



Veolia Environmental Services (Australia) Pty Limited

Clyde Waste Transfer Terminal

Odour Audit XXII

**Final Report
January 2014**

THE ODOUR UNIT PTY LTD

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Project Number: N1473L

Report Revision		
Revision Number	Date	Description
Draft Report V1	15.01.2014	Draft report issued
Final Report	16.01.2014	Final report issued
Report Preparation		
Report Prepared By: M. Assal		Approved By: T.Schulz
Report Title: Veolia Environmental Services (Australia) Pty Limited Clyde Waste Transfer Terminal – Odour Audit XXII		

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Appendix B: Weather Data Calibration Report (May 2013 – November 2013)

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Appendix D: NSW Clyde Transfer Terminal Odour Management Procedures

1 INTRODUCTION

The Odour Unit Pty Ltd (TOU) was commissioned by Veolia Environmental Services (Australia) Pty Ltd (VES) to undertake the twenty-second (XXII) Odour Audit at the Clyde Transfer Terminal (the Site) on 27 November 2013. This Odour Audit is the twelfth to be carried out since the commissioning of the new forced air extraction system within the transfer building. Odour Audit XXII covers the 6-month period from May 2013 to November 2013, and was undertaken by a TOU Engineer.

The Odour Audit requirements of the Conditions of Consent – 48(f) are outlined below:

48. The Odour Management Plan must address, but is not necessarily limited to, the following issues:

(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 un-containerised 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.

As with previous Audits, Odour Audit XXII focused on issues relating to general housekeeping, fugitive odour emissions from the transfer building, ground level odour impacts, meteorological monitoring, complaints handling and actions on past Odour Audit recommendations. The approach included a general inspection and smoke testing of the transfer building, inspection of the container packing area and site access roads; inspection of the complaint register; review of the site meteorological data log and equipment maintenance/calibration; and an off-site downwind FAOA survey. At the time of this Odour Audit a calm to light wind (0.5 - 2 m/s) from the north/northeast tending to east/northeast was blowing.

2 FINDINGS

2.1 Assessment of General Housekeeping

2.1.1 Transfer Terminal Building

During the Odour Audit visit on 27 November 2013, there were approximately 100-120 tonnes of waste on the floor, according to the Site Manager. This tonnage is considered to be within the normal operational range of the Transfer Terminal Building (TTB) at the time this Odour Audit was being carried out. The TTB floor area not covered by waste material was observed to be reasonably clean, with little evidence of leachate or aged material. General housekeeping procedures of the TTB were good, as observed during several truck-unloading sequences. It was also observed that the site's front-end loaders cleared the floor area of waste on a regular basis, minimising the exposed area of waste.

As with previous audits, and consistent with TOU's experience at other waste transfer stations, there was a weak to distinct level of odour observed within the TTB.

2.1.2 Container Packing Area and Site Roadways

The container packing area and site roadways were clean and well managed with no waste or leachate exposed at the time of this Odour Audit. Similarly to previous Odour Audits, the container compacting/train packing area had a weak odour present but was confined to this area only. The general house-keeping around this area was observed to be of high quality, with no evidence to suggest otherwise. As with previous Odour Audits, the containers are cleaned off-site at Veolia's Woodlawn Bioreactor Facility. The weight of each container is monitored to determine if there is any waste that has not been removed completely from each container, which in turn reduces the likelihood of the containers contributing to the Site's odour levels.

As per the Odour Management Procedures at the Site, following the compaction of waste, all filled containers are completely sealed and remain so whilst at the Site. All containers used are required to be in good condition and unused/returned containers

adequately clean. Provided this practice is sustained at the Site, the Odour Audit has determined that this area continues to remain a minor contributor to odour emissions at the Site.

2.1.3 Odour Extraction System Maintenance

Service documentation was provided and inspected for the maintenance of the odour extraction system (refer **Appendix A**). Service logs were provided from May 2013 to October 2013. Each service log provided showed that the required maintenance was taking place and the odour extraction system overall was operating well. The service logs during this period noted that all required maintenance works such as checking the fan belts and unit operations, greasing bearings, and other routine preventative maintenance. The fan technician however appears to have not recorded exhaust airflow velocities through the stack in the service log reports. This should be undertaken in the next service to confirm that the minimum exit air velocity of 19.1 m/s is been achieved by the system. This was previously identified in the last Audit and should be followed-up (given also the results from smoke testing – see **Section 2.1.7** for details).

Additionally, on the service carried out on 18 July 2013 the fan technician indicated that the Variable Speed Drive (VSD) had tripped on a high DC volt fault. This was reset and unit operations checked. Following this, the operation of the system was recorded as normal and no other issues were noted. The VSD was checked on a later service on 30 August 2013 and found no further faults.

2.1.4 Odour Management Procedures

The Odour Management Procedures (formerly known as the Odour Minimising Procedures) continue to be regularly reviewed at Tool Box meetings and new issues/recommendations are raised with all staff members at these meetings. Following the alternation to the procedures reference, the updated Odour Management Procedure document has been attached to Appendix D for the purposes of this Odour Audit.

2.1.5 Transfer Terminal Building

As indicated in the previous Odour Audit, VES had advised plans to replace the rubber mats that seal the TTB breezeways with fixed metal plates. The auditor was advised that the reason for this new installation is in response to practical issues associated with the rubber mats use in recent times with the mats consistently falling due to waste build-up on the surface (identified in several consecutive Odour Audits) and safety issues and access difficulties during their maintenance. The installation of metal plates was completed in December 2013. **Photos 2.1 & 2.2** show this new installation at the TTB.



Photo 2.1 – New fixed metal plates on the western end of the TTB



Photo 2.2 – New fixed metal plates on the eastern end of the TTB

All doors and roller shutters of the TTB were found to be shut at the time of the Odour Audit, reducing the likelihood of odour impacts detected offsite. Similarly, the louvres on the end walls of the TTB were observed to be permanently shut.

2.1.6 Truck Entrance Plastic Strips

The truck entrance strips of the TTB, used to reduce odour escaping through the opening, were found to be mostly intact with 4-5 panels missing/requiring repair. Action to rectify this should be taken as soon as possible. Experience has determined that these strips contribute to containing odour within the building and therefore require daily check-ups to ensure they are all intact. The Site Manager has previously informed the auditor that sourcing a supplier for the new strips has been difficult, however, will continue to action this matter until a successful outcome is achieved.

2.1.7 Smoke Testing

As per previous audits, smoke testing was carried out within the TTB to assist in determining the effectiveness of the forced air extraction system, as well as the extent to which the TTB has been sealed from leaks. Smoke was released from within the building from three (3) different points within the TTB. **Figure 2.1** shows the three points where the smoke was released. These are identical locations to that of previous Odour Audits.

