

29 September 2022
RE: E25751.E21_Rev0



EI Australia
6.01, 55 Miller Street
PYRMONT NSW 2009

Ms. Reina Menhem
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C/o

The Trustees of the Roman Catholic Church for the Diocese of Saint Maron Sydney
PO Box 385,
STRATHFIELD NSW 2135

Air Quality Assessment of 826 Victoria Road, Ryde NSW

At your request, EI Australia (EI) has prepared this Letter for the proposed development 826 Victoria Rd, Ryde, NSW (the Site). The purpose of this letter is to comply with State Environmental Planning Policies, condition 3.6, part 3 (Condition Title: Noise and Air Pollution) for the proposed development as per Pre-lodgement Minutes document.

The proposed site redevelopment will involve keeping the heritage structure on the site; removal of the tennis court and hardstand pavement in the car parking area from the site, and the construction of a two storey structure to be used as a childcare facility.

Air Quality Assessment has been prepared and attached in **Attachment A**.

Should you have any queries, please do not hesitate to contact the undersigned.
For and on behalf of

EI AUSTRALIA

A handwritten signature in blue ink, appearing to read "A. Ibrahim", is written over a horizontal line.

ANDREW IBRAHIM
Chemical / Environmental Engineer
Project Manager

Attachment A
Air Quality Assessment

AIR QUALITY ASSESSMENT

September 20, 2022

El Australia Pty Ltd
Suite 6.01, 55 Miller Street
PYRMONT NSW 2009

Your Reference: 826 Victoria Road, Ryde
Job Number: 64835

Attention: Andrew Ibrahim
Date of Inspection: September 8th, 2022
Subject Area: Tennis Court, parking area and external areas of the monastery

INTRODUCTION AND BACKGROUND

General

AIRSAFE was retained to conduct a limited air quality assessment and sampling at 826 Victoria Road, Ryde (the "Site"). The purpose of this assessment was to provide baseline data following a concern from the client.



Figure 1: Site Location.

Scope of Work

The scope of work included visual and olfactory assessments of the Site. IAQ concerns were not reported by the Client as well as other representative areas of the building and mechanical spaces. The assessment of real-time measurements for typical IAQ indicators and comparison to recognized guidelines.

Test parameters included measurement of airborne particulates, carbon monoxide (CO), Total Volatile Organic Compounds (TVOCs) and settled lead dust. Measurements were obtained using the following equipment:

- Calibrated TSI8530/Dust Track II Desktop Monitors;
- SKC VOC Chek 575 passive sampler
- KITAGAWA Gas Detector Tube System

At the time of inspection, no access to the internal areas of the monastery were available to undertake testing and is therefore not part of this assessment.

Airborne Particulates

Dust is a generic term used to describe fine particles that are suspended in the atmosphere. Dust is formed when fine particles are taken up into the atmosphere (entrained) by the action of wind, by disturbance of fine materials, or through the release of particulate-rich gaseous emissions (primary particles).

Dust comes from a wide variety of sources, including soil, vegetation (pollens and fungi), sea salt, fossil fuel combustion, burning of biomass, and industrial activities.

Dust is typically not classified according to its composition, but rather, its particle size, as follows:

- Deposited matter refers to any dust that falls out of suspension in the atmosphere;
- Total suspended particles (TSP) typically refers to particles 50µm(micrometers) (0.05mm diameter) in size or less;
- PM10 refers to particles 10µm (0.01mm) in size or less;

Condition	Guideline	Authority
PM 10	50µg/m ³	National Environment Protection Council

Carbon Monoxide (CO)

Carbon monoxide (CO) is a colorless and odorless toxic gas that most often occurs as a by-product of incomplete hydrocarbon fuel combustion.

Condition	Guideline	Authority
Carbon Monoxide (CO)	9 PPM	Australian Building Codes Board

The most likely sources of CO are from incomplete hydrocarbon fuel combustion inside a building, and from air intakes placed in, at, or near parking garages or street level that may entrain automotive exhaust gases into the air handling system.

Total Volatile Organic Compound (TVOC) Screening

Total volatile organic compounds (TVOCs) are emitted as gases from certain solids or liquids.

Condition	Guideline	Authority
TVOC	500 ug/m ³	Australian Building Codes Board

TVOCs include a variety of chemicals, some that may have short and/or long-term adverse health effects. Concentrations of many TVOCs are consistently higher indoors when compared to outdoor measurements.

Settled Dust sampling for lead on surfaces

Acceptance limits for surface dust lead loadings stated in the Guide to Lead Paint Management Part 2: Residential and Commercial Buildings [AS 4361.2-1998] are as follows:

Condition	Guideline	Authority
Interior Floors	1 mg/m ²	EPA
Interior Window sills	5 mg/m ²	EPA
Exterior Surfaces	8 mg/m ²	EPA

Hazardous Gas and Vapour Concentrations

A KITAGAWA Gas Detector Tube System was used to sampling and analysis of hazardous gas and vapour concentrations. The results were compared to the workplace exposure standards in the Safe Work Australia Hazardous Chemical Information System (2021).

