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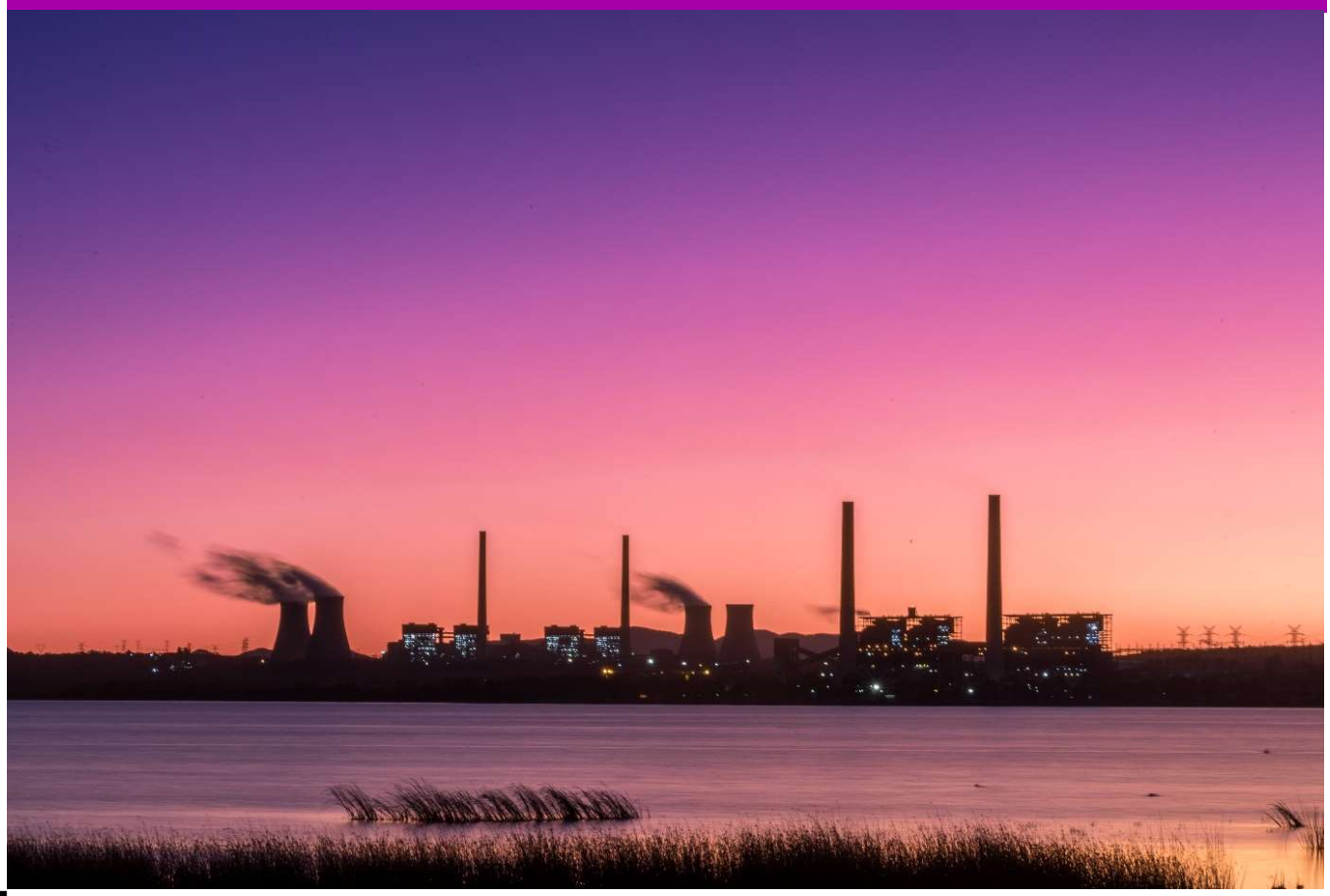
Liddell Future Land Use and Enabling Works – Dust Management Sub-Plan

AGL Macquarie Limited

SSD-24937520 Post Approval Documentation

30 January 2026



Liddell Future Land Use and Enabling Works – Dust Management Plan

Client name:	AGL Macquarie Limited		
Project name:	Liddell Future Land Use and Enabling Works Project		
Client reference:	AGL	**Project no:**	IS501900
Version:	D0v5	**Project manager:**	Luke Spencer
Date:	30 January 2026	**Prepared by:**	Luke Spencer, Sam Putland, Trescinda Brown
File name:	IS501900_DMP_D0v6.docx		

Document history and status

Version	Date	Description	Author	Checked	Reviewed	Approved
D0v0	30/09/2024	Initial draft	Sam Putland	Luke Spencer	Luke Spencer	Luke Spencer
D0v1	21/02/2025	2nd draft	Asha Niddrie	Luke Spencer	Luke Spencer	Luke Spencer
D0v2	03/04/2025	3rd draft	Asha Niddrie	Luke Spencer	Luke Spencer	Luke Spencer
D0v3	07/04/2025	4th draft	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
D0v4	02/05/2025	5th draft	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
D0v5	15/05/2025	6th Draft (Final)	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
F2	30/01/2026	Final 2	Trescinda Brown	Trescinda Brown	Trescinda Brown	Trescinda Brown

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Acronyms and abbreviations

Term	Definition
ACMs	Asbestos Containing Materials
AGLM	AGL Macquarie Pty Limited
AMP	Asbestos Management Sub-Plan
BMP	Blast Management Sub-Plan
BPS	Bayswater Power Station
DEMP	Demolition Environmental Management Plan
Development	Liddell Future Land Use and Enabling Works
DMP	Dust Management Sub-Plan
DPHI	Department of Planning, Housing and Industry
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LPS	Liddell Power Station
NEPM	National Environment Protection Measure
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 microns
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 microns
RtS	Response to Submissions Report
SEARs	Secretary's Environmental Assessment Requirements
SEPP SRD	State Environmental Planning Policy (State and Regional Development) 2011
SMF	Synthetic Mineral Fibre
SSD	State Significant Development
TARP	Trigger Action Response Plan
TSP	Total Solid Particulates

1. Introduction

1.1. Overview

Jacobs Australia Pty Limited (Jacobs) was commissioned by AGL Macquarie Pty Limited (AGLM) to prepare a Dust Management Sub-Plan (DMP) for the Liddell Future Land Use and Enabling Works (the development). The development involves demolition of Liddell Power Station (LPS) and associated infrastructure including the Hunter Valley Gas Turbines (HVGTs); ancillary works to the approved Liddell Ash Dam (LAD); construction and use of a borrow pit and asbestos disposal facility; Recontouring and revegetation of the site landform; and administrative updates to existing consent arrangements. The development would be delivered in stages, with Stage 1 involving demolition of LPS and associated infrastructure; site establishment and preliminary works; construction of asbestos disposal facility; and establishment, stabilisation and commencement of extraction of borrow pit. A description of the development as relevant to the DMP is provided in **Section 2**.

The development was classified as a State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD) being subject to Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and required an Environmental Impact Statement (EIS) to be prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs).

An EIS was prepared and submitted, which was exhibited 4 May to 31 May 2023. A Response to Submissions (RtS) Report (GHD, 2024a) was prepared 19 February 2024 to address submissions received during exhibition. An Amendment Report (GHD, 2024b) was subsequently submitted 11 June 2024 addressing minor changes to the development. The development was approved by the Department of Planning, Housing, and Infrastructure's (DHPI's) Executive Director Energy, Resource and Industry Assessments on 31st of January 2025, and Development Consent SSD-24937520 was issued.

1.2. Purpose

This DMP was prepared to specifically address condition C22 of Development Consent SSD-24937520. The DMP is a sub-plan to the Demolition Environmental Management Plan (DEMP) required by condition C16. Condition C22 requires the development of a DMP to control and effectively manage dust emissions during Stage 1 demolition activities (the 'demolition').

1.3. Scope

The scope of this DMP is to detail how potential dust issues during the demolition would be mitigated or otherwise effectively managed so that the requirements Development Consent SSD-24937520 are met. The 'Definitions' provided in Development Consent SSD-24937520 lists 'demolition' as including "the deconstruction and removal of the structures as described in the documents listed in Condition A2 (c); does not include preliminary works". Further, the 'Definitions' define 'preliminary works as including:

"Development activities required for site establishment and temporary services that do not impact native vegetation (excluding native vegetation within garden beds), including environmental mitigation measures, laydown areas, emergency muster points, mobilisation of plant and personnel, removal of hazardous materials proposed for demolition delineation of assets for retention and dilapidation surveys of adjacent plant and structures to be retained".

The documents referred to in Condition A2 (c) from the definition for 'demolition above include the EIS, RtS and Amendment Report (i.e., assessment documents), as well as the requirements of Development Consent SSD-24937520.

1.4. Objectives

This DMP describes the measures that are implemented to comply with the relevant conditions of Development Consent SSD-24937520 (identified above), as well as other requirements including Environment Protection Licence (EPL) No.2122, and relevant commitments detailed in the assessment documents, including details of associated monitoring, evaluation and reporting.

1.5. Authoring

Consistent with condition C22 a) of Development Consent SSD-24937520, this DMP was prepared by suitably qualified and experienced persons. The DMP lead authors were Luke Spencer, who is a member of CASANZ and Chartered Professional Engineer (CPEng), with more than 16 years' experience in air quality impact assessment and management and Sam Putland, who is a Certified Air Quality Practitioner (CAQP) with the Clean Air Society of Australia and New Zealand (CASANZ) with more than 10 years' experience.

1.6. Related plans

The following documents are related and shall be read in conjunction with this DMP:

- The DEMP describes how all environmental matters would be managed during demolition activities, The DMP is one of a suite of sub-plans to the DEMP, which also includes the BMP.
- Environmental Management Strategy (EMS). The EMS provides the overall environmental management strategy for the development. It details how emissions to air would be managed for all other aspects of Stage 1 (i.e., activities other than demolition).

2. Development demolition description

As per condition C16 (c), the DEMP includes a detailed description and schedule of all activities to be undertaken during demolition. The location of LPS, HVGTs and other infrastructure to be demolished and that are the subject of this DMP are displayed below in **Figure 2-1**.

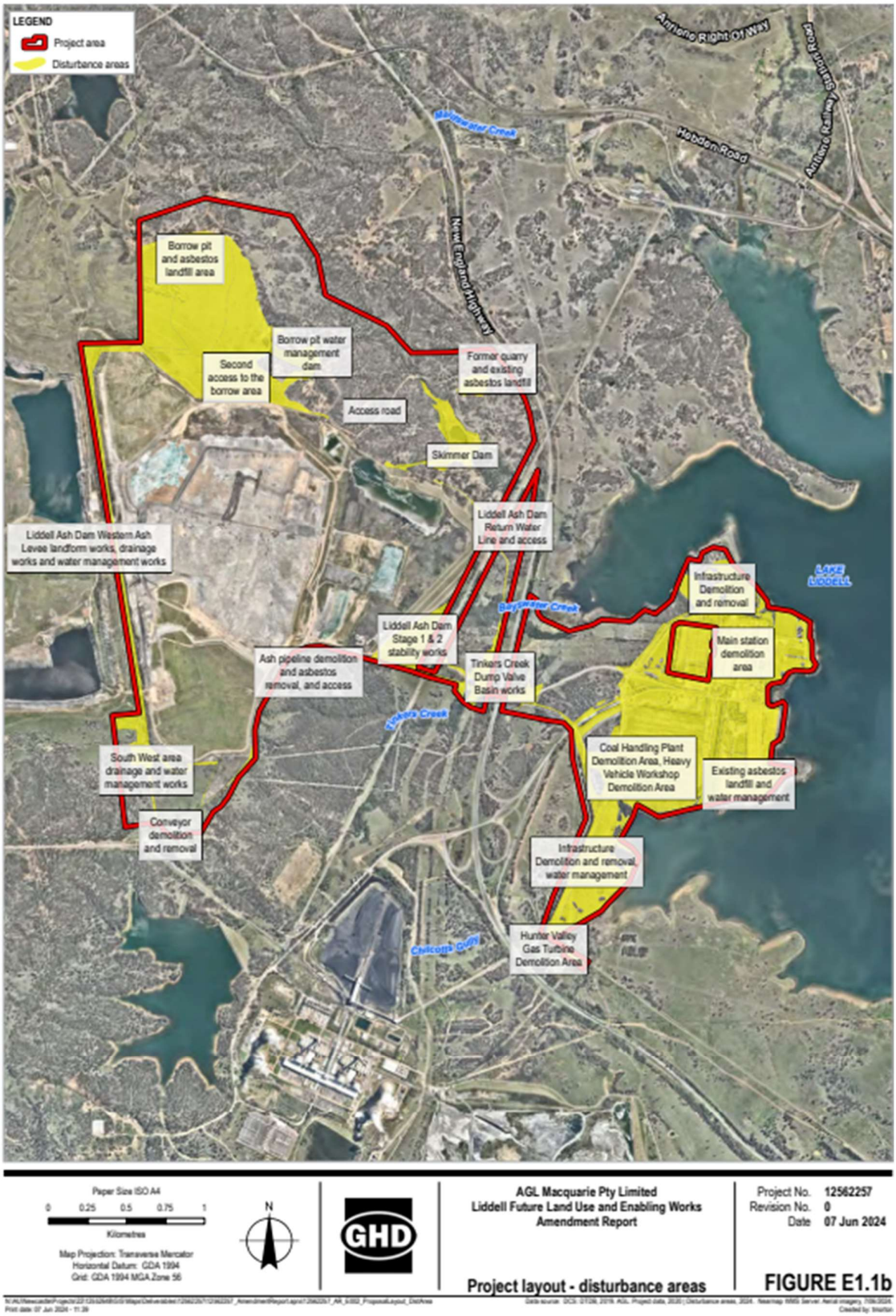

Figure 2-1. Disturbance areas (GHD,2024)

Table 2-1. Demolition overview

Stage 1	▪ Demolition of LPS, HVGTs and associated infrastructure, including. - Asbestos removal. - Mechanical and explosive demolition of above ground infrastructure. - Removal of infrastructure to the bottom of slab and foundations to the equivalent level. - Collection, materials handling and processing, crushing and removal/disposal (including transport) of demolition materials - Earthworks and re-grading of demolition areas to final landform. ▪ Excavation of containment cells for receipt of demolition waste materials ▪ Transport and disposal of demolition materials to on-site (i.e., temporary asbestos storage facility and asbestos disposal facility) or off-site (suitably licenced) disposal locations ▪ Establishment, stabilisation and commencement of extraction of borrow pit (up to 1.5 million m^3). ▪ Loading and transport of borrow pit materials to the demolished infrastructure locations to construct the final landform.