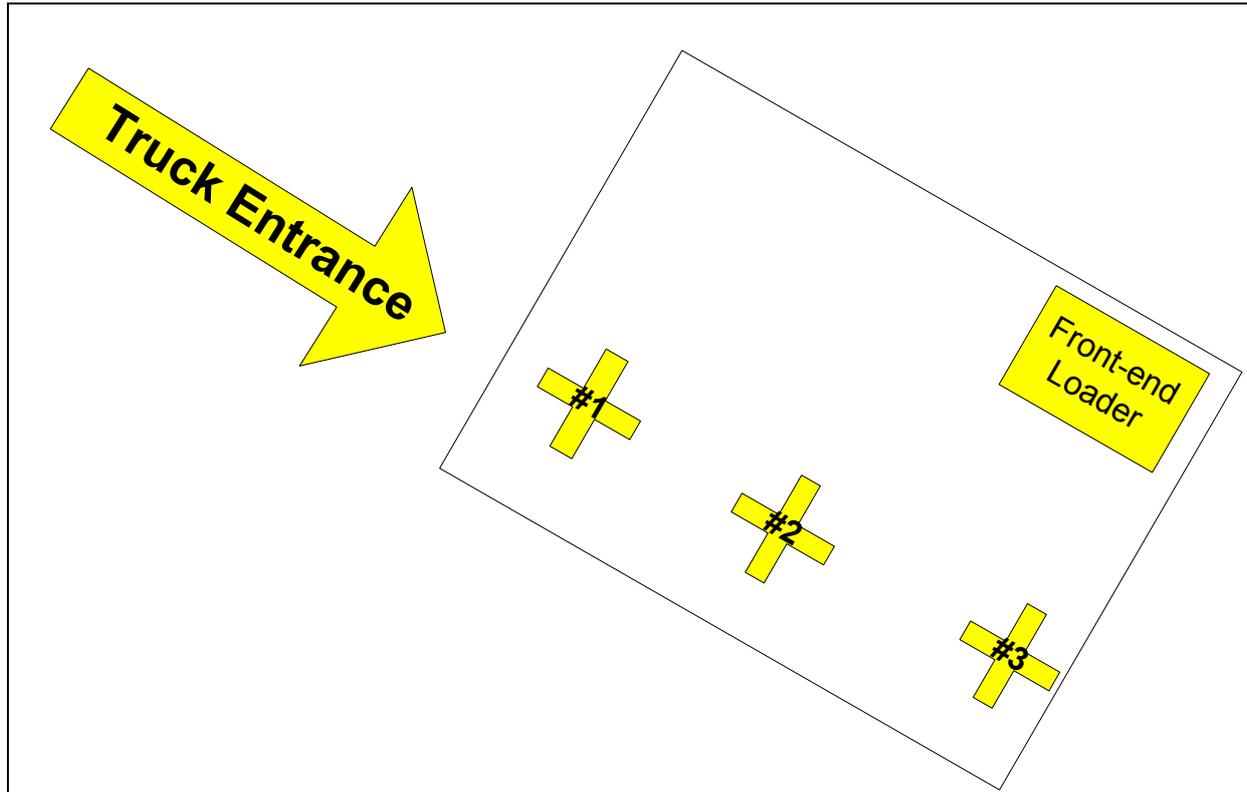


Figure 2.1 - Smoke testing release points within the TTB

Smoke Testing Point #1

Smoke released at this point initially rose gradually moving towards the truck entrance before rising to the roof and moving towards the extraction system. The smoke testing at this point revealed however that not all the smoke was being extracted suggesting that there could be a possibility that the fan extraction system is sub-optimally capturing air from the TTB at this point. This matter should be followed up with the fan technician. In light of this smoke testing result there will be need for the technician to determine if adequate airflow capture is occurring at the overhead air capture points across the entire overhead common collection duct within the TTB. Additionally, the discharge velocity at the fan extraction system stacks should be measured to determine that the minimum exit air velocity of 19.1 m/s has been achieved. This matter will be followed up in the next Odour Audit.

Smoke Testing Point #2

Smoke released at this point revealed a similar result to smoke testing point #1, with sub-optimal air capture was being visually observed. This should be followed up as per previous advice.

Smoke Testing Point #3

Smoke released at this point revealed a similar result to smoke testing point #3, with sub-optimal air capture being visually observed. This should be followed up as per previous advice.

Notwithstanding the above smoke testing results, and based on the fact that no odour complaints have been received by the Site (see **Section 2.2.1**) and the positive Field Ambient Odour Assessment (FAOA) Survey results (**Section 2.3.1**), it appears that there is no significant fugitive odour emission release occurring from the TTB.

2.1.8 Stormwater Retention Pond

The auditor observed that there was no effluent in this pond at the time this Odour Audit was carried out. There was no odour detectable during the Odour Audit visit that could be linked directly back to this pond.

2.2 Odour Complaints Handling and Meteorological Data

2.2.1 Odour Complaints Handling

As advised by the Site Manager, there have been no complaints recorded in the site complaints register since March 2012.

2.2.2 Meteorological Data

The meteorological data provided to the auditor for the period from May 2013 to November 2013 was inspected and found to be in good order. The exception is between the period of 07/06/2013 and 19/08/2013 when the datalogger failed and the data was lost. VES has put in a corrective measure for automated downloads (replacing manual downloads) to enable this issue to be identified more efficiently in

the future. As found in previous Odour Audits, the observations were recorded in 15-minute intervals, and included all parameters necessary to develop a meteorological dataset for odour dispersion modelling.

As indicated Quarterly Service Documents provided by VES, the weather station is located in an accessible area with the solar panel and components regularly cleaned, installation sprayed regularly for insects and trimming of nearby vegetation as required to ensure no overgrowth immediately around the weather station pole. The service logs indicate that servicing of the weather station and required calibrations were being carried out as required in May, August and November 2013 by Hydrometric Consulting Services. The weather data calibration reports for the service visits have been attached in **Appendix B**.

2.3 Field Ambient Odour Assessment Methodology

At present, no Australian Standard exists for field based ambient odour assessment surveys. Consequently, The Odour Unit utilises a method for assessing the ground level impacts of odour emissions using a modified version of the German Standard VDI 3940 (1993) – *‘Determination of Odorants in Ambient Air by Field Inspections’*.

Field based ambient odour surveys are considered a valuable odour impact assessment tool as previous experience with ambient odour sampling and subsequent olfactometry testing suggests that accurate and useful ambient odour concentration data is difficult to obtain. Therefore, TOU has adopted a more practical approach based on the field measurement of odour intensity. With this method, calibrated and experienced odour specialists traverse the downwind surrounds of odour sources in a strategically mapped pattern, assessing the presence, character and intensity of any odours encountered and recording these observations along with wind speed and direction.

