VEOLIA (AUSTRALIA) PTY LTD

Clyde Waste Transfer Terminal

Odour Audit XXXIV

Final Report

January 2020

THE ODOUR UNIT PTY LTD

ABN 53 09 116 5061
ACN 091 165 061

Level 3, 12/56 Church Avenue
MASCOT NSW 2020

E: info@odourunit.com.au
W: www.odourunit.com.au

Project Number: N1473L

Report Revision		
Revision Number	**Date**	**Description**
Draft report	04.11.2019	Issued for internal review
Final report Rev 1	31.01.2019	Final report issued to client
Report Preparation		
Report Prepared By: J. Schulz & M. Assal		**Approved By:** M. Assal 
Report Title: Veolia (Australia) Pty Ltd Clyde Waste Transfer Terminal – Odour Audit XXXIV		

CONTENTS

1 INTRODUCTION 1

1.1 Odour Audit Period 1

1.2 Odour Audit Requirements 1

1.3 Prevailing Weather Conditions During The Odour Audit Visit 2

2 ODOUR AUDIT FINDINGS 3

2.1 Assessment of General Housekeeping 3

2.1.1 Transfer Terminal Building 3

2.1.2 Container Packing Area and Site Roadways 4

2.1.3 Odour Management Plan 4

2.1.4 Odour Extraction System Maintenance 5

2.1.5 Odour Management Procedures/Plan 6

2.1.6 Transfer Terminal Building 6

2.1.7 Truck Entrance Plastic Strips 6

2.1.8 Smoke Testing 7

2.1.9 Stormwater Retention Pond 10

2.2 Odour Complaints Handling and Meteorological Data 10

2.2.1 Odour Complaints Handling 10

2.2.2 Meteorological Data 10

2.3 Field Ambient Odour Assessment Methodology 11

2.3.1 Field Ambient Odour Assessment - Results 12

3 RECOMMENDATIONS/FOLLOW-UP ACTIONS 13

3.1 Previous Audit Actions 13

3.2 Transfer Terminal Building 13

3.3 Compactor Area 13

3.4 Odour Extraction System 13

3.5 Weather Station 14

3.6 Field Ambient Odour Assessment Survey 14

3.7 Odour Management Procedures/Plan 14

3.8 Concluding Remark 14

FIGURES, PHOTOS & TABLES

FIGURES

Figure 2.1 - Smoke testing release points within the TTB on 27 November 2019 8

PHOTOS

Photo 2.1 – TTB waste on-floor as found on 27 November 2019 3
Photo 2.2 – A view of the compactor area as found on 27 November 2019 5
Photo 2.3 – A view of the truck entrance plastic strips as found on 27 November 2019 7
Photo 2.4 – Smoke testing within the TTB on 27 November 2019 8
Photo 2.5 – Smoke testing at the truck entrance of the TTB on 27 November 2019 9
Photo 2.6 – Stormwater retention pond as seen on 27 November 2019 10

TABLES

Table 2.1 - VDI 3882 Odour Intensity Categories 12

APPENDICES

APPENDIX A: Odour Extraction System Service Reports (23 May 2019 – 27 November 2019)

APPENDIX B: Weather Data Calibration Reports (31 May 2019 – 27 November 2019)

APPENDIX C: Field Ambient Odour Assessment Plot and Field Sheets (27 November 2019)

1 INTRODUCTION

The Odour Unit Pty Ltd (**TOU**) was commissioned by Veolia (Australia) Pty Ltd (**Veolia**) to undertake the thirty-forth (**XXXIV**) Odour Audit at the Clyde Transfer Terminal (**the Site**) on 27 November 2019. The visit for this Odour Audit was undertaken by a TOU Senior Engineer & Consultant and is the twenty-fourth (24th) to be carried out since the commissioning of the forced air extraction system within the waste transfer terminal.

1.1 ODOUR AUDIT PERIOD

Odour Audit XXXIV covers the six months from 23 May 2019 to 27 November 2019 (**the Odour Audit**).

1.2 ODOUR AUDIT REQUIREMENTS

The Odour Audit requirements originate from the *Conditions of Consent – 48(f)* and 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 Odour Audits, Odour Audit XXXIV 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. Specifically, the Odour Audit approach included:

- A general inspection and smoke testing of the transfer building;
- The inspection of the container packing area and site access roads;
- The examination of the complaint register;
- The review of the on-site meteorological data log and equipment maintenance/ calibration;
- The analysis of relevant documentation relating to odour management; and
- The undertaking of an off-site downwind Field Ambient Odour Assessment (**FAOA**) survey.

1.3 PREVAILING WEATHER CONDITIONS DURING THE ODOUR AUDIT VISIT

At the time of the Odour Audit visit, it was light to moderate (0.5 metres per second (**m/s**) to 3 m/s) wind speeds with the local wind direction blowing predominately from the north-east. The skies were clear and the ambient temperature during the Odour Audit visit was approximately 27 degrees Celsius (**ºC**).

No rainfall was observed during the Odour Audit visit.

2 ODOUR AUDIT FINDINGS

2.1 ASSESSMENT OF GENERAL HOUSEKEEPING

2.1.1 Transfer Terminal Building

During the Odour Audit visit, there were approximately 250 to 300 tonnes of waste on the floor. This tonnage is considered to be within the normal operating range of the Transfer Terminal Building (**TTB**). 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 found during several truck-unloading sequences. It was also observed that the TTB'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. A photo of the waste on the floor as found during the Odour Audit visit is shown in **Photo 2.1**.

Photo 2.1 – TTB waste on-floor as found on 27 November 2019

2.1.2 Container Packing Area and Site Roadways

The container packing area and site roadways were found to be clean and well managed with no evidence of waste or exposed leachate. Like previous odour audits, the container compacting/train packing area had a weak to distinct odour that was intermittently detectable but was confined to this area only (see **Appendix C** for Field Ambient Odour Assessment Survey results). It appeared during the Odour Audit visit that both compactors were in operation. The general housekeeping 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 before being returned to the Site. 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.

2.1.2.1 Container Management and Maintenance

Based on previous verbal discussions with the Veolia team and observations made during the Odour Audit visit, the Audit finds that Veolia continues to implement the policies and procedures as outlined in the following documents:

- The container management and maintenance procedures titled *NSW Resource Recovery – Container Maintenance* dated 15 September 2017 (**the September 2017 NSW RR Container Document**), which details the following:
    - The design of the containers;
    - The maintenance and management of the activated carbon filter retrofitted to the containers;
    - The container management procedure; and
    - The container maintenance procedure.
- The waste container preparation requirements for the Site (**the September 2017 Container Preparation Document**), which details the following:
    - The inspections and actions to be undertaken by operators to enable containers to be prepared to an acceptable standard;
    - The steps to be undertaken should a damaged container be identified; and
    - The steps to be undertaken should a leaking container be identified.

