusiveness' and 'amenity' criteria at the closest residential premises in accordance with the Industrial Noise Policy (EPA, 2000). Noise monitoring of the Terminal is undertaken as required and is outlined in the Noise Management Plan – Transfer Terminal (TNMP).

VES ensures the requirements of Conditions 50 (g) is satisfied through the "windows" booking system. This is similar to those used in the retail transport industry. Clients are required to pre-book deliveries during those restricted hours for delivery of waste, ensuring vehicle movements, and the subsequent noise emissions, are minimised. Delivery "windows" are set at pre-determined intervals, and any vehicles that arrive and have not pre-booked will be refused entry to the site, unless vacancies exist, permitting acceptance of deliveries whilst still complying with delivery time criteria.



This procedure is communicated to clients through the training and induction program, referred to in Section 4.2 of the Operation Environmental Management Plan (OEMP).

Any vehicles observed emitting excessive noise would be noted on the Pollution Complaints Form. This will then be communicated to the vehicle owner for rectification.

2.3. Control Strategies

Control strategies employed during the operation of the Terminal include a range of preventative and responsive measures including;

2.3.1. Education Program

In accordance with Condition 50(a) & (c), an education program has been developed to ensure all drivers accessing the site are trained in the “left turn only” restrictions and the permitted transport routes in the vicinity of the development. A traffic route plan showing access ways is provided in **Appendix A**. Details regarding this training program are provided in section 4.2.2 of the OEMP.

The education program is supported by the following measures:

- Signage posted, advising allowable entry/exit movements as shown in Appendix A, and including:
 - Exit to Parramatta Road;
 - Rawson Street;
 - Administration and ablutions areas;
 - At intersection of development access road and access to Rawson;
 - Weighbridge; and
 - On Parramatta Road (for “right turn in” movement).
- Instructions from weighbridge staff advising allowable entry/exit movements and transport routes for all vehicles, including:
 - Verbal; and



- Written advice.
- Regular “toolbox meetings”;
- Consideration to be shown to the site’s neighbours and their requirements and the agreed arrangements for use of the shared access way is part of the induction; and
- Written advice and updates to all waste transport contractors.

2.3.2. Monitoring and Recording Program – Transport Routes

In accordance with condition 50 (b) & (d), the following measures are employed to monitor and record the movement of vehicles accessing the site:

- Spot monitoring of vehicle movements by Site Manager, EMR or Weighbridge Operator;
- Recording of any breaches identified through spot monitoring, through the Incident Management System, which forms part of VES’ National Integrated Management System (NIMS); and,
- Reviewing any complaints related to transport routes.

2.3.3. Enforcement Program

In accordance with condition 50(e), an enforcement program has been developed which includes imposition of punitive measures for breaching traffic restrictions. This enforcement program is based on a three strikes principle, which is consistent with VES policy for disciplinary measures. The following table outlines the measures for any breach of waste acceptance requirements.

Offence	Action – VES employee	Action – external driver
First	Verbal warning	Verbal warning
Second	Written warning and re-attendance to induction training session	Written warning and re-attendance to induction training session
Third	Re-posting to another site or retrenchment	Refused entry to site for driver



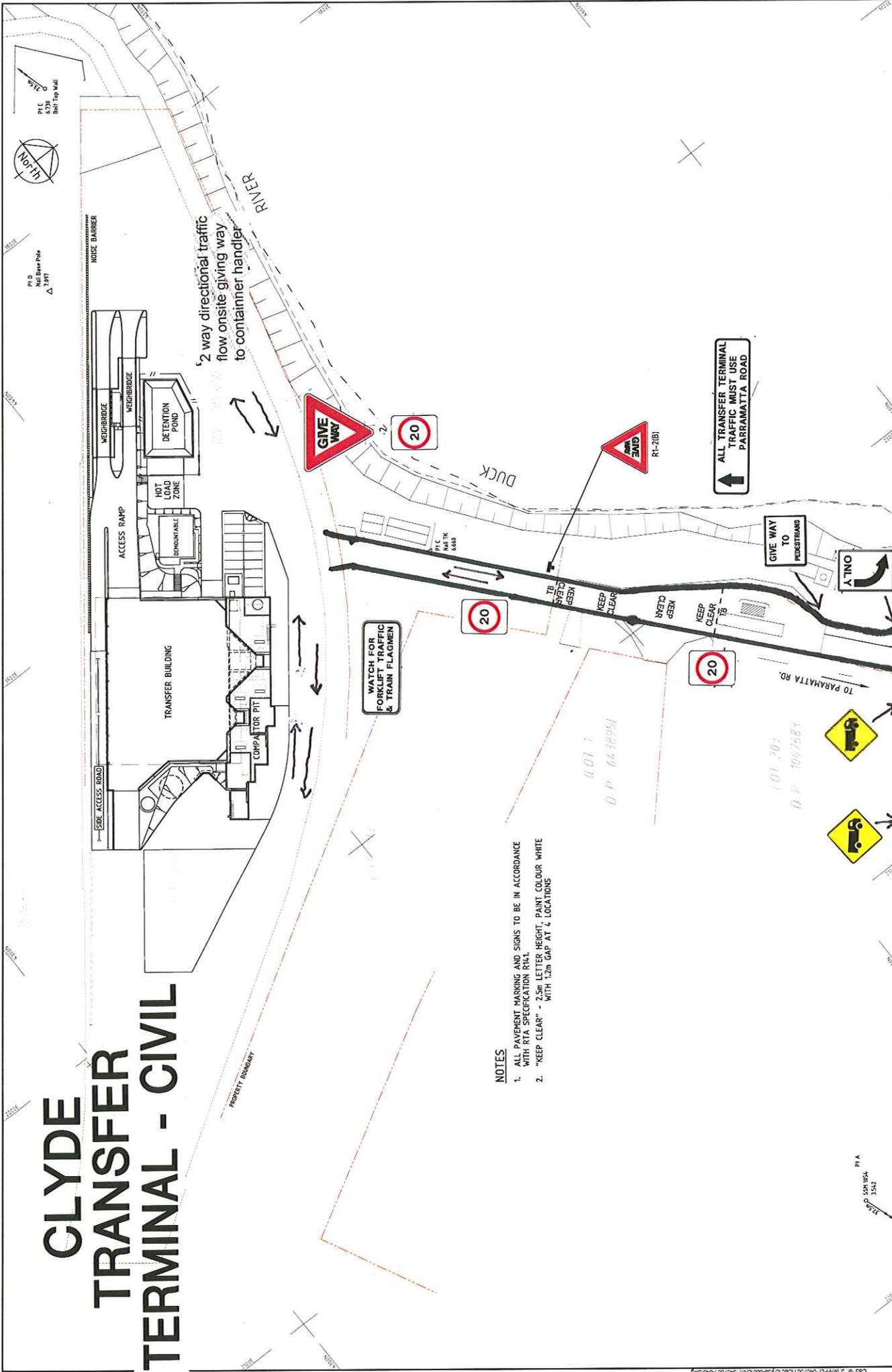
2.3.4. Traffic Congestion Procedure

The Procedure for Traffic Congestion, which is provided in **Appendix B**, has been developed to manage any potential traffic impacts on neighbouring businesses. This procedure forms part of NIMS and is accessible on site. A Site Hazard Identification Assessment and Control Report has been compiled for the Terminal which identifies the potential traffic hazards at the Terminal and provides management strategies for mitigation during construction projects such as the odour control system modification (2007) and the hardstand upgrade and extension works (2008). The Report can be found appended to the Construction Environmental Management Plans for the aforementioned projects (CEMP 2007, CEMP 2008).



Appendix A Traffic Routes

CLYDE TRANSFER TERMINAL - CIVIL



- NOTES**
1. ALL PAVEMENT MARKING AND SIGNS TO BE IN ACCORDANCE WITH RTA SPECIFICATION R141.
 2. "KEEP CLEAR" - 2.5m LETTER HEIGHT, PAINT COLOUR WHITE WITH 1.2m GAP AT 4 LOCATIONS

		Maunsell Maunsell Australia Pty Ltd Environmental Engineers, Planners, Environmental Scientists & Project Managers	
CLYDE TRANSFER TERMINAL ACCESS ROAD PAVEMENT MARKING AS BUILT		104.07001-843 C	
PREPARED JC JC	CHECKED JC JC	PASSED R.B.Y. R.B.Y.	DATE 11.03.03 11.03.03
DRAFTING JC JC		DATE 11.03.03 11.03.03	
SCALES 1:1000 1:500 1:250			
PLEASE CONSULTING WORK, ALL CONSULTING DIMENSIONS ON THE DRAWING MUST BE VERIFIED ON THE SITE, PARTICULARLY THOSE RELATIVE TO PROPERTY BOUNDARIES, OTHER STRUCTURES, AND SERVICES. DIMENSIONS ARE GIVEN IN METERS UNLESS OTHERWISE STATED.			
NO. 101 DATE 11.03.03	DESCRIPTION AS BUILT	NO. 101 DATE 11.03.03	DESCRIPTION AS BUILT

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NO.	BY	DATE	DESCRIPTION
1	MA	11.03.03	AS BUILT
2	MA	11.03.03	CASUALTY AREA ADDED
3	MA	11.03.03	ISSUED FOR CONSTRUCTION

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Appendix B Procedure for Traffic Congestion

NSW Clyde Transfer Terminal Traffic Control

Objective

In the event that the site becomes congested, causing a banking up of traffic beyond the Clyde Transfer Terminal, the following procedure is to be followed. This procedure ensures that any traffic congestion within the Clyde Marshalling Yards that is a result of traffic from the Clyde Transfer Terminal is managed and cleared as efficiently as possible to overcome any impact on neighbouring businesses.

Activity

- The Site Manager or Weighbridge Operator will direct the relevant site personnel to assess the scope and/or cause of the congestion.
- Vehicles queued beyond the boundary will be organised so as not to obstruct the traffic movements of neighbouring businesses.
- When possible, vehicles will be moved onto the areas of the Clyde site pending resolution of the problem.
- Should all the above measures fail to relieve congestion or resolve the problem in full causing traffic to bank to the Parramatta Road slip lane, vehicles will be directed away from the site.
- In addition, the Site Manager (or nominee) will contact waste transporter advising them to cease further deliveries to the site until the problem has been resolved.

End of Procedure

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VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

VERMIN AND PEST CONTROL PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Vermin and Pest Control Plan (VPCP) has been prepared in accordance with conditions 51, 115, 116 and 117 of the Conditions of Consent for the Clyde Transfer Terminal (the Terminal).

This plan has been developed in liaison with neighbouring industries to imitate their activities in pest control.

1.2. Conditions of Consent

51. *The Vermin and Pest Control Plan must address, but is not necessarily limited to, the following issues:*
- (a) Removing all waste from the tipping areas at the end of each day*
 - (b) Cleaning up all waste tipping and handling areas at the end of each day*
 - (c) Regular cleaning of catch drains and drainage sumps*
 - (d) Minimising onsite waste storage and handling*
 - (e) Maintaining any bird deterrent measures such as hanging wires*
 - (f) Routine inspection and action for potential vector habitats*
 - (g) Using commercial vector control specialists*
 - (h) Conducting routine litter patrols to collect trash on site, around the perimeter, on immediately adjacent properties and on approach roads.*
115. *The design of the terminal building and associated waste handling facilities shall incorporate such reasonable measures to eliminate or minimise the potential for birds, rodents, flies and other pests to congregate at the development. Consideration shall be given to incorporating the following measures:*
- (a) Sealing surfaces to prevent moisture and odour absorption*
 - (b) Elimination of crevices where waste, moisture and vermin can accumulate*
 - (c) Providing screening of the ventilation openings in the building*
 - (d) Eliminating horizontal surfaces where birds can congregate*
 - (e) Minimising horizontal ledges where dust and litter can accumulate*
 - (f) Using fencing and netting to prevent wind-blown litter from escaping.*



116. *The Vermin and Pest Management Plan must be implemented for the duration of the operation of the development, to the satisfaction of the Director-General.*

117. *The Applicant must take all practicable measures to prevent the attraction and infestation of the premises with vermin and pests.*

1.3. Objectives

The objectives of the VPCP are to establish monitoring programs and control strategies to minimise the attraction of vermin and pests to the site, and to prevent the degradation of local amenity.

1.4. Responsibilities

Action	Responsibility
Implementation of the VPCP	Site Manager
Implementation of methodologies for minimising vermin and pests	Site Manager
Coordinate monitoring and mitigation strategies	Site Manager
Maintaining internal records	Site Manager



2. POTENTIAL VERMIN AND PESTS

For the purpose of formulating an effective vermin and pest control plan, an initial site assessment was conducted. This assessment considered:

- The site layout;
- Nature of waste materials to be delivered;
- The minimal time uncontainerised waste material will remain on site;
- Proximity to the Duck River and surrounding vegetation; and,
- The nature of surrounding industrial activities.

In summary, the potential variety of pests and vermin that may be encountered on site is likely to include:

- Mice;
- Rats;
- Cockroaches;
- Spiders;
- Ants; and,
- Silverfish.



3. CONTROL PLAN

3.1. Control Strategies

The Site Manager is responsible for ensuring the pest control program is carried out as per this plan. This plan has been developed in consultation with neighbouring industry and their Vermin and Pest Control Plan.

All buildings and equipment are maintained in such a manner that will not encourage the presence of pests. All efforts shall be taken to prevent access to insects, birds and rodents, as well as steps to remove them when their presence has been detected.

All pest control activities have been developed to comply with legal and safety and standard requirements.

3.2. Pest Control Contractor

The Site Manager is responsible for engaging a licensed pest control contractor to assist in carrying out the functions detailed in this plan. In addition to carrying out the pest control activities the contractor will have regard for neighbouring industries that may be sensitive to potential for pests.

3.3. Schedule and Method of Control

Management of pest and vermin at the site is control through both preventative and responsive mitigation measures.

Preventative control measures include, but are not limited to:

- Design of the building not to be conducive to bird habitation;
- Minimising the time waste is spent on the floor of the building;
- Inspection of the site by a registered pest controller every three months for the first year, and at least annually thereafter;
- Good house keeping practices as detailed in section 2.5;



- Placement of rodent bait stations at various locations around the site as follows:
 - Transfer Terminal (8);
 - Compactor Pit (3);
 - Site Administration Office (2);
 - Weighbridge Office (2).
- Training of all staff for recognising potential vector habitats;
- Border spraying, for the prevention of cockroaches, silverfish, spiders and ants; and,
- Cockroach gel in office areas.

Responsive measures include, but are not limited to:

- Recording and action of staff complaints and reports, as required;
- Discussion of any pest or vermin issues at monthly toolbox meetings; and
- Increase in the preventative measures listed above if considered necessary, and as advised by the Pest Controller, such as netting or hanging wires for birds.

The Weekly Site Inspection Checklist, which forms part of Veolia Environmental Services' (VES) National Integrated Management System (NIMS) documentation, records the site conditions such as drains, sumps and litter, evidence of vermin and pests, and any actions undertaken to ensure the mitigation measures mentioned above are being implemented effectively.

3.4. Reporting

Following each site inspection, the pest controller reports the following details to the Site Manager:

- The level of pest activity noted during inspection;
- Actions as part of routine schedule; and
- Actions in response to problems noted.



As a minimum requirement, all reports include the company name and address, the pest control license number, the date and the areas inspected and areas where action was taken.

From time to time, the pest controller may be requested to carry out further investigations. The results of these investigations will be provided in report form.

3.5. Housekeeping

The good housekeeping practices detailed below are primarily implemented and checked through the Weekly Site Inspection Checklist which is accessible on site.

3.5.1. Grounds

The grounds are kept in good condition to limit harbourage for pests by ensuring grounds and gardens are kept free from excessive weeds and undergrowth.

The drainage sumps and catch drains are inspected daily and cleaned regularly to prevent providing a potential habitat for pests.

Daily litter patrols are conducted to remove any wind blown litter. Incorporated in the litter patrol is an inspection for the emergence of potential vector habitats.

3.5.2. Building

To prevent the proliferation of pests, all areas are maintained in a manner that will not encourage the presence of pests, including keeping the holding time of waste on the floor to a minimum.

The waste floors, dado walls and all loading areas are cleaned regularly, including mechanical sweeping of the building floor following periods of high traffic volumes.

All overhead structures and internal roofs are also inspected daily to ensure they are kept clean.



3.6. Control of Chemicals Used

The pest controller is required to use approved chemicals only. A list of chemicals proposed and Material Safety Data Sheet (MSDS) for each are submitted and approved prior to use by the contractor.

All pesticides, poisons and other chemical used in the control and prevention of pest infestation are used in accordance with the manufacturers' instructions and the provisions of the Occupational Health and Safety Act, Worksafe Australia and any other relevant legislation.

3.7. Bait and Trap Stations

The Pest Controller is responsible for maintaining a current bait and trap map, however a copy is provided in **Appendix A**. This map is reviewed and updated on an annual basis.



Appendix A Bait and Trap Map

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VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

STORMWATER MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Stormwater Management Plan (SMP) has been prepared in accordance with conditions 52, 56 and 102 of the Conditions of Consent for the Clyde Transfer Terminal (the Terminal) to ensure that stormwater is successfully controlled and managed during the operation of the Terminal.

1.2. Conditions of Consent

52. *The Stormwater Management Plan must describe the post construction measures to be employed to operate and maintain the stormwater controls at the premises in a manner that minimises the pollution of waters.*

56. *The Applicant shall prepare and implement a detailed Environmental Monitoring Program for the proposed development. The program shall include, but is not necessarily limited to, all the monitoring required by this Consent, the environment protection licence, the EMP (Construction Stage) and the EMP (Operation Stage) for the development. The program must:*

- (a) Identify the environmental issues to be monitored*
- (b) For each issue, indicate whether its monitoring is required by this Consent, the environment protection licence, the EMP (Construction Stage), the EMP (Operation Stage), or by another instrument*
- (c) Set standards and performance measures for each issue*
- (d) Describe in detail how each issue is to be monitored, who will conduct the monitoring, how often the monitoring will be conducted, and how the results of the monitoring will be recorded and reported to the Director-General and other relevant authorities*
- (e) Indicate the actions taken and procedures to be followed if any non-compliance is detected.*

102. *Stormwater pollution controls must be implemented prior to and for the duration of the operation of the development. The controls shall be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the Scheme shall be consistent with the guidance contained in Managing Urban Stormwater: Council Handbook (available from the EPA). The controls shall incorporate minimum levels of treatment in the following table:*

Development component	Minimum level of stormwater treatment
<i>Undeveloped sections of access road</i>	<i>Existing overland flow to Duck River</i>
<i>Roof water</i>	<i>On-site detention</i>
<i>Gatehouse and weighbridge area, car park, access road and container loading area</i>	<i>First flush system, GPT, oil and grease separation, on-site detention</i>



adjacent to the compaction units	
----------------------------------	--

1.3. Objectives

The objectives of the SMP are to provide details regarding the operation of the stormwater control system during the operation of the Terminal.

1.4. Responsibilities

Action	Responsibility
Overall implementation of the SMP	Site Manager
Coordinate monitoring and compile reports	Environmental Monitoring Manager (EMM)
Conduct monitoring	Environmental Monitoring Technician (EMT)
Maintain internal records of monitoring	Environmental Monitoring Manager (EMM)
Identify Non Conformances and notify Site Manager	Environmental Management Representative (EMR) or site nominee
Authorise and confirm the implementation of mitigation measures	Site Manager



2. STORMWATER MANAGEMENT

2.1. *Collection and Treatment*

The Terminal stormwater system ensures that stormwater generated on site is collected and discharged, in a controlled manner, into Duck River, via a culvert and headwall as shown in **Appendix A**.