An ambient odour assessment was performed at the entrance of the Site and off-site locations on 27 November 2013 between 1705 hrs – 1800 hrs. The ambient odour assessment focused off-site as required by the Conditions of Consent on “.....nearby

commercial and residential areas.....” (Section 48 (f)). The TOU assessors firstly determined the wind direction using a compass and then assessed downwind locations of the TTB.

The assessors spent a few minutes at each assessment location in order to gauge the effects of any odour impact. If an odour was detected at a location, the assessors attempted to characterise it. The general aim was to determine the extent of the impact of odours off-site and rank their intensity. The ranking scale for the German Standard VDI 3940 ‘*Determination of Odorants in Ambient Air by Field Inspections*’ was used for the intensity assessments. The standard’s ranking system is based on the following seven-point intensity scale, as shown in **Table 2.1**.

Table 2.1 - VDI 3882 Odour Intensity Categories		
Odour Strength	Intensity Rank (code)	TOU Interpretation (meaning)
Not detectable	0	No odour detected
Very weak	1	Odour detected but not strong enough to be characterised
Weak	2	Odour is weak but just able to be characterised
Distinct	3	Odour is clearly distinct and easily characterised
Strong	4	Strong odour detectable
Very Strong	5	If offensive, observer may consider moving from the area
Extremely Strong	6	Odour is sufficiently over-powering that assessor moves from area

2.3.1 Field Ambient Odour Assessment - Results

The results from the FAOA survey conducted during the Odour Audit found that no odours were detected off-site that could be linked back to the Transfer Terminal Station. The field log sheets and visual survey plot have been attached as **Appendix C**.

3 RECOMMENDATIONS/FOLLOW-UP

3.1 Transfer Terminal Building

The on-going issue with the rubber mats sealing the breezeway of the TTB has been resolved by the installation of fixed metal plates. This installation should be effective in permanently sealing the breezeways and thereby reducing fugitive odour emission release from the TTB. This new installation will be inspected in the next Odour Audit. Additionally, repair and attention of the missing/damaged truck entrance strips should be carried out as soon as a suitable supplier is sourced.

3.2 Compactor Area

The general house-keeping around this area was observed to be of high quality, with no evidence to suggest otherwise. As with previous Odour Audits, the container compacting/train packing area had a weak odour present but it was confined to this area only.

3.3 Odour Extraction System

The service logs indicate that all required maintenance works on the odour extraction system since the last Odour Audit has been carried out successfully, and the system is operating well. The smoke testing did however identify some tendency for sub-optimal capture at several of the ventilation capture points (see **Section 2.1.7** for details) of the TTB. Given the finding in the Odour Audit, it is recommended that a follow-up investigation is carried out to ensure that the system is operating in an optimum condition. Next to this, the stack velocity should be measured in the next fan extraction system service date to confirm that the minimum stack velocity of 19.1 m/s is being achieved.

Overall, this Odour Audit found that the operation and maintenance of the odour management system at the plant were satisfactory, with no evidence to suggest significant fugitive emission release from the Transfer Terminal Station. The next Odour Audit is due in April/June 2014.



**Appendix A –
Odour Extraction System Service Reports
(May 2013 – November 2013)**

Craig Doorey

From: no-reply@bsa.com.au
Sent: Wednesday, 1 May 2013 1:50 PM
To: service@triple-m.com.au; dblore@bsa.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



Technical Maintenance Services

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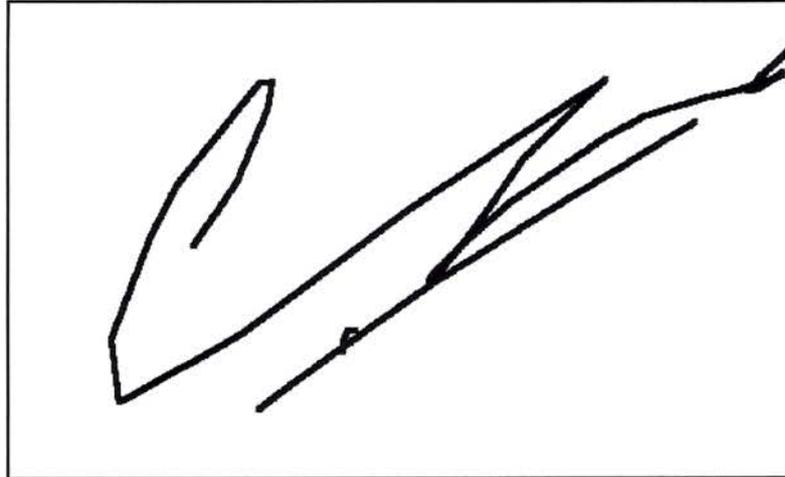
Triple M Fire ABN 37 101 246 351 | QLD ABN 81 096 895 288
 NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

ID	4271
Time Start	Wed May 01 2013 13:42:58 GMT+1000 (EST)
Client Details	CLYDE - MAINTENANCE
Address	322 Parramatta Rd, Clyde NSW 2142
Site Contact Telephone Number	02 8868 7401
Type of Service	Preventative Maintenance
Job / Service Call Number	70662
Fault Description	CLYDE WASTE - PM April
Asset Type Affected	AIR DISTRIBUTION
Maintenance Done	
Description of Work Done	Carried out routine maintenance as per schedule for April. Checked belts and unit operations. Will grease all bearings on next visit. No issues found.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature

Client Signature



Forwarding Email

craig.doorey@veolia.com.au

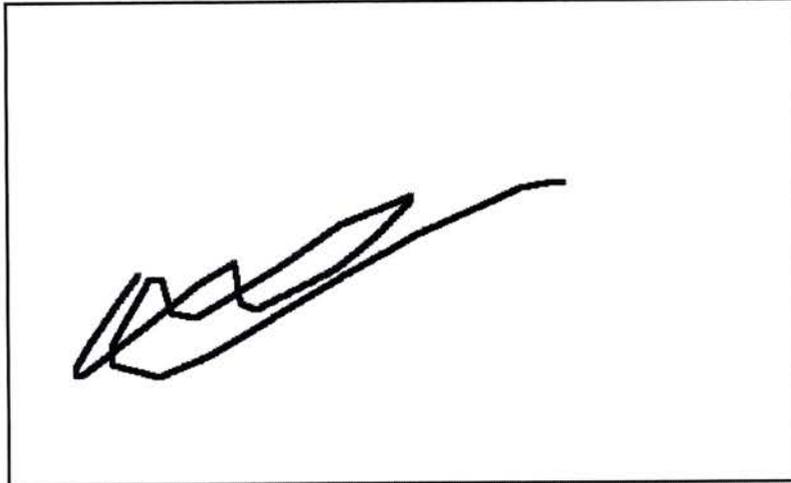
User ID

TNSS-MLY

Job Safety Analysis

ID	S4271
Job/Service Call Number	70662
Work to be done	CLYDE WASTE - PM April
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S4271
Job Number	70662
Name of Tech	Mick Lye
Number of Hours	0
Travel Time	0
Charge Rate	Normal Time
Technician Classification	Tradesman

