

4 September 2023

Dora Ambrosi-Wall
Environmental Advisor
Veolia
Via email: dora.ambrosi-wall@veolia.com

RE: Odour Audit – Veolia Resource Recovery Facility at Wetherill Park

Dear Dora,
Todoroski Air Sciences has conducted an odour audit and odour survey for the Veolia Resource Recovery Facility at Wetherill Park (hereafter referred to as the Project).

The Project is a resource recovery facility that receives and processes up to 500 tonnes per day of both putrescible and non-putrescible general dry and wet waste from commercial premises. The waste material is delivered onsite and deposited within the warehouse where it is sorted and consolidated before being transferred offsite for alternative processing and disposal.

The Project is located at 20 Davis Road, Wetherill Park New South Wales (NSW) within an existing industrial area. The nearest residential area is located approximately 1.5 kilometres (km) south-southeast of the Project site. **Figure 1** presents the location of the Project.



Figure 1: Project location

Odour complaints

A Complaint and Incident Register (the 'Register') is maintained at the site by SUEZ and published online as part of the Wetherill Park Resource Recovery Odour Management Plan (**SUEZ, 2021**). A review of the available data from the online register from May to June 2023 indicate that there have been no odour complaints received by SUEZ in regard to the Project. In addition, there have been no odour complaints documented since the last odour audit conducted in 2020.

Field odour survey

Todoroski Air Sciences conducted two field odour surveys on 28 July 2023 and 31 July 2023 to assist with validation of the odour predictions in the *Wetherill Park Resource Recovery Facility Upgrade – Odour Assessment* (**Pacific Environment, 2016**).

Confirmation was received from Veolia prior to the odour survey to verify that the site was in full operation at the time of the field odour survey. The odour surveys were completed at times likely to lead to the highest odour impacts.

Odour survey locations

The odour survey locations are shown in **Figure 2**. The odour survey locations on each day are presented in **Table 1**. A portable weather monitor (Kestrel type 5500) was positioned at each survey location to record the prevailing wind conditions for the duration of the monitoring period and to ensure that each location was representative of locations downwind of the Project.

Table 1: Odour survey monitoring locations

Date	Location ID	Wind direction	Average wind speed (m/s)	Address	Eastings	Northings
28/07/2023	1	WNW	1.0	Denori Close	305696	6253646
	2	W	0.1	75 Elizabeth Street	305821	6253808
	3	W	0.2	Corner of Elizabeth Street and Davis Road	305836	6253987
	4	CALM	CALM	1/14 Davis Road	305680	6253992
	5	W	0.3	20 Davis Road (Project boundary)	305454	6253995
31/07/2023	3	CALM	CALM	Corner of Elizabeth Street and Davis Road	305836	6253987
	4	W	0.1	1/14 Davis Road	305680	6253992
	5	W	0.1	20 Davis Road (Project boundary)	305454	6253995

