Heron Resources Limited
Tarago Operations Pty Limited

Woodlawn Mine

SML 20

Air Quality Management Plan

August 2017

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CIRCULATION DETAILS	Name	Department/Organisation
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	Julian Thompson	Environment Protection Authority
	Stephen Shoesmith	Department of Planning and Environment

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1. Introduction

1.1 Purpose

The control of dust from the premises during both the construction and operational phases is a key environmental issue. The purpose of this Air Quality Management Plan (AQMP) is to document the control measures and management initiatives to control dust generation for both the construction activities and ongoing operations of the Woodlawn Mine as shown on Plan 1.

The AQMP forms one component of the overall Project Environmental Management Strategy (EMS). The EMS includes a number of commitments and component management plans which together form the basis for the ongoing operation of the Woodlawn Mine.

As with any development project, changes will arise throughout the construction and operational phases. The EMS and component management plans will be updated as required to reflect any changes to the development project. It is anticipated that this plan will be fully reviewed and updated during the plant commissioning phase to ensure that operational components are still accurate. Thereafter, this plan will be reviewed on an annual basis in accordance with the EMS requirements.

1.2 Scope and Objectives

This AQMP has been developed with Pacific Environment Pty Limited who undertook the original Air Quality and Greenhouse Gas Assessment contained in the Environmental Assessment and subsequent project modification application. Input from Pacific Environment is contained as Appendix B which covers the entire operation. This AQMP primarily covers the construction component of the Project including:

- ❒ Mobilisation of construction equipment.
- ❒ Initial surface disturbance and construction area set up.
- ❒ Earthworks and required erosion and sedimentation controls.
- ❒ Control of dust impacts during construction.
- ❒ Erection of temporary buildings and contractors facilities.
- ❒ Erection of all permanent buildings, infrastructure, hardstand and car parking.
- ❒ Construction of the process plant including installation of processing equipment, material handling and storage areas.
- ❒ Construction of a new tailings storage facility.
- ❒ Construction of the box cut, portal and underground entry area including paste fill plant as shown on Plan 2.
- ❒ Construction of the new haul road between the underground entry site and the processing plant area as shown on Plan 2.
- ❒ Erection of tailings retreatment equipment and infrastructure.

- ❒ Establishment of a waste rock emplacement.
- ❒ Temporary and permanent revegetation work.

Modifications to this plan may be required during the construction phase if detailed design changes occur but otherwise would be updated prior to operations commencing to ensure that any new information or management initiatives are incorporated.

The overall objectives for the AQMP are to:

- ❒ Implement the commitments made in the EA including specific conditions of approval and the Statement of Commitments.
- ❒ Ensure compliance with relevant environmental legislation.
- ❒ Manage air quality risks associated with the Woodlawn Project.
- ❒ Provide for continuous improvement in dust control performance.
- ❒ Provide a mechanism to identify and correct areas of non-compliance.

1.3 Key Personnel and Responsibilities

Management responsibility for the Woodlawn Mine will be as follows.

Table 1 - Management Responsibilities

Position	Personnel	Company	Responsibility	Contact Details
Managing Director	Wayne Taylor	Heron Resources	Overall responsibility for the construction and operation of the Woodlawn Mine	02 9119 8111
Chief Operating Officer	Andrew Lawry	Heron Resources	Responsible for Project delivery and operations	02 9119 8111
Project Manager	To be appointed	Heron Resources	Construction Project Management and Implementation	02 9119 8111
Manager Mining Engineering	To be appointed	Heron	Mine Planning and Design	02 9119 8111
General Manager	Brian Hearne	Heron Resources	Conduct of Mining Operations	02 9119 8111
Exploration Manager, Chief Geologist	David von Perger	Heron Resources	Resource Evaluation	02 9119 8111
Environmental Manager	Robert Byrnes	IEC	Conduct of environmental management and compliance	02 4878 5502
Woodlawn Mine Environmental Officer	Zoe Reed	Heron	On site environmental management	02 9119 8111

The above table will be updated with the confirmation of the Lead Construction Contractor when appointed.

1.3.1 Responsibility

The Managing Director has overall responsibility for the implementation of the EMS at Woodlawn Mine as well as to review and approve expenditure and resources necessary to effectively implement the EMS and individual management plans.

The Chief Operating Officer (COO) reports to the Managing Director and is responsible for Project delivery and ultimate development and operation of the Project.