3. Environmental management framework

3.1. Overview

This section outlines the relevant requirements for the DMP and how they are incorporated in the document. These include the relevant conditions of Development Consent SSD-24937520, from EPL No. 2122, and the Statement of Commitments (SoCs).

3.2. Development Consent SSD-24937520

This DMP was prepared to specifically address condition C22 of Development Consent SSD-24937520. The DMP is a sub-plan to the Demolition Environmental Management Plan (DEMP) required by condition C16. Condition C22 requires the development of a DMP to control and effectively manage dust emissions during Stage 1 demolition activities (the 'demolition').

Table 3-1. Development Consent SSD-24937520 DMP-related conditions and where they are addressed in this document

Consent requirement	Section/reference where addressed in the DMP
C22. A dust management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: (a) be prepared by a suitably qualified and experienced person/s; (b) describe the mitigation measures that will be implemented to: (i) comply with the conditions of this consent; (ii) manage the risks identified in the environmental risk assessment required by condition B1; and (c) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.	This document, with (a) addressed in **Section 1.5**, (b) as detailed here and in **Section 7.2**, and (c) in **Section 0**.
B6. All reasonable and feasible avoidance and mitigation measures must be implemented to prevent the generation of dust from the development.	**Section 7.2**
B7. All reasonable and feasible avoidance and mitigation measures must be implemented to minimise greenhouse gas emissions from the development	**Section 7.2**
B22. Prior to the commencement of development activities and for the life of the development, a suitable meteorological station must operate in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); (b) is capable of measuring meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA,	**Section 5.3**

Consent requirement	Section/reference where addressed in the DMP
2000) or NSW Noise Policy for Industry (EPA, 2017); and (c) unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	
C19. An asbestos management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: (a) (a) be prepared in accordance with the SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil, Schedule B2 of the NEPM and any requirements of the Site auditor; (b) identify any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre; (c) include: (i) procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre; (ii) procedures for interim storage of asbestos prior to disposal and disposal of asbestos; and (iii) outline the relevant requirements of conditions C1 to C13 for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.	Addressed separately in the Asbestos Management Sub-Plan (AMP) to the DEMP
C20. A blast management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: … (d) describe the mitigation measures that will be implemented to: … (iii) manage blast generated dust and fumes, protect public safety and manage road closures	Specific measures provided separately in the BMP (sub-plan) to the DEMP. General measures to manage blast generated dust and fumes, protect public safety and manage road closures are provided in **Section 7.2**

Condition C22 (b) (ii) refers to the environmental risk assessment undertaken as part of the EMS, as part of Development Consent SSD-24937520 condition B1. The risks as relevant to the DMP from the environmental risk assessment are detailed below in Section 4.

3.3. Environmental Protection Licence

EPL No. 2122 includes conditions relating to the management of dust and would also apply (as relevant) to Stage 1 demolition activities. These conditions are reproduced below in **Table 3-2**, including details of where they are addressed in the DMP.

Table 3-2. EPL 2122 - AQ management requirements

Condition	Where addressed in the DMP
O1.1 – Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) and the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	**Section 7.2**
O3.1 - The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises	**Section 7.2**
O3.2 - All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.	**Section 7.2**
O3.3 - Trucks entering and leaving the premises that are carrying loads of dust generating materials must be covered at all times, except during loading and unloading.	**Section 7.2**
P1.1 - Meteorological weather monitoring – Meteorology weather station marked and shown as EPL monitors ID No. 15 on 'The Plans'.	**Section5.3**

3.4. Statement of Commitments

Recommendations written into the SoCs contained in the environmental assessment documents must also be adhered to. Two dust management requirements were recommended in the SoCs. These commitments as relevant to dust are detailed in **Table 3-3**.

Table 3-3. EIS, RtS and Amendment Report dust commitments and where addressed in the DMP

Source	Condition Requirements	Timing	Where addressed in the DMP
AQ1	Prior to demolition commencing, a Dust Management Plan (DMP) will be prepared which would include details of: – Frequency of onsite and offsite inspections to monitor compliance with the air quality management strategy. – The name and contact details of the person(s) accountable for air quality and dust issues. – Procedure for receival of complaints. – Regular pre-wetting and watering requirements. – When to adjust works (including site inspections and watering) due to increased emission risk (e.g. during dry windy conditions). – Designated vehicle entries and exits, haulage routes and parking areas.	Prior to works commencing	**Section 7.2** and **Section 0** Complaints processes are detailed separately in the DEMP and EMS Designated vehicle entries

Source	Condition Requirements	Timing	Where addressed in the DMP
	– Other vehicle requirements including minimising idling of vehicles on site and covering loads on trucks transporting materials. – Maintenance and cleaning of equipment used on site. – Stabilisation of stockpiles when not in use and completed areas. – Removal of accumulation of dust before commencing work. – Trigger Action Response Plan. – Monitoring Program.		and exits, haulage routes and parking areas are described separately in the TMP
AQ2	Preparation of a Blast Management Plan and Asbestos Control Plan, which would including specific measures for minimising impacts during blasting and handling of ACM, including: – Soft-strip inside buildings before demolition – Pre-watering – Forecasting – Sprinklers. Due to the potentially high emissions of dust during blasting events, a monitoring plan is recommended. This would include boundary and receptor monitoring. A report after each blasting event summarising the results of the air quality monitoring during and after the event would be prepared.	Prior to works commencing	Refer to the BMP and Asbestos Management Sub-Plans (AMP) forming part of the DEMP

3.5. Other relevant standards and guidelines

The following guidelines, standards and policies are also relevant to the DMP:

- 'Approved Methods for the Modelling and Assessment of Air Pollutants in NSW' (Approved Methods), (EPA, 2022a)
- 'Approved Methods for Sampling and Analysis of Air Pollutants in NSW', (EPA, 2022b).

These contain guidance that was applied as part of the impact assessment undertaken in the environmental assessment documents. Aspects from these documents relevant during demolition are reproduced below.

3.5.1. Approved Methods for the Modelling and Assessment of Air Pollutants in NSW

The EPA's 'Approved methods for the modelling and assessment of air pollutants' (2022a) provide criteria for air pollutants. The impact assessment criteria are considered to be the concentration at which if exceeded, could result in dust impacts beyond an acceptable level. These criteria are listed in **Table 3-4**, and were considered in the development of management measures below in **Section 7**.

Table 3-4. NSW EPA dust impact assessment criteria

Pollutant	Averaging period	Concentration	Units
Dust			

Particulate matter as PM_{10}	24-hours	50	µg/m^3
	Annual	25	µg/m^3
Particulate matter as $PM_{2.5}$	24-hours	25	µg/m^3
	Annual	8	µg/m^3
Particulate matter as total solid particulates (TSP)	Annual	90	µg/m^3
Deposited Dust	Maximum monthly incremental average	2	g/m^2/month
	Maximum monthly average	4	g/m^2/month

It is noted that applicable guidance related to the assessment and management of airborne asbestos is provided in the AMP.

3.5.2. 'Approved Methods for Sampling and Analysis of Air Pollutants in NSW'

The Approved Methods for Sampling and Analysis of Air Pollutants in NSW (EPA, 2022b) provides guidance for the monitoring and analysis of air pollutants in NSW. Relevant guidance from this document has been included in the monitoring requirements below in **Section 7.3.3**.

4. Environmental risk assessment and details of the demolition activities relevant to the DMP

4.1. EMS Environmental risk assessment

As noted above in **Section 3.2**, Condition C22 (b) (ii) details how the DMP must describe the measures that will be implemented to manage to relevant risks identified in the environmental risk assessment completed as part of the EMS, as per Development Consent SSD-24937520 condition B1. The risks as relevant to the DMP from the environmental risk assessment have been reproduced below in **Table 4-1**.

Table 4-1. EMS environmental risk assessment as relevant to the DMP (Source: AGL, 2025)

Risk event	Cause(s)	Consequence(s)	Controls	Residual risk rating
Emissions to air (dust and air quality)	Fugitive dust from surfaces, e.g. dust generation for vehicle movements. Emissions from combustion engines (e.g., diesel fumes, etc). Less than adequate air quality and dust controls when crushing rock in the borrow pit, and when mechanical and blast felling	Regulatory non-compliance, impact on localised/operation environment area	Site entry and exit controls including rumble grids as required; water carts and manual sprays in place to dampen and minimise dust generation on roadways and surfaces; operation of machinery and equipment in a proper and efficient manner; carrying out routine maintenance on plant and vehicles; reduce and/or cease operations in adverse weather; weather forecasting tool (4 day lookahead) to prepare for adverse weather/dust events; real time dust monitoring and early warning system. Adequate assessment of goods and services under AGL Procurement policies and procedures. Pre use inspections. Daily inspections. SWMS for crushing.	High based on 'Level 3' residual consequence and 'possible' residual likelihood

It is noted that the DMP details with the dust emissions only, and specifically from activities associated with Stage 1 demolition activities.

Consistent with condition C22 (b) (ii), the relevant controls from the EMS the environmental risk assessment from column four of **Table 4-1** above have been incorporated into the dust mitigation and management measures below in **Section 7**.

4.2. Demolition activities as relevant to the DMP

As described above in **Section 1.3**, the DMP only applies to Stage 1 'demolition' activities. The key dust-generating activities that are the subject of the DMP include:

- Demolition and mechanical felling of key structures at LPS, HVGTs and ancillary assets (including redundant utilities)

- Demolition of associated concrete hardstands
- Collection, materials handling and processing, crushing and disposal (including transport) of demolition materials either on-site to the asbestos disposal facility or otherwise for on-site re-use or off-site disposal to a suitably licenced facility
- Excavation of containment cells for receipt of demolition waste materials at the asbestos disposal facility
- Earthworks, re-grading and finishing, including extraction, handling and transport of filling materials from the borrow pit at the demolition locations.

Table 4-2 details how dust may arise from each of these activities which informs the management measures below in **Section 7**.

Table 4-2. Stage 1 demolition activities relevant to DMP

Location(s)	Activities	Potential dust issues
LPS including, HVGTs and ancillary infrastructure (including redundant utilities but excluding activities under the CDC)	Demolition and mechanical felling of structure and hardstands	- Dust resulting from residual materials left on demolished structures as well as from the impact of demolished structures when they hit the ground and broken apart/disassembled, and from handstands when they are broken up.
	Collection, materials handling and processing, crushing and removal/disposal (including transport) of demolition materials	- Dust generated from the movement, handling, processing, crushing, storing and loading of demolished materials - Dust resulting from the movement of vehicles, plant and equipment on demolished materials and exposed surfaces - Windborne dust arising from exposed demolition areas
	Unloading, placement, earthworks, compaction and re-grading of materials at demolished infrastructure locations	- Dust from vehicle movements, exposed surfaces and materials handling - Dust resulting from the unloading, placement, earthworks, compaction and regrading of materials to produce the final landform at the demolished infrastructure locations - Windborne dust arising from exposed final landform at the demolished infrastructure locations prior to effective revegetation
Asbestos disposal facility	Excavation of containment cells for receipt of demolition waste materials	- Windborne dust arising from exposed areas and stockpiled materials - Dust arising from the unloading of demolition waste materials from trucks
	Transport of demolition materials to and disposal to asbestos management facility	- Wheel-generated dust generated from traffic movements along unsealed internal roads from the demolished infrastructure locations to the asbestos disposal facility - Dust arising from the unloading of demolition waste materials from trucks into the containment cells - Dust from earthworks associated with the capping of the demolition waste materials, as well as wind generated dust from the associated exposed capping surface (prior to effective revegetation)

Location(s)	Activities	Potential dust issues
Borrow pit	Extraction, processing (including crushing), storage and loading of materials for re-grading and finishing of the demolition locations	- Dust resulting from disturbance and handling of soils - Windborne dust arising from exposed areas and stockpiled materials - Dust arising from the processing (including crushing) of materials - Dust generated during the loading of materials to trucks for transport to the demolished infrastructure locations
	Transport of materials to the demolished infrastructure locations	- Wheel-generated dust generated from traffic movements along unsealed internal roads from the borrow pit to the demolished infrastructure locations - Loose materials from loading materials that are not removed and/or covered prior to transport being dispersed

5. Existing environment

5.1. Overview

Local environmental conditions with direct implications for dust management for demolition include the proximity of sensitive receptors, prevailing meteorology and dust conditions. These three aspects are described in the following **Sections 5.2** to **5.4**.

5.2. Sensitive receptors

Receptors that are sensitive to dust include residences, schools, and hospitals. A total of 32 sensitive receptor locations were identified within the vicinity of demolition activities as part of the environmental assessment documents. All are located to the north of the development area. These nearest sensitive receptors to the development area are presented below in **Figure 5-1**.

Recent aerial imagery (up to May 2024) from MetroMap was reviewed which confirmed no new nearby sensitive receivers since these assessments.

