Air Quality Report

Prepared for:

TCON Construction

Address:

400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta NSW

Signees		
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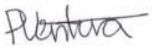
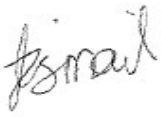
Assessed by:	Patrick Ventura Environmental Consultant / Occupational Hygienist B.Sc. LAA001615	
Reviewed by:	Zeyn Ismail Environmental Consultant / Occupational Hygienist M. Sc. Env. Sc LAA001123	

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400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta

Report Details	
Report type	Air Quality Report / AQ1
Report version	Version 1 final
Job Number	8195
Client	Tcon Construction
Date of Works	11.05.2023
Date of Report	26.05.2023
Address	400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta NSW
Analytes	3x MultiRAE Lite(PGM-6208) measuring: - Oxygen (O_2) - Nitric Oxide (NO) - Nitrogen Dioxide (NO_2) - Sulfur Dioxide (SO_2) 3x Diesel Particulate Cassettes measuring: - Diesel Particulate Matter (DPM) – as elemental carbon 3x Qtrak (VelociCalc/Q-Trak 7575) measuring: - Carbon Dioxide (CO_2). - Temperature (Deg C) - Humidity (%rh) - Carbon Monoxide (CO) 3x DRX Dust Monitor - Particles less than 2.5 micrometres diameter (PM2.5) - Particles less than 10 micrometres diameter (PM10) - Total Particles (mg/m^3) (Milligrams per cubic meter of air) 3x Type 1 Sound Level Meters (dB)

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1 INTRODUCTION

1.1. General

EnviroX Consulting was engaged by TCON Constructions (the client) to prepare an Air Quality Report (AQ) for the site at 400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta NSW to obtain background air quality data prior to construction.

Monitoring was carried out within the site to determine the likely exposure to site visitors to the agreed upon contaminants of potential concern (CoPCs), listed above as analytes.

The monitoring period was carried out within the site during the month of May 2023, considered consistent with typical day of vehicle traffic.

2. Restrictions and Limitations Upon Air Monitoring Report

This report is provided for the exclusive use of the client for the purposes as described in the report. It should not be used by or relied upon for other projects or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of EnviroX, does so entirely at its own risk and without recourse to EnviroX for any loss or damage.

This Air Quality Report is restricted to the locations of the air monitoring equipment detailed below observed at the time of the works. Areas outside the scope of this report and may differ in results.

3. Scope of Work

The scope of the works during the monitoring period is to measure ambient air through one (1) Air Quality Qtrak, MultiRAE, DPM Cassettes, Type 1 sound level meters and DRX across three different locations Transmitter Station located within the Site. The Air Quality Monitoring carried out over the course of this period was carried out for the following stage of works:

- Pre-Construction Phase (Background Monitoring): This stage of monitoring will be used to determine the ambient background concentrations of the airborne CoPC prior to any works being carried out within the site.

4. Relevant Legislation

The monitoring program will be carried out as per and with reference to the following standards:

- Association of Australian Acoustical Consultants (AAAC) Guideline for Child Care Acoustic Assessment 2013;
- AS/NZS 3580.7.1 – 2011 / Amdr 1-2012 - Determination of Carbon Monoxide-Direct Reading Instrumental Method;
- AS/NZS 3580.5.1-2011 - Determination of Oxides of Nitrogen-Chemiluminescence Method;
- AS/NZS 3580.6.1-2011 - Determination of Ozone-Direct Reading Instrumental Method;
- AS/NZS 3580.4.1-2008 - Determination of Sulfur Dioxide-Direct Reading Instrumental Method;
- AS/NZS 3580.9.8-2008 - Determination of Suspended Particulate Matter-PM_{10} continuous direct mass method using tapered element oscillating microbalance analyser;
- AS/NZS 3580.9.13:2013 - Determination of Suspended Particulate Matter-$PM_{2.5}$ continuous direct mass method using a tapered element oscillating microbalance monitor;
- Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (NOHSC:
- 3008 - 1995), 1995;
- National Code of Practice for Noise Management and Protection of Hearing at Work [NOHSC: 2009(2004)] 3rd Edition;
- National Environmental Protection Council (2016) National environment protection (Ambient Air Quality) measure – as amended. Government of Australia: Canberra, ACT (Air NEPM);
- NSW DECC under the *Contaminated Land Management Act;*
- Occupational Health and Safety Act 1997;
- Workplace exposure standards for airborne contaminants (2019);
- Protection of the Environment Operations Act 1997;
- WHS Regulation 2017; and
- WHS Act 2011.

5. SAMPLING AND ANALYSIS METHODOLOGY

5.1 Equipment

Air quality monitoring / measurements of the CoPCs was carried out using Qtrak, MultiRAE, DRX, SLM and DPM Cassettes.

5.2 Monitoring Location

The air monitoring equipment was placed within the Site across three locations across the site as detailed in **Figure 1** below.

This location was chosen within consideration to the following:

1. Proximity to main roads;
2. Proximity to building locations; and
3. Security of location.

5.3 Dust Sampling

All inhalable dusts are considered harmful in some degree. Even where there is a slight danger to the lungs, there is likely some adverse effect on the respiratory system, particularly to asthmatics or allergy sufferers. Dust particles of size ranging from 0.001 to 0.1mm (1 to 100 microns) pose a threat to health when they are airborne, creating an uncomfortable environment (irritation to eyes, ears, nose, throat, skin) and possibility resulting in damage to the tissues of the lungs. Included among potentially harmful dusts are silica, asbestos, talc and cotton dust – each of which can produce its own form of lung damage when dust control is inadequate. The most harmful dust is fractions less than 5 microns in size, that is, particles smaller than 0.005m.

Dust particles vary in size, and can be classed as coarse (non-inhalable) to fine (inhalable), to very fine (respirable). Depending on the size of particles, the effect on humans varies. Coarse particles generally are only able to reach the inside of the mouth, throat or nose, though the smaller particles can settle deeper in the respiratory tract and lungs. This can lead to allergic reactions or asthma attacks, trigger serious breathing-related problems and contribute to cardiovascular disease (refer to Airborne Dust and Health Effects Community Fact Sheet, Health and Human Services Victoria, 2015)

Dust levels was assessed using three DRX Dust Monitors positioned across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.4 Methodology

Sampling was carried out within the subject areas in order to determine if there are any potential contaminants present that occupants of the site may be exposed to. Representative air sampling aims to indicate whether further investigation is necessary.
Contaminants were assessed against their specific Short Term Exposure Limit (STEL) and 8-hour Time-

weighted Average (TWA). These definitions are described in Workplace Exposure Standards for Airborne Contaminants by Safe Work Australia:

There are 3 different types of WES values:

Time Weighted Average (TWA). If the critical effect on a worker is chronic (long-term) or sub-chronic (medium-term), the substance is given a TWA value. This is an 8 hour time weighted average (a worker's average airborne exposure in any 8 hour work shift of a 40 hour week). Most substances in the WES have a TWA.

Short Term Exposure Limit (STEL). If the critical effect of the substance is acute (short term), it is generally given a STEL value. This a 15 minute time weighted average.

Peak Limitation (peak). If the critical effect of a substance is acute and very dangerous, it is given a Peak value. This is the maximum concentration over the shortest possible time frame that can be measured, to a maximum of 15 minutes.

While noise levels were assessed against the LA,eq and LC,peak values that were detected by the noise monitors.

LA,eq

"When a noise varies over time, the LA,eq is the equivalent continuous sound which would contain the same sound energy as the time varying sound". Typically referred to as an average.
LA,eq: 85 db

LC,peak

A C-weighted peak (instantaneous) sound pressure level, measured by a sound level meter with a peak detector-indicator characteristic complying with AS 1259.1 (NOHSC 1007).
LC,peak: 140 db

5.5 Air & Noise Monitoring

It is recognised by the NSW Department of Planning, vehicle exhaust emissions can have a significant influence on local air quality in urban and suburban areas. Localised effects can be caused as a direct result of the compounds emitted from vehicle exhausts.

Motor vehicles emit a variety of air pollutants that are known to be associated with adverse health impacts. Common air pollutants emitted by motor vehicles include fine particles, nitrogen oxides and volatile organic compounds. Exposure to these substances at particular concentrations is associated with a range of short and long term health effects, including on the heart and lungs (WHO 2000, WHO 2003, NEPC 2002, Environment Australia 2001).