The Project Manager will ensure that the approved management provisions and requirements of the individual Environmental Management Plans and commitments are implemented. The Project Manager will review and evaluate the performance of the EMS program and environmental protection initiatives. This role may be merged with the Mine Manager during the construction period prior to commissioning.

The Construction Manager will be responsible for the day to day management of the construction workforce, implementation of the Construction EMP and report directly to the Project Manager.

The Mine Manager is responsible for the day to day management of the mine and overview role for environmental management systems on site, which will include:

- ❒ Ensuring compliance with environmental requirements for the site.
- ❒ Represent the on site contact officer under the Environment Protection Licence and other statutes.
- ❒ Report to the COO on a monthly basis on the environmental performance of mine.
- ❒ Liaise with the Environmental Officer on environmental matters as required.

The Environmental Manager will provide the following assistance with the EMS:

- ❒ Provide technical assistance on environmental matters to the Mine Manager.
- ❒ Undertake the necessary environmental monitoring program.
- ❒ Organise external environmental experts as required.
- ❒ Organise external environmental audits of the site on an annual basis.
- ❒ Develop Corrective Action Programs in consultation with the Mine Manager and monitor their implementation.
- ❒ Develop and implement an Environmental Training Package for the Mine.

1.3.2 Company Structure

The Woodlawn Project will be developed by Tarago Operations Pty Limited, a wholly owned subsidiary of Heron Resources Limited (Heron) which merged with TriAusMin Limited who was the original proponent for the project.

The Woodlawn Mine will be developed as a “greenfield project” despite its long history and existing infrastructure. The construction program will be managed by Heron using construction contractors. Once commissioned, the new facility will be operated by Heron through its subsidiary Tarago Operations.

1.4 Legislative Requirements

Of relevance to the management of dust emissions from both construction and operation of the Woodlawn Mine Project is the following legislation.

Mining Act 1992 – This Act covers the exploration and extraction of the State's resources having regard to the need to encourage ecologically sustainable development. It provides a framework for compensation to landholders for loss or damage resulting from such operations and requires the payment of security to provide for the rehabilitation of mine sites, effective rehabilitation of disturbed land and water, and ensures mineral resources are identified and developed in ways that minimise impacts on the environment

Environmental Planning and Assessment Act 1979 – Provides the primary approval path for mining projects and sets environmental management and reporting conditions as part of the approval. For new mining approvals, it also provides an integrated approach to other mining related approvals. Woodlawn Mine holds Project Approval 07_0143 covering its development and operations. The Project Approval requires that a Construction Management Plan be prepared prior the commencement of construction.

Protection of the Environment Operations Act 1997 (POEO Act) - The POEO Act is administered by the Environment Protection Authority (EPA) and requires licensing for environmental protection, including waste generation and disposal, water, air and noise pollution. Under the POEO Act, an EPL is required for the Woodlawn Mine as it is defined as a scheduled activity. EPL 20821 has been issued by the EPA and is provided as Appendix E. The site has now been divided between EPL 11436 held by Veolia Environmental Services (Australia) Pty Limited (VES) and a separate part of the site by Infigen as shown on Plan 2.

Protection of the Environment Legislation Amendment Act 2011 – The POELA Act requires the preparation and implementation of a pollution incident response management plan. Pollution Incident response procedures are included in this Plan.

General Guidelines

The Department of Planning and Environment, Environment Protection Authority and NSW Minerals Council have issued a range of guidelines and fact sheets regarding the control of mine site dust and control of dust emissions from construction activities. These guidelines provide general information on the control systems as well as methods to achieve current best practice. There are also guidelines for issue to residents near mine sites in order educate the community to their rights. Relevant documents include:

- The Protection of the Environment Operations (Clean Air) Regulations 2010.
- The Approved Methods for the Sampling and Analysis of Air Pollutants in NSW guideline (EPA, 2005).
- Mine Dust and You - NSW Minerals Council and Department of Health.
- Air Quality Guidance Notes Construction Sites - Environment Protection Authority.
- Guidance on Workplace Exposure Standards for Airborne Contaminants - Safe Work Australia.

1.5 Project Approval Requirements

The Woodlawn Project received Project Approval on 4th July 2013 with subsequent modifications received on 22nd April 2016 and 6th July 2017. The approval was obtained under the provisions of Part 3A of the Environmental Assessment Act 1979 and following the public exhibition of an Environmental Assessment document.