Email Report

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Craig Doorey

From: no-reply@bsa.com.au
Sent: Tuesday, 21 May 2013 12:55 PM
To: service@triple-m.com.au; dblore@bsa.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



Technical Maintenance Services

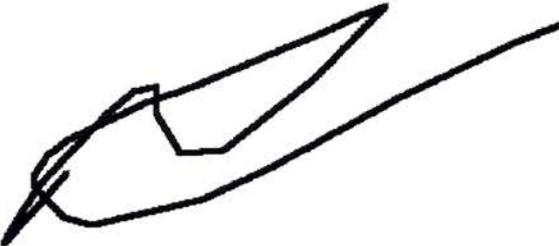
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 NSW ABN 50 063 395 013 | Arctick Licence AU03033

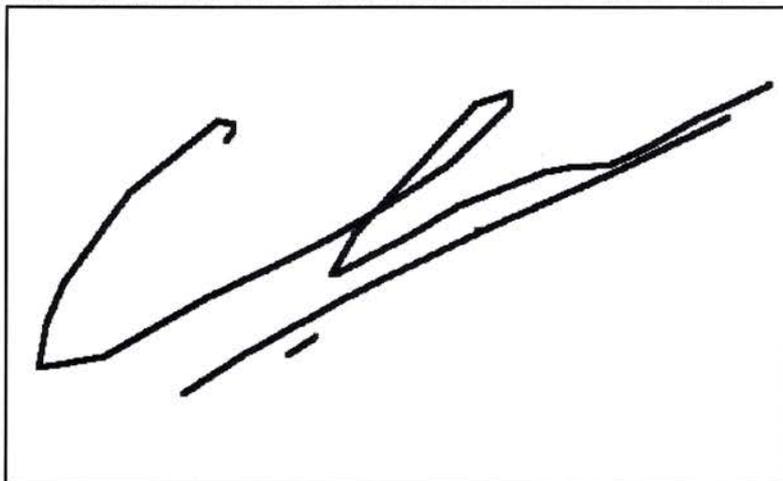
Triple M - NSW - Service Docket

ID	4501
Time Start	Tue May 21 2013 12:50:14 GMT+1000 (EST)
Client Details	CLYDE - MAINTENANCE
Address	322 Parramatta Rd, Clyde NSW 2142
Site Contact Telephone Number	02 8868 7401
Type of Service	Service Call - DC
Job / Service Call Number	500162
Fault Description	CLYDE WASTE - PM May
Asset Type Affected	AIR DISTRIBUTION
Maintenance Done	
Description of Work Done	Carried out routine maintenance as per schedule for may. Checked belts and unit operations. Greased all motor and fan bearings this month. No other issues found.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature



Client Signature



Forwarding Email craig.doorey@veolia.com.au
 User ID TNSS-MLY

Job Safety Analysis

ID	S4501
Job/Service Call Number	500162
Work to be done	CLYDE WASTE - PM May
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature

Craig Doorey

From: no-reply@bsa.com.au
Sent: Friday, 28 June 2013 10:46 AM
To: service@triple-m.com.au; dblore@bsa.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



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 NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

ID	5224
Time Start	Fri Jun 28 2013 10:42:48 GMT+1000 (EST)
Client Details	CLYDE - MAINTENANCE
Address	322 Parramatta Rd, Clyde NSW 2142
Site Contact Telephone Number	02 8868 7401
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	503428
Fault Description	CLYDE WASTE - PM June 6JNM - June Monthly
Asset Type Affected	AIR HANDLING PLANT /UNIT
Maintenance Done	
Description of Work Done	Carried out routine maintenance as per schedule for June. Checked belts and unit operations on fans. No issues found.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature

Forwarding Email craig.doorey@veolia.com.au

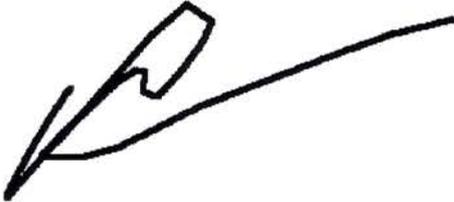
User ID TNSS-MLY

Job Safety Analysis

ID	S5224
Job/Service Call Number	503428
Work to be done	CLYDE WASTE - PM June 6JNM - June Monthly
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Safety Boots/Shoes

Access / Egress to equipment hazard present? No
 Trips, slips, and falls hazard present? No
 Roof Access hazard present? No
 Working on roof? No
 Remain on walkways and paths No
 Manual Handling? No
 Client/General Public/vehicle control? No
 Electrical works? No
 Mechanical works? Yes
 All isolations complete: electrical, refrigeration, air, water, gas. 1
 No work until all moving parts have stopped. 1
 Working from heights? No
 Working from a step ladder? No
 Electrical tools & equipment being used? No
 Using HazMat? No
 Welding or oxy cutting? No
 Cooling towers? Bio Hazards? No
 Handling refrigerant? No

Technician's Signature



Tech Times

ID S5224
 Job Number 503428
 Date Worked 2013-06-28 10:45:38
 Name of Tech Mick Lye
 Number of Hours 0
 Charge Rate Normal Time
 Technician Classification Tradesman

Email Report

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Craig Doorey

From: no-reply@bsa.com.au
Sent: Thursday, 18 July 2013 2:21 PM
To: service@triple-m.com.au; dblore@bsa.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



Technical Maintenance Services

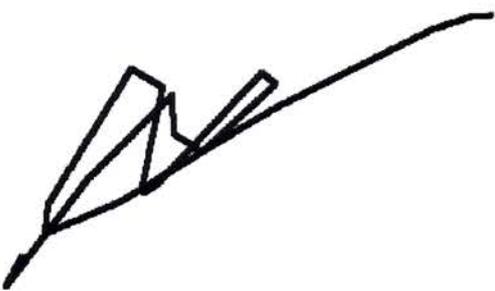
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 NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

