Odour and Volatile Organic Compound Assessment – New Medowie High School

6 Abundance Road, Medowie NSW

Prepared for: Department of Education NSW

A101024.0124 | A101024.0124 Medowie Odour v2f | Date: 22/01/2025

ADE CONSULTING GROUP

Document Information

Report Title:	Odour and VOC Assessment – Proposed Medowie High School
Prepared for:	Department of Education NSW
Project Address:	6 Abundance Road, Medowie NSW
File Reference:	A101024.0124
Report Reference:	A101024.0124 Medowie Odour v2f

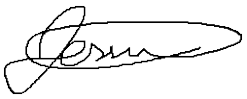
Document Control

Version	Date	Author	Revision description	Reviewer
V1f	05/11/2024	Jessica Whitehead	Draft for client review	Stephen Bowly
V2f	22/01/2024	Jessica Whitehead	Update to reflect REF pathway	Stephen Bowly

For and on behalf of

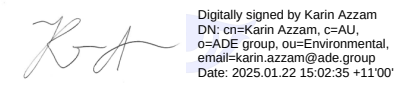
ADE Consulting Group Pty Ltd
ABN: 14 617 358 808

Prepared by:



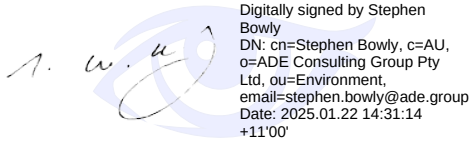
Jessica Whitehead
Environmental Consultant

Submitted by:



Karin Azzam
Environmental Consultant

Reviewed by:



Stephen Bowly
Principal Environmental Consultant
CEnvP 1690

T. 1300 796 922| E. info@ade.group

Contents

Tables

Figures

Appendices

1 Introduction

This Odour and Volatile Organic Compound (VOC) assessment has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP

The activity will be carried out at 6 Abundance Road, Medowie (the site) associated with the adjacent service station in the north-western corner. The purpose of this report is to assess the aesthetic and human health risks associated with odour and VOC at the site.

The Department of Education (DoE) is the landowner, proponent and determining authority pursuant to Section 5.1 of the Environmental Planning and Assessment Act 1979 (the Act).

1.1 Project description

The proposed activity involves the construction of school facilities on the site for the purpose of the new High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.

- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle
- crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The new school development will include the following spaces; general learning spaces, general support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).

1.2 Background

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises 1 allotment, legally described as Lot 3 in DP788451.

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.

ADE has previously undertaken other environmental investigations on site, comprising a preliminary site investigation (PSI) and detailed site investigation (DSI):

- Preliminary Site Investigation – Proposed Medowie High School (draft, ref: A101024.0124 Medowie PSI v1d, dated 19/04/2024) (the 'PSI').
- Detailed Site Investigation – Proposed Medowie High School (ref: A101024.0124 Medowie DSI v1, dated 13/11/2024) (the 'DSI').

Previous investigations did not identify contamination in the soil or groundwater at the site and concluded the site was suitable for the proposed future use, however aesthetic concerns regarding volatile organic compounds (VOC) and odours from the adjoining service station require further assessment for inclusion in the Review of Environmental Factors (REF).

1.3 Objectives

The objective of the investigation is to assess human health and aesthetic concerns relating to VOC and odours associated with the adjoining service station that may adversely impact future sensitive receptors at the site.

1.4 Scope of Work

The scope of works to achieve the above objective is as follows.

- Site inspection, comprising:
    - Installation of three evacuated canisters (air quality monitoring equipment) in sampling locations representative of future school site users.
    - Odour survey conducted by the environmental consultant during morning installation of evacuated air canisters and evening pick-up of the canisters.

- Collection of air samples and submission of all samples to National Association of Testing Authorities (NATA) accredited laboratories for analysis of contaminants of potential concern (COPC).

- Preparation of a report detailing the completed works, observations and analytical results.

1.5 Guidelines and Codes of Practices

The legislative framework for the report is based on guidelines that have been issued and/or endorsed by the NSW EPA, formerly the Office of Environment and Heritage under the following Acts/Regulations:

- Environmental Planning and Assessment Act 1979
- Protection of the Environment Operations Act 1997 and

The relevant guidelines issued under the provisions of the Acts/Regulations include:

- NSW EPA Technical Framework: Assessment and management of odour from stationary sources in NSW (NSW EPA, 2006a)
- NSW EPA Technical Framework: Assessment and management of odour from stationary sources in NSW (NSW EPA, 2006b)
- National Environmental Protection Council National Environmental Protection (Air Toxics) Measure 2011 Amendment (NEPC, 2011)

1.6 REF Review Checklist

The following REF Review Checklist items provided by Department of Education (and relevant to this report) have been presented in Table 1 below, along with the associated section of the report.

Table 1: REF Review Checklist Relevant Items

Item	Comment
Details of: - The proposed activity.	Section 1.2
- Relevant legislation and policies.	Section 1.5
A description of the site and surrounding environment.	Section 2.2
Address all the potential sources of contamination mentioned	Section 4 and Section 7
Summarise investigations undertaken and conclude that contamination risk has been appropriately addressed.	Executive Summary and Section 9
Conclude that air quality is suitable for the proposed use with or without migration.	Section 9

2 Site Identification and Condition

2.1 Site Location

The investigation area, covering an approximate area of 6.51 ha, was rural in nature with a grass covered surface and used as horse paddocks at the time of the investigation.

2.2 Summary of Site Details

The site surrounds have been summarised in **Table 2** (Refer **Figure 1-3** in **Appendix – Figures** for site location and features).

Table 2: Site Identification Details

Item	Details
Site Address	6 Abundance Road, Medowie, NSW
Title Identification	Lot 3 DP788451
Local Government Authority	Port Stephens
Current Land Use Zoning	RU2 – Rural Landscape
Site Area	6.51 ha
Former/ Current Land Use	Rural residential use
Proposed Land-use	Secondary education facility
Local Environmental Plan	Port Stephens Local Environmental Plan 2013
Approximate Elevation	16 meters Australian Heights Datum (mAHD)

The site surrounds have been summarised in **Table 3**.

Table 3: Summary of Site Surrounds

Site Surrounds	Description
North	Ferodale Road runs along the northern boundary of the site. Medowie Public School is situated across Ferodale Road, approximately 30 m northwest from the northern boundary of the investigation area.
East	Abundance Road borders the site to the east. Commercial properties east of Abundance Road consist of motor engineer and repairers, lawncare retail and repairs, welders, seafood wholesalers, and conveyor belt suppliers.
South	South of the site consists of rural/residential use
West	Directly west of the site is a petrol station (Pearl Energy), an engine and motor repairers, and earth moving/excavation contractors.

2.3 Climatic Conditions

Light winds and warm temperatures are typically conducive to the migration of VOC and odour from emission sources, consequently, local climate data was assessed. Long-term climate data was sourced from the Bureau of Meteorology (BOM) weather station at Williamtown (ID: 061078[1], located approximately 7.5 km south of the site) has been used to characterise the local climate in the site's vicinity, with a summary presented below in **Table 4** summarising the previous 59-75 years (overall average).

[1] Bureau of Meteorology, Williamtown, URL: http://www.bom.gov.au/climate/averages/tables/cw_061078.shtml, accessed 27 November 2024.

Table 4: Summary of climate statistics for Williamtown (Bureau of Meteorology)

	Mean maximum temperature (°C)	Mean minimum temperature (°C)	Mean rainfall (mm)	Mean 9am wind speed (km/h)	Mean 3pm wind speed (km/h)
January	28.3	18.2	98.4	11.9	21.9
February	27.7	18.2	118.7	10.6	20.6
March	26.4	16.5	126.9	10.2	18.9
April	23.8	13.3	110.7	11.4	17.2
May	20.4	10.1	110.8	13.7	15.8
June	17.7	8	122.1	15.9	17.5
July	17.2	6.5	75.4	16.4	18.7
August	18.8	6.9	71.5	16.8	20.9
September	21.5	9.2	60.2	15.3	22
October	23.8	12	75.6	14.4	22.5
November	25.6	14.5	82.7	14.4	23.5
December	27.4	16.6	76.8	12.9	23.5
Annual	**23.2**	**12.5**	**94.15**	**13.7**	**20.2**

Wind speed is generally lower in the morning, with average speeds of 14-26 km/h at 3pm, and higher in the afternoon, with average speeds of 10-22 km/h at 9am. On an annual basis, wind in the morning is generally from the north to west, while in the evening wind is generally from the south to east. **Figure 4** below presents the average annual wind roses for 9am and 3pm, with average monthly wind roses provided in **Appendix A**, both sourced from BOM Williamtown weather station.

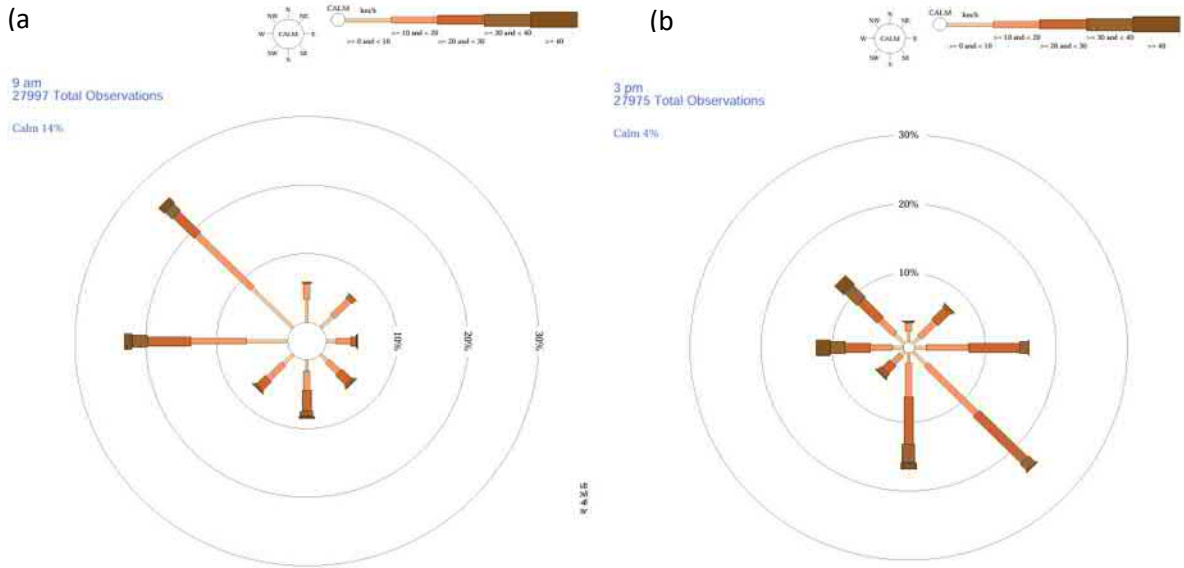


Figure 4. Average annual wind roses for 9am (a) and 3pm (b) (Bureau of Meteorology, 2024)

On this basis, odour and VOC samples being collected on site were proposed to commence in the morning, when winds (blowing from the north west) were more likely to blow onto the school site from the service station.

3 Site History and Summary of Previous Reports

3.1 Preliminary Site Investigation - Contamination

A preliminary site investigation (PSI) was undertaken by ADE in 2024 for the site with findings reported in ADE (2024a) Preliminary Site Investigation – Proposed Medowie High School (draft, ref: A101024.0124 Medowie PSI v1d; 19 April 2024).

The objective of the PSI was to develop an understanding of the potential for contamination to be present at the site that may pose a potentially unacceptable risk to sensitive receptors as a result of current and historic land uses and would inform on the potential need for further investigation at the site.

The PSI included a review of desktop information, a site walkover inspection, an assessment of potential areas and sources of on-site and off-site contamination and potential risk from contamination (if any) in view of the proposed development as well as recommendations for further investigations where necessary.

The site was found to have an agricultural history including orchards from as early as 1954 through to 1998 after which the site has been used for hobby scale livestock rearing. The adjacent service station was identified as an potentially contaminating activity, however it was not listed on NSW EPA records as either a notified or significantly contaminated site.

The site was not considered to be a significant source of contamination and no sources of VOCs nor odorous activities were identified on site.

3.2 Detailed Site Investigation - Contamination

A detailed site investigation (DSI) was undertaken by ADE in 2024 for a portion of the site (located in the northern portion, referred to as the 'investigation area'), with findings reported in ADE (2024b) Detailed Site Investigation – Proposed Medowie High School (ref: A101024.0124 Medowie DSI v1; 11 November 2024).

The objective of the DSI was to assess whether contamination has the potential to exist in the investigation area and whether further investigation or future management is necessary, as well as provide indicative advice regarding the offsite management of material. Intrusive soil and groundwater sampling was undertaken. Consistent with the PSI (ADE, 2024a), intrusive works did not identify sources of contamination emitting VOCs and odorous, nor any areas where uncontrolled fill was identified.

4 Preliminary Conceptual Site Model

A conceptual site model (CSM) is an iterative approach required by to allow the risks from potential contamination source to be characterised by considering the potential sources of contamination, the pathways through which exposure/ migration may occur and the sensitive receptors (human and environmental) that may foreseeably be exposed to contamination.

Where any of the source, pathway or receptor is missing, then the risk linkage status can be considered incomplete, and there is no unacceptable risk.

4.1 Potential Emission Sources

The adjoining service station was identified as a potential emission source of VOC and odour during previous investigations, with associated contaminants of potential concern:

- Air phase petroleum hydrocarbons, generally considered to be VOC
- Petroleum-type odours.

4.2 Potential Exposure Pathways

The potential exposure pathways through which human receptors may be exposed to VOC and odour would be inhalation.

4.3 Sensitive receptors

Potential human receptors at the site include:

- Current and future users of the site including visitors, students and staff.
- Residents of neighbouring properties and surrounding site users.

ADE is not aware of any complaints from odour from Medowie Public School (immediately north of the service station) or surrounding residents.

4.4 Source-pathway-receptor linkages

The linkage status between the potential sources of contamination and sensitive receptors that were identified to be potentially incomplete (i.e. there is unlikely to be a risk). However, on site data was needed to confirm this linkage.

5 Approach and Assessment Criteria

5.1 Odour Assessment Approach and Criteria

The NSW EPA Technical Framework (NSW EPA, 2006a) defines the odour assessment criteria for a school as 2 odour units (OU). Similarly, NSW EPA (2006a) define 1 OU, otherwise known as the 'odour threshold', as a concentration below which adverse odour impact would not be experienced. For this assessment, a field odour intensity survey was used assess odour. Specifically, where odour character and intensity at the school site did not identify petroleum hydrocarbon-type odours i.e. odours from the service station were not detected at the school site, then the 1 OU threshold would not be reached, suggesting that the odour would be less than 1 OU and consequently less than the odour criteria for a school of 2 OU.

5.2 VOC Assessment Approach and Criteria

The site assessment criteria (SAC) were developed as per the following environmental legislation, guidelines, code of practices and industrial advice:

- United States Environmental Protection Agency (2024) *Regional Screening Level (RSL) Resident Ambient Air Table (TR=1E-06, HQ=1)* (last updated November 2024).
- United States Environmental Protection Agency (2024) *Regional Screening Level (RSL) Resident Ambient Air Table (TR=1E-06, HQ=0.1)* (last updated November 2024).
- National Environment Protection (Air Toxics) Measure (2011) *Table 2 Monitoring investigation levels* (the 'Air Toxics NEPM').

This report applies the relevant criteria investigation levels to identify contaminants and/or areas of contamination that potentially pose a risk to human health or an impact on site aesthetics. The assessment focuses on the presence of volatile aromatic hydrocarbons typically emitted from a service station, namely benzene, toluene, ethylbenzene and xylenes.

In addition, historical urban air quality data for Newcastle from the Department of Environment and Conservation (NSW) *Ambient Air Quality Research Project (1996-2001)* has been used as indicative baseline ambient air quality.

6 Investigation Methodology

ADE field methods were undertaken in general accordance with relevant parts of national and state guidelines.

The fieldworks were undertaken by qualified ADE environmental scientist appropriately trained and experienced in conducting environmental investigations on 5 November 2024.

6.1 Field programme

Odour

The field consultant also conducted a site inspection and odour survey across the site. The survey focused on locations where future site users or buildings would most likely be present in the proposed school. The cataloguing potential sources of odours and documenting if any odours were detected was undertaken at a total of 16 locations.

The odour character was noted, and odour intensity was assessed against the scale presented in NSW EPA (2006b):

- Odour intensity scale 0 = not detectable
- Odour intensity scale 1 = very weak
- Odour intensity scale 2 = weak
- Odour intensity scale 3 = distinct
- Odour intensity scale 4 = strong
- Odour intensity scale 5 = very strong
- Odour intensity scale 6 = extremely strong

VOC

VOC monitoring data was collected at three locations in the northern portion of the site: 1) immediately adjacent to the service station (AM01); and 2) further to the south-east (AM02) and east (AM03). Sample locations were chosen to capture 'worst case' as well as 'representative' scenarios. Specifically, AM01 was situated on the site boundary in between the emission source and future site users thereby representing a 'worst case' sampling location. The two other sampling locations, AM02 and AM03 were situated in proximity to proposed buildings locations on site closest to the source area (service station), thereby representing areas likely to be exposed by future site users i.e. 'representative' scenarios. VOC sampling locations are illustrated on **Figure 2** (**Appendix A**).

Sample containers (evacuated cannisters) were set up on portable tables at approximately 1 metre above ground level, with an appropriate flow regulator to allow for passive collection over eight hours. After the eight hours had passed, the flow path was closed and cannisters sealed for transport.

See **Appendix B** for photologs.

6.2 Analytical programme

Three ambient air samples were transported to ALS Environmental, which is a National Association of Testing Authorities (NATA) accredited laboratory for the analytical methods used. Samples were submitted for analysis of the following analytes:

- Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)
- Volatile organic compounds (VOCs)
- Total Petroleum Hydrocarbons (TPH)

7 Discussed Results

7.1 Site climatic conditions

Short-term (half-hourly) climate data was sourced from the Bureau of Meteorology (BOM) weather station at Williamtown (ID: 061078) and has been provided in **Appendix A**. Ambient air sampling was undertaken between approximately 08:30 to 16:30.

Temperature on the 5 November 2024 ranged from ~19.5 °C in the morning, increasing to a max of 22.5 °C at midday, before dropping to 20.9 °C by 18:30. This is within the average ranges detailed in **Table 3** for November, as such the weather during the sampling event is considered representative of average temperatures at the site.

No rainfall was recorded between 05:00 to 18:30 that may have impacted the availability of volatile compounds within ambient air and impacted the results, thus the data is considered representative of the site in typical conditions.

Wind speed peaked at 24 km/h around midday, noted to be coming generally from the south in the morning, and the east in the afternoon/evening at Williamstown weather station (7.5km south). The wind speed and direction at Williamtown (refer **Appendix A**) provides hourly wind data. The Williamtown weather station is likely to show higher windspeeds that those that occurred on site, due to its exposed location. Similarly, the consultant on site noted the following:

- Calm / stable atmospheric environment (limited winds) at commencement of sampling
- winds were typically light and from the south east (towards service station) over the course of the day

Whilst the wind direction was towards the service station, the calm conditions and light winds over the course of the day would typically allow odour and VOC from sources to be detected in close promixity to the source. Given the odour survey and VOC samples were taken from as close at 40m to the actual service station filling area, it is considered that the atmospheric conditions during the sampling were generally representative of typical weather conditions experienced on site.

7.2 Odour survey

The odour survey was conducted between 08:30 to 09:00 following set up of the ambient air monitoring and involved the consultant walking a general grid pattern across the site with observations noted at sixteen locations (**Figure 3**). The sixteen locations were taken from representative locations across the whole site ranging from the northern end of the property, along the boundary with the service station, right through to the southern end of the property. The results of the survey follow:

- Of the sixteen locations surveyed, 13 had an odour intensity of 0 (non detectable).
- No petroleum odours relating to the service station were identified,
- Three locations had a detectable odour with an odour intensity scale of 1 (very weak) which were all related to the current site use as a horse pasture / paddock. The odour characters were described as horse manure and vegetation.

On this basis, the odour at the school deriving from the service station was not detected at concentrations eliciting a physiological response by the environmental scientist, indicating the odours were less than 1 OU. Given the odour assessment criteria is 2 OU for a school, it is considered that the service station is unlikely to present adverse odours at the proposed activity (school).

7.3 VOC analytical results

All analytes assessed were reported with concentrations below adopted site criteria (US EPA Regional Screening Levels), with the majority of analytes reporting below laboratory limit of reporting (LOR). The results table has been presented in **Appendix C**, with laboratory documentation provided in **Appendix D**.

Minor detections for the following analytes were identified at all locations:

- Chloromethane
- Dichlorodifluoromethane (also known as Freon 12)
- Acetone

None of these analytes are typically associated with service station contamination, and detections at such low concentrations, as well as the non-detection of any other volatile compounds, indicates the risk to site receptors from the service station is very low. Further comparison of the VOC concentrations compared to likely background VOC concentrations as well as regulatory guidelines are presented below.

7.3.1 Comparison with background data

Historical urban air quality data from the Department of Environment and Conservation (NSW) *Ambient Air Quality Research Project (1996-2001)* for key compounds has been presented below in **Table 5** with comparison to investigative results. Air quality data from Newcastle has been selected due to proximity to the site.

Table 5: Baseline air quality comparison for Newcastle (Department of Environment and Conservation)

Compound	Overall average (ppb)	Maximum 24-hour average (ppb)	VOC results at the school (ppb)
Benzene	0.8	4.3	<0.5
Toluene	1.1	6.0	<0.5
Ethylbenzene	0.1	0.6	<0.5
Total Xylenes	0.8	4.0	<1.5*
Chloromethane	0.7	1.4	0.7
Dichlorodifluoromethane	0.6	1.3	0.5

* Approximate value based on conversion from <6.5 µg/m^3.

Investigation results for BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes, the primary COPC for a service station) were all reported below LOR, and generally an order of magnitude below the maximum 24-hour average background concentrations.

Chloromethane was detected at a concentration of 0.7 ppb, equivalent to the overall average background concentration and 50% of the maximum 24-hour average background concentration. VOC detections for the site, in particular for key COPC and detected compound chloromethane, is considered to be generally in line with expected background concentrations.

Dichlorodifluoromethane was detected at a concentration of 0.5 ppb, below both the overall average concentration and the maximum 24-hour average concentration background levels.

Although there is no background data for acetone collected for Newcastle, acetone is known to be a common chemical used in a variety of industries and is a common ingredient in domestic products. Data sourced from the New York State Department of Health (2014) indicates acetone is typically found in air at concentrations below 20 ug/m^3. Acetone detections in the samples ranged from 3.1 – 6.2 ug/m^3, well below this level, as such these detections are considered to be indicative of background levels.

The ambient air measurements of VOC at the school suggest that the measured concentrations are consistent with background concentrations.

7.3.2 BTEX Assessment against the Air Toxics National Environmental Protection Measures (NEPM)

As the source of potential VOC is the nearby service station, the primary COPC expected would be BTEX. A comparison of relevant analytical results with the Air Toxics NEPM (2011) has been presented below in **Table 6**.

Table 6: BTEX results in comparison with Air Toxics NEPM (2011) average investigation levels

COPC	Air Toxics NEPM (2011) Averaging Period	Monitoring investigation level (ppb)	Investigation results (ppb)
Benzene	Annual average*	3	<0.5
Toluene	24 hours**	1000	<0. 5
	Annual average*	100	
Total Xylenes	24 hours**	250	<1.5***
	Annual average*	200	

*For the purposes of the Air Toxics NEPM (2011) the annual average concentrations in are the arithmetic mean concentrations of 24-hour monitoring results.

** For the purposes of the Air Toxics NEPM (2011) monitoring over a 24-hour period is to be conducted from midnight to midnight.

*** Approximate value based on conversion from <6.5 µg/m^3.

Analytical results for these COPC collected over eight hours are an order of magnitude or greater below the investigation levels set out in the Air Toxics NEPM (2011), as such the risk to human health from inhalation of these VOC from the service station is considered to be acceptably low.

ADE notes the Air Toxics NEPM does not include monitoring investigation levels for ethylbenzene, however considering concentrations recorded are below laboratory limit of reporting (LOR), risk of impact from this compound is considered to be very low.

7.4 Mitigation Measures

Based on the information and data collected for the site, impact from VOC and odour are not expected to be significant, as such no mitigation measures are required.

8 Quality Assurance and Quality Control

A review of the laboratory quality assurance / quality control (QA/QC) data was completed by ADE. The QA/QC review indicated that results were generally within the relevant acceptance criteria for the analysis conducted. A data quality evaluation is provided in **Appendix E**.

Based on an assessment of the collected data set and in consideration of the adopted DQIs for the project it is the opinion of ADE that the data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of conditions at the sample locations at the time of sampling, and that the overall quality of the analytical data produced is considered acceptably reliable for the purposes of this investigation.