The EA contained a number of environmental commitments while the Project Approval was also subject to conditions. Specifically, the conditions and Proponent commitments relating to the preparation of an Air Quality and Greenhouse Gas Management Plan is as follows:

Table 2 - Consent Conditions Relating to Air Quality and Greenhouse Gas

Condition	Interaction with Construction	Where Addressed
Sch 4 Condition 11(c)	minimise the dust and fume emissions from any blasting	Section 3.1
Sch 4 Condition 13	The Proponent shall ensure that no offensive odours generated by the project are emitted from the site, as defined under the POEO Act.	Section 3.1
Sch 4 Condition 14	The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Director-General.	Section 3.2
Sch 4 Condition 15	The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 6, 7 and 8 (of the Project Approval) at any residence on privately-owned land unless the Proponent has advised the Department in writing of the terms of this agreement.	Chapter 2 and Section 3.1
Sch 4 Condition 17	The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with the EPA, and be submitted to the Director-General for approval prior to commencing construction on the site; (b) describe the measures that would be implemented to ensure compliance with Conditions 13 to 16 above; (c) include an air quality monitoring program that: • uses a combination of high volumes samplers and dust deposition gauges to evaluate the performance of the project; and • includes a protocol for determining exceedances of the relevant conditions of this	This Plan

	approval; and (d) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site.	
Sch 4 Condition 18	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants* in New South Wales guideline.	Section 5.1 and Appendix A
Sch 5 Condition 1	an exceedence of any relevant air quality criteria in Schedule 4, the Proponent shall send the affected landowners and/ or tenants a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time). Specific provisions for an independent review of monitoring data and compliance status	Section 4.4
Statement of Commitments Item 7A	The CEMP would include measures to avoid and manage dust impacts during construction. As a minimum, these measures would include: ❒ the use of water carts to hose down exposed soils (including unsealed haulage routes) during dry and/or windy conditions ❒ the defining of trafficked areas and haulage routes for construction vehicles ❒ stabilisation of exposed areas as quickly as possible ❒ air quality monitoring to assess compliance with OEH criteria.	Section 3.1 and Section 5.1
Statement of Commitments Item 7B	The REMP would include measures to avoid and manage dust impacts during operation. As a minimum, these measures would include: ❒ clearly defining haulage routes and limiting the number of trafficable routes over unsealed surfaces ❒ washdown of vehicles ❒ imposing speed limits on unsealed surfaces for light vehicles ❒ stabilising and rehabilitating exposed areas as quickly as possible.	Future AQMP for ongoing operations
Statement of Commitments Item 7C	One or more dust deposition gauges would be installed at the nearest privately owned residence to the Project Site to assist in the assessment of air quality impacts due to Project operations.	Section 5.1

1.6 Consultation

This Plan has been formulated through a process of consultation with government and non-government organisations. A consultation log is provided in Appendix E which will be updated as required during the construction and ongoing operation of the Woodlawn Mine.

2. Air Quality Criteria

2.1 Air Quality Criteria

This AQMP complies with the following legislation and standards:

- The Protection of the Environment Operations (Clean Air) Regulations 2010
- The Approved Methods for the Sampling and Analysis of Air Pollutants in NSW guideline (EPA, 2005)

In accordance with Schedule 4, Condition 15 of the Project Approval, all reasonable and feasible avoidance and mitigation measures are employed to ensure that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 6, 7 and 8 of the Approval (reproduced in this report as Tables 3, 4 and 5 respectively), at any residence on privately-owned land.

An exceedance of any of these criteria constitutes an air quality incident.

Table 3: Long Term criteria for particulate matter

Pollutant	Averaging period	[d] Criterion
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter <10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 4: Short Term criteria for particulate matter

Pollutant	Averaging period	[d] Criterion
Particulate matter <10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 5: Long Term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables

All methods to conform to Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2005)

[a] Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the project on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

2.2 Sources of Dust

2.2.1 Construction

The construction program will commence initially with the mobilisation of earthmoving equipment and erection of temporary contractor facilities. As the first task is to construct the box cut and portal entry, access will be provided using the existing internal roads associated with the Bioreactor. This component will extend over a 12 month period consisting of 1 month for equipment mobilisation and relocation of the existing dolerite stockpile, 3 months to establish the box cut and portal followed by 8 months of underground development of the decline access. During the development of the decline, other surface works will be occurring including the main access road and hardstand areas for the new process area in Hickory's Paddock.