2.1.3 Odour Management Plan

As per the Odour Management Plan dated February 2010 (**the February 2010 OMP**) for the Site, following the compaction of waste, all filled containers are entirely sealed

and remain so while at the Site. All containers used are required to be in good condition, and unused/returned containers adequately clean. A view of the condition of the compactor area as found on 27 November 2019 is shown in **Photo 2.2**.

The Audit finds that this continues to be current practice at the Site.

Photo 2.2 – A view of the compactor area as found on 27 November 2019

2.1.4 Odour Extraction System Maintenance

Service documentation for the maintenance of the odour extraction system was supplied and reviewed as part of the Odour Audit (refer **Appendix A**). Service logs were provided covering the period between 23 May 2019 to 27 November 2019.

Each service log provided to the Audit indicated that the required inspection and maintenance works were taking place by a suitable service contractor, and the odour extraction system overall was operating efficiently. The service logs during this period noted that all the necessary support works such as checking the fan belts and unit operations, greasing bearings, and other routine preventative maintenance works were being inspected and undertaken (see **Section 2.1.4.1** for more details).

2.1.4.1 Status of Odour Extraction System Maintenance Items

During the previous odour audit, the following outstanding items were raised in the service logs:

- ***Item 1 -*** *The inlet exhaust plenum contained heavy dust/debris build-up resulting in a restriction to airflow;*
- ***Item 2 -*** *The Exhaust Fan 1 and Exhaust Fan 2 hub intakes also have heavy dust/debris build-up resulting in a restriction to airflow;*
- ***Item 3 -*** *The heavy dust/debris on the motor may cause it to overheat, resulting in the exhaust fans to be temporarily inoperable;* and
- ***Item 4 -*** *Large amounts of dust/debris accumulated on discharge ductwork*

Since that time, the service logs between 23 May 2019 to 27 November 2019 indicated that Items 1 to 4 were completed in subsequent visits. The October service log indicated that airflow readings and balancing of the dampers were undertaken to achieve optimal extraction airflow, but no data was provided in the service log. As such, subsequent service logs should include this data.

In view of the above and based on the positive results obtained for the smoke testing, odour complaints register, and the FAOA survey conducted as part of the Odour Audit visit, it appears that the current operation of the odour extraction system is satisfactory. However, it is recommended that the discharge stack velocity is regularly reported in future service logs.

2.1.5 Odour Management Procedures/Plan

The Odour Management Procedures (formerly known as the Odour Minimising Procedures) continue to be regularly reviewed at toolbox meetings, and contemporary issues/recommendations are raised with all staff members at these meetings.

Veolia has advised the Odour Audit that the February 2010 OMP is still in the process of being reviewed and updated.

2.1.6 Transfer Terminal Building

The Odour Audit inspected the fixed metal plates retrofitted along the TTB breezeways in December 2013. All metal plates were found to be intact and in good condition around 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. The louvres on the end walls of the TTB were observed to be permanently shut.

2.1.7 Truck Entrance Plastic Strips

The truck entrance plastic strips of the TTB, used to reduce odour escaping through the opening, were found to be intact and in good condition.

Photo 2.3 – A view of the truck entrance plastic strips as found on 27 November 2019

2.1.8 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. As per previous audits, smoke was released from within the TTB at three points within the TTB. **Figure 2.1** shows the three points where the smoke was released within the TTB. **Photo 2.4** shows smoke testing at one of the test locations (Smoke Testing Point #3) as occurred on 27 November 2019. **Photo 2.5** shows smoke testing at the truck entrance of the TTB, an additional test location to the normal smoke testing release points conducted in previous odour audits.