Stormwater runoff is diverted to an oil/silt separator (humeceptor) located at the north western side of the Terminal's office/amenity buildings. This treated water flows to the stormwater retention basin located on site. Stormwater captured from the roof of the transfer and office/amenity buildings, classified as "clean", is direct straight to the stormwater retention pond or the rainwater tank for re-use on site.

Stormwater from the hot load area passes through the oil/water separator under normal operation. When a hot load is disposed in the area, the firewater is collected and stored in a dedicated tank. This stored liquid is classified as leachate and is disposed of appropriately off site in accordance with NSW Environment Protection Authority (EPA) requirements.

2.2. *Potential Contaminants*

The stormwater treatment system for the Terminal has been designed to treat stormwater contaminants that have the potential to be present at the facility. Sources of possible contaminants include:

- Gross pollutants (cigarette butts, paper, wind blown matter); and
- Oil and grease.

Identification of these pollutants has enabled an appropriate treatment system to be designed that effectively removes the contaminants from the stormwater prior to final discharge into Duck River.



Gross pollutants are minimised through routine litter patrols and housekeeping of the site perimeter for wind blown material.

Note: The Terminal building floor has been designed so that any water that may come into contact with the waste is directed to the leachate sump, for collection and appropriate disposal off site.

2.3. Monitoring

In accordance with Condition 56 of the Development Consent, an Environmental Monitoring Program (EMP) has been prepared to details the monitoring schedule, calendar and locations for all environmental aspects, as required and is provided in Appendix E of the Operational Environmental Management Plan (OEMP).

This section provides monitoring details that are specific to water management. Any water quality monitoring and sampling required is to be undertaken in accordance with the Procedure for Monitoring and Sampling of Surface Water, which forms part of Veolia Environmental Services' (VES) National Integrated Management System (NIMS) and is accessible on site and provided in **Appendix B**.

Background water sampling and analysis of Duck Creek, both upstream and downstream of the Terminal was undertaken prior to the commencement of the Terminal's operations, to establish the existing water quality of the river. Samples are no longer collected from Duck Creek, as historical monitoring results do not indicate any pollutant exceedances or adverse impacts to the river due to stormwater run-off from the Terminal, neither is it a requirement of the site's Environmental Protection Licence (EPL).

Note: Water quality monitoring is neither an EPL nor a Conditions of Consent requirement; therefore it does not form part of the Terminal's operational monitoring requirements. The results of any water quality testing, if required would be reported in the Annual Environmental Management Report (AEMR).



2.4. Maintenance

Inspection of the stormwater treatment system is carried out on a regular basis and after significant rainfall events. Debris is removed when identified by inspection, or on a programmed basis. Any material accumulated within the retention basin or the silt/oil chamber is removed manually or by high suction vacuuming and disposed of in an approved manner.

Checking and cleaning out the treatment system, as well as inspections for the pumps and retention pond are part of the stormwater maintenance procedure for the Terminal. Other stormwater maintenance involves visually inspecting pits and drainage points as part of the site inspection checklists. Cleaning out of drain wardens and inspection of culverts for obstructions are undertaken on a biennial basis, or as required.

2.5. Storage Capacity

The retention basin has been designed for a one (1) in 100 year storm ARI and has a permissible discharge of 80L/s/ha. This conforms to the Upper Parramatta River Catchment Trust guidelines “On-Site Stormwater Detention Handbook”.

2.6. Spill Response

In the event of a spill, the liquid and solid spill emergency procedures are to be followed, as detailed in the Incident Response Plan (IRP).



Appendix A Stormwater Plan

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Appendix B Water Monitoring and Sampling Procedure

NSW Clyde Transfer Terminal Environmental Monitoring and Sampling

Objective

To undertake periodic sampling of surface waters that is required to assess the performance of environmental controls, compliance with permits and other authorisations and to evaluate and check third party compliance testing.

Activity

Sampling

The sampling location should remain consistent through the complete monitoring program unless the location becomes inaccessible and the new location is representative of the water body to be sampled. Any change in the monitoring location should be recorded on the pro-forma record sheet

Avoid collecting samples from the water surface wherever possible except where a floating product layer needs to be sampled. Submerge sample or transfer containers below the water surface to avoid collecting floating debris or other products. Where information is required on floating products present on the water surface (e.g. oil or foam) it is necessary to collect two samples- one representative of the floating product and one of the sub-surface body of the water.

To ensure integrity of the sample, be aware of possible sources of contamination. Contamination introduced during each phase of sample collection and processing is additive and usually is substantially greater than contamination introduced elsewhere

The Australian / New Zealand Standard AS/NZS 5667.6:1998 provides additional guidance on the sampling of rivers and streams.

ALL MONITORING PERSONNEL MUST MAKE THEMSELVES AWARE OF THE HAZARDOUS SUBSTANCE ASSESSMENT/RISK ASSESSMENT FOR THEIR OPERATIONAL TASKS. ADDITIONAL INFORMATION ON GENERAL AREAS OF RISK MAY BE OBTAINED FROM THE 'SITE RULES' OF THE RESPECTIVE SITE OR RISK MANAGEMENT.

Springs

- These are sites where the groundwater rises and breaks out from the ground. They form one of the easiest sources to obtain a sample. A sample should be taken from the point closest to where the water is breaking through the ground surface if this can be seen, otherwise it must be obtained from an undisturbed area as close to the middle of the course as possible.

Standing Water, Ponds, Streams and Surface Water Run-off Ditches

- The sampling should include field comments about the state of the water body including vegetation cover and whether the body of water is in flood or abate. Any further observations required will be outlined in the site-monitoring schedule.



NSW Clyde Transfer Terminal Environmental Monitoring and Sampling

- Care should be taken so as not to disturb sediments. Extra care should be taken when sampling deep or fast flowing water, under no circumstances should personnel enter the water unless the risk assessment has identified control measures and a safe system of working.
- When collecting samples from ponds, lakes or wetlands, avoid collecting the sample too close to the banks. Equipment designed for obtaining samples beyond arms reach can be obtained and should be used where necessary.

Surface Water / Trade Effluent Controlled Discharges

- Periodic sampling of surface water and trade effluent controlled discharges are required to check for compliance against the conditions of the consent.
- The location of the sampling point should be clearly marked on the site drawing and the location should be common with the controlling authorities sampling location.
- If the discharge has a weir or other such flow-restricting device, the sample should be taken from directly upstream of the restriction.
- If the sample is to be taken from a closed discharge pipe with a sample valve or tap, the valve or tap should be fitted with a section of clear hose to aid the filling of sample bottles. Also, open tap for approximately 30 seconds before sampling, so as to achieve a representative sample

Wheel-washes, Holding Tanks and other such structures

It may be necessary to obtain non-routine samples from various structures including wheel-washes and holding tanks, particular care should be taken as to the design of the structure and where necessary make sketches of the design and where the sample was obtained

Procedure

Pre-site Visit Checks

- Check the location of the site and the precise location of the surface water points. Take necessary keys, equipment to enter the site safely and the areas where sampling is to be undertaken.
- Depending upon access, take disposable bailers, sampling vessels or other collection equipment.
- Take the necessary Monitoring Pro-forma (Example Two)
- Ensure all analytical instrumentation for the in-situ determination of pH, Temperature, Electrical Conductivity and Dissolved Oxygen are in working order and calibrate with appropriate solutions in accordance with the calibration procedure. Record calibration results on the pro-forma (Example One).
- Any instrument that is faulty or showing erroneous readings should be removed from daily use until suitably repaired or recalibrated, and recorded in calibration file.
- Collect the appropriate number of sample bottles (sterilised with lids), taking spares.



NSW Clyde Transfer Terminal Environmental Monitoring and Sampling

- Ensure the correct types of bottles are taken for the appropriate analytical suite.

Refer to the relevant Hazardous Substance Assessment / Risk Assessment, and control measures for the operational task(s)

On-site Pre-Sampling Checks

- Sign in at the office or weighbridge in accordance with the Entry onto Sites and Lone Working Procedure.
- If the site is closed and lone working is expected contact an appointed person in accordance with the Entry onto Sites and Lone Working Procedure.
- Put on the appropriate personal protective equipment including gloves.
- Familiarise with the risk assessment(s) for the operational task(s).

Ensure that all equipment is carried around the site without causing damage to it. Glass bottles should be stored safely (bubble wrap, divided box) to protect them during transit.

Sampling by Hand

- Sampling by hand the bottle may be lowered into the water. Caution must be taken when sampling shallow water that debris from the bottom is not disturbed.
- Sampling from streams or rivers must be undertaken by standing downstream of the desired sampling location in order to minimise the amount of disturbance. Downstream samples should be taken first.
- The presence of weirs and other fast flowing areas of water can affect dissolved oxygen levels. Samples should not be taken directly downstream of these areas.
- Fill and empty the sample bottle/transfer container in order to rinse out unless the sample bottle has been pre-charged with preservative.
- Unless otherwise indicated fill the sample bottle(s) completely, excluding all air when the top is screwed on. If the bottles are pre-charged with preservatives fill to the level indication point only.
- Label the bottle(s) correctly with Company, site, location, sampler, suite required and date. Add preservative to the sample to stabilise if necessary. Repeat for multiple bottles, ensuring correct instructions are adhered to when using preservatives or fixatives

Sampling using a bailer or similar weighted device

- Rinse the bailer with distilled water.
- Lower the clean, disposable bailer to the surface using a length of plastic coated line and allow it to fill. This may be done where a bridge or other access platform allows. If access is more difficult then the bailer may be thrown out from the bank or use a dedicated long-reach sampling unit. The bailer may need weighting in order to obtain a satisfactory sample volume.



NSW Clyde Transfer Terminal Environmental Monitoring and Sampling

- Rinse with sample water before taking actual sample.
- Minimise the amount of disturbance to the sample and avoid sampling any sediment.

Fill the bottle(s), as in the (Handling BY Hand) section and label accordingly

Field Measurement Testing

- Rinse a plastic beaker with the sample water, either from the bailer or the bottle, thoroughly before undertaking the analysis.
- Use one instrument at a time, taking temperature readings first to give the most accurate reading. If a temperature dip meter or probe is available this may be used to gain a reading directly from the body of the water.
- When taking dissolved oxygen readings agitate probe slowly until readings stabilise. For pH and electrical conductivity record stable readings.
- Record the results on the Pro-forma (Example 2).
- Note any colouration in the sample and level of sediment and presence of surface contamination such as oils and grease.
- Rinse all the instruments with deionised water once all the measurements have been taken. Ensure all equipment is transported, safely without causing damage, to the next monitoring point.

Sampling Completion

- Following completion of monitoring check integrity of all samples bottles and ensure that they are packed well and all lids are intact.
- Ensure all labels remain fixed and are labelled



NSW Clyde Transfer Terminal Environmental Monitoring and Sampling

Example One Pro-Forma – Field Instrument Calibration

Calibration Date	Calibrated (Yes/No)			Remarks
	Dissolved Oxygen	Conductivity	pH	

Site				Weather				
Date				Atmospheric Pressure (mb)				
Operator				Wind direction				
Equipment				Wind speed				
Calibration				Ground conditions/ Water conditions				
Sample Point	Date	pH (field)	Temperature (field) (°C)	Conductivity (field) (µs/cm)	Dissolved oxygen (field) (mg/l)	Sample taken (Y/N)	Visible oil & grease?	Comments

Example Two Pro-Forma Surface Water Field Test

End of Procedure

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VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

SITE CONTAMINATION MANAGEMENT PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Soil Contamination Management Plan (SCMP) has been prepared in accordance with conditions 23, 24, 53 and 103 of the Conditions of Development Consent (COCs) for the Clyde Transfer Terminal (the Terminal) as a guide to minimise the disturbance of contaminated soils and dust generation on site during operational activities.

1.2. Background

The Terminal site has historically been used for rail purposes since the early nineteenth hundreds. Hydrocarbon-based liquids, ash-based materials, coal wash, slag, ashes and ballast comprise the rail-based wastes. These wastes include heavy metals, lead and asbestos.

The site has been redeveloped so as to operate a road/ rail waste transfer station with gatehouse/ weighbridge for the transportation of General Solid Waste (Putrescible), classified in accordance with Schedule 1 of the Protection of the Environmental Operations (POEO) Act 1997.

The Terminal's operating area comprises a transfer building, housing a hydraulic waste compactor pit, a weighbridge, container storage, loading and unloading areas and a leachate tank. Waste enters the Terminal by road, is weighed on the weighbridge and unloaded onto the tipping floor, prior to compaction and loading into containers, ready for rail transport to the bioreactor site at Woodlawn.

The SCMP has been prepared to identify measures to minimise and control the mobilisation of contaminants on-site to protect sub-surface waters from contamination; and manage dust during the construction and operation stages to protect the health of on-site and off-site personnel. In accordance with Condition 23, the SCMP was endorsed by a site auditor which can be referred to in **Appendix A**.



A Construction Site Contamination Management Plan (Construction SCMP) is prepared as a guide for the effective control of contaminated material during any construction work of the Terminal. Although the Terminal is sealed with a hardstand to prevent disturbance to existing soil or groundwater, any ground disturbance, while not envisaged, causing likely mobilisation of contaminants, the management procedures outlined in **Appendix B** will be complied with.

Both construction of the Terminal (2004) and upgrade works to the existing hardstand (2008) involved earthworks within an area of approximately 7500 m² with a potential to disturb the contaminated material on which the facility is sited. The results of the environmental monitoring undertaken during the construction stages of both projects did not indicate any adverse impacts on air and water quality.

1.3. Conditions of Consent

23. *The applicant shall obtain an environmental report prepared by a site auditor accredited under the Contaminated Land Management Act 1997 to determine the nature and extent of contamination at the site and any investigation and/or remediation necessary before the land is suitable for commercial/industrial use.*

Prior to construction the Applicant shall obtain written endorsement from the site auditor for the following aspects of the Site Contamination Management Plan:

- (a) A plan to manage the disturbance of contaminated soil in a manner that protects sub-surface waters from contamination; and*
 - (b) A plan to manage dust during the construction and operational stages in a manner that protects the health of on-site and off-site personnel.*
24. *Prior to completion of construction, any amelioration measures required to enable a site audit statement to be issued shall be implemented.*
53. *The Site Contamination Management Plan must include any actions recommended in the environmental report by the site auditor that apply to operation stage activities.*
103. *The Site Contamination Management Plan must be implemented to the satisfaction of the Director-General, prior to and for the duration of the development.*



1.4. Objectives

The objective of this SCMP is to provide mitigation management procedures in the event of disturbing the ground and subsurface soils during the operation of the Terminal.

1.5. Responsibilities

Action	Responsibility
Overall implementation of the SCMP	Site Manager
Implement methodology for managing disturbed soil and dust	Site Manager
Coordinate monitoring and compile reports	Environmental Monitoring Manager (EMM)
Conduct monitoring and maintain internal records of monitoring	Environmental Monitoring Technician (EMT)
Identify Non Conformances and notify Site Manager	Environmental Management Representative or site nominee
Authorise and confirm the implementation of mitigation measures	Site Manager



2. MITIGATION MEASURES

2.1. *Management of Disturbed Material*

For the duration of the operations undertaken at the Terminal, the site will be sealed, unless upgrade works are required to the existing hardstand, thereby minimising the potential for disturbing the soils. If future works are to be undertaken involving disturbing the ground, mitigation measures as outlined in the Construction SCMP provided in **Appendix B** will be implemented.

2.2. *Management of Dust*

The management of dust during the operational stage is detailed in the Dust Management Plan (DMP), which aims to minimise potential dust emissions from the Terminal. In addition to the measures outlined in the DMP, an objective of the Terminal's operations is to ensure the effective sealing of the site to minimise any disturbance of soil.

2.3. *Management of Groundwater*

The surface of the site has been sealed to minimise the potential disturbance of groundwater and groundwater will not be utilised for any aspect of the operation. In accordance with the site auditor recommendations, groundwater will not be abstracted for use without ascertaining that it is suitable for the proposed use.

Background groundwater monitoring was undertaken by Veolia Environmental Services (VES) prior to the commencement of Terminal operations, on the recommendation of the site auditor to determine the risk, if any, that the impacted fill material posed to the quality of groundwater and surface water. The monitoring results indicated that no significant contamination potential was detected, consequently groundwater monitoring is no longer undertaken at this site, neither is it a requirement of the site's Environmental Protection Licence (EPL). Further information related to water monitoring is detailed in the Stormwater Management Plan (SWMP).



3. MONITORING AND REPORTING

3.1. Monitoring

Air quality, surface water and ground water monitoring form an important part of the overall SCMP for the Terminal. The SMP and the DMP outline the relevant monitoring locations and schedules associated with surface water, groundwater and dust.

3.2. Reporting

Any measured contribution to on and off site contamination shall be evaluated and assessed against the relevant criteria for each contaminant type.

In the event of an exceedance of the relevant criteria, the EMR shall be promptly informed of the location, the margin of exceedance and the source of emission so that an appropriate response can be made to the Director-General, Department of Environment, Climate Change and Water (DECCW) and Auburn Council, as required by the COCs.



Appendix A Site Auditor Endorsement

ENVIRON

17 December 2003.

Ref: 31-0127

Collex Pty Ltd
Attn: Christine Nettle
Level 4, 65 Pirrama Road
PYRMONT NSW 2009

RECEIVED	
MAUNSELL BRISBANE	
24 MAR 2004	
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REGISTER No:	
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Dear Christine,

Site Contamination Management- Clyde Transfer Terminal

This letter refers to the proposed Transfer Terminal at 322 Parramatta Road, Clyde (the Site). This letter was prepared in response to Condition 22 of the Conditions of Consent Issued under the NSW *Environmental Planning and Assessment Act 1979* for the development of a waste transfer terminal on the Site. This later became Condition 23 of Development Consent for the *Clyde Waste Transfer Terminal (Special Provisions) Bill 2003*.

Condition 23 is in two parts. The first part requires an environmental report prepared by a site auditor accredited under the Contaminated Land Management Act. The undersigned is an accredited auditor and prepared an environmental report dated 17 December 2003. It assessed the suitability of the Site for its intended use as a waste transfer terminal.

The second part of Condition 23 requires endorsement from the site auditor for aspects of a site management plan, specifically to (a) manage the disturbance of contaminated soil in a manner that protects sub-surface waters from contamination, and (b) to manage dust during construction and operation stages in a manner that protects the health of on-site and off-site personnel.

To address the second part of Condition 23, I have reviewed several drafts of the Site Contamination Management Plan, and the final document "Site Contamination Construction Environmental Management Plan, Clyde Transfer Terminal" dated December 2003. The document (the CEMP) was prepared by Collex, Barclay Mowlam and Maunsell.

I have also reviewed drafts of the "Soil and Water Management Plan" (SWMP) dated August 2003 and "Construction Dust Monitoring Plan Incorporating Ambient Air Quality Plan" (CDMP) dated September 2003.

Condition 23 (a) Sub-surface waters.

The surface of the site is currently sealed, and the final surface will also be sealed, thereby minimising infiltration. The potential for the development to change the sub-surface water quality is confined to the construction period, when the soils are disturbed.

The CEMP outlines measures to prevent surface water from entering excavation or stockpile areas. It states that any perched water will be collected in a sump and treated as contaminated. The SWMP further states that areas of disturbance will be limited.

The measures proposed are considered adequate to protect sub-surface waters from contamination during site redevelopment. A critical factor is removal of any water from unsealed soil areas as soon as possible to minimise the potential for infiltration.

Condition 23 (b) Dust

Dust management measures are outlined in the CEMP with further measures listed in the CDMP. The measures generally include keeping the soil moist and covering of stockpiles. The CDMP outlines a monitoring program which, if successful results are achieved, should be protective of the health of offsite personnel.