9 Conclusions

ADE Consulting Group Pty Ltd (ADE) was engaged to undertake an ambient air assessment for part of the property located at 6 Abundance Road, Medowie, NSW 2318. The site has been chosen as the location for a new high school for Medowie.

The site currently comprises a large rural lot with a small residential dwelling and outbuildings and is predominantly used for agricultural grazing. As part of the planning process, aesthetic concerns regarding VOCs and offensive odours from the adjoining service station required further assessment for inclusion in the REF.

The assessment involved sampling of ambient air at the site by way of evacuated cannister as well as a site inspection and odour survey (assessing odour character and intensity) by an environmental scientist.

Based in the results of the investigation, the following conclusions are made:

- Analytical results reported all VOC analytes below adopted criteria and/or below laboratory LOR.
    - Minor detections of three organic compounds (acetone, dichlorodifluoromethane, and chloromethane) were detected, but at concentrations not warranting further investigation.
    - VOCs appeared to be present at 'background' concentrations, consistent with concentrations typically found in urban air.
    - Key COPC associated with service stations (BTEX) were all reported below laboratory LORs.
    - The risk to human health from inhalation of these VOC is considered to be acceptably low.
- The odour survey identified no offensive odours relating to the service station and it is considered unlikely to present a long-term adverse odour issue to sensitive receptors or facilities on the school grounds.

The assessment undertaken suggests the risks of exposure to sensitive receptors from both adverse odour situations and elevated VOC concentrations (beyond background concentrations) from identified VOC emission sources, at the proposed development site are acceptably low. On this basis, adverse impacts from odour and VOC on the New High School for Medowie is considered to be unlikely and further assessment is not considered warranted.

The objective of the investigation was to assess human health and aesthetic concerns relating to VOC and odours associated with the adjoining service station that may adversely impact future sensitive receptors at the proposed development site (school). The investigation did not identify unacceptable aesthetic or human health risks related to the presence of adverse odours and VOC deriving from the service station, consequently the objective is considered to have been suitably addressed.

10 Limitations and Disclaimer

This report has been prepared for the exclusive use of the client and is limited to the scope of the work agreed in the terms and conditions of contract (including assumptions, limitations and qualifications, circumstances, and constraints). ADE has relied upon the accuracy of information and data provided to it by the client and others.

ADE has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendixes and attachments. The report is an integral document and must be read in its entirety.

To the fullest extent permitted by law, ADE does not accept or assume responsibility to any third party (other than the client) for the investigative work, the report or the opinions given.

The scope of work conducted, and report herein may not meet the specific needs (of which ADE is not aware) of third parties. ADE cannot be held liable for third party reliance on this document. Any third party who relies upon this report does so at its own risk.

The subsurface environment can present substantial uncertainty due to it complex heterogeneity. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

The material subject to classification pertains only to the site and subject area outlined within the report and must be consistent with the waste description reported. If there are any unexpected finds that are not consistent with this classification, ADE must be notified immediately.

ADE does not verify the accuracy or completeness of, or adopt as its own, the information or data supplied by others and excludes all liability with respect to such information and data. To the extent that conditions differ from assumptions set out in the report, and to the extent that information provided to ADE is inaccurate or incomplete or has changed since it was provided to ADE, the opinions expressed in this report may not be valid and should be reviewed.

ADE's professional opinions are based upon its professional judgement, experience, training, and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited its investigation to the scope agreed upon with its client.

This Limitation and Disclaimer must accompany every copy of this report.

11 References

Department of Environment and Conservation NSW (2004) *Ambient Air Quality Research Project (1996-2001)*

New York State Department of Health (2014) *Tenant Notification Fact Sheet for Acetone.*

NSW Department of Education (2024) *REF Review Checklist* (ref: DOC24/3137063 Revision 1 December 2024)

NSW EPA Technical Framework: Assessment and management of odour from stationary sources in NSW (NSW EPA, 2006a)

NSW EPA Technical Framework: Assessment and management of odour from stationary sources in NSW (NSW EPA, 2006b)

National Environmental Protection Council National Environmental Protection (Air Toxics) Measure 2011 Amendment (NEPC, 2011)

Port Stephens Local Environmental Plan (LEP) 2013.

United States Environmental Protection Agency (2024) *Regional Screening Level (RSL) Resident Ambient Air*.

Work Health and Safety Act 2011.

Work Health and Safety Regulation 2017.

Figures

Legend

- Campvale Drain
- Approximate Site Boundary

0 100 m 200 m

ADE CONSULTING GROUP

Produced by **Datanest.earth**

Title: Site locality

Client: SINSW		Size: A3
Project: 24.0124 SINSW Medowie	Drawn: KA	Figure No.: 1
Date: 19-04-2024	Checked: SG	
Proj No: A101024.0124	Scale: 1:6200	Version: draft

Legend

- Ambient Air Sample Location
- Service station and mechanical car workshop
- Approximate Site Boundary

0 25 m 50 m

ADE CONSULTING GROUP

Produced by **Datanest.earth**

Title: Figure 2 - Site features and sample locations		
Client: SINSW		Size: A4
Project: 24.0124 SINSW Medowie	Drawn: KA	Figure No.: 2
Date: 02-12-2024	Checked: MD	
Proj No: A101024.0124	Scale: 1:1500	Version: draft

Legend

- Odour Assessmement Location
- Approximate Site Boundary

0 25 m 50 m

ADE CONSULTING GROUP

Produced by **Datanest.earth**

Title: Figure 3 - Sample locations		
Client: SINSW		Size: A4
Project: 24.0124 SINSW Medowie	Drawn: JW	Figure No.: 3
Date: 13-01-2025	Checked: SB	
Proj No: A101024.0124	Scale: 1:2191	Version: final

Appendix A: Supporting Documents

Short-term climate data from Bureau of Meteorology Williamtown Station (ID: 061078)

Date/Time	Temperature (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (km/h)	Pressure (hPa)	Rain since 9am (mm)
5:00 5/11/24	19.7	89	S	17	1015	4.6
5:30 5/11/24	19.6	91	S	19	1015.2	4.6
6:00 5/11/24	19.4	94	SSW	13	1015.6	4.6
6:30 5/11/24	19.5	93	S	13	1016	4.6
7:00 5/11/24	19.9	88	SSE	15	1016.4	4.6
7:30 5/11/24	20.1	86	SE	13	1016.8	4.6
8:00 5/11/24	20.7	82	SE	19	1017	4.6
8:30 5/11/24	21	77	SE	20	1017.5	4.6
9:00 5/11/24	21.6	77	SE	20	1017.6	4.6
9:30 5/11/24	22	78	SE	24	1017.8	0
10:00 5/11/24	22.5	77	SE	24	1017.8	0
10:13 5/11/24	22.1	76	SE	24	1017.8	0
10:30 5/11/24	21.6	77	ESE	22	1017.7	0
10:45 5/11/24	21.9	76	ESE	22	1017.7	0
11:00 5/11/24	21.1	76	ESE	24	1017.7	0
11:30 5/11/24	21.8	75	ESE	24	1017.4	0
12:00 5/11/24	21.9	73	ESE	24	1017.3	0
12:30 5/11/24	22.5	70	ESE	20	1017.1	0
13:00 5/11/24	22.2	73	ESE	24	1017.1	0
13:30 5/11/24	22.1	73	ESE	24	1017	0
14:00 5/11/24	22.4	74	ESE	24	1016.6	0
14:30 5/11/24	21.9	73	E	20	1016.5	0
15:00 5/11/24	21.8	74	ESE	26	1016.3	0
15:30 5/11/24	21.8	72	E	24	1016	0
16:00 5/11/24	22	72	E	19	1015.9	0
16:30 5/11/24	22	75	E	20	1015.8	0
17:00 5/11/24	21.7	76	E	20	1015.9	0
17:30 5/11/24	21.5	76	E	19	1016.1	0
18:00 5/11/24	21.2	75	E	15	1016.1	0
18:30 5/11/24	20.9	75	ENE	17	1016.1	0

Williamtown, New South Wales
January 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Mo	20.6	26.5	0			ENE	48	14:32	22.6	74	8	ENE	22	1022.5	25.2	71	8	ENE	28	1019.5
2	Tu	20.5	29.0	0			ENE	52	15:53	25.5	67		NE	19	1019.6	28.0	54		ENE	33	1016.9
3	We	19.6	30.0	0			ENE	43	16:01	25.5	56		NE	19	1017.3	29.3	50		ENE	24	1013.9
4	Th	18.9	29.9	0			SSW	48	17:49	25.1	73		WNW	9	1014.6	24.2	83	8	S	28	1015.5
5	Fr	20.2	26.6	1.6			SSE	46	11:10	23.2	76	8	SSE	28	1020.2	23.1	74	8	SE	33	1020.2
6	Sa	17.1	27.0	0			SE	41	13:21	22.5	67	8	SW	11	1021.8	25.5	49		ESE	31	1019.6
7	Su	15.3	30.3	0			ENE	50	14:45	25.1	60		NNE	19	1019.0	29.2	49		ENE	31	1014.7
8	Mo	20.1	30.1	0			W	33	16:40	27.3	59	7	NNW	6	1012.6	29.1	53	7	N	9	1010.7
9	Tu	22.4	28.8	1.2			S	41	09:56	25.1	78	8	W	9	1012.3	24.7	76	7	SE	17	1011.9
10	We	22.1	29.9	0.4			SE	35	12:46	24.6	79	8	E	6	1015.0	28.9	64		ESE	24	1013.3
11	Th	21.7	32.2	0			ESE	44	14:46	25.9	82	8	NE	13	1017.7	29.4	58		E	30	1018.2
12	Fr	21.4	30.3	0.8			ESE	48	13:31	26.4	66		ENE	20	1020.5	28.8	58	1	ESE	33	1018.2
13	Sa	18.8	32.7	0			SE	39	12:56	26.4	64		NNE	11	1016.0	31.3	47		ESE	28	1012.7
14	Su	20.0	28.2	0			SE	41	17:12	25.3	73	6	SSW	20	1016.8	26.2	69	8	S	19	1016.5
15	Mo	20.7	25.8	1.8			ESE	54	09:29	23.5	77	8	ESE	30	1019.5	23.8	65	8	ESE	33	1020.0
16	Tu	19.9	26.8	0.4			ENE	39	09:53	24.3	67	8	E	15	1017.6	22.8	82	6	NE	24	1014.4
17	We	22.0	33.1	0.4			N	37	09:22	26.6	65		NNE	19	1009.9	30.3	58	7	ENE	20	1004.7
18	Th	21.4	35.5	13.0			WNW	52	08:37	27.1	73		WNW	30	1003.4	33.1	42	1	WNW	26	1000.5
19	Fr	16.3	29.1	0.2			ESE	39	14:38	23.2	45		WNW	24	1007.3	26.6	33		SSE	28	1007.5
20	Sa	18.3	29.7	0			ENE	54	15:33	25.1	71	8	ENE	17	1011.7	27.4	53		ENE	30	1008.6
21	Su	19.2	39.0	0			WNW	52	11:37	25.3	72		NW	15	1006.9	35.5	37		ESE	22	1003.1
22	Mo	21.9	27.5	0			SSW	61	00:01	22.8	68	8	SSW	24	1011.4	25.5	58	1	SSE	35	1011.6
23	Tu	19.6	27.1	0.2			ESE	37	13:41	23.4	65	3	ENE	11	1015.5	25.8	52	8	ENE	22	1014.0
24	We	17.2	33.3	0			NNE	31	14:16	23.6	63		NNE	20	1013.0	32.7	41		NE	15	1010.6
25	Th	23.5	41.7	0			WNW	41	10:25	29.6	50	7	NW	17	1009.9	37.1	30	7	SE	20	1007.1
26	Fr	23.7	42.4	0			NW	61	13:59	34.8	36	6	NW	28	1002.3	40.4	24	8	WNW	35	998.9
27	Sa	23.0	25.5	0			SSE	31	23:02	24.0	70	8	E	15	1006.9	23.7	69	7	ENE	17	1005.8
28	Su	20.4	26.9	0			S	35	10:26	23.8	77	8	S	13	1009.7	25.3	72	8	SSE	20	1010.4
29	Mo	21.2	34.6	0			ENE	46	15:35	26.7	66		ENE	17	1012.4	33.4	50		NE	24	1007.7
30	Tu	22.8	31.8	0			SE	39	13:08	26.7	79	8	ENE	15	1012.3	29.4	65		ESE	31	1011.1
31	We	20.0	29.8	0			ESE	35	12:24	25.3	78	8	NE	13	1012.4	28.7	64	1	ESE	24	1011.3
Statistics for January 2024																					
	Mean	20.3	30.7							25.4	67	7		17	1013.8	28.5	56	6		25	1011.9
	Lowest	15.3	25.5							22.5	36	3	#	6	1002.3	22.8	24	1	N	9	998.9
	Highest	23.7	42.4	13.0			#	61		34.8	82	8	#	30	1022.5	40.4	83	8	#	35	1020.2
	Total			20.0																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202401 Prepared at 13:00 UTC on 10 Nov 2024

Williamtown, New South Wales
February 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Th	21.7	28.2	7.4			SSW	35	04:56	23.8	85	7	SE	17	1013.3	27.4	68	5	SE	17	1009.8
2	Fr	20.0	30.5	0.2			SE	46	16:00	26.4	76		SW	15	1006.5	29.4	59		SSE	31	1005.5
3	Sa	18.8	28.2	0			ESE	41	13:36	23.2	66	7	E	11	1013.8	27.4	56	8	ENE	28	1011.3
4	Su	19.5	36.8	0			ENE	39	15:57	22.3	82		NW	13	1010.8	36.2	43		ENE	17	1006.5
5	Mo	22.3	38.7	0			WNW	33	11:47	31.3	68		N	13	1007.9	35.3	44	8	SE	17	1006.0
6	Tu	22.1	27.5	0.2			S	52	13:16	25.7	86	8		Calm	1009.2	20.5	95	8	S	33	1011.1
7	We	17.5	22.8	25.2			SSE	41	22:12	17.8	92	8	W	11	1019.7	19.6	93	8	SSW	26	1020.0
8	Th	17.2	25.9	12.8			SSE	46	13:32	22.6	71	8	SSE	22	1023.4	24.5	60	7	SSE	35	1022.7
9	Fr	16.1	26.1	0			SSW	41	17:49	20.2	71	8	W	13	1021.9	25.1	61	8	SSE	20	1019.1
10	Sa	19.4	26.0	5.4			SSE	61	05:32	21.7	79	8	SSE	33	1022.5	24.4	65	7	S	37	1022.7
11	Su	20.8	25.1	0			ESE	43	02:39	23.5	70	8	SE	26	1022.8	24.3	64	8	ESE	19	1021.3
12	Mo	18.4	30.7	0			E	35	14:24	24.5	66		NE	13	1021.5	28.9	63	1	E	24	1017.4
13	Tu	21.1	33.5	0			ENE	41	15:37	26.1	64		N	20	1017.6	32.8	43		NE	19	1012.3
14	We	18.9	35.4	0			SW	69	15:23	26.6	62		NNW	13	1011.9	33.0	41	8	WSW	13	1010.5
15	Th	20.7	23.4	6.4			S	41	15:19	22.0	88	8	SSW	15	1019.6	22.0	88	8	SSW	20	1019.7
16	Fr	20.9	28.0	18.8			NE	50	14:12	22.4	94	8	S	11	1021.5	26.8	78	8	ESE	17	1019.6
17	Sa	20.7	31.4	19.8			ENE	31	17:46	24.4	78		NNW	15	1021.4	30.5	54		ESE	19	1018.4
18	Su	19.3	29.7	0			SE	28	10:58	22.3	95	8	NNW	9	1019.4	28.4	63		SE	15	1016.3
19	Mo	20.9	23.6	0.2			SSW	37	10:06	21.9	91	8	NNW	15	1017.6	20.0	86	8	ENE	17	1018.1
20	Tu	18.8	25.3							21.5	95	8	W	7	1017.7	24.7	68	8	SSE	19	1015.9
21	We	18.2	26.7	4.0			SSE	30	13:18	21.0	93	8	WNW	9	1016.9	25.7	73	4	SE	19	1014.7
22	Th	20.3		0.2						22.9	91	8	W	9	1015.0	28.5	68		SE	20	1010.7
23	Fr	20.9	38.1				SW	74	18:31	27.1	68		NNW	13	1009.1	38.1	35	2	WNW	22	1005.3
24	Sa	21.8	22.2	12.6			S	48	16:19	21.9	96	7	S	28	1013.9	20.1	95	8	S	30	1016.3
25	Su	18.2	26.0	1.8			S	30	01:59	21.7	75	1	WSW	11	1018.4	25.3	67	8	ESE	13	1014.6
26	Mo	16.3	32.7	0.2			SSE	54	13:21	22.1	84		WNW	17	1014.4	28.5	56	1	SE	30	1013.6
27	Tu	21.6	25.5	2.8			SE	37	11:00	22.4	93	8	NNW	4	1018.3	22.8	85	8	E	20	1017.4
28	We	21.2	30.8	0.2			ENE	41	16:17	25.3	77		NE	19	1019.2	29.1	63	6	ENE	24	1015.8
29	Th	21.6	39.7	0			W	52	12:19	26.4	77		N	11	1015.0	38.3	36		NW	30	1010.9
Statistics for February 2024																					
	Mean	19.8	29.2							23.5	80	7		14	1016.6	27.5	64	6		22	1014.6
	Lowest	16.1	22.2							17.8	62	1		Calm	1006.5	19.6	35	1	#	13	1005.3
	Highest	22.3	39.7	25.2			SW	74		31.3	96	8	SSE	33	1023.4	38.3	95	8	S	37	1022.7
	Total			118.2																	

Observations were drawn from Williamtown RAAF {station 061078}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202402 Prepared at 13:00 UTC on 9 Nov 2024

Williamtown, New South Wales
March 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Fr	23.0	29.2	2.6			WNW	39	23:31	24.9	89	8	WSW	4	1015.7	28.0	71	6	SE	19	1013.0
2	Sa	24.5	32.8	0			S	57	11:07	26.7	84	3	W	7	1010.6	23.7	89	8	SSW	33	1013.6
3	Su	19.1	29.8	4.6			ESE	28	13:47	23.1	86		WSW	4	1014.7	26.9	70	8	E	19	1010.8
4	Mo	21.0	25.3	0.2			SE	50	01:59	22.0	66	8	SSE	30	1020.6	23.4	58	8	S	28	1021.5
5	Tu	14.8	26.0	0			ESE	35	15:01	20.5	72	4	WSW	9	1023.3	25.0	49	3	SE	20	1021.1
6	We	15.4	30.7	0			SSE	28	14:26	21.1	80		NW	13	1021.2	29.6	51		SSE	17	1017.7
7	Th	17.3	28.1	0			SE	33	14:19	23.7	79		WNW	7	1020.2	27.3	65		SE	24	1020.4
8	Fr	18.3	28.9	1.6			ESE	39	13:40	24.4	83		ENE	9	1024.5	28.2	56		ESE	24	1022.9
9	Sa	18.0	28.4	0.4			SE	37	12:20	24.3	74	1	NE	7	1025.8	27.9	56		ESE	26	1024.4
10	Su	16.9	29.5	0			ENE	44	15:06	24.7	72		SE	9	1027.4	28.7	48	1	ENE	24	1025.5
11	Mo	16.3	29.4	0			ENE	43	15:58	24.4	70		NE	11	1026.7	27.4	50		ESE	31	1023.0
12	Tu	16.4	31.6	0						21.9	72		NNW	13	1019.8	30.3	43		ESE	17	1015.4
13	We	14.4	28.1				ESE	33	16:04	19.3	98	8		Calm	1017.5	26.2	64		SE	20	1014.3
14	Th	15.6	35.1	0			S	41	17:52	20.5	88	2	NW	13	1011.9	34.3	30		NNW	15	1007.3
15	Fr	18.6	25.8	3.2			S	54	02:27	20.2	83	8	S	11	1018.3	24.3	52	2	SE	31	1018.9
16	Sa	14.6	24.3	1.2			SE	35	12:56	19.8	86	8	WNW	7	1021.7	23.0	68	8	SSE	22	1019.1
17	Su	18.4	23.9	8.2			ESE	28	13:40	18.7	96	5	N	7	1017.4	22.4	80	8	SE	20	1014.1
18	Mo	17.0	23.9	6.6			SSE	33	14:46	19.1	97	8	NW	7	1015.0	23.5	82	8	S	13	1013.7
19	Tu	17.0	28.7	1.8			ENE	39	16:05	20.8	88	1	NNW	11	1017.4	26.3	72		SE	17	1015.1
20	We	20.2	26.3	0			SSE	61	21:53	21.8	92	8	NW	4	1015.3	23.0	91	8	WNW	26	1015.8
21	Th	18.0	23.1	9.0			SSE	56	23:16	19.7	60	1	S	24	1027.7	22.0	58		SSE	30	1026.3
22	Fr	16.2	23.8	5.6			NE	31	16:04	17.1	96	8	WNW	13	1025.7	22.1	68	5	SE	19	1023.1
23	Sa	12.2	24.3	0			SE	28	13:34	17.1	89	8	WSW	6	1023.1	23.5	61		SE	20	1021.0
24	Su	17.0	25.2	0			SE	28	14:58	19.5	90		NW	11	1020.9	24.2	66		SE	17	1018.3
25	Mo	14.1	29.7	0			ENE	31	16:03	19.4	83		NW	13	1019.6	28.5	48		ENE	9	1016.4
26	Tu	14.9	26.6	0			SSE	28	12:11	19.2	93	8	WNW	15	1020.0	24.9	74		SSE	20	1017.9
27	We	15.4	26.0	0			S	37	09:15	22.6	90	5	S	19	1022.6	24.9	76	7	S	26	1021.6
28	Th	16.5	25.2	0.2			SE	37	12:22	20.3	96	2	WNW	11	1024.0	22.9	78	8	ESE	26	1023.5
29	Fr	18.7	24.5	0			SSE	22	14:30	20.4	90	8	SSE	4	1027.3	23.5	61	8	SE	15	1025.8
30	Sa	13.0	26.8	0.2			ESE	28	14:52	16.7	98	8	WNW	9	1026.4	25.6	67		SE	17	1023.3
31	Su	13.9	25.5	0			SE	26	13:04	17.5	98	8	WNW	7	1023.6	24.5	65		SE	17	1020.5
Statistics for March 2024																					
	Mean	17.0	27.3							21.0	85	5		10	1020.8	25.7	63	6		21	1018.9
	Lowest	12.2	23.1							16.7	60	1		Calm	1010.6	22.0	30	1	ENE	9	1007.3
	Highest	24.5	35.1	9.0			SSE	61		26.7	98	8	SSE	30	1027.7	34.3	91	8	SSW	33	1026.3
	Total			45.4																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202403 Prepared at 13:00 UTC on 8 Nov 2024