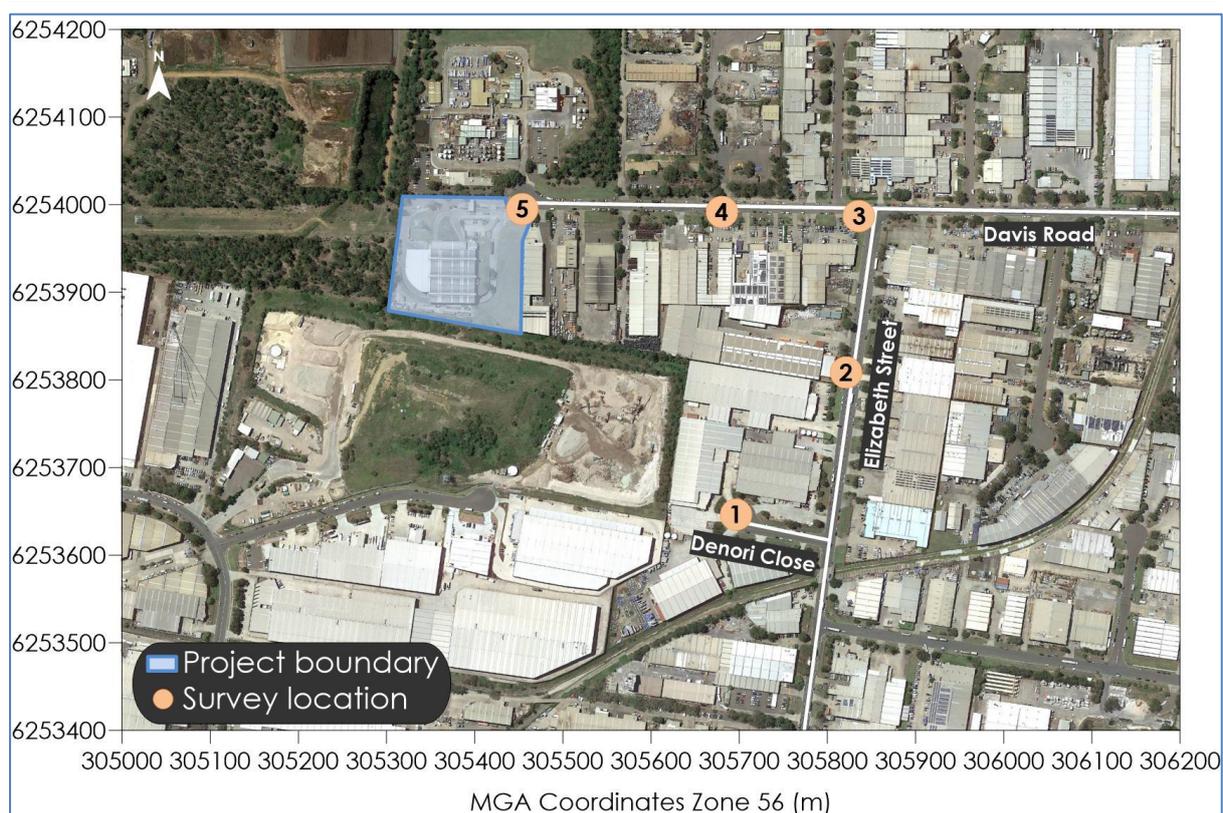


Figure 2: Odour survey monitoring locations

Odour survey methodology

The field odour survey methodology is based on a simplified version of the German Standard VDI 3940 "Determination of Odorants in Ambient Air by Field Inspections". During the field odour survey, a measurement is taken at the location over a period of 10 minutes. Over the 10-minute interval, the assessor tests the ambient air at 10 second intervals and records their observation of the intensity of the odour and the odour characteristic every 10 seconds. The findings are evaluated according to specific factors including frequency, intensity, duration, odour character and location (FIDOL).

Table 2 and **Table 3** present the odour intensity rating scale and suggested odour characteristic descriptors, respectively, suitable to be applied for the field odour surveys.

Table 2: Odour intensity rating scale

Rating	Intensity description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

Table 3: Odour characteristic descriptors

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
1	Fragrant	12	Seaweed, mangroves
2	Household gas	13	Compost
3	Burnt smoky	14	Musty, earthy, mouldy

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
4	Herbal, green, cut grass	15	Garbage
5	Oily, fatty	16	Industrial
6	Rotten eggs, sulfide	17	Baked goods
7	Sour, body odour	18	Rubber
8	Meaty	19	Alcohol
9	Faecal, manure, sewer	20	Soap/disinfectant
10	Fishy	21	Fried food
11	Diesel/car fumes		

Odour survey results

Table 4 presents a summary of the FIDOL evaluation.

Figure 3 presents the count of odour intensity for at each location for each survey period.

The full field odour survey logs are provided in **Appendix A**.