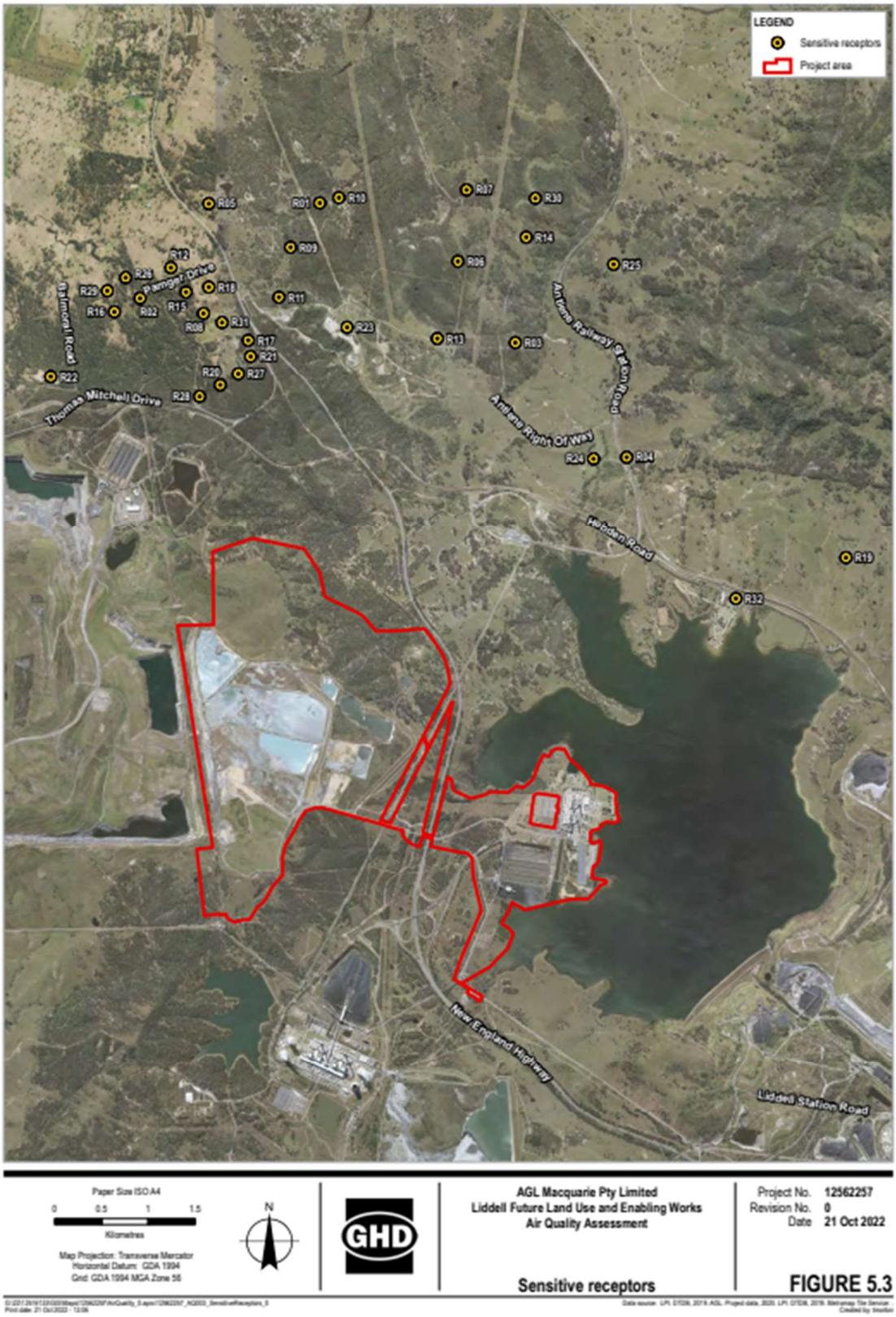

Figure 5-1. Surrounding sensitive receptors (GHD, 2023)

5.3. Meteorological conditions

Meteorological conditions are important for determining the direction and rate at which dust emissions will disperse. The key meteorological parameters for dust management are wind speed and wind direction.

The prevailing winds in the vicinity of the development area are from the northwest and southeast, with minimal winds from the northeast or southwest, which is likely due to the orientation of the Hunter Valley terrain. This is demonstrated by the wind roses shown in **Figure 5-2**, which summarise the EIS wind data developed by the CALMET model for the development location. Based on these winds, the sensitive receptors at most risk of dust impacts from the development location will be those to the northeast.

The meteorological conditions that most commonly lead to elevated dust concentrations include:

- Warm weather and extended periods without rainfall, resulting in lower surface moisture.
- Wind speeds greater than 6 m/s. These winds are conducive to higher wind erosion rates.
- Stable conditions, such as at night with light winds and when a temperature inversion is present.

The existing environment is characterised by higher rainfall in summer and autumn and lower rainfall in winter and spring. The commonly experienced south easterly winds mean that the sensitive receptors to the north of the development area will be downwind of activities for significant periods during the year. It is noted that these south easterly winds do occur significantly less often during the winter months (as per **Figure 5-2**).

Dust mitigation measures in this DMP have been developed with a focus on controlling dust emissions under unfavourable meteorological conditions, such as dry and windy conditions, stable night-time conditions and/or when winds are blowing from the development area towards sensitive receptors.

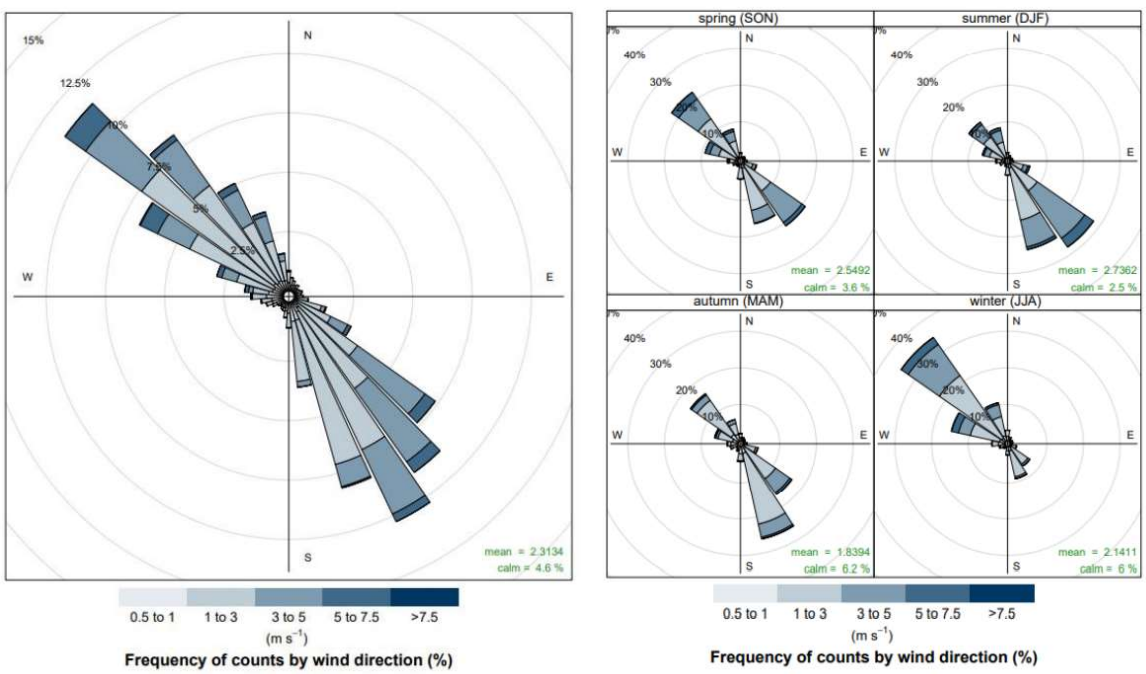

Figure 5-2. CALMET generated wind roses onsite for all of 2017 (left) and by season (right).

Figure notes:

1. Wind roses sourced from GHD (2023)

As per Conditions B22 of Development Consent SSD-24937520 and M5 of EPL No. 2122, AGLM operates an on-site meteorological station 'AGL08' (EPL No. 2122 Monitoring Point 15). The location of this station is displayed below in **Figure 5-3**.

The meteorological station is a requirement of Condition M5.1 of EPL 2122. This condition lists sampling methods AM-1, AM-2 and AM-4 from the now superseded Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007) which are also referred to in Condition B22 of Development Consent SSD-24937520.As such, it is considered that meteorological station 'AGL08' meets the requirements of Condition B22.

Figure 5-3. AGLM dust and meteorological monitoring locations (GHD, 2024a)

5.4. Background air quality

The environmental assessment documents established background dust conditions around the Development (including demolition). An understanding of wider background air quality conditions is important as the criteria from the EPA's Approved Methods (2022) are cumulative; i.e., they consider the total of background levels and contributions from the development, including demolition. The environmental assessment documents established background dust conditions around the development area using information from the following stations:

- Three DPHI stations at Muswellbrook, Camberwell and Jerrys Plains
- Two on-site monitoring stations, AGL03 and AGL04.

These stations at and around the development area, as well as AGLM's meteorological station AGL08 are displayed in **Figure 5-3** above.

Long-term background dust conditions from data collected at these stations from 2017 to 2021 were presented in the environmental assessment documents. This information has been reproduced below in **Table 5-1**.

Table 5-1. Background PM_{10} and $PM_{2.5}$ conditions (GHD, 2024a)

Pollutant	Averaging period	2017	2018	2019	2020	2021
Muswellbrook (µg/m³)						
PM_{10}	24-hr maximum	54.1	185.9	231.3	181.0	43.5
	Maximum 24-hr below assessment criterion	47.6	49.6	48.3	49.2	43.5
	Annual average	21.5	26.8	34.1	22.2	18.1
$PM_{2.5}$	24-hr maximum	31.1	26.5	77.4	49.1	19.7
	Maximum 24-hr below assessment criterion	20.0	19.9	19.8	19.6	19.7
	Annual average	9.3	9.3	11.8	9.2	7.2
Camberwell (µg/m³)						
PM_{10}	24-hr maximum	101.5	243.9	294.4	103.4	75.5
	Maximum 24-hr below assessment criterion	49.8	50.0	49.8	49.7	47.0
	Annual average	27.0	31.0	39.5	24.1	20.4
$PM_{2.5}$	24-hr maximum	23.3	22.6	80.0	44.1	18.7
	Maximum 24-hr below assessment criterion	19.6	19.1	19.8	19.3	18.7
	Annual average	7.3	8.3	10.1	7.2	5.6
Jerrys Plains (µg/m³)						
PM_{10}	24-hr maximum	50.5	201.4	217.5	134.5	42.8
	Maximum 24-hr below assessment criterion	47.4	49.8	49.6	50.0	42.8
	Annual average	17.9	23.5	31.5	20.1	13.3
AGL03 (µg/m³)						
PM_{10}	24-hr maximum	62.1	86.5	609.5	270.3	59.2
	Maximum 24-hr below assessment criterion	49.1	49.3	49.5	47.3	48.9
	Annual average	17.1	22.2	39.0	24.0	15.5
AGL04 (µg/m³)						
PM_{10}	24-hr maximum	14.5	23.7	40.2	26.0	17.0
	Maximum 24-hr below assessment criterion	58.2	131.7	639.0	284.4	65.6
	Annual average	47.1	49.3	49.9	46.9	48.5

These data above in **Table 5-1** indicate:

- Occasional measured exceedances of 24-hour averaged PM_{10} and $PM_{2.5}$ criteria. Higher maximum 24-hour averaged concentrations in 2019 and 2020 were noted as being a result of dry conditions leading into an unprecedented 2019 and 2020 bushfire season in Eastern Australia
- Local annually averaged PM_{10} and $PM_{2.5}$ criteria generally being met, with some exceptions.

A review of more recent data from the DPHI stations confirmed that more recent 2022 to 2024 background dust conditions are generally consistent or lower than the results presented in the environmental assessment documents.

An indicative annually averaged TSP concentration of 43 $\mu g/m^3$ was also established in the environmental assessment documents. Using the same estimation approach applied, the 2022 and 2023 annual TSP concentrations for DPHI's Muswellbrook, Camberwell and Jerrys Plains stations ranged between 27 and 42 $\mu g/m^3$. Again, this review confirmed that estimated TSP conditions are generally consistent or lower than the results presented in the environmental assessment documents.

6. Predicted impacts from environmental assessment documents

The EIS, environmental assessment documents determined that the primary air quality risk for the development (including from demolition activities) is emissions of dust particulates, including TSP, PM_{10}, and $PM_{2.5}$. Comparisons of reported annual emissions from the operating LPS with emissions from the development showed a significant reduction in PM_{10} and $PM_{2.5}$ emissions. Still, the assessment did predict exceedances of the EPA's assessment criteria from the Approved Methods (2022), with the following impacts determined:

> *"There were no exceedances of the PM_{10} or TSP annual average criteria.*
>
> *The background annual average criterion for $PM_{2.5}$ was already significantly exceeded during the model period. Exceedances of the annual average $PM_{2.5}$ criterion are likely associated with contributions from various sources, including existing operations and external factors such as bushfires. The maximum predicted incremental impact was approximately 7% of the criterion. Given a reduction in background concentrations is expected upon decommissioning of the LPS, this does not represent a significant increase in annual average $PM_{2.5}$ concentrations at the nearest receptor.*
>
> *Exceedances of the 24-hour average $PM_{2.5}$ criterion were predicted to occur on a single day, where the background concentration was 98% of the criterion. Consequently, the predicted exceedances of the $PM_{2.5}$ criterion cannot reasonably be considered to be associated with the project. The average wind speed and direction recorded at the Muswellbrook DPE station on this day was 0.8 m/s from the southwest.*
>
> *Exceedances of the 24-hour average PM_{10} criterion were predicted to occur on two days at the most affected sensitive receptor, with exceedances predicted at a total of three receptors. On the exceeding days at the most affected sensitive receptor, the background concentrations made up 72% and 32% of the criterion. The average wind speed and direction recorded at the DPE Muswellbrook station on each of these days was 0.5 m/s from the southeast and 0.6 m/s from the southwest, respectively. In general, the incremental concentration makes up only a small proportion of the total concentration. Incremental impacts during exceedance events are primarily associated with dust emissions at the borrow pit location."*

As a result of these findings, two management and mitigation measures were recommended (refer to AQ1 and AQ2 in **Section 3.4**), of which this plan constitutes AQ1, with AQ2 addressed separately in the BMP and AMP.

7. Dust Management

7.1. Overview

Dust from the demolition activities is to be managed to minimise dust emissions, including those from relevant risks identified in the environmental risk assessment, so that the EPA's impact assessment criteria at surrounding sensitive receptors are met.

The strategy for mitigating and managing dust during demolition activities includes:

- Elimination and substitution approaches
- Engineering controls
- Administrative and planning measures
- Proactive and reactive controls.

Section 7.2 details the measures to be applied to effectively manage dust, consistent with the requirements of condition C22 (b) of Development Consent SSD-24937520 and the relevant requirements of SoC AQ1. The monitoring, evaluation and reporting requirements of C22 (c) and the trigger action response plan (TARP) and monitoring components of SoC AQ1 are provided below in **Section 0**.