The main processing area in Hickory's Paddock will include establishment of initial soil and water management controls, access road construction, establishing hardstand and foundation levels for several buildings, compounds, ore stockpiles and waste rock emplacement. This component will require typical cut and fill earthmoving using mobile plant such as dozers and scrapers.

The construction phase also includes a new haul road between the box cut mine entry and the processing site, construction of a new tailings storage dam (TSF 4) and various support infrastructure including materials handling and processing, services, dams and drainage works. Sources of dust for the construction phase will include:

- ❒ Stripping topsoil by bulldozer;
- ❒ Blasting of rock;
- ❒ Earthmoving equipment excavating the decline portal;
- ❒ Cut and fill earthworks;
- ❒ Wind erosion from exposed areas;
- ❒ Front End Loaders loading/unloading material; and
- ❒ Wheel generated dust.

2.2.2 Operational Dust Sources

Once operational, dust sources will be limited to crushing and screening, material loading and handling, conveyors, mine ventilation facilities and general on site activities. Dust will also be generated from:

- ❒ Unsealed haul roads and access roads;
- ❒ Exposed surface that remain unrehabilitated; and
- ❒ Tailings dams that are allowed to dry out.

This AQMP covers general dust mitigation strategies covering the ongoing operation of the mine but will be further updated prior to commissioning the main processing plant to ensure that all sources of dust have been identified and adequately controlled as necessary.

2.3 Greenhouse Gas Emissions

Greenhouse gas emissions will occur for all stages of the project from initial construction through to final rehabilitation on completion of the project. The emissions will arise from:

- Fuel combustion (mainly diesel) associated with the use of plant and equipment;
- Indirect emissions associated with electricity use; and
- Indirect emissions associated with the transport of product.

The Greenhouse Gas emissions for the construction and every year of operation of the Project were estimated in the greenhouse gas assessment contained in the Environmental Assessment and are summarised in Table 6.

Table 6: Greenhouse Gas emission estimates for the life of the Project

Parameter	Project	Total (tonnes CO2-e)
Construction		
Scope 1 Emissions	WRP	3,912
	WUP	587
Scope 2 Emissions	WRP	4,748
	WUP	237
Operation		
Scope 1 Emissions	WRP	36,212
	WUP	42,982
Scope 2 Emissions	WRP	78,777
	WUP	59,325

This AQMP commits Heron to implement all reasonable and feasible measures to reduce Greenhouse Gas emissions from the operation.

3. Air Quality Management

Pacific Environment Pty Limited was engaged to prepare the AQMP for the Woodlawn Mine development which is contained in full as Appendix A. Key compliance issues relating to Air Quality and Greenhouse gas emissions are:

- Implement all reasonable and feasible measures to minimise dust, fume and greenhouse gas emissions from the project.
- Meet the dust assessment criteria contained in Tables 3, 4 and 5 this plan.
- Minimise dust and fume emissions from blasting.
- Ensure that there is a suitable meteorological station operating in the vicinity of the site for the life of the project.
- Establish a dust monitoring program and verification process to determine compliance status with the stated criteria.
- Provide a mechanism for correcting any non-compliance with the assessment criteria.

3.1 Dust and Air Quality Management Initiatives

Previous dust and air quality assessments suggest that the majority of wind blown dust falls out within 500 m of the source with a significant portion of the dust falling out within a 250 m radius. The closest residence is located approximately 3 km away, therefore dust related impacts on the local community are unlikely, even during construction.

Dust modelling undertaken as part of the Environmental Assessment and confirmed again with the 2015 Project Modification, demonstrated that some minor air quality (dust) impacts could be experienced at the nearby Veolia occupied properties during construction. These would be short term and can be adequately controlled. Dispersion model predictions suggest that the Project is unlikely to cause exceedances of regulatory air quality criteria at the nearest sensitive receptors during operations.

The following management initiatives will be implemented during the construction and operation of the mine:

- Use of a water cart to wet exposed surfaces during windy conditions or heavy traffic resulting in visible dust lift off.
- Limiting the site disturbance during the construction phase to only that required at any one time.
- Once final batters are constructed associated the processing plant area, temporary revegetation works will be undertaken to stabilise the exposed surface or batter.
- Constructing the new haul road with an all-weather surface using hardrock aggregate generated on site.
- Watering of the haul road as required to reduce dust generation during dry windy days.