Williamtown, New South Wales
April 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Mo	14.2	29.1	0			SSE	33	12:29	19.3	88		WNW	2	1020.8	28.3	48		ENE	17	1017.0
2	Tu	15.7	27.8	0			W	41	12:33	20.6	80		N	7	1013.7	20.7	93	8	NNW	19	1011.8
3	We	12.6	25.1	4.8			SSE	37	14:44	16.9	79	5	WNW	20	1018.4	23.4	64	2	S	26	1017.8
4	Th	16.8	20.1	0.8			ENE	37	09:07	19.3	94	8	ENE	19	1022.1	19.5	92	5	SE	11	1021.5
5	Fr	17.7	21.5	42.8			ESE	57	18:48	18.8	96	8	SSW	4	1022.7	20.1	93	8	E	26	1018.9
6	Sa	17.8	27.7	103.6			ENE	43	00:11	19.8	87		WNW	24	1015.4	27.4	54	1	NW	19	1013.0
7	Su	16.6	28.5	0			WNW	46	13:03	20.4	76	8	WNW	9	1012.6	28.1	41		WNW	20	1007.7
8	Mo	17.3	26.0	0			WNW	33	07:21	22.1	65		WNW	22	1011.6	22.9	70	3	SE	20	1009.3
9	Tu	15.0	25.0	0			S	63	17:08	20.3	65		NW	20	1009.7	20.7	73	8	S	41	1007.3
10	We	12.8	21.2	1.8			SW	59	04:14	16.6	62	8	SW	28	1014.0	19.9	65	8	SSW	30	1014.3
11	Th	11.9	22.8	0			S	41	13:21	18.6	62	1	W	19	1019.7	21.4	57	8	SSE	31	1018.7
12	Fr	12.5	23.5	0			SSE	30	14:50	18.0	74		WNW	17	1021.8	22.9	62		SSE	20	1018.7
13	Sa	11.2	24.4	0			ESE	33	14:41	18.5	84		WNW	11	1021.4	23.5	67		ESE	20	1019.1
14	Su	11.7	26.1	0			ENE	26	15:14	16.4	98	8	NW	11	1023.3	24.2	67		E	17	1020.4
15	Mo	12.3	26.7	0			SE	26	13:04	21.0	73	1	WNW	11	1023.1	23.5	71	2	SE	19	1020.3
16	Tu	16.5	25.0	0			S	31	12:11	20.2	84	8	WNW	13	1023.5	24.2	65		SSE	20	1020.6
17	We	12.9	25.3	0			SE	28	14:13	19.7	88	8	WNW	9	1024.1	23.7	64	2	ESE	17	1020.1
18	Th	14.2	25.2	0.6			WNW	33	11:34	18.3	87	8	WNW	17	1018.6	22.4	71	8	SSE	17	1014.0
19	Fr	12.2	22.5	0.8			S	35	19:12	17.0	65		WNW	19	1016.7	20.3	63	8	S	19	1016.6
20	Sa	14.8	19.1	15.0			S	43	19:24	16.1	94	8	SW	15	1022.6	17.3	94	8	SSW	19	1022.9
21	Su	16.0	24.0	23.4			SSE	41	05:57	17.0	93	7	WSW	19	1027.2	21.9	57	3	SE	22	1025.5
22	Mo	13.5	23.6	0			SSE	30	14:09	19.4	79		SW	13	1028.1	22.7	65		SSE	17	1025.8
23	Tu	11.6	25.9	0.2			ENE	24	17:33	17.5	83		NW	17	1026.1	25.5	46		NW	11	1020.8
24	We	13.4	25.7	0			S	48	19:44	18.9	81		NW	11	1018.3	24.1	57	8	NW	17	1015.1
25	Th	15.8	22.0	0.4			S	37	14:03	17.9	67	8	W	13	1019.8	21.0	54	8	SSE	24	1018.2
26	Fr	10.6	21.3	0.2			SSW	43	12:04	15.7	74	8	NW	17	1023.0	20.5	59		SSW	26	1022.0
27	Sa	11.2	22.4	1.0			SE	28	12:51	16.6	78	1	WNW	13	1027.3	21.0	65		ESE	17	1025.0
28	Su	10.3	24.3	0			SE	24	13:13	16.0	89		NW	13	1027.7	24.0	61		NE	15	1023.6
29	Mo	11.5	26.3	0			WNW	28	11:31	18.9	81		WNW	13	1024.8	25.8	43	1	N	11	1021.4
30	Tu	12.3	21.1	0			SSE	41	15:47	18.3	86	8	WNW	15	1023.9	18.8	85	8	S	26	1023.3
Statistics for April 2024																					
	Mean	13.8	24.3							18.5	80	6		14	1020.7	22.7	65	5		20	1018.4
	Lowest	10.3	19.1							15.7	62	1	WNW	2	1009.7	17.3	41	1	#	11	1007.3
	Highest	17.8	29.1	103.6			S	63		22.1	98	8	SW	28	1028.1	28.3	94	8	S	41	1025.8
	Total			195.4																	

Observations were drawn from Williamtown RAAF {station 061078}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202404 Prepared at 16:00 UTC on 7 Nov 2024

Williamtown, New South Wales
May 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	We	13.8	19.2	43.8			SSE	43	15:41	14.3	95	8	WSW	20	1028.9	18.9	71	8	SSE	19	1027.1
2	Th	14.3	20.2	52.2			SE	37	07:18	16.6	91	8	NW	9	1030.5	18.4	78	8	E	4	1028.1
3	Fr	11.6	20.5	17.6			S	30	12:16	15.1	90		WNW	11	1029.1	19.8	63	5	SSE	19	1025.5
4	Sa	12.3	20.6	3.4			ENE	19	13:32	17.4	91	8	NW	4	1024.4	19.2	74	8	ESE	11	1021.0
5	Su	14.2	19.1	22.4			S	31	10:41	15.5	97	7	WSW	11	1020.9	17.7	85	8	SSW	17	1018.9
6	Mo	14.2	21.0	54.0			ESE	67	14:44	18.8	78	8	E	17	1024.5	18.1	95	8	SE	30	1025.6
7	Tu	13.2	21.4	20.2			ESE	35	19:16	15.1	95	8	NNW	9	1029.9	18.8	69	8	SSW	9	1027.9
8	We	11.8	21.2	2.4			ESE	33	14:33	16.2	90	1	W	9	1030.7	20.0	66	7	ESE	20	1027.8
9	Th	12.4	21.4	1.2			SE	31	14:32	15.7	95	8	NW	6	1031.1	20.5	64		E	17	1028.4
10	Fr	11.4	21.0	0			NE	30	20:35	14.8	96	4	WSW	7	1029.9	20.1	67	8	ESE	15	1027.0
11	Sa	14.8	18.2	9.2			ENE	28	11:34	16.1	96	8	NE	13	1026.6	18.0	88	7	NE	9	1023.1
12	Su	13.2	21.1	14.2			WNW	24	11:14	15.2	97	8	WNW	11	1020.1	19.9	71	8	WNW	13	1017.2
13	Mo	13.1	20.8	0			WSW	39	11:12	17.2	83	6	WNW	22	1018.6	18.6	90	6	W	13	1018.1
14	Tu	13.0	23.2	1.6			WNW	30	08:10	16.7	84		WNW	22	1025.2	21.0	61		SE	17	1023.9
15	We	12.2	22.3	0.8			NW	19	08:19	16.5	84		WNW	13	1029.1	20.3	72		ESE	13	1026.0
16	Th	10.0	20.4	0			SSE	20	12:56	13.9	98	7	WNW	11	1029.8	19.5	74	4	ESE	15	1026.5
17	Fr	11.5	21.5	0.4			NW	28	11:38	14.3	98	8	NW	17	1025.4	21.0	61		WNW	17	1020.5
18	Sa	11.2	16.7	0.8			SSW	69	03:44	13.1	79	7	WSW	15	1021.5	11.9	93	7	WSW	22	1020.7
19	Su	9.5	18.8	32.0			WSW	35	10:34	12.1	72	8	WNW	17	1021.9	18.2	52	2	SW	15	1019.0
20	Mo	7.7	18.0	0			WNW	37	03:59	12.2	58	1	WNW	24	1022.2	16.7	64	8	SSW	17	1021.4
21	Tu	12.2	17.3	20.2			SW	41	12:46	13.4	95	8	SW	13	1026.5	15.6	91	8	SW	20	1024.8
22	We	10.0	19.3	11.8			WNW	26	06:10	13.7	81		WNW	19	1026.7	18.4	57		S	17	1023.5
23	Th	9.5	19.8	0.2			NW	28	08:19	12.8	81	8	WNW	22	1027.3	19.3	54		NW	7	1024.9
24	Fr	8.3	20.3	0			NW	24	07:59	12.4	87		NW	19	1027.2	18.9	61		S	11	1024.9
25	Sa	10.2	19.2	0.2			NW	20	09:44	12.5	94	8	WNW	13	1028.1	18.7	71	7	SSE	11	1025.2
26	Su	9.9	21.0	0.2			NW	24	10:29	13.2	98	4	NW	15	1026.0	21.0	60		WNW	9	1022.6
27	Mo	9.0	20.4	0			NW	28	08:59	12.7	86		NW	19	1025.2	19.1	69		SSE	17	1023.5
28	Tu	8.2	21.4	0.2			NW	26	08:42	12.3	90		NW	19	1028.5	19.8	62		ESE	11	1026.5
29	We	6.8	22.1	0.2			NW	19	07:49	11.5	95		WNW	15	1029.8	20.8	65		ESE	11	1026.1
30	Th	6.5	23.6	0.2			NNE	20	23:30	13.6	88		WNW	9	1027.2	23.0	49		N	6	1023.1
31	Fr	13.6	18.7	0			NNE	26	02:47	14.9	84	8		Calm	1019.4	18.5	76	8	NW	6	1016.7
Statistics for May 2024																					
	Mean	11.3	20.3							14.5	88	6		13	1026.2	19.0	70	7		14	1023.7
	Lowest	6.5	16.7							11.5	58	1		Calm	1018.6	11.9	49	2	E	4	1016.7
	Highest	14.8	23.6	54.0			SSW	69		18.8	98	8	WNW	24	1031.1	23.0	95	8	SE	30	1028.4
	Total			309.4																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202405 Prepared at 13:00 UTC on 6 Nov 2024

Williamtown, New South Wales
June 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Sa	13.2	15.8	29.2			SE	50	17:41	13.5	94	8	SW	19	1018.7	13.2	96	8	WNW	17	1016.5
2	Su	11.6	14.9	38.6			WSW	43	02:10	12.4	90	8	WNW	17	1017.3	14.3	78	8	WNW	24	1014.8
3	Mo	9.5	16.9	0			WNW	52	09:52	13.3	65		NW	22	1013.6	16.5	51	8	WNW	35	1011.0
4	Tu	10.2	16.7	0			WNW	52	13:12	12.2	60	1	WNW	26	1016.5	15.0	55	8	W	19	1015.0
5	We	7.4	17.7	0			WNW	30	19:58	11.7	74	7	WNW	17	1019.2	17.0	66	7	SE	9	1016.6
6	Th	9.1	18.4	10.6			SW	41	20:00	12.2	84		WNW	17	1018.6	17.1	74		NW	11	1016.0
7	Fr	11.3	16.7	5.6						13.3	87	8	WNW	33	1014.5	15.5	69		W	15	1012.7
8	Sa	10.0	18.3	0.2			WNW	56	21:12	14.1	75	7	WNW	31	1012.6	17.8	59		WNW	37	1010.8
9	Su	12.8	19.2	0			WNW	50	11:37	14.9	69	8	WNW	22	1017.4	17.4	56	4	WNW	28	1016.4
10	Mo	8.9	18.3	0			WNW	43	05:41	12.1	66		W	30	1021.6	17.8	49		SW	22	1020.1
11	Tu	7.8	18.7	0			NW	56	22:13	11.4	80	8	WNW	17	1021.6	16.9	56	7	WNW	13	1015.4
12	We	11.1	20.4	0			WNW	61	00:58	16.7	58		WNW	30	1009.9	18.9	36	8	WSW	37	1008.9
13	Th	8.4	16.5	0.6			W	31	08:58	12.6	57	1	W	20	1019.9	15.7	59	8	WSW	17	1018.8
14	Fr	10.0	16.1	0			W	28	10:26	12.6	75	8	WNW	17	1019.3	13.9	94	8	SSW	17	1016.7
15	Sa	11.6	15.7	49.4			SW	37	18:00	12.0	92	7	S	15	1016.5	13.6	84	8	SW	11	1014.0
16	Su	8.7	16.5	5.8			WSW	41	12:47	12.1	65		W	20	1015.6	16.1	42		SW	17	1012.6
17	Mo	8.0	16.3	0			WNW	50	08:31	9.9	68	8	WNW	31	1013.5	13.6	80	8	SSW	24	1013.3
18	Tu	8.3	17.0	0			WNW	31	08:50	11.8	69		WNW	20	1016.5	16.6	53	8	S	11	1014.2
19	We	6.8	15.3	0			WNW	39	10:40	9.7	73		WNW	28	1017.5	14.9	45		WSW	15	1014.4
20	Th	3.5	17.5	0			WNW	33	13:23	9.1	76	1	NW	11	1018.4	17.4	45	7	W	20	1016.0
21	Fr	5.6	18.5	0			WNW	35	11:08	11.6	79	6	WNW	20	1018.7	18.4	54	1	W	20	1017.2
22	Sa	6.6	14.0	2.6			SW	35	13:19	10.8	81	8	WNW	20	1024.2	12.6	87	2	WSW	15	1022.5
23	Su	9.8	16.7	14.0			SSW	31	11:58	12.3	94	8	WSW	15	1023.9	15.8	73	8	SW	19	1021.0
24	Mo	7.9	16.9	2.6			WNW	30	10:23	8.7	98	8	WNW	19	1021.0	16.2	61		NW	11	1018.3
25	Tu	4.4	20.0	0.2			WNW	22	09:48	8.6	94		NW	13	1023.0	19.3	56		E	4	1020.0
26	We	5.9	21.7	0.2			NW	17	04:36	11.6	92	2	NW	7	1021.7	21.0	56		N	7	1017.6
27	Th	6.7	18.4	0			WNW	28	09:23	11.9	76		WNW	19	1023.2	18.2	41		W	13	1021.0
28	Fr	4.9	18.7	0.2			NW	30	09:14	9.7	76		WNW	22	1026.9	17.0	48		SE	15	1024.0
29	Sa	3.0	20.5	0			NW	20	05:04	9.3	82		NNW	11	1022.9	20.3	57		NNE	9	1017.6
30	Su	9.2	15.3	7.6			S	50	16:52	14.4	97	8	SW	11	1012.9	14.5	91	8	SSW	20	1012.9
Statistics for June 2024																					
Mean		8.4	17.5							11.9	78	6		20	1018.6	16.4	62	6		17	1016.2
Lowest		3.0	14.0							8.6	57	1	NW	7	1009.9	12.6	36	1	E	4	1008.9
Highest		13.2	21.7	49.4			WNW	61		16.7	98	8	WNW	33	1026.9	21.0	96	8	#	37	1024.0
Total				167.4																	

Observations were drawn from Williamtown RAAF {station 061078}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202406 Prepared at 13:00 UTC on 5 Nov 2024

Williamtown, New South Wales
July 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Mo	9.4	15.6	2.0			S	48	13:33	12.2	72		W	11	1023.3	14.8	73	5	S	30	1022.9
2	Tu	8.6	16.0	32.8			ESE	39	18:45	11.2	97	8	W	13	1028.7	13.5	87	8	SW	15	1027.9
3	We	9.4	17.6	20.2			SE	50	11:31	15.9	60	8	SSE	24	1032.4	16.6	60	4	S	31	1030.6
4	Th	9.7	18.0	5.8			SE	44	10:20	15.1	63	8	SE	28	1033.5	16.0	63	6	S	17	1032.4
5	Fr	7.6	18.0	0			SE	44	10:24	14.5	88	8	S	20	1035.8	16.9	62	8	SSE	31	1035.0
6	Sa	12.8	17.8	1.4			SE	44	10:54	16.8	50	1	SE	20	1037.9	16.0	63		S	24	1035.5
7	Su	8.7	16.9	0			S	26	14:30	10.9	90	7	WNW	13	1034.2	16.4	74	8	S	15	1030.1
8	Mo	10.8	16.4	10.0			WNW	19	00:31	12.0	98	8		Calm	1027.8	15.8	84	8	NE	7	1023.1
9	Tu	12.0	17.5	7.4			W	26	14:36	14.0	95	8	N	11	1021.1	17.0	84	8	WNW	17	1018.9
10	We	8.1	18.3	0.4			WNW	46	10:57	13.1	79		NW	20	1022.3	18.1	56		WNW	24	1020.2
11	Th	6.6	17.7	0			NW	30	10:48	11.4	83		WNW	15	1023.4	17.0	55	7	WNW	6	1018.8
12	Fr	8.2	18.9	0.2			W	28	14:30	9.9	94	6	WNW	13	1014.9	18.8	48		WNW	19	1010.1
13	Sa	8.8	18.1	0			WSW	37	10:35	13.8	70	8	W	20	1011.0	17.2	59	6	S	20	1009.6
14	Su	8.1	16.0	0			WNW	46	09:20	11.3	70		WNW	31	1012.5	14.9	52		WNW	28	1009.3
15	Mo	7.3	14.9	0			NW	61	11:03	10.4	62		WNW	35	1009.1	14.3	44		NW	37	1006.0
16	Tu	9.2	13.8	0			WNW	80	12:20	11.9	54	7	WNW	50	1003.3	13.3	53	8	WNW	48	1001.4
17	We	10.3	18.1	0			WNW	61	01:52	12.9	68		WNW	41	1006.2	16.2	56	8	WNW	33	1005.1
18	Th	9.5	17.8	0			WNW	44	19:27	12.4	71		WNW	28	1013.2	17.7	51	5	WNW	26	1011.0
19	Fr	6.0	16.3	0			WNW	63	10:28	11.3	58		WNW	28	1016.9	15.3	40		WNW	39	1012.8
20	Sa	9.0	18.1	0			WNW	85	14:07	16.2	46		WNW	39	1007.6	16.4	33		W	41	1006.1
21	Su	9.4	17.4	0			WNW	65	09:04	11.9	54		WNW	43	1016.7	17.2	39		WNW	31	1017.7
22	Mo	5.9	18.5	0			WNW	37	09:57	11.3	67		WNW	22	1027.0	18.0	45	1	WNW	17	1024.5
23	Tu	6.8	19.5	0			WNW	39	11:51	10.8	78		WNW	17	1028.4	19.0	40		WNW	20	1024.9
24	We	3.0	20.0	0			WNW	22	11:55	9.5	80		NW	13	1025.4	19.8	46		N	9	1020.8
25	Th	4.5	23.7	0			NNW	37	14:15	12.2	79		N	6	1021.3	22.5	41	5	NNW	15	1016.9
26	Fr	10.2	20.8	5.6			NW	37	13:15	13.2	96	5	N	7	1020.3	20.5	52		WNW	22	1018.5
27	Sa	6.9	16.8	4.6			WNW	28	23:53	10.9	97	7	NW	11	1021.1	16.5	82	8	WSW	9	1016.3
28	Su	9.5	15.6	3.0			WNW	70	12:53	12.2	68		WNW	37	1017.8	15.3	33		W	35	1016.4
29	Mo	6.3	14.8	0			SSW	56	15:55	8.7	64	5	WNW	31	1024.0	14.2	44	7	SW	31	1024.4
30	Tu	8.1	15.8	1.2			SSW	61	14:39	11.5	67	8	SW	24	1031.6	14.3	65	3	SSW	33	1030.6
31	We	9.2	15.7	1.4			SSW	52	14:25	11.3	73	8	SW	22	1033.4	15.2	62	8	SSW	30	1031.3
Statistics for July 2024																					
	Mean	8.4	17.4							12.3	73	6		22	1022.0	16.6	56	6		24	1019.6
	Lowest	3.0	13.8							8.7	46	1		Calm	1003.3	13.3	33	1	WNW	6	1001.4
	Highest	12.8	23.7	32.8			WNW	85		16.8	98	8	WNW	50	1037.9	22.5	87	8	WNW	48	1035.5
	Total			96.0																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202407 Prepared at 13:00 UTC on 18 Nov 2024

Williamtown, New South Wales
August 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Th	8.5	16.3	3.6			SSW	44	13:56	10.5	86	8	WSW	13	1032.2	14.5	71	8	SSW	28	1029.2
2	Fr	7.5	17.0	4.8			SSW	35	13:01	11.8	89		W	13	1029.8	15.4	71	8	SSW	19	1028.1
3	Sa	5.7	18.1	0.2			WNW	24	08:40	10.3	88		NW	17	1030.7	17.6	45		NW	9	1027.4
4	Su	2.7	16.3	0.2			WNW	22	08:37	7.8	88	2	NW	13	1029.2	15.7	58	8	SSE	11	1026.4
5	Mo	7.4	16.3	0			NW	17	09:05	10.5	90	8	NW	13	1025.7	15.6	66	8	NW	11	1021.3
6	Tu	10.3	17.7	18.2			S	33	12:24	13.4	85		WNW	17	1022.7	16.3	66	7	S	20	1021.8
7	We	6.2	18.5	0.2			WNW	26	08:43	10.6	82		WNW	17	1026.6	16.8	60		SSE	17	1025.1
8	Th	4.6	21.2	0			ENE	28	14:42	10.0	95		NW	11	1029.3	20.5	49		NNE	13	1025.0
9	Fr	6.9	21.6	0			NNW	20	11:04	12.5	83	8	WNW	15	1027.5	20.9	49		NW	9	1024.1
10	Sa	7.0	19.1	0			SSE	30	12:50	12.2	92	8	NW	13	1029.0	18.0	77	2	S	17	1027.1
11	Su	9.1	18.8	1.0			S	31	15:09	13.1	98	8	W	13	1030.9	18.3	70	8	S	22	1029.0
12	Mo	8.5	16.8	1.0			ENE	15	14:06	12.0	98	8		Calm	1032.6	16.6	85	8	E	9	1029.9
13	Tu	12.0	20.5	1.2			NNE	37	12:49	16.7	90	8	NE	9	1029.2	18.7	82	1	ENE	19	1024.9
14	We	14.9	17.5	1.8			SE	17	14:21	16.6	96	8	N	7	1022.4	17.0	95	8	SSE	11	1018.5
15	Th	15.4	18.4	10.2			S	30	14:56	16.4	96	8	WSW	13	1018.1	17.5	93	8	S	20	1015.8
16	Fr	15.5	19.5	3.0			S	19	12:59	16.9	94	8	WSW	9	1014.5	18.8	79	8	ESE	9	1010.4
17	Sa	13.4	21.5	1.0			WNW	59	15:18	16.1	78		WNW	26	1008.1	20.6	39		WNW	37	1004.8
18	Su	12.7	19.1	0			WNW	52	01:52	15.2	67	8	W	24	1013.7	14.9	86	8	SW	22	1015.6
19	Mo	10.2	18.0	2.8			SSE	28	12:39	15.0	74	7	W	11	1025.4	16.9	73	1	SE	17	1023.7
20	Tu	6.2	22.2	0			ENE	24	17:27	13.7	87	1	NNW	9	1024.9	21.2	59		SE	15	1019.2
21	We	11.8	26.2	0			WNW	54	12:29	19.2	67	1	N	17	1016.2	25.3	42		NW	35	1013.1
22	Th	12.7	22.7	0			WNW	35	14:25	16.2	70	7	W	13	1019.5	22.7	44		WNW	22	1017.5
23	Fr	9.1	21.9	0			SE	26	13:31	15.6	67		NW	17	1025.4	19.0	48	1	ESE	19	1022.4
24	Sa	11.8	25.6	1.6			N	41	07:22	15.2	82	8	NNW	15	1021.0	24.2	50	8	NW	17	1014.9
25	Su	15.1	20.7	0.6			NW	54	12:18	17.6	82	7	NNW	15	1016.7	18.3	87	7	NNW	13	1014.1
26	Mo	14.4	25.0	5.4			W	52	10:36	20.6	68		WNW	30	1014.9	21.8	41		ESE	19	1015.3
27	Tu	6.3	25.2	0			NW	28	08:07	14.7	71		WNW	13	1022.8	25.1	37		NW	13	1015.7
28	We	8.5	29.1	0			WNW	85	12:17	19.3	51		N	13	1011.2	28.3	21		WNW	50	1006.4
29	Th	13.0	24.2	0			WNW	43	11:08	18.9	47	8	WNW	28	1014.9	23.5	26		W	24	1011.8
30	Fr	8.7	30.3	0			WNW	54	13:57	17.2	57		N	17	1007.0	29.1	25		NW	31	1000.8
31	Sa	13.8	24.6	0			NW	67	14:27	21.3	31		WSW	30	1009.3	24.1	25		NW	41	1006.4
Statistics for August 2024																					
	Mean	10.0	21.0							14.7	79	6		15	1022.0	19.8	58	6		19	1018.9
	Lowest	2.7	16.3							7.8	31	1		Calm	1007.0	14.5	21	1	#	9	1000.8
	Highest	15.5	30.3	18.2			WNW	85		21.3	98	8	#	30	1032.6	29.1	95	8	WNW	50	1029.9
	Total			56.8																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202408 Prepared at 13:00 UTC on 17 Nov 2024