The predominant odours observed during the surveys were very slight to slight industrial smells likely attributed to the nearby commercial and industrial operations, faint diesel/ car fumes associated with passing or idling trucks, slight baked goods odours likely to be originating from the nearby café, weak rubber smells from the nearby tyre facility, slight soap and disinfectant odours were identified, a distinct but short-lived alcoholic odour, and slight garbage smell. The garbage smell was more distinct at the Project's boundary, with weaker and infrequent garbage odours observed offsite.

It is to be noted that the garbage odour detected at Location 1 was most likely attributed to the existing JJ Richards waste recycling facility at Denori Close. The odour generated from JJ Richards is of a similar nature to the Project, however, given the proximity of JJ Richards to the odour survey location, the odours detected at Location 1 is most likely from this site and not from the Project. In addition, the garbage odours detected at Location 3 and 4 were predominately from the passing trucks delivering waste material to the Project, and not solely from the Project site itself.

Following the field odour survey, the assessor went onto the Project site in order to identify whether there were potential on-site sources of odours similar to those detected in the field. It is considered that the garbage odours observed offsite likely originated from the Project, with the exception of Location 1. Other odour characters detected during the survey period were considered to be from non-Project related activities.

The offensiveness of potentially Project related odour (i.e. garbage) detected during the study period has been evaluated using the FIDOL factors (frequency, intensity, duration, odour character and location).

Table 4: Evaluation of garbage odour using FIDOL factors for odours potentially associated with the Project

Date	Location ID	Address	Frequency	Intensity	Duration	Odour character	Location
28/07/2023	3	Corner of Elizabeth Street and Davis Road	13%	Very slight	10 to 30 seconds	Garbage	Industrial (passing waste trucks)
			5%	Slight	10 seconds		
	4	1/14 Davis Road	3%	Very slight	10 seconds	Garbage	
			3%	Slight	10 seconds		
	5	20 Davis Road (Project boundary)	18%	Very slight	10 to 30 seconds	Garbage	Industrial (Project site)
			12%	Slight	10 seconds		
5%			Distinct	10 to 20 seconds			

Date	Location ID	Address	Frequency	Intensity	Duration	Odour character	Location
31/07/2023	3	Corner of Elizabeth Street and Davis Road	17%	Very slight	10 to 20 seconds	Garbage	Industrial (passing waste trucks)
			7%	Slight	10 to 20 seconds		
			3%	Distinct	10 to 20 seconds		
	4	1/14 Davis Road	8%	Very slight	10 to 20 seconds	Garbage	
			2%	Slight	10 seconds		
	5	20 Davis Road (Project boundary)	20%	Very slight	10 to 30 seconds	Garbage	
			12%	Slight	10 to 20 seconds		
			5%	Distinct	10 seconds		