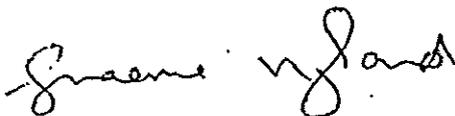
The monitoring program does not include monitoring for the specific contaminants, which may include asbestos and lead, that are potentially present in the soil on the site. Protection of workers is proposed to be achieved through personnel protective equipment and site inductions for all personnel. The CEMP does not specify the contents of the induction with respect to contaminated soils. Clearly it must communicate that there is a risk of some asbestos being present in all soil on the site, although short term exposures to low concentrations of airborne fibres are likely to be associated with very low health risks. It must also communicate that respirable fibres cannot be seen with the naked eye, and that there is a possible synergistic relationship with smoking.

Condition 23 requires endorsement of a plan to manage dust during the operational stages. This is not specifically covered in the documents reviewed. However, it is understood that the entire site will be paved in the operational stage, and therefore there is no requirement for any measures to control dust from soil beneath the paving.

* * *

Please call me if you have any questions.

Yours faithfully,
ENVIRON Australia Pty Ltd



Graeme Nyland

NSW EPA Accredited Site Auditor 9808

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Appendix B Construction Site Contamination Management Plan



Site Contamination Management Plan

**Hardstand Upgrade & Extension
Clyde Transfer Terminal**

December 2008

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1.0 INTRODUCTION

This Site Contamination Management Plan (SCMP) has been prepared in accordance with Condition 103 of the Clyde Transfer Terminal (Terminal) Conditions of Development Consent as a guide to the effective control of contaminated material, during the Hardstand Upgrade and Extension works.

1.1 Conditions of Consent

23. *The applicant shall obtain an environmental report prepared by a site auditor accredited under the Contaminated Land Management Act 1997 to determine the nature and extent of contamination at the site and any investigation and/or remediation necessary before the land is suitable for commercial/industrial use.*

Prior to construction the Applicant shall obtain written endorsement from the site auditor for the following aspects of the Site Contamination Management Plan:

- (a) A plan to manage the disturbance of contaminated soil in a manner that protects sub-surface waters from contamination*
- (b) A plan to manage dust during the construction and operational stages in a manner that protects the health of on-site and off-site personnel.*
24. *Prior to completion of construction, any amelioration measures required to enable a site audit statement to be issued shall be implemented.*
37. *The Site Contamination Management Plan must include, but not necessarily be limited, the following issues that apply to construction stage activities:*
- (a) A plan to manage the disturbance of contaminated soil in a manner that protects sub-surface waters from contamination*
- (b) A plan to manage dust during the construction and operational stages in a manner that protects the health of on-site and off-site personnel.*
103. *The Site Contamination Management Plan must be implemented to the satisfaction of the Director-General, prior to and for the duration of the development.*

1.2 Relevant Legislation and Guidelines

- *National Environment Protection (Assessment of Site Contamination) Measures (NEPM) (1999) "Guidelines on Investigation Levels for Soil and Groundwater"- provides a policy framework, a recommended process for assessing site contamination, and guidelines dealing with salient aspects of the assessment process. Adoption of the NEPM in New South Wales has been achieved within the Contaminated Land Management Act 1997.*
- *ANZECC (2000) "Guidelines for Fresh and Marine Water Quality and Monitoring"- provides a guide for setting water quality objectives to sustain*

current, or likely future, environmental values for natural and semi-natural water resources in Australia and New Zealand. Includes guidelines for monitoring of water quality.

- *ANZECC/NHRMC (1992) "Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites"*
- *NSW EPA (1999) "Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes"*.
- provides details of the EPA licensing scheme and the classification and management of wastes.
- *Contaminated Land Management Act 1997* - establishes a process for investigating and remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment.
- *Contaminated Land Management Regulation 1998* - outlines details to be submitted to EPA in regards to annual returns, duty to report contamination and site audit statement.
- *Protection of the Environment Operations Act 1997* - provides regulatory framework for the control of pollution
- *Protection of the Environment Regulation (General) 1998* - provides details of environment protection license (EPL) provisions and fees, record keeping and reporting requirements, and appropriate regulatory authority.

2.0 GOALS OF THE SITE CONTAMINATION MANAGEMENT PLAN

This SCMP has been prepared to address the following in the event the Terminal Hardstand Upgrade and Extension disturb any contaminated material in the underlying fill:

- To identify measures to minimise the disturbance of contaminated material;
- To maximise where appropriate the reuse of the contaminated material on site; and
- To limit any mobilisation of contaminants to the environment.

2.1 Objectives

The objectives of the SCMP, in accordance with the Consent Conditions are to:

- Outline the measures required to manage the excavation of contaminated material and reuse of the material on site;
- Minimise potential environmental impacts on and off the site from excavation procedures; and
- Outline measures if asbestos or hydrocarbons in the semi volatile and non volatile range are encountered within the fill.

2.2 Responsibilities

During the Construction phase, responsibility for the management of contaminated material within the site lies with the Contractor under agreement with Site Management and Pacific National.

Responsibilities for the implementation of the SCMP are summarised in Table 2.1.

Table 2.1 Summary of Responsibilities – Site Contamination Management Plan

Action	Responsibility
Overall implementation of the SCMP	Site Manager and Contractor
Implement methodology for managing disturbed soil, dust and water management.	Contractor
Induct all personnel on site safety and site environmental requirements prior to commencing any work on site	Site Manager and Contractor
Develop specific Work Methods and carry out Job Specific Safety Analysis for site personnel	Contractor
Coordinate site health and safety monitoring and compile reports	Contractor
Create a Permit to Dig for each new excavation activity to track material movements.	Site Manager
Coordinate site environmental monitoring and compile reports	Environmental Management Representative (EMR) or nominee
Maintain internal records of environmental monitoring	EMR or nominee
Identify and /or notify any reported Environmental Non Conformances if and when they occur for corrective action.	Contractor and EMR or nominee
Confirm methods to mitigate impacts and rectify any Environmental Non Conformance or Incident.	Contractor
Authorise and confirm the implementation of mitigation and/or rectification measures	Site Manager and Contractor

3.0 BACKGROUND

3.1 *Site Location and Description*

The Terminal is located within the south-western portion of the Clyde Marshalling Rail Yards, on a site that has been used for rail purposes since the early part of the century. The site has been contaminated with rail based wastes such as coal wash, slag, ashes, ballast; hydrocarbon-based liquids and ash-based materials. These wastes include heavy metals, lead and asbestos.

Duck River borders the site to the west, the CityRail main Western Rail Line to the south and the operating Pacific National Intermodal Facility to the north and east. Entry to the site is via the existing access road that adjoins Parramatta Road.

The existing asphalt-sealed hardstand lies east of the Terminal and is bounded to the north, south and east by rail line tracks numbered 17 to 22. Significant distress mainly in the form of potholes and differential settlement is exhibited by the pavement.

The extension planned for the container storage area to the south and east is occupied by existing rail line tracks numbered 17 to 22.

The proposed pavement upgrade and extension area is estimated to occupy approximately 11,000 square metres, spanning 230 metres from the east to the west and between 20 to 60 metres from the north to the south.

3.2 *Site History*

The site had been used for industrial purposes as a rail siding since the early nineteen hundreds.

The current paved site has had detailed investigative soil core and water sampling carried out. The following contaminants, prior to site investigation, were considered to have the potential of occurring at the Terminal:-

- Polycyclic Aromatic Hydrocarbons (PAH);
- Monocyclic Aromatic Hydrocarbons (including Benzene, Toluene, Ethylbenzene and Xylenes - collectively called BTEX);
- Total petroleum hydrocarbons (TPH);
- Various heavy metals including copper, lead, zinc, chromium, cadmium and mercury;
- Arsenic;
- Asbestos;
- Cyanides;
- Organochlorine pesticides (OCP);
- Ammonia (in groundwater); and
- Polychlorinated biphenyls (PCB).

BT Environmental Services Pty Ltd undertook a baseline contamination assessment of the site in 2002. The investigation identified that the site had been extensively filled largely with a gravelly-sand mixed with coal wash and slag debris, and additional material such as broken tiles, brick fragments, timber waste and broken glass. Underneath the fill, natural clays were observed at a depth ranging from 4 to 6 metres below the existing ground level. Perched water was observed to be present in the majority of fill materials on the site, but discontinuous with the ground water in the underlying clays.

Taking the history of site use into account and its future industrial use, soils were assessed against the NEHF F (Commercial or Industrial) criteria as provided by schedule B(1) of the National Environmental Protection Council (NEPC(1999)) as well as the relevant NSW Environmental Protection Agency (NSW-EPA) guidelines.

The fill material was observed to contain hydrocarbons typically in the semi volatile and non-volatile range. Sample results indicated that the levels of several heavy metals exceeded assessment criteria in a number of cases. No volatile hydrocarbons, cyanides, PCBs or OCPs were detected within the fill material.

No hydrocarbon-based contaminants were identified within the underlying natural clay, however elevated concentrations (above guidelines) of manganese and copper were detected. The manganese and copper may be naturally occurring or leached from the fill material.

The field assessment also identified two separate hotspots for asbestos and Total Petroleum Hydrocarbons at varying depths

The results of the soil testing indicated that all contaminants found in the samples taken, with the exception of the two hotspots identified, complied with the human health based site assessment criteria.

The hardstand upgrade and extension works will disturb the ground within hotspot areas. All earthworks will be conducted in accordance with the management strategies detailed herein for minimising potential exposure to contaminated material.

Groundwater was assessed in line with the Australian and New Zealand Environment and Conservation Council (ANZECC) (2000) guidelines as endorsed by the NSW EPA.

Ground water samples indicated heavy metals (copper, lead, nickel and zinc), cyanide, ammonia, and arsenic above the trigger value for marine water quality. However the ground water contaminants were found to be below criteria provided for irrigation water. Following the redevelopment (sealed via paving) of the site, the ground water quality should improve as the infiltration of water through the fill will be decreased, minimising potential leaching of contaminants (especially zinc and ammonia) out of the fill.

3.3 Site Audit Report

A Summary Site Audit Report and a Site Audit Statement were prepared for the Clyde site by Mr Graeme Nyland (Accred. No. 9808) of Environ in January 2003.

3.4 Project Description

The Hardstand upgrade and extension at the Terminal will involve two consecutive stages of construction.

Stage 1 will involve construction of an extension to the southern and eastern sides of the existing hardstand, as well as construction of drainage and detention systems and Stage 2 will involve reconstruction of the existing hardstand area.

Construction activities will include:

- Erosion and sedimentation control and other environmental protection measures
- Stormwater drainage and scour protection structures
- Earthworks
- Survey and set out
- Concrete works
- Bound pavement
- Asphaltting
- Drainage and detention pond works
- Security fencing and other ancillary works

Material handling will be managed on site by induction, training, job safety analysis and safe working method development, and provision of personal protective safety equipment to site personnel during the site excavation operation. This will ensure the occupational health and safety of the site personnel and will in accordance with the constructors' accredited quality and safety systems.

On completion of the excavation works all areas of considered contamination, both previously identified through sampling and any new areas detected through visual inspection, will be fully documented for the use of any future operations.

3.5 Risk

The risk evaluation for the removal, relocation and/or disturbance of contaminated material on site is presented in Table 1.1 overleaf.

Table 1.1 Risks Arising from Removal, Relocation or Disturbance of Contaminated Material

Item/Group at Risk	Risk Assessment	Management
Workers	Within human health based assessment criteria	Personnel protective equipment in (PPE) accordance with the Job Specific Safety Analysis, Method Statement and the Contractor's Occupation Health Safety and Environmental Plan. Blinding and/or sealing of open excavations. Covering/protection of overburden storage for later incorporation into the works.
Ecology	Exceeds the provisional Phototoxicity criteria as adopted for this site	Care with reuse of material on site, ensure it is placed in an area to be sealed with paving. Procedures to be in place to track material.
Air Quality	Dust expected to be minimal due to the moist nature of the contaminated material	Water spraying to control dust emissions. High Volume Air Sampling (HVAS) in place to validate control measures.
Surface Water Quality	Surface water build up expected only due to rain.	Install erosion and sediment control structures and drainage diversion to sediment basin
Ground Water Quality	May exceed marine water quality guidelines	Deep ground water – construction activities will not be below the water table and as such ground water ingress to site excavations is not envisaged to be an issue. This management reference is for contingency only.

4.0 GENERAL ENVIRONMENTAL MANAGEMENT

4.1 *General Procedure for Material Handling*

The identified hotspot areas from previous investigations are not likely to be disturbed during the construction phase of the hardstand upgrade and extension.

Any likely occurrence of exposure to contaminated material will be managed in accordance with the contingency plans contained within this document.

4.2 *Contaminated hotspots*

A lead and asbestos hotspot located in the central south-western portion of the site was remediated as per the Environmental Consultants recommendation to install an impermeable layer (i.e. concrete pad) over the entire extent of the identified hotspot.

The scope of the hardstand upgrade and extension does not include this hotspot therefore the area will not be disturbed during construction activities.

4.3 *Excavation procedure for soils*

Prior to the commencement of excavation activities, Contractor will formulate the Work Method to be included on the Permit to Dig. This will include the following activities:

- verify the areas to be excavated;
- ensure erosion and sediment control structures are installed in accordance with the Soil and Erosion Control Plan;
- diversion drains, sumps and pumping system installed in accordance with the Soil and Water Management Plan; and
- verify that the excavation occurs in the correct area, to the correct depth and in a manner to enable correct stockpiling/backfilling.

The nominated areas will be excavated in a manner to enable material to be blended for re-use in the encapsulated main building foundations. Any material identified as suspect will be quarantined for further investigation to avoid any cross contamination. Excavated soil will be stockpiled at the nominated locations for no longer than necessary.

The Contractor shall ensure at all times the sides of the excavation are stable and material is stockpiled with adequate angle of repose to ensure stability.

Stockpiled, site excavated material will be used on site as backfill in areas that are not available to ecological receptors. If excavated material exceeds on site fill requirements, the excess material will be removed from the site by a licensed waste transporter to an appropriately licensed

location for disposal. Licensing validity is to be checked by the Contractor.

If there is a requirement to use imported fill, then the imported fill will be certified clean fill (e.g. native quarried material) and will not contain contaminants above the health based standard for industrial guidelines. Validation certification from supplier will to be checked by the Contractor.

Compaction of the soil to the specified standard will be achieved by using compaction rollers and/or other compaction equipment. Fill will be placed to contours such that in the event of rain, water will drain to the outside of the fill area to be collected by diversion drains to sumps and pumped to the detention pond to be used as a settlement and treatment pond.

4.4 Containment of Contaminated material

4.4.1 Air

Emissions to air during excavation will be minimised in accordance with the Construction Dust Monitoring Plan including:

- Water sprays/ carts will be used as required across all construction sites to suppress dust;
- Covering of all stockpiles of contaminated soil remaining for periods longer than 24 hours;
- Covering or sealing of all loads entering or leaving the site; and
- High Volume Air Sampling (HVAS) will be in place to validate success of the control measures.

4.4.2 Water

All water on the site will be controlled in accordance with the Soil and Erosion Control Plan and the Contractor's Erosion and Sediment Control Plan appended to the Soil and Water Management Plan (refer to Appendix C7 of the CEMP) including:

- Diversion drains, sumps and pumping systems to prevent surface run off entering or leaving excavated areas and/or stockpile area;
- Detention ponds to store water for sediment control;
- Erosion and sediment control structures to prevent run off/suspended solids entering or leaving works/stockpile areas;

No surface run off from the works area is to be discharged to the surrounding environment prior to appropriate treatment.

As the excavation is above the water table, perched water should not be prevalent. As a contingency, excavation will be carried out so that any water ingress into the excavation will be allowed to naturally drain to a sump located at one corner of the excavation.

4.4.3 Vehicles

Vehicle access to the site shall be established to prevent any material being tracked onto the roads and footpath. Soil, earth, mud or other similar materials must be removed from the roadway by sweeping, shovelling or means other than washing, on a daily basis or as required.

Soil washings from the wheels shall be collected and disposed of in a manner that does not pollute waters.

4.4.4 *General*

As part of the induction process, all employees and contractors will be trained on how to identify contaminants in the various mediums (air, water, and soil).

4.5 ***Material Tracking Control***

To ensure contaminated material is controlled throughout all stages of the construction operation, the following tracking controls will be implemented during the following phases:

- Excavation - The area to be excavated shall be clearly delineated by flagging and/or marking off the area. A Permit to Dig will be filled out to confirm the area to be excavated and the method/process to be followed to move the material to stockpile or backfill location.
- Stockpiling - All stockpiling operations during construction will move material from one location to another as defined on the Permit to Dig. The Permit to Dig will detail the protection measures to be utilised on the stock pile as previously determined by the Work Method and Job Safety Analysis formulated in conjunction with the Contractor.
- Backfilling - All backfilling operations during construction will move material from one location to another whether from stockpile or direct from excavation as defined on the Permit to Dig. The Permit to Dig will detail the measures to be utilised for backfilling as previously determined by the Work Method and Job Safety Analysis formulated in conjunction with the Contractor.

If removal of contaminated material from the site is required it will be carried out in accordance with the procedure outlined in Section 4.3 of this plan.

4.6 **Contingency Plan**

If any contamination incident occurs, the following contingency plan will be followed.

For unexpected situations:-

- The Contractor and Site Management are to be notified as per the explanation provided during the site induction.
- Work Methods and the Job Safety Analysis will be revisited to determine the best means of dealing with the new situation.

Two examples of unexpected situations are presented below.

Situation 1: Unacceptable conditions such as high levels of odour, high dust levels or some form of surface run-off.

Response: Work to cease in the area of concern. An unacceptable condition may be observed by construction employees, identified by a complaint by a member of the public or through the results of monitoring. It is usual that unacceptable conditions are reported in the first instance to the Site Manager and/or the EMR or nominee. An assessment of the impact would be undertaken by the Contractor in conjunction with the Site Manager and/or the EMR or nominee. The EMR or nominee would then recommend appropriate measures in accordance with the assessment carried out. This may involve new Work Methods and a revised Job Safety Analysis. The Site Manager and Contractor will ensure the new mitigation and rectification works are carried out in accordance with the appropriate environmental legislation or policy and any required notifications are addressed.

Situation 2: Asbestos is detected visually in the excavation material.

Response: Work will cease in the area of concern and the Site Manager and/or EMR or nominee will be contacted. The Contractor and/or EMR or nominee will confirm the presence of asbestos, cover the site temporarily and contact an asbestos removal contractor with an AS1 Licence for friable asbestos to remove asbestos fragments. Work will recommence after removal certification is provided.

4.7 **Other Management Measures**

To control the introduction of any new contamination during construction:

- All maintenance/refuelling of plant and equipment will be conducted in a designated area with care taken to minimise fuel and waste oil

spillage (appropriate environmental clean up kits will be available near by);

- Upon completion of the excavation works and prior to being allowed to leave site, the Contractor will inspect the excavation equipment to ensure it is clean and decontaminated.

4.8 Occupational Health and Safety

A number of exposure pathways exist which could potentially result in on-site workers/visitors to the site or the general public being exposed to contaminated material. These potential exposure pathways include:

- Inhalation
- Ingestion
- Immersion
- Absorption through skin contact

The Contractor shall ensure that these and any other potential exposure pathways are controlled through the adoption and use of appropriate personnel protective equipment on the site and the maintenance of appropriate barriers and fencing around the site to stop the access to site of unauthorised or non-inducted persons.

Appropriate safety and site security fencing and other protection will be constructed and implemented in accordance with the Site Occupational Health Safety and Environmental Plan and legislative requirements and reviewed on an on going basis through on site project meetings, tool box meetings and daily work start up sign-on when required.

4.9 Training and awareness

As part of the construction process, the Site Manager in conjunction with the Contractor will ensure a procedure is in place such that all employees, visitors and contractors entering the site will be inducted in the site environmental, health and safety issues. Information associated with the handling of known contaminated soil on site and the notification procedure in the event something unknown or unexpected is found will be reinforced during this induction.