7.2. Management measures

Consistent with condition B6, all reasonable and feasible avoidance and mitigation measures will be implemented to prevent the generation of dust during Stage 1 demolition-related activities. **Table 7-1** lists the measures that are to be applied for controlling and minimising dust emissions from Stage 1 demolition-related activities for the development. These measures are intended to:

- Minimise dust generation
- Prevent visible dust emissions
- Manage visible dust
- Prevent dust issues beyond the development area.

Details of who would be responsible for each measure is also included in **Table 7-1**.

Table 7-1. Dust management measures

Emission source	Management measures	Responsibility
All demolition activities	Conduct daily inspections to verify that the requirements of the DMP are being implemented and remain effective.	AGLM Environment Team
	Apply water or polymer to minimise wind-generated dust from disposed and exposed surfaces.	Site Manager / Supervisor
	Wherever possible, minimise the extent of exposed areas through progressive rehabilitation and/or stabilisation.	Site Manager / Supervisor
	Cover or stabilise stockpiles when not in use and completed areas.	Site Manager / Supervisor
	Limit the drop height of materials that can lead to dust generation when loading and unloading.	Site Manager / Supervisor

	Adjust work intensity in response to increased emission risks (e.g. strong winds). Further details are provided in **Section 0.**	Site Manager / Supervisor
	Implement a dust and meteorological monitoring program to identify adverse weather conditions and potential air quality impacts. Further details are provided in **Section 0.**	Site Manager / Supervisor, AGLM Environment Team
	Implement a change management process for responding to evolving dusk risks and ensure compliance with **Trigger Action Response Plans (TARP)** (i.e., **Section 7.3.5**).	Site Manager / Supervisor, AGLM Environment Team
	Use non-potable water for dust suppression where possible.	Site Manager / Supervisor
	Apply compaction techniques as necessary to control dust emissions.	Site Manager / Supervisor
	Conduct routine dust suppression inspections and monitor effectiveness (refer to methods below in **Section 0**).	Site Manager / Supervisor, AGLM Environment Team
Blasting	Dust and fume generated during blast events will be managed through a range of mitigation measures including: ▪ Wetting down techniques and water sprays. ▪ Public safety will be managed through exclusion zones and spotters for each Blast event. ▪ Stakeholder engagement for road closures including consultation with the Police and Transport for NSW The dust management measures for blasts outlined above are general only. Blast events will be managed the BMP in accordance with Condition C20.	Site Manager / Supervisor
Haulage routes, entries and exits and parking areas associated with Stage 1 demolition activities	Reduce on-site speed limits to limit the generation of dust from vehicle movements.	Site Manager / Supervisor
	Limit traffic movements to designated areas, and wherever possible, along sealed surfaces	Site Manager / Supervisor
	Apply water or polymer to reduce wind from unsealed haulage routes and parking areas.	Site Manager / Supervisor
	Stabilise entry and exit points to minimise dust generation from vehicle movements and improve site access conditions.	Site Manager / Supervisor
	Ensure all heavy vehicles are inspected prior to leaving site. Inspections must ensure that all heavy vehicles are free of any debris and loose materials, as well as that all loads are covered for all trucks transporting materials. Trucks carrying materials,	Site Manager / Supervisor

	with the exception of scrap steel,must be covered at all times except during loading and unloading.	
LPS and associated infrastructure, including HVGTs (excluding activities under the CDC)	Remove accumulated dust and apply pre-wetting before commencing demolition work where reasonably practicable. Apply watering during mechanical demolition of structures and hardstands as required and where practicable.	Site Manager / Supervisor
	Complete in a staged manner to limit the extent of dust emissions at any given time.	Site Manager / Supervisor
	Apply watering to any localised processing, crushing or break-up of materials as required, as well as during unloading, placement, earthworks, compaction and re-grading of materials at demolished infrastructure locations	Site Manager / Supervisor
Disposal of demolition waste to asbestos disposal facility	Where practical, transfer ACM demolition waste directly into the landfill to reduce emissions (including any dust) from storage and double handling. In instances where ACM storage is required it must be completed in accordance with the methodology outlined in the AMP. All ACM transported to the cell, except for ACM-contaminated soil, will have been pre-packaged for transport in accordance with regulatory requirements. Apply watering as required to suppress and dust generated	Site Manager / Supervisor, AGLM Environment Team
	Stabilise and rehabilitate the cap covering the filled containment cells storing the demolition waste as soon as possible	Site Manager / Supervisor
Borrow pit	Apply watering as required to minimise dust generated from the extraction, storage, handling, and loading of materials to be used to develop the final landform at the demolished infrastructure locations.	Site Manager / Supervisor

Following consultation with DPHI in the development of this plan, measures to minimise greenhouse gas emissions as per condition B7 have also been included. These are reproduced below in **Table 7-2** from the EMS:

Table 7-2. EMS GHG management measures

Emission source	Management measures	Responsibility
All relevant activities	GG1: Sustainable procurement practices will be adopted where feasible.	AGLM Environment Team
	GG2: The project will maximise the reuse of materials won onsite for the backfilling of voids and ground levelling. Any raw materials required would be sourced locally where possible	Site Manager / Supervisor
	GG3: Investigate the use of biodiesel for trucks and equipment, where suitable.	Site Manager / Supervisor
	GG4: All plant and equipment used during the project shall be regularly maintained to reduce emissions and comply with the relevant exhaust emissions guidelines	Site Manager / Supervisor

	GG5: Plant and equipment will be switched off when not in constant use and not left idling	Site Manager / Supervisor
	GG6: The project will be planned to ensure minimal movement of plant and equipment where practical.	Site Manager / Supervisor
	GG7: Maximise the beneficial reuse of the carbon removed in vegetation, such as mulching and composting, will be included in management plans, where feasible	Site Manager / Supervisor
	GG8: Maximise the reuse/recycling of demolition waste materials will be investigated and included in demolition management plans, where feasible.	Site Manager / Supervisor

7.3. Monitoring, evaluation and reporting program

7.3.1. Overview

The measures outlined in **Section 7.2** are to be implemented as standard, as part of normal operations. That said, as **Table 7-1** notes, the nature and/or intensity of site activities and the application of these controls should also be informed by a combination of visual monitoring, meteorological monitoring, ambient dust monitoring and proactive management (e.g., forecasting). These processes are summarised below in **Figure 7-1.** Further details of each aspect provided in the following sub-sections, including TARP that explains how information from each, as well as enquiries and complaints is to be used inform activities and management measures.

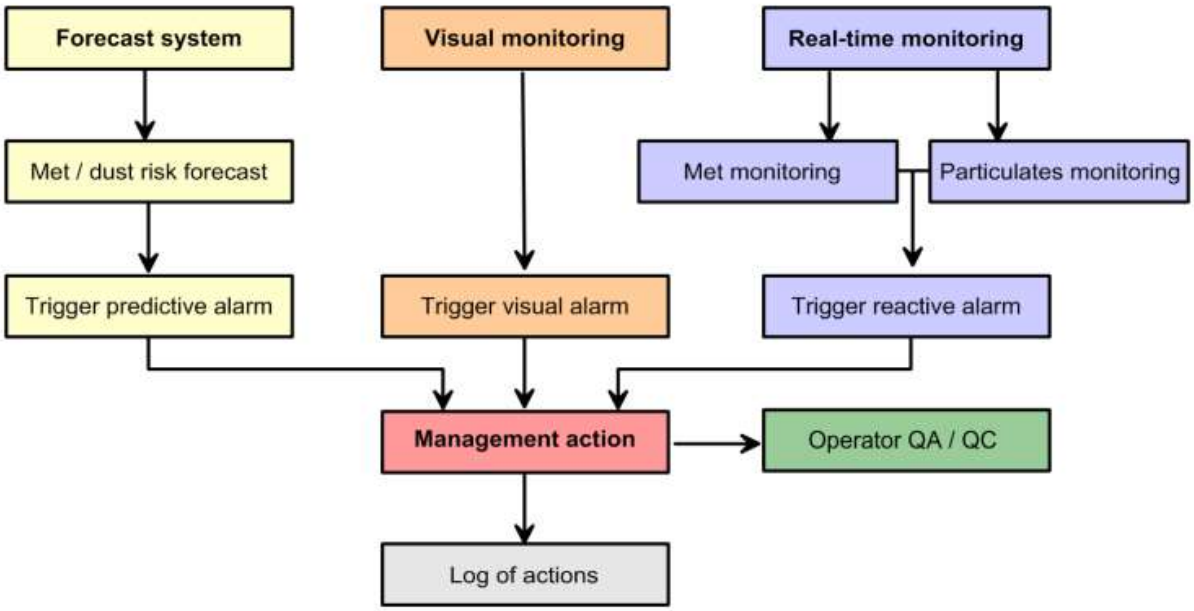

Figure 7-1. Dust monitoring and proactive management processes

7.3.2. Visual monitoring

Monitoring of visual dust conditions will be conducted daily by the Site Manager / Supervisor and AGLM Environment Team. Inspections will assess visual triggers that indicate increasing dust generation and potential off-site impact:

1. Loose dust present but not mobilised.
2. Dust has mobilised but is local and not travelling beyond the development area.
3. Dust has mobilised and has moved beyond the development area.

Any occurrence of triggers 2 and 3 must be reported to the Site Manager / Supervisor and addressed as part of the TARP (refer to **Section 7.3.5**)

7.3.3. Real-time dust and meteorological monitoring

As noted in **Section 5** AGLM operates two dust monitors on and near-site measuring PM_{10} (AGL03 and AGL04). Additionally, an on-site meteorological station is operated at AGL08. AGL03 and AGL04 provide useful information regarding dust conditions at the site. Noting the key work locations across the development area, and the direction of nearby sensitive receptors in relation to the site and prevailing local wind conditions (refer to **Sections 5.2** and **5.3**) the following additional monitoring is to be undertaken:

- Installation and operation of a real-time monitors to measure $PM_{10:}$
  - 1) at or around the nearest sensitive receptor to the northwest; and
  - 2) at or near the northwest boundary of the development area. Both locations are displayed below in **Figure 7-2**
- The monitors are to be installed consistent with 'AS/NZS 3580.9.11:2022 'Methods for sampling and analysis of ambient air,

The results from the monitoring at or near the northwest boundary of the development area are to be used to identify dust conditions on-site and leaving the demolition area. Results from the off-site monitoring at or around the nearest sensitive receptor are to be used to understand conditions at surrounding sensitive receptors. These data would be used together with meteorological data measured at AGL08, as well as data from other surrounding stations operated by DHPI to determine:

- How activities at the site, as well as wider background conditions are influencing cumulative concentrations at surrounding sensitive receptors, and whether the demolition is meeting the required limits
- Whether conditions are such that demolition activities and controls need to be reviewed.

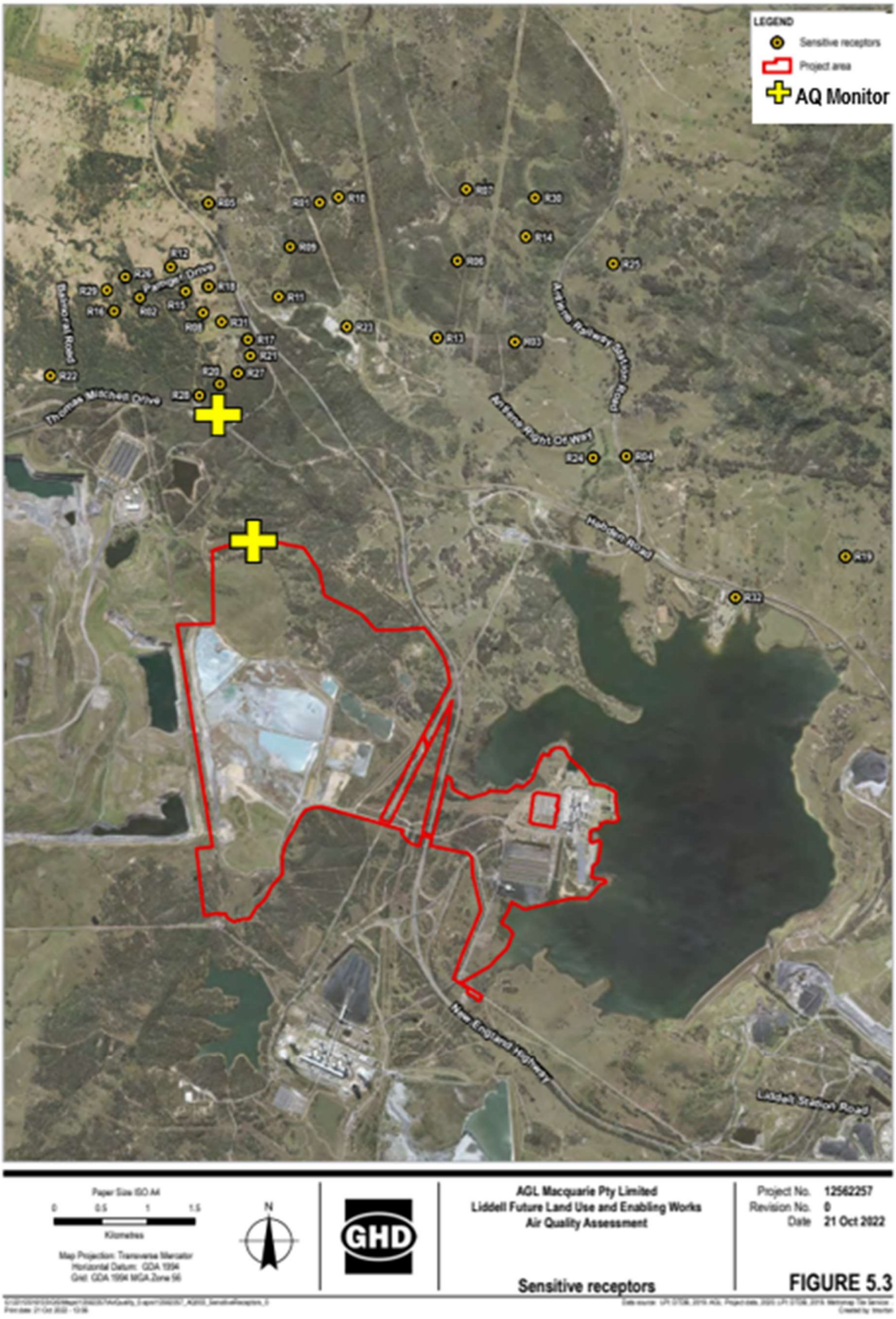

Figure 7-2. Indicative Dust Monitoring Locations

7.3.4. Proactive management

AGLM operates a meteorological and air quality forecasting system for LPS. This system aims to provide early warning of adverse meteorological conditions and potential dust risks, thus facilitating proactive management of activities to reduce the potential for dust generation.