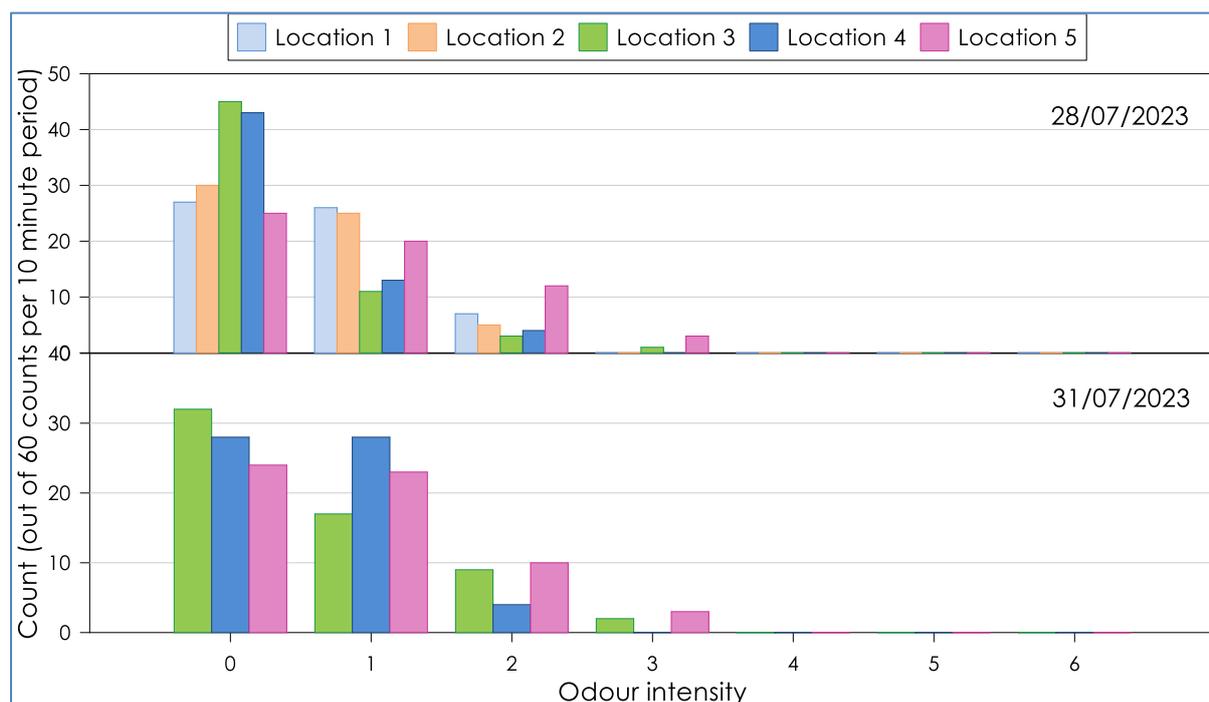


Figure 3: Field odour survey results - Count of odour intensity for garbage odour

While the garbage odour characters are considered to have an unpleasant hedonic tone, as the intensity was predominately very slight to slight (i.e. only just detectable), and the odours frequency and duration were low, it is considered that this odour could not reasonably be perceived as offensive.

Only 3% and 5% of the monitoring period at Location 3 and 5, respectively, was detected at a distinct intensity for garbage odour which is below the 10% VDI threshold for any odour to be considered offensive. The distinct odours at Location 3 were attributed to passing trucks delivering waste material to the site. Location 5 is the site boundary and is anticipated that odour would be detectable at this location.

Odour survey results comparison

The field odour survey results were compared against the predicted odour impacts from the Project site presented in the *Wetherill Park Resource Recovery Facility Upgrade – Odour Assessment (Pacific Environment, 2016)* that was prepared as part of the EIS for the upgrade of the facility.

Figure 4 presents the predicted odour concentration as prepared in the odour assessment report. The modelling results show that the odour concentrations will not exceed the 2OU criterion at the nearest industrial receptors immediately adjacent to the Project site.

The odour survey results are considered consistent with the modelling predictions, as odours detected from the Project site were most noticeable at the Project boundary with infrequent and less intensity odours detected at offsite locations, however, as discussed, these odours were due to passing trucks delivering waste material to the site.