ID	5119
Time Start	Thu Jul 18 2013 14:16:38 GMT+1000 (EST)
Client Details	CLYDE - MAINTENANCE
Address	322 Parramatta Rd, Clyde NSW 2142
Site Contact Name	BIKRAM SINGH
Site Contact Telephone Number	02 8868 7401
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	508076
Fault Description	CLYDE WASTE - PM July
Asset Type Affected	AIR HANDLING PLANT/UNIT
Maintenance Done	
Description of Work Done	Carried out routine maintenance as per schedule for July. Checked belts and unit operations of fans. Found both VSD's tripped on high dc volt fault. Reset faults and checked unit operations. Both running as per normal and no other issues found. Possible cause could have been a power surge to the area or blackout.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature



Client Signature

CD
NATS

Forwarding Email

craig.doorey@veolia.com.au

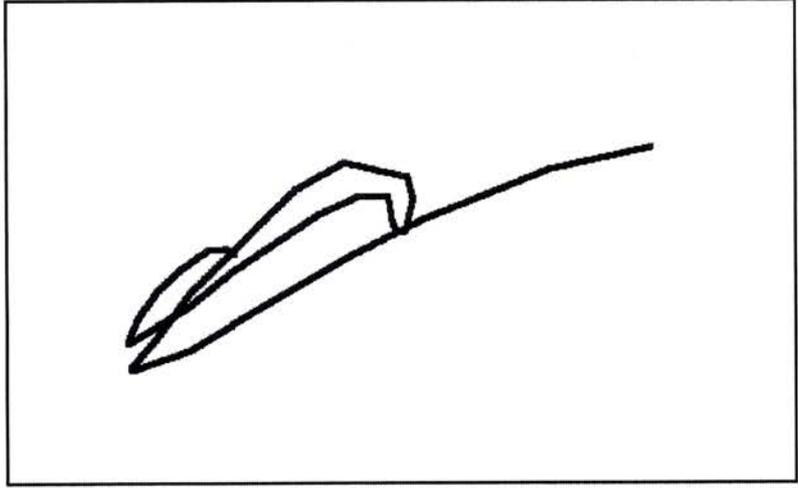
User ID

TNSS-MLY

Job Safety Analysis

ID	S5119
Job/Service Call Number	508076
Work to be done	CLYDE WASTE - PM July
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S5119
Job Number	508076
Name of Tech	Mick Lye
Number of Hours	0
Charge Rate	Normal Time
Technician Classification	Tradesman

Email Report

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Craig Doorey

From: no-reply@bsa.com.au
Sent: Friday, 30 August 2013 12:30 PM
To: service@triple-m.com.au; dblore@bsa.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket

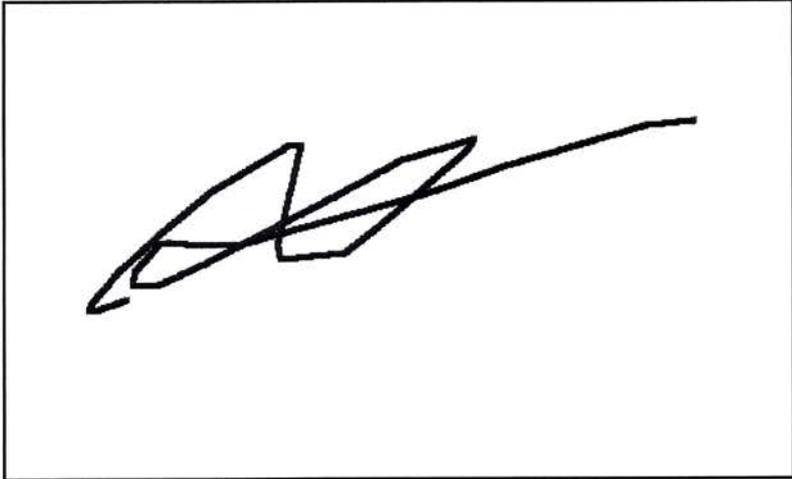


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 NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

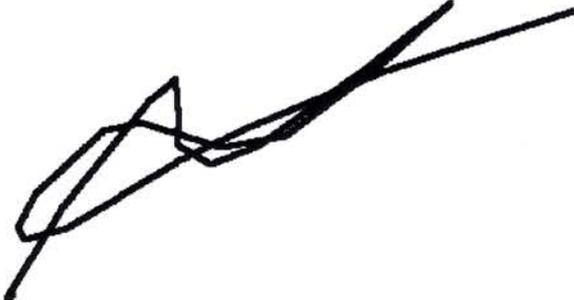
ID	6289
Time Start	Fri Aug 30 2013 12:26:38 GMT+1000 (EST)
Client Details	CLYDE - MAINTENANCE
Address	322 Parramatta Rd, Clyde NSW 2142
Site Contact Name	BIKRAM SINGH
Site Contact Telephone Number	02 8868 7401
Customer Ref Number	
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	511169
Fault Description	CLYDE WASTE - PM August 8AUM - August Monthly Main
Asset Type Affected	AIR HANDLING PLANT /UNIT
Maintenance Done	
Description of Work Done	Carried out routine maintenance as per schedule for August. Checked belts and unit operations. Checked VSD for any faults after last month but all clear. No issues found, all belts still in good condition and fans running as normal.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed
Technician's Signature	
Forwarding Email	craig.doorey@veolia.com.au
User ID	TNSS-MLY

Job Safety Analysis

ID	S6289
Job/Service Call Number	511169
Work to be done	CLYDE WASTE - PM August 8AUM - August Monthly Main

Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S6289
Job Number	511169
Name of Tech	Mick Lye
Number of Hours	0
Travel Time	0
Charge Rate	Normal Time
Technician Classification	Tradesman

Email Report

A BSA - Technical Maintenance Services Company

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Craig Doorey

From: no-reply@bsa.com.au
Sent: Monday, 30 September 2013 1:09 PM
To: service@triple-m.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket

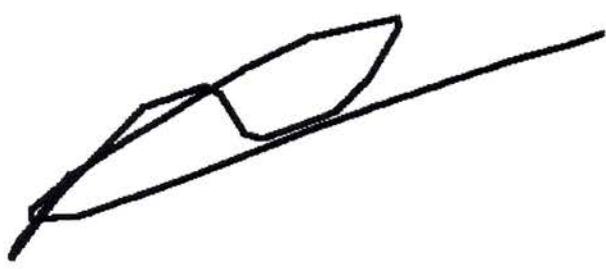
SECURE**Technical Maintenance Services**

bsa | SERVICE CUSTOMISED REPORTING

Triple M - NSW - Service Docket

ID	250
Time Start	Mon Sep 30 2013 13:05:02 GMT+1000 (EST)
Client Details	CLYDE WASTE
Address	322 Parramatta Rd Clyde NSW 2142
Site Contact Name	BIKRAM SINGH
Site Contact Telephone Number	02 8868 7401
Customer Ref Number	4502301049
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	515210
Fault Description	CLYDE WASTE - PM September 9SEM - September Monthly Maintena
Asset Type Affected	FANS ALL TYPE
Description of Work Done	Carried out routine maintenance as per schedule for September. Checked belts and fan operations. Belts still in good condition and fans are operational. Will grease all bearings next month.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Job Status	Completed