Automated meteorological and dust risk forecasts are issued via email to AGLM and the Principal Contractor each morning. The forecasts include two-day forecasts of site-specific meteorological conditions and dust dispersion. **Figure 7-3** shows an example of the site-specific daily environmental forecast.

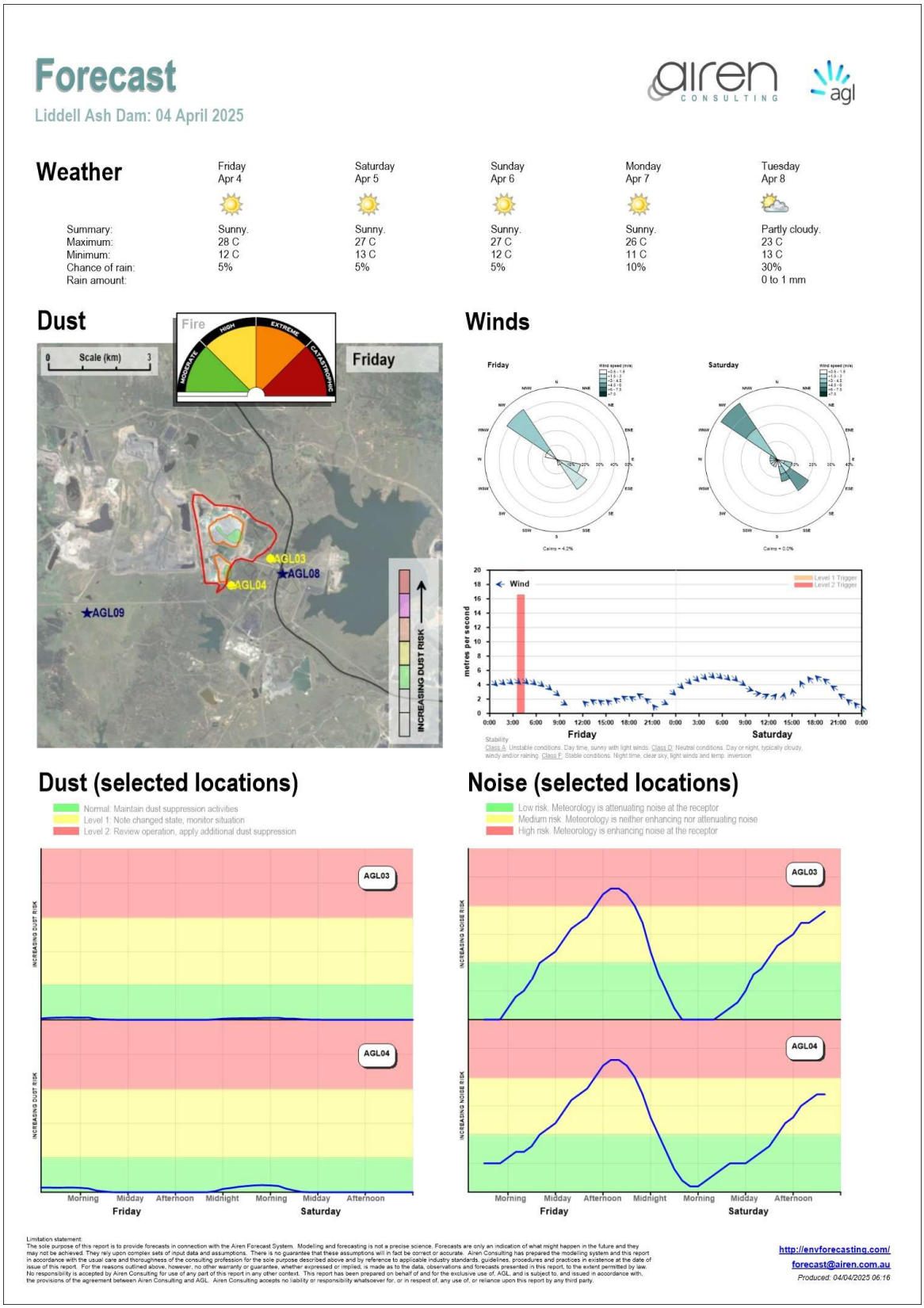

Figure 7-3. Example daily forecast

The meteorological and dust risk forecasts are discussed at the start of each day as part of Toolbox Talks. This allows the workers and Site Manager / Supervisor to prepare for dust management, as per the TARP (see below in **Section 7.3.5**), if adverse meteorological conditions that could result in ash dam dust emissions are to develop as forecast.

7.3.5. Dust TARP

As noted above, the dust TARP defines clear actions that will be taken to address changing risk of potential dust impacts informed by meteorological and dust monitoring data, visual observations, forecast system and related enquiries and complaints. The dust TARP is shown below in **Table 7-3**.

Table 7-3. Trigger, Action, and Response Plan for Dust Emissions

TARP Level	Normal	Level 1 – Alert	Level 2 – High Alert
Indicator			
Complaint	No dust complaint	Dust complaint (unvalidated, i.e., dust complaint has been received but has not yet been confirmed as being associated with the demolition)	Dust complaint (validated, i.e., dust complaint received and has been confirmed via monitoring data, site inspection, or visual verification)
Visual observations	Loose dust present but not mobilised	Dust has mobilised but remains within the site boundary	Dust has mobilised and has moved beyond the site boundary
Measured and forecast meteorological conditions	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: Wind speed less than 18km/hr Observed wind speeds less than 18km/hr at AGLM08	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: Wind speed greater than 18km/hr Observed wind speeds greater than 18km/hr at AGLM08	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: - Wind speed greater than 36km/hr OR - Wind speed greater than 18km/hr AND wind direction from the SE Observed wind speeds to be reviewed against these triggers throughout the day
Air quality monitoring	'Boundary' hourly PM_{10} below 150 µg/m^3 and 'Off-site receptor' hourly PM_{10} below 40 µg/m^3	'Boundary' hourly PM_{10} between 150 and 200 µg/m^3 trigger limit or 'Off-site receptor' hourly PM_{10} between 40 and 50 µg/m^3	'Boundary' hourly PM_{10} above 200 µg/m^3 trigger limit or 'Off-site receptor' hourly PM_{10} above 50 µg/m^3
Trigger Actions Responses			
Activities	Normal activities	Continue activities and evaluate additional	Review activities and evaluate additional

TARP Level	Normal	Level 1 – Alert	Level 2 – High Alert
		standard controls to suppress dust	controls to suppress dust, and modify/suspend relevant activities as required
Responsibilities			
Actions	Principal Contractor to: Maintain standard dust suppression activities, continue monitoring operations	Principal Contractor to: Assess site conditions, meteorological factors, and air quality data to determine if increased dust controls are required Evaluate effectiveness of controls through activity-based monitoring Plan and execute remedial actions as required, including: additional watering, relocation of activities	Principal Contractor to: Maintain and evaluate effectiveness of controls throughout activity Plan and execute remedial actions as required, including: additional watering, relocation of activities, and/or reducing activities
Complaint Handling	No complaints present	If a complaint is received: Conduct visual inspection to identify dust generating activities Investigate complaint considering meteorological conditions and visual observations Validate complaint if supported by evidence Provide verbal response to complaint Record in complaints register	If a validated complaint is received: Conduct visual inspection Investigate complaint as per Level 1 Implement further dust suppression or modify activities as required Communicate lessons learned to demolition personnel

The allowable limit from the EPA's Approved Methods (2022) applies on a 24-hour averaged basis. Higher short-term hourly averaged PM_{10} trigger values are included in the TARP so that conditions that could lead to a non-compliance are identified early before an attributable instance occurs.

8. Compliance Management

Compliance with the processes and outcomes of this plan would be ensured through the roles and responsibilities, inspections and review of controls, training, monitoring, stakeholder engagement, incident and complaint investigation and response processes, non-compliance approaches, record keeping and reporting procedures and adaptive management actions outlined below.

8.1. Roles and responsibilities

The specific roles and responsibilities are applicable to the activities and actions outlined in this plan are summarised in **Section 8** of the DEMP.

8.2. Inspections

Dust emissions from Stage 1 demolition activities, and confirmation of the implementation of relevant controls listed above in **Section 7** would be reviewed as part of the weekly environmental inspections completed for the development, including demolition activities. Where opportunities for improvement in control measures arise, these would be documented in the inspection reports and promptly actioned on-site.

8.3. Training

Workers and visitors are required to undergo training and awareness programs regarding environmental management requirements, including dust management, and the importance adhering to related requirements during activities. Details of this are provided in Section 4.4 of the EMS.

8.4. Monitoring

Monitoring as relevant to the DMP is to be completed as described above in **Section 0**.

8.5. Community and stakeholder engagement

Community and stakeholder engagement related to dust management will align with the DEMP. This includes public notifications, stakeholder consultation, and complaints management for dust-related concerns. Refer to Sections 4 and 5.1 of the DEMP for detailed engagement processes.

8.6. Enquiries and complaints

Incidents, complaints and enquiries, including those related to dust will be managed in accordance with the process outlined in Section 6.5 of the DEMP.

8.7. Hazards, near misses, incidents and non-compliances

Any demolition dust-related hazards, near miss, incident and non-compliances will be managed in accordance with the process outlined in Section 6.3 of the DEMP.

8.8. Record keeping and reporting

8.8.1. Compliance reporting

Compliance reporting will be undertaken as per Section 6.2 of the DEMP.

8.8.2. Environmental audits

Routine audits will be conducted to assess compliance with the DEMP and regulatory requirements. Audit procedures are detailed in Section 6.4 of the DEMP

8.8.3. Record keeping

In accordance with Condition M6.1 of EPL No. 2122, reports associated with dust monitoring, incidents, non-compliances or complaints are to be maintained for a period of at least four years from when they were produced.

9. Review and improvement

9.1. Management Plan update and review

Refer to Section 9.1 of the DEMP for the requirements relating to the plan review and updates.

9.2. Continuous improvement

Refer to Section 9.2 of the DEMP for information relating to continuous improvement.

Appendix A – Curricular Vitae

EDUCATION/QUALIFICATIONS

BE (Env) Hon. Class 1 (UoN, 2010)

Masters Env & Bus M (UoN, 2018)

MIEAUST CPEng (3481081)

Certificates (3) in General Acoustics & Vibration, Building Acoustics and measurement (University of NSW / AAAC, 2013, 2014 and 2015)

MEMBERSHIPS AND AFFILIATIONS

Engineers Australia, CASANZ

OTHER

- Class C Drivers Licence
- OH&S General Induction White Card
- Baseline Australian Security Clearance (inc. YC)
- Certificate of Competency in 4WD Operations
- CET Cert. Erosion & Sediment Control for Main Roads Construction
- Work eligibility information

WORK HISTORY

Available at www.linkedin.com/in/luke-spencer-4674a1104

Luke Spencer

SENIOR ASSOCIATE ENVIRONMENTAL ENGINEER, TEAM LEADER ENVIRONMENTAL MANAGEMENT (NEW SOUTH WALES AND NEW ZEALAND)

Summary of competencies

Luke is a Chartered Environmental Engineer with 17 years' experience in environmental management and assessment with specialist skills in the fields of acoustics and vibration, air quality and environmental remediation. Luke also has experience in environmental due diligence and development feasibility assessment.

Regarding air quality, Luke has conducted multiple quantitative and qualitative assessments (recent projects highlighted below) and is proficient in the use of AUSPLUME, AERMOD, TAPM, TRAQ (CALINE), CAL3QHCR and CALPUFF/CALMET. Luke has also completed training at the *Institute for Internal Combustion Engines and Thermodynamics*, Graz Austria in the use of the GRAMM/GRAL meteorological and dispersion model. Luke is an approved air quality technical reviewer within Jacobs Technical leaders framework.

Areas of Expertise

- Air quality and odour
- Acoustics & vibration
- Environmental compliance, management and due diligence

Relevant Project Experience

Air quality, odour and meteorology experience (141+ Projects)

Newcastle Reservoirs Dense Gas Modelling, Newcastle NSW (Jan-Jun 2025)

Client: Hunter Water Corporation

Role: Environmental Engineer

Key achievements:

Luke led the air dispersion modelling assessment of potential risks, consequences and responses for accidental chlorine release emergency reviews for seven reservoir sites across the lower Hunter. Modelling was completed using US EPA's SLAB and CALPUFF models. The outcomes of this assessment are informing HWC's emergency response planning for these facilities

Torrens to Darlington, Adelaide SA (Jan-May 2025)

Client: DTP

Role: Environmental Engineer

Key achievements:

Luke completed a preliminary plume rise screening assessment and review for optimisation of the exit velocity of the tunnel VSOs for the Project. Luke also co-ordinated inputs for the 50% Design Report.

Quakers Hill WRRF and Prospect Reservoir Pipeline Projects, Sydney SA (Jan-May 2025)

Client: SWC

Role: Lead Environmental Engineer

Key achievements:

Luke led the completion of two air quality assessments for the Quakers Hill WRRF secondary upgrades and brine pipeline, and Quakers Hill advanced water treatment facility and recycled water pipeline to Prospect Reservoir projects. The assessments included detailed dispersion modelling of changes in odour arising from the Quakers Hill WRRF, including review of potential control options, and was completed in accordance with the EPA's Approved Methods (2022)

Confidential air quality due diligence assessment for potential gas turbine project, Goulburn NSW (Dec 2024)

Client: Confidential

Role: Environmental Engineer

Key achievements:

Luke conducted CALPUFF air dispersion modelling and preliminary plume rise reviews to assess potential constraints associated with a new gas turbine development being considered in central NSW.

Dust suppression water needs review for New England Renewable Energy Zone (REZ), New England Region, NSW (Nov 2024)

Client: Confidential

Role: Environmental Engineer

Key achievements:

Luke provided preliminary calculations to estimate expected dust suppression water needs for several renewable energy projects planned across the NE REZ. These calculations formed part of an overall water security review evaluating water capacity across the region.