Soil excavation work methods, job safety analysis and awareness of contaminated soil issues will be reinforced through weekly site meetings with site construction personnel (tool-box meetings) and when necessary at the daily work sign on.

4.10 Quality Assurance/Quality Control Imported Fill

If there is a requirement to use imported fill then the imported fill must be certified clean fill (e.g. native quarried material) and must not contain contaminants above the health based standard for industrial guidelines. Validation certification from supplier will be checked by the Contractor.

5.0 MONITORING

5.1 *Surface Waters*

Surface waters will be monitored on at each stage of construction during the hardstand upgrade and extension at locations along Duck River upstream and downstream of the site as outlined in the Soil and Water Management Plan. The water has been sampled prior to the commencement of construction, for the full suite of contaminants including heavy metals, arsenic, cyanide and ammonia to establish a baseline.

5.2 *Groundwater*

Groundwater will be monitored on at each stage of construction during the hardstand upgrade and extension at locations upgradient and down gradient of the site as outlined in the Soil and Water Management Plan. The water has been sampled prior to the commencement of construction for the full suite of contaminants including heavy metals, ammonia and TPH (Total Petroleum Hydrocarbons) to establish a baseline.

5.3 *Air*

Dust deposition and dust concentration (TSP) will be monitored in accordance with the Construction Dust Monitoring Plan. HVAS receptors will be located appropriately and near to the works to confirm air quality during the construction phase.

5.4 *General*

If monitoring reveals unacceptable levels of any contaminant or exceedances of environmental criteria, these will be reported immediately to the EMR or nominee. The EMR or nominee will decide what steps will be taken to address the issue and will keep record of these to report in the Annual Environmental Management Report (AEMR).

6.0 REPORTING & AUDITING

The Contractor as well as EMR or nominee will complete weekly checklists, summarising the week's activities, weather, the status of erosion and sediment control structures and other environmental aspects. These reports will address any incidents, volumes of excavated material handled and specifically address site performance during and after periods of rain.

The EMR or nominee will compile results of monitoring, a summary of activities completed and report any non-compliance in AEMR to detail environmental performance of the Terminal during the construction phase of the hardstand upgrade and extension. The AEMR will be submitted to the Department of Planning, the Department of Environment and Climate Change and the public through the Community Consultative Committee (CCC).

The Site Manager and EMR or nominee will attend the quarterly CCC meetings to provide information about the ongoing works.

Where reporting and auditing indicate any exceedance of environmental criteria, these will be reported immediately to the EMR or site nominee. The EMR will decide what steps will be taken to address the issue and will record these to report in the AEMR.

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VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

INCIDENT RESPONSE PLAN

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Incident Response Plan (IRP) has been prepared in compliance with conditions 125 and 126 of the Conditions of Development Consent (COCs) for the Clyde Transfer Terminal (the Terminal).

1.2. Conditions of Consent

125. *In relation to activities, which in the event of a disruption to operations may result in significant pollution being emitted, the Applicant must:*
- (a) *Conduct an assessment to determine the potential internal and external causes of disruption of operations at the premises;*
 - (b) *Determine how these disruptions would impact on operations; and*
 - (c) *Identify the pollution that would result due to the disruption of operations and what impact the pollution would have on the health of the community and the environment.*
126. *In relation to matters identified in the previous condition, the Applicant must prepare an Emergency Management Plan. The Plan shall address, but not necessarily be limited to:*
- (a) *identification of threats to the environment and/or public health that could arise in relation to the construction and operation of development. These threats may include fire, overflow, power or other utility failure, natural disaster etc;*
 - (b) *identification of strategies to minimise and ameliorate the effects of any water pollution identified from the groundwater and surface water monitoring programs;*
 - (c) *an estimate of the cost of implementation;*
 - (d) *actions to effectively respond to the disruption of operations so the risk of pollution is minimised;*
 - (e) *a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution; and*
 - (f) *ensuring that all relevant employees are familiar with the emergency management plan.*

The Applicant should regularly review the adequacy of the plan obtaining expert advice as required.

Note: When developing this emergency plan, consideration should be given to the possible integration with current emergency management plans for the entire site.



1.3. Objectives

The aims of this IRP are to:

- Identify threats to the environment and/or public health that could arise in relation to the operation of the Terminal including the delivery and packing of waste;
- Develop fire management procedures and in particular the management of fire water so the potential risk of surface water pollution is minimised; and,
- Develop a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution.



2. POTENTIAL HAZARDS

2.1. *Management Strategy*

The Operational Environmental Management Plan (OEMP) and all the supporting specific management plans aim to minimise the likelihood of an incident occurring. However, in the unlikely event of an emergency or incident, the general management strategy that will be adopted to minimise the risk to the public and all personnel in the event of an emergency would include;

- Providing adequate resources including staffing and fire-fighting equipment;
- Ensuring that all relevant employees are familiar with the IRP;
- Training of staff so that a high level of preparedness is maintained by all people who could be involved in an emergency; and
- Periodic review and update of emergency procedures for the site.

2.2. *Potential Hazards*

The following table summarises the potential hazards associated with the operation of the Terminal, based on a risk assessment that was undertaken prior to commencement of operations.

Hazards ID	Potential Hazard
1	Non Conforming Product – Dangerous Goods/Hazardous Substances
2	Fire – Electrical, Chemical etc.
3	Traffic – Heavy Vehicles/Pedestrians
4	Traffic – Hot Waste Loads
5	Spills – Liquid/Solid. Ranging from bursting Hydraulic Oils to potential loss of putrescible loads
6	Structural Damage
7	Electrical Faults
8	Equipment Failure
9	Threats
10	Environmental Pollution – Dust, Use and Containment of firewater



Further details have been provided for the following potential threats to the environment and/or public health that may arise in relation to the operation of the Terminal:

- Spills;
- Delivery of hazardous or dangerous waste;
- Fire/Explosion;
- Disruption of operations, and;
- Elevated surface water results.

2.2.1. Spills

In the event that there is a liquid or solid spill in the transport of the waste to the Terminal, or at the Terminal itself, the emergency response, outlined in the Emergency Procedure Flowcharts provided in **Appendix A** will be followed.

2.2.2. Delivery of Hazardous or Dangerous Waste

There are 2 checks where unacceptable waste may be detected and intercepted. They are the weighbridge operator through the CCTV and the loader driver, both viewing the unloading of waste within the terminal building. Refer to the Waste Management Plan (WMP) regarding acceptable waste types for the facility, Procedure for Waste Rejection, and Procedure for Screening and Recording of Waste Received, which form part of the Veolia Environmental Services' (VES) National Integrated Management System (NIMS) and are accessible on site.

This information is covered as part of the induction program for the site, which is detailed in section 4.2 of the OEMP.

2.2.3. Fire or Explosion

In the event that there is a fire or explosion in the transport of the waste to the Terminal, or at the Terminal itself, the emergency response is outlined in **Appendix A** and the contacts provided in the Emergency Response Plan provided in **Appendix B**. The location of hydraulic services, including fire and water, on site are provided in **Appendix C**.



2.2.4. Disruption of Operation

Disruption of operations may be as a result of power or other utility failure, structural damage or delivery of unauthorised waste. Details regarding the operational contingency measures for any such disruptions to the site are provided in the Operational Contingency Plan, which is attached to the WMP. This plan forms part of NIMS and is accessible on site. In the event that a disruption to operations causing the closure of the facility cannot be avoided, the Site Manager and/or Environmental Management Representative (EMR) shall be informed and co-ordinate the redirection of waste vehicles to other suitable receiving facilities, until such time that operation can recommence.

2.2.5. Elevated Surface Water Results

In accordance with Condition 126 (b) & (c) of the Development Consent in the event that surface water monitoring analytical results are elevated, further investigation shall be undertaken consisting of firstly re-sampling duplicates to check accuracy of results. Surface water monitoring at additional locations and analysis of additional parameters may be required to further characterise the pattern of discharge of contaminants from the Terminal site.

If the results of this assessment suggest that contamination is occurring from the site then corrective action could comprise one (1) or more of the following:

- Report any contaminated discharges to the Department of Environment, Climate Change and Water (DECCW);
- Check that the performance of gross pollutant traps and oil/silt separators can not be improved, rectify if necessary;
- Check that any disturbed ground is satisfactorily rehabilitated, rectify if necessary;
- Install bunds to collect floating substances such as hydrocarbons if necessary; and
- Assess whether contaminated groundwater may be the source, conduct groundwater monitoring at the three locations and check previous results against groundwater monitoring data to assess risk to the river environment.



Additional measures and information are contained in the Stormwater Management Plan.

2.3. Reporting and Review

The following steps will be undertaken in the reporting and review of any incident/emergency:

- Immediate reporting of any incidents/emergencies to the Site Manager or EMR;
- Completion of the internal reporting form for any injury resulting in lost time or any matter which affects the health or safety of any person;
- Submit completed form to Work Cover (or other relevant authority) for any injury resulting in lost time or any matter which affects the health or safety of any person;
- Reporting to the DECCW officer, or after hours to the Pollution Control Hotline, of any incident may have potential environmental ramifications;
- Preparation of an incident report for serious incidents or as required; and
- Maintaining environmental logbooks/electronic checklists.

In the event of a disruption that may result in significant pollution, the following will be undertaken:

- Conduct an assessment to determine the potential internal and external causes of disruption of operations at the premises;
- Determine how these disruptions would impact on operations; and
- Identify the pollution that would result due to the disruption of operations and what impact the pollution would have on the health of the community and the environment.



3. EMERGENCY RESPONSE PROCEDURES

In the event of an emergency at the Terminal, the following emergency responses, which forms part of NIMS, will be followed.

3.1. *Emergency Procedure Flowcharts*

The Emergency Procedures provided in Appendix A contains flowcharts outlining Incident Response Procedures for the Terminal. These flowcharts form part of NIMS and are as follows:

- Liquid Spill Procedure (on site);
- Solid Spill Procedure;
- Fire Protection Procedure;
- Discovery of Emergency Procedure; and,
- Fuel/Oil Spill Procedure (in transit).

3.2. *Emergency Response Plan*

The Emergency Response Plan provided in Appendix B makes available a planned and coordinated strategy for site personnel in the event of an emergency situation at the Terminal and may be used in conjunction with the Emergency Procedure Flowcharts. The Plan has been developed by identifying key potential hazard scenarios and likely corrective actions that can be undertaken to mitigate the situations.



4. FIRE MANAGEMENT PROCEDURE

Fires may be caused by hot material brought in with the waste, or possibly through spontaneous combustion of volatile material in the waste or by discarded matches or naked flames. As part of this plan all VES' staff are trained for the necessary action to take should an emergency occur. Refer to **Appendix C**, for the location of hydraulic services, including fire and water, on site.

4.1. *Terminal Fire Management*

Fire alarms, hoses, reels and extinguishers are installed in all buildings/structures on-site. All machinery has been fitted with fire suppression systems. This equipment is checked weekly or according to the equipment maintenance specification and replaced as necessary. Any defects identified in fire fighting equipment are reported to the Site Manager who takes the appropriate action to replace and/or repair equipment.

Fires on the tipping floor can be extinguished with the fire hydrant system provided and/or foam from portable units depending on the severity of the fire.

In addition, a manually operation fire deluge system is available. The source of water is an onsite tank filled with rainwater and topped up as required from mains water.

All fires are treated as an emergency and the extinguishment of fires takes precedence over normal operations. In the event of a fire, the procedure outlined in the previous section will be used.

In addition, the following measures will be implemented:

- The Weighbridge Operator would stop additional loads entering the Terminal;
- The evacuation plan in **Appendix C** is also located in appropriate locations within the Terminal; and
- When the fire brigade and other emergency services arrive, the Weighbridge Operator would surrender control of the site to the Senior Fire Officer.



4.1.1. Management of Fire Water

- Where possible the use of fire retardants and foams will be utilised to minimise the volume of firewater generated.
- The Terminal will be managed, to ensure there is minimal waste on the tipping floor at any given time, reducing the fire potential.
- Any water that falls on external areas of the terminal will be treated as stormwater and will pass through the silt/oil separator to the retention basin prior to discharge into Duck River (refer to the SMP).
- Firewater captured within the terminal building will be treated as leachate and will drain to the leachate holding tank, through the compactors. When the leachate holding tank reaches capacity it will overflow into the compaction pit, which will act as a collection and storage area of the firewater. Any firewater collected in both the leachate holding tank and the compactor pit, will be pumped out and transferred off site for appropriate disposal.

4.2. Management of Hot Loads

Fires that occur in the transfer vehicles are more difficult to deal with since the contents cannot be discharged quickly, particularly if the fire occurs on route to the Terminal. At the Terminal, an area designated for the management of 'hot loads' is shown in Management of Hot Loads Procedure attached to **Appendix D**.

Management of vehicle fires will be in accordance with the procedures outlined in **Appendix D**, which forms part of NIMS and is accessible on site.

In this designated area vehicles would contain fires through a combination of dousing with fire hoses and discharging the contents and totally extinguishing the fire using on site fire hose reels.

4.3. Training Programs

In accordance with Condition 126(f), the training of site personnel is imperative for the efficient operation of the Terminal, particularly in the event of an emergency. This



training forms part of the induction and training program, which is detailed in section 4.2 of the OEMP.

4.3.1. Employees

Training aspects that are specific to the management of hot loads include:

- Definition of hot load area and zone;
- Use of the fire hose reel and how to approach the fire hose reel;
- How the flows are separated in the gully pit;
- The requirement to store the firewater;
- Treatment required for the stored firewater;
- Requirement to maintain the seal on other manholes in the area; and
- Removal of waste from this zone.

4.3.2. Drivers

Training aspects for drivers that relate to hot loads in transit include:

- Notify the Terminal site, fire brigade or relevant council, depending on location of truck;
- Move the vehicle out of the flow of traffic if possible;
- Stop the vehicle, engage park brake, shift into neutral and turn off engine;
- Inspect the vehicle for smoke or heat to verify the load is burning;
- Do not open compactor unit as fresh oxygen supply may accelerate combustion; and,
- Await Fire brigade for further instruction.



5. STAFF AND EMERGENCY COMMUNICATION

5.1. VES Contact Numbers

Position	Staff Member	Contact Details
General Manager/Recycling & Resource Recovery	Danny Conlon	0418 407 686
Environmental Management Representative	Toni Soster	0429 664 838
Sydney Region Facilities Manager	Steve Lawrence	0419 610 938
Clyde Site Manager	Craig Doorey	0409 833 663
Weighbridge Operator	-	(02) 8868 7400

5.2. Emergency Service Numbers

Service	Contact Number
Police	000 (02) 9646 8699
Fire Brigade	000 (02) 9647 1246
Ambulance	000
State Emergency Services	13 2500
SES Auburn Division	(02) 9646 5775
SES Parramatta Division	(02) 9890 9990
Environment Protection Authority – Pollution Line	131 555

5.3. Communication Strategy

In accordance with Condition 126(e), in the event of an emergency the following communication strategy will be implemented:

1. Any site personnel that discovers an emergency will notify the Site Manager as soon as possible, in accordance with the Discovery of Emergency Procedure (Refer to **Appendix A** and section 4) ;



2. The EMR will be responsible for notifying any relevant authorities, including DECC; and,
3. The Site Manager/EMR will be responsible for notifying emergency services to ensure that any potentially affected community is adequately notified.



Appendix A Emergency Procedure Flowcharts

LIQUID SPILL

LIQUID SPILL PROCEDURE

If a spill is sighted, note the following:

1. What has been spilled?
2. What is the approximate volume of the spilled liquid?
3. Is the spill increasing?
4. Is it moving towards any waterways, drains or grates?
5. Is the spill likely to cause harm or nuisance?

If the answer is NO for ALL of the questions 3, 4 and 5 above

If safe to do so, prevent further spillage by shutting appropriate valve or by plugging the leak at source and contain the spill using booms, absorbing material or soil

Notify the Weighbridge Operator

If situation cannot be controlled or spill is moving towards any waterways, drains or grates

If the spill affected any waterways, prepare a report with details of the spill and cleanup operation

If the answer is YES for ANY of the questions 3, 4 and 5 above or there is any doubt

If safe to do so, prevent further spillage by shutting appropriate valve or by plugging the leak at source and contain the spill using booms, absorbing material or soil

Notify the Weighbridge Operator

Notify Fire Brigade on 000 and advise situation. Arrange for a person to meet and liaise with the Emergency Services

On arrival of Emergency Services advise the situation and render assistance as requested

If further cleanup / remediation is required, develop and co-ordinate implementation of appropriate remediation plan

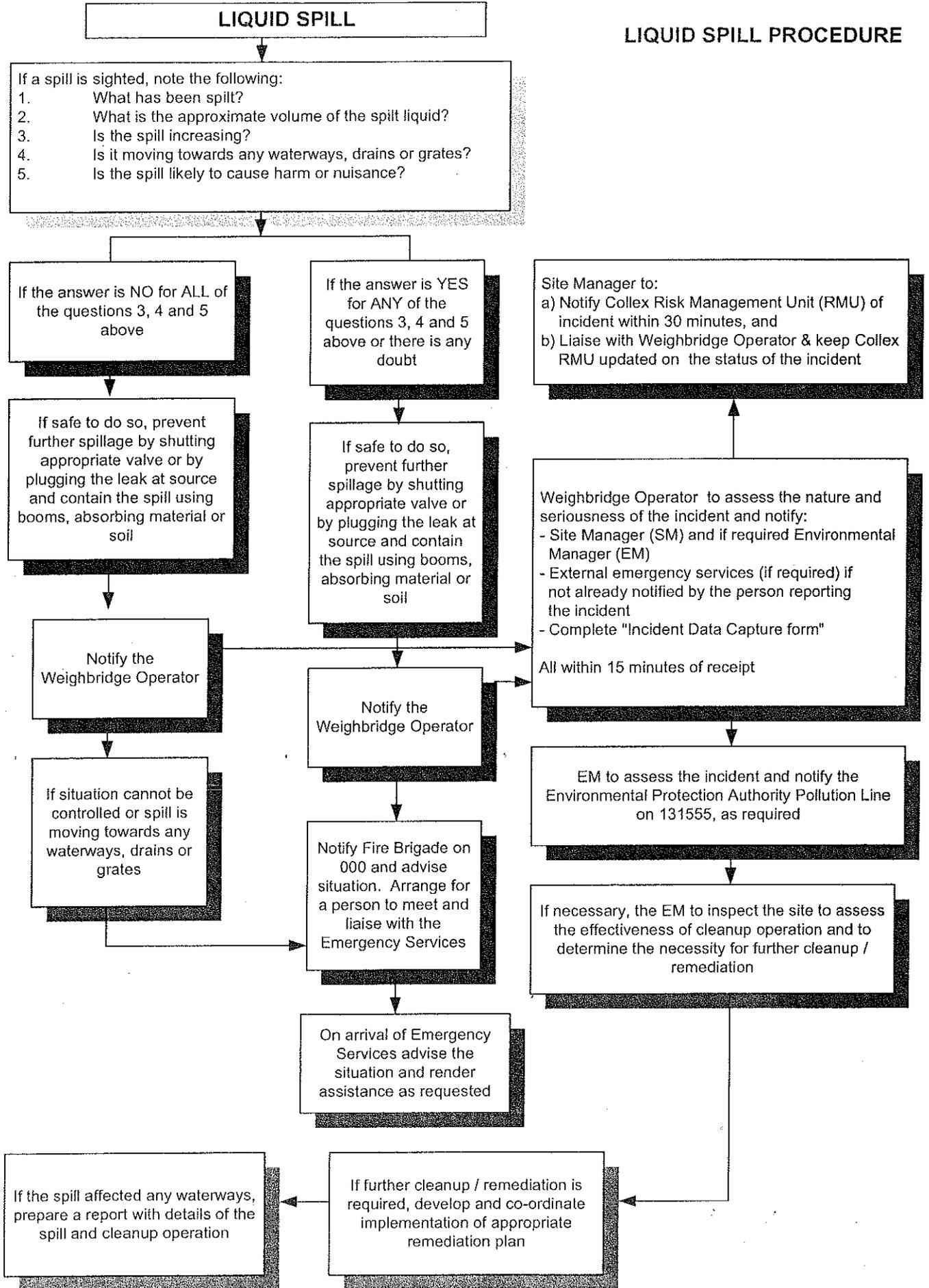
Site Manager to:
a) Notify Collex Risk Management Unit (RMU) of incident within 30 minutes, and
b) Liaise with Weighbridge Operator & keep Collex RMU updated on the status of the incident