Technician's Signature



Client Signature



Forwarding Email

craig.doorey@veolia.com.au

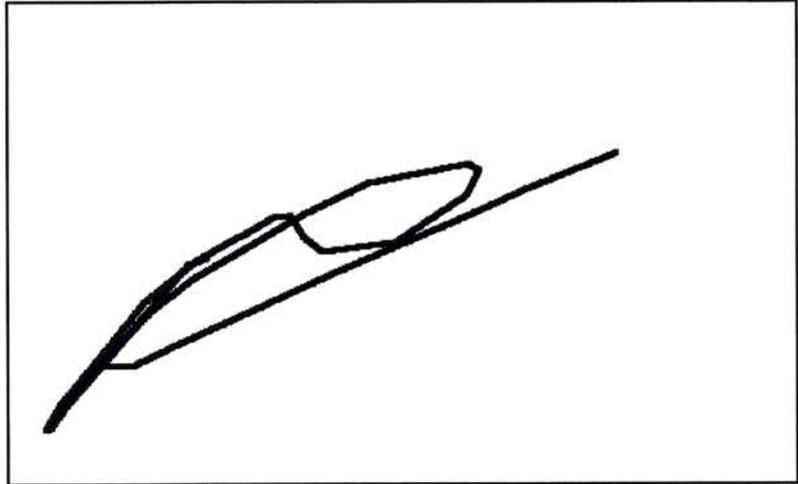
User ID

TMS-MLY

Job Safety Analysis

ID	S260
Job/Service Call Number	515210
Work to be done	CLYDE WASTE - PM September 9SEM - September Monthly Maintena
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S250
Job Number	515210
Name of Tech	Mick Lye
Number of Hours	0
Charge Rate	Normal Time
Technician Classification	Tradesman

Craig Doorey

From: no-reply@bsa.com.au
Sent: Friday, 25 October 2013 1:29 PM
To: service@triple-m.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket

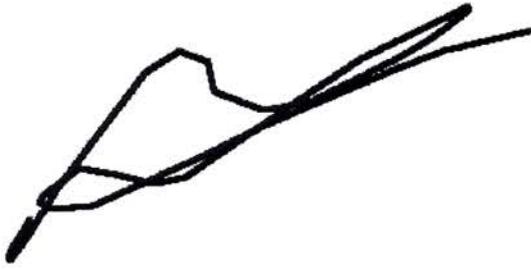
SECURE**Technical Maintenance Services**

bsa | SERVICE CUSTOMISED REPORTING

Triple M - NSW - Service Docket

ID	919
Time Start	Fri Oct 25 2013 14:19:04 GMT+1100 (EST)
Client Details	CLYDE WASTE
Address	2144
Site Contact Name	BIKRAM SINGH
Site Contact Telephone Number	02 8868 7401
Customer Ref Number	4502301049
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	519792
Fault Description	CLYDE WASTE - PM October L1 - MONTHLY - TBA
Asset Type Affected	AIR HANDLING PLANTUNIT
Description of Work Done	Carried routine maintenance as per schedule for October. Checked belts and unit operations. Greased all motor and fan bearings and checked operation on start up. No issues found and belts are still fine.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Job Status	Completed

Technician's Signature



Forwarding Email	craig.doorey@veolia.com.au
User ID	TMS-MLY

Job Safety Analysis

ID	919
Job/Service Call Number	519792
Work to be done	CLYDE WASTE - PM October L1 - MONTHLY - TBA

Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S919
Job Number	519792
Name of Tech	Mick Lye
Number of Hours	0
Charge Rate	Normal Time
Technician Classification	Tradesman



Appendix B –

Weather Data Calibration Reports

(May 2013 - November 2013)

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

22 May 2013

Stephen Bernhart
Environmental Monitoring Officer
Veolia Environmental Services

Re – Quarterly service of weather stations

Dear Stephen,

As per our service agreement, on the 21/05/13 HCS undertook the service, calibration and maintenance of the weather stations located at the Clyde and Horsley Park sites. Field readings were obtained by a combination of a Kestral 3500, compass, Monitor Solar Radiation field unit and HS TBRG calibration device. Details are as follows

Horsley Park

Sensor	Actual (field)	Logger
Temperature – 10m	15.0 deg *	14.1 deg
2m	15.0 deg *	13.4 deg
Relative Humidity	58.6%	58.1%
Wind Speed	0.4 m/sec at ground	0.8 m/sec at 10m
Wind Direction	270	270
Solar Radiation	270	190
TBRG	20mm	40 tips (0.5mm per tip)
Battery	13.6v Solar 20.0v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged between 0750 to 0820 as these were testing and calibration.

Note 3: the site was polled prior to the visit and was operating satisfactorily.

Note 4: the 10 metre mast was found to be bent as a result of being hit by machinery. This will have an effect on the accuracy of the solar radiation, wind speed and wind direction sensors.

Additional Items

1. Solar panel and components cleaned.
2. Installation sprayed for insects.

Clyde

Sensor	Actual (field)	Logger
Temperature – 10m	19.7 deg *	19.5 deg
2m	19.7 deg *	19.8 deg
Relative Humidity	38%	37.4%
Wind Speed	2.4 m/sec at ground	3.7 m/sec at 10m
Wind Direction	280	281
Solar Radiation	570 w/sq.m	450 w/sq.m
TBRG	20mm	41 tips (0.5mm per tip)
Battery	13.4v Solar 20.1v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged between 1015 to 1035 as these were testing and calibration.

Note 3: small amount of condensation in cabinet was dried out and the desiccant pack was replaced.

Note 4: the site was polled prior to the visit and was operating satisfactorily.

Additional Items

1. Installation sprayed for insects.

Should you require any further information on this report please do not hesitate to contact me on 0402 134 092.



