



| VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD |

OCCUPATIONAL HYGIENE - AIR AND DUST ASSESSMENT

REFERENCE NO. S12937

WETHERILL TRANSFER STATION | 04TH & 10TH JANUARY 2024

Occupational Hygiene - Air and Dust Assessment

20 Davis Road, Wetherill Park, NSW, 2164

Prepared for

Veolia Environmental Services (Australia) Pty Ltd

Level 4, 65 Pirrama Road, Pyrmont, NSW, 2009

by

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Our Reference: S12937

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Senior Occupational Hygienist, CIH, MAIOH



Date: 04th & 10th January 2024

Executive Summary

This report presents the results of an Occupational Hygiene - Air and Dust Assessment conducted for Veolia Environmental Services (Australia) Pty Ltd on the 04th & 10th January 2024 at the Wetherill Transfer Station. The survey was conducted by Albie Louw (Senior Occupational Hygienist, ROH, MAIOH) from Hibbs. The conditions in the depot were normal on the days of the surveys and, therefore, the results obtained during the surveys are representative of a standard workday.

The scope of work included:

- Determining the concentrations of Inhalable and Respirable Dust at the Wetherhill Park Transfer Station, by conducting personal air monitoring.
- Facilitate laboratory analysis of the samples collected.
- Evaluate the data collected and compare with the relevant workplace exposure standards.
- Prepare a report including observations, findings and conclusions, and recommendations, as necessary.

The following results were obtained, and observations or recommendations were made during the survey:

The concentrations for the personal Inhalable Dust samples taken ranged from 0.076 mg/m³ to 0.605 mg/m³. Additionally, the concentrations for the personal Respirable Dust samples taken ranged from 0.010 mg/m³ to 0.102 mg/m³. Therefore, based on the previous statements, the concentrations of dust on all the samples taken at the Wetherhill Transfer Station were well below the prescribed Work Exposure Standards (WESs) of 10 mg/m³ for Inhalable Dust and 3 mg/m³ for Respirable Dust respectively.

The highest concentration of Inhalable Dust was detected on one of the samples worn by the machine operators [Sample ID 231218-5; 0.605 mg/m³]. This is predominantly due to the employee spending the majority of the day inside of the drop-off depot, where larger particles are generated when waste is unloaded and moved.

Whereas the highest concentration of Respirable Dust was detected on the sample worn by a worker conducting various tasks around the facility [Sample ID 230905-2; 0.102 mg/m³], which included predominantly operating heavy plant machinery and cleaning the facility. Sweeping, either manually or mechanically, can re-introduce fine settled particles into the air which subsequently be inhaled by the worker. This could be a contributing factor to the higher levels of respirable dust detected, compared to other workers.

The current control measures, as listed below, do effectively control exposure to Inhalable and Respirable Dust particles generated by the waste off-loading process:

- Misting system installed throughout the drop-off depot.
- Enclosed operator cabins, which are in a good condition.
- Regular maintenance of air conditioning and ventilation systems installed on the heavy plant machinery.
- Pre-start checklist.
- Effective housekeeping methods.
- Trained staff.

- Minimal staff interaction with the contaminant source.

Site management should be cognizant of the fact that, based on the results obtained for inhalable and respirable dust, workers are not required to wear particulate respirators whilst working at the Wetherill Transfer Station. However, due to fact that various unknown contaminants may be present in the waste dropped-off at the site, it would be advisable to implement the recommendations made under Section 8 of the report to keep exposure as low as possible.

It should be noted that Asbestos containing material is present on the site. However, it is stored in a sperate outdoors area, inside of sealed skips. Additionally, employees of Veolia Environmental Services (Australia) Pty Ltd do not interact with the Asbestos containing materials at all when it is being unloaded or removed from the transfer facility. Therefore, it's presence at the transfer station is a low risk to employees on the premises and no further recommendations were made.