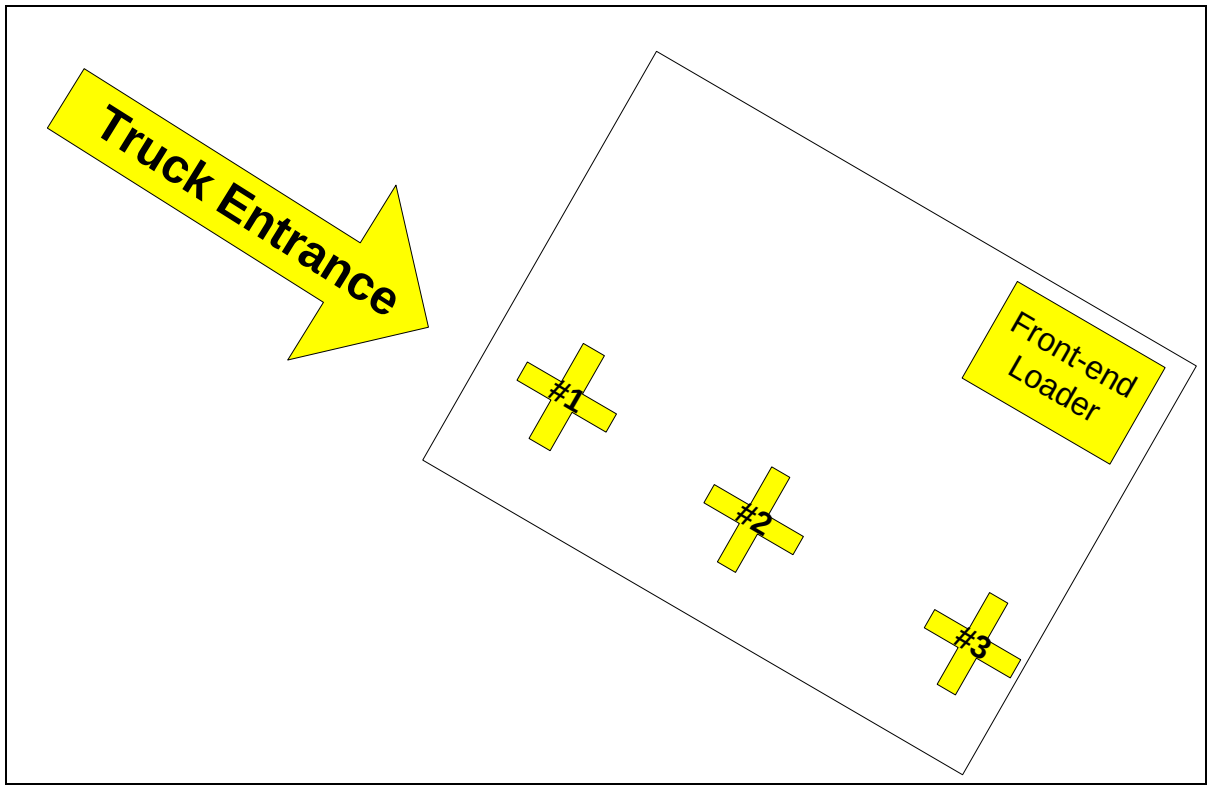


Figure 2.1 - Smoke testing release points within the TTB on 27 November 2019

Photo 2.4 – Smoke testing within the TTB on 27 November 2019

Photo 2.5 – Smoke testing at the truck entrance of the TTB on 27 November 2019

2.1.8.1 Smoke Testing Results

Smoke Testing Point #1

The smoke released at this point initially rose gradually moving towards the truck entrance before rising to the roof and moving slowly towards the extraction system. Visible smoke extraction at the overhead capture points was evident during the smoke testing at this point. Any smoke that continued towards the truck entrance was promptly blown back into the building.

Smoke Testing Point #2

The smoke released at this point revealed a similar result to smoke testing point #1.

Smoke Testing Point #3

The smoke released at this point revealed a similar result to smoke testing point #1.

Additional Testing Location

The smoke released at this point indicated that smoke tended to be drawn into the TTB, suggesting that the odour extraction system was performing well during the Odour Audit visit.

2.1.9 Stormwater Retention Pond

The auditor observed that there was no effluent in this pond at the time of the Odour Audit visit. **Photo 2.6** shows the state of the pond as found on 27 November 2019.

Photo 2.6 – Stormwater retention pond as seen on 27 November 2019

2.2 ODOUR COMPLAINTS HANDLING AND METEOROLOGICAL DATA

2.2.1 Odour Complaints Handling

As advised by Veolia personnel, there have been no complaints recorded in the Site's complaints register since March 2012.

2.2.2 Meteorological Data

The meteorological data provided to the Odour Audit for the period 31 May 2019 and 27 November 2019 was inspected and found to be in good order. As found in previous

Odour Audits, the observations were provided in daily intervals and included all parameters necessary to develop a meteorological dataset for odour dispersion modelling. It is recommended that future datasets be provided in 15-minute increments, as with previous odour audits.

As indicated via service records completed by Hydrometric Consulting Services (**HCS**) supplied by Veolia to the Odour Audit, the weather station continues to remain located in an accessible area with the solar panel and components regularly cleaned, and installation sprayed periodically for insects and trimming of nearby vegetation as required to ensure no overgrowth immediately around the weather station pole. Overall, HCS indicated that the weather stations were operating well, and any identified issues were rectified.

The weather data calibration and service reports by HCS are appended as **Appendix B**.

2.3 FIELD AMBIENT ODOUR ASSESSMENT METHODOLOGY

At present, no Australian Standard exists for field-based ambient odour assessment surveys. Consequently, TOU 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 on 27 November 2019 between 1508 hrs and 1638 hrs. The FAOA survey was undertaken at strategic locations, both on-site and off-site. The ambient odour assessment focus was off-site, as required by the Conditions of Consent on "…..*nearby commercial and residential areas…..*" (Section *48 (f)*). The TOU assessor firstly determined the wind direction using a Kestrel 4500 Pocket Weather Tracker Anemometer and then assessed locations of the TTB downwind.

The assessors spent approximately five minutes at each assessment location 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** below.

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 distinct and easily characterised
Strong	4	Strong odour detectable
Very Strong	5	If offensive, the observer may consider moving from the area
Extremely Strong	6	Odour is sufficiently over-powering that assessor moves from the area

2.3.1 Field Ambient Odour Assessment - Results

The results of the FAOA survey conducted during the Odour Audit found that whilst intermittent odours were detected onsite, no odours were detectable off-site that could be linked back to the Site and its activities.

The field log sheets and visual survey plot are appended as **Appendix C**.

3 RECOMMENDATIONS/FOLLOW-UP ACTIONS

3.1 PREVIOUS AUDIT ACTIONS

The following list provides an outline of the last May 2019 odour audit actions and status as of the Odour Audit:

- ***Previous Audit Action 1:*** *Action 1 – Complete the outstanding maintenance items as required by the fan maintenance service provider as documented in March 2019.*

  Status: Complete (see **Section 2.1.4.1** for more details).

- ***Previous Audit Action 2****: Veolia to continue its review and update of the OMP for the Site*

  Status: Outstanding (see **Section 3.7**).

3.2 TRANSFER TERMINAL BUILDING

All metal plates were found to be intact and in good condition around 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. The louvres on the end walls of the TTB were observed to be permanently shut. Overall, the TTB was found to be well managed.

Based on the findings in the Odour Audit, the following action is recommended:

- **No further action is required at this stage.**

3.3 COMPACTOR AREA

The general housekeeping around the compactor 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 to distinct odour that was intermittently detectable but was found to be confined to this area only.

Based on the findings in this Odour Audit, the following action is recommended:

- **No further action is required at this stage.**

3.4 ODOUR EXTRACTION SYSTEM

The service logs indicate that all required maintenance works on the odour extraction system since the previous May 2019 odour audit have been adequately undertaken, and the odour extraction system is operating in a satisfactory condition. However, it is recommended that the discharge stack velocity is regularly reported in future service logs.

Based on the findings in the Odour Audit, the following action is recommended:

- **Action 1 – All stack discharge velocity and airflow measurements collected during a service visit should be reported in future service logs.**

3.5 WEATHER STATION

The calibration and service reports from HCS indicate that all maintenance to the weather station and required calibrations were carried out as needed.

Based on the findings in the Odour Audit, the following action is recommended:

- **Action 2 - Future datasets should be provided in 15-minute increments, as with previous odour audits.**

3.6 FIELD AMBIENT ODOUR ASSESSMENT SURVEY

The results of the FAOA survey conducted during the Odour Audit found that no odours were detectable off-site that could be linked back to the Site and its activities.

3.7 ODOUR MANAGEMENT PROCEDURES/PLAN

At the timing of the writing of the Odour Audit, the February 2010 OMP was last updated over seven years ago. Given the previous update, it is suggested that as part of good practice that Veolia reviews and update the February 2010 OMP to ensure it continues to reflect the odour management procedures implemented and followed at the Site. Veolia has advised the Odour Audit that the February 2010 OMP is in the process of being reviewed and updated.