- Clearly defining other access roads around the site and limiting the number of trafficable routes over unsealed surfaces.
- Imposing speed limits on unsealed surfaces for light vehicles.
- Rehabilitation of exposed areas as soon as practicable.

The progressive rehabilitation of the site will facilitate the reduction of dust emissions. This will be important during the rehabilitation of the tailings dams, where removal of the water is required for the rehabilitation process, thereby leaving exposed surfaces suitable for wind generation of dust. This will be ameliorated as far as possible through a timely rehabilitation strategy.

Table 7 provides a summary of these measures and their relevant performance indicators and timing. Odour and fume mitigation is also included in Table 8.

Table 7: Dust Management Measures at the Woodlawn Mine Project

Measure	Monitoring Method	Timing	Performance Indicator	Responsibility for Implementation
Haul road watering	Visual inspection	Ongoing as required	No visible dust above vehicle wheel arches	Environmental Manager
Clearly defining haul roads	N/A	Ongoing as required	No haulage vehicles using unmarked roads	Environmental Manager
Limiting speeds onsite	N/A	Ongoing	30 km/h onsite speed limit	Environmental Manager
Minimise disturbed land	Actual surface disturbance in accordance with mine operation plan	As required	Compliance with mine plan and rehabilitation plan	Mine Manager
Minimise visible off-site air pollution	Visual inspection	Ongoing	No visible dust leaving the site	Environmental Manager

Table 8: Fume Management Measures at the Woodlawn Mine Project

Measure	Monitoring Method	Timing	Performance Indicator	Responsibility for Implementation
Maintain trucks and plant on-site	Manufacturer's specifications	Ongoing	Well maintained equipment and potential reductions in fuel costs and less downtime	Mine Manager
Stand down vehicles with smoky exhausts (more than 10 seconds)	Visual inspection	As required	No smoky exhausts	Mine Manager
Optimise fleet to reduce VKT* where possible	N/A	Ongoing	Reduced VKT and fuel consumption	Mine Manager

* Vehicle Kilometres per Tonne. This is a standard measure which provides effective emissions reductions

There are not expected to be any odour emissions from the proposed operation. Odour mitigation, as it pertains to Schedule 4 Condition 13, is therefore not addressed further in this report.

Mitigation of dust and fumes generated during blasting will be achieved by limiting the number of blasts to the minimum required and to ensure the blast design minimises the potential for release of drill stemming material.

A negotiated agreement has been prepared between Heron and Veolia for managing construction and operational impacts on the Pylara, Woodlawn and Cowley Hills properties in accordance with previous commitments in the EA. This agreement will cover noise, blasting and dust emissions from the operation. The basis of the agreement will be that

Heron seeks to meet the standard assessment criteria contained in the Project Approval for a non company owned receptor but recognises that this may not always be possible. By achieving the criteria at the Pylara properties at a distance of 3.2 km will ensure that the relevant criteria is met at the nearest non-company owned property at a distance of 4.4 km away.

3.2 Greenhouse Gas Mitigation and Management

The main sources of greenhouse gases generated by Woodlawn Mine Project are listed below. Greenhouse gas management will focus on emissions management and reductions associated with:

- Fuel combustion associated with the use of plant and equipment,
- Indirect emissions associated with electricity use, and
- Indirect emissions associated with the transport of product.

In accordance with Schedule 4 Condition 14, all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site will be implemented. A summary of the measures used to manage and minimise greenhouse gas emissions at the Woodlawn Mine Project are listed in Table 9 below.

Appendix A provides details of monitoring that will take place to measure greenhouse gas emissions.

Table 9: Greenhouse Gas Management Practices at the Woodlawn Mine Project

Action	Timing	Performance Indicator	Responsibility for Implementation
Review opportunities to increase energy efficiency such as minimising haul distances, reducing trips by coordinating delivery and removal of materials etc.	Ongoing	Energy is reduced	Mine Manager
Consideration of the use of alternative fuels where economically and practically feasible	Ongoing	Identify potential energy efficiency and improvement	Chief Operations Officer
Regular maintenance of diesel powered equipment to ensure operation at peak efficiency	Ongoing as required	Energy efficiency is maximised	Mine Manager
Consideration of energy efficiency for all electrical equipment, appliances, lighting and hot water system	Ongoing	Energy efficiency is maximised	Mine Manager

Heron will potentially utilise available renewable energy generated by Infigen and Veolia on site which will reduce greenhouse gas emissions from electricity usage.