Weighbridge Operator to assess the nature and seriousness of the incident and notify:
- Site Manager (SM) and if required Environmental Manager (EM)
- External emergency services (if required) if not already notified by the person reporting the incident
- Complete "Incident Data Capture form"

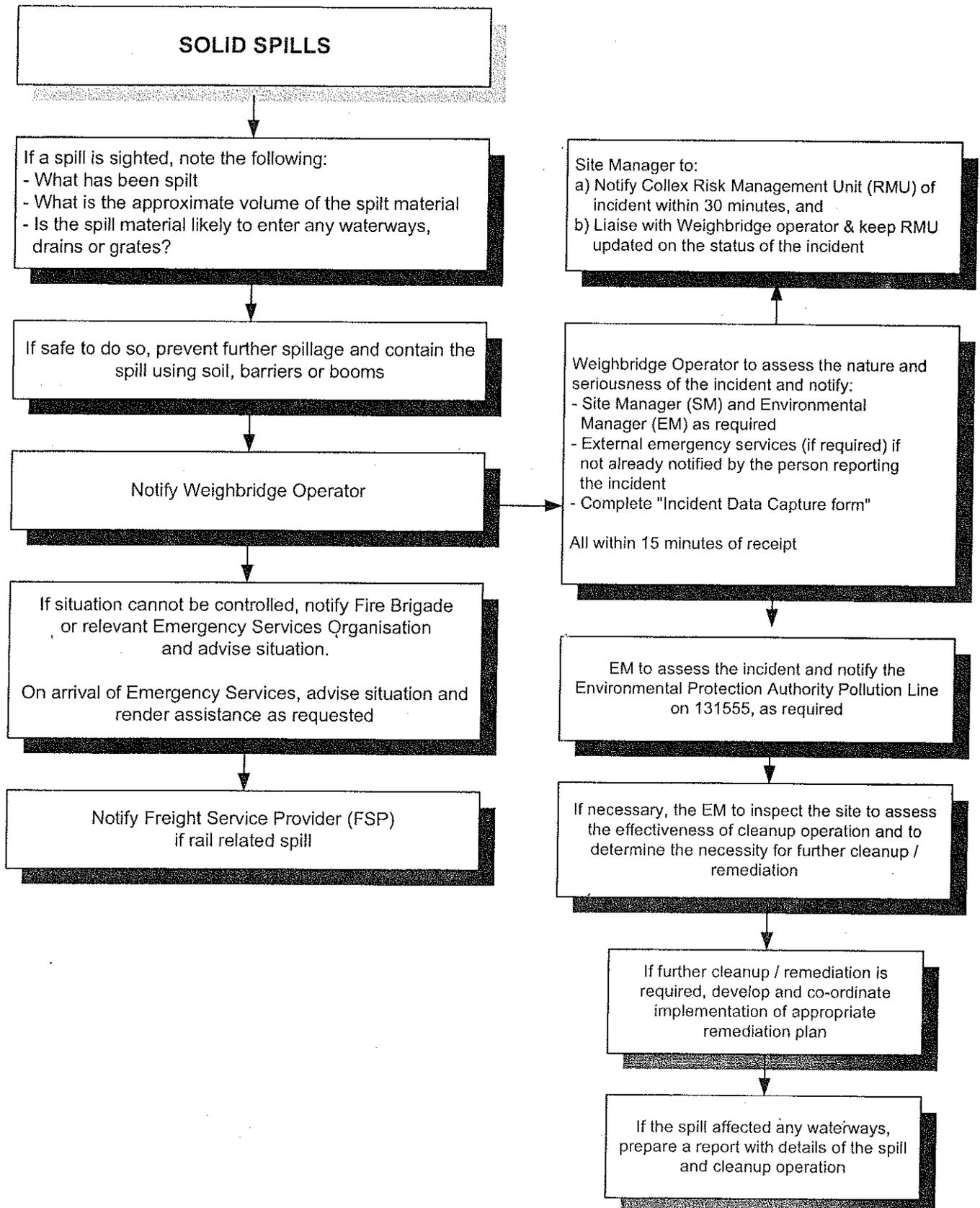
All within 15 minutes of receipt

EM to assess the incident and notify the Environmental Protection Authority Pollution Line on 131555, as required

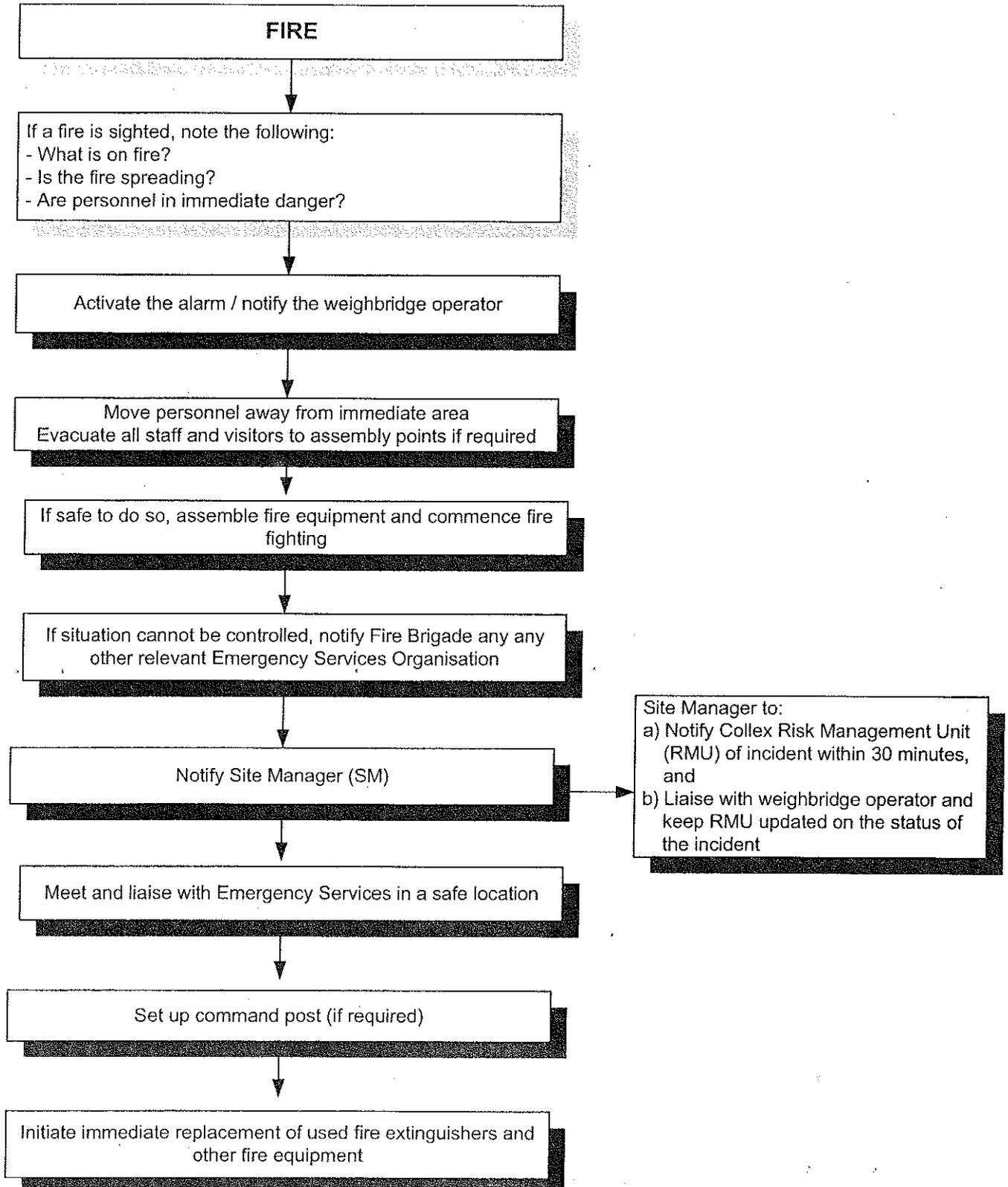
If necessary, the EM to inspect the site to assess the effectiveness of cleanup operation and to determine the necessity for further cleanup / remediation



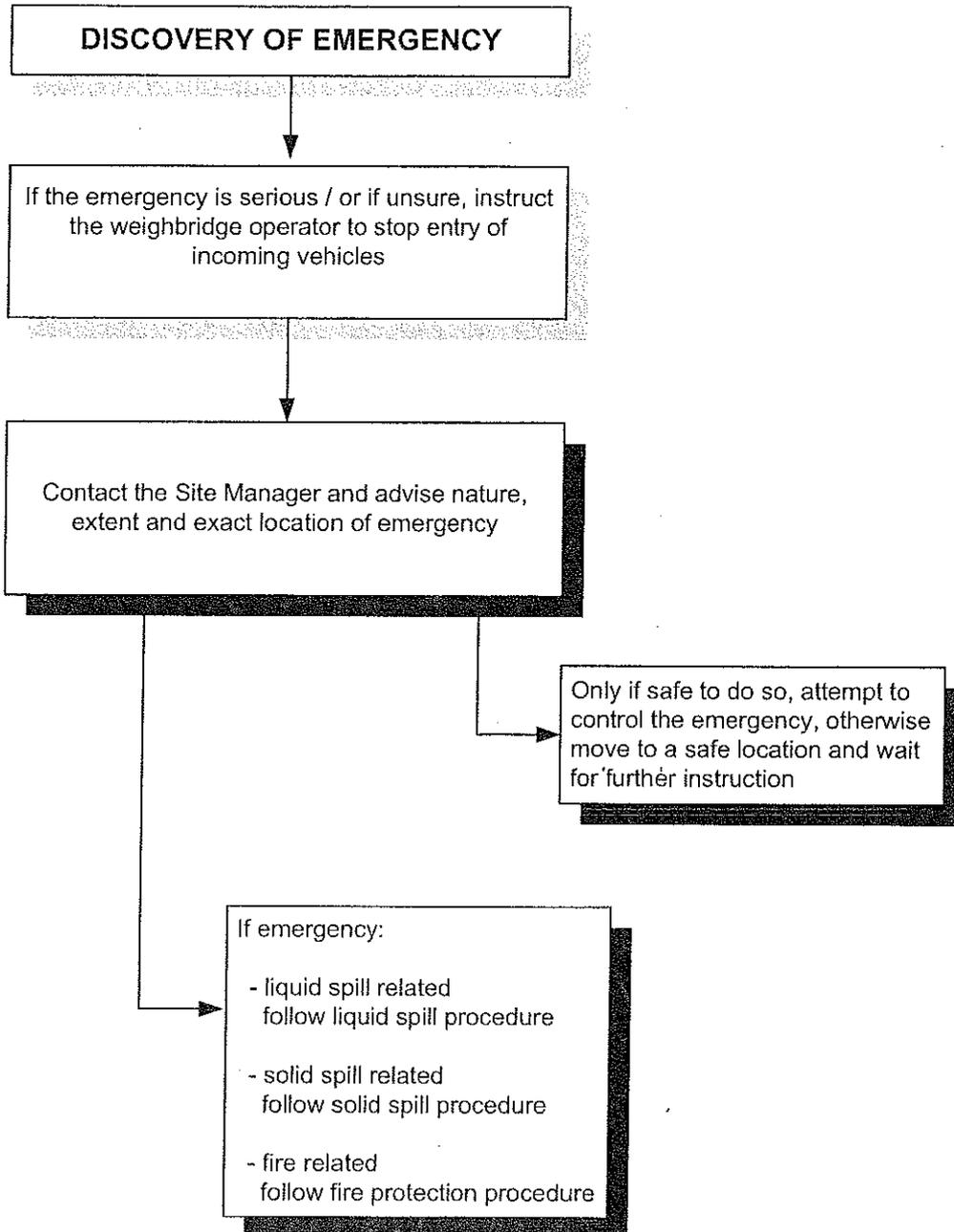
SOLID SPILLS PROCEDURE



FIRE PROTECTION PROCEDURE



DISCOVERY OF EMERGENCY PROCEDURE



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Appendix B Site Hydraulic Services Location Plan

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Appendix C Management of Hot Loads Procedure

NSW Clyde Transfer Terminal Management of Hot Loads

Objective

This procedure is to ensure that if any vehicle enters the Clyde Transfer Terminal (CTT) carrying a “hot load”, that is a load that is on fire, the proper measures and actions are undertaken to deal appropriately with the situation and minimise risk of damage to the environment.

Background

Fires that occur in transfer vehicles are more difficult to deal with since the contents cannot be discharged quickly, particularly, if the fire occurs en route to the CTT. The terminal has a designated area, which is clearly signposted with HOT LOADS and this is the designated area for where this type of load is to be handled.

Procedure

In the event a driver becomes aware he/ she is carrying a hot load en route to CTT the driver must immediately contact CTT.

In response, the Clyde Manager or nominee will:

- Determine and advise the driver of the nominated point with the shortest travelling time
- Inform the relevant client / Council; and
- Contact the NSW Fire Brigade, where necessary.

Upon arrival at the CTT, a vehicle with a hot load, is to be directed to the designated ‘HOT LOAD’ area which is adjacent to the site office.

Site personnel should attempt to contain the fire by making use of the designated fire reel and hydrant located in the Hot Load area. If it is safe to do so, douse the vehicle with water and the contents as they are being discharged.

The designated fire area is to be clearly marked and kept clear at all times.

All VES vehicles and plant associated with the CTT operation will be equipped with fire fighting equipment.

Under normal conditions, the hot load area drains into the stormwater system, however, when the fire hose reel is in use, a manually operated butterfly valve closes the stormwater drain allowing contaminated water to enter the firewater holding tank, which prevents any water from the area entering the stormwater system.

All water collected in the holding tank is treated as leachate and disposed of appropriately.

NSW Clyde Transfer Terminal Management of Hot Loads

As a back up to this system, a manually operated butterfly valve in the detention pond outlet drain is closed so as to prevent any firewater entering the stormwater system. All water collected in the detention pond is also treated as leachate and disposed of appropriately.

Once the fire has been extinguished all waste that has been dumped onto the Hot Load Zone shall be cleared and the area made clean.

End of Procedure

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Appendix D Emergency Response Plan

Emergency Response Plan

OHS & Environment



NSW Clyde

322 Parramatta Road, Auburn

Prepared by Veolia Environmental Services
Pty Ltd



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1.0 Introduction

This document and the attached appendices form the Emergency Response Plan developed for the Veolia Environmental Services (VES) Clyde site.

This plan is to be revised on an annual basis, controlled through the VES National Integrated Management System review process or as needed to ensure relevancy and accuracy in the stated procedures. If an emergency event occurs, the Emergency Response Plan and current established procedures will be reviewed to ensure effectiveness.

This document is intended to be a localised Plan for emergency situations and is to be used in conjunction with the State Crisis Management Plan.

Description of Site Operations

The Clyde Transfer Terminal is located on Parramatta Road, between the James Ruse Drive and Silverwater Road exits from the M4 Motorway. The transfer station serves as the secondary transfer phase between Sydney Domestic (household) waste pick-ups and disposal at the Woodlawn Bioreactor.

The terminal operations primarily include the following:

Waste is received from internal and external customers;

The waste is loaded into either of the two compaction units;

The waste is compacted and transferred to a shipping container which is sealed

The shipping container is loaded onto rail wagons and dispatched to the Intermodal Facility at Woodlawn – this occurs once daily.



2.0 Purpose and Structure

The purpose of this document is to provide a planned and coordinated strategy to Site Personnel in the event of an emergency situation at the Clyde site. The strategy that is outlined considers both Occupational Health & Safety and Environmental Management requirements. The plan has been developed by identifying key potential hazard scenarios that could be encountered at the facility through Risk Management Programs. If a hazard scenario is encountered that is not addressed in this document the NSW Group Services Division must be informed and the document will be reviewed and amended. The VES State Crisis Management Plan should be consulted to deal with a crisis as defined in the document.

The basic structure of the report is as follows:

Section	Title	Page Number
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Section 4	Responsibilities	6
Section 5	Evacuation Procedure	7
Section 6	Emergency Response	10
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3.0 Relevant Legislation

Legislation pertinent to this Plan are listed below:

- NSW Occupational Health and Safety Act 2000;
- NSW Occupational Health and Safety Regulations 2001;
- Australian Standard AS3745 “Emergency Control Organisation and Procedures for Buildings”;
- Protection of the Environment Operations Act, 1997 (POEO Act).



4.0 Responsibility, Authority and Accountability

Responsibility

- It is the responsibility of Site Management to ensure that the Emergency Procedures outlined in this document for the site is conveyed and made available to site staff and visitors.
- It is the responsibility of Site Management, site staff and visitors to follow the procedures stated in this document.
- It is the responsibility of those VES personnel nominated in the Emergency Contacts list for the site – see Appendix A to perform their appointed duties.
- It is the responsibility of Site Manager and NSW Group Services Division to amend this Emergency Response Plan in conjunction with the document owner/controller for the site, when required.
- It is the responsibility of those part of the Emergency Control Organisation to perform their nominated duties.

Authority

- The Control Organisation as defined in Section 5 of this document have the authority to action the Emergency Plan in consultation with the Site Management

Accountability

- The performance of the fire wardens will be reviewed by the Chief Fire Wardens and the Site Management at least annually or at a higher frequency as decided by the Site Management
- The performance of the Chief Fire Warden will be reviewed by the Site Management at least annually or at a higher frequency as decided by the Site Management.



5.0 Emergency Control Organisation

In the event of an emergency or evacuation, a Control Organisation will be established to ensure successful management of the situation. The Control Organisation can consist of a Chief Warden, Deputy Chief Warden, Communications Officer and General Wardens, depending upon the size and requirements of the site.

5.1 Roles and Duties of Emergency Control Organisation (ECO) Personnel

All personnel undertaking Warden duties will need to be clearly identified in the case of an emergency. The primary duties of the ECO personnel are as follows:

- Assist in the establishment of an Emergency Evacuation Plan.
- Appoint Key Personnel within the ECO.
- Ensure that all members of the ECO are competently trained.
- Be heavily involved in any training requirements – which include mock evacuation exercises. All outcomes emanating from an emergency evacuation, whether mock or otherwise, will need to be documented.

5.2 Emergency Control Organisation Duties

5.2.1 Chief Warden

The Chief Warden is highly familiar with the site outlay and is to don a Red helmet. During a fire or any other risk that arises – it is the Chief Warden who is aware of the nature and scope of the emergency. The 'Chief Warden' should delegate duties for the effective control and direction of occupants. It is recommended that those appointed to positions of 'Chief Wardens' be continuously exposed to key operational/process areas within the facility.

It is the role of the Chief Warden to determine the cause and nature of the emergency, by tracking where the alarm was activated and/or by whom it was announced. The Chief Warden is to ensure that no part of the premises are occupied and is to restrict access to the building. The Chief Warden needs to ensure that there is continual dialogue with other wardens and that all relevant information is appropriately conveyed.