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1. Introduction

This report presents the results of an Occupational Hygiene - Air and Dust Assessment conducted for Veolia Environmental Services (Australia) Pty Ltd on the 04th & 10th January 2024 at the Wetherill Transfer Station. The survey was conducted by Albie Louw (Senior Occupational Hygienist, ROH, MAIOH) from Hibbs. The conditions in the depot were normal on the days of the surveys and, therefore, the results obtained during the surveys are representative of a standard workday.

1.1 Scope of Assessment

The scope of work included:

- Determining the concentrations of Inhalable and Respirable Dust at the Wetherhill Park Transfer Station, by conducting personal air monitoring.
- Facilitate laboratory analysis of the samples collected.
- Evaluate the data collected and compare with the relevant workplace exposure standards.
- Prepare a report including observations, findings and conclusions, and recommendations, as necessary.

1.2 Abbreviations

HCIS	Hazardous Chemical Information System
LOQ	Limit of Quantitation
mg/m ³	Milligrams per cubic metre
PPE	Personal Protective Equipment
STEL	Short Term Exposure Limit(s)
SWA	Safe Work Australia
TWA	Time Weighted Average
WES	Workplace Exposure Standard

2. Report Limitations and Disclaimer

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

Hibbs & Associates Pty Ltd has exercised reasonable care, skill and diligence in preparation of the Report. However, except for any non-excludable statutory provision, Hibbs & Associates Pty Ltd gives no warranty in relation to its services or the Report, and is not liable for any loss, damage, injury or death suffered by any party (whether caused by negligence or otherwise) arising from or relating to the services or the use or otherwise of this Report. Where the Client has the benefit of any non-excludable condition or warranty, the liability of Hibbs & Associates Pty Ltd is, to the extent permitted by law, limited to re-performing the services or refunding the fees paid in relation to the services or sections of the Report not complying with the conditions or warranty.

Exposure data collected were representative of the working conditions on the day. Operator and process variability can affect results significantly. As such, it is generally recommended that the number of samples taken should be statistically significant. In this case, conclusions and recommendations are based upon a limited data set. The Report must be read in its entirety and must not be copied, distributed or referred to in part only.

3. Process description

The waste transfer station is a warehouse with large doors on opposing sides of the area, which has ample natural ventilation to reduce the accumulation of airborne contaminants. Additionally, there is a misting system installed in the area, which disperses mist periodically at the entrances to the area and at strategic locations within the facility. The majority of the workers operate driven machinery on the premises, transferring waste from the drop-off area to the underground holding area. Moreover, other workers clean the surrounding premises and control traffic entering or leaving the area. Workers at the site work an average 40 hour per week (8-hour shifts for five days). Refer to the photographs below:



Photograph 3.1: Indicating the misting system used on site.



Photograph 3.2: Indicating normal operation in the facility.



Photograph 3.3: Indicating a housekeeping method used to clean the premises.



Photograph 3.4: Indicating the heavy plant machinery with enclosed cabins used on site.

4. Methodology

4.1 Inhalable Dust

The inhalable airborne dust measurements were conducted in accordance with AS 3640-2009 *Workplace Atmospheres - Method for Sampling and Gravimetric Determination of Inhalable Dust*.

The sample collection was carried out using portable air sampling pumps with Institute of Occupational Medicine (IOM) UK sampling heads fitted with 25 mm, 5 µm PVC membrane filters, at a sampling flow rate of 2.0 litres/min. SafeWork NSW TestSafe Laboratory provided pre-weighed filters loaded onto pre-labelled IOM cassettes for inhalable dust sampling. Laboratory and Field blanks were submitted with the samples for quality assurance purposes.

The personal exposure samples were collected from the operator's breathing zone during typical work tasks. The breathing zone is defined as a hemisphere of 300 mm radius on the front of the head and measured from the midpoint of an imaginary line joining the ears. This requires the operator to wear a battery-operated sampling pump connected by hose to the sampling head (IOM) mounted on the shirt collar or lapel.

NATA accredited SafeWork NSW TestSafe Laboratory analysed the samples using gravimetric analysis (method WCA.190) with a limit of quantitation (LOQ) of 0.01 mg/filter.