3.3 Integration with Veolia Operations

Veolia operate the Bioreactor, gas generation plant and Mechanical Biological Treatment (MBT) Plant on site. The Bioreactor consists of trucks entering the site and travelling to the mine void where they discharge containerised waste which is then pushed out with a dozer. The gas generation plant consists of gas converted diesel generators which are run of gas collected from the Bioreactor. The MBT Plant consists of waste screening and

mechanical separation processing followed by composting organic residuals. All these activities generate noise and have approval conditions covering noise emissions, controls and monitoring requirements.

As with other monitoring requirements covering surface water, groundwater, dust and atmospheric data, Heron has entered into an agreement with Veolia to share the costs of the combined monitoring program and the resultant data. Some components that are specific to each operation will be borne by the respective operator however the results of all monitoring effort will be available to each party. Noise is a specific monitoring requirement which has a common governing standard, that is, NSW Industrial Noise Policy. The INP allows for the assessment of cumulative noise as well as the determination of individual contributions to a receiver location.

The initial noise monitoring for construction, outlined in Section 5.1 will not need to separately determine the contribution of other noise sources as it is considered that the construction program will be dominant compared with other site activities. However, once operational should there be any exceedence in the noise criteria at Pylara, an assessment will be made of the respective contributions of each site activity.

Management of noise falls under the general provisions of the Veolia-Heron Cooperation Agreement whereby each party will proactively work together to resolve specific issues of noise, dust, odour, water and general site activities that may arise. Each operator recognises the importance of maintaining positive community relationships which are critical to the success of the respective ventures.
Veolia and Heron however do not share the same primary residential receiver locations. The key receptor for Heron's operation is the Pylara Homestead which is owned by Veolia. The monitoring program for noise includes the Pylara Homestead but in the spirit of the Cooperation Agreement, Heron will endeavour to meet the required noise criteria at this location. In doing so will ensure that the relevant criteria is met at the nearest non-company owned property approximately 4.4 km away.

3.4 Future Noise Management Provisions

As required by the Environmental Management Strategy, this NBMP will be reviewed and updated on an annual basis but in particular will be updated prior to the commissioning of the processing plant and off site transport occurs. At this stage, this NBMP will be updated to include transport arrangements and ongoing noise controls relevant to the operational phase of the project. Specific management issues to be included in the operational NBMP will include, but not limited to the following issues:

- Protection of people and livestock in the surrounding area.
- Road noise implications for the St Andrews Anglican Church.
- The need or otherwise to modify the noise monitoring program undertaken during the construction phase.
- A protocol for determining noise contributions from ongoing operations on site, including the Bioreactor on the Pylara Homestead.
- Compliance procedures to verify that the processing plant constructed under this NBMP can meet the noise assessment criteria listed in the Project Approval.

4. Communication and Reporting

Effective communication with government agencies, the workforce and the community are important features of the overall Environmental Management Strategy for the Woodlawn Mine and therefore a key component of each Environmental Management Plan.

4.1 Community and Government Liaison

Heron is aware of its community obligations and the need to keep lines of communication open. Ongoing government authority and community consultation has been maintained as part of the re-opening of the mine. Heron is committed to continue this consultation work with key government and community stakeholders. The consultation process has, and will continue to include the following stakeholders:

- Woodlawn Bioreactor (Veolia);
- Woodlawn Windfarm (Infigen);
- Woodlawn Community Consultation Committee (CCC);
- NSW Trade and Investment, Resources and Energy;
- Department of Planning and Environment;
- Office of Environment and Heritage;
- Environment Protection Authority;
- Goulburn Mulwaree Shire Council;
- Water NSW (Sydney Catchment Authority);
- Department of Primary Industries - Water (NSW Office of Water); and
- Various community groups and open forums.

The Project Manager and Chief Operating Officer will be responsible for direct contact with government agencies and the community via the CCC.

A presentation was provided by Heron at the Woodlawn CCC meeting on 9th September 2015 which included discussion of the construction program and activities as well as details of the relocation of the mine portal to the western side of the Bioreactor void. The project was again discussed in more detail in the CCC meeting of 16th December 2015. It was agreed that the CCC will be kept informed for the progress of the construction program.