Based on the findings in this Odour Audit, the following action/s is recommended:

- **Action 3 – Veolia to continue its review and update of the OMP for the Site.**

3.8 CONCLUDING REMARK

Overall, this Odour Audit found that the operation and maintenance of the odour management system at the Site was satisfactory. There was no evidence to suggest that significant fugitive odour emission release from the Site is occurring.

The next Odour Audit is due in **May 2020**.

VEOLIA (AUSTRALIA) PTY LTD

Clyde Waste Transfer Terminal

Odour Audit XXXIV

Appendices

January 2020

Appendix A –

Odour Extraction System Service Report

(23 May 2019 – 27 November 2019)

SECURE

BSA | Maintain

Mobile Data Capture Report

Triple M - NSW - Service Docket

Record: 212150	
Time Start	*Wed Jul 31 2019 13:25:39 GMT+1000 (AEST)*
Client Details	*CLYDE WASTE*
Address	*322 Parramatta Rd Clyde NSW 2142*
Site Contact Name	*Ash Turner*
Site Contact Telephone Number 2	*02 8868 7401*
Customer Ref Number	*7100156359*
Type of Service	*Preventative Maintenance - PM*
Job / Service Call Number	*1204738*
Fault Description	*CLYDE WASTE - PM June L1 - MONTHLY*
Asset List	*EQUIP-M_Whole of Site - Mech_MONTHLY _Qty:1|*
Job Safety Analysis Completed	*YES*
Description of Work Done	*Arrived on site and signed in.* *Went u to the plant room and isolated the fans and the fan alarm and locked out and tagged. Proceeded to clean all dampers on dust and all VSD, isolators, fans and lights. Checked the pulleys belts and found all to be okay. Removed tag and turned the fans back on and the alarm.*
Parts, Materials?	*No*
Refrigerant Used?	*No*
Job Status	*Completed*
Technician's Signature	
Client Signature	
Forwarding Email	*rod.jones@veolia.com*
Normal Hours	*0*
Time and a Half	*0*
Double Time	*0*
User ID	*TMS-ZBN*
Technician Name	*ZACHARY JAMES BROWN*
Iforms Record ID	*212150*
Record Location	*Latitude:-33.775590,* *Longitude:150.916987,* *Altitude:61.937168,* *Speed:-1.000000,* *Horizontal Accuracy:65.000000,* *Vertical Accuracy:10.000000,* *Time:08/01/2019 09:31:17 AEST*
Total Hrs	*0*
Time Completed	*2019-07-31 13:25:39*

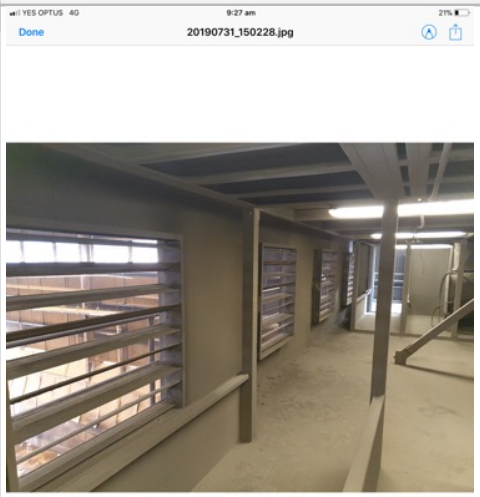
SECURE
BSA | Maintain

Mobile Data Capture Report

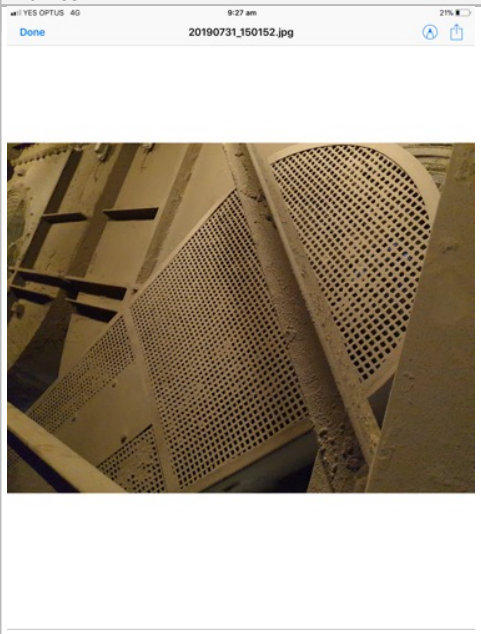
Job Safety Analysis	
Are you an Apprentice?	*Yes*
Is this an Electrical task or are you using Refrigerants?	*No*
Job/Service Call Number	*1204738*
Work to be done.	*CLYDE WASTE - PM June L1 - MONTHLY*
Protective Equipment to be Used During Works	*Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Electrical Test Equipment, Safety Boots/Shoes*
Is there clear access to the work area equipment & free from trips, slips & fall hazards?	*Yes*
Are weather conditions appropriate for the commencement of works?	*Yes*
Is there a potential risk of disturbing asbestos during the works you are undertaking today?	*No*
Does your task involve working on the roof?	*No*
Will your task involve Manual Handling?	*Yes*
Change the work process so that the loads do not have to be lifted or moved by hand.	*1*
Use and maintain correct posture.	*1*
Minimize distance the load is to be moved/lifted.	*1*
Will your work impact general public/vehicle control?	*No*
Does your task involve Electrical works?	*No*
Does your work involve Mechanical works?	*Yes*
All isolations complete: electrical, refrigeration, air, water, gas.	*1*
No work until all moving parts have stopped.	*1*
Does your task involve working from heights (not including roof work) & are there adequate fall prevention controls in place?	*No*
Working from a step ladder?	*Yes*
Ladder secured.	*1*
Barrier(s) installed around work area.	*1*
Electrical tools & equipment being used?	*No*
Will you be using chemicals during your task?	*No*
Will you be working in area's that produce excessive noise?	*Yes*
Hearing protection for equipment & plant noisier than 85dB(A).	*1*
Using HazMat?	*No*
Will you be welding or oxy cutting.	*No*
Will you be working in or near Cooling towers?	*No*
Handling refrigerant?	*No*
Are you working by yourself?	*Yes*
Sign in & out of your worksite.	*1*
Keep in regular contact with your supervisor/coordinator (arriving/leaving site).	*1*
Is it safe for you to proceed with your job.	*Yes*
Technician's Signature	
PPE Title	*Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Electrical Test Equipment, Safety Boots/Shoes*
TMP Work Order No	

Mobile Data Capture Report

Post Photos?	
Job Number	*1204738*
Photo	
Location Description	*Indoor Location*
Location Title	*Indoor Location*