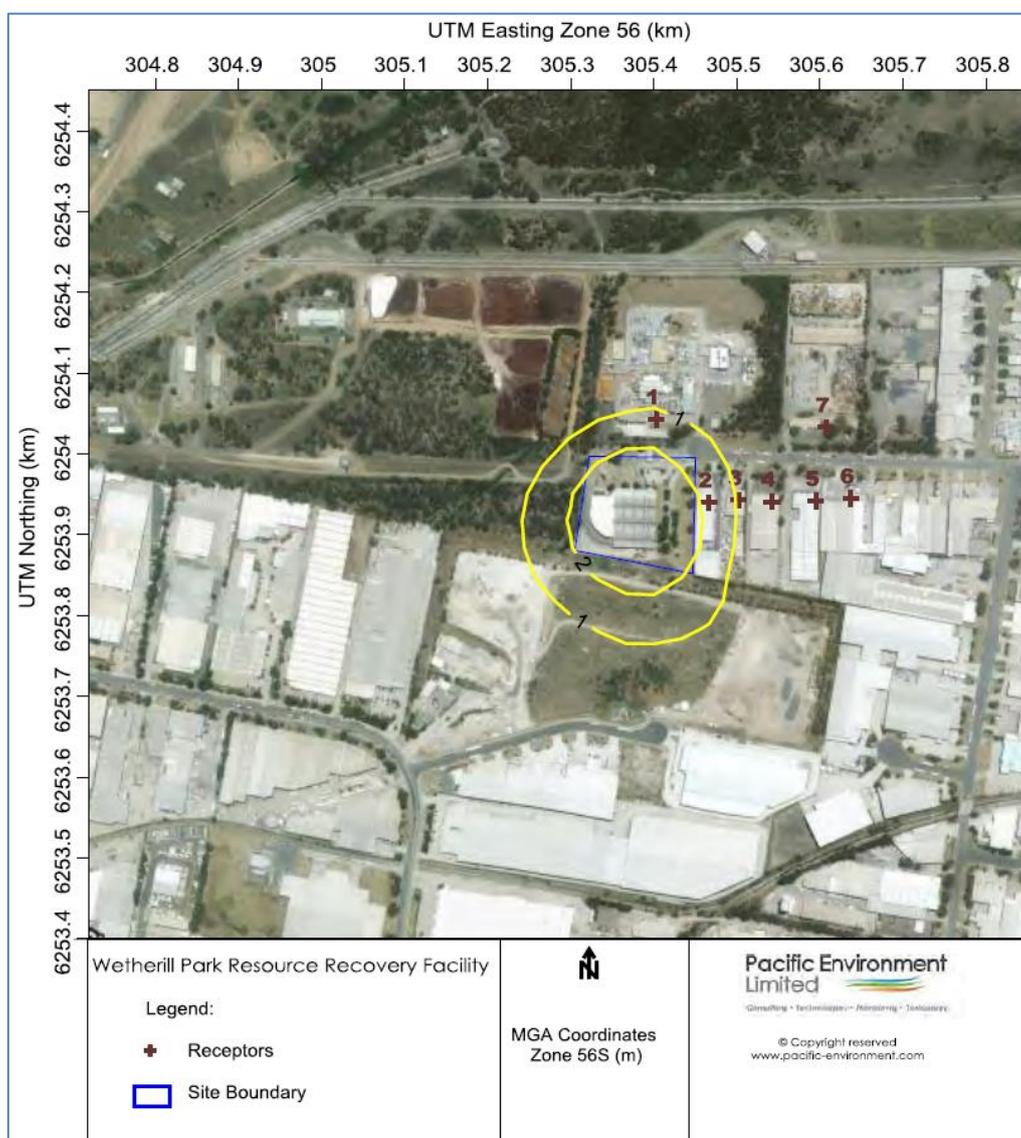


Figure 4: Predicted 99th percentile odour concentrations (Pacific Environment, 2016)

The odour survey results in the previous *SUEZ – Wetherill Park RRF Odour Audit* report (ERM, 2020) was also compared with the odour results presented in this report. The previous audit report identified waste odours detected at the offsite locations were largely due to passing waste trucks from the site and ranged in intensity from very slight to slight which is generally consistent with the odour survey results.

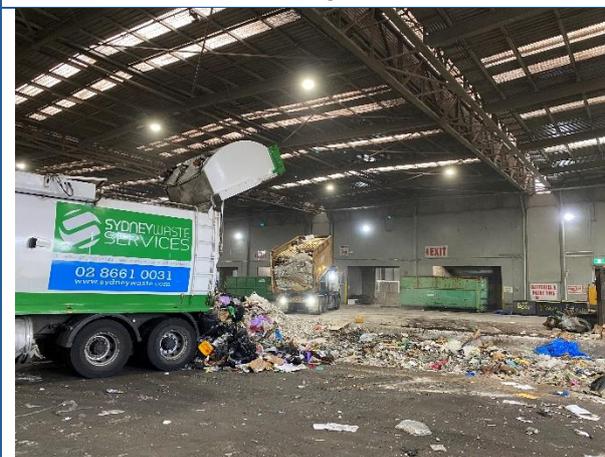
Site odour audit

Todoroski Air Sciences conducted a site odour audit for the Project and its operations on 28 July 2023 to identify the potential odour sources and current control measures to mitigate any potential emissions.