5.5A Carbon Monoxide

Carbon monoxide (CO) may originate from vehicle exhaust and can enter buildings through poorly located air intake ducts and from basement car parks via stairwells and lift shafts. Major sources of CO are cigarette smoke and various combustion appliances such as gas stoves. Dizziness, nausea, and fatigue have been linked with low levels of carbon monoxide.

CO was assessed using a MultiRAE gas monitor. Monitoring was conducted in order to obtain a baseline reference level of a typical day at the residence. A Multi gas data logger was placed across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.5B Carbon Dioxide

Carbon Dioxide (CO2) arises from human respiration, cigarette smoke and vehicle emissions. This gas is a useful indication of the 'staleness' of air and the adequacy of a ventilation system. CO2 only becomes a 'pollutant' at very high levels.

BOMA Guidelines suggest that approximately 95% of building occupants are likely to find indoor air acceptable, if the level of CO2 remains below 800 parts per million (ppm).

CO2 was assessed using a MultiRAE monitor. Monitoring was conducted in order to obtain a baseline reference level of a typical day at the residence. A Multi gas data logger was placed across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.5C Nitrogen Monoxide

Nitrogen Monoxide or Nitric Oxide (NO) is an important signaling molecule in the body of mammals, including humans. It is also an air pollutant produced by cigarette smoke, power plants and automobile engines.

NO was assessed using a MultiRAE monitor. Monitoring was conducted in order to obtain a baseline reference level of a typical day at the residence. A Multi gas data logger was placed across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.5D Nitrogen Dioxide

Nitrogen Dioxide (NO2) is the chemical compound, which exists as a radical in nature. This is an intermediate compound in the industrial synthesis of nitric acid, millions of tons are produced each year. This reddish-brown toxic gas has a characteristic sharp, biting odour and is a prominent air pollutant. NO2 as well as NO are emitted from high temperature combustion.

NO2 was assessed using a MultiRAE monitor. Monitoring was conducted in order to obtain a baseline reference level of a typical day at the residence. A Multi gas data logger was placed across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.6 Diesel Particulate Matter (DPM)

DPM is a component of the emissions arising from diesel-powered motor vehicles. Acute effects of DPM exposure in humans include irritation of the eyes and respiratory organs, as well as coughing and nausea. Chronic effects can increase the risk of lung and heart diseases, including lung cancer (refer to Guide to Managing Risks of Exposure to Diesel Exhaust in the Workplace, Safe Work Australia, 2015).

5.7 Noise

Noise levels were assessed using three (3) 3x Type 1 Sound Level Meters placed across three locations, see Appendix B – aerial photograph, varying from 0.5m to 2m above ground level (agl).

5.8 Contaminants of Potential Concern (CoPC)

As agreed, upon with the client, and outlined within EnviroX 2023, the air quality monitoring program for 400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta NSW was based around the measurement of the following CoPCs, comparison against the current site assessment criteria / thresholds as outlined within the Workplace Exposure Standards For Airbourne Contaminants (Safe Work Australia 2019):

3 x MultiRAE Lite(PGM-6208) measuring:
- Oxygen (O_2)
- Nitrogen Monoxide (NO)
- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2).

3x Diesel Particulate Cassettes measuring:
- Diesel Particulate Matter (DPM)

3x Qtrak (VelociCalc/Q-Trak 7575) measuring:
- Carbon Dioxide (CO_2).
- Temperature (Deg C)
- Humidity (%rh)
- Carbon Monoxide (CO)

3x DRX (DustTrak™ DRX Aerosol Monitor 8533) measuring (mg/m^3) (Milligrams per cubic meter of air):
- PM2.5
- PM10
- Total

3x Type 1 Sound Level Meters measuring:
- Sound dB

Gases:

The following gases were measured using calibrated and alarmed MultiRae Gas Detectors:

- Oxygen (O_2). Oxygen is not a toxic gas. This was measured to ensure the minimum levels (20% of Oxygen for human respiration) were maintained.

Gaseous products of combustion and respiration were monitored:

- Carbon Monoxide (CO)
- Carbon Dioxide (CO_2).
- Nitrogen Monoxide (NO)
- Nitrogen Dioxide (NO_2).
- Sulphur Dioxide (SO_2).

Diesel Particulate Matter:

Diesel Particulate Matter (DPM) is a component of diesel exhaust that includes soot particles made up primarily of carbon. DPM is classified as carcinogenic.

- DPM monitors using DPM cassettes attached to calibrated sampling pumps at the flow rate of 2.0 L/min was used to collect DPM airborne particles. The laboratory analysis of DPM samples was in accordance with *NIOSH Method 5040 Diesel Particulate Matter (as Elemental Carbon).*

5.9 Sampling Frequency

The Data logging, Air Quality Monitoring, was set up on a continuous 24-hour CoPC measurement and data logging, with a 1-minute logging interval.

Such a setup means the instrument measures the airborne CoPC concentration every 1 minute, and then calculating and logging the average. In this way, brief peaks in concentration associated with passing trucks or strong gusts of wind, which can be in the order of mg/m^3, are evened out, thus preventing any redundant alarming.

6 RESULTS

6.1 MultiRAE Results (O_2, NO_2, NO, SO_2)

	Location 1			
Sensor:	**O_2**	**NO**	**NO2**	**SO2**
Units:	(%)	(ppm)	(ppm)	(ppm)
Sensor SN:	M01C015704	M01C015704	M01C015704	M01C015704
Average:	20.9	0	0	0
Minimum:	20.9	0	0	0
Maximum:	20.9	0.5	0.1	0
Exposure Standards:	N/A	25	3	2

	Location 2			
Sensor:	**O_2**	**NO**	**NO2**	**SO2**
Units:	(%)	(ppm)	(ppm)	(ppm)
Sensor SN:	M01C020581	M01C020581	M01C020581	M01C020581
Average:	20.9	0.003	0	0
Minimum:	20.9	0	0	0
Maximum:	20.9	0.5	0.1	0
Exposure Standards:	N/A	25	3	2

	Location 3			
Sensor:	**OXY**	**NO**	**NO2**	**SO2**
Units:	(%)	(ppm)	(ppm)	(ppm)
Sensor SN:	M01C015626	M01C015626	M01C015626	M01C015626
Average:	20.9	0.23	0.037	0
Minimum:	20.9	0	0	0
Maximum:	20.9	1	0.4	0
Exposure Standards:	N/A	25	3	2

Nitrogen Dioxide was not detected above either TWA or STEL standard values during the period of works.

Nitric Oxide was not detected above either TWA standard value during the period of works.

Sulphur Dioxide was not detected above either TWA or STEL standard values during the period of works.

6.2 QTRAK Results (CO_2, Temperature, Humidity, CO)

	Location 1			
Sensor:	**CO2**	**Temperature**	**Humidity**	**CO**
Units:	ppm	degree C	%rh	ppm
Sensor SN:	7575X2048003	7575X2048003	7575X2048003	7575X2048003
Average:	384.3	18.9	53.1	0.0005
Minimum:	492	11.4	47.9	0
Maximum:	355	24.8	58.9	0.1
Exposure Standards:	5000	N/A	N/A	30

	Location 2			
Sensor:	**CO2**	**Temperature**	**Humidity**	**CO**
Units:	ppm	degree C	%rh	ppm
Sensor SN:	7575X1948013	7575X1948013	7575X1948013	7575X1948013
Average:	397.9	25.6	41.0	0
Minimum:	379	12.2	23	0
Maximum:	481	41	59.8	0
Exposure Standards:	5000	N/A	N/A	30

	Location 3			
Sensor:	**CO2**	**Temperature**	**Humidity**	**CO**
Units:	ppm	degree C	%rh	ppm
Sensor SN:	7575X2046002	7575X2046002	7575X2046002	7575X2046002
Average:	419.7	16.9	55.3	0
Minimum:	396	11.8	48.3	0
Maximum:	498	20.6	59.1	0
Exposure Standards:	5000	N/A	N/A	30

Carbon Dioxide was not detected above either TWA or STEL standard values during the period of works. Carbon Monoxide was not detected above either TWA or STEL standard values during the period of works.