Williamtown, New South Wales
September 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Su	8.9	27.7	0			WNW	67	12:13	20.8	43		NW	20	1013.8	27.0	31		WNW	35	1010.3
2	Mo	10.2	26.8	0			WNW	89	12:20	22.9	30		WNW	39	1011.3	25.5	22		WNW	54	1010.7
3	Tu	7.0	18.3	0			SSE	39	13:50	14.7	36		WSW	20	1029.4	16.8	39		SSE	24	1028.9
4	We	2.8	22.9	0			N	35	11:35	13.1	63		NW	11	1030.6	21.6	43		NE	19	1024.6
5	Th	5.6	27.2	0			WNW	48	13:04	16.9	52		NW	15	1026.2	26.7	30		NW	28	1021.1
6	Fr	8.8	28.4	0			WNW	61	11:47	18.7	57		WNW	9	1024.4	27.4	32		NW	28	1019.3
7	Sa	15.2	30.5	0			WNW	46	07:04	23.8	43		NW	13	1021.4	22.5	55	4	SE	22	1020.1
8	Su	14.6	23.3	0			WNW	31	19:32	16.8	92	8	W	17	1020.7	17.7	78	7	ESE	9	1016.6
9	Mo	9.5	23.7	0			WNW	48	15:45	17.7	49	2	NW	22	1019.5	21.8	37		NW	28	1015.7
10	Tu	8.1	21.6	0			SSE	28	11:53	17.6	54		W	11	1025.3	20.6	60		SSE	17	1023.9
11	We	7.4	26.4	0			WNW	31	11:52	17.1	73		NW	13	1025.1	25.2	51		ESE	17	1020.2
12	Th	15.8	21.5	0.8			SSE	57	21:54	16.6	86	8	W	15	1020.2	20.2	72	8	S	30	1019.8
13	Fr	11.2	17.4	5.6			S	54	03:40	14.2	73	8	SW	19	1027.0	13.7	89	8	SW	20	1025.6
14	Sa	8.3	22.8	1.0			SSW	56	22:26	14.1	82		WNW	22	1024.5	22.2	40		NNW	15	1018.6
15	Su	10.0	17.3	0			SSW	72	15:20	13.1	52	2	SW	28	1025.9	15.7	52	2	SSW	41	1025.1
16	Mo	6.0	21.3	6.4			WNW	43	09:56	13.0	57		W	24	1027.7	18.4	37		SSE	30	1021.9
17	Tu	9.6	19.2	2.4			WSW	26	00:12	14.8	69	1	WNW	17	1026.1	18.2	60		ESE	20	1021.9
18	We	7.5	25.8	0			WNW	56	10:48	17.2	47		WNW	35	1019.2	25.4	19		WNW	35	1013.1
19	Th	6.1	27.4	0			WNW	69	12:00	20.4	39		NW	22	1011.3	26.9	14		NW	37	1005.6
20	Fr	8.5	25.2	0			WNW	48	16:16	18.7	36		WNW	26	1011.5	25.1	24		NW	28	1006.7
21	Sa	5.7	24.8	0			WNW	54	14:32	18.3	44		WNW	28	1011.8	24.3	27		WNW	33	1008.8
22	Su	8.6	25.9	0			WNW	44	12:42	18.7	42		NW	17	1016.9	25.4	28		NW	24	1013.5
23	Mo	9.6	28.5	0			NW	48	15:46	20.5	42		WNW	24	1020.3	27.7	22		WNW	30	1015.5
24	Tu	10.0	24.6	0			SSW	31	03:47	19.6	73		WSW	9	1021.8	21.7	72	2	ESE	13	1017.0
25	We	14.1	26.2	0			NE	28	14:46	18.6	66	8	NW	17	1016.1	25.7	46	7	NE	19	1010.4
26	Th	14.8	16.6	9.0			SE	61	00:00	14.9	91	8	S	35	1016.1	14.1	92	8	S	28	1017.8
27	Fr	12.9	18.8	24.0			SSE	59	03:45	16.2	60	8	SE	37	1025.5	16.7	53	8	SE	33	1024.8
28	Sa	12.3	20.5	1.6			SE	48	03:09	18.8	59	4	SE	30	1027.4	17.6	74	7	SE	30	1024.1
29	Su	15.8	21.5	2.8			E	35	10:13	19.2	83	8	E	13	1022.6	21.2	74	8	ENE	15	1018.0
30	Mo	14.9	21.2	12.2			S	54	14:39	16.6	86	8	NW	15	1019.0	19.6	76	8	S	35	1018.8
Statistics for September 2024																					
	Mean	10.0	23.4							17.5	59	6		20	1021.3	21.8	48	6		26	1017.9
	Lowest	2.8	16.6							13.0	30	1	#	9	1011.3	13.7	14	2	ESE	9	1005.6
	Highest	15.8	30.5	24.0			WNW	89		23.8	92	8	WNW	39	1030.6	27.7	92	8	WNW	54	1028.9
	Total			65.8																	

Observations were drawn from Williamtown RAAF {station 061078}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202409 Prepared at 16:00 UTC on 16 Nov 2024

Williamtown, New South Wales
October 2024 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Tu	9.9		0.4						17.8	66		WNW	7	1023.3	19.6	60		ESE	20	1021.1
2	We	12.5	21.5				SE	44	11:52	18.9	70	7	SSE	26	1029.0	19.9	53		ESE	24	1028.2
3	Th	11.7	20.9	1.6			SE	35	12:40	18.5	66	8	S	4	1030.6	19.5	50		ESE	24	1026.3
4	Fr	7.0	25.1	0.2			NE	28	16:31	16.3	70		NW	9	1020.9	23.7	50	1	SSW	13	1014.0
5	Sa	15.8	27.8	0			WNW	69	10:12	23.2	55		WNW	35	1008.7	27.1	36		NW	37	1005.1
6	Su	11.3	29.7	0			NW	59	12:24	21.3	48		WNW	20	1012.4	29.1	25		WNW	35	1010.3
7	Mo	11.8	30.3	0			W	50	13:52	19.6	56		NW	11	1019.1	29.6	22		WNW	31	1014.7
8	Tu	12.7	19.8	0			SSW	50	01:38	19.5	71	8	S	22	1021.4	15.7	91	8	S	30	1021.1
9	We	13.1	18.2	8.4			ESE	39	14:28	14.8	85	8		Calm	1025.3	17.8	57	8	ESE	19	1024.0
10	Th	11.2	24.2	0.4			ENE	33	16:38	17.1	73		N	6	1023.5	23.8	46	1	NNW	11	1019.7
11	Fr	10.9	24.5	0			NE	31	20:15	18.3	80	7	WNW	13	1023.7	23.1	66	4	ESE	19	1019.9
12	Sa	14.6	18.2	3.6			S	57	04:34	16.6	93	8	S	30	1024.4	18.0	65	8	S	35	1025.1
13	Su	13.2	21.3	7.4			ENE	37	16:13	16.2	81	8	NNE	9	1027.1	20.4	47	1	ENE	22	1022.5
14	Mo	10.4	22.5	0			WNW	37	14:42	16.8	70		NNW	15	1020.0	21.1	67	8	W	19	1017.4
15	Tu	15.0	19.5	7.6			SSE	37	11:25	16.5	92	8	SSW	19	1023.4	18.4	65	8	SSE	26	1022.8
16	We	11.4	19.1	1.0			S	24	09:15	17.0	71	6	WSW	9	1022.3	18.0	55	8	SE	11	1020.1
17	Th	9.9	22.6	0.4						13.8	98	8	WNW	11	1019.4	21.4	69		ESE	19	1016.4
18	Fr	13.7	25.4				WNW	46	20:11	18.1	94	8	WSW	2	1012.2	23.5	73	7	NNE	6	1005.7
19	Sa	17.9	24.9	4.8			W	48	06:49	22.4	64	2	W	31	1007.2	21.6	71		SE	26	1009.6
20	Su	17.3	21.9	6.0			SSE	50	13:31	18.2	78	7	S	19	1018.7	20.5	66	3	S	35	1018.2
21	Mo	14.7	21.0	0.8			S	56	12:54	16.6	78	8	SW	20	1021.0	20.0	60	8	S	35	1018.4
22	Tu	12.0	21.2	0.6			SW	26	07:38	17.7	68	1	SW	15	1017.2	20.5	61		SE	17	1014.3
23	We	9.7	30.0	0.2			NW	30	13:03	18.1	66		NNW	13	1011.5	28.9	41	3	NNW	11	1007.1
24	Th	16.1	23.2	0			S	52	22:34	21.4	73		S	33	1010.7	21.4	62	7	SE	31	1010.0
25	Fr	13.6	22.4	10.0			S	44	01:10	17.4	77	5	W	20	1014.6	20.9	43		SSE	24	1013.1
26	Sa	14.7	19.4	0.2			SSE	37	09:12	16.8	47	2	SSW	20	1021.8	18.4	46		SE	20	1020.0
27	Su	8.5	25.8	0			ENE	30	17:48	17.9	60	1	N	11	1020.2	24.9	45		WNW	11	1016.9
28	Mo	13.1	30.8	0			S	74	13:59	20.5	58		NW	22	1017.5	25.1	39	7	S	56	1014.8
29	Tu	17.6	22.1	0.4			SSE	31	23:15	18.9	62	8	SSE	15	1023.3	21.5	58		ESE	19	1020.3
30	We	12.6	27.3	0			NE	35	16:42	20.1	65		NNE	13	1019.0	26.6	49		NE	17	1012.9
31	Th	13.8	29.6	0			SSW	52	18:55	23.0	50		WNW	13	1010.5	27.0	40		ESE	20	1007.7
Statistics for October 2024																					
	Mean	12.8	23.7							18.4	70	6		15	1019.4	22.2	54	5		23	1016.7
	Lowest	7.0	18.2							13.8	47	1		Calm	1007.2	15.7	22	1	NNE	6	1005.1
	Highest	17.9	30.8	10.0			S	74		23.2	98	8	WNW	35	1030.6	29.6	91	8	S	56	1028.2
	Total			54.0																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202410 Prepared at 13:00 UTC on 14 Nov 2024

Williamtown, New South Wales
November 2023 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	We	12.9	22.8	0			ESE	43	12:08	19.6	55	8	ENE	11	1020.0	20.2	58	1	SE	28	1018.7
2	Th	14.2	22.1	0			SSE	37	11:35	18.7	70	2	SW	11	1021.4	20.9	57		SE	24	1019.1
3	Fr	12.2	24.0	2.4			ESE	41	11:24	20.5	69	2	ENE	15	1019.6	22.8	63	2	ESE	26	1016.1
4	Sa	14.1	23.1	0			SE	44	08:26	19.7	78	8	NE	4	1020.4	21.6	56	3	SE	20	1019.8
5	Su	15.8	20.6	0			ESE	37	14:58	18.8	77	8	ESE	22	1024.3	16.9	92	8	E	17	1024.7
6	Mo	11.2	21.1	19.4			ESE	30	10:56	19.5	60	7	ESE	13	1026.0	20.0	57	7	ESE	20	1023.1
7	Tu	11.9	23.5	0.2			ENE	43	16:23	20.6	65	1	NE	17	1023.0	21.9	60	4	ESE	30	1019.1
8	We	12.1	27.5	0			ENE	39	14:48	19.7	74		WNW	11	1019.7	26.8	46		E	19	1015.3
9	Th	17.2	27.6	0			S	69	16:03	19.6	80	8	NNW	11	1017.7	27.1	56		NE	20	1013.4
10	Fr	16.9	25.6	16.0			ESE	37	12:57	18.4	92		NNW	9	1017.6	23.3	69		E	24	1016.1
11	Sa	17.0	31.9	0.2			NE	39	17:13	22.9	63		NNE	15	1019.2	31.2	46		NE	19	1015.0
12	Su	18.6	26.5	0			SSW	50	21:08	22.2	77	3	S	15	1016.6	25.4	73		E	17	1011.1
13	Mo	18.2	23.1	0			SSW	39	23:40	21.3	63	8	SE	22	1018.2	22.1	58	8	SE	28	1016.5
14	Tu	14.9	27.6	0			ENE	41	15:33	20.9	66		NNE	17	1014.4	26.6	53		ENE	22	1010.8
15	We	17.8	28.6	0			SSE	39	14:52	20.8	83	8	W	13	1012.2	24.2	76		SSE	28	1008.6
16	Th	17.4	25.8	0						21.3	86	8	S	7	1010.2	24.5	67		ESE	28	1006.5
17	Fr	16.1	22.2	8.2			SSE	59	05:19	16.5	90	8	SSE	31	1015.7	20.2	60	3	S	35	1016.9
18	Sa	11.3	23.8	0.2			ESE	41	13:44	20.4	55	4	NE	11	1021.6	22.3	49		ESE	31	1019.4
19	Su	11.2	28.3	0			ENE	41	15:29	20.6	60		N	20	1021.0	26.3	56		ENE	24	1017.7
20	Mo	18.7	25.0	0			N	35	11:22	20.9	79	5	N	11	1019.7	22.8	61	7	W	9	1018.7
21	Tu	17.5	24.7	0.6			SSW	31	22:43	20.8	75	8	NNW	11	1018.9	23.5	70	7	N	11	1016.7
22	We	16.8	25.0	0.4			S	37	11:46	22.0	80	8	S	19	1020.5	23.5	71	8	SSE	26	1019.8
23	Th	17.0	25.0	0			SSW	41	12:16	21.4	80	8	WSW	11	1022.3	24.2	69	2	S	24	1020.7
24	Fr	18.2	24.8	5.4			ENE	35	14:00	22.5	81	8	ENE	9	1020.8	22.5	81	8	ENE	26	1017.9
25	Sa	19.9	24.7	0.2			NNE	30	13:51	21.1	79	8	NNE	13	1015.9	22.8	68	8	NNE	19	1012.4
26	Su	18.0	33.0	0			NW	48	09:09	24.5	67	3	WNW	22	1011.2	27.4	53	4	S	22	1008.6
27	Mo	17.5	26.7	0.2			SSE	39	14:03	24.8	69		SW	20	1012.1	24.8	71	6	SSE	30	1010.8
28	Tu	19.5	24.4	1.2			E	39	13:58	21.8	86	8	ESE	15	1014.9	21.9	89	8	ESE	24	1012.0
29	We	20.4	29.0	5.6			SW	52	16:35	24.3	67		NNE	19	1005.7	27.3	68	8	ENE	20	1000.8
30	Th	16.5	31.8	5.2			W	59	14:13	24.4	58		WNW	28	1002.9	30.7	28	6	WNW	28	1000.1
Statistics for November 2023																					
	Mean	16.0	25.7							21.0	72	6		15	1017.5	23.9	62	5		23	1014.9
	Lowest	11.2	20.6							16.5	55	1	NE	4	1002.9	16.9	28	1	W	9	1000.1
	Highest	20.4	33.0	19.4			S	69		24.8	92	8	SSE	31	1026.0	31.2	92	8	S	35	1024.7
	Total			65.4																	

Observations were drawn from Williamtown RAAF {station 061078}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202311 Prepared at 13:00 UTC on 12 Nov 2024

Williamtown, New South Wales
December 2023 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Fr	17.2	26.2	0			ESE	33	15:07	24.4	61		SSW	13	1005.7	24.0	68		SE	20	1003.7
2	Sa	19.8	24.3	2.4			SSW	48	22:54	21.6	87	8	WSW	9	1008.7	21.3	92	8	E	11	1007.9
3	Su	16.4	25.9	11.6			ESE	39	14:47	22.7	77		SW	6	1012.8	24.7	67		ESE	26	1011.5
4	Mo	16.8	23.9	0.2			SE	33	09:54	21.5	65	8	SE	17	1019.0	23.5	61	1	SE	20	1017.4
5	Tu	13.8	34.0	0			ENE	31	15:31	21.6	75		NW	7	1018.2	32.8	37		NW	11	1013.2
6	We	21.1	26.3	0			SSW	52	08:14	24.6	63		S	31	1017.3	25.0	64	4	SSE	28	1016.7
7	Th	18.7	31.4	0			SE	46	12:08	21.9	79	8	NW	4	1018.6	31.1	55		ENE	13	1014.9
8	Fr	19.8	35.1	0			NE	37	17:36	25.5	71	6	NNW	13	1018.4	34.3	49		ENE	26	1012.8
9	Sa	22.8	41.7	0			S	48	22:25	30.4	53		NNW	11	1012.8	38.5	31		ENE	22	1009.4
10	Su	21.6	29.2	0.2			S	61	23:12	22.1	96	8	W	15	1018.0	27.2	72		SE	26	1016.2
11	Mo	17.9	31.5	0			SE	31	13:19	24.0	77	8	WSW	7	1017.1	29.4	51		ESE	22	1014.5
12	Tu	19.7	28.2	0			ESE	46	14:13	24.8	70	8	SE	17	1019.8	26.5	63		ESE	31	1016.7
13	We	20.4	32.7	0			ENE	43	14:59	26.1	65	1	ENE	15	1015.7	31.3	49		E	26	1010.7
14	Th	22.6	41.0	0.2			NW	59	14:23	29.1	54	7	NW	24	1008.4	39.7	20		WNW	33	1002.9
15	Fr	21.3	26.7	0			SSW	52	00:12	23.5	73	8	S	17	1010.7	25.6	63		SE	28	1008.4
16	Sa	17.6	38.8	0			WNW	61	11:44	25.4	70		WNW	20	1006.3	37.9	12		NW	35	1002.2
17	Su	21.4	26.9	0			ESE	39	11:56	23.9	70	8	SE	26	1014.0	25.6	60	6	ESE	24	1013.5
18	Mo	21.8	30.0	0			ENE	39	16:16	25.0	85	7	ESE	17	1014.2	28.6	68		SE	28	1011.0
19	Tu	22.7	35.4	0			NNE	69	14:34	26.8	78	6	SW	4	1011.9	30.8	49	8	SE	28	1008.8
20	We	20.5	22.7	13.2			S	56	16:11	21.6	93	8	WNW	11	1012.6	19.8	91	8	SSW	31	1011.9
21	Th	17.5	23.8	15.4			S	61	14:09	19.9	80	7	W	13	1014.6	22.9	73	8	SSW	41	1014.4
22	Fr	18.0	24.5	0.2			SSW	41	23:43	22.0	59		SSW	26	1016.7	23.2	58		SSE	28	1014.5
23	Sa	15.8	25.0	1.2			ESE	37	14:28	21.0	71		W	11	1013.5	24.4	61		SE	24	1010.0
24	Su	17.7	26.5	0			WNW	37	07:54	20.8	83	8	WNW	28	1008.1	23.5	65	8	NNE	7	1005.8
25	Mo	17.2	26.3	4.2			W	41	20:06	22.2	75	8	WSW	11	1006.8	25.2	73	1	ESE	20	1004.5
26	Tu	19.2	29.6	2.0			ESE	33	14:16	23.4	83	1	NW	4	1006.8	28.4	55		ESE	20	1004.9
27	We	18.2	27.4	0.2			SSE	39	12:36	25.1	63		SW	15	1008.8	25.0	70	6	SSE	26	1007.4
28	Th	17.2	32.9	0			NW	39	13:51	24.9	62		WNW	24	1010.6	31.9	28	7	NW	22	1008.0
29	Fr	18.6	28.5	0			SE	33	10:51	25.5	78	3	SW	4	1011.0	23.5	91	6	ESE	13	1011.0
30	Sa	18.6	26.7	5.4			ESE	44	14:45	23.8	64	6	S	24	1010.6	25.3	65	1	ESE	30	1008.8
31	Su	18.7	22.9	5.0			SE	37	03:03	21.3	67	8	SE	19	1019.6	20.9	73	8	E	15	1020.4
Statistics for December 2023																					
	Mean	19.1	29.2							23.8	72	6		14	1013.1	27.5	59	5		23	1010.8
	Lowest	13.8	22.7							19.9	53	1	#	4	1005.7	19.8	12	1	NNE	7	1002.2
	Highest	22.8	41.7	15.4			NNE	69		30.4	96	8	S	31	1019.8	39.7	92	8	SSW	41	1020.4
	Total			61.4																	

Observations were drawn from Williamtown RAAF {station 061078}

Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2145.202312 Prepared at 13:00 UTC on 11 Nov 2024

Appendix B: Photographs

Photograph 1. Site overview. Facing south. Taken 05/11/2024.

Photograph 2. AM01. Facing north-west. Taken 05/11/2024.

Photograph 3. AM02. Facing east. Taken 05/11/2024.

Photograph 4. AM04. Facing north. Taken 05/11/2024.

Appendix C: Result Tables

Table A - Ambient Air Analytical Results

					Field ID	AM01	AM02	AM03															
					Location Code																		
					Date	05 Nov 2024	05 Nov 2024	05 Nov 2024															
	Unit	EQL	USEPA RSLs Resident Air THQ=0.1	USEPA RSLs Resident Air THQ=1.0					Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration *	Median Concentration *	Standard Deviation *	95% UCL (Student's-t) *	% of Detects	% of Non-Detects		
Inorganics																							
Temperature as Received	°C	0.1				21	21	21	-	-	-	-	-	-	-	-	-	-	-	-		
Pressure																							
Pressure - Gauge as Received	Inches Hg	1				-7	-14	-8	-	-	-	-	-	-	-	-	-	-	-	-		
Pressure - As received	kPa	0.1				79.4	80.2	81.4	-	-	-	-	-	-	-	-	-	-	-	-		
Pressure - Laboratory Atmosphere	kPa	0.1				101	101	101	-	-	-	-	-	-	-	-	-	-	-	-		
BTEX																							
Benzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	1.6	0.36	0.36		<1.6	<1.6	<1.6	3	0	<1.6	ND	<1.6	ND	0.8	0.8	0	0.8	0	100			
Toluene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	1.9	520	5,200		<1.9	<1.9	<1.9	3	0	<1.9	ND	<1.9	ND	0.95	0.95	0	0.95	0	100			
Ethylbenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.2	1.1	1.1		<2.2	<2.2	<2.2	3	0	<2.2	ND	<2.2	ND	1.1	1.1	0	1.1	0	100			
Xylene (m & p)	ppbv	1				<1.0	<1.0	<1.0	3	0	<1	ND	<1	ND	0.5	0.5	0	0.5	0	100			
	µg/m3	4.3				<4.3	<4.3	<4.3	3	0	<4.3	ND	<4.3	ND	2.2	2.15	0	2.15	0	100			
Xylene (o)	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.2	10	100		<2.2	<2.2	<2.2	3	0	<2.2	ND	<2.2	ND	1.1	1.1	0	1.1	0	100			
Xylene Total	µg/m3	6.5	10	100		<6.5	<6.5	<6.5	3	0	<6.5	ND	<6.5	ND	3.2	3.25	0	3.25	0	100			
TRH																							
Aromatic >C6-C10 minus BTEX (F1 Aromatic)	ppbv	4				<4	<4	<4	3	0	<4	ND	<4	ND	2	2	0	2	0	100			
	mg/m3	0.014				<0.014	<0.014	<0.014	3	0	<0.014	ND	<0.014	ND	0.007	0.007	0	0.007	0	100			
Aromatic >C10-C16 minus Naphthalene (F2 Aromatic)	ppbv	2				<2	<2	<2	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
Aromatic >C10-C16 minus Naphthalene (F2 Aromatic)	µg/m3	14				<14	<14	<14	3	0	<14	ND	<14	ND	7	7	0	7	0	100			
Chlorinated Hydrocarbons																							
1,1,1-trichloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.7	520	5,200		<2.7	<2.7	<2.7	3	0	<2.7	ND	<2.7	ND	1.4	1.35	0	1.35	0	100			
1,1,2,2-tetrachloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.4	0.048	0.048		<3.4	<3.4	<3.4	3	0	<3.4	ND	<3.4	ND	1.7	1.7	0	1.7	0	100			
1,1,2-trichloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.7	0.021	0.18		<2.7	<2.7	<2.7	3	0	<2.7	ND	<2.7	ND	1.4	1.35	0	1.35	0	100			
1,1-dichloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2	1.8	1.8		<2.0	<2.0	<2.0	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
1,1-dichloroethene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2	0.41			<2.0	<2.0	<2.0	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
1,2-dichloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2	0.11	0.11		<2.0	<2.0	<2.0	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
1,2-dichloropropane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.3	0.42	0.76		<2.3	<2.3	<2.3	3	0	<2.3	ND	<2.3	ND	1.2	1.15	0	1.15	0	100			
Benzyl chloride	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.6	0.057	0.057		<2.6	<2.6	<2.6	3	0	<2.6	ND	<2.6	ND	1.3	1.3	0	1.3	0	100			
Bromodichloromethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.4	0.076	0.076		<3.4	<3.4	<3.4	3	0	<3.4	ND	<3.4	ND	1.7	1.7	0	1.7	0	100			
Bromoform	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	5.2	2.6	2.6		<5.2	<5.2	<5.2	3	0	<5.2	ND	<5.2	ND	2.6	2.6	0	2.6	0	100			
Carbon tetrachloride	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.1	0.47	0.47		<3.1	<3.1	<3.1	3	0	<3.1	ND	<3.1	ND	1.6	1.55	0	1.55	0	100			
Chlorodibromomethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	4.3				<4.3	<4.3	<4.3	3	0	<4.3	ND	<4.3	ND	2.2	2.15	0	2.15	0	100			
Chloroethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	1.3	420	4,200		<1.3	<1.3	<1.3	3	0	<1.3	ND	<1.3	ND	0.65	0.65	0	0.65	0	100			
Chloroform	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.4	0.12	0.12		<2.4	<2.4	<2.4	3	0	<2.4	ND	<2.4	ND	1.2	1.2	0	1.2	0	100			
Chloromethane	ppbv	0.5				0.7	0.7	0.7	3	3	0.7	0.7	0.7	0.7	0.7	0.7	0	0.7	100	0			
	µg/m3	1	9.4	94		1.4	1.4	1.4	3	3	1.4	1.4	1.4	1.4	1.4	1.4	0	1.4	100	0			
cis-1,2-dichloroethene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2	4.2	42		<2.0	<2.0	<2.0	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
cis-1,3-dichloropropene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.3				<2.3	<2.3	<2.3	3	0	<2.3	ND	<2.3	ND	1.2	1.15	0	1.15	0	100			
Dichloromethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	1.7	63	100		<1.7	<1.7	<1.7	3	0	<1.7	ND	<1.7	ND	0.85	0.85	0	0.85	0	100			
Hexachlorobutadiene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	5.3	0.13	0.13		<5.3	<5.3	<5.3	3	0	<5.3	ND	<5.3	ND	2.6	2.65	0	2.65	0	100			
Trichloroethene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.7	0.21	0.48		<2.7	<2.7	<2.7	3	0	<2.7	ND	<2.7	ND	1.4	1.35	0	1.35	0	100			
Tetrachloroethene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.4	4.2	11		<3.4	<3.4	<3.4	3	0	<3.4	ND	<3.4	ND	1.7	1.7	0	1.7	0	100			
trans-1,2-dichloroethene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2	4.2	42		<2.0	<2.0	<2.0	3	0	<2	ND	<2	ND	1	1	0	1	0	100			
trans-1,3-dichloropropene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.3				<2.3	<2.3	<2.3	3	0	<2.3	ND	<2.3	ND	1.2	1.15	0	1.15	0	100			
Vinyl chloride	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
Vinyl chloride	µg/m3	1.3	0.17	0.17		<1.3	<1.3	<1.3	3	0	<1.3	ND	<1.3	ND	0.65	0.65	0	0.65	0	100			
Halogenated Benzenes																							
1,2,4-trichlorobenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.7	0.21	2.1		<3.7	<3.7	<3.7	3	0	<3.7	ND	<3.7	ND	1.9	1.85	0	1.85	0	100			
1,2-dichlorobenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3	21	210		<3.0	<3.0	<3.0	3	0	<3	ND	<3	ND	1.5	1.5	0	1.5	0	100			
1,3-dichlorobenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3				<3.0	<3.0	<3.0	3	0	<3	ND	<3	ND	1.5	1.5	0	1.5	0	100			
1,4-dichlorobenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3	0.26	0.26		<3.0	<3.0	<3.0	3	0	<3	ND	<3	ND	1.5	1.5	0	1.5	0	100			
2-chlorotoluene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	2.6				<2.6	<2.6	<2.6	3	0	<2.6	ND	<2.6	ND	1.3	1.3	0	1.3	0	100			
Chlorobenzene	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
Chlorobenzene	µg/m3	2.3	5.2	52		<2.3	<2.3	<2.3	3	0	<2.3	ND	<2.3	ND	1.2	1.15	0	1.15	0	100			
Halogenated Hydrocarbons																							
1,2-dibromoethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	3.8	0.0047	0.0047		<3.8	<3.8	<3.8	3	0	<3.8	ND	<3.8	ND	1.9	1.9	0	1.9	0	100			
Bromomethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
	µg/m3	1.9	0.52	5.2		<1.9	<1.9	<1.9	3	0	<1.9	ND	<1.9	ND	0.95	0.95	0	0.95	0	100			
Dichlorodifluoromethane	ppbv	0.5				0.5	0.5	0.5	3	3	0.5	0.5	0.5	0.5	0.5	0.5	0	0.5	100	0			
	µg/m3	2.5	10	100		<2.5	<2.5	<2.5	3	0	<2.5	ND	<2.5	ND	1.2	1.25	0	1.25	0	100			
Trichlorofluoromethane	ppbv	0.5				<0.5	<0.5	<0.5	3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100			
Trichlorofluoromethane	µg/m3	2.8				<2.8	<2.8	<2.8	3	0	<2.8	ND	<2.8	ND	1.4	1.4	0	1.4	0	100			