The Chief Warden is to liaise with the Emergency Services and received instructions for action from them. The Chief Warden is to ensure that staff do not return to their 'Work Posts' until clear instructions are received from the emergency services advising that this is safe. Upon the clearance being issued by the emergency services, the Chief Warden is to proceed to reset the alarms and record details of the emergency situation in the incident management system. All issues arising from the emergency evacuation should be summarised and discussed with the Emergency Control Organisation and management.

5.2.2 Deputy Chief Warden

The Deputy Chief Warden is to undertake the duties of the 'Chief Warden' in his absence. The Deputy Chief Warden will be distinguished by a white helmet or vest. Under the presence of a Chief Warden, the Deputy Warden will be given direction to assist in the overall evacuation of employees. They will also aid the Chief Warden in the maintenance of reporting records. Note – the Deputy Chief Warden may also assume the role of the Communications Officer, if necessary.

5.2.3 Communications Officer

The role of the Communications Officer is to communicate all relevant information and duties referred to by either the 'Chief Warden' or 'Deputy Warden'. The Communications Officer will also be responsible for obtaining the Sites Visitors Register for checking at the Emergency Muster Point. The Communications Officer needs to be familiar with the operations of the loud speaker or interphone system (if available). Another key role of the Communications Officer is to contact the Emergency Services seeking their assistance, when required.



5.2.4 Floor Wardens, Area Wardens and General Wardens

Depending on the nature and size of the site, Wardens will be appointed. The general duties of the Wardens are outlined below (extract from AS3745):

- 1) Floor or Area Warden (Yellow Hat)
 - a) Implement the emergency procedure for their floor or area;
 - b) Ensure that the appropriate emergency service has been notified;
 - c) Direct the wardens to check the floor or area for any abnormal situation;
 - d) Commence evacuation if the circumstances on their floor or area warrant this;
 - e) Communicate with the chief warden by whatever means available and act on instruction;
 - f) Advise the chief warden asap of the circumstances and action taken;
 - g) Co-opt persons as required to assist a warden during an emergency;
 - h) Confirm that the activities of wardens have been completed and report this to the chief warden.
- 2) General Wardens (Red Helmet)
 - a) Act as above floor or area wardens;
 - b) Ensure that the appropriate emergency service has been notified;
 - c) Check to ensure fire doors and smoke doors are properly closed;
 - d) Search the floor or area to ensure that all persons have evacuated;
 - e) Ensure orderly flow of persons into protected areas (eg stairwells);
 - f) Assist persons with disability;
 - g) Act as leader of groups moving to nominated assembly areas;
 - h) report to the floor or area warden on completion of required activities.

5.3 Clyde Site Emergency Control Organisation

The members of the Clyde Emergency Control Organisation are as follows:

- Fire Wardens: Andy Putru (morning shift), Les Goddard (afternoon shift)

See Appendix D for photos of the nominated Emergency Control Organisation and First Aid Officers.

5.4 Clyde Emergency Assembly Area

The Assembly area is across the rail way lines at the Clyde site, towards the Parramatta Road entrance to the premises. It is marked by a green sign that reads "Emergency Assembly Area".

This area is marked in the site map located in Appendix B of this procedure.



6.0 Emergency Response

This section details the key identified hazard scenarios that could potentially be encountered at the Clyde site. The emergency will be alerted to other personnel onsite through the emergency systems, eg fire alarms, mobile systems.

6.1 Fire

In the event of a fire the following procedure should be followed:

Fire Onsite:

- If the fire can be suppressed using onsite fire extinguishers/hoses, then it should be conducted if safe to do so.
- When a fire onsite is observed, the observant or nominated person is to contact Site Management immediately. All necessary Emergency Services must be notified.
- The NSW Group Services Division must be notified by Site Management as soon as a fire is observed. The NSW Group Services Division must then notify any additional relevant authorities where deemed necessary (eg Department of Environment and Conservation).
- If water is used to suppress a fire, all stormwater drains must be blocked/protected first. Protection of stormwater drains includes placement of absorbent socks/gravel sausages around the drain/s. If the site contains a system where all stormwater over the site is channelled and collected in dedicated infrastructure, the manual over-ride shut-off valve must be closed to ensure containment of the water onsite. Prior to resuming normal operation of the stormwater system, the system should be flushed of water (and that water treated as contaminated) to ensure that all potential residues of the fire are properly managed.
- If needed, licensed VES tankers or otherwise must be arranged to be present at the site to pump out firewater from the stormwater drains.
- Note: fire-water is not clean and therefore all possible measures must be taken to prevent fire-water from entering the stormwater drains.
- The site's Emergency muster point is identified in the Site Emergency Plan, located in Appendix B.

Fire during transit:

- When a fire is observed during transit (eg compactor on fire) then the driver is to stop the vehicle and park in a safe area and away from stormwater drains where possible.
- If safe and practical to do so, the driver should use the fire extinguishers on the vehicle in an effort to suppress the fire.



- The driver must notify Site Management immediately of the incident, including details of the type of load carried, origin of fire.
- Stormwater drains should be protected/blocked off with gravel socks/absorbent booms or otherwise to prevent potential ingress of fire water/waste/liquid.
- Site Management must notify the NSW Group Services Division immediately of the incident and the necessary emergency services. The area may need to be cordoned off and emergency services assist with traffic control.
- In the event of a fire in a compactor on a truck, the driver is to contact the supervisor as soon as the fire is noted and the fire brigade contacted. The supervisor will take a decision on the next course of action. It may be an option to compress the load further to starve it of oxygen and then get help from the Fire Brigade to deal with the situation. In some situations, it may be necessary to eject the load in a controlled fashion, if no environmental harm will result by such an action. The NSW Group Services Division is to be notified of all such incidents.
- The Emergency Contacts list must be available in the VES vehicles (Appendix A).
- Also refer to Appendix C – Fire Extinguisher Chart for details on the appropriate extinguisher for the fire experienced.

6.2 Explosions

In the event of an explosion the following procedure should be followed:

Explosion Onsite:

- When an explosion onsite is detected, the observant or nominated person is to contact Site Management immediately.
- Site Management or otherwise must contact the necessary emergency services (eg fire brigade, Ambulance, police) and also the NSW Group Services Division. It must be conveyed to emergency services the nature and source of the explosion (eg hazardous chemicals leading to release of hazardous fumes).
- The fire alarm must be activated and all personnel proceed to the emergency muster point and personnel accounted for through the visitors register.
- If the explosion has caused the release of liquids on site, then all stormwater drains must be protected.
- The site's Emergency muster points are identified in the Site Emergency Plan, located in Appendix B.



Explosions during transit:

- If an explosion occurs during transit from the load carried then the driver/operator must stop and park the vehicle and ensure his/her safety before exiting the vehicle.
- Stormwater drains should be protected/blocked off with gravel socks/absorbent booms or otherwise to prevent potential ingress of fire water/waste/liquid.
- The driver/operator must contact Site Management as soon as possible and emergency services notified. It must be conveyed to Emergency Services the nature of the explosion. The NSW Group Services Division must also be notified as soon as practical.
- The driver should attempt to secure the area if safe to do so.
- The Emergency Contacts list must be available in the VES vehicles (Appendix A).

6.3 Chemical spills

Hazardous chemical spills onsite:

- The spill is to be contained as much as possible using the available materials onsite (eg spill kits, sand), if safe to do so and being mindful of the type of chemical released. Personnel conducting the initial containment must be wearing the appropriate PPE – eg masks, corrosive resistant gloves etc.
- All stormwater drains in the vicinity must be blocked/protected/sealed. VES licenced tankers or otherwise may need to be called in to pump-out any drains, if material has entered them.
- If a hazardous chemical spill occurs on site, then Site Management is to be notified of the incident, including the type of chemical spilt.
- The effected area must be cordoned off from general site personnel and vehicles and if necessary evacuation invoked (eg for chemicals giving off irritable fumes).
- Note: for small spills containment can be performed using the appropriate spill kit. This section refers to large spills that cannot be managed with just a spill kit (eg from a storage tank rupture).
- The NSW Group Services Division must be notified as soon as practical. The Division is to notify the relevant authorities where required.
- If a chemical spill occurs which leads to a fire/explosion - see 6.1 and 6.2 noting chemical effects.
- The site's Emergency muster point is identified in the Site Emergency Plan, located in Appendix B.



Chemical spills during transit:

- If a tanker is observed to leak during transit the driver/operator must stop and park the vehicle, away from a stormwater drain and downstream of a stormwater drain, if possible and ensure his/her safety before exiting the vehicle.
- Stormwater drains should be protected/blocked off with absorbent booms or otherwise to prevent potential ingress of chemicals.
- The driver/operator must assess the cause and source of the spill and attempt to halt the leak/rupture.
- The driver/operator must contact Site Management as soon as possible and emergency services notified. The NSW Group Services Division must also be notified as soon as practical. Site Management or the NSW Group Services Division is to notify the relevant authority/ies as soon as practical.
- If any chemical has entered the stormwater drain, then the drain must be cleaned out by the appropriate contractor immediately.
- All personnel involved with the spill must be aware of the type of chemical spilt and its effects (eg flammable/corrosive etc) and the appropriate PPE worn.
- The Emergency Contacts list must be available in the VES vehicles (Appendix A).

6.4 Medical emergencies

Medical Emergency onsite:

- If there is a medical emergency onsite, then the site's First Aid Officers and Site Manager/Supervisor are to be notified immediately. A medical emergency is for example injury or physical harm to an individual.
- The Site Manager/Supervisor or nominated person is to notify Emergency Services, eg ambulance, if required. See Emergency Contacts list Appendix A.
- All First Aid injuries will be logged on the sites' First Aid Register
- All other injuries must be forwarded to the NSW Group Services Division as per established Workers Compensation notification procedures for further assessments.

Medical Emergency during transit:

- If a medical emergency occurs during transit then the Site Manager/Supervisor is to be notified immediately either by the injured person, if possible or another VES person available. The Emergency Contact list in Appendix A must be available in the VES vehicles.



-
- All First Aid injuries will be logged on the sites' First Aid Register.
 - All other injuries must be forwarded to the NSW Group Services Division as per established Workers Compensation notification procedures for further assessments.

6.5 Bomb/Phone Threats

- For any threatening phone calls that are received, that is bomb threats, chemical/biological threats, the checklist on Hippo Station should be completed – NSW Bomb Threat Checklist FOR-NSW-000-101.

6.6 Site Neighbours

- Within this Site Emergency Plan VES have considered in the event of a safety or environmental emergency which occurs on a VES site and/or neighbouring site in table 2 listed in appendix A .
- The site representatives from the neighbouring operations and or emergency services instructions will be followed by VES staff if an emergency occurs which may impact on the VES site .
- If an Emergency occurs at a VES site that may impact on the neighbouring operations the neighbours outlined in table 2 listed in appendix A to be notified as appropriate



7.0 Emergency Training / Drills

-
- All new employees must be trained in the contents of this Plan, including location of emergency muster point, contacts list, incident notification etc, during the induction process.
- On an annual basis, all members of the Emergency Control Organisation are to be provided with refresher training in relation to their responsibilities and in dealing with emergency situations.
- At least annually, a drill needs to be undertaken at the facility to test and evaluate compliance against this Plan and identify areas where further training is required and/or changes to this Plan is needed. This drill could be a fire drill, emergency spill response, phone threat etc.
- The assessment of the drill is to be recorded on the associated form – “NSW Emergency Drill Assessment”.



Appendix A

Site Emergency Contacts

NSW Clyde Emergency Contacts

In case of an incident, immediately inform:

Clyde Office			(02) 8868 7400
Sydney Region Facilities Manager	Steve Lawrence	0419 610 938	(02) 8868 7401
Clyde Site Manager	Craig Doorey	0409 833 663	
Site Leading	Les Goddard	0439 603 410	
General Manager/Recycling & Resource Recovery	Danny Conlon	0418 407 686	(02) 9841 2922
NSW Group Services Officer	Bassem Kabbara	0400 368 579	(02) 9841 2958
NSW Environment Officer/Clyde EMR	Toni Soster	0429 664 838	(02) 9841 2926
Auburn Police Station		000	(02) 9646 8699
Auburn Hospital		000	(02) 9563 9500
Guildford Fire Station		000	(02) 9632 6856
WorkCover NSW	Parramatta Office	13 10 50	(02) 9841 8550
Department of Environment, Climate Change and Water			13 15 55

If you get an answering service leave a clear message and then ring another VES person. Ensure that the NSW Group Services Division has been notified in all circumstances (tel: (02) 9841 2500).

Table 2

Name of Company	Operations	Contact number
Manildra Group	Sugar Refiners	02 8863 6261
Pacific National	Rail Providers	02 9682 1280



Appendix B

Site Emergency Plan

NSW Clyde Site Emergency Plan

This is a reference to ORG-NSW-219-010.

A hard-copy of this Emergency Response Plan with the site emergency plan is maintained in the Clyde site lunchroom and weighbridge.



Appendix C

Fire Extinguisher Chart

Once printed this document is an uncontrolled version and should be checked against the electronic version for validity



Portable Fire Extinguisher Selection Chart

Class of Fire →		A	B	C	(E)	F
Type of Fire →		Ordinary combustibles (Wood, paper, plastics, etc.)	Flammable and combustible liquids	Flammable gases	Fire involving energised electrical equipment	Fire involving cooking oils and fats
Identifying Colours	Type of Extinguisher	Extinguisher Suitability				
↓	↓					
RED	WATER	YES Most Suitable	NO	NO	NO	NO
OATMEAL Or RED WITH OATMEAL BAND	WET CHEMICAL	YES	NO	NO	NO	YES Most Suitable
BLUE Or RED WITH BLUE BAND	ALCOHOL RESISTANT FOAM	YES	YES Most Suitable for alcohol fires	NO	NO	NO
	AFFF TYPE FOAM	YES	YES Most Suitable except for alcohol fires	NO	NO	NO
RED WITH WHITE BAND	AB(E) DRY CHEMICAL POWDER	YES	YES	YES	YES	NO
	B(E) DRY CHEMICAL POWDER	NO	YES	YES	YES	YES
RED WITH BLACK BAND	CARBON DIOXIDE (CO ²)	YES*	YES	NO	YES	YES
RED WITH YELLOW BAND	VAPOURIZING LIQUID (fumes may be dangerous in confined spaces)	YES*	YES 5KG ONLY	YES	YES	NO

Class 'D' fires (involving combustible metals) - use special purpose extinguishers only.

*Carbon dioxide and vapourizing liquid extinguishers are not suitable for deep seated smouldering 'A' class fires.



Appendix D

Site Emergency Control Organisation

In Case of Emergency – Get to Know Your Emergency Evacuation Members

	 02/14/2007
Name: Andy Putru Site: Fire Warden (Morning Shift)	Name: Les Goddard Site: Fire Warden (Afternoon Shift)

In Case of Emergency – Get to Know Your Fellow First Aid Officers

	
<p>Name: Andy Putru (Morning Shift)</p>	<p>Name: Abhay (AJ) Kumar (Morning Shift)</p>
	
<p>Name: Taka Faokula (Afternoon Shift)</p>	

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VEOLIA

ENVIRONMENTAL SERVICES

Technical and Engineering Division

**NOISE MANAGEMENT PLAN – TERMINAL
OPERATIONS**

CLYDE TRANSFER TERMINAL

FEBRUARY 2010



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1. INTRODUCTION

1.1. Introduction

This Noise Management Plan - Terminal Operations (TNMP) has been prepared to develop noise control and monitoring procedures, in accordance with Conditions 105 and 112 to 113 of the Conditions of Development Consent for the Clyde Transfer Terminal (the Terminal).

1.2. Conditions of Consent

105. *The Applicant shall implement the Noise Management Plan to the satisfaction of the Director – General.*
112. *The Applicant shall implement a Heavy Vehicle Noise Monitoring Management Program for the development to the satisfaction of the Director-General. This program must:*
- (a) monitor heavy vehicle noise on site, in accordance with the methods outlined in the “Truck Noise Monitoring – Proposed Test and Management Plan” prepared by Heggies and dated 26 May 2008;*
 - (b) be undertaken quarterly for a year starting in October 2008, and annually thereafter, unless otherwise agreed by the Director-General;*
 - (c) measure at least 25% of the heavy vehicles visiting the site;*
 - (d) identify heavy vehicles exceeding the relevant noise criteria specified in the Australian Design Rule 28/01, or its successor, and ensure that the owners of these subsequently comply with the relevant noise criteria;*
 - (e) report the number of non-compliant heavy vehicles identified and the actions undertaken to address these non-compliances in the Annual Environmental Monitoring Report; and*
 - (f) be amended, should the monitoring activities not achieve the aim of the program to the satisfaction of the Director-General.*
113. *The Applicant shall implement an induction program for all drivers of trucks that deliver waste to the waste terminals with the objective of mitigating noise impacts of trucks entering and leaving the waste terminal, including driving procedures and throttle*



management. The program is to be designed in consultation with Auburn Council and is to emphasize the importance of noise emission control, driving and operating practices and procedures for night time activities.

1.3. Objectives

The objectives of the TNMP are to ensure that any noise emissions from the Terminal during its operation stage are of an acceptable level and any arising issues are dealt with quickly and effectively.

The TNMP covers noise attributable to the Terminal operations, which includes:

- Waste delivery truck movements;
- Mobile plant associated with transferring waste from trucks to containers; and,
- Fixed plant located on site such as pre-compaction units and extraction fans.

Rail activities are undertaken by Pacific National (the Clyde-Woodlawn rail operators) and do not form part of the Terminal operations. Therefore, noise issues associated with these activities have not been included in this TNMP and have been detailed in the Noise Management Plan – Rail Operations (RNMP).

1.4. Responsibilities

Action	Responsibility
Overall implementation of the TNMP	Site Manager
Implement methodology for avoiding excessive noise emissions	Site Manager
Coordinate monitoring and compile reports	Environmental Monitoring Technician (EMT)
Maintain internal records of monitoring	EMT
Collate and maintain records of complaints, respond to complainant	Site Manager and/or Environmental Management Representative (EMR).
Identify Non Conformances and notify Site Manager	EMR or site nominee
Authorise and confirm the implementation of mitigation measures	Site Manager



2. CONTROL MEASURES

2.1. *Operational Control Measures*

Noise mitigation practices at the Terminal during normal operations include the following:

- Noise emission level checks of all critical items of plant, mobile plant and equipment including slug packers (compactors) and waste delivery trucks for compliance with expected noise limits appropriate for those items.
- Truck speeds within the Terminal are kept as low as practical.
- Trucks enter and exit the site in a forward direction, eliminating the need for reversing alarms outside the terminal building.
- All noise associated with the unloading and compaction of the waste is generated in the building and compaction pits, which acts as additional noise attenuation.
- Operators are trained in order to raise their awareness of potential noise problems and to increase their use of techniques to minimise noise emission.
- Delivery truck drivers are subjected to an induction program to ensure an appreciation of noise control requirements is achieved. This was designed in consultation with Auburn Council and includes driving and operating practices and procedures for night time activities.
- A permanent noise barrier on the south-western Terminal boundary minimises noise emissions at the nearest sensitive receivers.

2.2. *Corrective Actions*

If a noise complaint is received or any changes to the operations occur then the following actions will be taken:

- Additional attended measurements of noise levels to determine the activity causing excessive noise emission levels will be conducted. If necessary, amelioration strategies will be employed to achieve acceptable emissions.
- Consultation with any other relevant parties (e.g. community, businesses, government agencies) to address any noise issues.



It should be noted, since the commencement of operations of the Terminal, no noise complaints have been received

For vehicles exceeding noise limit requirements of the Terminal, the following actions will be taken:

- Initially verbal or written communication to both Veolia Environmental Services' (VES) and external contractors requesting inspection of non-conforming vehicles.
- For repeat offenders, written communication will be sent out identifying trucks exceeding the Terminal's noise limits requesting details of corrective actions taken by the operator.
- A third exceedance will result in the non-conforming vehicle being excluded from site until compliance with the relevant noise emissions standards can be demonstrated.