Post Photos?	
Job Number	*1204738*
Photo	
Location Description	*Indoor Location*
Location Title	*Indoor Location*

Mobile Data Capture Report

Post Photos?	
Job Number	*1204738*
Photo	
Location Description	*Indoor Location*
Location Title	*Indoor Location*

SECURE

BSA | Maintain

bsa
think.build.connect.maintain

Triple M - NSW - Service Docket

ID	212150
Time Start	Wed Jul 31 2019 13:25:39 GMT+1000 (AEST)
Client Details	CLYDE WASTE
Address	322 Parramatta Rd Clyde NSW 2142
Site Contact Name	Ash Turner
Site Contact Telephone Number 2	02 8868 7401
Customer Ref Number	7100156359
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	1204738
Faul scription	CLYDE WASTE - PM June L1 - MONTHLY
Asset List	EQUIP-M_Whole of Site - Mech_MONTHLY _Qty:1|
Job Safety Analysis Completed	YES
Description of Work Done	Arrived on site and signed in. Went u to the plant room and isolated the fans and the fan alarm and locked out and tagged. Proceeded to clean all dampers on dust and all VSD, isolators, fans and lights. Checked the pulleys belts and found all to be okay. Removed tag and turned the fans back on and the alarm.
Parts, Materials?	No
Refrigerant Used?	No
Job Status	Completed
Technician's Signature	
Clier. gnature	
Forwarding Email	rod.jones@veolia.com
Normal Hours	0
Time and a Half	0
Double Time	0
User ID	TMS-ZBN
Technician Name	ZACHARY JAMES BROWN
Iforms Record ID	212150
Record Location	Latitude:-33.775590, Longitude:150.916987, Altitude:61.937168, Speed:-1.000000, Horizontal Accuracy:65.000000, Vertical Accuracy:10.000000, Time:08/01/2019 09:31:17 AEST
Total Hrs	0
Time Completed	2019-07-31 13:25:39

Job Safety Analysis

ID	S212150
Are you an Apprentice?	Yes
Is this an Electrical task or are you using Refrigerants?	No
Job/Service Call Number	1204738
Work to be done.	CLYDE WASTE - PM June L1 - MONTHLY
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Electrical Test Equipment, Safety Boots/Shoes
Is there clear access to the work area equipment & free from trips, slips & fall hazards?	Yes
Are weather conditions appropriate for the commencement of works?	Yes
Is there a potential risk of disturbing asbestos during the works you are undertaking today?	No
Does your task involve working on the roof?	No
Will your task involve Manual Handling?	Yes
Change the work process so that the loads do not have to be lifted or moved by hand.	1
Use and maintain correct posture.	1
Minimize distance the load is to be moved/lifted.	1
Will your work impact general public/vehicle control?	No
Does your task involve Electrical works?	No
Does your work involve Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Does your task involve working from heights (not including roof work) & are there adequate fall prevention controls in place?	No
Working from a step ladder?	Yes
Ladder secured.	1
Barrier(s) installed around work area.	1
Electrical tools & equipment being used?	No
Will you be using chemicals during your task?	No
Will you be working in area's that produce excessive noise?	Yes
Hearing protection for equipment & plant noisier than 85dB(A).	1
Using HazMat?	No
Will you be welding or oxy cutting.	No
Will you be working in or near Cooling towers?	No
Handling refrigerant?	No
Are you working by yourself?	Yes
Sign in & out of your worksite.	1
Keep in regular contact with your supervisor/coordinator (arriving/leaving site).	1
Is it safe for you to proceed with your job.	Yes
Technician's Signature	
PPE Title	Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Electrical Test Equipment, Safety Boots/Shoes

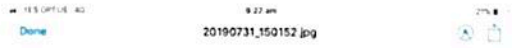
ID S212150

TMP Work Order No

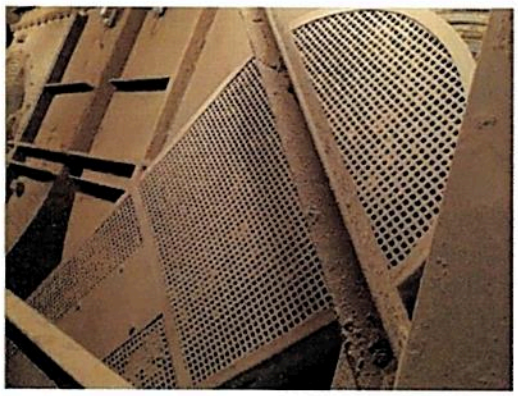
Post Photos?