Table A - Ambient Air Analytical Results

					Field ID	AM01	AM02	AM03											
					Location Code														
					Date	05 Nov 2024	05 Nov 2024	05 Nov 2024											
	Unit	EQL	USEPA RSLs Resident Air THQ=0.1	USEPA RSLs Resident Air THQ=1.0					Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration *	Median Concentration *	Standard Deviation *	95% UCL (Student's-t) *	% of Detects	% of Non-Detects
MAH																				
1,2,4-trimethylbenzene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2.4	6.3	63	<2.4	<2.4	<2.4		3	0	<2.4	ND	<2.4	ND	1.2	1.2	0	1.2	0	100
1,3,5-trimethylbenzene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2.4	6.3	63	<2.4	<2.4	<2.4		3	0	<2.4	ND	<2.4	ND	1.2	1.2	0	1.2	0	100
1-methyl-4 ethyl benzene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2.4			<2.4	<2.4	<2.4		3	0	<2.4	ND	<2.4	ND	1.2	1.2	0	1.2	0	100
Styrene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
Styrene	**µg/m3**	2.1	100	1,000	<2.1	<2.1	<2.1		3	0	<2.1	ND	<2.1	ND	1	1.05	0	1.05	0	100
PAH																				
Naphthalene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
Naphthalene	**µg/m3**	2.6	0.083	0.083	<2.6	<2.6	<2.6		3	0	<2.6	ND	<2.6	ND	1.3	1.3	0	1.3	0	100
Solvents																				
1,3-Butadiene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.1	0.094	0.094	<1.1	<1.1	<1.1		3	0	<1.1	ND	<1.1	ND	0.55	0.55	0	0.55	0	100
1,4-Dioxane	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.8	0.56	0.56	<1.8	<1.8	<1.8		3	0	<1.8	ND	<1.8	ND	0.9	0.9	0	0.9	0	100
Methyl Ethyl Ketone	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.5	520	5,200	<1.5	<1.5	<1.5		3	0	<1.5	ND	<1.5	ND	0.75	0.75	0	0.75	0	100
2-hexanone (MBK)	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2	3.1	31	<2.0	<2.0	<2.0		3	0	<2	ND	<2	ND	1	1	0	1	0	100
4-Methyl-2-pentanone	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2	310	3,100	<2.0	<2.0	<2.0		3	0	<2	ND	<2	ND	1	1	0	1	0	100
Acetone	**ppbv**	0.5			1.9	2.6	1.3		3	3	1.3	1.3	2.6	2.6	1.9	1.9	0.65	3.03	100	0
	µg/m3	1.2			4.5	6.2	3.1		3	3	3.1	3.1	6.2	6.2	4.6	4.5	1.6	7.217	100	0
Allyl chloride	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.6	0.1	0.47	<1.6	<1.6	<1.6		3	0	<1.6	ND	<1.6	ND	0.8	0.8	0	0.8	0	100
Carbon disulfide	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.6	73	730	<1.6	<1.6	<1.6		3	0	<1.6	ND	<1.6	ND	0.8	0.8	0	0.8	0	100
Cyclohexane	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.7	630	6,300	<1.7	<1.7	<1.7		3	0	<1.7	ND	<1.7	ND	0.85	0.85	0	0.85	0	100
Ethyl acetate	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.8	7.3	73	<1.8	<1.8	<1.8		3	0	<1.8	ND	<1.8	ND	0.9	0.9	0	0.9	0	100
Heptane	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2	42	420	<2.0	<2.0	<2.0		3	0	<2	ND	<2	ND	1	1	0	1	0	100
Hexane	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.8	14	14	<1.8	<1.8	<1.8		3	0	<1.8	ND	<1.8	ND	0.9	0.9	0	0.9	0	100
MTBE	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.8	11	11	<1.8	<1.8	<1.8		3	0	<1.8	ND	<1.8	ND	0.9	0.9	0	0.9	0	100
2-Propanol	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.2	21	210	<1.2	<1.2	<1.2		3	0	<1.2	ND	<1.2	ND	0.6	0.6	0	0.6	0	100
Tetrahydrofuran	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	1.5	210	2,100	<1.5	<1.5	<1.5		3	0	<1.5	ND	<1.5	ND	0.75	0.75	0	0.75	0	100
Vinyl acetate	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
Vinyl acetate	**µg/m3**	1.8	21	210	<1.8	<1.8	<1.8		3	0	<1.8	ND	<1.8	ND	0.9	0.9	0	0.9	0	100
TPH																				
Aliphatic >C10-C12	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.3			<0.3	<0.3	<0.3		3	0	<0.3	ND	<0.3	ND	0.15	0.15	0	0.15	0	100
Aliphatic >C10-C16	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.37			<0.37	<0.37	<0.37		3	0	<0.37	ND	<0.37	ND	0.18	0.185	0	0.185	0	100
Aliphatic >C5-C6	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.16			<0.16	<0.16	<0.16		3	0	<0.16	ND	<0.16	ND	0.08	0.08	0	0.08	0	100
Aliphatic >C6-C10	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.2			<0.2	<0.2	<0.2		3	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0.1	0	100
Aliphatic >C6-C8	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.2			<0.2	<0.2	<0.2		3	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0.1	0	100
Aliphatic >C8-C10	**ppbv**	50			<50	<50	<50		3	0	<50	ND	<50	ND	25	25	0	25	0	100
	mg/m3	0.25			<0.25	<0.25	<0.25		3	0	<0.25	ND	<0.25	ND	0.12	0.125	0	0.125	0	100
Aromatic >C10-C12	**ppbv**	5			<5	<5	<5		3	0	<5	ND	<5	ND	2.5	2.5	0	2.5	0	100
	mg/m3	0.025			<0.025	<0.025	<0.025		3	0	<0.025	ND	<0.025	ND	0.013	0.0125	0	0.0125	0	100
Aromatic >C10-C16	**ppbv**	2			<2	<2	<2		3	0	<2	ND	<2	ND	1	1	0	1	0	100
	mg/m3	0.014			<0.014	<0.014	<0.014		3	0	<0.014	ND	<0.014	ND	0.007	0.007	0	0.007	0	100
Aromatic >C5-C7	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	mg/m3	0.0016			<0.0016	<0.0016	<0.0016		3	0	<0.0016	ND	<0.0016	ND	0.0008	0.0008	0	0.0008	0	100
Aromatic >C6-C10	**ppbv**	7			<7.0	<7.0	<7.0		3	0	<7	ND	<7	ND	3.5	3.5	0	3.5	0	100
	mg/m3	0.03			<0.03	<0.03	<0.03		3	0	<0.03	ND	<0.03	ND	0.015	0.015	0	0.015	0	100
Aromatic >C7-C8	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	mg/m3	0.0019			<0.0019	<0.0019	<0.0019		3	0	<0.0019	ND	<0.0019	ND	0.00095	0.00095	0	0.00095	0	100
Aromatic >C8-C10	**ppbv**	2.5			<2.5	<2.5	<2.5		3	0	<2.5	ND	<2.5	ND	1.2	1.25	0	1.25	0	100
Aromatic >C8-C10	**mg/m3**	0.012			<0.012	<0.012	<0.012		3	0	<0.012	ND	<0.012	ND	0.006	0.006	0	0.006	0	100
VOCs																				
Vinyl bromide (bromoethene)	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2.2	0.19	0.19	<2.2	<2.2	<2.2		3	0	<2.2	ND	<2.2	ND	1.1	1.1	0	1.1	0	100
Freon 113	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
Freon 113	**µg/m3**	3.8	520	5,200	<3.8	<3.8	<3.8		3	0	<3.8	ND	<3.8	ND	1.9	1.9	0	1.9	0	100
NA																				
2,2,4-Trimethylpentane	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	2.3			<2.3	<2.3	<2.3		3	0	<2.3	ND	<2.3	ND	1.2	1.15	0	1.15	0	100
Freon 114	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
	µg/m3	3.5			<3.5	<3.5	<3.5		3	0	<3.5	ND	<3.5	ND	1.8	1.75	0	1.75	0	100
Propene	**ppbv**	0.5			<0.5	<0.5	<0.5		3	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0.25	0	100
Propene	**µg/m3**	0.9	310	3,100	<0.9	<0.9	<0.9		3	0	<0.9	ND	<0.9	ND	0.45	0.45	0	0.45	0	100

Environmental Standards

USEPA, Nov 2024, USEPA RSLs Resident Air THQ=0.1

USEPA, Nov 2024, USEPA RSLs Resident Air THQ=1.0

Statistics

* A Non Detect Multiplier of 0.5 has been applied.

Appendix D: Laboratory documentation

CERTIFICATE OF ANALYSIS

Work Order	: **EN2414252**	Page	: 1 of 10
Client	: **ADE Consulting Group Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Karin Azzam	Contact	:
Address	:	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: A101024.0124 51NSW Medowie HS	Date Samples Received	: 08-Nov-2024 10:22
Order number	: ----	Date Analysis Commenced	: 11-Nov-2024
C-O-C number	: ----	Issue Date	: 16-Nov-2024 18:33
Sampler	: Mitchell Roy		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Dale Semple	Analyst	Newcastle, Mayfield West, NSW
Daniel Junek	Senior Organic Chemist	Newcastle - Organics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- CAN-001: Results for Pressure - As Received are measured under controlled conditions using calibrated laboratory gauges. These results are expressed as an absolute pressure. Equivalent gauge pressures may be calculated by subtracting the Pressure - Laboratory Atmosphere.
- CAN-001: Results for Pressure - Gauge As Received are obtained from uncalibrated field gauges and are indicative only. These results may not precisely match calibrated gauge readings and may vary from field measurements due to changes in temperature and pressure.
- CAN-001: Results for Vacuum - As Received are calculated from the pressures of the canister and laboratory atmosphere at the time of receipt, and are expressed as a measure of the vacuum remaining. A positive value indicates that the canister was below atmospheric pressure upon receipt.
- EP101, EP103: Results reported in µg/m³ are calculated from PPBV results based on a temperature of 25°C and atmospheric pressure of 101.3 kPa.

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)			Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
			Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit	EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
				Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration)								
Freon 12	75-71-8	2.5	µg/m³	<2.5	<2.5	<2.5	----	----
Chloromethane	74-87-3	1.0	µg/m³	**1.4**	**1.4**	**1.4**	----	----
Freon 114	76-14-2	3.5	µg/m³	<3.5	<3.5	<3.5	----	----
Vinyl chloride	75-01-4	1.3	µg/m³	<1.3	<1.3	<1.3	----	----
Bromomethane	74-83-9	1.9	µg/m³	<1.9	<1.9	<1.9	----	----
Chloroethane	75-00-3	1.3	µg/m³	<1.3	<1.3	<1.3	----	----
Freon 11	75-69-4	2.8	µg/m³	<2.8	<2.8	<2.8	----	----
1.1-Dichloroethene	75-35-4	2.0	µg/m³	<2.0	<2.0	<2.0	----	----
Dichloromethane	75-09-2	1.7	µg/m³	<1.7	<1.7	<1.7	----	----
Freon 113	76-13-1	3.8	µg/m³	<3.8	<3.8	<3.8	----	----
1.1-Dichloroethane	75-34-3	2.0	µg/m³	<2.0	<2.0	<2.0	----	----
cis-1.2-Dichloroethene	156-59-2	2.0	µg/m³	<2.0	<2.0	<2.0	----	----
Chloroform	67-66-3	2.4	µg/m³	<2.4	<2.4	<2.4	----	----
1.2-Dichloroethane	107-06-2	2.0	µg/m³	<2.0	<2.0	<2.0	----	----
1.1.1-Trichloroethane	71-55-6	2.7	µg/m³	<2.7	<2.7	<2.7	----	----
Benzene	71-43-2	1.6	µg/m³	<1.6	<1.6	<1.6	----	----
Carbon Tetrachloride	56-23-5	3.1	µg/m³	<3.1	<3.1	<3.1	----	----
1.2-Dichloropropane	78-87-5	2.3	µg/m³	<2.3	<2.3	<2.3	----	----
Trichloroethene	79-01-6	2.7	µg/m³	<2.7	<2.7	<2.7	----	----
cis-1.3-Dichloropropylene	10061-01-5	2.3	µg/m³	<2.3	<2.3	<2.3	----	----
trans-1.3-Dichloropropene	10061-02-6	2.3	µg/m³	<2.3	<2.3	<2.3	----	----
1.1.2-Trichloroethane	79-00-5	2.7	µg/m³	<2.7	<2.7	<2.7	----	----
Toluene	108-88-3	1.9	µg/m³	<1.9	<1.9	<1.9	----	----
1.2-Dibromoethane (EDB)	106-93-4	3.8	µg/m³	<3.8	<3.8	<3.8	----	----
Tetrachloroethene	127-18-4	3.4	µg/m³	<3.4	<3.4	<3.4	----	----
Chlorobenzene	108-90-7	2.3	µg/m³	<2.3	<2.3	<2.3	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)				Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
				Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
					Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration) - Continued									
Ethylbenzene	100-41-4	2.2	µg/m³		<2.2	<2.2	<2.2	----	----
meta- & para-Xylene	108-38-3 106-42-3	4.3	µg/m³		<4.3	<4.3	<4.3	----	----
Styrene	100-42-5	2.1	µg/m³		<2.1	<2.1	<2.1	----	----
1.1.2.2-Tetrachloroethane	79-34-5	3.4	µg/m³		<3.4	<3.4	<3.4	----	----
ortho-Xylene	95-47-6	2.2	µg/m³		<2.2	<2.2	<2.2	----	----
4-Ethyltoluene	622-96-8	2.4	µg/m³		<2.4	<2.4	<2.4	----	----
Total Xylenes	----	6.5	µg/m³		<6.5	<6.5	<6.5	----	----
1.3.5-Trimethylbenzene	108-67-8	2.4	µg/m³		<2.4	<2.4	<2.4	----	----
1.2.4-Trimethylbenzene	95-63-6	2.4	µg/m³		<2.4	<2.4	<2.4	----	----
1.3-Dichlorobenzene	541-73-1	3.0	µg/m³		<3.0	<3.0	<3.0	----	----
Benzylchloride	100-44-7	2.6	µg/m³		<2.6	<2.6	<2.6	----	----
1.4-Dichlorobenzene	106-46-7	3.0	µg/m³		<3.0	<3.0	<3.0	----	----
1.2-Dichlorobenzene	95-50-1	3.0	µg/m³		<3.0	<3.0	<3.0	----	----
1.2.4-Trichlorobenzene	120-82-1	3.7	µg/m³		<3.7	<3.7	<3.7	----	----
Hexachlorobutadiene	87-68-3	5.3	µg/m³		<5.3	<5.3	<5.3	----	----
Acetone	67-64-1	1.2	µg/m³		**4.5**	**6.2**	**3.1**	----	----
Bromodichloromethane	75-27-4	3.4	µg/m³		<3.4	<3.4	<3.4	----	----
1.3-Butadiene	106-99-0	1.1	µg/m³		<1.1	<1.1	<1.1	----	----
Carbon disulfide	75-15-0	1.6	µg/m³		<1.6	<1.6	<1.6	----	----
2-Chlorotoluene	95-49-8	2.6	µg/m³		<2.6	<2.6	<2.6	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	1.6	µg/m³		<1.6	<1.6	<1.6	----	----
Cyclohexane	110-82-7	1.7	µg/m³		<1.7	<1.7	<1.7	----	----
Dibromochloromethane	124-48-1	4.3	µg/m³		<4.3	<4.3	<4.3	----	----
1.4-Dioxane	123-91-1	1.8	µg/m³		<1.8	<1.8	<1.8	----	----
Ethylacetate	9002-89-5	1.8	µg/m³		<1.8	<1.8	<1.8	----	----
trans-1.2-Dichloroethene	156-60-5	2.0	µg/m³		<2.0	<2.0	<2.0	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)				Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
				Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
					Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration) - Continued									
Heptane	142-82-5	2.0	µg/m³		<2.0	<2.0	<2.0	----	----
Hexane	110-54-3	1.8	µg/m³		<1.8	<1.8	<1.8	----	----
Isooctane	540-84-1	2.3	µg/m³		<2.3	<2.3	<2.3	----	----
Isopropyl Alcohol	67-63-0	1.2	µg/m³		<1.2	<1.2	<1.2	----	----
2-Butanone (MEK)	78-93-3	1.5	µg/m³		<1.5	<1.5	<1.5	----	----
Methyl iso-Butyl ketone	108-10-1	2.0	µg/m³		<2.0	<2.0	<2.0	----	----
2-Hexanone (MBK)	591-78-6	2.0	µg/m³		<2.0	<2.0	<2.0	----	----
Propene	115-07-1	0.9	µg/m³		<0.9	<0.9	<0.9	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	1.8	µg/m³		<1.8	<1.8	<1.8	----	----
Tetrahydrofuran	109-99-9	1.5	µg/m³		<1.5	<1.5	<1.5	----	----
Bromoform	75-25-2	5.2	µg/m³		<5.2	<5.2	<5.2	----	----
Vinyl Acetate	108-05-4	1.8	µg/m³		<1.8	<1.8	<1.8	----	----
Vinyl bromide	593-60-2	2.2	µg/m³		<2.2	<2.2	<2.2	----	----
Naphthalene	91-20-3	2.6	µg/m³		<2.6	<2.6	<2.6	----	----
EP101: VOCs by USEPA Method TO15r									
Freon 12	75-71-8	0.5	ppbv		**0.5**	**0.5**	**0.5**	----	----
Chloromethane	74-87-3	0.5	ppbv		**0.7**	**0.7**	**0.7**	----	----
Freon 114	76-14-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Vinyl chloride	75-01-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Bromomethane	74-83-9	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Chloroethane	75-00-3	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Freon 11	75-69-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.1-Dichloroethene	75-35-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Dichloromethane	75-09-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Freon 113	76-13-1	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.1-Dichloroethane	75-34-3	0.5	ppbv		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)				Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
				Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
					Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15r - Continued									
cis-1.2-Dichloroethene	156-59-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Chloroform	67-66-3	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.2-Dichloroethane	107-06-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.1.1-Trichloroethane	71-55-6	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Benzene	71-43-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.2-Dichloropropane	78-87-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Trichloroethene	79-01-6	0.5	ppbv		<0.5	<0.5	<0.5	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Toluene	108-88-3	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Chlorobenzene	108-90-7	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	ppbv		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	1.0	ppbv		<1.0	<1.0	<1.0	----	----
Styrene	100-42-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	ppbv		<0.5	<0.5	<0.5	----	----
4-Ethyltoluene	622-96-8	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Benzylchloride	100-44-7	0.5	ppbv		<0.5	<0.5	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	ppbv		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)			Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
			Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit	EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
				Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15r - Continued								
1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Acetone	67-64-1	0.5	ppbv	**1.9**	**2.6**	**1.3**	----	----
Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	<0.5	<0.5	----	----
1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Carbon disulfide	75-15-0	0.5	ppbv	<0.5	<0.5	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	<0.5	<0.5	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Cyclohexane	110-82-7	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Ethylacetate	9002-89-5	0.5	ppbv	<0.5	<0.5	<0.5	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Heptane	142-82-5	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Hexane	110-54-3	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Isooctane	540-84-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	<0.5	<0.5	----	----
2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Propene	115-07-1	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Bromoform	75-25-2	0.5	ppbv	<0.5	<0.5	<0.5	----	----
Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)				Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
				Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
					Result	Result	Result	Result	----
EP101: VOCs by USEPA Method TO15r - Continued									
Vinyl bromide	593-60-2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	0.5	ppbv		<0.5	<0.5	<0.5	----	----
EP103-S: CRCCARE PVI Aliphatic Hydrocarbon Fractions									
Aliphatic C6-C10	----	50	ppbv		<50	<50	<50	----	----
Aliphatic > C10-C16	----	50	ppbv		<50	<50	<50	----	----
EP103-S: CRCCARE PVI Aliphatic Hydrocarbon Fractions (Calc Conc)									
Aliphatic C6-C10	----	200	µg/m³		<200	<200	<200	----	----
Aliphatic > C10-C16	----	370	µg/m³		<370	<370	<370	----	----
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions									
Aromatics C6-C10	----	7.0	ppbv		<7.0	<7.0	<7.0	----	----
Aromatics C6-C10 minus BTEX (F1 Aromatic)	----	4	ppbv		<4	<4	<4	----	----
Aromatic > C10-C16	----	2	ppbv		<2	<2	<2	----	----
Aromatics >C10-C16 minus Naphthalene (F2 Aromatic)	----	2	ppbv		<2	<2	<2	----	----
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions (Calc Conc)									
Aromatics C6-C10	----	30	µg/m³		<30	<30	<30	----	----
Aromatics C6-C10 minus BTEX (F1 Aromatic)	----	14	µg/m³		<14	<14	<14	----	----
Aromatic > C10-C16	----	14	µg/m³		<14	<14	<14	----	----
Aromatics >C10-C16 minus Naphthalene (F2 Aromatic)	----	14	µg/m³		<14	<14	<14	----	----
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions									
Aliphatic >C5-C6	----	50	ppbv		<50	<50	<50	----	----
Aliphatic >C6-C8	TPHCWG-ALV2	50	ppbv		<50	<50	<50	----	----
Aliphatic >C8-C10	TPHCWG-ALV3	50	ppbv		<50	<50	<50	----	----
Aliphatic >C10-C12	TPHCWG-ALE1	50	ppbv		<50	<50	<50	----	----
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions (Calc Conc)									
Aliphatic >C5-C6	----	160	µg/m³		<160	<160	<160	----	----