Workplace Hazard	TWA (mg/m ³)	STEL (mg/m ³)	TWA (ppm)	STEL (ppm)
Benzene	3.2	-	1	-
Toluene	191	150	50	574
Xylene	350	655	80	655

OBSERVATIONS

On the day of the assessment, September 08, 2022 the weather was partly cloudy with seasonably warm conditions.

Jonathon Stephens performed a visual and olfactory assessment in representative areas of the site and noted below:

- Obvious visible suspect mould not present
- Dust was present on window ledges of the monastery
- Mould or mildew odour not present
- Delaminated surfaces were not observed

RESULTS

Airborne Particulates [PM 10]

PM 10 Monitoring Calculations								
Analytes	Time On	Time Off	Total Time, min	Flow On, L/min	Flow Off, L/min	Log intervals	Average Dust mg/m ³	Maximum Dust, mg/m ³
PM 10	1122	0646	1164	3.00	3.00	60 seconds	0.007	0.204

Table 2. Dust monitoring calculations over 24 hours [Location reference: refer to site plans].

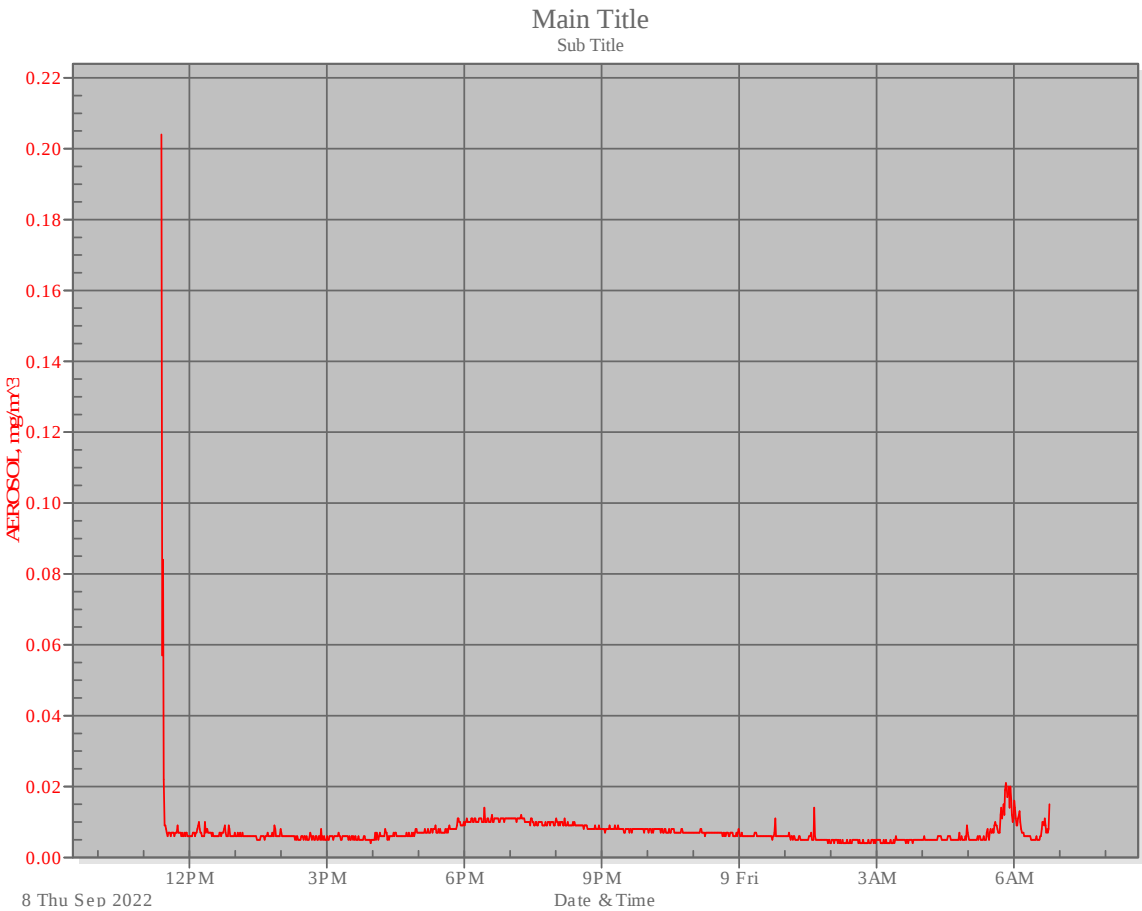


Figure 2. Graph for dust monitoring

Total Volatile Organic Compound (TVOC) Screening

Toxic and Asphyxiant Gases				
Sample No	Location/Reference	Airborne contaminant		
		H ₂ S [ppm]	CO [ppm]	TVOC [ppm]
-	Tennis Court	<0.1	<0.1	0
-	Rear parking Area	<0.1	<0.1	0
-	Side Adjacent Monastery	<0.1	<0.1	0

Table 3. SKC VOC Chek 575 passive sampler results.