The CCC will be provided environmental monitoring data during the construction program as well as ongoing operations of the mine. This will include dust deposition and atmospheric particulate data so that the performance of the operation can be assessed.

4.2 Community Complaints

Heron currently maintains a community complaints register that identifies actions required to resolve community issues. The main phone line advertised in the white pages is the designated community complaints line and is answered at all times during hours of operation. The complaints register will record the following details:

- Complainant name and contact details.
- Nature of the complaint (noise, dust, traffic etc).

- Time and date of the complaint.
- Specifics of the complaint.
- Actions taken to resolve the complaint.
- Confirmation that the complaint has been resolved.

In the event that an issue is unresolved, the register will include details of the outstanding issues and any actions that are required. It is recognised that some issues may not have a simple resolution and have resulted in multiple complaints. These form part of the ongoing environmental improvement program for the operation.

All complaints received will be noted at each CCC meeting and recorded. Any additional complaints or issues raised at the CCC will also be documented and actioned in accordance with the current CCC format.

4.3 Public Access to Information

Monitoring data required by the EPL will be reported on the company's web page in accordance with EPA requirements for public disclosure. The data will also be presented to the CCC and interpretation of the data provided if required.

Should an exceedence of any relevant air quality criteria, Heron will notify the affected landowners and/or tenants within 2 weeks as well as provide a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time). Heron will also report the incident to the Department of Planning and Environment and the Environment Protection Authority as well as provide details of the incident in the Annual Review. The Annual Review document will be published on the Heron's web page.

If an owner of privately-owned land considers the project to be exceeding the relevant dust criteria, Heron will facilitate an Independent Review of the data and compliance status. As required in Schedule 5 of the Project Approval, the land owner or tenant may ask the Director-General in writing for an independent review of the impacts of the project on his/her land. Heron will comply with the outcomes of any Independent Review.

5. Verification and Corrective Action

This AQMP forms a component of the overall Environmental Management System for the Woodlawn Mine Project. An essential component of the EMS is verification and implementation of corrective actions as required to achieve the requirements of the Project Approval and Environment Protection Licence.

5.1 Environmental Monitoring

Heron has developed an environmental monitoring program covering both the construction and operational phases. The full monitoring program is shown on Plan 4. Monitoring specifically for dust emissions will include:

- Operation of the existing 4 dust gauges which form part of the current Veolia Environment Protection Licence. These longterm data points include two representative points to the east, west and south west of the operation and the nearest residential receptor at the Pylara homestead.
- Installation of a high volume air sampler at the Pylara homestead.
- Joint operation of the existing weather station which will measures hourly wind speed and direction, Pascal Stability Class, rainfall, temperature at 2m and 10m, barometric pressure, relative humidity and solar radiation. The current weather station complies with the requirements in the Approved Methods for Sampling Air Pollutants in NSW.

Details of the proposed dust monitoring program and meteorological data is provided in Appendix B and summarised below

Dust deposition monitoring is conducted at 4 sites as shown on Plan 4. These sites are designated as:

- DG 28 located at the Pylara Homestead
- DG22 located adjacent to the processing site
- DG24 located adjacent to the mine entry and paste plant
- DG33 located adjacent to the Waste Rock Dam.

A High Volume Air Sampler (HVAS) has also been installed at the Pylara Homestead. This unit measures atmospheric dust levels. As shown on Plan 4, the dust monitoring network covers all key aspects of the mine operation. These sites are in operation and the results reported in the Annual Review.

Sampling and analysis of dust deposition is carried out in accordance with Australian Standard AS2724.1 Ambient Air - Particulate Matter. Monitoring is conducted monthly for the deposition gauges and results are recorded as total solids analysed according to Australian Standard AS3580.10.1 – Methods for sampling and analysis of ambient air. The operation and data collection from the HVAS is in accordance with the EPA guideline Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2005). The HVAS will operated for 24 hours every 6 days and measure Total Suspended Particulates in micrograms per cubic metre. The deposition gauges will collect dust

continuously with the bottles collected monthly and analysed for total, insoluble and ash residue dust in grams per square metre per month.

Dust data collected is reviewed monthly when laboratory results are obtained. Should levels be in excess the criteria specified in Section 2.1 an analysis of the results will be performed and will include a review of weather station data to determine wind speed and direction during the collection period, activities being performed which may have contributed to dust generation and other external activities such as high regional dust levels as a result of bushfire or localised effects from neighbouring farming activities.. If this initial assessment indicates that the source of the dust could be sourced from on site activities then the results will be reported to the EPA and DPE.