Glen Murphy

Hydrometric Consulting Services Pty Ltd

2 Autumn Place
Guildford NSW 2161
Tele 98924588 Fax 98924599
Email glenmurf@ozemail.com.au

44 Colo Rd
Colo Vale NSW 2575
Tele 48895102 Fax 48895103
Email steves@mitmania.net.au

www.hydrometric.com.au

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

27 August 2013

Stephen Bernhart
Environmental Monitoring Officer
Veolia Environmental Services

Re – Quarterly service of weather stations

Dear Stephen,

As per our service agreement, on the 26/08/13 HCS undertook the service, calibration and maintenance of the weather stations located at the Clyde and Horsley Park sites. Field readings were obtained by a combination of a Kestral 3500, compass, Monitor Solar Radiation field unit and HS TBRG calibration device. Details are as follows

Horsley Park

Sensor	Actual (field)	Logger
Temperature – 10m	12.5 deg *	12.85 deg
2m	12.5 deg *	12.5 deg
Relative Humidity	59.9%	60.0%
Wind Speed	0.5 m/sec at ground	0.5 m/sec at 10m
Wind Direction	275	275
Solar Radiation	370	340
TBRG	10mm	20 tips (0.5mm per tip)
Battery	13.2v Solar 20.1v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged at approximately 0850 as these were testing and calibration.

Note 3: the site was polled prior to the visit and was operating satisfactorily.

Note 4: the 10 metre mast is bent as a result of being hit by machinery. This will have an effect on the accuracy of the solar radiation, wind speed and wind direction sensors.

Additional Items

1. Solar panel and components cleaned.
2. Installation sprayed for insects.

Clyde

Sensor	Actual (field)	Logger
Temperature – 10m	17.0 deg *	15.6 deg
2m	17.0 deg *	16.3 deg
Relative Humidity	49%	46.3%
Wind Speed	2.0 m/sec at ground	2.8 m/sec at 10m
Wind Direction	240	240
Solar Radiation	400 w/sq.m	390 w/sq.m
TBRG	10mm	20 tips (0.5mm per tip)
Battery	13.4v Solar 20.5v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged at approximately 1000 as these were testing and calibration.

Note 3: the modem at the site was found to be faulty on 19/08/13 and was removed and sent to Campbell Scientific for assessment. The data logger was downloaded on both site visits.

Additional Items

1. Installation sprayed for insects.

Should you require any further information on this report please do not hesitate to contact me on 0402 134 092.



Glen Murphy

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Colo Vale NSW 2575
Tele 48895102 Fax 48895103
Email steves@mitmania.net.au

www.hydrometric.com.au

Clyde

Sensor	Actual (field)	Logger
Temperature – 10m*	18.9	18.3
2m*	18.9	18.2
Relative Humidity*	68.9	67.8
Wind Speed	2.6 at ground	3.6 at 10 metres
Wind Direction	112	112
Solar Radiation	190	180
TBRG	2 tips	2 tips
Battery	13.1	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged at approximately 1010 as these were testing.

Additional Items

1. Installation sprayed for insects.
2. Vegetation trimmed.

Both sites are now polled weekly by HCS and data is downloaded and available on the HCS website.

Should you require any further information on this report please do not hesitate to contact me on 0402 134 092.



Glen Murphy

Hydrometric Consulting Services Pty Ltd

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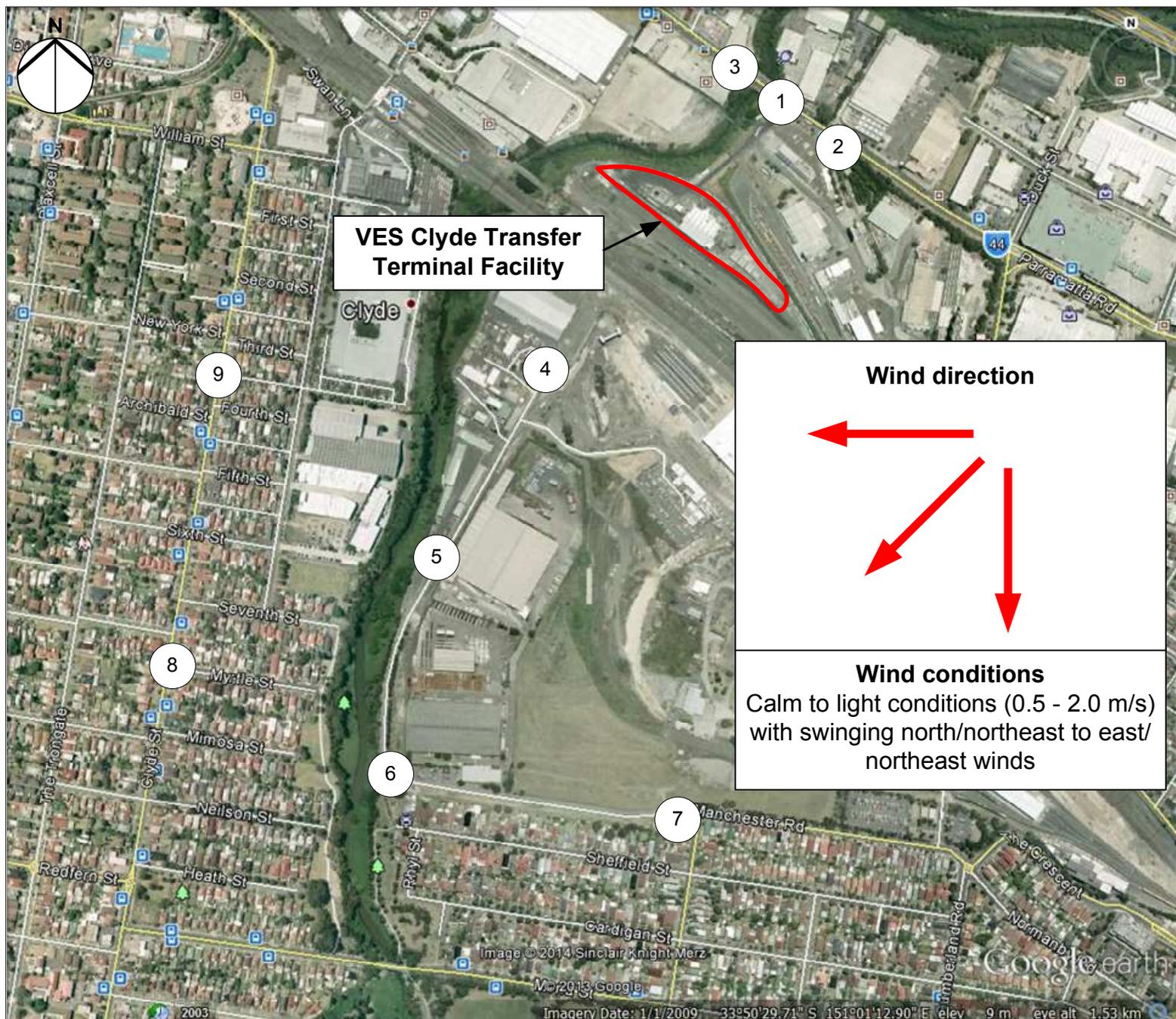
www.hydrometric.com.au