4.2 Respirable Dust

The respirable airborne dust measurements were conducted in accordance with AS 2985-2009 *Workplace Atmospheres - Method for sampling and gravimetric determination of respirable dust*.

The sample collection was carried out using portable air sampling pumps with a Dewell-Higgins plastic Cyclone for Respirable Dust, fitted with 25 mm, 5 µm PVC membrane filters, at a sampling flow rate of 2.2 litres/min. SafeWork NSW TestSafe Laboratory provided pre-weighed filters loaded onto pre-labelled cassettes for respirable dust sampling. Laboratory and field blanks were submitted with the samples for quality assurance purposes.

The personal exposure samples were collected from the operator's breathing zone during typical work tasks. The breathing zone is defined as a hemisphere of 300 mm radius on the front of the head and measured from the midpoint of an imaginary line joining the ears. This requires the operator to wear a battery-operated sampling pump connected by hose to the sampling head (Dewell-Higgins plastic cyclone for Respirable Dust) mounted on the shirt collar or lapel.

NATA accredited SafeWork NSW TestSafe Laboratory analysed the samples using gravimetric analysis (method WCA.191) with a limit of quantitation (LOQ) of 0.01 mg/filter.

5. Workplace Exposure Standards (WES)

5.1 Airbourne WES Information

Workplace Exposure Standards (WES) for the evaluation of atmospheric contaminants in the workplace are contained in Safe Work Australia (SWA) Workplace Exposure Standards for Airborne Contaminants – effective October 2022 (SWA 2022) ¹. Subsequent updates to the listed standards are available from the SWA Hazardous Chemical Information System (HCIS) website (<http://hcis.safeworkaustralia.gov.au/>). The SWA Guidance on the Interpretation of Workplace Exposure Standards for Airborne Contaminants – April 2013 was considered before adopting the selected WES used in this study.

The WES represent airborne concentrations of individual substances, exposure at which, according to current knowledge, should not impair the health of, nor cause undue discomfort to, nearly all workers. The WES do not represent a fine dividing line between a healthy and unhealthy work environment. Natural biological variation and the range of individual susceptibilities mean that a small number of people might experience adverse health effects below the exposure standard.

The exposure standards are expressed as time-weighted average (TWA) concentrations over an eight-hour working day, for a five-day working week, and reflect long-term exposure (over the employees working lifetime). During the eight-hour averaging period, excursions above the TWA exposure standard are permitted provided these excursions are compensated by equivalent excursions below the standard during the day. However, as some substances can give rise to acute health effects even after brief exposures to high concentrations, excursions above the TWA concentration are restricted by Short Term Exposure Limits (STEL), usually 15 minutes.

The STEL represents the concentration to which it is believed that workers can be exposed continuously for a short period of time without suffering from 1) irritation, 2) chronic or irreversible tissue damage, or 3) narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency, and provided that the daily WES-TWA is not exceeded. It is not a separate independent exposure guideline; rather, it supplements the WES-TWA where there are recognized acute effects from a substance whose toxic effects are primarily of a chronic nature. STEL is applied where evidence has suggested that adverse health effects may result from excessive short-term exposures. Exposures at the STEL should not be longer than 15 minutes and should not occur any more than 4 times a day. A rest period of 60 minutes is required between each STEL exposure.

The table below presents a summary of the relevant WES values:

Table 5.1: Workplace Exposure Standards

Contaminant	WES-TWA (8 Hrs)	WES-STEL (15 Min)	Shift Adjust WES-TWA (10 Hrs)	Unit	Notation
Inhalable Dust	10	-	Not Required (See 5.2)	mg/m ³	N/A
Respirable Dust	3	-	Not Required (See 5.2)	mg/m ³	N/A

Table Notes:

- There is no WES for RD published by SafeWork Australia. Note that not all dusts have assigned exposure standards, however, it should not be assumed these dusts do not present a hazard to health. For guidance purposes the following values are provided:
 - 3 mg/m³ mandated in NSW Coal Mines (Mines and Petroleum sites Regulations 2022).
 - 3 mg/m³ is recommended by the American Conference of Governmental Industrial Hygienists (ACGIH).
 - 4 mg/m³ is recommended by the Health and Safety Executive, UK (HSE UK).
 - 1 mg/m³ is recommended by the Australian Institute of Occupational Hygiene as a trigger value to protect against lung overload and inflammation for dust which do not have any assigned WES value.