6.3 DRX Results (Dust - PM2.5, PM10 & total)

	Location 1		
Sensor:	**PM2.5**	**PM10**	**PM Total**
Units:	mg/m^3	mg/m^3	mg/m^3
Sensor SN:	8534121702	8534121702	8534121702
Average:	0.016	0.022	0.025
Exposure Standards:	0.025mg/m3	0.050mg/m3	0.1 mg/m3

	Location 2		
Sensor:	**PM2.5**	**PM10**	**PM Total**
Units:	mg/m^3	mg/m^3	mg/m^3
Sensor SN:	8533121307	8533121307	8533121307
Average:	0.013	0.014	0.015
Exposure Standards:	0.025mg/m3	0.050mg/m3	0.1 mg/m3

	Location 3		
Sensor:	**PM2.5**	**PM10**	**PM Total**
Units:	mg/m^3	mg/m^3	mg/m^3
Sensor SN:	8533131002	8533131002	8533131002
Average:	0.013	0.016	0.016
Exposure Standards:	0.025mg/m3	0.050mg/m3	0.1 mg/m3

Respirable Dust: 0.1 mg/m3 (TWA for an 8 hour shift)
Standard in Ambient Air: PM10 = 50µg/m3
NEPM standard 1 day: PM2.5 = 25µg/m3

6.4 SLM Results (Sound - dB)

	Location 1			
Sensor:	dB	dB	dB	dB
Units:	LAeq (dB)	LEX8	LAE	LCPeak (db)
Sensor SN:	4257400	4257400	4257400	4257400
Average:	65	65	106.7	109.6
Exposure Standards:	85 (dB)	N/A	N/A	140 (dB)

	Location 2			
Sensor:	dB	dB	dB	dB
Units:	LAeq (dB)	LEX8	LAE	LCPeak (db)
Sensor SN:	G066240	G066240	G066240	G066240
Average:	57.8	54.2	98.8	99.9
Exposure Standards:	85 (dB)	N/A	N/A	140 (dB)

	Location 3			
Sensor:	dB	dB	dB	dB
Units:	LAeq (dB)	LEX8	LAE	LCPeak (db)
Sensor SN:	PN2342	PN2342	PN2342	PN2342
Average:	70.8	71.4	116.0	116.7
Exposure Standards:	85 (dB)	N/A	N/A	140 (dB)

Legend:

LAeq (dB)

Leq Equivalent Continuous Sound Level. This is the most commonly used value used to describe sound levels that vary over time. An Leq is the level that would produce the same sound energy over a stated period of time when using a 3 dB exchange rate. It is defined as the sound pressure level of a noise fluctuating over a period of time T, expressed as the amount of average energy. Commonly written as Leq, LAeq, LAeq,t or LAT

LEX8

LEX,8h See LEP,d

LEP,d Daily personal noise exposure. Also see LEX,8h. The LEP,d is the average A-weighted noise exposure level for a nominal 8 hour working day. This is also known as the LEX,8h. LEP,d is calculated from the measured sound exposure, the measurement time and the reference 8 hour day.

LAE

LAE Sound Exposure Level (SEL) with 'A' frequency weighting. See LE

LE (SEL) This is an Leq normalised to 1 second. It can be used to compare the energy of noise events which have different

time durations. For example if a noise level of 90 dB last for 1 second then the LE = 90 dB. If the same noise event lasted 10 seconds the LE would be 100 dBA. If it lasted 20 seconds the LE would be 103 dBA and so on. The LE is the Sound Exposure expressed as a logarithm and basically Leq is the LE divided by time. This will usually be displayed as LAE, LCE or LZE

LCPeak (dB)

C-weighting refers to a standardised frequency response used in sound measuring instruments, specified in Australian Standard AS 1259.11. C' Weighting 'C' weighting gives much more emphasis to low frequency sounds than the 'A' weighting response and is essentially flat or linear between 31,5Hz and 8kHz, the two -3dB or 'half power' points. In addition, Peak Sound Pressure measurements are made using the 'C' Frequency Weighting. Measurements made with this frequency weighting will be displayed as dB(C) or dBC. For example, as LCeq, LCPeak, LCE etc where the C shows the use of 'C' Weighting.

Note: Historically it was developed to model the human ear response at high sound levels. It is now used to measure peak noise levels.

A-weighting refers to a standardised frequency response used in sound measuring instruments as specified in Australian Standard AS 1259.11. Note: Historically it was developed to model the human ear response at low sound levels. However, A-weighting is now frequently specified for measuring sounds irrespective of level and studies have shown a relationship between the long-term exposure to A-weighted sound pressure levels and hearing damage risk.

6.5 DPM Results

Time	0700-1500
Location 1	<0.0025mg/m^3
Location 2	<0.0025mg/m^3
Location 3	<0.0025mg/m^3

8-hour TWA DPM as Elemental Carbon = 0.1mg/m^3
12-hour TWA DPM as Elemental Carbon = 0.05mg/m^3

Refer to Appendix A – laboratory results

7 CONCLUSIONS

Based on the information presented in this report, it is the opinion of EnviroX Consulting Pty Ltd that:

- All relevant CoPCs measured on the 11.05.2023 were below the adopted assessment criteria as mentioned in the results section of this report; and

- All CoPCs are classed as acceptable according to the relevant standards.

8 LIMITATIONS

This report is provided for the exclusive use of the client for the purposes as described in the report. It should not be used by or relied upon for other projects or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of EnviroX, does so entirely at its own risk and without recourse to EnviroX for any loss or damage.

This report is restricted to the site as detailed above and of the specific CoPC, and should only be used as an evaluation of the localised air quality during the period of monitoring outlined within the body of this report.

This report does not provide a complete evaluation of the condition of the site; it is limited to the scope defined as above. Should information become available regarding site conditions including previously unknown sources of contamination, EnviroX reserves the right to review the report in relation to the additional information.

Appendix A – Laboratory Results

Summary - Location 1

Unit Name	MultiRAE Lite(PGM-6208)			
Unit SN	M01C015704			
Unit Firmware Ver	V1.50			
Running Mode	Hygiene Mode			
Datalog Mode	Auto			
Diagnostic Mode	No			
Stop Reason	Power Down			
Site ID	SITE0000			
User ID	USER0000			
Begin	11/05/2023 7:56			
End	11/05/2023 17:27			
Sample Period(s)	60			
Number of Records	571			
Sensor	NO(ppm)	OXY(%)	NO2(ppm)	SO2(ppm)
Sensor SN	SC03740022N8	SC03B50323V6	SC03750125Q3	SC03AF0014A5
Measure Type	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real
Span	25	18	5	5
Span 2	N/A	N/A	N/A	N/A
Low Alarm	25	19.5	1	2
High Alarm	50	23.5	10	10
Over Alarm	250	30	20	20
STEL Alarm	25	N/A	1	5
TWA Alarm	25	N/A	1	2
Measurement Gas(CF)	N/A	N/A	N/A	N/A
Calibration Time	8/05/2023 13:07	8/05/2023 13:04	8/05/2023 13:13	8/05/2023 13:10
Peak	0	20.9	0	0
Min	0	20.9	0	0
Average	0	20.9	0	0

Summary - Location 2

Unit Name	MultiRAE Lite(PGM-6208)			
Unit SN	M01C020581			
Unit Firmware Ver	V1.52			
Running Mode	Hygiene Mode			
Datalog Mode	Auto			
Diagnostic Mode	No			
Stop Reason	Power Down			
Site ID	SITE0000			
User ID	USER0000			
Begin	11/05/2023 7:44			
End	11/05/2023 17:18			
Sample Period(s)	60			
Number of Records	574			
Sensor	NO2(ppm)	OXY(%)	NO(ppm)	SO2(ppm)
Sensor SN	SC03750133Q3	SC03420835C7	SC03740048Q2	SC03AF0145T5
Measure Type	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real
Span	5	18	25	5
Span 2	N/A	N/A	N/A	N/A
Low Alarm	1	19.5	25	2
High Alarm	9	23.5	50	10
Over Alarm	20	30	250	20
STEL Alarm	5	N/A	25	5
TWA Alarm	3	N/A	25	2
Measurement Gas(CF)	N/A	N/A	N/A	N/A
Calibration Time	8/05/2023 10:24	8/05/2023 10:27	8/05/2023 10:29	8/05/2023 10:34
Peak	0	20.9	0.5	0
Min	0	20.9	0	0
Average	0	20.9	0	0