Settled Dust sampling for lead on surfaces

Lead Swab Results				
Sample No	Location/Reference	Lead in swab µg/swab	Sample area m ²	Lead loading mg/m ²
64835 – 1	Monastery – Northern Window Ledges	440	0.09	4.8
64835 – 2	Monastery – Eastern Window Ledges	120	0.09	1.3
64835 – 3	Monastery – Southern Window Ledges	47	0.09	0.5
64835 – 4	Monastery – Western Window Ledges	69	0.09	0.8

Table 4. Surface swab results for settled dust

Hazardous Gas and Vapour Concentrations

Hazardous Gas and Vapour Concentrations		
Location/Reference	Analyte	Results [ppm]
Tennis Courts [Outdoor]	Xylene	0
	Benzene	0
	Toluene	0
Rear Parking Area [Outdoor]	Xylene	0
	Benzene	0
	Toluene	0
Western Elevation – Monastery [Outdoor]	Xylene	0
	Benzene	0
	Toluene	0

Table 5. Results for the Gas Detector Tube System for Xylene, Benzene & Toluene

CONCLUSION

The average PM 10 was below the National Environment Protection Council standard.

Carbon monoxide concentrations were below levels specified by the Australian Building Codes Board.

Total volatile organic compounds were below levels specified by the Australian Building Codes Board.

Settled dust for lead calculated concentrations are less than the loadings stated in the Guide to Lead Paint Management Part 2: Residential and Commercial Buildings [AS 4361.2-1998]

Results from the Gas Detector Tube System showed no reportable levels of Xylene, Benzene or toluene.

Results for the air samples in the areas sampled showed no concentrations of concern.

RECOMMENDATIONS

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.

If human health symptoms emerge as a result of poor air quality, further investigations should be undertaken.

OCCUPATIONAL HYGIENIST			
Prepared by:	Jonathon Stephens	September 20, 2022	

Statements of Limitations

This report has been prepared for the benefit of the client and no other party. AIRSAFE assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of AIRSAFE or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

In accordance with the scope of services, AIRSAFE has relied upon the data and has conducted field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report. On all sites, varying degrees of non-uniformity of conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of actual situations. The conclusions are based upon the data and the field monitoring and/or testing and are therefore merely indicative of the conditions of the site at the time of preparing the report.

It should also be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable Occupational Hygiene consultants under similar circumstances. No other warranty, expressed or implied, is made.

ANALYSIS RESULTS



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 www.envirolab.com.au

CERTIFICATE OF ANALYSIS 305639**Client Details**

Client	Airsafe Laboratories
Attention	Simon Gorham
Address	Level 1, 488 Botany Rd, BEACONSFIELD, NSW, 2015

Sample Details

Your Reference	64835, 826 Victoria Rd Ryde
Number of Samples	4 swab
Date samples received	14/09/2022
Date completed instructions received	14/09/2022

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	19/09/2022
Date of Issue	16/09/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Loren Bardwell, Development Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Envirolab Reference: 305639
 Revision No: R00



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Client Reference: 64835, 826 Victoria Rd Ryde

Lead in swab					
Our Reference		305639-1	305639-2	305639-3	305639-4
Your Reference	UNITS	64835-1	64835-2	64835-3	64835-4
Date Sampled		9/09/2022	9/09/2022	9/09/2022	9/09/2022
Type of sample		swab	swab	swab	swab
Date prepared	-	15/09/2022	15/09/2022	15/09/2022	15/09/2022
Date analysed	-	15/09/2022	15/09/2022	15/09/2022	15/09/2022
Lead in Swabs	µg/swab	440	120	47	69

Client Reference: 64835, 826 Victoria Rd Ryde

Method ID	Methodology Summary
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

Client Reference: 64835, 826 Victoria Rd Ryde

QUALITY CONTROL: Lead in swab						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			15/09/2022	[NT]	[NT]	[NT]	[NT]	15/09/2022	[NT]
Date analysed	-			15/09/2022	[NT]	[NT]	[NT]	[NT]	15/09/2022	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]

Client Reference: 64835, 826 Victoria Rd Ryde

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Client Reference: 64835, 826 Victoria Rd Ryde

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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.
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.
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.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

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.

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 QA/QC tables for details; <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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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 insufficient in order to satisfy laboratory QA/QC protocols.

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.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

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 and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Test 013

ERROR: FLOW,

Instrument		Data Properties	
Model	DustTrak II	Start Date	08/09/2022
Instrument SN	8530165015	Start Time	11:22:26
		Stop Date	09/09/2022
		Stop Time	06:46:26
		Total Time	0:19:24:00
		Logging Interval	60 seconds

Statistics		AEROSOL
Avg		0.007 mg/m ³
Max		0.204 mg/m ³
Max Date		08/09/2022
Max Time		11:23:26
Min		0.004 mg/m ³
Min Date		08/09/2022
Min Time		15:57:26
TWA (8 hr)		0.000
TWA Start Date		08/09/2022
TWA Start Time		11:22:26
TWA End Time		06:46:26