5.2 Shift Adjustment Model

The Québec model (AIOH, 2016) was selected and applied for calculating the adjustment factor based on the adjustment category with regard to the daily and weekly average working hours relative to the WES. No shift adjustments were, however, required for Inhalable and Respirable Dust.

6. Results Summary

6.1 Inhalable Dust

Table 6.1: Summary of the personal Inhalable Dust samples.

Sample I.D.	Employee	Sample Location	Result (mg/m ³)	WES-TWA (8 Hrs)	Shift Adjust WES-TWA (10 Hrs)	WES Exceedance	Comments
231218-5	Tyler Walzak	Personal sample worn by a worker operating various heavy plant machinery in the drop-off depot.	0.605	10	Not Required	No	The employee spent the majority of the shift indoors, either within the cabin of various heavy plant machinery or while conducting various tasks in the drop-off depot (directing traffic, doing inspections, general labour etc.).
231218-15	Julie Malcolm	Personal sample worn by a worker employed as a weighbridge operator at the access control point to the facility.	0.263	10	Not Required	No	The worker remained in the weighbridge office for the majority of the day, which is directly adjacent to the drop-off depot. Her duties include weighing the trucks entering and exiting the facility and controlling access to the drop off-depot.
231218-16	Victor Nguyen	Personal sample worn by a worker operating various heavy plant machinery in the drop-off depot.	0.121	10	Voided*		The employee spent the majority of the shift indoors, either within the cabin of various heavy plant machinery or while conducting various tasks in the drop-off depot (directing traffic, doing inspections, general labour etc.).
231218-19	Phong Phoung	Personal sample worn by a worker conducting various tasks in and around the facility.	0.076	10	Not Required	No	The worker conducted various tasks during the workday around the facility, which included operating the bulldozer and front loader, operating the sweeper outdoors and various other miscellaneous tasks for the remainder of the day (manual sweeping, general labour, going into tunnel etc.).

*Personal air sampling pump automatically switched off during monitoring due to restricted airflow, consequently this sample was voided.

6.2 Respirable Dust

Table 6.2: Summary of the personal Respirable Dust samples.

Sample I.D.	Employee	Sample Location	Result (mg/m ³)	WES-TWA (8 Hrs)	Shift Adjust WES-TWA (10 Hrs)	WES Exceedance	Comments
230905-6	Victor Nguyen	Personal sample worn by a worker operating various heavy plant machinery in the drop of depot.	0.066	3	Not Required	No	The employee spent the majority of the shift indoors, either within the cabin of various heavy plant machinery or while conducting various tasks in the drop-off depot (directing traffic, doing inspections, general labour etc.).
230905-68	Julie Malcolm	Personal sample worn by a worker employed as a weighbridge operator at the access control point to the facility.	0.010	3	Not Required	No	The worker remained in the weighbridge office for the majority of the day, which is directly adjacent to the drop-off depot. Her duties include weighing the trucks entering and exiting the facility and controlling access to the drop off-depot.
230905-2	Phong Phoung	Personal sample worn by a worker conducting various tasks in and around the facility.	0.102	3	Not Required	No	The worker conducted various tasks during the workday around the facility, which included operating the bulldozer and front loader, operating the sweeper outdoors and various other miscellaneous tasks for the remainder of the day (manual sweeping, general labour, going into tunnel etc.).