Summary - Location 3

Unit Name	MultiRAE Lite(PGM-6208)
Unit SN	M01C015626
Unit Firmware Ver	V1.54
Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Power Down
Site ID	SITE0000
User ID	USER0000
Begin	11/05/2023 8:05
End	11/05/2023 11:32
Sample Period(s)	60
Number of Records	206

Sensor	NO2(ppm)	OXY(%)	NO(ppm)	SO2(ppm)
Sensor SN	SC03750099D3	SC03B50001U6	SC03740134U8	SC03AF0317U8
Measure Type	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real
Span	5	18	25	5
Span 2	N/A	N/A	N/A	N/A
Low Alarm	1	19.5	25	2
High Alarm	10	23.5	50	10
Over Alarm	20	30	250	20
STEL Alarm	1	N/A	25	5
TWA Alarm	1	N/A	25	2
Measurement Gas(CF)	N/A	N/A	N/A	N/A
Calibration Time	8/05/2023 11:56	8/05/2023 12:28	8/05/2023 12:00	8/05/2023 12:03
Peak	0	20.9	1	0
Min	0	20.9	0	0
Average	0	20.9	0	0

Summary - Location 3

Unit Name	MultiRAE Lite(PGM-6208)
Unit SN	M01C015626
Unit Firmware Ver	V1.54
Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Power Down
Site ID	SITE0000
User ID	USER0000
Begin	11/05/2023 11:39
End	11/05/2023 17:36
Sample Period(s)	60
Number of Records	357

Sensor	NO2(ppm)	OXY(%)	NO(ppm)	SO2(ppm)
Sensor SN	SC03750099D3	SC03B50001U6	SC03740134U8	SC03AF0317U8
Measure Type	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real	Min; Avg; Max; Real
Span	5	18	25	5
Span 2	N/A	N/A	N/A	N/A
Low Alarm	1	19.5	25	2
High Alarm	10	23.5	50	10
Over Alarm	20	30	250	20
STEL Alarm	1	N/A	25	5
TWA Alarm	1	N/A	25	2
Measurement Gas(CF)	N/A	N/A	N/A	N/A
Calibration Time	8/05/2023 11:56	8/05/2023 12:28	8/05/2023 12:00	8/05/2023 12:03
Peak	0.4	20.9	1	0
Min	0	20.9	0	0
Average	0.1	20.9	0.5	0

TrakPro Version 4.70 ASCII Data File

Summery - Location 1

Model:	VelociCalc/Q-Trak 7575
Model Number:	7575-X-NB
Serial Number:	7575X2048003
Probe Model Number	982
Probe Serial Number	P08040045
Test ID:	1
Test Abbreviation:	Test 001
Start Date:	11/05/2023
Start Time:	7:24:56
Duration (dd:hh:mm:ss):	0:09:42:00
Log Interval (mm:ss):	1:00
Number of points:	582
Notes:	Test 001

Statistics	Channel:	CO2	T	H	CO
	Units:	ppm	deg C	%rh	ppm
	Average:	384	19	53.1	0
	Minimum:	355	11.4	47.9	0
	Time of Minimum:	16:40:56	7:49:56	14:58:56	7:28:56
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	492	24.8	58.9	0.1
	Time of Maximum:	7:25:56	13:28:56	9:12:56	13:32:56
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration	Meter:	24/10/2022
Calibration	Sensor:	
	Cal. date	

Summmary - Location 2

Model:	VelociCalc/Q-Trak 7575
Model Number:	7575-X-NB
Serial Number:	7575X1948013
Probe Model Number	982
Probe Serial Number	P19480003
Test ID:	1
Test Abbreviation:	Test 001
Start Date:	11/05/2023
Start Time:	7:26:25
Duration (dd:hh:mm:ss):	0:06:24:00
Log Interval (mm:ss):	1:00
Number of points:	384
Notes:	Test 001

Statistics	Channel:	CO2	T	H	CO
	Units:	ppm	deg C	%rh	ppm
	Average:	404	25.7	42.7	0
	Minimum:	383	12.2	23	0
	Time of Minimum:	12:35:25	7:42:25	12:02:25	7:28:25
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	481	41	59.8	0
	Time of Maximum:	8:24:25	11:38:25	9:19:25	7:28:25
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration	Meter:	27/10/2021
Calibration	Sensor:	
	Cal. date	

Summmary - Location 2

Model:	VelociCalc/Q-Trak 7575
Model Number:	7575-X-NB
Serial Number:	7575X1948013
Probe Model Number	982
Probe Serial Number	P19480003
Test ID:	2
Test Abbreviation:	Test 002
Start Date:	11/05/2023
Start Time:	13:54:44
Duration (dd:hh:mm:ss):	0:03:18:00
Log Interval (mm:ss):	1:00
Number of points:	198
Notes:	Test 002

Statistics	Channel:	CO2	T	H	CO
	Units:	ppm	deg C	%rh	ppm
	Average:	387	25.3	37.7	0
	Minimum:	379	18.7	30.6	0
	Time of Minimum:	16:44:44	17:12:44	15:17:44	13:55:44
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	403	29.8	43.4	0
	Time of Maximum:	15:10:44	15:12:44	17:12:44	13:55:44
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration	Meter:	27/10/2021
Calibration	Sensor:	
	Cal. date	

Summary - Location 3

Model:	VelociCalc/Q-Trak 7575
Model Number:	7575-X-NB
Serial Number:	7575X2046002
Probe Model Number	982
Probe Serial Number	P20430042
Test ID:	1
Test Abbreviation:	Test 001
Start Date:	11/05/2023
Start Time:	7:27:24
Duration (dd:hh:mm:ss):	0:08:33:00
Log Interval (mm:ss):	1:00
Number of points:	513
Notes:	Test 001

Statistics	Channel:	CO2	T	H	CO
	Units:	ppm	deg C	%rh	ppm
	Average:	422	16.8	55	0
	Minimum:	396	11.8	48.3	0
	Time of Minimum:	12:08:24	8:10:24	7:39:24	7:29:24
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023

	Maximum:	498	20.6	58.2	0
	Time of Maximum:	7:28:24	15:29:24	12:08:24	7:29:24
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Calibration	Meter:	24/10/2022			
Calibration	Sensor:				
	Cal. date				

Summary - Location 3

Model:	VelociCalc/Q-Trak 7575
Model Number:	7575-X-NB
Serial Number:	7575X2046002
Probe Model Number	982
Probe Serial Number	P20430042
Test ID:	2
Test Abbreviation:	Test 002
Start Date:	11/05/2023
Start Time:	16:02:46
Duration (dd:hh:mm:ss):	0:01:12:00
Log Interval (mm:ss):	1:00
Number of points:	72
Notes:	Test 002

Statistics	Channel:	CO2	T	H	CO
	Units:	ppm	deg C	%rh	ppm
	Average:	400	18	57.9	0
	Minimum:	397	16.5	54	0
	Time of Minimum:	16:21:46	17:14:46	16:04:46	16:04:46
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	407	19.3	59.1	0
	Time of Maximum:	17:00:46	16:03:46	17:03:46	16:04:46
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Calibration	Meter:	24/10/2022			
Calibration	Sensor:				
	Cal. date				

TrakPro Version 4.70 ASCII Data File

Location 1

Model:	DustTrak DRX
Model Number:	8534
Serial Number:	8534121702
Test ID:	29
Test Abbreviation:	TEST 1_029
Start Date:	11/05/2023
Start Time:	7:52:41
Duration (dd:hh:mm:ss):	0:00:01:00
Log Interval (mm:ss):	0:01
Number of points:	60
Notes:	

Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.014	0.014	0.015	0.018	0.022
	Minimum:	0.011	0.011	0.012	0.013	0.013
	Time of Minimum:	7:52:51	7:52:51	7:52:51	7:52:51	7:53:10
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.039	0.039	0.04	0.048	0.073
	Time of Maximum:	7:52:49	7:52:49	7:52:49	7:52:49	7:52:45
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration		
	Sensor:	AEROSOL
	Cal. date	23/06/2022

Model:	DustTrak DRX
Model Number:	8534
Serial Number:	8534121702
Test ID:	30
Test Abbreviation:	TEST 1_030
Start Date:	11/05/2023
Start Time:	10:01:02
Duration (dd:hh:mm:ss):	0:00:01:00
Log Interval (mm:ss):	0:01
Number of points:	60
Notes:	

Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.009	0.009	0.01	0.013	0.015
	Minimum:	0.007	0.007	0.008	0.008	0.008
	Time of Minimum:	10:01:10	10:01:10	10:01:11	10:01:11	10:01:11
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.016	0.017	0.017	0.028	0.048
	Time of Maximum:	10:01:58	10:01:58	10:01:58	10:01:48	10:01:58
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration		
	Sensor:	AEROSOL
	Cal. date	23/06/2022

Model Number:	8534
Serial Number:	8534121702
Test ID:	31
Test Abbreviation:	TEST 1_031
Start Date:	11/05/2023
Start Time:	10:59:39

Duration (dd:hh:mm:ss):	0:00:23:00
Log Interval (mm:ss):	0:01
Number of points:	1424
Notes:	

Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.007	0.008	0.009	0.011	0.012
	Minimum:	0.004	0.004	0.006	0.006	0.006
	Time of Minimum:	11:03:20	11:03:20	11:00:24	11:00:24	11:00:24
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.036	0.037	0.037	0.048	0.107
	Time of Maximum:	10:59:42	10:59:42	10:59:42	10:59:42	11:15:50
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration		
	Sensor:	AEROSOL
	Cal. date	23/06/2022

Model Number:	8534
Serial Number:	8534121702
Test ID:	32
Test Abbreviation:	TEST 1_032
Start Date:	11/05/2023
Start Time:	11:24:41
Duration (dd:hh:mm:ss):	0:02:52:00
Log Interval (mm:ss):	0:01
Number of points:	10379
Notes:	

Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.016	0.017	0.019	0.023	0.027
	Minimum:	0.004	0.005	0.005	0.005	0.005
	Time of Minimum:	12:10:03	11:25:51	12:05:11	12:08:54	12:08:54
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.83	0.9	1.07	1.46	1.75
	Time of Maximum:	13:26:33	13:26:33	13:26:33	13:26:33	13:26:33
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023

Calibration		
	Sensor:	AEROSOL
	Cal. date	23/06/2022

Location 2

Model:	DustTrak DRX
Model Number:	8533
Serial Number:	8533121307
Test ID:	1
Test Abbreviation:	MANUAL_001
Start Date:	11/05/2023
Start Time:	7:48:12
Duration (dd:hh:mm:ss):	0:09:23:00
Log Interval (mm:ss):	1:00
Number of points:	563
Notes:	

Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.012	0.013	0.013	0.014	0.015
	Minimum:	0.007	0.007	0.008	0.009	0.009

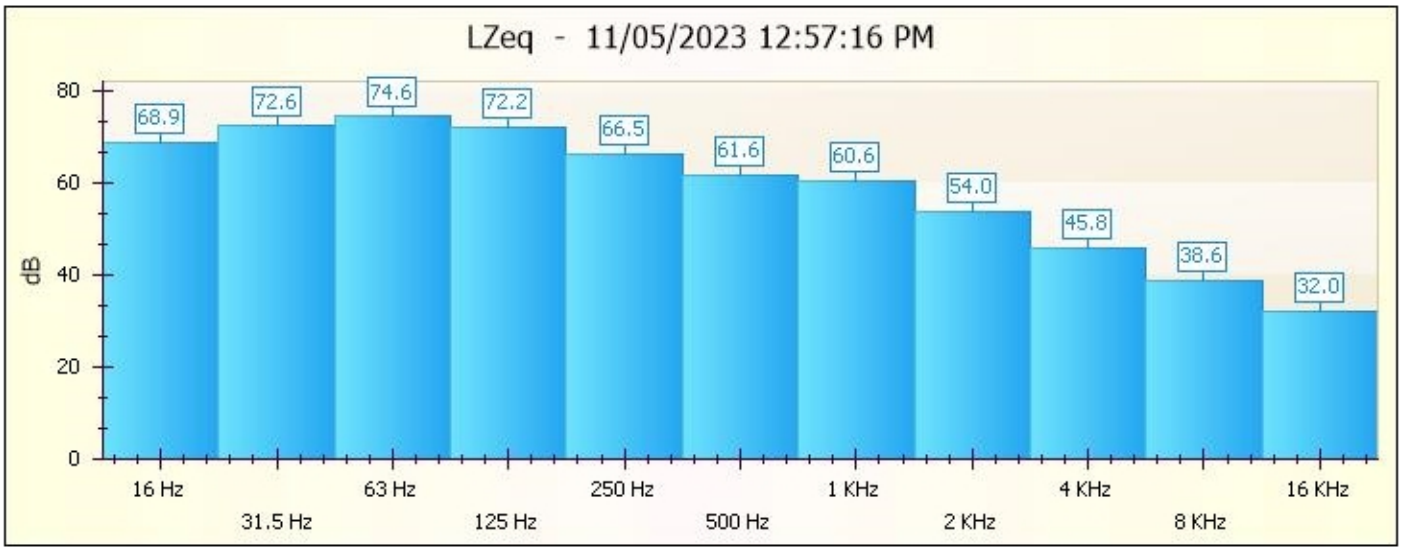
	Time of Minimum:	11:08:12	11:08:12	11:08:12	10:37:12	10:37:12
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.045	0.046	0.047	0.048	0.05
	Time of Maximum:	8:26:12	8:26:12	8:26:12	8:26:12	8:26:12
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Calibration	Sensor:	AEROSOL				
	Cal. date	23/06/2022				