Confidential desalination plant and water pipeline project, Air quality assessment, Gladstone QLD (Oct-Nov 2024)

Client: Confidential

Role: Technical Reviewer

Key achievements:

Luke completed technical reviews of the air quality assessment completed as part of a preliminary environmental assessment to inform a business case for a desalination plant and associated pipeline infrastructure around Gladstone, QLD.

PSIQuantum datacentre Air quality assessment, Brisbane QLD (Sep 2024)

Client: Brisbane Airport Corporation

Role: Technical Reviewer

Key achievements:

- Luke completed an initial risk-based air quality assessment for a datacentre development proposed near Brisbane Airport.

Prospect Hill EfW Plume rise assessment, Lara VIC (Sep 2024)

Client: Prospect Hill Pty Ltd

Role: Environmental Engineer

Key achievements:

- Luke conducted plume rise modelling using TAPM to predict the heights above ground level that CASA's critical vertical plume velocities would be exceeded. Results were evaluated by comparing against gazetted Protected Airspace requirements for the nearby certified Aerodrome.

Caboolture-Bribie Island Road to Steve Irwin Way (South) Air Quality Complaints Investigation Review, Elimbah QLD (Sep 2024)

Client: TMR

Role: Environmental Engineer

Key achievements:

- Luke reviewed air quality and meteorological data to assess an air quality complaint received from a nearby resident in relation the Project. Advice was provided regarding potential causation and the implications of the air pollution levels mesasured, in line with TMR's 'Road Traffic Air Quality Management Manual' (RTAQM) (2014).

PSIQuantum datacentre plume rise assessment, Brisbane QLD (Aug 2024)

Client: Brisbane Airport Corporation

Role: Technical Reviewer

Key achievements:

- Luke conducted a technical review of a plume rise screening review prepared using TAPM for a datacentre development proposed near Brisbane Airport.

Hunter Economic Zone air quality review for EPL modification, Abermain NSW (Sep 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Luke conducted CALPUFF air dispersion modelling assessment for the HEZ power station to inform an application to amend particulate matter licence limits.

Hunter Power Project air quality review for Modification3, Kurri Kurri NSW (Aug 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Modification 3 seeks extended operation on diesel during the first year post-commissioning. Luke reviewed potential changes to air quality

impacts associated with this change, noting updates to EPA assessment requirements since the original EIS.

Hunter Power Project EPL Amendment, Kurri Kurri NSW (Aug 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Luke completed a POEO Act S248 EPL licence Condition exemption application for HPP during their commissioning phase. The application involved air dispersion modelling to review GLCs for CO, NO2 and PM2.5 at surrounding sensitive receptors during commissioning operations. All works were completed in accordance with the EPA's Approved Methods (2022).

Belmont Desalination Plant Roadside air quality review, Belmont NSW (Apr 2024)

Client: Hunter Water Corporation

Role: Environmental Engineer

Key achievements:

- Luke assessed potential changes in air quality along local roads from additional traffic during construction using TfNSW's RSAQT. Impacts were assessed against TfNSW guidance, as well as relevant guidance from the NSW EPA's Approved Methods.

Victoria Park Redevelopment Project, Kelvin Grove QLD (Apr 2024)

Client: Brisbane City Council

Role: Environmental Engineer, Technical Reviewer

Key achievements:

- The Victoria Park Redevelopment Project involves the repurposing of Victoria Park as a Brisbane Olympics venue. Luke reviewed the construction and operational air quality assessment prepared for the project. Construction impacts were assessed in line with CASANZ' assessment methodology, with operations qualitatively assessed.

Sunshine Coast Public Transit Project Desktop Air Quality Impact Assessment for Option 3 (Rapid Bus Network), Allenby QLD (Feb-Mar 2024)

Client: Department of Transport and Main Roads

Role: Environmental Engineer, Technical Reviewer

Key achievements:

- Luke reviewed the construction and operational air quality assessment prepared for the SCPT project. Construction impacts were assessed in line with VIC EPA requirements, with operations quantitatively assessed using the CALINE4 screening model. Impacts were assessed with reference to TMR's RTAQM.

Granges Road, Holbrooks Road and East Avenue Intersection Upgrade Operational Air Quality Impact Assessment, Allenby SA (Jan 2024)

Client: Department of Infrastructure and Transport

Role: Environmental Engineer

Key achievements:

- Operational air quality assessment of changes in air quality conditions around the Granges Road, Holbrooks Road and East Avenue was completed using the CAL3QHCR dispersion model. This model was selected on the basis of its suitability for assessing emissions associated with traffic effects (e.g., delays and queues) that occur at intersections. An emissions inventory was developed using available traffic inputs, with emission estimation guidance referred to from 'Road Tunnels: Vehicle Emissions and Air Demand for Ventilation' (PIARC, 2012); consistent with guidance presented in the AQAG (DIT, 2021).

Stone Ridge Quarry Air Quality Impact Assessment, Seaham NSW (Jan-Mar 2024)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Update of previous Air Quality Impact Assessment to account for amendments to design following exhibition of Development Application.

Colongra Power Station Combustion Tuning Maintenance Air Quality Review CT2 and CT3, Colongra NSW (Oct 2023)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from combustion tuning maintenance at Colongra Power station on diesel. The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Gippsland Preliminary Environmental Assessment, Gippsland VIC (Aug 2023)

Client: VicGrid

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality and noise investigations for construction of a new transmission line between Loy Yang Power Station and the Gippsland Coast. Both assessments were completed with reference to applicable state legislation and regulations, as well as relevant EPA guidelines.

Woolloongabba Station Redevelopment Preliminary Environmental Assessment, Woolloongabba QLD (Aug 2023)

Client: Brisbane City Council

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality and noise investigations for the redevelopment of Woolloongabba Station and the associated bus layover area. The station included several overpass and flyerovers. Air quality impacts were reviewed with references to the EPP (Air) and other relevant guidance.

Ipswich Motorway Upgrade Stage 2 and 3 Preliminary Environmental Assessments, Ipswich QLD (Jul 2023)

Client: Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality investigations for redevelopment Stages 2 and 3 of Ipswich Motorway. The project included various bridge underpasses. Air quality impacts were reviewed with references to the EPP (Air) and other relevant guidance.

Flyers Creek Wind Farm Meteorological Review, Flyers Creek NSW (Jun 2023)

Client: Iberdrola

Role: Environmental Engineer

Key achievements:

- TAPM modelling to review expected changes across project study area to inform the quantity and placement of operational meteorological monitoring stations. Results were statistically validated against observational data.

EPL Annual Returns, Kooragang Island NSW (Apr 2023)

Client: Park Fuels Pty Ltd

Role: Environmental Engineer

Key achievements:

- Estimation of load-based emissions to air for reporting against EPL Annual Returns for Kooragang Island EPL using US EPA TANKS.

Colongra Power Station Combustion Tuning Maintenance Air Quality Review CT1 and CT4, Colongra NSW (Apr 2023)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from combustion tuning maintenance at Colongra Power station on diesel The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Birkdale Community Precinct Air Quality Review, Birkdale QLD (Mar 2023)

Client: Redland city Council

Role: Environmental Engineer

Key achievements:

- Technical review of AQIA and AQMp prepared to evaluate potential impacts associated with a new multi-use precinct at Birkdale, QLD forming part of the Brisbane 2032 Brisbane Olympics venues.

Stone Ridge Quarry Air Quality Impact Assessment, Seaham NSW (Jul 2022 to Jan 2023)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Detailed Air Quality Impact Assessment for new 1.5 MTPA hard rock quarry with a 30-year operational life north of Newcastle, NSW. The assessment considered dust, as well as blast fume and exhaust impacts, as well as crystalline silica. The assessment was completed using the CALPUFF dispersion model.
- Attendance of community engagement sessions to explain air quality matters associated with the proposal.

Webstar Masterton Air Discharge Permit Renewal Technical Review, Masterton NZ (Nov 2022)

Client: Greater Wellington Regional Council

Role: Environmental Engineer

Key achievements:

- Techincal review of an application to renew air discharge permit WAR070015 [25847] for Webstar's printing press facility at 43-45 Ngaumutawa Road, Masterton. The review considered all technical air quality aspects of the application and evaluated the potential for effects in-line with GWRC's evaluation processes. Recommendations regarding updated conditions for the new consent were made.

Middle Creek Quarry Air Quality Impact Assessment, Oberon NSW (Aug to Oct 2022)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- AQIA for a quarry and resource recovery centre near Oberon, NSW using the CALPUFF dispersion model.

Independent Air Quality Review, Taupo NZ (Aug 2022)

Client: Waikato Regional Council

Role: Technical Reviewer

Key achievements:

- Independent review of technical modelling methods and inputs applied for an Air Quality Impact Assessment prepared to support the application for an Air Discharge Permit for Oriented Strand Board Plant in Taupo, New Zealand.

Fuel Change Colongra Power Station Air Quality Review, Colongra NSW (Aug 2022)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from the permitted short-term use of the four GT's at Colongra Power station on diesel with 50% demineralised water supply. The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Betio Hospital Medical Waste Incinerator Detailed Air Quality Review, Kiribati (Jul 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Detailed assessment of different options for a new medical waste incinerator to support the new hospital at Betio. These reviews were completed in-line with WHO and relevant international requirements and were undertaken using the CALPUFF dispersion model.

Boggo Road Pedestrian Crossing Scoping Report Air Quality Review, Brisbane QLD (Jun 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Preliminary assessment of potential air quality impacts associated with the construction of a new pedestrian crossing, and recommendations for further assessment as part of the Project Business Case.

Technical review of S127 Application to modify Air Discharge Consent for Waitoa Dairy Manufacturing Site, New Zealand (Feb 2022)

Client: Waikao Regional Council

Role: Environmental Engineer

Key achievements:

- Technical review of an application to modify operations at Waitoa Dairy Manufacturing Site on behalf of WRC. Proposed modifications involved decommissioning of a 30 MW coal-fired boiler with a 30 MW wood biomass-fired boiler.

Ravensworth Void 5 Modification Application AQIA, Hunter Valley NSW (Jan 2022 to Apr 2022)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- Assessment of whether emissions to air associated with modified void 5 filling and capping activities would meet current (EPA Approved Methods) requirements.

Betio Hospital AQIA, Kiribati (Nov 2021 to May 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts during construction and operation of a new hospital at Betio in Kiribati. The assessment was completed in accordance with Local Kiribati, World Bank Group and relevant international requirements, and included an assessment of potential impacts associated with a new medical waste incineration unit.

Independent technical review for Hamptons Compositing Facility Air Discharge Permit Application NZ (Nov 2021)

Client: Waikato Regional Council

Role: Technical Reviewer

Key achievements:

- Technical review of the process, outcomes and conclusions of an application prepared to support process modifications (and consent updates) sought for an existing composting facility.

Air Quality Impact Assessment for Western Victoria Transmission Line Project VIC (Oct 2021 to Dec 2022)

Client: AusNet

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction, operational and decommissioning phases of a proposal to construct approximately 190 km of new transmission line, including support infrastructure and new terminal stations, as well as upgrades at several existing terminal stations. The assessment was undertaken using the UK IAQM, 2014 methodology, and was undertaken to meet the relevant Victorian legislative and guideline requirements.

Yanco Delta Wind farm EIS Scoping Report Air Quality Review, (Dec 2021)

Client: Yanco Delta

Role: Environmental Engineer

Key achievements:

- Preliminary assessment of potential air quality issues and requirements for assessment as part of the EIS for a new wind farm on the NSW/VIC border.

Emergency Generator Air Quality Review, Upper Hutt New Zealand (Nov 2021)

Client: MSD Animal Health

Role: Environmental Engineer

Key achievements:

- Screening assessment of potential air quality issues associated with the installation of an emergency generator at MSD Animal Health New Zealand's Upper Hutt Manufacturing Facility. The key pollutant of concern was NO2, and the assessment was completed in-line with 'Rule 12: Emergency power generators – permitted activity' of the Proposed Natural Resources Plan for the Wellington Region, Appeals Version

(2019). The AUSPLUME dispersion model listed in the 'Good Practice Guide for Atmospheric Dispersion Modelling' (NIWAR, 2004) was used to complete the assessment.

Independent technical review for Waikato Hospital Air Discharge Permit Application NZ (Sep-Oct 2021)

Client: Waikato Regional Council

Role: Environmental Engineer

Key achievements:

- Technical review of the process, outcomes and conclusions of the AEE and AQIA prepared to support an application to renew the Air Discharge Permit for the emergency generators and boilers at Waikato Hospital.

Air Quality Impact Assessment for The Driftway, Richmond NSW (Aug 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen The Driftway in Richmond, NSW. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.

Hurstville pump station Odour Review, Blakehurst NSW (Jun 2021)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- CALPUFF odour modelling for SWC's Hurstville pump station to address complaints received from the NSW EPA.

Whyalla WWTP and WRP Odour Supplementary Review, Whyalla SA (Jul 2021)

Client: South Australia Water

Role: Environmental Engineer

Key achievements:

- Supplementary CALPUFF odour modelling for SA Water's Whyalla Waste Water Treatment Plant (WWTP) and Water Recycling Plant (WRP) in accordance with South Australian Environment Protection Authority's 'Ambient air quality assessment' (AAQA), (2016) and in Schedule 3 of the Environmental Protection (Air Quality) Policy 2016 (South Australia), (EPP AQ).

Sydney Metro West Stage 2 AQIA, Sydney NSW (Jul 2021 to Aug 2021)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction of stations at The Bays, Pyrmont and the Sydney CBD as part of the Sydney Metro West Project. Potential dust impacts during construction were evaluated using the UK IAQM, 2014 methodology.

Great Western Highway AQIA, Lithgow NSW (May 2021 to Aug 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen approximately 34 kilometres of the Great Western Highway between Lithgow and Katoomba. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.

Cessnock STP Upgrades AQIA, Cessnock NSW (May 2021)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of potential changes in odour arising from operations at Cessnock STP from the decommissioning of trickling bed filters and installation of a sequential batching reactor.