ID S212150

Job Number 1204738



Photo

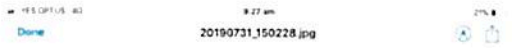


Location Description Indoor Location

Location Title Indoor Location

ID S212150

Job Number 1204738



Photo

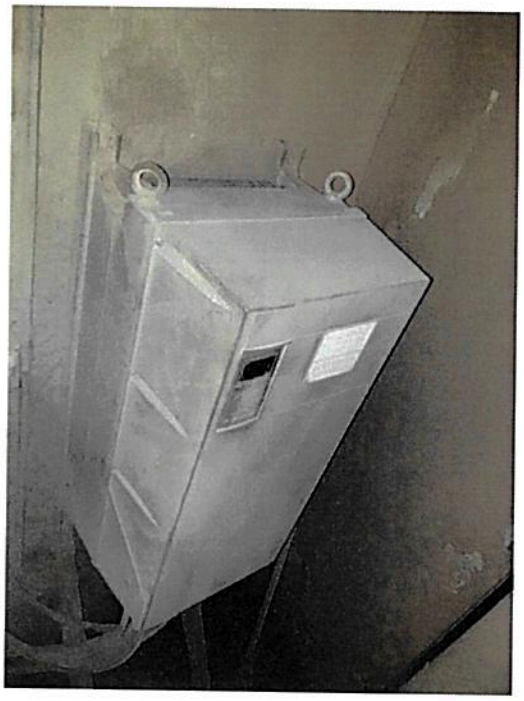
Location Description Indoor Location

Location Title Indoor Location

ID S212150

Job Number 1204738

Photo



Location Description

Indoor Location

Location Title

Indoor Location

Email Report

BSA Mobile Business Technologies, a Division of BSA Ltd

SECURE

BSA | Maintain

Mobile Data Capture Report

Triple M - NSW - Service Docket

Record: 213407	
Time Start	*Tue Sep 03 2019 08:58:14 GMT+1000 (AEST)*
Client Details	*CLYDE WASTE*
Address	*322 Parramatta Rd Clyde NSW 2142*
Site Contact Name	*Ash Turner*
Site Contact Telephone Number 2	*02 8868 7401*
Customer Ref Number	*7100156359*
Type of Service	*Preventative Maintenance - PM*
Job / Service Call Number	*1218104*
Fault Description	*CLYDE WASTE - PM August L1 - MONTHLY*
Asset List	*EQUIP-M_Whole of Site - Mech_MONTHLY _Qty:1|*
Job Safety Analysis Completed	*YES*
Description of Work Done	*Carried out maintenance as scheduled, cleaned up all dampers and lights, checked pulleys and belts. Cleaned out vsds of any dust.* *Signed out of site.*
Parts, Materials?	*No*
Refrigerant Used?	*No*
Job Status	*Completed*
Technician's Signature	
Client Signature	
Signature Name	*Rod*
Forwarding Email	*rod.jones@@veolia.com*
Normal Hours	*0*
Time and a Half	*0*
Double Time	*0*
User ID	*TMS-ZBN*
Technician Name	*ZACHARY JAMES BROWN*
Iforms Record ID	*213407*
Record Location	*Latitude:-33.671023,* *Longitude:150.931187,* *Altitude:58.232882,* *Speed:0.000000,* *Horizontal Accuracy:5.000000,* *Vertical Accuracy:4.000000,* *Time:09/05/2019 16:56:52 AEST*
Total Hrs	*0*
Time Completed	*2019-09-03 08:58:14*

SECURE

BSA | Maintain

Mobile Data Capture Report

Job Safety Analysis	
Are you an Apprentice?	*Yes*
Is this an Electrical task or are you using Refrigerants?	*No*
Job/Service Call Number	*1218104*
Work to be done.	*CLYDE WASTE - PM August L1 - MONTHLY*
Protective Equipment to be Used During Works	*Gloves, Long Pants, Safety Glasses, High Visibility Garments, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes*
Is there clear access to the work area equipment & free from trips, slips & fall hazards?	*Yes*
Are weather conditions appropriate for the commencement of works?	*Yes*
Is there a potential risk of disturbing asbestos during the works you are undertaking today?	*No*
Does your task involve working on the roof?	*No*
Will your task involve Manual Handling?	*Yes*
Change the work process so that the loads do not have to be lifted or moved by hand.	*1*
Use and maintain correct posture.	*1*
Minimize distance the load is to be moved/lifted.	*1*
Will your work impact general public/vehicle control?	*No*
Does your task involve Electrical works?	*No*
Does your work involve Mechanical works?	*Yes*
All isolations complete: electrical, refrigeration, air, water, gas.	*1*
No work until all moving parts have stopped.	*1*
Does your task involve working from heights (not including roof work) & are there adequate fall prevention controls in place?	*No*
Working from a step ladder?	*Yes*
Ladder secured.	*1*
Barrier(s) installed around work area.	*1*
Electrical tools & equipment being used?	*No*
Will you be using chemicals during your task?	*No*
Will you be working in area's that produce excessive noise?	*No*
Using HazMat?	*No*
Will you be welding or oxy cutting.	*No*
Will you be working in or near Cooling towers?	*No*
Handling refrigerant?	*No*
Are you working by yourself?	*Yes*
Sign in & out of your worksite.	*1*
Keep in regular contact with your supervisor/coordinator (arriving/leaving site).	*1*
Is it safe for you to proceed with your job.	*Yes*
Technician's Signature	
PPE Title	*Gloves, Long Pants, Safety Glasses, High Visibility Garments, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes*
TMP Work Order No	

SECURE

BSA | Maintain

Mobile Data Capture Report

Triple M - NSW - Service Docket

Record: 213407	
Time Start	Tue Sep 03 2019 08:58:14 GMT+1000 (AEST)
Client Details	CLYDE WASTE
Address	322 Parramatta Rd Clyde NSW 2142
Site Contact Name	Ash Turner
Site Contact Telephone Number 2	02 8868 7401
Customer Ref Number	7100156359
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	1218104
Fault Description	CLYDE WASTE - PM August L1 - MONTHLY
Asset List	EQUIP-M_Whole of Site - Mech_MONTHLY_Qty:1|
Job Safety Analysis Completed	YES
Description of Work Done	Carried out maintenance as scheduled, cleaned up all dampers and lights, checked pulleys and belts. Cleaned out vsds of any dust. Signed out of site.
Parts, Materials?	No
Refrigerant Used?	No
Job Status	Completed
Technician's Signature	
Client Signature	
Signature Name	Rod
Forwarding Email	rod.jones@@veolia.com
Normal Hours	0
Time and a Half	0
Double Time	0
User ID	TMS-ZBN
Technician Name	ZACHARY JAMES BROWN
Iforms Record ID	213407
Record Location	Latitude:-33.671023, Longitude:150.931187, Altitude:58.232882, Speed:0.000000, Horizontal Accuracy:5.000000, Vertical Accuracy:4.000000, Time:09/05/2019 16:56:52 AEST
Total Hrs	0
Time Completed	2019-09-03 08:58:14

SECURE
BSA | Maintain

Mobile Data Capture Report

Job Safety Analysis	
Are you an Apprentice?	Yes
Is this an Electrical task or are you using Refrigerants?	No
Job/Service Call Number	1218104
Work to be done.	CLYDE WASTE - PM August L1 - MONTHLY
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, High Visibility Garments, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes
Is there clear access to the work area equipment & free from trips, slips & fall hazards?	Yes
Are weather conditions appropriate for the commencement of works?	Yes
Is there a potential risk of disturbing asbestos during the works you are undertaking today?	No
Does your task involve working on the roof?	No
Will your task involve Manual Handling?	Yes
Change the work process so that the loads do not have to be lifted or moved by hand.	1
Use and maintain correct posture.	1
Minimize distance the load is to be moved/lifted.	1
Will your work impact general public/vehicle control?	No
Does your task involve Electrical works?	No
Does your work involve Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Does your task involve working from heights (not including roof work) & are there adequate fall prevention controls in place?	No
Working from a step ladder?	Yes
Ladder secured.	1
Barrier(s) installed around work area.	1
Electrical tools & equipment being used?	No
Will you be using chemicals during your task?	No
Will you be working in area's that produce excessive noise?	No
Using HazMat?	No
Will you be welding or oxy cutting.	No
Will you be working in or near Cooling towers?	No
Handling refrigerant?	No
Are you working by yourself?	Yes
Sign in & out of your worksite.	1
Keep in regular contact with your supervisor/coordinator (arriving/leaving site).	1
Is it safe for you to proceed with your job.	Yes
Technician's Signature	
PPE Title	Gloves, Long Pants, Safety Glasses, High Visibility Garments, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes
TMP Work Order No	