A summary of corrective actions taken will be reported in the Terminal's Annual Environmental Management Report (AEMR) which may include recommendations for any further mitigation measures for compliance with noise emissions requirements.



3. NOISE MONITORING PLAN

3.1. *Noise Monitoring Procedures*

3.1.1. **General Requirements**

The noise measurement procedures employed in the Environmental Monitoring Programme (EMP) for any noise monitoring required, which is provided in **Appendix E** of the Operational Noise Management Plan (OEMP), are guided by the requirements contained in the following documents (refer to **Appendix A** for a glossary of acoustic terms):

- AS 1055.1-1997 “Acoustics - Description and Measurement of Environmental Noise”
- NSW Environment Protection Authority, “Environmental Noise Control Manual” (1994)
- NSW Environment Protection Authority, “Environmental Criteria for Road Traffic Noise” (1999)
- NSW Environment Protection Authority, “Industrial Noise Policy” (2000)
- Australian Design Rule (ADR) 28/01, “External Noise of Motor Vehicles” (2006)

3.1.2. **Weather Monitoring Instrumentation**

A weather station has been installed on site, and will remain in place throughout the operation of the Terminal. Noise measurements, as required, are to be accompanied by a qualitative description and quantitative measurement of prevailing local weather conditions throughout the monitoring period.

Meteorological measurements shall be guided by the following documents:

- AS 2922-1987 “Ambient air – Guide for the siting of sampling units”
- AS 2923-1987 “Ambient Air-Guide for Measurements of Horizontal Wind for Air Quality Applications”
- USEPA 454/R-99-005 “Meteorological Monitoring Guidance for Regulatory Modelling Applications”

The weather station is programmed to continuously record the meteorological parameters as required by Condition 91.



3.1.3. Instrumentation and Measurement Procedures

All acoustic instrumentation employed throughout the monitoring program, where required, are to comply with the specifications of AS/IEC 61672.2-2004, “Electro acoustics - Sound Level Meters” and carry a current NATA or manufacturer calibration certificate. All instrumentation are programmed to record continuous statistical noise level metrics in 15 minute intervals, which may include the L_{Amax} , L_{A1} , L_{A10} , L_{A90} , and the L_{Aeq} .

Plant and equipment sound power levels are measured in general accordance with AS1217.5-1985.

Truck compliance checks are to be carried out in general accordance with Australian Design Rule (ADR) 28/01 using a modified drive-by method. This was a result of an application to the DOP and DECCW to modify the requirements of the original Condition 112 for an alternative method of annual truck noise measurement method. Approval to conduct truck noise assessments in this method was granted in September 2008 and is further discussed in Section 3.2.4.

3.2. Noise Monitoring

3.2.1. Attended Noise Measurements

Noise measurements have been conducted to quantify the effect of noise emissions from the Terminal on the nearest sensitive receptors. This included recording $L_{Amax(15\text{ minute})}$, $L_{Aeq(15\text{ minute})}$, and $L_{A1(1\text{ minute})}$ for each noise source while recording the operating conditions for each item during monitoring.

3.2.2. Unattended Noise Logging

The attended noise measurements were supplemented by unattended noise logging to quantify overall ambient noise amenity levels.

Both attended and unattended noise measurements have been conducted at the Terminal for construction and operation related noise to determine if the Terminal conforms to the noise criteria required by the Department of Environment, Climate Change and Water. Whilst no exceedances have been



recorded, additional noise measurements may be considered, to assist in addressing any noise complaints that may be received in future.

Due to the distance of the monitoring location of the nearest sensitive receiver from the Terminal, direct noise measurements at this location were not able to distinguish between noise from the Terminal and other contributing noise sources. As such, the assessment of the Terminal's compliance with noise limits was achieved through a combination of plant and equipment sound power level measurement, near and far field noise measurements and acoustic modelling.

3.2.3. Plant and Equipment Emissions

Noise emission levels of all critical items of mobile plant and equipment are checked for compliance with noise limits appropriate to those items when a new plant item first arrives on site.

3.2.4. Vehicle Emissions

Condition 112 requires that vehicles using the Terminal undergo an annual noise emission assessment in accordance with Australian Design Rule (ADR) 28/01.

ADRs are intended for manufacturers and importers of motor vehicles at the first registration of vehicles to ensure that vehicles are safe to use, that pollutants (including noise) are controlled, and to secure vehicles against theft.

ADR 28/01 refers to both moving and stationary noise measurements, with the vehicle specifications determining the specific testing requirements as shown in the table below.



Vehicle Category Code	Vehicle Type	Vehicles in Motion	Stationary Vehicles			
		Spark Ignition and Direct Injection Diesel Engines	Spark Ignition Engines Exhaust Outlet Height		Diesel Engines Exhaust Outlet Height	
			<1500mm	≥1500mm	<1500mm	≥1500mm
NA	Light Goods Vehicles GVM ≤ 3.5 t on road use	78 to 80	89	85	99	95
NB	Medium Goods Vehicles GVM > 3.5 t ≤ 12 t on road use	81 to 84	95	91	101	97
NC	Heavy Goods Vehicle GVM > 12t on road use	81 to 87	95	91	103	99

Note: ¹. Units are given in L_{Amax} Noise Limits (dBA) – ADR 28/01
². For vehicles in motion test, L_{Amax} noise limits are based on the Gross Vehicle Mass (GVM) and the Nett Engine Power (NEP).
 The noise limits in the table are expressed as a range where the lower noise refers to the minimum GVM and NEP in each category and the upper noise level refers to the maximum GVM and NEP in each category.

Monitoring at the Terminal to assess vehicle noise emissions is undertaken in accordance with the approved Truck Noise Test Plan provided in **Appendix B**. The Truck Noise Test Plan was submitted to the DOP and the DECCW to support VES' inability to comply with the original Condition 112 and measure the vehicle emissions of all vehicles accessing the Terminal. The approved Truck Noise Test Plan removes this impracticality by assessing a representative sample of the total truck movements at the Terminal in a year. A drive-by test of the vehicles accessing the site is conducted and the noise emissions from each truck measured, recorded and assessed from compliance against the ADR 28/01 criteria.



3.2.5. Monitoring Schedule

Action	Schedule
Carry out equipment noise level checks on any new (untested) items of critical plant and issue Equipment Noise Certificates.	As required
Carry out noise emission tests on waste delivery vehicles and on any new vehicles requiring access to the site.	Annually
On a complaint basis, attended measurements and unattended Noise Logging as required	As required

3.3. Reporting

Noise monitoring results are documented and reported in the Annual Environmental Management Report (AEMR). This includes an assessment of these results against the relevant compliance aspects of the consent conditions. In accordance with Condition 112, the Annual Truck Noise Assessment Report is included in the AEMR and submitted to the DOP, the DECCW, Auburn Council and the CCC to report any non compliance with the requirements of ADR 28/01. VES' recommendations for mitigation measures to ensure noise emissions are reduced may also be included in this report.

A register, compiled of trucks exceeding the noise limits, provides a further system of reporting put in place by VES to improve noise management at the Terminal. Identifying trucks exceeding the noise limits, both owned and/or operated by VES or external contractors, allows VES to set out a method of rectifying non conforming vehicles. Initial verbal and written communication is employed to request operators to repair defects before exclusion from the premises as a final stage.

Furthermore, the storage of each series of noise measurements, including the measured L_{Amax} noise levels together with the relevant information, enables individual vehicles and operators to be identified and to record any actions arising from the truck inspections, as well as any written communication sent to operators in relations to the noise limits exceedances.



Appendix A Glossary of Acoustic Terms

**Decibel, dB:**

Unit of acoustic measurement. Measurements of power, pressure and intensity. Expressed in dB relative to standard reference levels.

dB(A):

Unit of acoustic measurement weighted to approximate the sensitivity of human hearing to sound frequency.

Sound Pressure Level, L_p (dB), of a sound:

20 times the logarithm to the base 10 of the ratio of the r.m.s. sound pressure to the reference sound pressure of 20 micro Pascals. Sound pressure level is measured using a microphone and a sound level meter, and varies with distance from the source and the environment.

Sound Power Level, L_w (dB), of a source:

10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 Pico Watt. Sound power level cannot be directly measured using a microphone. Sound power level does not change with distance. The sound power level of a machine may vary depending on the actual operating load.

Ambient Sound:

Of an environment: the all-encompassing sound associated with that environment, being a composite of sounds from many sources, near and far.

Percentile Level - L_{A90} , L_{A10} , etc:

A statistical measurement giving the sound pressure level which is exceeded for the given percentile of an observation period, e.g. L_{A90} is the level which is exceeded for 90% of a measurement period. L_{A90} is commonly referred to as the "**background**" sound level.

Rating Background Level – RBL:

Method for determining the existing background noise level which involves calculating the tenth percentile from the L_{A90} measurements. This value gives the Assessment Background Noise Level (ABL). Rating Background Level is the median of the overall ABL.

Average Maximum A-weighted sound pressure level - $L_{AMAX,T}$:



The A-weighted sound pressure level obtained by using time weighting Fast and arithmetically averaging the maximum levels measured during the time interval considered - $L_{A10,T}$ is commonly taken to be an approximation for $L_{A_{MAX},T}$.

Average Background A-weighted sound pressure level - $L_{ABG,T}$:

The A-weighted sound pressure level obtained by using time weighting Fast and arithmetically averaging the lowest levels of the ambient sound pressure levels measured in the absence of the noise source(s) under investigation, during the time interval considered - $L_{A90,T}$ is commonly taken to be an approximation of $L_{ABG,T}$.

$L_{AEQ,T}$:

Equivalent continuous A-weighted sound pressure level. The value of the A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval T, has the same A-weighted sound energy as the actual time-varying sound.

Noise Rating Number:

A single number ascribed to a prescribed set of measured octave band sound pressure levels. The number ascribed is the greatest of the set of octave band noise rating numbers ($q.v$) calculated from the measured set of octave band sound pressure levels.

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Appendix B Truck Noise Test Plan



HEGGIES

26 May 2008

10-6815 Test Plan 20080522

Veolia Environmental Services
Cnr Unwin & Shirley Street
ROSEHILL NSW 2142

Attention: Mr Thomas Muddle

Dear Thomas

Clyde Waste Transfer Facility Truck Noise Monitoring Proposed Test and Management Plan

1 Introduction

Heggies Pty Ltd (Heggies) has been engaged by Veolia Environmental Services (Veolia) to prepare a test and management plan to monitor and manage noise levels from heavy vehicles accessing the Clyde Waste Transfer Facility.

The test plan has been prepared in response to the issues raised by the Department of Environment and Climate Change (DECC) in their letter to Mr Kitto dated 5 February 2008 (refer **Attachment A**).

This report provides a noise measurement test and management plan in which:

- Measurements are aligned with the requirements of Australian Design Rule (ADR) 28/01 as far as practical and thus allowing noise from truck passbys to be compared with the applicable noise limits.
- A draft noise management plan has been prepared which outlines the actions that will occur when truck noise levels are found to be in exceedance of the nominated noise level thresholds.

HEGGIES PTY LTD

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Incorporating New Environment Graeme E. Harding & Associates Eric Taylor Acoustics





2 Background

2.1 Conditions of Approval

The NSW Department of Planning's (DoP) Condition 112 for the Clyde Waste Transfer Terminal requires that:

"The Applicant shall ensure that annual noise emissions assessments of all trucks owned or operated by the Applicant or trucks the subject of a delivery contract with the applicant are carried out. The assessment shall assess compliance with relevant noise emission requirements of ADR 28/01 or its successor. The assessment shall be made available to Auburn Council and the Director-General within 3 weeks of the Applicant's annual licensing report to the EPA (now DEC). If any non-compliance with the relevant noise emission requirements is identified, the assessment report shall recommend mitigation measures with the objective of ensuring compliance with relevant noise emission requirements of ADR 28/01."

The DECC notes in the letter of 26 July 2006 (**Attachment A**) that Auburn Council does not support the removal of Condition 112, but does support an application to amend the condition on the basis that the intent of the condition is satisfied.

2.2 Test Plan and Measurements Undertaken by Hyder

A test plan and attended noise measurements have previously been undertaken by Hyder Consulting Pty Ltd (Hyder). The test plan was prepared in April 2007 and the attended noise measurements were undertaken on 8 January 2008.

The measurement location that Hyder selected is illustrated in **Figure 1**. The attended noise measurements were undertaken at the Hardstand area (near the wire fence of the detention pond), approximately 13 m from the centre of the road between the entry ramp and weighbridge; and 21 m from the centre of the road between the weight bridge and exit ramp. This measurement location was considered most appropriate as influence from road traffic noise (particularly heavy vehicles) from Parramatta Road, noise from the waste transfer building and noise from the diesel fork truck near the waste transfer building was minimised.

The Hyder report indicates that a review of Veolia Environmental Services' register identifies that there are approximately 400 trucks movements daily (weekdays) to and from the site and that the majority of truck movements occur during morning periods. It was estimated that there are approximately 120 truck movements (weekdays) between 8:00 am to 12:00 midday, representing approximately 20% to 25% of the daily truck movements.

Attended measurements were undertaken by Hyder Consulting between 8:00 am and 12:00 midday on 8 January 2008. L_{Amax} noise measurements were measured for 108 truck passbys (54 entries and 54 exits). The L_{Amax} noise levels from trucks departing were 5 dBA to 7 dBA lower than those from trucks entering the site. This was due to the fact that the trucks departing were located 8 m further than the entering vehicle to the measuring equipment. The other reason appears to be that the trucks tend to accelerate as they enter the weighbridge, while trucks on exit have the option to roll down the hill.

Heggies have undertaken an analysis of the L_{Amax} passby noise levels for trucks entering the waste transfer facility. The results are plotted in **Figure 2** in the form of a noise level distribution chart. This chart illustrates that the highest L_{Amax} noise level of 84 dBA occurred for one truck passby and the next highest L_{Amax} noise level was 80 dBA. The L_{Amax} noise levels from all other passbys were less than 80 dBA.



Figure 1 Hyder Noise Measurement Location

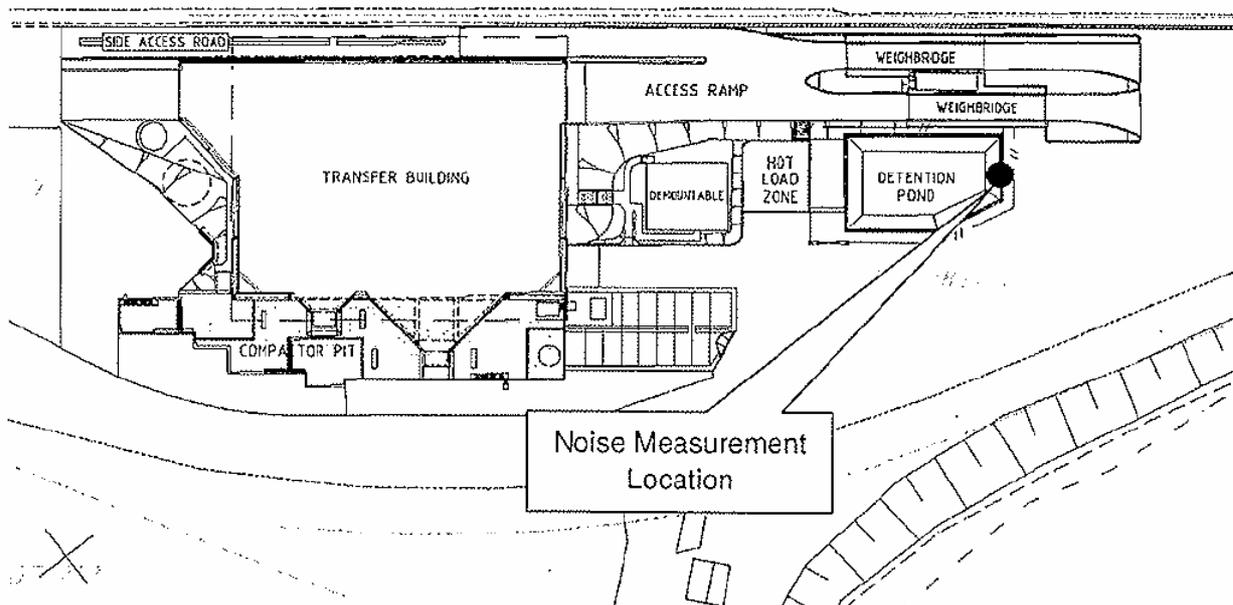
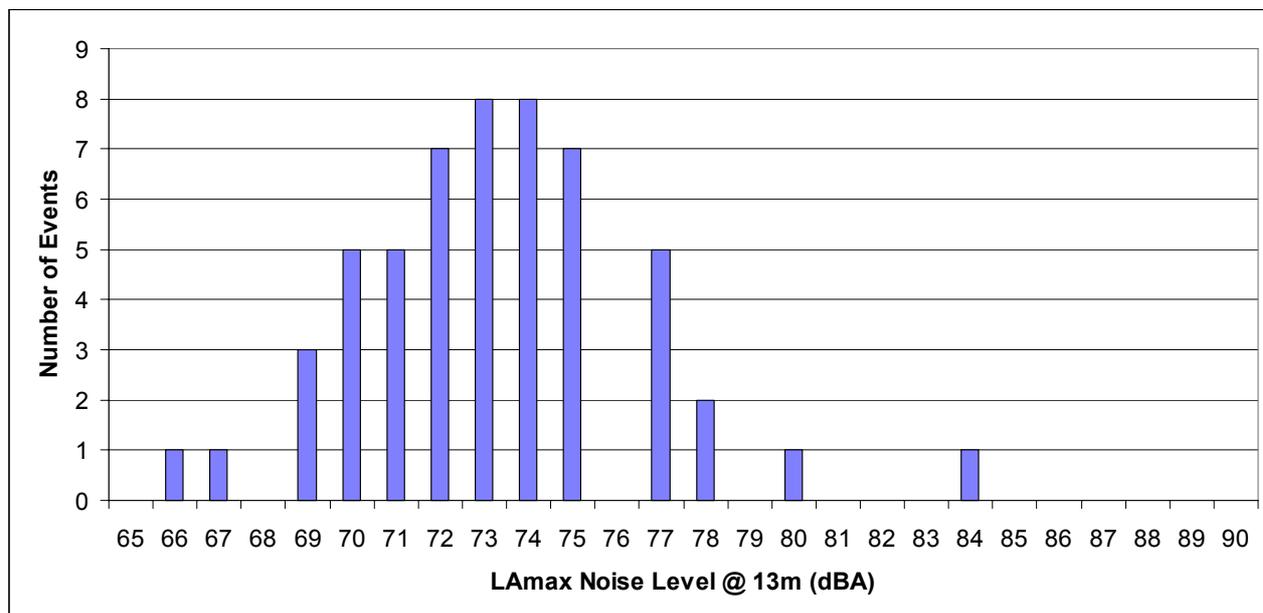


Figure 2 Analysis of Hyder Noise Measurements on 8 January 2008 for Trucks Entering Waste Transfer Facility



Note: For measurements at a distance of 7.5 m, a nominal correction of +5 dBA should be added to the Hyder measurement results.



2.3 Letter from DECC

The letter from the DECC dated 5 February 2008 (**Attachment A**) provides a response to Veolia's application to modify the consent conditions relating to the noise testing of trucks entering the waste transfer facility. The following provides a brief summary of the key aspects relating to the proposed noise testing.