7. Discussion

The concentrations for the personal Inhalable Dust samples taken ranged from 0.076 mg/m³ to 0.605 mg/m³. Additionally, the concentrations for the personal Respirable Dust samples taken ranged from 0.010 mg/m³ to 0.102 mg/m³. Therefore, based on the previous statements, the concentrations of dust on all the samples taken at the Wetherhill Transfer Station were well below the prescribed Work Exposure Standards (WESs) of 10 mg/m³ for Inhalable Dust and 3 mg/m³ for Respirable Dust respectively.

The highest concentration of Inhalable Dust was detected on one of the samples worn by the machine operators [Sample ID 231218-5; 0.605 mg/m³]. This is predominantly due to the employee spending the majority of the day inside of the drop-off depot, where larger particles are generated when waste is unloaded and moved.

Whereas the highest concentration of Respirable Dust was detected on the sample worn by a worker conducting various tasks around the facility [Sample ID 230905-2; 0.102 mg/m³], which included predominantly operating heavy plant machinery and cleaning the facility. Sweeping, either manually or mechanically, can re-introduce fine settled particles into the air which subsequently be inhaled by the worker. This could be a contributing factor to the higher levels of respirable dust detected, compared to other workers.

The current control measures, as listed below, do effectively control exposure to Inhalable and Respirable Dust particles generated by the waste off-loading process:

- Misting system installed throughout the drop-off depot.
- Enclosed operator cabins, which are in a good condition.
- Regular maintenance of air conditioning and ventilation systems installed on the heavy plant machinery.
- Pre-start checklist.
- Effective housekeeping methods.
- Trained staff.
- Minimal staff interaction with the contaminant source.

Site management should be cognizant of the fact that, based on the results obtained for inhalable and respirable dust, workers are not required to wear particulate respirators whilst working at the Wetherill Transfer Station. However, due to fact that various unknown contaminants may be present in the waste dropped-off at the site, it would be advisable to implement the recommendations made under Section 8 of the report to keep exposure as low as possible.

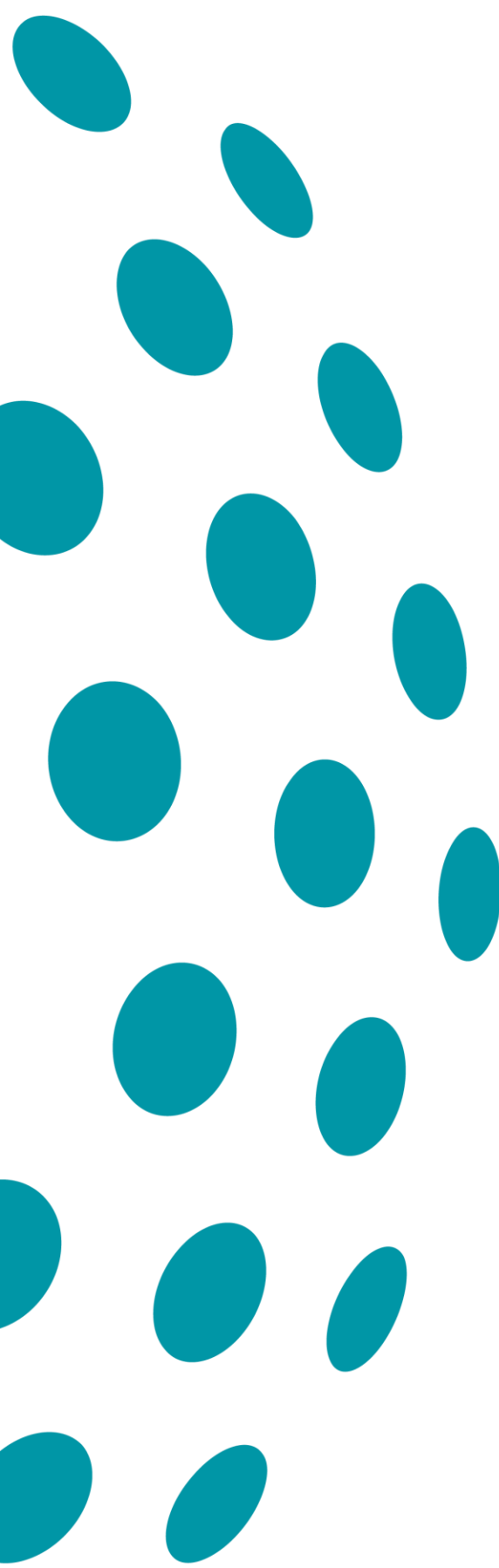
It should be noted that Asbestos containing material is present on the site. However, it is stored in a sperate outdoors area, inside of sealed skips. Additionally, employees of Veolia Environmental Services (Australia) Pty Ltd do not interact with the Asbestos containing materials at all when it is being unloaded or removed from the transfer facility. Therefore, it's presence at the transfer station is a low risk to employees on the premises and no further recommendations were made.