Equilibrium Air Conditioning Services Pty Ltd
ABN 51 844 035 531

Telephone: (02) 9439 4822
service@eqac.com.au

PO Box 7996
Norwest NSW 2153

CUSTOMER JOB NO. 30340 - 417 - Joerg Viefhaus
Quoted Works

Salesperson	Timothy Caunt	**Date Created**	30/09/2019
Project Name	October Bi-Annual Velocity Testing		

Site Details

Name	Veolia Clyde
Address	Clyde Transfer Terminal 322 Parramatta road Clyde NSW 2142
Contact	Rod Jones
Telephone	
Mobile	0437 167 211
Email	rod.jones@veolia.com

Customer Details

Name	Veolia Environmental Services P/L
Address	Level 4, 65 Pirrama Road Pyrmont NSW 2009
Contact	Rod Jones
Telephone	
Mobile	0437 167 211
Email	rod.jones@veolia.com

Work Requested

Bi-Annual airflow testing/balancing

The Scope of Works include:

- Attend site, sign in and submit SWMS
- Access fan chamber and take air flow readings of intake grilles and fan velocity
- Balance any dampers as required
- Provide report on findings
- It is recommended that these tests are performed after fan chamber cleans to ensure maximum airflow readings are recorded

Raymond Hupton (23/10/2019) - Work Note
Attended site.
Assisting sub contractors in getting readings for flows.
Report sheet and recommendations and results are being done by sub contractor and getting sent through.

Customer:	Rod Jones		
	Print Name		Signature
Technician:	Joerg Viefhaus		
	Print Name		Signature

SECURE

BSA | Maintain

Mobile Data Capture Report

Triple M - NSW - Service Docket

Record: 222530	
Time Start	Tue Nov 19 2019 13:24:20 GMT+1100 (AEDT)
Client Details	CLYDE WASTE
Address	322 Parramatta Rd Clyde NSW 2142
Site Contact Name	Ash Turner
Site Contact Telephone Number 2	02 8868 7401
Customer Ref Number	7100156359
Type of Service	Preventative Maintenance - PM
Job / Service Call Number	1228983
Fault Description	CLYDE WASTE - PM October L1 - MONTHLY
Asset List	EQUIP-M_Whole of Site - Mech_MONTHLY _Qty:1
Job Safety Analysis Completed	YES
Description of Work Done	Carried out maintenance as scheduled. Checked extraction fan alarm to make sure it is working fine. Dusted down all lights and the motors on the extraction fans and checked the belts. Duplicate docket.
Parts, Materials?	No
Refrigerant Used?	No
Job Status	Completed
Technician's Signature	
Normal Hours	0
Time and a Half	0
Double Time	0
User ID	TMS-ZBN
Technician Name	ZACHARY JAMES BROWN
Iforms Record ID	222530
Record Location	Latitude:-33.671031, Longitude:150.931261, Altitude:53.476412, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:4.000000, Time:11/19/2019 13:26:45 AEDT
Total Hrs	0
Time Completed	2019-11-19 13:24:20

SECURE
BSA | Maintain

Mobile Data Capture Report

Job Safety Analysis	
Are you an Apprentice?	Yes
Is this an Electrical task or are you using Refrigerants?	No
Job/Service Call Number	1228983
Work to be done.	CLYDE WASTE - PM October L1 - MONTHLY
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes
Is there clear access to the work area equipment & free from trips, slips & fall hazards?	Yes
Are weather conditions appropriate for the commencement of works?	Yes
Is there a potential risk of disturbing asbestos during the works you are undertaking today?	No
Does your task involve working on the roof?	No
Will your task involve Manual Handling?	Yes
Change the work process so that the loads do not have to be lifted or moved by hand.	1
Use and maintain correct posture.	1
Minimize distance the load is to be moved/lifted.	1
Will your work impact general public/vehicle control?	No
Does your task involve Electrical works?	No
Does your work involve Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Does your task involve working from heights (not including roof work) & are there adequate fall prevention controls in place?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Will you be using chemicals during your task?	No
Will you be working in area's that produce excessive noise?	No
Using HazMat?	No
Will you be welding or oxy cutting.	No
Will you be working in or near Cooling towers?	No
Handling refrigerant?	No
Are you working by yourself?	No
Is it safe for you to proceed with your job.	Yes
Technician's Signature	
PPE Title	Gloves, Long Pants, Safety Glasses, Long Sleeve Shirt, Face/Dust mask, Electrical Test Equipment, Safety Boots/Shoes
TMP Work Order No	

APPENDIX B –

WEATHER DATA CALIBRATION REPORTS

(31 MAY 2019 – 27 NOVEMBER 2019)

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

24 May 2019

Constance Georgiou
Environmental Engineer
Veolia Australia and New Zealand

Re – Quarterly service of weather stations

Dear Constance,

As per our service agreement, on the 22/05/19 HCS undertook the service, calibration and maintenance of the weather stations located at the Horsley Park and Clyde 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 22/05/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	15.0	15.1
2m*	15.0	13.9 Cleaned then 14.9
Relative Humidity*	75	82
Wind Speed	0.9 m/s at ground	1.1 m/s at10 metres
Wind Direction	270	270
Solar Radiation	168	150
TBRG	10mm	20 tips
Battery/Solar	14.5	

* Note 1: Field reading is not inside the radiation shield.

Note 2: Ignore rainfall tips logged at approximately 0740 EST as these were testing.

Additional Items

1. Solar panel and components cleaned. All components were very dirty.
2. Installation sprayed for insects.
3. Guy wires checked.

Clyde 22/05/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	24.7	22.8
2m*	24.7	25.3
Relative Humidity*	45.7	44.9 Cleaned
Wind Speed	1.2 m/s at ground (poor exposure at ground)	3.27 m/s at 10 metres
Wind Direction	100 to 180	156 fluctuating
Solar Radiation	300	303
TBRG	10mm	20 tips
Battery/Solar	13.6/20.0	

* Note 1: Field reading is not inside the radiation shield.

Note 2: Ignore rainfall tips logged at approximately 1435 EST as these were testing.