All handling and processing activities at the site occur indoors. Material is received and processed within the waste pit where it is sorted and consolidated before being loaded into trucks for dispatch for further processing at offsite locations. The majority of material processed onsite is sourced from commercial premises and is primarily dry with some material received for processing being wet. Any wastewater runoff in the waste pit is funnelled and collected in the leachate containment and stormwater pits. Fugitive emissions generated in the building are suppressed via the misting system located on the warehouse building where the odours and dust emissions are diluted before exiting via the two-roller door exits located on the northern side of the warehouse.

Todoroski Air Sciences identified the key odour emission sources at the site as the waste receive pit and storage area, leachate containment and stormwater pits and vehicles entering and exiting the site. Images of the potential odour sources that were taken during the site audit are presented in **Table 5**.

Table 5: Potential odour sources

	
Waste storage area	Waste pit
	
Waste pit	Vehicles entering and exiting the site



Leachate containment and stormwater pits

Leachate containment and stormwater pits

Odour mitigation and action plan

Todoroski Air Sciences reviewed the current controls employed at the site with reference to the Wetherill Park Resource Recovery Park odour management plan and the overall effectiveness of these controls in managing odour emissions. The controls currently utilised onsite include:

- ✦ Misting sprays and deodorisers are located on the ceiling and roller doors which are operated for 10 to 15 seconds every 45 seconds;
- ✦ Leachate containment and stormwater pits are inspected and tested every 90 days by onsite personnel and routinely maintained every 60 days by an independent contractor;
- ✦ Truck loads covered before entering and exiting the site;
- ✦ Trucks are routinely washed twice a month at the designated truck wash area;
- ✦ Misting sprays are located at the roller door entrances; and,
- ✦ Hardstand areas are swept twice a week and inspected daily.

In addition to these controls, the site regularly conducts odour surveys on a weekly basis to monitor odours generated from the site and evaluate the control measures currently employed.

The odour survey results indicated that garbage odours were most prevalent at the Project boundary and were infrequently observed with a weaker intensity at offsite locations. Based on a site inspection, it was observed that the main source of odour emanating from the site was likely due to fugitive emissions escaping the building.

The current odour controls, mitigation and management measures are considered to be effective in reducing odour impacts in the surrounding environment. No additional measures are recommended for the site.

Summary and conclusions

This report has investigated the potential for odour impacts associated with the Veolia Resource Recovery Facility at Wetherill Park.

The field odour survey indicates that while the garbage odour character, likely related to the Project, was observed offsite during the survey, these were generally of a weak intensity, too infrequent and relatively short lived to be considered offensive. Per the VDI methodology, no offensive odours associated with the Project were identified in the surrounding industrial area. In addition, the odour survey results were considered consistent with the modelling prediction presented in the odour assessment report and the extent of impacts from the site. Notably, the surveys were completed at times likely to lead to the highest odour impacts.

Overall, given the nature of the air emissions sources and the existing air quality control measures, the results indicate that the site was operating without undue air quality impact in the surrounding environment at the times the surveys were completed and compare well with the predicted impacts. The current odour mitigation measures are considered to be effective, and no additional measures are recommended.

Please feel free to contact us if you would like to clarify any aspect of this report.

Yours faithfully,
Todoroski Air Sciences



Emilie Aragnou

References

ERM (2020)

"SUEZ – Wetherill Park RRF Odour Audit", ERM, May 2020.

Pacific Environment (2016)

"Wetherill Park Resource Recovery Facility Upgrade – Odour Assessment", prepared by Pacific Environment on behalf of Golder Associates, February 2016.

SUEZ (2021)

"Odour Management Plan Wetherill Park Resource Recovery Park", SUEZ, September 2021.