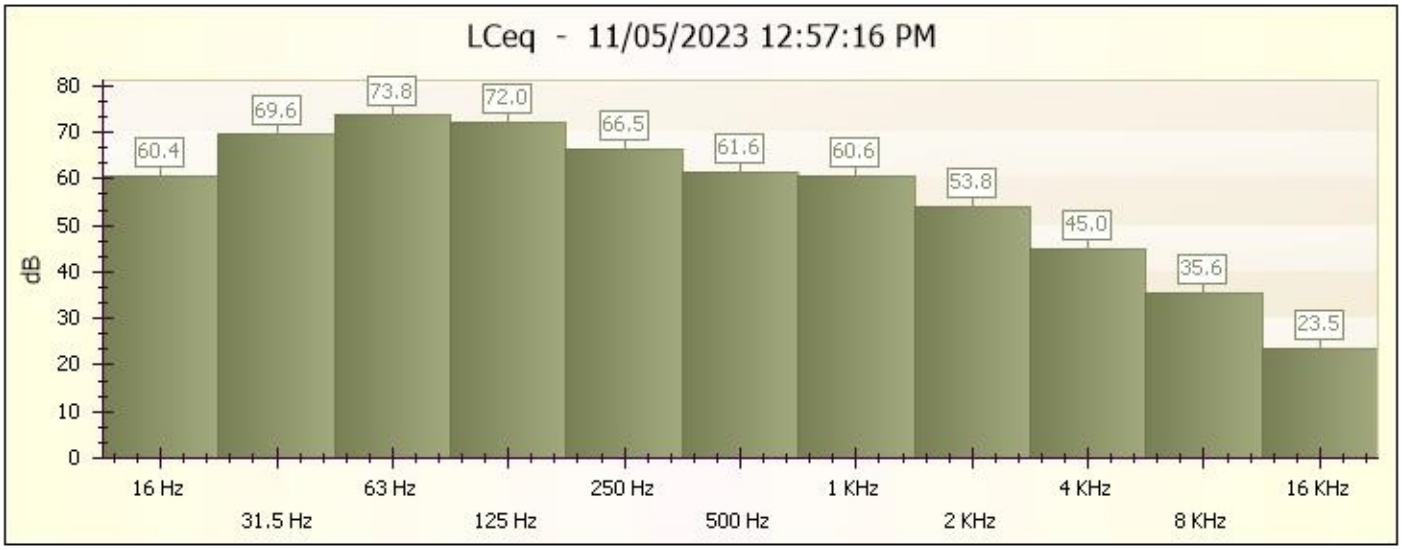
Location 3

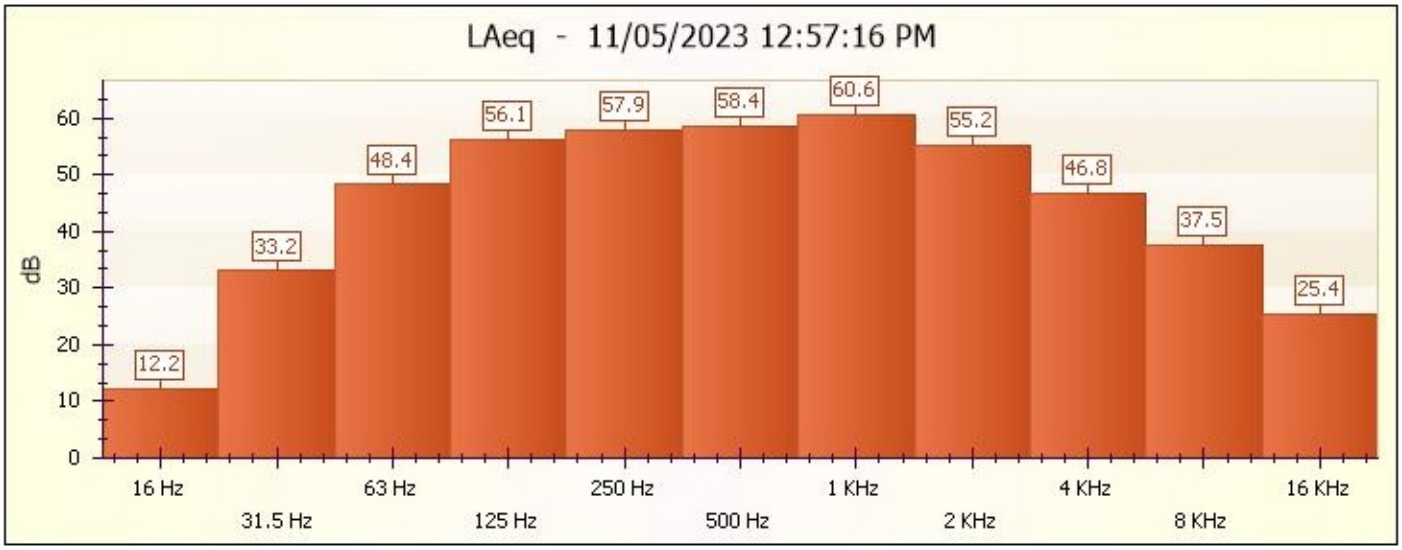
Model:	DustTrak DRX
Model Number:	8533
Serial Number:	8533131002
Test ID:	1
Test Abbreviation:	MANUAL_001
Start Date:	11/05/2023
Start Time:	7:42:33
Duration (dd:hh:mm:ss):	0:09:25:00
Log Interval (mm:ss):	1:00
Number of points:	523
Notes:	

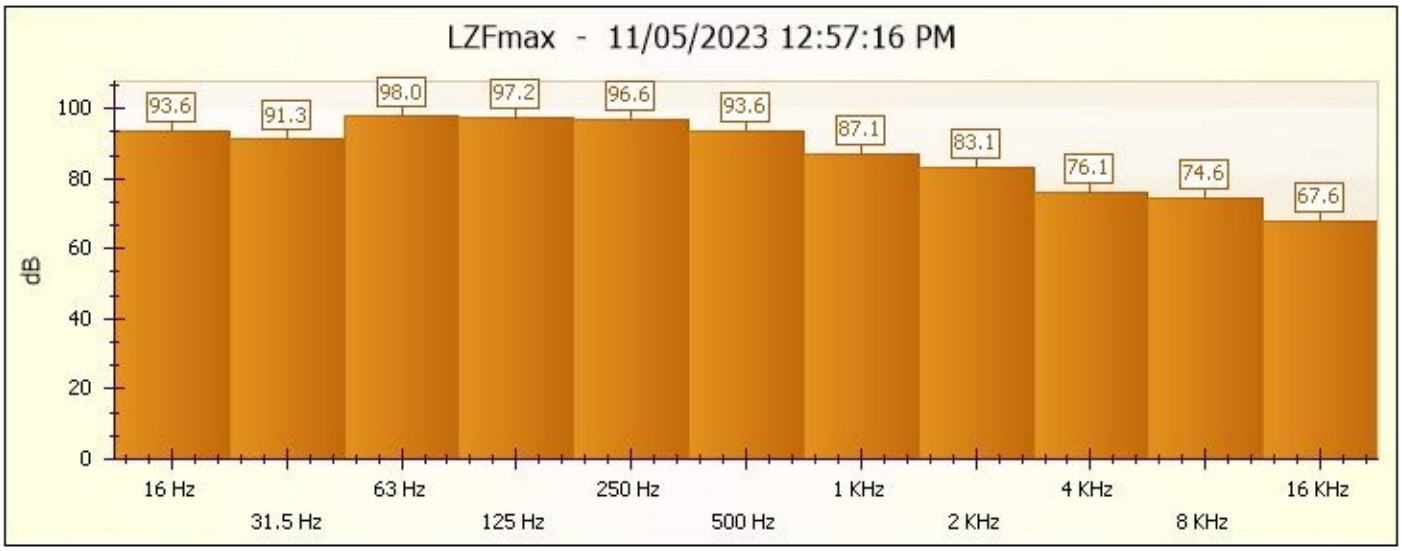
Statistics	Channel:	PM1	PM2.5	RESP	PM10	TOTAL
	Units:	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
	Average:	0.012	0.013	0.014	0.016	0.016
	Minimum:	0	0	0	0	0
	Time of Minimum:	14:10:33	14:10:33	14:10:33	14:10:33	14:10:33
	Date of Minimum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
	Maximum:	0.045	0.046	0.046	0.048	0.048
	Time of Maximum:	15:30:33	15:30:33	15:30:33	15:30:33	15:30:33
	Date of Maximum:	11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Calibration	Sensor:	AEROSOL				
	Cal. date	30/11/2022				

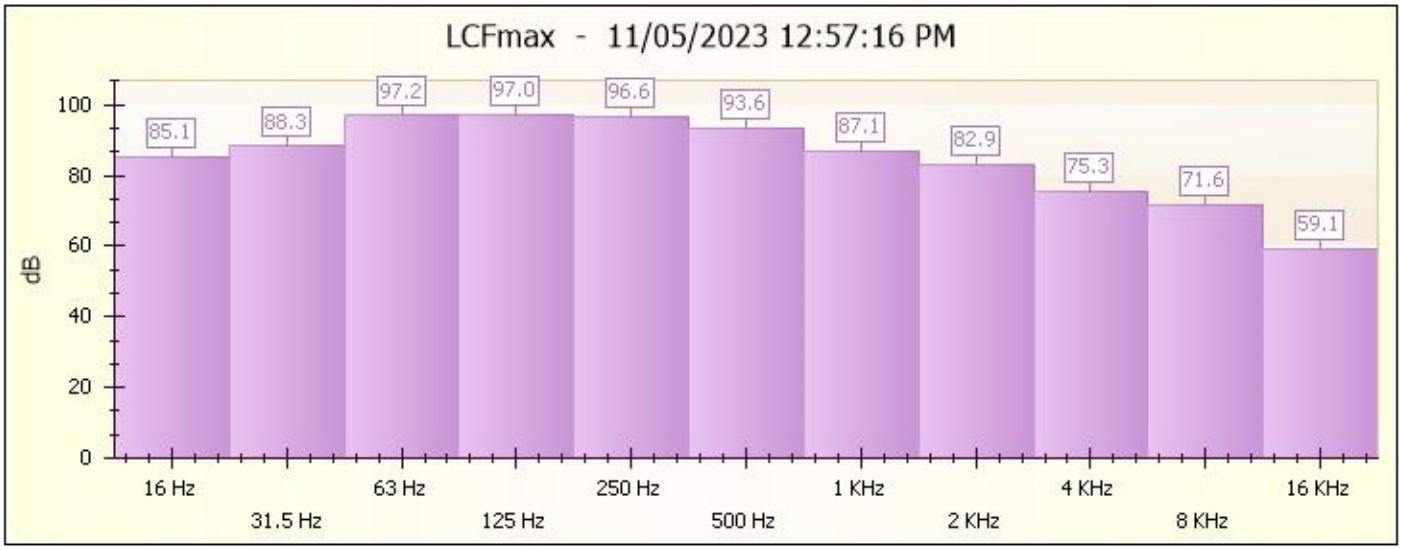
Serial Number	4257400	LCeq-LAeq	12.6 dB
Start Date & Time	11/05/2023 12:57:16 PM	LAleq	66.8 dB
Duration	04:08:07 HH:MM:SS	LAE	106.7 dB
LAeq	65 dB	Response	Random
LCpeak with Time	109.6 dB (11/05/2023 3:44:35 PM)	End Date & Time	11/05/2023 5:05:23 PM
Lepd(Projected)	65 dB	Pause Duration	00:00:00 HH:MM:SS
Lex8h(Projected)	65 dB	Calibration (Before) Date	9/05/2023 11:35:40 AM
LAFmax with Time	91.8 dB (11/05/2023 3:44:35 PM)	Calibration (Before) SPL	114 dB
LAImax with Time	93.2 dB (11/05/2023 3:44:35 PM)	Calibration (After) Date	
LAFmin with Time	50.4 dB (11/05/2023 2:08:44 PM)	Calibration Drift	-3.5 dB
LAImin with Time	50.7 dB (11/05/2023 1:03:07 PM)	Overload	No
LZeq	79.6 dB	Result	Cumulative
LCeq	77.6 dB		