8. Recommendation

- Additional air monitoring could be conducted to acquire a larger dataset of information in varying conditions, which will provide data that is a more accurate representation of employee exposure.
- Disposable P1 respirators could be made available on site for all employee to wear when required. It is advised that site management encourage workers to wear these respirators when conducting any work that may generate dust or when being near an activity generating dust, even if it is not legally required. Moreover, if the site management does decide to make P1 respirators available on site, it would be beneficial to have the employee's fit tested and trained in the proper use of the respirators.
- Although the results indicate that the employee conducting dry sweeping is not exposed to elevated levels of dust, it would be advantageous to make use of wet cleaning methods where possible to further reduce exposure to Dust as low as possible.

9. Conclusions

The employees are exposed to minimal concentrations of airborne dust on the premises. However, due to fact that various unknown contaminants may be present in the waste dropped-off at the site, it would be advisable to provide employees with appropriate P1 respirators.



Appendix A Laboratory Results

The Manager
Hibbs & Associates Pty Ltd
PO Box 4266
HOMEBUSH NSW 2140

Lab. Reference: 2024-0049

Samples analysed as received

SAMPLE ORIGIN: S12937 HW4791 - Veolia Wetherill Park

DATE OF INVESTIGATION: 04/01/2024

DATE RECEIVED: 8/01/24

ANALYSIS REQUIRED: Gravimetry

REPORT OF ANALYSIS OFFICIAL: Sensitive – Personal

See attached sheet(s) for sample description and test results.

The results of this report have been approved by the signatory whose signature appears below.

For all administrative or account details please contact the Laboratory.

Increment and total pagination can be seen on the following pages.



Martin Mazereeuw
Manager

Date: 9/01/24

Gravimetric Determination of Respirable Dust

Client : Albie Louw

Job No.: S12937

Company: Hibbs & Associates

Date Sampled: 04/01/2024

COC No.: S12937-HW4791- Veolia Wetherill Park

Date Analysed: 09/01/2024

Laboratory Reference Number	Sample ID	Laboratory Filter ID	Pre-Weight (g)	Post-Weight (g)	Post-Pre (g)	Amount (mg)
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BLANK FILTERS ENTRIES

2024-0049-A-4	231117-32	231117-32	0.005 916	0.005 914	-0.000 002	
2024-0049-A-5	230905-1	230905-1	0.006 452	0.006 447	-0.000 005	
Average					-0.000 003 5	

SAMPLE FILTER ENTRIES

2024-0049-A-1	230905-6	230905-6	0.005 998	0.006 061	0.000 063	0.07
2024-0049-A-2	230905-68	230905-68	0.006 152	0.006 161	0.000 009	0.01
2024-0049-A-3	230905-2	230905-2	0.006 385	0.006 473	0.000 088	0.09

Gravimetric Determination of Respirable Dust

Client : Albie Louw

Job No.: S12937

Company: Hibbs & Associates

Date Sampled: 04/01/2024

COC No.: S12937-HW4791- Veolia Wetherill Park

Date Analysed: 09/01/2024

Method : WCA 191 Gravimetric Determination of Respirable Dust

Limit of Quantitation (LOQ) : 0.01 mg/Filter

Comment: Six (6) decimal balance used. The amount of dust on the filter has been blank corrected by subtracting the average blank value from the "post-pre" weight value.