Appendix A – Field odour survey logs

Assessor			Emilie Aragnou		
Date			28/07/2023		
Start time			7:42am		
End time			7:52am		
Survey Location			Location 1 - Denori Close		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	1	11	31	1	17
2	1	15	32	1	16
3	0		33	0	
4	1	16	34	0	
5	0		35	1	17
6	1	16	36	1	17
7	0		37	0	
8	0		38	0	
9	0		39	0	
10	0		40	0	
11	0		41	0	
12	1	9	42	0	
13	0		43	0	
14	0		44	1	11
15	1	1	45	1	16
16	1	1	46	1	16
17	1	1	47	1	16
18	1	17	48	1	18
19	2	17	49	1	18
20	2	16	50	2	16
21	2	16	51	1	15
22	2	16	52	1	15
23	0		53	1	16
24	0		54	0	
25	0		55	0	
26	1	6	56	1	16
27	1	1	57	0	
28	2	1	58	0	
29	1	11	59	0	
30	2	17	60	0	

Assessor			Emilie Aragnou		
Date			28/07/2023		
Start time			7:59am		
End time			8:09am		
Survey Location			Location 2 - 75 Elizabeth Street		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	2	17	31	0	
2	2	17	32	0	
3	1	17	33	0	
4	1	17	34	0	
5	1	16	35	0	
6	1	16	36	2	11
7	1	17	37	0	
8	1	17	38	0	
9	1	16	39	1	11
10	1	16	40	1	16
11	1	16	41	0	
12	1	16	42	0	
13	1	16	43	0	
14	0		44	0	
15	0		45	0	
16	0		46	0	
17	1	16	47	2	11
18	0		48	1	1
19	0		49	0	
20	0		50	0	
21	1	17	51	0	
22	0		52	0	
23	1	17	53	1	5
24	1	17	54	0	
25	1	17	55	0	
26	1	16	56	1	16
27	1	16	57	2	1
28	1	17	58	0	
29	0		59	1	17
30	0		60	0	

Assessor			Emilie Aragnou		
Date			28/07/2023		
Start time			8:14am		
End time			8:24am		
Survey Location			Location 3 - Corner of Elizabeth Street and Davis Road		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	0		31	0	
2	0		32	0	
3	0		33	0	
4	0		34	0	
5	0		35	0	
6	0		36	2	15
7	0		37	1	15
8	0		38	1	15
9	0		39	0	
10	1	11	40	0	
11	0		41	0	
12	0		42	0	
13	0		43	0	
14	3	19	44	1	15
15	0		45	0	
16	2	15	46	0	
17	1	15	47	0	
18	0		48	0	
19	0		49	0	
20	0		50	0	
21	0		51	2	15
22	1	15	52	1	16
23	1	15	53	0	
24	1	15	54	0	
25	0		55	1	15
26	0		56	0	
27	0		57	1	16
28	0		58	0	
29	0		59	0	
30	0		60	0	



Assessor			Emilie Aragnou		
Date			28/07/2023		
Start time			8:34am		
End time			8:44am		
Survey Location			Location 4 - 1/14 Davis Road		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	0		31	1	15
2	0		32	0	
3	2	11	33	0	
4	1	11	34	0	
5	1	11	35	1	17
6	1	16	36	1	17
7	0		37	0	
8	0		38	0	
9	0		39	0	
10	0		40	0	
11	0		41	0	
12	0		42	0	
13	0		43	1	16
14	0		44	1	17
15	0		45	0	
16	0		46	2	17
17	0		47	1	17
18	0		48	0	
19	0		49	0	
20	0		50	0	
21	0		51	0	
22	0		52	1	15
23	0		53	0	
24	0		54	0	
25	2	15	55	1	14
26	0		56	1	14
27	0		57	1	14
28	0		58	0	
29	0		59	2	15
30	0		60	0	