Appendix C –

Field Ambient Odour Assessment Map Plot and Field Logsheet

(27 November 2013)



VES Clyde Transfer Terminal Facility

Wind direction

Wind conditions
Calm to light conditions (0.5 - 2.0 m/s) with swinging north/northeast to east/northeast winds

<p>DESCRIPTION</p> <p>Field Ambient Odour Assessment Survey Modified German Standard VDI 3940</p>	<p>LEGEND</p> <p>German Intensity Scale VDI3882</p> <ul style="list-style-type: none"> ○ 0 Not detectable ● 1 Very weak ● 2 Weak ● 3 Distinct ● 4 Strong ● 5 Very strong ● 6 Extremely strong 	<p>Veolia Environmental Services (Australia) Pty Ltd Clyde Transfer Terminal, Clyde NSW Field Ambient Odour Assessment Survey</p> <p>Survey Date: 27/11/2013 Survey Time Period: 1707 hrs – 1800 hrs</p>			
	<p>THE ODOUR UNIT PTY LTD Bay 4 Suite 3011 Australian Technology Park 2 Locomotive Street, EVELEIGH, NSW 2015 Phone: (02) 9209 4420 – Fax: (02) 9209 4421 www.odourunit.com.au</p>	<p>DRAWN BY</p>	<p>M.ASSAL 14/01/2014</p>	<p>Odour Audit XXII</p> <p>Field Ambient Odour Assessment Survey</p>	<p>Plot No. N1473-XXII</p>
<p>CHECKED</p>	<p>A.SCHULZ 14/01/2013</p>	<p>Job No. N1473L</p>			
<p>APPROVED</p>	<p>M.ASSAL 15/01/2013</p>				

THE ODOUR UNIT PTY LIMITED



Bay 4 Suite 3011 Phone: +61 2 9209 4420
Australian Technology Park Facsimile: +61 2 9209 4421
2 Locomotive Street Email: info@odourunit.com.au
EVELEIGH, NSW 2015 Internet: www.odourunit.com.au
ABN: 53 091 165 061

Field Ambient Odour Assessment Log Sheet

Date: 27/11/2013

Assessor: M. Assal

Weather Conditions: Calm to light conditions (0.5 – 2.0 m/s) with swinging north/northeast to east/northeast winds

Reference: Plot No. 1473-XXII

GRIF REF. POSITION	TIME (hrs)	WIND DIRECTION	WIND SPEED (m/s)	ODOUR PRESENT (Y/N)	ODOUR CHARACTER	VDI 3940 INTENSITY SCALE 0-6	COMMENTS
1	1707	E/NE	0.5 -1.5	N	-	0	-
2	1711	E/NE	0.5 - 1.5	N	-	0	-
3	1716	N/NE to E/NE	0.5 – 2.0	N	-	0	-
4	1735	N/NE	1.0 - 1.5	N	-	0	Transfer Terminal Station in line of site
5	1740	E/NE	1.0 - 1.5	N	-	0	-
6	1745	E/NE	1.0 – 2.0	N	-	0	-
7	1750	N/NE to E/NE	1.0 – 1.5	N	-	0	-
8	1755	NE/E	0.5 – 1.5	N	-	0	-
9	1800	NE/E	0.5 – 1.5	N	-	0	-



Appendix D –

NSW Clyde Transfer Terminal Odour Management Procedures

NSW Clyde Transfer Terminal Odour Management

Aim:

The processing of putrescible waste at the Clyde Transfer Terminal may generate some localised odours. This procedure has been developed in an effort to reduce the likelihood of offensive odours leaving the site boundary by providing Site Operators with clear regular tasks to eliminate the source of any potential odours.

This procedure is also 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 Facility Manager and Environmental Management Representative to ensure that this procedure is communicated to Site Operators and that the procedure is followed. It is the responsibility of the Site Operators to ensure that actions mirror this procedure.

Procedure:

Task	Reason for action
1. Only fully enclosed and appropriately sealed vehicles will be permitted to dispose of waste at the Terminal;	Remove a potential source of odour from site entry .
2. The Odour Control System is to be operated when waste is present on the Terminal building floor.	Remove a potential source of odour.
3. The Dust Suppression System (DSS) will be operated as required to minimise the potential for particulates to become airborne;	Remove a potential source of odour.



NSW Clyde Transfer Terminal Odour Management

Task	Reason for action
4. Collect any solid waste from the floor of the compactor pit area. Shovel any waste matter into a container or into the mouth of the Compactor.	Remove a potential source of odour.
5. Waste is to be loaded into the compactors on a first-in/first-out basis. This is provided that where a load is identified as offensive (due to odours or dust), that load will be prioritised for compaction and loaded into sealed containers. For all waste, loading into the containers must be done in a timely fashion.	Remove a potential source of odour.
6. 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;	Remove a potential source of odour.
7. Following the compaction of waste, all containers are to be sealed immediately.	Remove a potential source of odour.
8. Misting sprays to be used as required	To minimise the potential for particulates to become airborne.
9. Hose down any liquid waste residue that falls onto pit floor area into the leachate drainage.	Remove a potential source of odour by storing leachate liquid in dedicated tank (not to be treated as stormwater).
10. The leachate retention tank ventilation system to be channelled back through the building's extraction system	Remove a potential source of odour
11. The compactor pit area will be inspected daily to ensure the area is free from residual waste and debris. Remove all waste from the rear and inside of the compactor.	Reduce likelihood of compactor failure and subsequent build-up of waste on site. Remove a potential source of odour.
12. Clean out all drains located in the compactor pit area weekly. Remove any solid matter and check the pollution socks for replacement.	Reduce likelihood of drainage blocking up. Remove a potential source of odour.
13. Collect any waste matter that may fall from Waste vehicles and dispose in the appropriate manner, such as waste bins.	Remove a potential source of odour.



NSW Clyde Transfer Terminal Odour Management

Task	Reason for action
14. Ensure adequate maintenance schedules are in place to reduce the likelihood of system failures or breakdown. andMaintain records in accordance with manufacturer's recommendations;	To ensure that maintenance is recorded sufficiently inline with COC needs
15. Housekeeping, including street sweeping and high pressure water jetting is undertaken routinely to remove build up of any waste material on hard surfaces on the road and weighbridge.	Remove build up of any waste material which may cause an odour.
16. Ensure through Veolia's monitoring regimes occur by internal and external process	This is so odour control measures remain effective and capable of minimising offensive odours from the site;

End of Procedure