Measurement Uncertainty : The measurement uncertainty is an estimate that characterises the range of values within which the true value is asserted to lie. The uncertainty estimate is an expanded uncertainty using a coverage factor of 2, which gives a level of confidence of approximately 95%. The estimate is compliant with the "ISO Guide to the Expression of Uncertainty in Measurement" and is a full estimate based on in-house method validation and quality control data. The measurement uncertainty relates to the analysis of the analyte on the sampling device and does not take into consideration the sampling parameters such as pump flowrate, time, temperature and pressure. Measurement Uncertainty is ± 0.02 mg.

The Manager
Hibbs & Associates Pty Ltd
PO Box 4266
HOMEBUSH NSW 2140

Lab. Reference: 2024-0108

Samples analysed as received

SAMPLE ORIGIN: S12937-HW4790-Veolia Wetherill Park

DATE OF INVESTIGATION: 04/01/2024

DATE RECEIVED: 12/01/24

ANALYSIS REQUIRED: Gravimetry

REPORT OF ANALYSIS OFFICIAL: Sensitive – Personal

See attached sheet(s) for sample description and test results.

The results of this report have been approved by the signatory whose signature appears below.

For all administrative or account details please contact the Laboratory.

Increment and total pagination can be seen on the following pages.



Martin Mazereeuw
Manager

Date: 15/01/24

Gravimetric Determination of Inhalable Dust

Client : Albie Louw

Job No.: S12937

Company: Hibbs & Associates

Date Sampled: 04/01/2024

COC No.: S12937-HW4790- Veolia Wetherill Park

Date Analysed: 15/01/2024

Laboratory Reference Number	Sample ID	Laboratory Filter ID	Pre-Weight (g)	Post-Weight (g)	Post-Pre (g)	Amount (mg)
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BLANK FILTERS ENTRIES

2024-0108-5	231218-4	231218-4	0.006 347	0.006 347	0.000 000	
2024-0108-6	231218-7	231218-7	0.005 921	0.005 918	-0.000 003	
2024-0108-7	231218-17	231218-17	0.005 155	0.005 156	0.000 001	
Average					-0.000 000 7	

SAMPLE FILTER ENTRIES

2024-0108-1	231218-5	231218-5	0.006 191	0.006 755	0.000 564	0.56
2024-0108-2	231218-15	231218-15	0.005 885	0.006 095	0.000 210	0.21
2024-0108-3	231218-16	231218-16	0.005 214	0.005 317	0.000 103	0.10
2024-0108-4	231218-19	231218-19	0.005 220	0.005 290	0.000 070	0.07

Gravimetric Determination of Inhalable Dust

Client : Albie Louw

Job No.: S12937

Company: Hibbs & Associates

Date Sampled: 04/01/2024

COC No.: S12937-HW4790- Veolia Wetherill Park

Date Analysed: 15/01/2024

Method : WCA 190 Gravimetric Determination of Inhalable Dust

Limit of Quantitation (LOQ) : 0.01 mg/Filter

Comment: Six (6) decimal balance used. The amount of dust on the filter has been blank corrected by subtracting the average blank value from the "post-pre" weight value.

Measurement Uncertainty : The measurement uncertainty is an estimate that characterises the range of values within which the true value is asserted to lie. The uncertainty estimate is an expanded uncertainty using a coverage factor of 2, which gives a level of confidence of approximately 95%. The estimate is compliant with the "ISO Guide to the Expression of Uncertainty in Measurement" and is a full estimate based on in-house method validation and quality control data. The measurement uncertainty relates to the analysis of the analyte on the sampling device and does not take into consideration the sampling parameters such as pump flowrate, time, temperature and pressure. Measurement Uncertainty is ± 0.02 mg.

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HIBBS & ASSOCIATES PTY LTD

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