Assessor			Emilie Aragnou		
Date			28/07/2023		
Start time			8:51am		
End time			9:01am		
Survey Location			Location 5 - 20 Davis Road (Project boundary)		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	0		31	1	15
2	1	15	32	0	
3	0		33	1	15
4	0		34	2	15
5	2	17	35	1	15
6	1	17	36	1	17
7	2	17	37	0	
8	1	17	38	0	
9	1	17	39	0	
10	1	17	40	0	
11	1	15	41	0	
12	1	15	42	0	
13	1	15	43	3	15
14	2	15	44	2	15
15	0		45	1	15
16	0		46	0	
17	0		47	0	
18	2	15	48	3	15
19	1	15	49	3	15
20	1	17	50	2	15
21	1	17	51	0	
22	2	15	52	0	
23	1	15	53	0	
24	2	17	54	0	
25	1	17	55	1	15
26	0		56	0	
27	2	17	57	0	
28	1	17	58	0	
29	2	17	59	0	
30	2	15	60	0	

Assessor			Emilie Aragnou		
Date			31/07/2023		
Start time			7:54am		
End time			8:04am		
Survey Location			Location 3 - Corner of Elizabeth Street and Davis Road		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	0		31	2	20
2	0		32	2	20
3	0		33	2	20
4	0		34	1	20
5	1	4	35	2	11
6	1	15	36	2	11
7	1	15	37	1	11
8	0		38	1	21
9	1	15	39	1	15
10	2	15	40	0	
11	0		41	0	
12	0		42	0	
13	0		43	0	
14	0		44	1	15
15	1	11	45	0	
16	1	15	46	1	16
17	0		47	0	
18	1	15	48	0	
19	3	15	49	0	
20	3	15	50	0	
21	2	15	51	0	
22	1	15	52	0	
23	0		53	0	
24	2	15	54	0	
25	2	15	55	0	
26	1	15	56	0	
27	1	15	57	0	
28	0		58	0	
29	0		59	0	
30	1	20	60	0	

Assessor			Emilie Aragnou		
Date			31/07/2023		
Start time			8:13am		
End time			8:23am		
Survey Location			Location 4 - 1/14 Davis Road		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	2	15	31	0	
2	1	15	32	0	
3	0		33	0	
4	0		34	0	
5	0		35	0	
6	0		36	0	
7	1	16	37	1	7
8	0		38	1	7
9	1	16	39	1	16
10	0		40	0	
11	0		41	1	18
12	1	15	42	1	18
13	1	15	43	1	18
14	0		44	1	18
15	1	16	45	0	
16	1	15	46	0	
17	1	16	47	0	
18	1	16	48	0	
19	2	16	49	1	18
20	1	16	50	0	
21	2	16	51	0	
22	1	16	52	0	
23	1	16	53	1	15
24	1	16	54	1	16
25	1	16	55	1	16
26	1	16	56	0	
27	1	18	57	0	
28	1	16	58	0	
29	0		59	0	
30	2	16	60	0	

Assessor			Emilie Aragnou		
Date			31/07/2023		
Start time			8:29am		
End time			9:01am		
Survey Location			Location 5 - 20 Davis Road (Project boundary)		
No.	Intensity rating	Odour code	No.	Intensity rating	Odour code
1	0		31	0	
2	0		32	0	
3	0		33	0	
4	0		34	0	
5	0		35	2	15
6	1	15	36	2	15
7	0		37	3	15
8	0		38	2	15
9	1	15	39	2	15
10	0		40	1	15
11	3	15	41	0	
12	2	15	42	1	17
13	2	15	43	1	17
14	1	15	44	1	15
15	0		45	2	17
16	2	15	46	1	17
17	1	15	47	1	17
18	1	11	48	1	17
19	1	11	49	1	15
20	0		50	1	15
21	0		51	1	15
22	0		52	1	17
23	1	15	53	1	15
24	0		54	0	
25	0		55	3	15
26	1	16	56	0	
27	1	16	57	0	
28	1	15	58	2	3
29	0		59	2	3
30	0		60	1	3