Analytical Results

Sub-Matrix: AMBIENT (Matrix: AIR)				Sample ID	AM01 C40253_S12205	AM02 C40211_S15006	AM03 C40244_S02840	AM04 C40251_S15023	----
				Sampling date / time	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	05-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EN2414252-001	EN2414252-002	EN2414252-003	EN2414252-004	--------
					Result	Result	Result	Result	----
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions (Calc Conc) - Continued									
Aliphatic >C6-C8	TPHCWG-ALV2	200	µg/m³		<200	<200	<200	----	----
Aliphatic >C8-C10	TPHCWG-ALV3	250	µg/m³		<250	<250	<250	----	----
Aliphatic >C10-C12	TPHCWG-ALE1	300	µg/m³		<300	<300	<300	----	----
EP103-S: TPH CWG Aromatic Hydrocarbon Fractions									
Aromatic >C5-C7	----	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Aromatic >C7-C8	TPHCWG-ARV2	0.5	ppbv		<0.5	<0.5	<0.5	----	----
Aromatic >C8-C10	TPHCWG-ARV3	2.5	ppbv		<2.5	<2.5	<2.5	----	----
Aromatic >C10-C12	TPHCWG-ARE1	5	ppbv		<5	<5	<5	----	----
EP103-S: TPH CWG Aromatic Hydrocarbon Fractions (Calc Conc)									
Aromatic >C5-C7	----	1.6	µg/m³		<1.6	<1.6	<1.6	----	----
Aromatic >C7-C8	TPHCWG-ARV2	1.9	µg/m³		<1.9	<1.9	<1.9	----	----
Aromatic >C8-C10	TPHCWG-ARV3	12	µg/m³		<12	<12	<12	----	----
Aromatic >C10-C12	TPHCWG-ARE1	25	µg/m³		<25	<25	<25	----	----
Sampling Quality Assurance									
Pressure - As received	PRESSURE	0.1	kPaa		**79.4**	**80.2**	**81.4**	**81.5**	----
Pressure - Gauge as Received	----	1	Inches Hg		**-7**	**-14**	**-8**	**-8**	----
Pressure - Laboratory Atmosphere	----	0.1	kPaa		**101**	**101**	**101**	**101**	----
Temperature as Received	----	0.1	°C		**21.0**	**21.0**	**21.0**	**21.0**	----
USEPA Air Toxics Method TO15r Surrogates									
4-Bromofluorobenzene	460-00-4	0.5	%		**95.8**	**95.0**	**95.0**	----	----

Surrogate Control Limits

Sub-Matrix: **AMBIENT**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
USEPA Air Toxics Method TO15r Surrogates			
4-Bromofluorobenzene	460-00-4	60	140

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2414252**	Page	: 1 of 4
Client	: **ADE Consulting Group Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Karin Azzam	Telephone	: +61 2 4014 2500
Project	: A101024.0124 51NSW Medowie HS	Date Samples Received	: 08-Nov-2024
Site	: ----	Issue Date	: 16-Nov-2024
Sampler	: Mitchell Roy	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **AIR**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP101: VOCs by USEPA Method TO15r							
Gas Canister - ALS Stainless Steel Silonite (EP101-15X) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840	**05-Nov-2024**	**----**	----	----	**12-Nov-2024**	05-Dec-2024	✓
EP103-S: CRCCARE PVI Aliphatic Hydrocarbon Fractions							
Gas Canister - ALS Stainless Steel Silonite (EP103-S) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840	**05-Nov-2024**	**----**	----	----	**12-Nov-2024**	05-Dec-2024	✓
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions							
Gas Canister - ALS Stainless Steel Silonite (EP103-S) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840	**05-Nov-2024**	**----**	----	----	**12-Nov-2024**	05-Dec-2024	✓
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions							
Gas Canister - ALS Stainless Steel Silonite (EP103-S) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840	**05-Nov-2024**	**----**	----	----	**12-Nov-2024**	05-Dec-2024	✓
EP103-S: TPH CWG Aromatic Hydrocarbon Fractions							
Gas Canister - ALS Stainless Steel Silonite (EP103-S) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840	**05-Nov-2024**	**----**	----	----	**12-Nov-2024**	05-Dec-2024	✓
Sampling Quality Assurance							
Gas Canister - ALS Stainless Steel Silonite (CAN-001) AM01 - C40253_S12205, AM02 - C40211_S15006, AM03 - C40244_S02840, AM04 - C40251_S15023	**05-Nov-2024**	**----**	----	----	**11-Nov-2024**	05-Nov-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **AIR**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Duplicate Control Samples (DCS)							
Aliphatic and Aromatic Hydrocarbons in Gaseous Samples	EP103-S	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Duplicates (DUP)							
Aliphatic and Aromatic Hydrocarbons in Gaseous Samples	EP103-S	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Aliphatic and Aromatic Hydrocarbons in Gaseous Samples	EP103-S	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Aliphatic and Aromatic Hydrocarbons in Gaseous Samples	EP103-S	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Canister Sampling - Field Data	CAN-001	AIR	In house: Referenced to USEPA TO14 / TO15
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	AIR	In house: Referenced to USEPA TO15r Volatile Organic Compounds in Air by USEPA TO15. Extended Suite
VOCs in Air by USEPA TO15r - Extended Suite (mass/volume)	EP101-15X-MV	AIR	USEPA TO15r VOCs in Air Results recalculated as mass/volume concentrations from volume/volume concentrations at a given temperature and pressure.
Aliphatic and Aromatic Hydrocarbons in Gaseous Samples	EP103-S	AIR	Aliphatic and Aromatic Hydrocarbons in Gaseous Samples by GC-MS with Preconcentration and Thermal Desorption Injection Based on USEPA TO15, MassDEP APH, TPHCWG and CRCCARE PVI Technical Report 23, 2013
Aliphatic and Aromatic Hydrocarbons in Gas Samples (Calc)	EP103-S-MV	AIR	USEPA TO15r, TPHCWG, MassDEP APH Results recalculated as mass/volume concentrations from volume/volume concentrations at a given temperature, pressure and molecular weights (incl. TPHCWG Vol3 Table 8).

QUALITY CONTROL REPORT

Work Order	: **EN2414252**	Page	: 1 of 7
Client	: **ADE Consulting Group Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Karin Azzam	Contact	:
Address	:	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: A101024.0124 51NSW Medowie HS	Date Samples Received	: 08-Nov-2024
Order number	: ----	Date Analysis Commenced	: 11-Nov-2024
C-O-C number	: ----	Issue Date	: 16-Nov-2024
Sampler	: Mitchell Roy		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report ; Recovery and Acceptance Limits
- Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Dale Semple	Analyst	Newcastle, Mayfield West, NSW
Daniel Junek	Senior Organic Chemist	Newcastle - Organics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 6182086)									
EN2414252-001	AM01 C40253_S12205	EP101-15X: Freon 12	75-71-8	0.5	ppbv	0.5	0.5	0.0	No Limit
		EP101-15X: Chloromethane	74-87-3	0.5	ppbv	0.7	0.7	0.0	No Limit
		EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 6182086) - continued									
EN2414252-001	AM01 C40253_S12205	EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Acetone	67-64-1	0.5	ppbv	1.9	1.9	0.0	No Limit
		EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Propene	115-07-1	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 6182086) - continued									
EN2414252-001	AM01 C40253_S12205	EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<1.0	<1.0	0.0	No Limit
EP103-S: CRCCARE PVI Aliphatic Hydrocarbon Fractions (QC Lot: 6182089)									
EN2414252-001	AM01 C40253_S12205	EP103-S: Aliphatic C6-C10	----	50	ppbv	<50	<50	0.0	No Limit
		EP103-S: Aliphatic > C10-C16	----	50	ppbv	<50	<50	0.0	No Limit
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions (QC Lot: 6182089)									
EN2414252-001	AM01 C40253_S12205	EP103-S: Aromatics >C10-C16 minus Naphthalene (F2 Aromatic)	----	1.5 (2)*	ppbv	<2	<2	0.0	No Limit
		EP103-S: Aromatic > C10-C16	----	2	ppbv	<2	<2	0.0	No Limit
		EP103-S: Aromatics C6-C10 minus BTEX (F1 Aromatic)	----	4	ppbv	<4	<4	0.0	No Limit
		EP103-S: Aromatics C6-C10	----	7	ppbv	<7.0	<7.0	0.0	No Limit
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions (QC Lot: 6182089)									
EN2414252-001	AM01 C40253_S12205	EP103-S: Aliphatic >C5-C6	----	50	ppbv	<50	<50	0.0	No Limit
		EP103-S: Aliphatic >C6-C8	TPHCWG-ALV2	50	ppbv	<50	<50	0.0	No Limit
		EP103-S: Aliphatic >C8-C10	TPHCWG-ALV3	50	ppbv	<50	<50	0.0	No Limit
		EP103-S: Aliphatic >C10-C12	TPHCWG-ALE1	50	ppbv	<50	<50	0.0	No Limit
EP103-S: TPH CWG Aromatic Hydrocarbon Fractions (QC Lot: 6182089)									
EN2414252-001	AM01 C40253_S12205	EP103-S: Aromatic >C5-C7	----	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP103-S: Aromatic >C7-C8	TPHCWG-ARV2	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP103-S: Aromatic >C8-C10	TPHCWG-ARV3	2.5	ppbv	<2.5	<2.5	0.0	No Limit
		EP103-S: Aromatic >C10-C12	TPHCWG-ARE1	5	ppbv	<5	<5	0.0	No Limit

Method Blank (MB), Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (DCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control terms Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (DCS) refers to certified reference materials, or known interference free matrices spiked with target analytes. The purpose of these QC parameters are to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS and DCS.

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 6182086)											
EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.5	10 ppbv	104	105	88.1	117	1.0	----
EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.5	10 ppbv	103	101	70.5	130	2.0	----
EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.5	10 ppbv	106	107	88.2	118	0.9	----
EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.5	10 ppbv	107	107	82.0	120	0.0	----
EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.5	10 ppbv	107	108	87.9	116	0.9	----
EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.5	10 ppbv	106	107	84.2	118	0.9	----
EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.5	10 ppbv	99.7	101	87.1	117	1.3	----
EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	10 ppbv	104	104	87.1	115	0.0	----
EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.5	10 ppbv	101	101	70.0	129	0.0	----
EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.5	10 ppbv	99.1	99.8	83.8	121	0.7	----
EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	10 ppbv	104	104	85.1	116	0.0	----
EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	10 ppbv	101	101	83.7	119	0.0	----
EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.5	10 ppbv	100	101	87.3	113	1.0	----
EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	10 ppbv	95.3	95.4	81.7	117	0.1	----
EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	10 ppbv	98.9	99.4	82.8	116	0.5	----
EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.5	10 ppbv	100	100	83.3	114	0.0	----
EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	10 ppbv	101	101	82.7	120	0.0	----
EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	10 ppbv	102	101	83.3	113	1.0	----
EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	<0.5	10 ppbv	98.5	98.7	85.1	113	0.2	----
EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	10 ppbv	110	110	84.0	116	0.0	----
EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	10 ppbv	115	116	75.3	121	0.9	----
EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	10 ppbv	108	108	87.5	116	0.0	----
EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.5	10 ppbv	106	106	81.8	120	0.0	----
EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	10 ppbv	107	107	84.0	119	0.0	----
EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	10 ppbv	104	105	75.7	126	1.0	----
EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.5	10 ppbv	106	106	84.8	118	0.0	----
EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.5	10 ppbv	103	104	82.8	116	1.0	----
EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<1.0	20 ppbv	102	103	84.3	118	1.0	----
EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.5	10 ppbv	91.6	94.2	74.6	125	2.8	----
EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	10 ppbv	111	112	86.9	120	0.9	----
EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.5	10 ppbv	102	104	84.9	120	1.9	----
EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	10 ppbv	89.3	91.1	78.2	125	2.0	----

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 6182086) - continued											
EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	10 ppbv	99.6	101	83.3	126	1.4	----
EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	10 ppbv	93.5	95.3	82.1	125	1.9	----
EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	10 ppbv	90.6	92.3	78.5	124	1.9	----
EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.5	10 ppbv	75.2	78.2	70.0	122	3.9	----
EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	10 ppbv	94.4	96.1	79.0	124	1.8	----
EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	10 ppbv	94.5	95.9	80.0	125	1.5	----
EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	10 ppbv	73.0	74.3	70.0	120	1.8	----
EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	10 ppbv	93.0	93.6	70.0	130	0.6	----
EP101-15X: Acetone	67-64-1	0.5	ppbv	<0.5	10 ppbv	104	104	70.0	130	0.0	----
EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	10 ppbv	103	103	82.3	117	0.0	----
EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	10 ppbv	105	106	74.0	126	0.9	----
EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.5	10 ppbv	107	107	85.0	115	0.0	----
EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	10 ppbv	98.5	100	79.1	128	1.5	----
EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	10 ppbv	92.7	93.2	74.3	122	0.5	----
EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.5	10 ppbv	106	104	82.2	113	1.9	----
EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	10 ppbv	104	105	78.4	129	1.0	----
EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	10 ppbv	90.8	90.0	70.0	130	0.9	----
EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.5	10 ppbv	91.9	92.9	70.0	122	1.1	----
EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	10 ppbv	102	102	82.9	115	0.0	----
EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.5	10 ppbv	105	104	80.1	117	1.0	----
EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.5	10 ppbv	104	104	76.8	123	0.0	----
EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.5	10 ppbv	106	106	77.6	120	0.0	----
EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	10 ppbv	77.6	78.4	70.0	128	1.0	----
EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	10 ppbv	103	106	70.0	123	2.9	----
EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	10 ppbv	81.5	81.6	70.0	126	0.1	----
EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	10 ppbv	82.1	83.1	70.0	130	1.2	----
EP101-15X: Propene	115-07-1	0.5	ppbv	<0.5	10 ppbv	97.9	96.8	70.0	130	1.1	----
EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	10 ppbv	102	102	74.7	125	0.0	----
EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	10 ppbv	97.3	97.4	70.0	130	0.1	----
EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.5	10 ppbv	73.2	75.0	70.0	130	2.4	----
EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	10 ppbv	116	120	70.0	128	3.4	----
EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.5	10 ppbv	102	103	83.8	116	1.0	----
EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.5	8.16 ppbv	87.0	91.9	70.0	125	5.5	----
EP103-S: CRCCARE PVI Aliphatic Hydrocarbon Fractions (QCLot: 6182089)											
EP103-S: Aliphatic C6-C10	----	50	ppbv	<50	----	----	----	----	----	----	----
EP103-S: Aliphatic > C10-C16	----	50	ppbv	<50	----	----	----	----	----	----	----
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions (QCLot: 6182089)											
EP103-S: Aromatics C6-C10	----	7	ppbv	<7.0	----	----	----	----	----	----	----

Sub-Matrix: **AIR**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP103-S: CRCCARE PVI Aromatic Hydrocarbon Fractions (QCLot: 6182089) - continued											
EP103-S: Aromatics C6-C10 minus BTEX (F1 Aromatic)	----	4	ppbv	<4	----	----	----	----	----	----	----
EP103-S: Aromatic > C10-C16	----	2	ppbv	<2	----	----	----	----	----	----	----
EP103-S: Aromatics >C10-C16 minus Naphthalene (F2 Aromatic)	----	1.5	ppbv	<2	----	----	----	----	----	----	----
EP103-S: TPH CWG Aliphatic Hydrocarbon Fractions (QCLot: 6182089)											
EP103-S: Aliphatic >C5-C6	----	50	ppbv	<50	1000 ppbv	108	111	73.2	125	2.7	25
EP103-S: Aliphatic >C6-C8	TPHCWG-AL V2	50	ppbv	<50	1300 ppbv	105	107	76.0	120	1.9	25
EP103-S: Aliphatic >C8-C10	TPHCWG-AL V3	50	ppbv	<50	200 ppbv	73.6	72.5	54.7	124	1.5	25
EP103-S: Aliphatic >C10-C12	TPHCWG-AL E1	50	ppbv	<50	200 ppbv	79.5	81.4	70.0	128	2.4	25
EP103-S: TPH CWG Aromatic Hydrocarbon Fractions (QCLot: 6182089)											
EP103-S: Aromatic >C5-C7	----	0.5	ppbv	<0.5	100 ppbv	109	111	83.3	116	1.8	25
EP103-S: Aromatic >C7-C8	TPHCWG-AR V2	0.5	ppbv	<0.5	100 ppbv	109	110	87.3	114	0.9	25
EP103-S: Aromatic >C8-C10	TPHCWG-AR V3	2.5	ppbv	<2.5	1200 ppbv	108	111	84.7	122	2.7	25
EP103-S: Aromatic >C10-C12	TPHCWG-AR E1	5	ppbv	<5	300 ppbv	112	114	83.4	128	1.8	25

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

AIR CANISTER CHAIN OF CUSTODY

If sourced from an ALS Laboratory: please tick →

Client Supplied Canister(s)? Y / N

CLIENT:	ADE Consulting Group	TURNAROUND REQUIREMENTS : (Standard TAT may be extended for multiple sequential analysis suites)	☑ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:			
PROJECT:	SINSW - Medowie Odour Assessment	PROJECT NO: A101024.0124.00	ALS QUOTE NO.: NE24ADENVT0002
CANISTER REQUEST NO:		PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:
PROJECT MANAGER:	Karin Azzam	CONTACT PH: 0490 072 877	
SAMPLER:	Mitchell Roy	SAMPLER MOBILE: 0405 863 418	
COC Emailed to ALS? (YES / NO)		EDD FORMAT (or default): Esdat	
Email Reports to (will default to PM if no other addresses are listed): karin.azzam@ade.group			
Email Invoice to (will default to PM if no other addresses are listed): , mitchell.roy@ade.group			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

LABORATORY USE ONLY (Circle) Receiver to initial and date/time

Custody Seal Intact? Rec Lab Y / N NE Y / N N/A

Valves closed on Receipt? Rec Lab Y / N NE Y / N N/A

Canister/Sampler Complete and Not Damaged Yes No

Other comment: Temperature °C

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
MR			
RECEIVED BY:	RECEIVED BY:	RECEIVED BY: 11/11 1020	RECEIVED BY:

Signature and date/time

COMMENTS/SPECIAL HANDLING/REPLACEMENT OR RETURN INSTRUCTIONS:

GAS SAMPLE CONTAINER INFORMATION

ALS USE ONLY	CANISTER / SAMPLE DETAILS					Canister Gauge Pressures (PSI)		Refer to Canister Verification Reports and COAs for pressures measured by the Lab					ANALYSES REQUESTED						Additional Information
								Reporting Requirements					Suite Codes must be listed to attract suite price						
LAB ID	CANISTER SERIAL NO.	FLOW CONTROLLER SERIAL NO.	CLIENT SAMPLE ID	DATE / TIME SAMPLED	MATRIX (eg Air, Soil Gas)	Pre-Sampling	Post Sampling	LORs			Units		VI-AA2 O15 VOCs + TPH CWG - Ambient Air		HOLD				Comments on LORs required, potential hazards, likely contaminant levels, or samples requiring specific QC analysis etc. (LOR defaults to routine method LOR after dilution)
								Ambient Air	Soil Gas (ref PID)	Other / Indoor	ppbv, µg/m³	ppmv, mg/m³							
	40253	12205	AM01	5/11/2024	Air	-30	-8	X			0.5 - 50 ppbv, 0.9 - 370 µg/m3		X						
	40211	15006	AM02	5/11/2024	Air	-36	-14	X			0.5 - 50 ppbv, 0.9 - 370 µg/m3		X						
	40244	02840	AM03	5/11/2024	Air	-32	-8	X			0.5 - 50 ppbv, 0.9 - 370 µg/m3		X						
	40251	15023	AM04	5/11/2024	Air	-34	-8	X			0.5 - 50 ppbv, 0.9 - 370 µg/m3				X				

Job Specific Instructions:

Environmental Division
Newcastle
Work Order Reference
EN2414252

Telephone : – 61 2 4014 2500

AIR CANISTER CHAIN OF CUSTODY

ALS

If sourced from an ALS Laboratory: please tick →

Client Supplied Canister(s)? Y / N

ADELAIDE 3/1 Burma Road Pooraka SA 5095 Ph: 08 81625130 E: adelaide@alsglobal.com

BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY Unit 2/20 Caterpillar Drive Paget QLD 4740 Ph: 07 49525795 E: ALSEnviro.Mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 1/29 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee mail@alsglobal.com

NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

PERTH 26 Rigali Way Wangara WA 6065 Ph: 08 94061301 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 13 Carlton Street Kirwan QLD 4817 Ph: 07 47730000 E: ALSEnviro.Townsville@alsglobal.com

WOLLONGONG 1/19-21 Ralph Black Drive Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

ENT:	AIDE Consulting Group	TURNAROUND REQUIREMENTS : (Standard TAT may be extended for multiple sequential analysis suites)	☒ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
ICE:	Newcastle		
JECT:	SINSW Medowie HS	PROJECT NO: A101024.0124	ALS QUOTE NO.:
ISTER REQUEST NO:		PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:
JECT MANAGER:	KA	CONTACT PH: 0490 072 877	
PLER:	MR	SAMPLER MOBILE: 0405883418	
Emailed to ALS? (YES / (NO)		EDD FORMAT (or default):	

COC SEQUENCE NUMBER (Circle): COC: (1) 2 3 4 5 6 7 OF: (1) 2 3 4 5 6 7

LABORATORY USE ONLY (Circle) *Receiver to initial and date/time*

Custody Seal Intact?	Rec Lab Y / N	NE Y / N	N/A
Valves closed on Receipt?	Rec Lab Y / N	NE Y / N	N/A
Canister/Sampler Complete and Not Damaged	Yes	No	
Other comment:	Temperature °C 22.1		

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
MR *Signature and date/time*	*Signature and date/time*	*Signature and date/time*	*Signature and date/time*
RECEIVED BY: BM 6/11 8:32 *Signature and date/time*	RECEIVED BY: *Signature and date/time*	RECEIVED BY: *Signature and date/time*	RECEIVED BY: *Signature and date/time*

Email Reports to (will default to PM if no other addresses are listed): Kevin.AZzam@aide.group, Mitchell.Rose@aide.group

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/REPLACEMENT OR RETURN INSTRUCTIONS:

GAS SAMPLE CONTAINER INFORMATION

ANALYSES REQUESTED

Additional Information

Comments on LORs required, potential hazards, likely contaminant levels, or samples requiring specific QC analysis etc. (LOR defaults to routine method LOR after dilution)

USE ONLY	CANISTER / SAMPLE DETAILS					Canister Gauge Pressures (PSI)		Refer to Canister Verification Reports and COAs for pressures measured by the Lab					ANALYSES REQUESTED						
								Reporting Requirements					Suite Codes must be listed to attract suite price						
								LORs			Units								
LAB ID	CANISTER SERIAL NO.	FLOW CONTROLLER SERIAL NO.	CLIENT SAMPLE ID	DATE / TIME SAMPLED	MATRIX (eg Air, Soil Gas)	Pre-Sampling	Post Sampling	Ambient Air	Soil Gas (NEPM)	Other / Indoor	ppbv, µg/m³	ppmv, mg/m³	ON HOLD						
							-08												
	40253	12205	AM01	5/11/24	Air	-30	[redacted]	X					X						
	40211	15006	AM02	5/11/24	Air	-36	-14	X					X						
	40244	02840	AM03	5/11/24	Air	-32	-08	X					X						
	40251	15023	AM04	5/11/24	Air	-34	-08	X					X						

Environmental Division
Newcastle
Work Order Reference
EN2414252

Telephone : +61 2 4014 2500

Special Instructions:

Appendix E: Data Quality Evaluation

Background

To evaluate a dataset generated by an environmental investigation or assessment, the data quality indicators need to be defined to ensure that the data are of sufficient quantity and quality for the purpose of making a decision. ASC NEPM (2013) identifies five measures to be considered when reviewing the quality assurance and quality control from an investigation or assessment as below:

- Precision: A quantitative measure of the variability or reproducibility of data.
- Accuracy (bias): A quantitative measure of the closeness of reported data to the true value.
- Representativeness: The confidence (expressed qualitatively) that data is representative of each medium present at the site.
- Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.
- Completeness: A measure of the amount of useable data (expressed as %) from a data collection activity.

The above five measures are known collectively by the acronym 'PARCC' and are comprised of both field and laboratory QA and QC processes to ensure that a resultant data set is suitable for making a decision.

The quantitative requirements have been outlined in the following sub-section, while the detailed review of the field and laboratory QA and QC is provided in the subsequent sub-sections.

Data Quality Indicators

The DGIs to demonstrate the PARC acceptance criteria were summarised in **Table E1** below.

Table E1: Data Quality Indicators

Data Quality Indicator	Frequency	Data Quality Criteria
Laboratory surrogate spikes	10% or laboratory discretion	50 – 150% recovery
Laboratory matrix spikes	10% or laboratory discretion	70 – 130% recovery
Laboratory control spikes	10% or laboratory discretion	70 – 130% recovery
Laboratory duplicates (internal)	10% or laboratory discretion	Results <10 times the PQL: No Limit Results between 10-20 times the PQL: RPD must lie between 0-50% Results >20 times the PQL: RPD must lie between 0-30%
Method blanks	Results between 10-20 times the PQL: RPD must lie between 0-50%	<LOR

Field Data Evaluation

Field Staff

ADE provided the following suitably experienced and qualified environmental consultants to oversee the investigations completed at the site.