- The DECC is of the view that the proposed testing (documented in the Hyder Report), at this stage, needs further work to clearly set out the new assessment requirements and to take into account New South Wales' legal requirements in relation to the noise emissions from trucks.
- The DECC supports an application to amend Condition 112 on the basis that the intent of the condition is satisfied.
- The DECC notes the requirements of the truck noise emission limits in the Protection of the Environment Operations (POEO) Noise Control Regulation 2000. The noise limits should form part of the proposed test plan.
- All Veolia trucks are required to meet the requirements of the Noise Control Regulation, whether they are new or used.
- Veolia is required to have a system in place to ensure that all trucks operated by it meet the requirements set out in the Noise Control Regulation including a means of repairing or improving any trucks that do not meet those limits.
- The DECC accepts that 25% of all trucks attending the premises be tested on any given day but recommends that the testing be done at least 4 times a year on a trial basis. If the results of this prove satisfactory, testing could subsequently be conducted say twice a year.
- It is suggested that any new condition could refer to the stationary test requirements of ADR 28/01.
- The DECC accepts that Veolia has only a limited range of options with respect to ensuring that trucks operated by its contractors meet the required noise limits but that it can keep a register of any such trucks that exceed the noise limits and ask that they be repaired or exclude them from the premises.
- It is also recommended that the condition should also require the setting out of a method of rectifying the Veolia trucks that either are clearly defective (for example because of noise control equipment such as external mufflers are missing or damaged) or emitting more noise than those set out in the limits.

3 Required Noise Testing and Noise Limits under ADR 28/01

ADR 28/01 "*External Noise of Motor Vehicles 2006*" includes two test procedures, these being a "Vehicles in Motion" test and a "Stationary Vehicle" test. A brief summary of the testing procedures is provided below.

For the vehicles in motion test, the ADR requires measurements to be undertaken at a distance of 7.5 m from the path of the vehicle's centreline at a height of 1.2 m above road level. Vehicles should approach the test site at speeds of 30 km/h to 50 km/h in gear 2 or 3 and be operated at full throttle through the 20 m test site.

For the stationary vehicles test (on goods vehicles), the ADR requires noise measurements to be undertaken at a distance of 1.0 m from the exhaust at an angle of 45 degrees from the principal direction of gas flow. Measurements should be undertaken at governed speed or 75% Engine Speed at Maximum Power (ESMP) whilst the vehicle is in neutral gear.

Table 1 provides a summary of the allowable L_{Amax} noise levels in ADR 28/01 for Goods Vehicles.



Table 1 L_{Amax} Noise Limits (dBA) - ADR 28/01

Vehicle Category Code	Vehicle Type	Vehicles in Motion Spark Ignition and Direct Injection Diesel Engines	Stationary Vehicles			
			Spark Ignition Engines Exhaust Outlet Height		Diesel Engines Exhaust Outlet Height	
			<1500 mm	≥ 1500 mm	<1500 mm	≥ 1500 mm
NA	Light Goods Vehicles GVM ≤ 3.5 t on road use	78 to 80	89	85	99	95
NB	Medium Goods Vehicles GVM > 3.5 t ≤ 12 t on road use	81 to 84	95	91	101	97
NC	Heavy Goods Vehicles GVM > 12 t on road use	81 to 87	95	91	103	99

Note: For vehicles in motion test, L_{Amax} noise limits are based on the Gross Vehicle Mass (GVM) and the Nett Engine Power (NEP). The noise limits in the table are expressed as a range where the lower noise level refers to the minimum GVM and NEP in each category and the upper noise level refers to the maximum GVM and NEP in each category.

4 Required Noise Testing and Noise Limits under POEO (Noise Control) Regulation 2000

The POEO (Noise Control) Regulation is based on a “Stationary Vehicle” test.

For the stationary vehicles test (on motor lorries), the noise measurements are to be undertaken at a distance of not more than 1.0 m from the exhaust at an angle of 45 or 90 degrees (depending on the exhaust height) from the principal direction of gas flow. Measurements should be undertaken at governed speed or 75% ESMP whilst the vehicle is in neutral gear or park.

Table 2 provides a summary of the allowable L_{Amax} noise levels for Motor Lorries in the Noise Control Regulation.

For diesel and non-diesel engines constructed after 1 July 1983, the L_{Amax} noise limits are equivalent to the stationary noise limits in ADR 28/01.



Table 2 LMax Noise Limits (dBA) - POEO (Noise Control) Regulation 2000

Description	Engine	Gross Vehicle Mass	Exhaust Height above Ground	Year of Manufacture	LMax Noise Limit (dBA)
Motor Lorry or Motor Bus	Any engine other than diesel	3500 kg or less	1.5 m or more	Before 1/7/83	88
				After 1/7/83	85
		Less than 1.5 m	Before 1/7/83	92	
			After 1/7/83	89	
		More than 3500 kg	1.5 m or more	Before 1/7/83	94
			After 1/7/83	91	
	Less than 1.5 m	Before 1/7/83	98		
		After 1/7/83	95		
	Diesel	3500 kg or less	1.5 m or more	Before 1/7/80	101
				After 1/7/80	98
			Less than 1.5 m	After 1/7/83	95
				Before 1/7/80	105
After 1/7/80			102		
			After 1/7/83	99	
More than 3500 kg but less than 12000 kg	1.5 m or more	Before 1/7/80	103		
	After 1/7/80	100			
After 1/7/83	97				
	Less than 1.5 m	Before 1/7/80	107		
After 1/7/80		104			
After 1/7/83	101				
	More than 12000 kg	1.5 m or more	Before 1/7/80	105	
After 1/7/80		102			
After 1/7/83	99				
	Less than 1.5 m	Before 1/7/80	109		
After 1/7/80		106			
After 1/7/83	103				

5 Comments on ADR 28/01 and Noise Control Regulation Testing Procedures

The Hyder report of 1 April 2005 identifies a number of issues in relation to the testing of truck noise levels in strict accordance with the ADR 28/01 and Noise Control Regulation test requirements. These include the following:

- Testing in accordance with ADR 28/01 will be time consuming (up to one hour per vehicle). The number of trucks using the facility totals around 400, of which around seventy are owned by Collex (now trading as Veolia Environmental Services). Testing of this number of vehicles is likely to take several months.
- Testing the trucks will be costly and logistically complex.



- Identifying and maintaining a suitable area for testing moving vehicles for the duration of the tests will be problematic as the test area requires a 25 m radius to ensure free-field conditions as well as having reasonably low background noise levels. The site must also enable vehicles to accelerate to the required speeds (50 km/h and faster), safely decelerate and stop/turn.

The Collex facility is unsuitable as a test site for a number of reasons, primarily its speed limit of 20 km/h.

The above issues are acknowledged in the DECC letter of 5 February 2008 (refer **Section 2.3**).

In addition to the above, Heggies noted during the site inspection on 8 April 2008 that there was a large variation in the location of the vehicle exhausts for the different truck types accessing the waste transfer facility. One of the proposed options is to undertake attended measurements using a fixed microphone located near the weighbridge whilst the vehicle is stopped or just taking off after being weighed. However, on this basis of the large variation in exhaust locations, it is considered impractical to undertake reliable noise measurements at the required measurement distance of 1.0 and 45 degrees from the principal direction of gas flow, with a fixed microphone location.

6 Proposed Test Plan

The DECC letter of 5 February 2008 notes that where possible, the measured L_{Amax} noise levels from truck passbys should be compared with the noise limits in ADR 28/01 or the Noise Control Regulation in order to identify vehicles that may have noise control devices that are defective or are in exceedance of the noise limits.

The proposed test plan aims to mimic the requirements of ADR 28/01 as far as practical (given the site constraints) to enable L_{Amax} noise levels from truck passbys to be compared with the noise limits in the “Vehicles in Motion” test.

- Measurements are proposed to be undertaken at a measurement distance of 7.5 m from the path of the vehicle’s centreline (ie at the same measurement distance identified in ADR 28/01).
- Measurements are proposed to be undertaken at a height of 1.2 m above the test site surface (ie at the same height identified in ADR 28/01).
- Measurements would be undertaken at the location illustrated in **Figure 3** and **Figure 4**. This location is positioned between the weighbridge and the transfer building on an uphill slope. During the site visit on 8 April 2008, all trucks were observed to be accelerating at this location. As the “Vehicles in Motion” test requires the vehicle to be operating under full throttle adjacent to the microphone, this measurement location (ie on an up slope with the vehicle accelerating) is considered to be most representative of the ADR 28/01 test requirements.
- Measurements would be undertaken using a Type 1 Sound Level Meter using the A weighting network and fast response time constant in accordance with the relevant standards.
- Measurements would be undertaken over a four hour period at least four times per year on a trial basis during the first year. During the measurements, a microphone extension lead would be used to enable the sound level meter to be operated from within the weighbridge office so that driver behaviour is not influenced by someone standing alongside the measurement location.
- The Gross Vehicle Mass (GVM) and vehicle type of each truck will be recorded in order to determine the relevant vehicle class and noise limits identified in **Table 1**.
- Number plate and/or operator information would be recorded for each truck passby in order to identify vehicles that exceed the specified noise limits.
- All measurements would be included in a comprehensive measurement report.



Additional Notes on Proposed Measurement Location

The previous measurement location selected by Hyder was on the approach to the weighbridge at a distance of 13 m. At this location, the speed and approach direction of the vehicles was variable, resulting in a large variation in measured noise levels.

A measurement location just after the weighbridge was ruled out on the basis that a speed bump requires drivers to slow down. A measurement location closer to the transfer facility near the top of the ramp was also ruled out on the basis of high ambient noise levels from the transfer facility and trucks being required to stop at a boom gate.

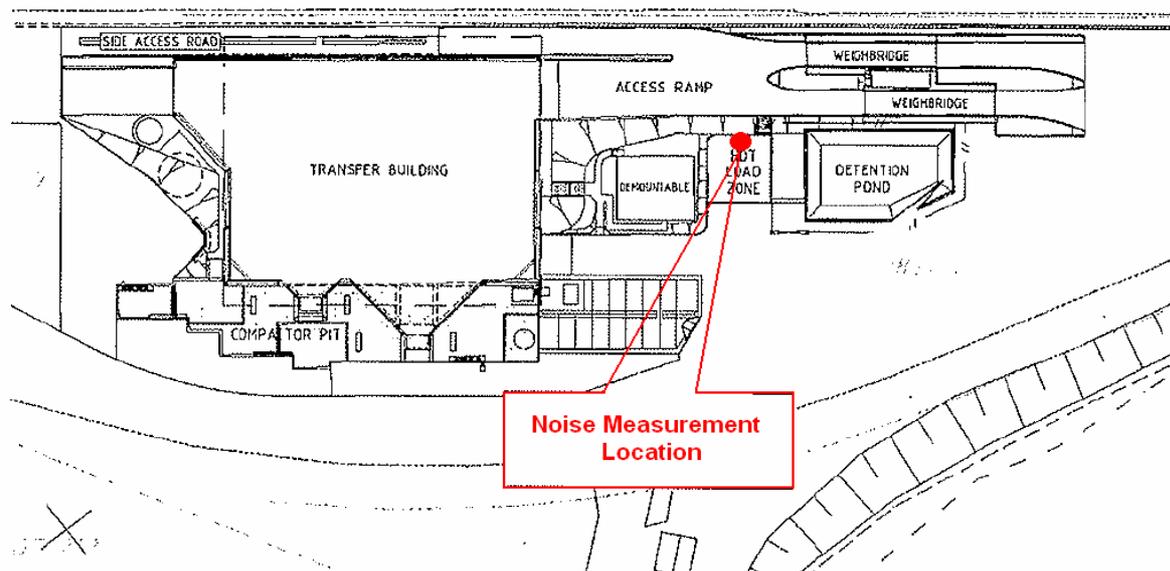
The proposed measurement location is considered to be representative of the loudest and most reliable measurement location.

Figure 3 Proposed Measurement Location





Figure 4 Proposed Noise Measurement Location



7 Noise Management Plan

In order to satisfy the intent of the ADR 28/01 test requirements in Condition 112, a noise management plan will be prepared by Veolia in order to document the management actions to be followed if the L_{Amax} noise levels from truck passbys exceed the noise limits.

The DECC letter of 5 February 2008 notes the following aspects that should be included in the noise management plan:

- Veolia is required to have a system in place to ensure that all trucks operated by it meet the requirements set out in the Noise Control Regulation including a means of repairing or improving any trucks that do not meet those limits.
- The DECC accepts that Veolia has only a limited range of options with respect to ensuring that trucks operated by its contractors meet the required noise limits but that it can keep a register of any such trucks that exceed the noise limits and ask that they be repaired or exclude them from the premises.
- It is also recommended that the condition should also require the setting out of a method of rectifying the Veolia trucks that either are clearly defective (for example because of noise control equipment such as external mufflers are missing or damaged) or emitting more noise than those set out in the limits.

In addition to the above requirements, it is anticipated that the noise management plan would also include the following:

- Following each series of noise measurements, the measured L_{Amax} noise levels would be stored in a database, together with the relevant information which enables individual vehicles and operators to be identified.
- Noise levels from individual truck passbys would be compared with the noise limits in **Table 1** to identify events which exceed the noise limits.



- Information will be stored in a database to record the number of Veolia trucks inspected as a result of noise levels exceeding the ADR 28/01 noise limits. The database should also include a field to record any actions arising from the truck inspection.
- For non-Veolia trucks, information will be stored in a database to identify the number of letters sent to other operators in relation to exceedances of the ADR 28/01 noise limits.
- On a yearly basis, a report will be prepared by Veolia providing a summary of the noise testing that has been undertaken, the number of trucks identified with noise levels in exceedance of the ADR 28/01 noise limits, the number of Veolia trucks inspected and repaired, and the number of letters sent to other operators.
- As the proposed testing is not in strict accordance with the ADR 28/01 requirements, the yearly report may also provide comment in relation to whether the noise limits in ADR 28/01 are appropriate.

For example, the L_{Amax} noise limit for a Medium Goods Vehicle is between 81 dBA to 84 dBA as outlined in ADR 28/01. If the upper value of this requirement is used (84 dBA), it will show that 2 of the 54 truck passbys conducted by Hyder would have exceeded an L_{Amax} noise limit of 84 dBA (after applying a +5 dB distance correction to the results in **Figure 2**). If the lower L_{Amax} noise limit of 81 dBA is used, the number of exceedances would increase from 2 to 9. This example highlights that if the noise limit is set to be too low, an unreasonable number of trucks would require inspections.

8 Conclusions

The proposed test plan in **Section 6** and management plan in **Section 7** are considered to address the intent of Condition 112 and the requirements of DECC in their letter of 5 February 2008.

The proposed test plan, whilst not in strict accordance with the requirements of ADR 28/01, is considered to mimic the requirements of ADR 28/01 as far as practical (given the site constraints) to enable L_{Amax} noise levels from truck passbys to be compared with the noise limits in the "Vehicles in Motion" test.

Furthermore, the proposed management plan provides a procedure for inspecting and repairing (if necessary), Veolia trucks with noise levels exceeding the ADR 28/01 noise limits. For non-Veolia trucks, the proposed management plan provides a procedure for informing the operator that one of their vehicles registered a noise level exceeding the ADR 28/01 noise limits.

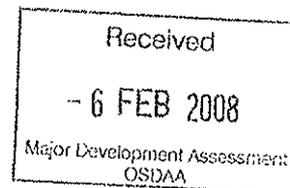
I trust that the above report provides sufficient information for your current requirements. Please contact me on 9428 8156 if you have any additional queries.

Kind Regards

CONRAD WEBER

Our reference : DOC08/2847

David Kitto
Director - Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001



BY FACSIMILE & STANDARD POST

Dear Mr Kitto

**Proposed modification to Veolia Waste Transfer Terminal (DA 205-08-01 MOD 2) –
Clyde, Auburn Local Government Area –
Environment Protection Licence No.11763 – Truck noise assessment**

Thank you for your letter dated 16 January 2008 regarding the application from Veolia Environmental Services Pty Ltd ("Veolia") seeking to modify the Minister's development consent for the Waste Transfer Terminal. Veolia holds an environment protection licence no.11763 issued by the Environment Protection Authority ("EPA").

Please note that, although the EPA is now a part of the Department of Environment and Climate Change ("DECC"), certain statutory functions and powers continue to be exercised in the name of the EPA.

Summary

The DECC is of the view that the proposed alternative, at this stage, needs further work to clearly set out the new assessment requirements and to take into account New South Wales' legal requirements in relation to the emission of noise from trucks.

The reasons for this are set out below.

The DECC suggests that a meeting be held with the Department of Planning, Veolia and Veolia's consultants with a view to finalising this matter.

Background

Council's position

The DECC notes that in its letter dated 26 July 2007, Auburn Council does not support the removal of condition 112 but does support an application to amend the condition on the basis that the intent of the condition is satisfied.

The Department of Environment and Conservation NSW is now known as
the Department of Environment and Climate Change NSW

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Department of **Environment and Conservation** NSW



Current requirements of the Protection of the Environment Operations (Noise Control) Regulation 2000

The DECC would like to draw the requirements of the *Protection of the Environment Operations (Noise Control) Regulation 2000* ("the Noise Control Regulation") to the attention of the Department and Veolia. In particular, we draw attention to clauses 13 and 14 and Schedule 1 of the Noise Control Regulation which sets out limits for the emission of noise from trucks used on public roads in New South Wales. To assist you, copies of clauses 13 and 14 and Schedule 1 of the Noise Control Regulation are attached.

The testing procedures are set out in Schedule 2 to the Noise Control Regulation and a copy of this is attached.

All Veolia trucks need to meet the requirements of the Noise Control Regulation when used on public roads, whether or not the trucks are new or used, although the standard required depends on the type of engine, the size of the engine and the age of the vehicle, as set out in Schedule 1.

The DECC assumes that Veolia already has in place a system to ensure that all of its trucks meet the requirements of the Noise Control Regulation, however, the DECC notes that the implication of "Part 4 Responsibilities" of the report titled "Clyde Waste Transfer Terminal Truck Noise – Proposed Measurement and Assessment Methodology" dated 2 April 2007 prepared by Hyder Consulting Pty Ltd for Veolia makes this unclear.

We note that this does not impose an obligation on Veolia in relation to trucks not operated by Veolia.

As this is a strict legal requirement for all trucks in New South Wales, Veolia needs to ensure it has in place a system to ensure all trucks operated by it meet the requirements set out in the Noise Control Regulation including a means of repairing or improving any trucks that do not meet those limits.

Proposal

The DECC is prepared to accept that 25% of all trucks attending the premises be tested on any given day but recommends that the testing be done at least 4 times a year on a trial basis. If the results of this prove satisfactory, testing could subsequently be conducted say twice a year. In either case, reporting the results of the testing and rectification action would only be required once a year to the EPA, the Department of Planning and Council.

It is suggested that any new condition could refer to the stationary test requirements of ADR 28/01.

The DECC understands that not all of Veolia's trucks should be assessed as part of the conditions attached to the operation of the Waste Transfer Terminal, rather, the focus should be on the trucks, whether operated by Veolia or otherwise, that use the Waste Transfer Terminal.

The DECC also accepts that Veolia has only a limited range of options with respect to ensuring that trucks operated by its contractors meet the required noise limits but that it can keep a register of any such trucks that exceed the noise limits and ask that they be repaired or exclude them from the premises.

It is also recommended that the condition should also require the setting out of a method of rectifying the Veolia trucks that either are clearly defective (for example because the noise control equipment such as exhaust mufflers are missing or damaged) or emitting more noise than those set out in the limits.

If the Department agrees that a meeting between all the interested parties would progress the matter, please contact Christine Mitchell to make the necessary arrangements.

If you have any questions in relation to the above, please contact Christine Mitchell on (02) 9995 5758.

Yours faithfully



5 FEBRUARY 2008

Chris McElwain
Unit Head Waste Operations
Climate Change and Environment Protection Group

Enc. Clauses 13 and 14 of the Noise Control Regulation
Schedules 1 and 2 of the Noise Control Regulation

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