Whyalla WWTP and WRP Odour review, Whyalla SA (Apr 2021 to May 2021)

Client: South Australia Water

Role: Environmental Engineer

Key achievements:

- CALPUFF modelling of potential odour impacts from SA Water's Whyalla Waste Water Treatment Plant (WWTP) and Water Recycling Plant (WRP) in accordance with South Australian Environment Protection Authority's 'Ambient air quality assessment' (AAQA), (2016) and in Schedule 3 of the Environmental Protection (Air Quality) Policy 2016 (South Australia), (EPP AQ).

BeneVap AEE, Southlands NZ (Mar 2021 to Apr 2021)

Client: AB Lime

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment to support an AEE of potential air quality impacts for a trial leachate evaporation unit proposed at AB Lime's landfill in Southlands, NZ.

Mt Owen IEA, Hunter Valley NSW (Jan 2021)

Client: Glencore

Role: Environmental Engineer

Key achievements:

- Review of operations compliance with air quality requirements a listed in their conditions of approval, EPLs, management plans, statement of commitments and EIS.

Liddell Battery, Decoupling and Bayswater Ancillary Works EIS, Liddell NSW (Dec 2020 to Jan 2021)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- AQIA of potential changes in air quality impacts from the proposed Liddell battery, Decoupling and Bayswater Ancillary Works, including cumulative impacts associated with the Bayswater Water and Other Associated Operational Works Project using the CALPUFF dispersion model.

Manchester Place Asphalt Batching Plant AEE, Hamilton NZ (Nov 2020 to Mar 2021)

Client: Downer

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment to support an AEE of potential air quality impacts for a hot mix asphalt batching plant proposed in Hamilton, NZ.

Berakee Quarry Expansion, Collie NSW (Oct 2020 to Jan 2021)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- AQIA of potential changes in air quality impacts from the proposed expansion of Berakee Quarry in Central NSW using the CALPUFF dispersion model.

Hexham Strait, Hexham NSW (Sep 2020 to Jan 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with proposed upgrades of the Pacific Highway between Hexham and Sandgate, NSW using the GRAL dispersion model.

Transmission Gully Asphalt batching plant AQIA, Paekakariki. New Zealand (Aug 2020)

Client: Fulton Hogan

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a hot mix asphalt batching plant proposed in Paekakariki, NZ.

Project Voldemort, NSW (Jun-Nov 2020)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with the construction and operation of a proposed major water desalination asset in NSW.

Coomera Connector, Coomera QLD (Feb 2020 to Jan 2021)

Client: Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with a new highway in Coomera, QLD using the GRAMM/GRAL meteorological and dispersion model. Assessment was undertaken in accordance with the TMR's RTAQM.

AQIA for Sydney Speedway EIS, Eastern Creek NSW (Feb-Jun 2020)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operation of a new speedway racing facility in Western Sydney.

M12RT AQIA, Heatherbrae NSW (Jul 2020 to Aug 2020)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction of the new M12RT motorway.

Sydney Metro Precast facility, NSW (Apr-May 2020)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with a precast concrete batching facility to support the Sydney Metro West Project.

Bathurst Asphalt Plant AQIA, Bathurst NSW (Feb 2020 to Mar 2020)

Client: Downer

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential air quality impacts associated with a hot mix asphalt batching plant proposed in Bathurst, NSW.

Park Fuels Kooragang Island Bulk Fuels Distribution Terminal Modification , Kooragang Island NSW (Feb 2020 to Mar 2020)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Review of changes in air quality-related risks from a minor modification to add an addition diesel storage tank at the existing bulk fuels terminal.

M12 Motorway Amendments Report, Badgerys Creek NSW (Jan 2020 to Apr 2020)

Client: TfNSW

Role: Environmental Engineer

Key achievements:

- Review of changes in air quality impacts from the M12 Motorway from the project as assessed in the EIS.

Plainlands Pump Station, Plainlands QLD (Feb 2020 to Apr 2020)

Client: QUU

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential odour impacts associated with a new pumping station at Plainlands, QLD.

West Wyalong Quarry AQIA, West Wyalong NSW (Jan 2020 to Mar 2020)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with expansion of operations at West Wyalong Quarry, NSW.

Project Chestnut Environmental Due Diligence, Hunter Valley NSW (Nov to Dec 2019)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Review of air quality performance and operational and regulatory risks for a large-scale open-cut coal mine in the Hunter Valley as part of an investment due diligence review.

Orbost Gas Plant Upgrade and Commissioning, Orbost VIC (Dec 2019)

Client: APA Group

Role: Environmental Engineer

Key achievements:

- Assessment of potential plume rise constraints from operations at Orbost Gas Plant in accordance with Civil Aviation Safety Authority (CASA) Advisory Circular titled 'AC 139-05v3.0 - Plume Rise Assessments', (CASA, 2019) using TAPM.

Upgrade of Norwest Boulevard, Norwest NSW (Nov 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen Norwest Boulevard around the intersection with Lexington Drive. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.
- Evaluation of changes in GHG emissions from the upgraded road segment using the 'Carbon Gauge' prediction tool, as well as TRAQ (CALINE) for predicting operational road traffic emissions.

Boydtown Stage 1A West AQ review, Boydtown NSW (Nov 2019)

Client: Lyon group

Role: Environmental Engineer

Key achievements:

- Technical review of assessment of potential issues associated with new residential development within the vicinity of an existing approved extractive industry.

Palmerston North Asphalt Plant, New Zealand (Nov 2019)

Client: Fulton Hogan

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a mobile asphalt plant at Stringfellows Quarry, Palmerston North.

Cessnock STP Upgrades AQIA, Cessnock NSW (Oct 2019)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of potential changes in odour arising from operations at Cessnock STP from the installation of two new oxidation ditches, a new clarifer and decommissioning of trickling bed filters.

NorthConnex Independent Review MCoA E12, Sydney NSW (Sep to Nov 2019)

Client: NorthConnex Company Pty Ltd

Role: Environmental Engineer

Key achievements:

- Independent review of potential air quality outcomes against approved impacts assessed in the NorthConnex EIS and Submissions Report in accordance with condition E12 of the MCoA.

Middle Creek Quarry, Odour Literature Review NSW (Sep 2019)

Client: Oberon Earthmoving Pty Ltd

Role: Environmental Engineer

Key achievements:

- Technical review of literature review of potential odour impacts associated with composting and fertiliser manufacturing activities at Middle Creek Quarry.

Costco LBL Annual Returns 2018/19, Casula and Marsden Park NSW (Nov 2019)

Client: Costco

Role: Environmental Engineer

Key achievements:

- Technical review of LBL total VOC and benzene estimates using US EPA's TANKS and LBL fee rate calculations in accordance with the EPA's calculation protocols.

Bayswater Water Improvements Project Air Quality Assessment, Bayswater NSW (Aug 2019 to Nov 2019)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with ash dam augmentation and various water improvement activities at Bayswater Power Station, NSW.

John Gorton Drive Preliminary Air Quality Review, Canberra ACT (Aug 2019)

Client: Macquarie Energy

Role: Environmental Engineer

Key achievements:

- Preliminary review of potential air quality impacts from John Gorton Drive Stage 3C Upgrades using TRAQ (CALINE).

Odour Impact Review, Gladstone STP, Gladstone QLD (Apr 2019)

Client: Gladstone Regional Council

Role: Environmental Engineer

Key achievements:

- Review of potential odour impacts associated with a new gas flare planned at Gladstone STP, including the development of an odour inventory to review the magnitude of potential changes.

EPL Annual Returns, Port Kembla NSW (Mar 2019, Apr 2020, Apr 2021)

Client: Park Fuels Pty Ltd

Role: Environmental Engineer

Key achievements:

- Estimation of load-based emissions to air for reporting against EPL Annual Returns for Port Kembla EPL using US EPA TANKS.

Maroota Quarry AQIA, Maroota NSW (Mar 2019 to May 2019)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a new quarry at Maroota, NSW.

National Pollution Inventory Review and Reporting, Various (Mar 2019 to present)

Client: Department of Defence

Role: Environmental Engineer

Key achievements:

- Jacobs conducted a detailed review of Handbooks I and II to improve their usability; the assumptions and techniques used to estimate reportable environmental emissions (including Defence internal co-ordination processes), so that the data could be most effectively used to inform environmental improvement measures across Defence's sites nationally.
- Preparation and consolidation of data for the 2017/18 and 2018/19 NPI reporting periods. This was done to ensure Defence continued to meet their NPI reporting obligations.

Air Quality Impact Assessment for Sydney Metro West, Parramatta NSW (Nov 2018 to Sep 2019)

Client: Sydney Metro West

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the construction of Stage 1 of the Sydney Metro West Proposal, as well as a high-level review of potential impacts associated with the overall Concept Design.

Air Quality Impact Assessment for Brisbane Metro Depot, Roachedale QLD (Dec 2018 to Feb 2019)

Client: Brisbane City Council

Role: Environmental Engineer

Key achievements:

- Quantitative TRAQ (CALINE)-based assessment of potential air quality impacts from Metro vehicle operations at a new depot planned at Roachedale, QLD.

Oxley STP Odour assessment, Oxley QLD (Nov 2018 to Mar 2019)

Client: Queensland Urban Utilities (QUU)

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential odour impacts associated with existing and proposed operations at Oxley STP, QLD.

United Mine Independent Audit NSW (Feb 2019)

Client: United Collieries Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of compliance against Development Consent and EPL air quality requirements as part of an Independent Environmental Audit (IEA).

NCIA Compliance Audit, Rutherford NSW (Jan 2019)

Client: NCIA

Role: Environmental Engineer

Key achievements:

- Review of compliance against Development Consent and EPL air quality requirements as part of an Independent Environmental Audit (IEA).

Northridge Waste Disposal Facility EIS Dust Impact Assessment, Wagga Wagga NSW (Nov 2018)

Client: NGH Environmental

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential dust impacts associated with a new landfill proposed north of Wagga Wagga, NSW.

Unwin St Odour Control Unit Assessment, Tempe NSW (Aug-Oct 2018)

Client: ADW Johnson

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of a new OCU at Tempe NSW using the CALPUFF dispersion model.

Woolgoolga to Ballina (W2B) Temporary asphalt batching plants AQIAs, Various, Mid-North Coast NSW (Jul-Nov 2018)

Client: Pacific Complete

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with a new asphalt batching plant and associated bulk materials storage

areas using the CALPUFF dispersion model. Assessment of four locations at Mororo West (2), Harwood, and Tyndale NSW.

SP0080 and SP0081 Educt ventilation shafts Odour assessments, Earlwood NSW (Jul 2018)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of different ventilation shaft design options for the wet well of two pump stations at Earlwood, NSW using the AUSPLUME dispersion model.

Spring Farm Parkway AQIA, Spring Farm NSW (Aug-Sep 2018)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of the road upgrade using a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and TRAQ (CALINE) respectively.

Colongra AQIA, Colongra NSW (Jul-Aug 2018)

Client: Snowy Hydro Limited

Role: Environmental Engineer

Key achievements:

- CALPUFF modelling of different fuel usage and change-over scenarios at Colongra Power Station, NSW

PDF Foods Facility AQIA, Tweed Heads NSW (Jul 2018)

Client: Queensland Airports Limited

Role: Environmental Engineer

Key achievements:

- Assessment of potential odour impacts at a proposed cold products storage and distribution facility adjacent to a WWTP.

Kyeemagh AQIA, Odour assessment NSW (Apr-May 2018)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of different ventilation shaft design options for the wet well of a pump station at the Kyeemagh pumping station using the AUSPLUME dispersion model.

Gundamain Feedlot OIA, Gundamain NSW (Apr-Oct 2018)

Client: Geolyse

Role: Environmental Engineer

Key achievements:

- Assessment of potential odour impacts associated with upgrades to an existing feedlot facility in Gundamain, NSW using the MLA method and the CALPUFF dispersion model

Teven Quarry Expansion AQ review, Teven, NSW (Mar-Jun 2018)

Client: Holcim Australia Pty LTd

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operation of a new asphalt plant at Teven quarry using CALMET/CALPUFF.

Dubbo Regional Rail Yard, Dubbo NSW (Feb-Jun 2018)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of a planned rail maintenance facility in Dubbo NSW using the CALMET/CALPUFF meteorological and dispersion model.

M12 Elizabeth Drive Upgrade, Badgerys Creek NSW (Oct 2017 to Jun 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of the new M12 motorway.

M12RT Initial AQIA, Heatherbrae NSW (June 2016 to Feb 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of the concept of the new M12RT motorway.

Stacey Street NSW (Nov-Dec 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Preparation of meteorological inputs for use in the GRAL dispersion model to evaluate portal emissions associated with a new tunnel concept design around the Hume Highway and Stacey Street, St Marys.

Berrys Bay Marine repair facility upgrade, Berrys Bay NSW (Nov-Dec 2017)

Client: Hamptons Property Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of an upgrade of a marine repairs facility set in a highly urbanised environment using the AUSPLUME dispersion model.

White Bay Truck Marshalling Area Exempt Development Air Quality Review, Rozelle NSW (Oct-Nov 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of the proposal using a risk-based approach based on the guidance presented in *AS/NZS ISO 31000: 2009 Risk Management – Principles* and TRAQ (CALINE) respectively.

Upgrade of Norwest Boulevard, Norwest NSW (Oct-Nov 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen Norwest Boulevard around the intersection with Lexington Drive. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines* applied to evaluate potential air quality risks during construction.
- Evaluation of changes in GHG emissions from the upgraded road segment using the 'Carbon Gauge' prediction tool, as well as TRAQ (CALINE) for predicting operational road traffic emissions.

Laidley STP Odour Review, Laidley QLD (Aug-Sep 2017)

Client: QUU

Role: Environmental Engineer

Key achievements:

- CALPUFF assessment of odours arising from present and proposed operations at the Laidley STP using the CALMET/CALPUFF meteorological and dispersion model.

Yeppoon STP Odour Review, Laidley QLD (Aug 2017)

Client: QUU

Role: Environmental Engineer

Key achievements:

- CALPUFF assessment of odours arising from proposed operational changes at the Yeppoon STP (installation of an odour control unit at the

inlet works) using the CALMET/CALPUFF meteorological and dispersion model.

Brisbane Metro Preliminary EIS Air Quality Assessment, Brisbane QLD (Jul-Sep 2017)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with The Brisbane Metro Project using TRAQ (CALINE) for the evaluation of operational impacts and the method outlined in *Guidance on the assessment of dust from demolition and construction Version 1.1,* (UK IAQM, 2014) for evaluating potential air quality issues during construction.