Additional Items

1. All components cleaned.
2. Installation sprayed for insects.

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
PO Box 3332
Putney NSW 2112
Mob 0402 134 092
Email glenmurf@ozemail.com.au

www.hydrometric.com.au

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

30 August 2019

Sara Maddison
Operations Project Manager
Veolia Australia and New Zealand

Re – Quarterly service of weather stations

Dear Sara,

As per our service agreement, on the 28/08/19 HCS undertook the service, calibration and maintenance of the weather stations located at the Horsley Park and Clyde 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 28/08/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	18.0	17.1
2m*	18.0	18.0
Relative Humidity*	49	51
Wind Speed	2.4 m/s at ground	3.2 m/s at10 metres
Wind Direction	236	230
Solar Radiation	580	420
TBRG	10mm	20 tips
Battery/Solar	14.0	

* Note 1: Field reading is not inside the radiation shield.
Note 2: Ignore rainfall tips logged at approximately 0850 EST as these were testing.

Additional Items

1. Solar panel and components cleaned. All components were very dirty.
2. Installation sprayed for insects.
3. Guy wires checked.
4. Data Logger replaced. Out: CR10X In: CR300.

Clyde 28/08/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	20.0	19.3
2m*	20.0	19.4
Relative Humidity*	45	44.4
Wind Speed	1.0 m/s at ground (poor exposure at ground)	1.47 m/s at 10 metres
Wind Direction	200	200
Solar Radiation	750	750
TBRG	10mm	20 tips
Battery/Solar	13.5	

* Note 1: Field reading is not inside the radiation shield.

Note 2: Ignore rainfall tips logged at approximately 1130 EST as these were testing.

Additional Items

1. All components cleaned.
2. Installation sprayed for insects.

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
PO Box 3332
Putney NSW 2112
Mob 0402 134 092
Email glenmurf@ozemail.com.au

www.hydrometric.com.au

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

26 November 2019

Mary Wong
Veolia Environmental Services (Australia) Pty Ltd

Re – Quarterly service of weather stations

Dear Mary,

As per our service agreement, on the 20/11/19 HCS undertook the service, calibration and maintenance of the weather stations located at the Horsley Park and Clyde 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 20/11/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	19.0	17.5
2m*	19.0	18.1
Relative Humidity*	62.6	62.55
Wind Speed	1.6 m/s at ground	2.1 m/s at10 metres
Wind Direction	120	120
Solar Radiation	83	78
TBRG	10mm	20 tips
Battery/Solar	13.5	

* Note 1: Field reading is not inside the radiation shield.
Note 2: Ignore rainfall tips logged at approximately 0630 EST as these were testing.

Additional Items

1. Solar panel and components cleaned. All components were very dirty.
2. Installation sprayed for insects.
3. Guy wires checked.
4. Replaced bearings and shafts in wind speed and direction sensors.
5. Replaced cups on wind speed sensor.

Clyde 20/11/19

Sensor	**Actual (field)**	**Logger**
Temperature – 10m*	25.8	22.8
2m*	25.8	25.1
Relative Humidity*	45	44.0
Wind Speed	1.0 m/s at ground (poor exposure at ground)	2.3 m/s at 10 metres
Wind Direction	180	180
Solar Radiation	650	660
TBRG	10mm	20 tips
Battery/Solar	13.4	

* Note 1: Field reading is not inside the radiation shield.

Note 2: Ignore rainfall tips logged at approximately 1130 EST as these were testing.

Additional Items

1. All components cleaned.
2. Installation sprayed for insects.

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
PO Box 3332
Putney NSW 2112
Mob 0402 134 092
Email glenmurf@ozemail.com.au

www.hydrometric.com.au

APPENDIX C –

FIELD AMBIENT ODOUR ASSESSMENT PLOT AND FIELD LOG SHEETS

(27 NOVEMBER 2019)

DESCRIPTION

Field Ambient Odour Assessment Survey
Modified German Standard
VDI 3940

LEGEND

German Intensity Scale VDI3882

- 0 Not detectable
- 1 Very weak
- 2 Weak
- 3 Distinct
- 4 Strong
- 5 Very strong
- 6 Extremely strong

VEOLIA

Veolia (Australia) Pty Ltd
Clyde Transfer Terminal, Clyde, NSW
Field Ambient Odour Assessment Survey

Survey Date: 27 November 2019
Survey Time Period: 1508 hrs to 1638 hrs

THE ODOUR UNIT PTY LTD
Level 3, 12/56 Church Avenue
MASCOT, NSW 2020
Phone: (02) 9209 4420 – Fax: (02) 9209 4421
www.odourunit.com.au

DRAWN BY	J.SCHULZ	04/12/2019
CHECKED	M.ASSAL	04/12/2019
APPROVED	M.ASSAL	04/12/2019

Odour Audit XXXII

Field Ambient Odour Assessment Survey

Plot No. N1473-XXXIV

Job No. N1473L

N

Local wind direction

Local wind conditions

Light to moderate (0.5 m/s – 3 m/s), with winds blowing from the north-east. No rainfall observed.

Refer to **FAOA Logsheet N1473L-XXXIV** for details on recorded odour detections

THE ODOUR UNIT PTY LTD

Level 3, 12/56 Church Avenue
MASCOT NSW 2020

Phone: +61 2 9209 4420
Facsimile: +61 2 9209 4421
Email: info@odourunit.com.au
Internet: www.odourunit.com.au
ABN: 53 091 165 061

Field Ambient Odour Assessment Log Sheet

Date: 27 November 2019 **Assessor:** M. Assal **Weather Conditions:** Light to moderate (0.5 m/s to 3 m/s) wind speeds blowing from the north-east. No rainfall observed.

Survey Reference Plot No: N1473L-XXXIV

GRIF REF. POSITION	MEASUREMENT TIME PERIOD (hrs)	WIND DIRECTION	WIND SPEED (m/s)	ODOUR PRESNT (Y/N)	ODOUR CHARACTER	VDI 3940 INTENSITY SCALE 0-6	COMMENTS
1	1508 – 1513	E - ESE	0.5 – 3	Y	bin juice, fermented	1	▪ intermittent detection
2	1517 – 1522	SE – ESE	0.5 – 3	N	--	0	--
3	1605 – 1610	N – NW	0.5 – 2.5	N	--	0	--
4	1612 – 1617	NE – WNW	0.5 – 2.5	N	--	0	--
5	1619 – 1624	NW – NE	0.5 – 2.5	N	--	0	--
6	1626 – 1631	NE – WNW	0.5 – 2.5	N	--	0	--
7	1545 – 1550	N – NNW	0.5 – 2.5	N	--	0	--
8	1538 – 1543	N – NNW	0.5 – 2.5	N	--	0	--
9	1531 – 1536	N – NNE	0.5 – 3	N	--	0	--
10	1633 – 1638	NE – WNW	0.5 – 2.5	N	--	0	--