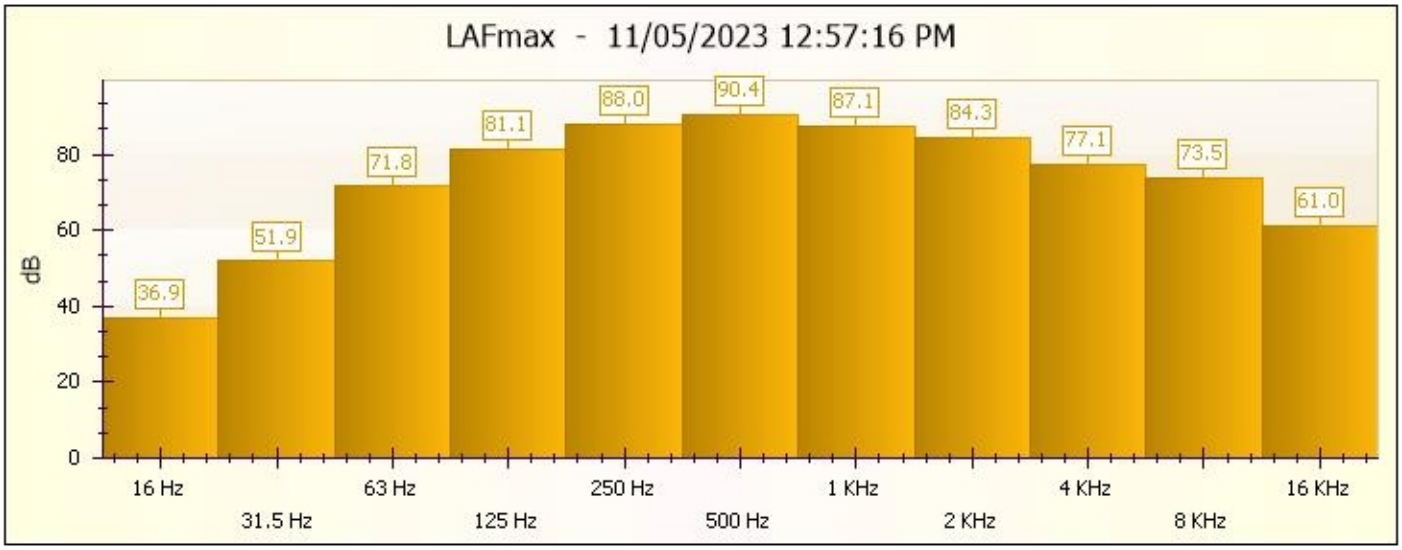



LCeq - 11/05/2023 12:57:16 PM
dB
80
70
60
50
40
30
20
10
0
60.4
69.6
73.8
72.0
66.5
61.6
60.6
53.8
45.0
35.6
23.5
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LAeq - 11/05/2023 12:57:16 PM
dB
60
50
40
30
20
10
0
12.2
33.2
48.4
56.1
57.9
58.4
60.6
55.2
46.8
37.5
25.4
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LZFmax - 11/05/2023 12:57:16 PM
dB
100
80
60
40
20
0
93.6
91.3
98.0
97.2
96.6
93.6
87.1
83.1
76.1
74.6
67.6
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz





Instrument Model	**CEL-633B**		
Serial Number	4257400	LCeq-LAeq	11.9 dB
Start Date & Time	9/05/2023 11:35:47 AM	LAleq	67.1 dB
Duration	00:01:00 HH:MM:SS	LAE	81.4 dB
LAeq	63.6 dB	Response	Random
LCpeak with Time	92.3 dB (9/05/2023 11:35:49 AM)	End Date & Time	9/05/2023 11:36:47 AM
Lepd(Projected)	63.6 dB	Pause Duration	00:00:00 HH:MM:SS
Lex8h(Projected)	63.6 dB	Calibration (Before) Date	9/05/2023 11:35:40 AM
LAFmax with Time	78.4 dB (9/05/2023 11:35:49 AM)	Calibration (Before) SPL	114 dB
LAImax with Time	80.6 dB (9/05/2023 11:35:49 AM)	Calibration (After) Date	
LAFmin with Time	55.9 dB (9/05/2023 11:35:48 AM)	Calibration Drift	-3.5 dB
LAImin with Time	56.1 dB (9/05/2023 11:35:48 AM)	Overload	No
LZeq	76.8 dB	Result	Cumulative
LCeq	75.5 dB		

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Overall Values Report

Name	3				
Time	11/05/2023 8:05:59 AM	**Person**		**Place**	**Project**
Duration	05:29:31				
Instrument	G066240, CR:171C				

Calibration

Before	11/05/2023 8:05 AM	Offset	-1.65 dB	**After**	Offset

Name	Value	Units
Leq		
LAeq	58.2	dB
LCeq	70.0	dB
LZeq	71.1	dB
LAeqI	60.5	dB
C-A	11.8	dB
Exposure		
LAE	101.2	dB
LCE	113.0	dB
LZE	114.1	dB
LEPd	56.6	dB
LEX8	56.6	dB
Peak		
LAPeak	97.3	dB
LCPeak	101.3	dB
LZPeak	101.9	dB
SPL (Max)		
LAFMax	84.6	dB
LCFMax	90.1	dB
LZFMax	90.5	dB
LASMax	95.9	dB

ReportId

LCSMax	113.6	dB
LZSMax	117.4	dB
LAIMax	85.9	dB
LCIMax	91.0	dB
LZIMax	91.3	dB
SPL (Min)		
LAFMin	45.2	dB
LCFMin	57.1	dB
LZFMin	58.3	dB
LASMin	46.5	dB
LCSMin	58.5	dB
LZSMin	60.2	dB
LAIMin	46.5	dB
LCIMin	58.8	dB
LZIMin	61.1	dB
Dose		
Dose	0.1	%
Projected Exposure		
30 Minutes	46.2	dB
1 Hour	49.2	dB
2 Hours	52.2	dB
3 Hours	53.9	dB
4 Hours	55.2	dB
5 Hours	56.2	dB
6 Hours	57.0	dB
7 Hours	57.6	dB
8 Hours	58.2	dB
10 Hours	59.2	dB
12 Hours	60.0	dB
Statistical Levels (Ln)		
LAF1	66.2	dB
LAF5	62.1	dB
LAF10	60.5	dB
LAF50	55.5	dB
LAF90	51.7	dB

ReportId

LAF95	50.9	dB
LAF99	49.5	dB
1:1 Octave		
31.5 Hz	63.7	dB
63 Hz	68.2	dB
125 Hz	64.1	dB
250 Hz	56.0	dB
500 Hz	52.4	dB
1 kHz	54.2	dB
2 kHz	50.7	dB
4 kHz	45.9	dB
8 kHz	35.8	dB
16 kHz	24.9	dB
1:3 Octave		
6.3 Hz	41.1	dB
8 Hz	40.9	dB
10 Hz	42.8	dB
12.5 Hz	48.1	dB
16 Hz	51.8	dB
20 Hz	55.0	dB
25 Hz	58.6	dB
31.5 Hz	59.2	dB
40 Hz	59.2	dB
50 Hz	62.2	dB
63 Hz	64.3	dB
80 Hz	63.7	dB
100 Hz	61.4	dB
125 Hz	59.1	dB
160 Hz	56.2	dB
200 Hz	53.0	dB
250 Hz	51.5	dB
315 Hz	47.6	dB
400 Hz	47.2	dB
500 Hz	47.7	dB
630 Hz	48.1	dB