Park Fuels Bulk Fuel Terminal Modification EIS Air Quality Impact Assessment, Kooragang Island QLD (Jul 2017 to Feb 2018)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with a proposed modification to Park Fuels Bulk Fuel Facility at Kooragang Island, NSW using the CALMET/CALPUFF meteorological and dispersion model. The assessment supported an EIS being prepared for the modification, as well as an application to update the load-based conditions for the site Environment Protection Licence (EPL).

Colongra Power Station Diesel Application Air quality review, Colongra NSW (Sep 2017)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- CALMET/CALPUFF meteorological and dispersion modelling of multiple gas and diesel operational scenarios, including start-up and shuts-down sequences.
- Post-processing of NO_x to NO_2 outputs using the OLM method.

Camellia remediation project air quality assessment, Parramatta NSW (Jun-Jul 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- AUSPLUME based assessment of soil vapour, dust and odours associated with the excavation and handling of contaminated soils as part of the Camellia PLR stabling yard remediation project.

Northridge Waste Disposal Facility EIS Operational Odour Assessment, Wagga Wagga NSW (Jun-Sep 2017)

Client: NGH Environmental

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential odour impacts associated with a new landfill proposed north of Wagga Wagga, NSW.

Alexandria to Moore Park Project Air quality review, Sydney NSW (Mar 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the proposal completed using metrics developed based on guidance from *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines.*

Bruce Highway Upgrade (Caloundra Road to Sunshine Motorway), Sippy Downs QLD (Feb-Mar 2017)

Client: Queensland Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Identification of assessment criteria in accordance with guidance presented in *Environmental Protection (Air) Policy 2008* (Air EPP) Queensland and the RTAQM.
- Development of emissions in accordance with the traffic emissions database developed by Brisbane City Council.
- Quantification of roadside air quality using the TRAQ (CALINE) model.
- Development of mitigation measures as identified to be necessary as per directives detailed in the RTAQM.

Parramatta Light Rail, Parramatta NSW (Jan-Mar 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the proposal completed using metrics developed based on guidance from *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines.*
- Development of mitigation and management measures to effectively limit and reduce air quality-related impacts during all phases of the development.

Hurstville Odour Control Unit Upgrade, South Hurstville NSW (Jan-Feb 2017)

Client: Sydney Water Corporation

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential odour impacts associated with the replacement of the odour control unit (OCU) at SY044 using the AUSPLUME dispersion model.
- Development of emissions with reference to *Odour Control Unit Standard Specification* (OCUSS), (Sydney Water, 2011)

Belmont WWTW Clarifier Upgrade, Belmont NSW (Jan 2017)

Client: Umwelt (for Hunter Water Corporation)

Role: Environmental Engineer

Key achievements:

- Assessment of potential changes to odour emissions arising from the Belmont WWTP as a result of the addition of two new secondary clarifiers.
- Quantification of significance of changes utilising reference data from the Sydney Water Corporation *Sydney Water Odour Emissions Database*

Brisbane Metro Subway System REF, Brisbane QLD (Oct-Dec 2016)

Client: Mott McDonald

Role: Environmental Engineer

Key achievements:

- Assessment of potential construction and operational air quality impacts associated with the proposed Brisbane Metro Subway System (BMSS). Impacts were assessed using a semi-quantitative risk-based approach against relevant local (*Brisbane City Plan 2014 – Air quality planning scheme policy,* [BCC, June 2014]) and state (*Environmental Protection (Air) Policy 2008* [Queensland]) criteria and requirements.

Port of Townsville AQIA, Townsville QLD (Sep-Oct 2016)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Modelling of potential air quality impacts associated with proposed changes to product bulk handling at the Port of Townsville to inform an application to amend an Environmental Authority for operations at the facility.

NPI 2015/16 Reporting, Townsville QLD (Aug-Sep 2016)

Client: Glencore Copper Refineries Limited

Role: Environmental Engineer

Key achievements:

- Assistance with the submission of 2015/16 NPI data to the national database for Glencore's Bowen, CRL and Townsville Port facilities including update of assessment tool and data analysis support.

NPI 2015/16 Reporting, Townsville QLD (Aug-Sep 2016)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Development of a bespoke NPI reporting tool for NSS' Townville Port Bulk handling operations and calculation and submission of 2015/16 NPI reporting data to the online facilities database

Lowood/Ferdale Sewage Schemes Upgrade, Detailed odour assessment, Lowood QLD (Aug-Sep 2016)

Client: Queensland Urban Utilities

Role: Environmental Engineer

Key achievements:

- Detailed assessment off odour associated with a new WWTP at Lowood, QLD against criteria outlined in *Guideline: Odour Impact Assessment for Developments,* (Department of Environment and Heritage Protection) using TAPM and CALPUFF air quality and meteorological models.

Cox Peninsula Remediation Project Direct Thermal Desorption Plant Air Quality Assessment, Cox Peninsula NT (Aug-Oct 2016)

Client: Department of Finance

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the use of a Direct Thermal Desorption Plant for contaminated soil remediation at Cox Peninsula, NT against the NSW Approved Methods using the AUSPLUME dispersion model to address Typical Assessment Requirements issued by the NT EPA.
- Assessment of potential work health and safety impacts using refined assessment approach and review of impacts against human health exposure criteria.

Lowood/Ferdale Sewage Schemes Upgrade, Odour screening assessment, Lowood QLD (June 2016)

Client: Queensland Urban Utilities

Role: Environmental Engineer

Key achievements:

- Screening level assessment using the AUSPLUME dispersion model of odour associated with a new WWTP at Lowood, QLD against criteria outlined in *Guideline: Odour Impact Assessment for Developments,* (Department of Environment and Heritage Protection).

The Northern Road Upgrade EIS, Badgerys Creek, NSW (May 2016)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- TRAQ (CALINE) modelling of changes in operation air quality associated with the proposed upgrade.
- Qualitative risk-based assessment of potential impacts to air quality during construction.
- Recommendation of suitable mitigation and measures to manage potential impacts during both phases of the proposal.

The Northern Road Upgrade REF, Kingswood, NSW (Mar- Apr 2016)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- TRAQ (CALINE) modelling of changes in operation air quality associated with the proposed upgrade.
- Qualitative risk-based assessment of potential impacts to air quality during construction.
- Recommendation of suitable mitigation and measures to manage potential impacts during both phases of the proposal.

Colongra Power Station air quality assessment, Colongra NSW (Feb-Mar 2016)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Detailed quantitative air quality assessment using TAPM and CALPUFF of a proposal to modify the fuel inputs from gas to diesel of the Colongra power station, including impacts during fuel changeover transitions.
- Statistical review of the impacts of the closure of Munmorah Power Station on surrounding ambient air quality conditions.

Supplementary air quality modelling, Townsville QLD (Sep 2015)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Supplementary CALPUFF air dispersion modelling to assess an application to handle and load different mineral concentrates at the NSS bulk handling facility.

HEZ relocation air quality assessment, Lonsdale SA (Sep 2015)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Detailed assessment of a proposal to relocate the HEZ power station to one of three potential locations including qualitative CALPUFF dispersion modelling, meteorological modelling using CALMET and TAPM, and a review of the different regulatory frameworks and criteria that the facility would be required to comply with for the different geographies.

NPI 2014/15 Reporting, Townsville QLD (Aug-Sep 2015)

Client: Glencore

Role: Environmental Engineer

Key achievements:

- Assistance with the submission of 2014/15 NPI data to the national database for Glencore's Bowen, CRL and Townsville Port facilities including update of assessment tool and data analysis.

NPI 2014/15 Reporting, Townsville QLD (Aug-Sep 2015)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Development of an bespoke NPI reporting tool for NSS' Townville Port Bulk handling operations and calculation and submission of 2014/15 NPI reporting data.

Chatswood to Sydenham Harbour Crossing Air quality technical paper, Sydney NSW (May 2015 to Jan 2016)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Qualitative assessment of potential construction and operational air quality impacts associated with the SRT Harbour Crossing project.

Odour review for Cabramatta pumping station, Cabramatta NSW (Apr 2015)

Client: Sydney Water Corporation

Role: Environmental Engineer

Key achievements:

- Assessment of four different odour control unit (OCU) exit stack options around Cabramatta Rugby Leagues club using the AUSPLUME dispersion model.

Air quality assessment of proposed production increase at Sydney Steel Mill, Rooty Hill NSW (Apr 2015)

Client: OneSteel

Role: Environmental Engineer

Key achievements:

- Updates to historical AUSPLUME files to evaluate potential emissions to air associated with an increase in production of rolled product.

Air quality assessment for Bryants Gravel Pit expansion EIS, Cooks Gap NSW (Feb-Mar 2015)

Client: Mid-Western Regional Council

Role: Environmental Engineer

Key achievements:

- Use of TAPM to generate site-specific meteorological data.
- Development of an emissions inventory considering NPI 2012 emission factors.
- AUSPLUME modelling to quantitatively evaluate present and proposed emissions at nearby receivers.

- Evaluation of results against DEC, 2005 criteria and development of appropriate safeguards as required.
- Reporting of assessment methodology and results.
- Client liaison and project management oversight.

Air quality review for Singleton railway underpass REF, Singleton NSW (Feb 2015)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Review of potential air quality impacts associated with an upgrade to a railway bridge and widening of the New England Highway, including TRAQ (CALINE) modelling to evaluate impacts associated with a temporary traffic diversion

DA No. D/2014/1307 Air quality Review, Haymarket NSW (Dec 2014)

Client: Kaz Constructions Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of present meteorological, ambient air quality and Sydney Cross City Tunnel (CCT) emissions information against predictions made in the CCT EIS to evaluate whether prediction remained valid.
- Assessment of whether a proposed multi-story development would adversely affect the dispersal of emissions from the CCT ventilation stack, or be unduly impacted by these emissions.

Air quality review for WestConnex Enabling Works – Airport East Precinct REF, Port Botany NSW (Dec 2014)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Review and update of air quality assessment section of REF to address comments from authorities.

South West Rocks Supplementary Odour Assessment, South West Rocks NSW (Nov 2014)

Client: Kempsey Shire Council

Role: Environmental Engineer

Key achievements:

- Odour modelling using AUSPLUME of re-configured WWTP design to determine recommended urban buffer setback requirements.

Mt. Thorley Warkworth Air quality Management Plan review, Hunter Valley NSW (Oct 2014)

Client: Coal and Allied – Rio Tinto

Role: Environmental Engineer

Key achievements:

- Statistical review of measured meteorological and PM10 data to determine conditions most conducive for elevated PM10 concentrations at surrounding receivers.

Patrick Shipping Terminal Air Quality Emissions Review, Carrington NSW (Sep - Oct 2014)

Client: Patrick

Role: Environmental Engineer

Key achievements:

- Assistance in the review of potential air quality impacts associated with an EPL variation application to allow temporary storage and export of zinc and lead concentrate from the Patrick Stevedoring Carrington Terminal.

Air Quality Assessment – Lisarow REF, Lisarow NSW (Sep 2014)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Quantitative comparative assessment of current and projected (project, no project) roadside air quality using TRAQ (CALINE) transport emissions model.
- Qualitative assessment of potential construction air quality impacts and development of mitigation measures and safeguards.

DAFF Quarantine Facility Emission Modelling, Mickelham VIC (Aug 2014)

Client: DAFF

Role: Environmental Engineer

Key achievements:

- Preliminary AUSPLUME modelling including BPIP calculations of potential chemical release scenarios.

Biosolids Storage Strategy odour screening review, Various Hunter locations NSW (July 2014)

Client: LOOP Organics

Role: Environmental Engineer

Key achievements:

- Development of local meteorological data using TAPM.
- Evaluated potential odour effects of bio solids storage areas with respect to meteorological conditions and surrounding landuses.

Odour sampling Supervision, Charmhaven and Mannering Park NSW (Jun, Nov 2014)

Client: Wyong Shire Council

Role: Environmental Engineer

Key achievements:

- Supervision of odour sampling activities at Charmhaven and Mannering Park WWTP's.

Rooty Hill Regional Distribution Centre construction and operational air quality and noise compliance assessment, Doonside NSW (June 2014 – Oct 2015)

Client: Holcim

Role: Environmental Engineer

Key achievements:

- Monitor, maintain and report on project depositional dust gauge, high volume air sampler and noise monitoring results.
- Monitoring and maintenance of project weather station.
- Attended noise monitoring to assess construction noise against development criteria.

Preliminary air quality and plume rise assessment, Avalon VIC (July 2014)

Client: HRL Developments Pty Ltd

Role: Environmental Engineer

Key achievements:

- Dispersion modelling of potential pollutant emissions from a thermal boiler power station associated with a sustainable farming development using AERMOD.
- Liaison with CASA to assess potential plume rise impacts to surrounding aeronautical activities.

Odour dispersion modelling review and update SWC WWTPs, South Sydney NSW (May- June 2014)

Client: Sydney Water Corporation (SWC)

Role: Environmental Engineer

Key achievements:

- Development of emissions inventories for existing WWTPs from existing dispersion models.
- Update of Glenfield WWTP AUSPLUME model and creation of updated odour contour plots in Surfer.

South West Rocks WWTP Odour Assessment, South West Rocks NSW (Apr 2014)

Client: Kempsey Shire Council

Role: Environmental Engineer

Key achievements:

- AUSPLUME dispersion modelling of current and projected odour emission scenarios, including assessment against criteria.

Air Emissions Assessment, Londonderry NSW (Mar 2014)

Client: TestSafe Australia

Role: Environmental Engineer

Key achievements:

- Support in the preparation of air emissions inventory for the facility.
- AUSPLUME dispersion modelling of associated pollutants.

Munmorah Power Station Demolition and Clearing Works SEE Qualitative Air Quality Assessment, Lake Munmorah NSW (Mar 2014)

Client: Delta Electricity

Role: Environmental Engineer

Key achievements:

- Qualitative assessment of demolition and site clearance activities.

Rezoning Application Odour Assessment, Nelsons Plains NSW (Feb 2014)

Client: Portree Park Pty Ltd

Role: Environmental Engineer

Key achievements:

- AUSPLUME odour dispersion modelling and review of odour-related impacts associated with rezoning application.

Referees

Available upon request