- Karin Azzam – Environmental Scientist
- Mitchell Roy – Environmental Scientist

Sampling Methods

Samples were collected into laboratory supplied evacuated cannisters. This method adopted is considered suitable for the identified CoPC. ADE considers that the analytical results are representative of the conditions of the sampling locations at the time of sampling and are directly usable for the purpose of this assessment.

Canister pressure as received at the laboratory ranged between -7 and -14 inches mercury. This indicates that samples retained a small vacuum upon laboratory receipt and therefore considered suitable for analysis.

Laboratory Data Evaluation

Quality control reports from the laboratories subcontracted for sample analyses were reviewed. Laboratory blank samples, duplicate samples, control samples, spiked samples and method blanks were evaluated.

Accreditation and Documentation

The analytical laboratories utilised during the course of this investigation were suitable accredited by National Association of Testing Authorities (NATA) for the required analysis and adopted approved methodologies. Australian Laboratory Services Pty Ltd (ALS, accreditation number 825) was the primary laboratory used.

The laboratory methodologies and the respective accreditations of ALS were deemed suitable for the required analyses. Refer to **Appendix D** for the details of the adopted laboratory analytical methods, their respective accreditations and full laboratory transcripts including:

- Certificates of Analysis (CoA);
- Quality Assurance and Quality Control Reports (if any); and
- Chain of Custody documentation.

Australian Standard AS 4482.1 defines the chain-of-custody documentation as the link in the transfer of samples between the time of collection and arrival at the laboratory.

The CoC utilised by ADE included the items recommended by the Standard:

- The person transferred the samples;
- The person who received the samples;
- Date the samples were collected;
- Date the samples were received at the laboratory; and
- Contact name and details for the client.

Preservation, Storage and Holding Times

The samples were in proper custody between the field and reaching the laboratory in a good condition, documented in a signed chain of custody form (refer to **Appendix D**).

Samples were properly and adequately preserved and all primary samples collected over the course of the investigation were submitted within the recommended holding times of the required analysis. As such, the holding times of the samples to the final submission to the laboratories used meet the recommended holding time criteria, with all samples analysed within 7 days (or specific to an analyte) from the time of collection.

Minimum Detection Limits

To ensure that Type 1 errors (i.e., false negative) do not occur during the analysis of chemical contaminants and that suitable resolution and accuracy to evaluate the risk to receptors are captured, a minimum detection limit (MDL or LOR) should be set as 50% of the relevant criteria threshold as per ASC NEPM (2013).

The LORs were sufficient to accurately quantify detectable contaminants.

Duplicate Samples

Internal laboratory duplicates are completed to assess for the reproducibility between known primary and the duplicate samples via RPD comparison.

All laboratory duplicates were reported to have RPDs within acceptable limits.

Laboratory Control Spikes and Surrogates
Laboratory control spikes are similar to matrix spikes, however, utilise a matrix that is free from interference (e.g., other contaminants) to demonstrate that the analytical system is in control.

The laboratory limit of 50-150% was implemented to validate surrogate recoveries for organic analytes.

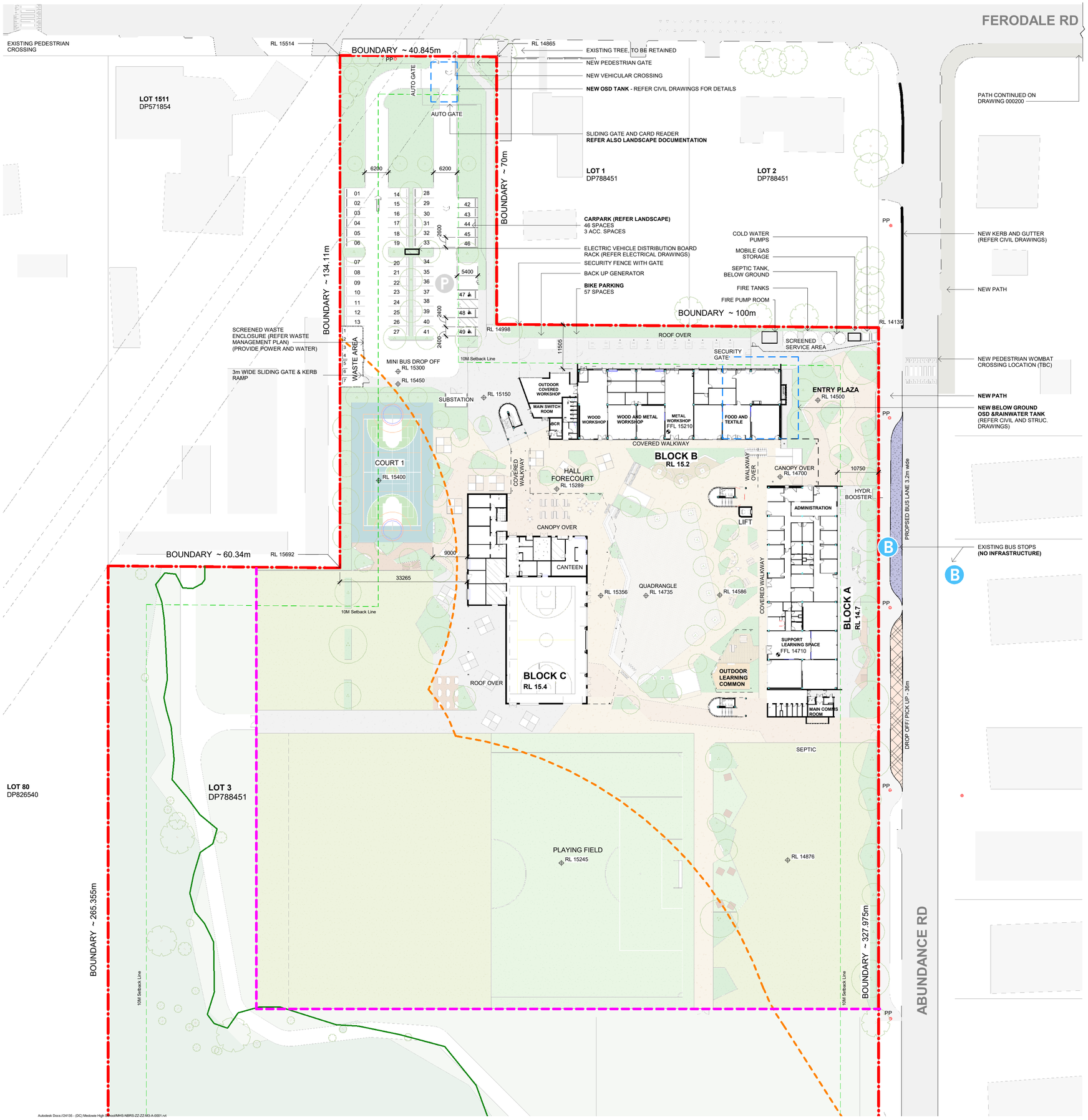
The recoveries for the laboratory control spikes and the surrogates were within acceptable criteria.

Method Blanks
Method blanks assess for false positives by analysing a blank sample and ensuring that the returned result is below the MDL. No contaminants were found in the blanks analysed by the laboratory.

Summary

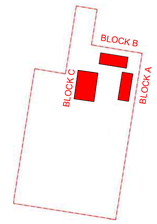
The acceptable limits on decision errors to be applied in the investigation and the manner of addressing possible decision errors have been applied. The data is considered suitable for its intended use in operations, decision making and planning as per step 6 of the data quality objectives and assessment

Appendix F: Architectural Plans



LEGEND

- BIODIVERSITY VALUE MAP
- FLOOD ZONE BOUNDARY
- 10m SETBACK LINE
- APZ ZONE EXTENT
- INDICATIVE SCHOOL/ FENCING BOUNDARY
- INGROUND OSD TANK
- HV POWER LINES & ASSOCIATED EASEMENT
- PICK UP AND DROP OFF
- BUS ZONE
- B EXISTING BUS BAY
- P CAR PARK
- PP EXISTING POWER POLE



KEY PLAN

SUMMARY OF AREAS

Function	Area	SLU Total	Special Teaching Space Total	Workshop /Labs Totals	Teaching Space Totals
	11 m²	0	0	0	0
AMENITIES	130 m²	0	0	0	0
HS 101 GENERAL LEARNING SPACES	1228 m²	0	0	0	14
HS 101.03 LEARNING COMMONS	345 m²	0	0	0	0
HS 102 GENERAL LEARNING SPACES (SUPPORT)	517 m²	3	0	0	0
HS 201 ADMINISTRATION HUB	369 m²	0	0	0	0
HS 202 STAFF HUB	413 m²	0	0	0	0
HS 203 GYMNASIUM + CANTEEN	977 m²	0	0	0	0
HS 204 LIBRARY HUB	528 m²	0	1	0	0
HS 301 SCIENCE LEARNING HUB	332 m²	0	2	1	0
HS 302 VISUAL ARTS LEARNING HUB	326 m²	0	2	1	0
HS 303 WOOD + METAL TECHNOLOGY LEARNING HUB	608 m²	0	2	2	0
HS 304 FOOD + TEXTILES LEARNING HUB	392 m²	0	2	1	0
HS 305 HEALTH/PE LEARNING HUB	315 m²	0	2	1	0
HS 306 PERFORMING ARTS LEARNING HUB	263 m²	0	2	1	0
HS 401 STUDENT AMENITIES	119 m²	0	0	0	0
HS 402 OTHER STORAGE	46 m²	0	0	0	0
HS 501 OUTDOOR AREAS	191 m²	0	0	0	0
HS CIRCULATION	1167 m²	0	0	0	0
HS SERVICES	468 m²	0	0	0	0
SERVICES	13 m²	0	0	0	0
VER	7 m²	0	0	0	0
Grand total: 218	8766 m²	3	13	7	14

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project
24135 - MEDOWIE HIGH SCHOOL

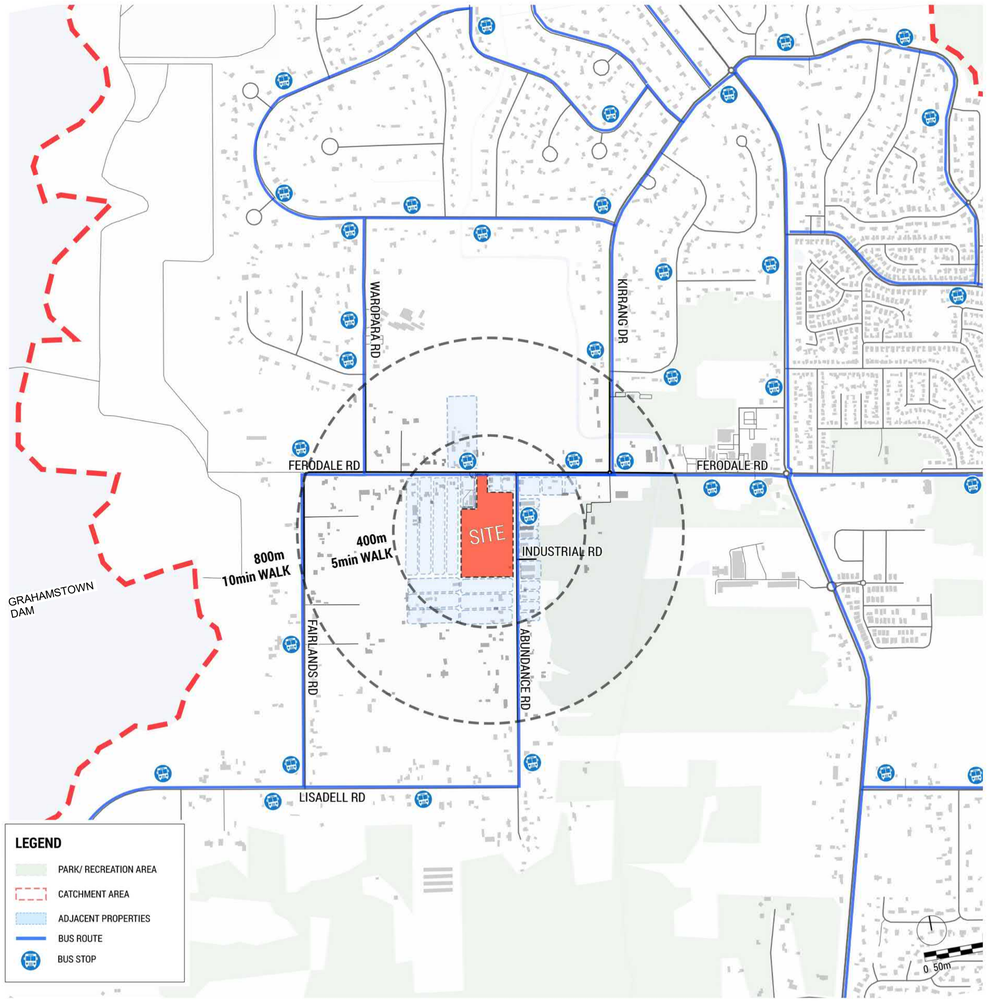
at
6 Abundance Rd, Medowie NSW 2318

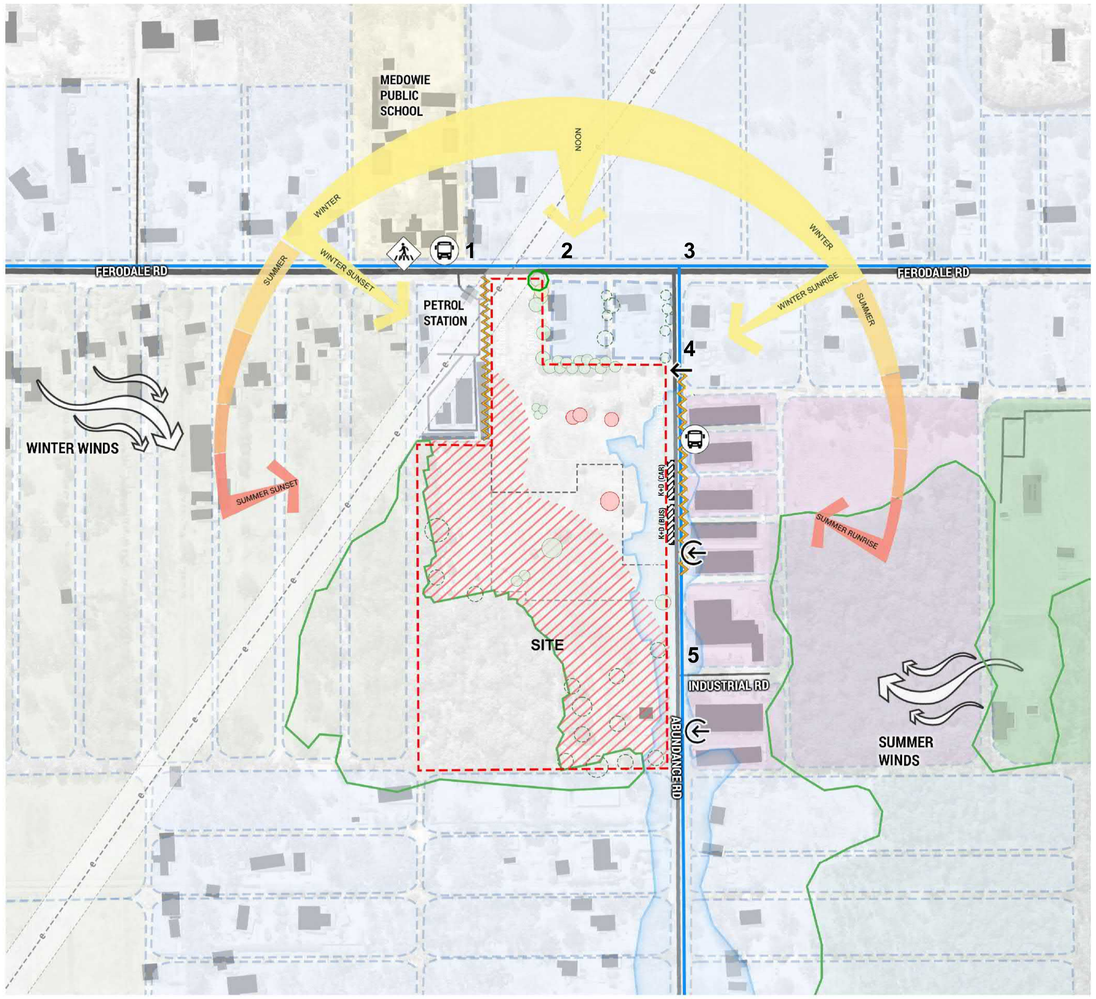
NSW GOVERNMENT Education

Drawing Title
SITE PLAN

Date 15/01/2025 11:44:44 AM
Scale 1:500 @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-000201
Revision 2

0 5m 10m 15m 20m 25m 30m 35m 40m 1:500





1 Location of power poles, height of overhead hv power lines passing over site, proximity to petrol station for air quality and noise impacts.

2. Narrow frontage, no existing driveway / vehicular crossing, high value tree on boundary, residential neighbour

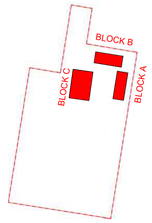
3. Prominent corner property adjacent to proposed school site. Medowie Primary School across the road from site.

4. Abundance Rd. proposed kiss and drop, and bus stop to consider existing levels adjacent site in swale, and location of power poles, industrial use across road, truck movements on Abundance Rd.

5. Abundance Rd. looking north, proposed kiss and drop and bus stop to consider existing levels adjacent site in swale, and location of power poles, industrial use across road, truck movements on Abundance Rd.

LEGEND

- R5 LARGE LOT RESIDENTIAL
- E4 GENERAL INDUSTRIAL
- RE1 PUBLIC RECRREATION
- RU2 RURAL LANDSCAPE
- EXISTING SCHOOL
- FLOOD AREA
- CONSERVATION ZONE
- NOISE
- MEDIUM SIGNFICANCE TREE
- EXISTING TREE ON SITE OUT OF SCOPE
- HIGH TENSION POWER LINES (WITH SETBACK)
- PEDESTRIAN CROSSING
- BUS STOP
- EXISTING BUS ROUTE
- EXISTING ROAD
- PROPOSED ROAD
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- BUSH FIRE ASSET PROTECTION ZONE
- LOW SIGNFICANCE TREE
- HIGH SIGNFICANCE TREE
- EAST CORNER TREE



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

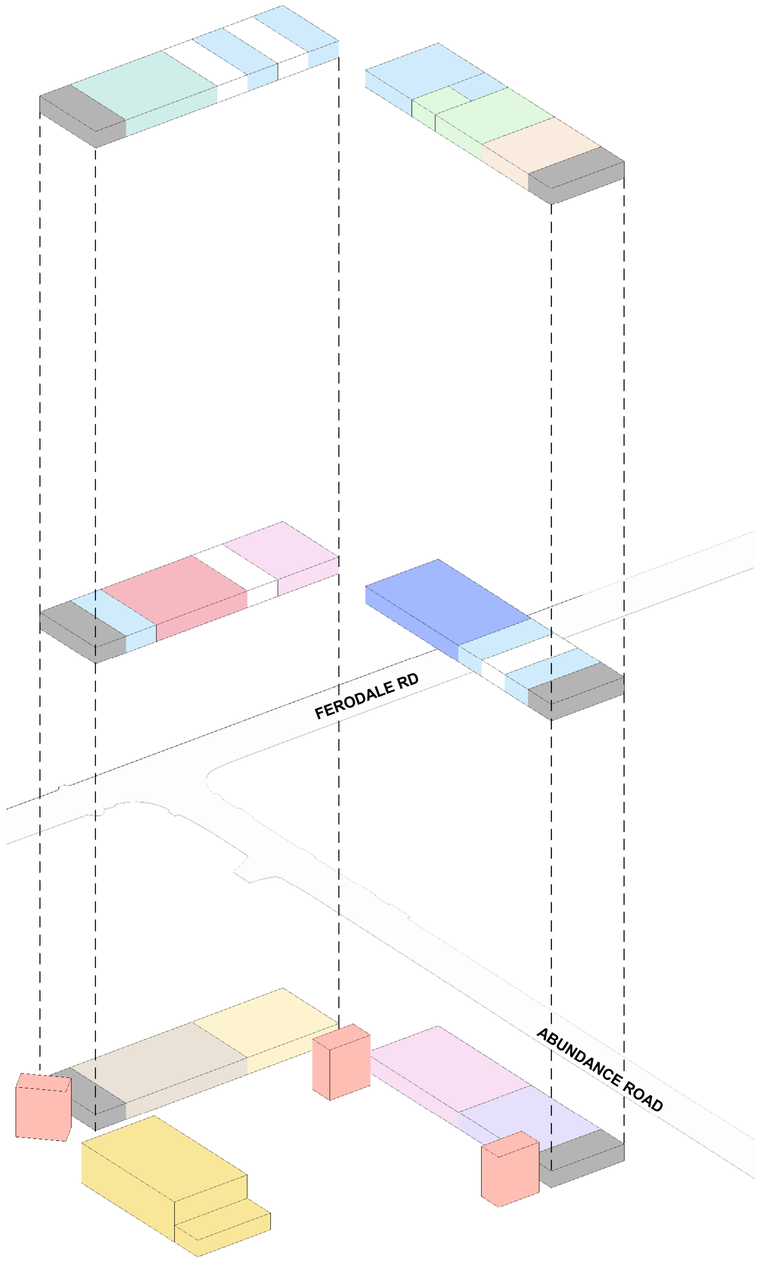
Project
24135 - MEDOWIE HIGH SCHOOL

at
6 Abundance Rd, Medowie NSW 2318

NSW GOVERNMENT Education

Drawing Title
SITE ANALYSIS SHEET 01

Date 15/01/2025 4:06:59 PM
Scale @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-000051
Revision 2



LEVEL 2

SCIENCE, GLS, PT FITNESS, GLS, PERFORMING ARTS WORKSHOPS

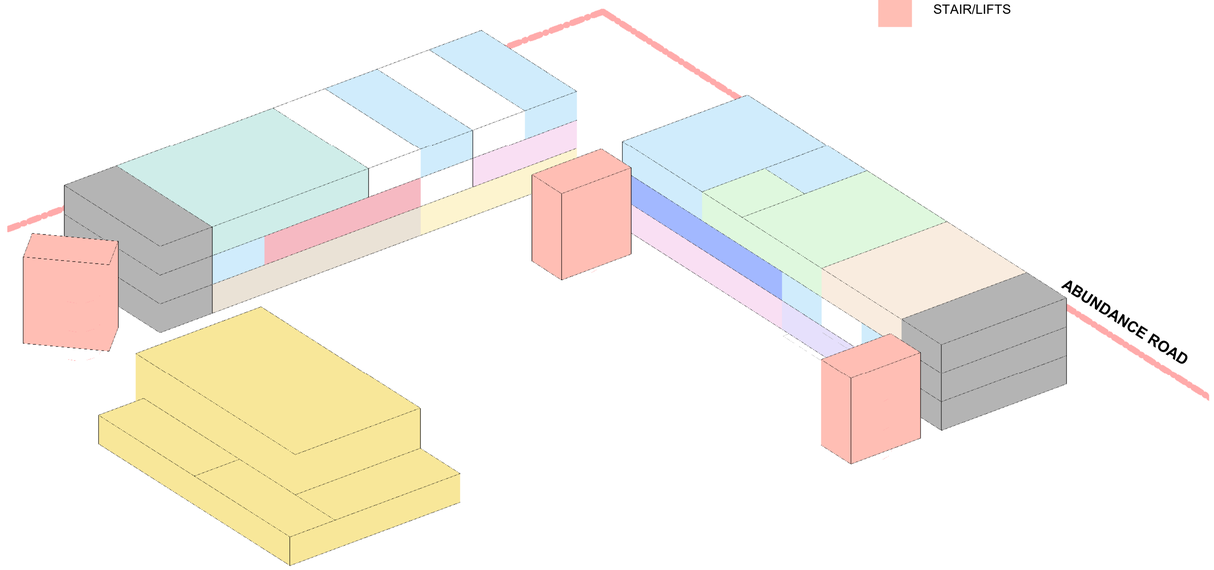
LEVEL 1

LIBRARY, GLS, LEARNING COMMONS, VISUAL ARTS, STAFF GLS

GROUND FLOOR

WOOD & METAL, FOOD & TEXTILE, ADMIN AND SELU, CANTEEN, HALL, SERVICES, AMENITIES

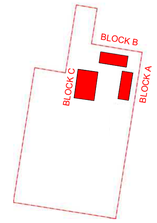
4 STACKING AXO DIAGRAM



1 STACKING DIAGRAM - 3D

LEGEND

- SITE BOUNDARY
- INDICATIVE SCHOOL/ FENCING BOUNDARY
- 10m SETBACK LINE
- PP EXISTING POWER POLE
- GLS HUB
- SUPPORT LEARNING UNIT (SLU)
- OUTDOOR LEARNING COMMON
- LEARNING COMMON
- SCIENCE LEARNING AREA
- FOOD+TEXTILES LEARNING HUB
- VISUAL ARTS LEARNING HUB
- PERFORMING ARTS LEARNING HUB
- WOOD + METAL TECH LEARNING HUB
- HEALTH & PE LEARNING HUB
- GYM & CANTEEN
- LIBRARY
- ADMIN / STAFF HUB
- ADDITIONAL LEARNING HUB
- SERVICES
- AMENITIES
- CIRCULATION
- STAIR/LIFTS