ReportId

800 Hz	49.4	dB
1 kHz	49.8	dB
1.25 kHz	49.3	dB
1.6 kHz	48.0	dB
2 kHz	45.4	dB
2.5 kHz	43.4	dB
3.15 kHz	41.6	dB
4 kHz	43.1	dB
5 kHz	36.6	dB
6.3 kHz	34.8	dB
8 kHz	28.2	dB
10 kHz	23.3	dB
12.5 kHz	20.1	dB
16 kHz	19.0	dB
20 kHz	21.3	dB

ReportId

Cirrus Research plc

Overall Values Report

Name	4				
Time	11/05/2023 1:41:01 PM	**Person**		**Place**	**Project**
Duration	03:28:43				
Instrument	G066240, CR:171C				

Calibration

Before	11/05/2023 8:05 AM	Offset	-1.65 dB	**After**	Offset

Name	Value	Units
Leq		
LAeq	57.8	dB
LCeq	70.2	dB
LZeq	71.3	dB
LAeqI	60.0	dB
C-A	12.4	dB
Exposure		
LAE	98.8	dB
LCE	111.2	dB
LZE	112.3	dB
LEPd	54.2	dB
LEX8	54.2	dB
Peak		
LAPeak	98.7	dB
LCPeak	99.9	dB
LZPeak	98.5	dB
SPL (Max)		
LAFMax	83.7	dB
LCFMax	88.7	dB
LZFMax	89.3	dB
LASMax	79.9	dB

ReportId

LCSMax	86.6	dB
LZSMax	87.2	dB
LAIMax	85.4	dB
LCIMax	90.0	dB
LZIMax	90.6	dB
SPL (Min)		
LAFMin	47.7	dB
LCFMin	59.4	dB
LZFMin	61.0	dB
LASMin	48.5	dB
LCSMin	61.3	dB
LZSMin	63.1	dB
LAIMin	48.3	dB
LCIMin	61.9	dB
LZIMin	63.7	dB
Dose		
Dose	0.1	%
Projected Exposure		
30 Minutes	45.8	dB
1 Hour	48.8	dB
2 Hours	51.8	dB
3 Hours	53.5	dB
4 Hours	54.8	dB
5 Hours	55.8	dB
6 Hours	56.6	dB
7 Hours	57.2	dB
8 Hours	57.8	dB
10 Hours	58.8	dB
12 Hours	59.6	dB
Statistical Levels (Ln)		
LAF1	65.8	dB
LAF5	61.4	dB
LAF10	59.7	dB
LAF50	55.1	dB
LAF90	51.8	dB

ReportId

LAF95	51.1	dB
LAF99	50.0	dB
1:1 Octave		
31.5 Hz	64.2	dB
63 Hz	68.1	dB
125 Hz	64.6	dB
250 Hz	56.1	dB
500 Hz	52.0	dB
1 kHz	53.5	dB
2 kHz	50.7	dB
4 kHz	43.5	dB
8 kHz	34.1	dB
16 kHz	24.5	dB
1:3 Octave		
6.3 Hz	42.7	dB
8 Hz	43.2	dB
10 Hz	44.7	dB
12.5 Hz	48.7	dB
16 Hz	51.8	dB
20 Hz	55.4	dB
25 Hz	59.5	dB
31.5 Hz	59.4	dB
40 Hz	59.4	dB
50 Hz	62.2	dB
63 Hz	64.2	dB
80 Hz	63.7	dB
100 Hz	61.6	dB
125 Hz	59.8	dB
160 Hz	56.9	dB
200 Hz	53.5	dB
250 Hz	51.2	dB
315 Hz	47.0	dB
400 Hz	47.1	dB
500 Hz	47.1	dB
630 Hz	47.6	dB

ReportId

800 Hz	48.2	dB
1 kHz	49.1	dB
1.25 kHz	49.1	dB
1.6 kHz	48.2	dB
2 kHz	45.1	dB
2.5 kHz	43.1	dB
3.15 kHz	41.0	dB
4 kHz	38.4	dB
5 kHz	35.3	dB
6.3 kHz	32.8	dB
8 kHz	27.2	dB
10 kHz	22.6	dB
12.5 kHz	19.1	dB
16 kHz	18.8	dB
20 kHz	21.1	dB

ReportId

Summary - Location 3

Start time	End Time	Duration	LAeq(dB)	Lavg (Custom)	LEX8	Dose (Custom)	LAE	LCPeak (dB)	LZPeak
11/05/2023 8:03:24 AM	11/05/2023 5:14:49 PM	9:11:25	70.8	64	71.4	3.1	116	116.7	116.6

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lab@mpl.com.au
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Certificate of Analysis PEE1845

Client Details

Client	EnviroX Consulting
Contact	Zeyn Ismail
Address	Unit 2 / 568 Darling Street, ROZELLE, NSW, 2039

Sample Details

Your Reference	DPM
Number of Samples	3 Air, 1 Filter
Date Samples Received	25/05/2023
Date Samples Registered	25/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	25/05/2023
Date of Issue	25/05/2023

Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with *.

Authorisation Details

Results Approved By	Thomas Edwards, OHL Supervisor
Laboratory Manager	Michael Kubiak

Certificate of Analysis PEE1845

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
PEE1845-01	DPM1	Air	23/05/2023	25/05/2023
PEE1845-02	DPM2	Air	23/05/2023	25/05/2023
PEE1845-03	DPM3	Air	23/05/2023	25/05/2023
PEE1845-04	DPM4	Filter	23/05/2023	25/05/2023

Sample Information

Sample ID	Filter ID	Flow Rate (L/min)	Time Sampled (min)	Air Volume (m3)
DPM1	[NA]	2.000	604	1.2080
DPM2	[NA]	2.000	603	1.2060
DPM3	[NA]	2.000	604	1.2080

Certificate of Analysis PEE1845

Diesel Particulate Matter (Air)

Envirolab ID	Units	PQL	PEE1845-01	PEE1845-02	PEE1845-03
Your Reference			DPM1	DPM2	DPM3
Date Sampled			23/05/2023	23/05/2023	23/05/2023
Diesel Particulate Matter as Elemental Carbon	mg/m3		<0.0025	<0.0025	<0.0025

Certificate of Analysis PEE1845

Diesel Particulate Matter (Filter)

Envirolab ID	Units	PQL	PEE1845-04
Your Reference			DPM4
Date Sampled			23/05/2023
Diesel Particulate Matter as Elemental Carbon	µg/sample	3.0	<3.0

Method Summary

Method ID	Methodology Summary
DUST-003	Diesel Particulate analysed as Elemental and/or Organic Carbon in accordance with NIOSH method 5040.

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

Surrogate Spike

Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

LCS (Laboratory Control Sample)

This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Matrix Spike

A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary PEE1845

Client Details

Client	EnviroX Consulting
Your Reference	DPM
Date Issued	25/05/2023

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	Yes	No Outliers
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	Yes	No Outliers

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary PEE1845

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
DPM-EC | Air	1-3	23/05/2023	25/05/2023	25/05/2023	Yes
DPM-EC | Filter	4	23/05/2023	25/05/2023	25/05/2023	Yes

Quality Control PEE1845

DUST-003 | Diesel Particulate Matter (Air) | Batch BEE3081

Analyte	Units	PQL	Blank	DUP1 PEE1845-01 Samp | QC | RPD %	LCS %
Diesel Particulate Matter as Elemental Carbon	mg/m3		<0.0030	<0.00248 | <0.0025 | [NA]	[NA]

DUST-003 | Diesel Particulate Matter (Filter) | Batch BEE3082

Analyte	Units	PQL	Blank	DUP1 PEE1845-04 Samp | QC | RPD %	LCS %
Diesel Particulate Matter as Elemental Carbon	µg/sample	3.0	<3.0	<3.0 | <3.0 | [NA]	[NA]

Appendix B – Aerial Photograph

Figure 1. Approximate Air Quality Monitoring locations within 400-404 Cabramatta Road West, 2-18 Orange Grove Road and 6 Links Avenue, Cabramatta.

Appendix C – Photographs

Photograph 1. Site interior.

Photograph 2. Sample location 1) - Site interior, north east corner of site, adjacent Cabramatta Road.

Photograph 3. Sample location 2) - Site interior, central eastern extent of site, atop play equipment platform.

Photograph 4. Sample location 3) - Site interior, western extent, site access gate adjacent Orange Grove Road.