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project
24135 - MEDOWIE HIGH SCHOOL

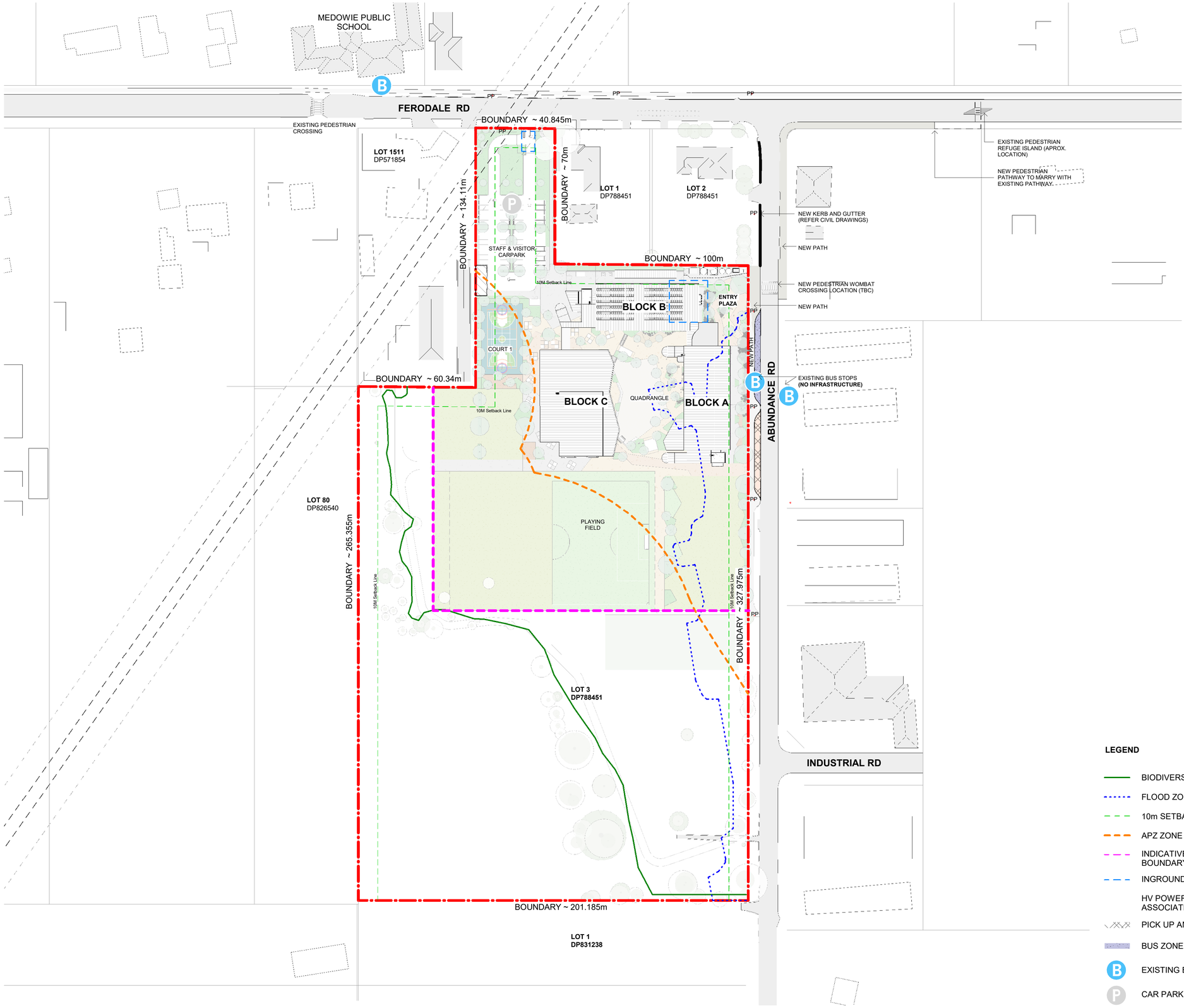
at
6 Abundance Rd, Medowie NSW 2318

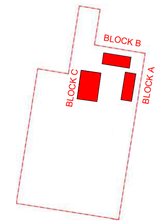
NSW GOVERNMENT Education

Drawing Title
3D AXONOMETRIC DIAGRAM

Date 15/01/2025 4:07:39 PM
Scale 1 : 1000 @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-000110
Revision 2

0 10 20 30 40 50 60 70 80 90 100





KEY PLAN

LEGEND

- BIODIVERSITY VALUE MAP
- FLOOD ZONE BOUNDARY
- 10m SETBACK LINE
- APZ ZONE EXTENT
- INDICATIVE SCHOOL/ FENCING BOUNDARY
- INGROUND OSD TANK
- HV POWER LINES & ASSOCIATED EASEMENT
- PICK UP AND DROP OFF
- BUS ZONE
- EXISTING BUS BAY
- CAR PARK
- EXISTING POWER POLE

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project
24135 - MEDOWIE HIGH SCHOOL

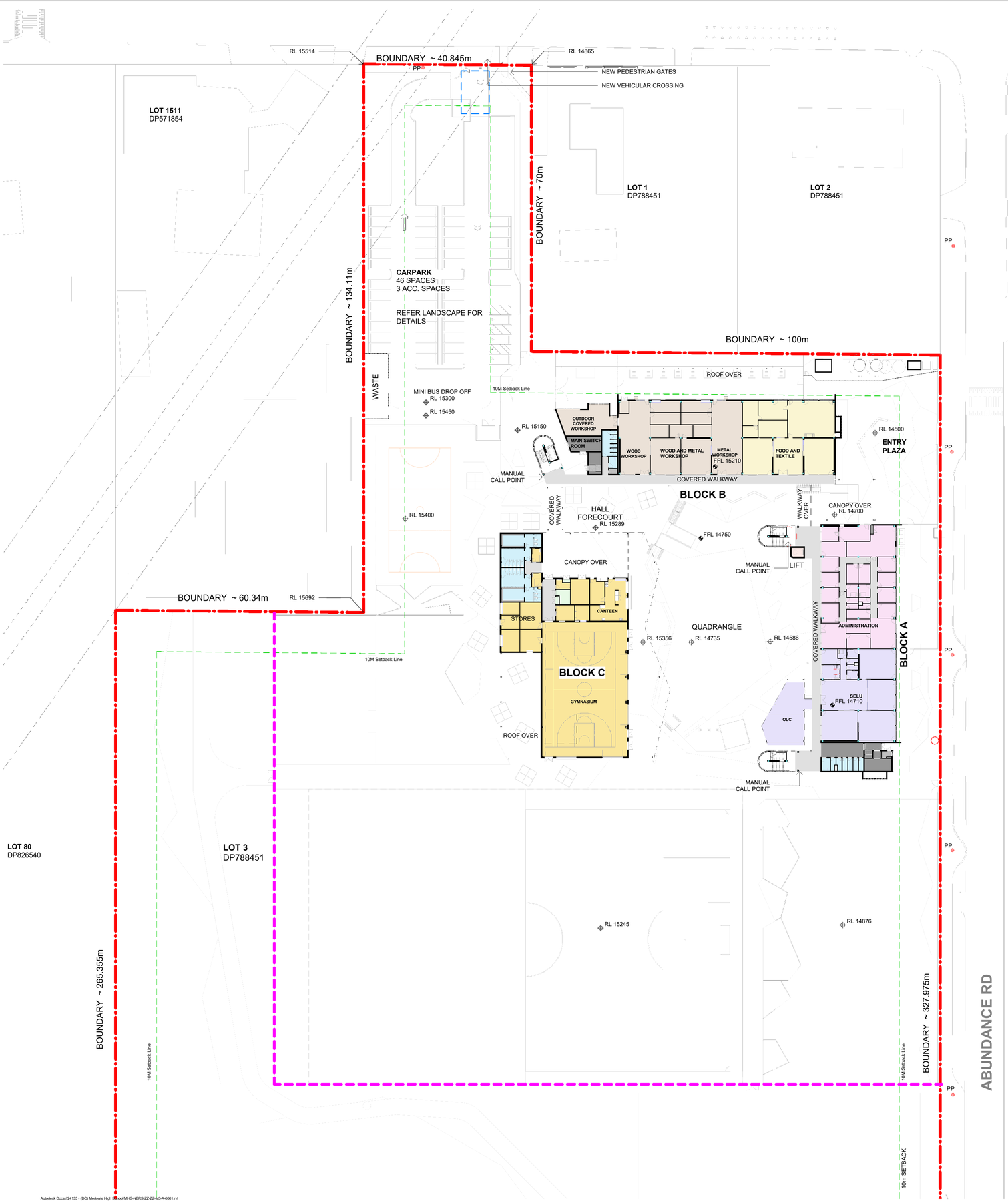
at
6 Abundance Rd, Medowie NSW 2318

NSW GOVERNMENT Education

Drawing Title
LOCATION PLAN

Date 15/01/2025 11:43:53 AM
Scale 1 : 1000 @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-000200
Revision 2

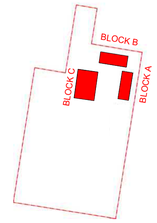
0 10 20 30 40 50 60 70 80 90 100



NBRS

LEGEND

- SITE BOUNDARY
- INDICATIVE SCHOOL/ FENCING BOUNDARY
- 10m SETBACK LINE
- PP EXISTING POWER POLE
- GLS HUB
- SUPPORT LEARNING UNIT (SLU)
- OUTDOOR LEARNING COMMON
- LEARNING COMMON
- SCIENCE LEARNING AREA
- FOOD+TEXTILES LEARNING HUB
- VISUAL ARTS LEARNING HUB
- PERFORMING ARTS LEARNING HUB
- WOOD + METAL TECH LEARNING HUB
- HEALTH & PE LEARNING HUB
- GYM & CANTEEN
- LIBRARY
- ADMIN / STAFF HUB
- ADDITIONAL LEARNING HUB
- SERVICES
- AMENITIES
- CIRCULATION
- STAIR/LIFTS



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project
24135 - MEDOWIE HIGH SCHOOL

at
6 Abundance Rd, Medowie NSW 2318

NSW GOVERNMENT Education

Drawing Title
OVERALL GROUND PLAN

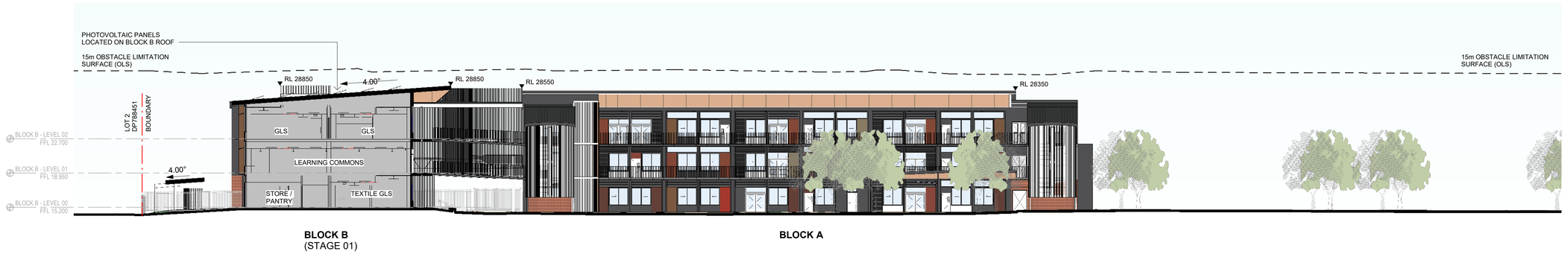
Date 15/01/2025 4:09:51 PM
Scale 1:500 @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-001000
Revision 2

0 5m 10m 15m 20m 25m 30m 35m 40m 1:500

Autodesk Docs://24135 - (DC) Medowie High School/MHS-NBRS-ZZ-ZZ-M3-A-0001.rvt

1 SITE ELEVATION - ABUNDANCE RD (EAST)

1 : 250



2 SITE ELEVATION - BLOCK B AND BLOCK A

1 : 250

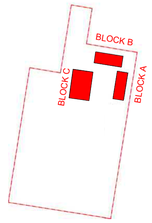
3 SITE ELEVATION - SOUTH

1 : 250

4 SITE SECTION - BLOCK B

1 : 250

Autodesk Docs://24135 - (DC) Medowie High School/MHS-NBRS-ZZ-ZZ-M3-A-0001.rvt



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project

24135 - MEDOWIE HIGH SCHOOL

at

6 Abundance Rd, Medowie NSW 2318

NSW GOVERNMENT Education

Drawing Title

SITE ELEVATIONS - SHEET 1

Date 15/01/2025 4:15:51 PM

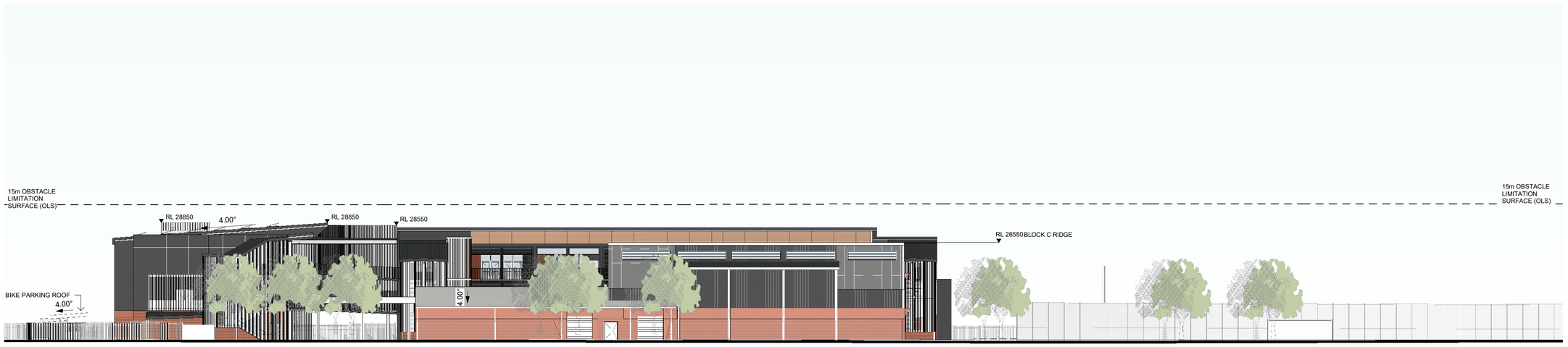
Scale 1 : 250 @ A1

NBRS Project # 24135

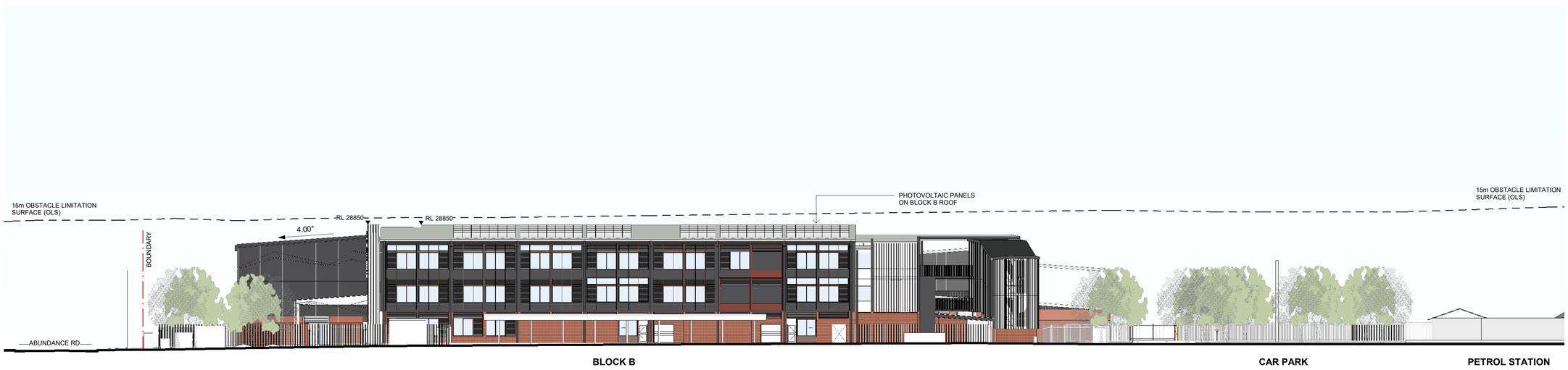
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-003001

Revision 2

0 10 20 30 40 50 60 70 80 90 100

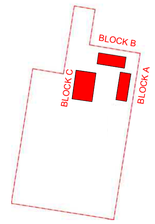


1 SITE ELEVATION - WEST
1 : 250



2 SITE ELEVATION - FERODALE RD (NORTH)
1 : 250

NBRS



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project
24135 - MEDOWIE HIGH SCHOOL

at
6 Abundance Rd, Medowie NSW 2318

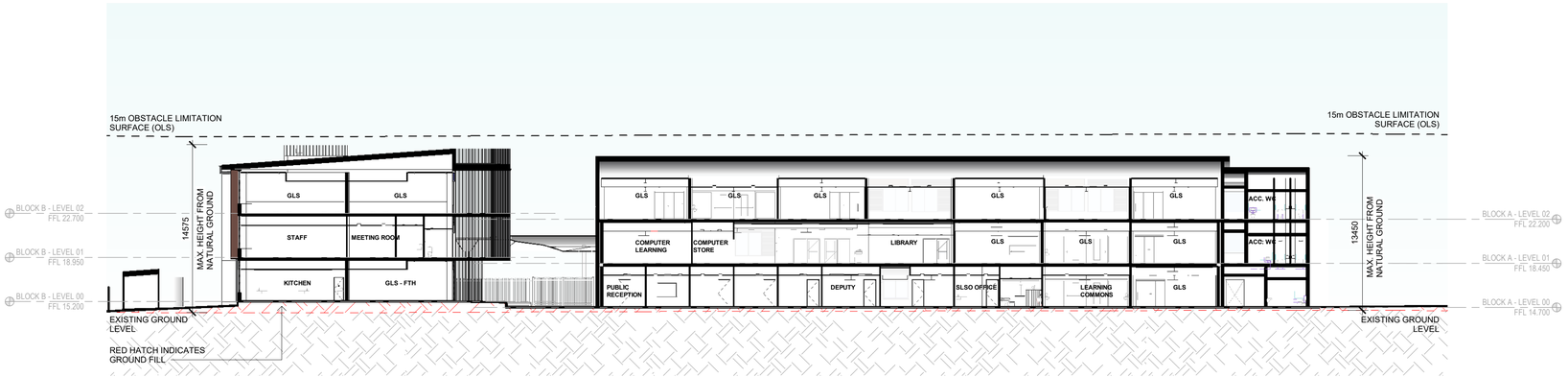
NSW GOVERNMENT Education

Drawing Title
SITE ELEVATIONS - SHEET 2

Date 15/01/2025 4:16:59 PM
Scale 1 : 250 @ A1
NBRS Project # 24135
Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-003002
Revision 2

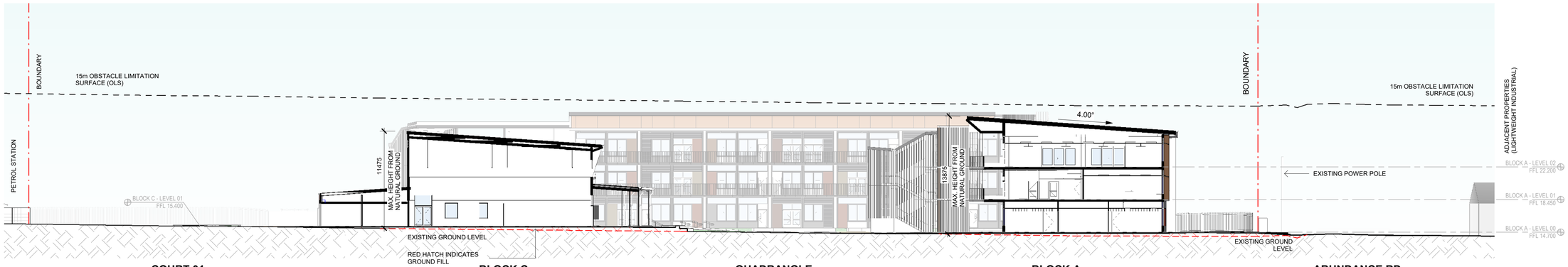
0 10 20 30 40 50 60 70 80 90 100

Autodesk Docs://24135 - (DC) Medowie High School/MHS-NBRS-ZZ-ZZ-M3-A-0001.rvt



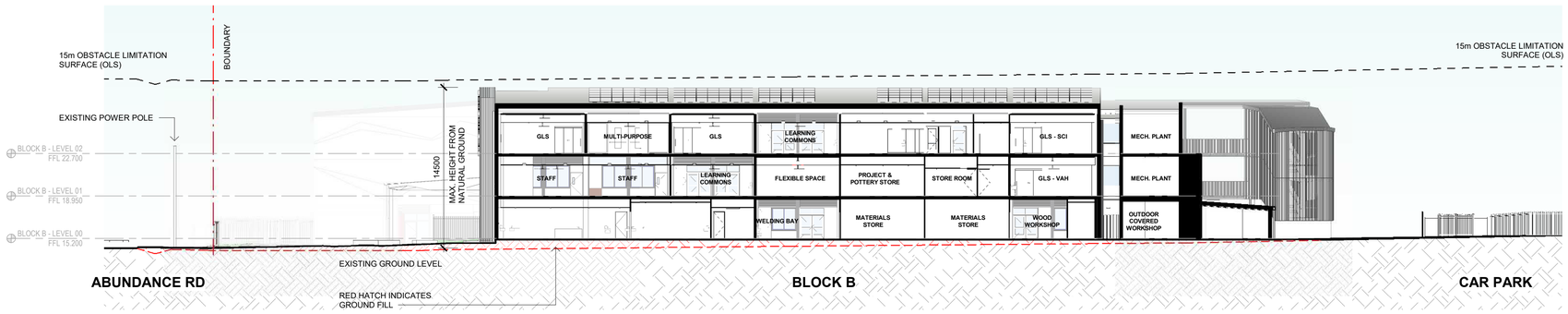
1 SITE SECTION 01 - N.S

1 : 250



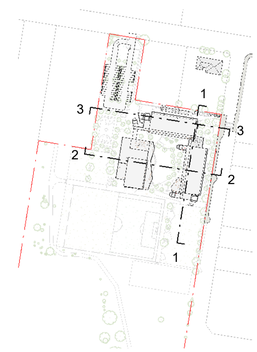
2 SITE SECTION 02 - E.W - BLOCK B

1 : 250

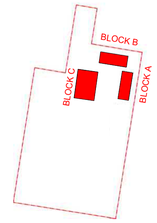


3 SITE SECTION 02 - E.W - BLOCK B

1 : 250



KEY PLAN



KEY PLAN

REF

Issue

No.	Date	Description	Chkd
1	2024/11/29	ISSUE FOR DRAFT REF	
2	2025/01/15	DRAFT REF (FINAL ISSUE)	

Changes to this Revision

NBRS
+61 2 9922 2344 nbrs.com.au
Nominated Architects:
Andrew Duffin NSW 5602
Jonathan West NSW 9899
NBRS & Partners Pty Ltd VIC 51197 ABN 16 002 247 565

Project

24135 - MEDOWIE HIGH SCHOOL

at

6 Abundance Rd, Medowie NSW 2318

NSW GOVERNMENT Education

Drawing Title

SITE SECTIONS - SHEET 1

Date 15/01/2025 4:17:34 PM

Scale As indicated @ A1

NBRS Project # 24135

Drawing Reference MHS-NBRS-ZZ-ZZ-DR-A-004001

Revision 2

0 10 20 30 40 50 60 70 80 90 100

Further details regarding ADE's services are available via

info@ade.group www.ade.group

ADE Consulting Group Pty Ltd

Sydney
Unit 6/7 Millenium Court,
Silverwater, NSW 2128 Australia
1300 796 922

Newcastle
Unit 9/103 Glenwood Drive
Thornton, NSW 2322, Australia
1300 796 922

ADE Consulting Group (QLD) Pty Ltd

Brisbane
10/53 Metroplex Avenue, Murarrie
QLD 4172, Australia.
1300 796 922

ADE Consulting Group (VIC) Pty Ltd

Melbourne
Unit 4/95 Salmon Street
Port Melbourne, VIC 3207, Australia
1300 796 922