5.2 Action Trigger Levels

Air quality action trigger levels relevant to the Woodlawn Mine are as follows.

- If the measured monthly deposited dust level exceeds 4.0 g/m^2/month (or contributes more than 2 g/m^2/month to background) and wind data confirms the mine is likely to have contributed to the elevated level.
- If measured atmospheric PM_{10} concentrations levels at the Pylara homestead exceed a 24 hour average in excess of 50 $\mu g/m^3$.
- If measured atmospheric PM_{10} concentrations levels at the Pylara homestead exceed an annual average of greater than 30 $\mu g/m^3$.

In any of the above situations, Heron will undertake an investigation of the dust impacts of the mine including:

- Confirmation of the laboratory results to ensure correct analysis methodology and chain of custody.
- Confirmation of weather conditions during the month or season of the exceedence.
- Investigation of any other potential sources of dust in the region which could have contributed to the elevated readings.
- Implement corrective actions to reduce dust deposition and return the operation to compliance. This will include incorporating any matters raised by the EPA and in consultation with affected landowners or other land occupiers (Veolia and Infigen).

Details of the event and corrective actions are to be including in the Annual Review.

5.3 Reporting Procedures

All environmental monitoring requirements specified in EPA licences and approvals are undertaken and the data kept on site. Copies are provided to the Mine Manager, who in consultation with the site Environmental Manager, reviews the data on a monthly basis. A summary of the data is provided to regulatory authorities as required by statutory approvals. Other data collected as part of projects or auditing procedures are reported internally in accordance with the EMS verification procedures.

The AEMR will be provided to the following agencies:

- NSW Trade and Investment, Resources and Energy;
- Department of Planning and Environment;
- Water NSW;
- Goulburn Mulwaree and Palerang Councils;
- Department of Primary Industry (Water);
- Office of Environment and Heritage;
- NSW Environment Protection Authority; and
- NSW Roads and Maritime Services.

The AEMR will also be published on Heron's web page to be freely available to the community and any other interested party.

5.4 Environmental Training

The EMS requires that all future employees at Woodlawn receive an appropriate level of environmental awareness training. This training will be tailored to suite the mine and covers the following levels:

- Managers (including Electrical, Mechanical, Surface and Underground Managers and Supervisors)
- Surface workforce
- Underground workforce
- Induction level for visitors.

Competency based training will be provided to key personnel. This training will cover environmental legislation, performance criteria, details of specific pollution control system for the site and emergency planning.

General surface workforce will be trained in specific site procedures and management of pollution control systems while all employees are made aware of the Woodlawn Mine's environmental obligations and statutory requirements.

Specifically in relation to dust management and mitigation, the training will include:

- the use of dust control equipment if relevant;
- obligations of all employees and contractors on site to minimise visible dust;
- identification of dusty activities and the need to implement dust controls as necessary;
- recognising the need to maintain water truck access to potential dust sources; and
- lines of communication to report activities that may be causing excessive dust.

5.5 Management Review

The overall EMS has provisions for management review to identify any weaknesses or out of date procedures. The aim is to maintain the EMS and component Management Plans in line with current industry and Australian standards and changes to environmental legislation.

As a minimum, this AQMP will be reviewed at the end of the construction phase to ensure that management practices and procedures for the operational phase are still in line with industry standards. The review will highlight any specific issues that gave rise to higher than anticipated dust levels and the incorporation of any additional controls necessary to support the ongoing mining operation.

5.6 Continuous Improvements

A key component of the EMS is the commitment to continuous improvement. This will be measured by formal and informal criteria. Formal measures will include internal and external inspection and action plans. These reports will be used to establish trends in non-compliance and environmental performance. The level of non-compliance with both statutory and company standards will then be summarised in the AEMR.

The auditing will also provide an assessment of housekeeping and general environmental awareness of the operation, how the site has adopted new technology, maintenance of pollution control systems, preventative actions, community consultation, responses to incidents and corrective action plans. This information will be used to provide a general trend in environmental performance.

The key measure of continuous improvement in dust control will be the results of dust monitoring and the level of dust complaints. It is recognised however that the construction phase is potentially the highest dust generating phase of the project. To achieve the objective of continuous improvement, a comparison will be made between the construction phase and historic averages prior to construction.

Appendix A - Plans

SML 20 (The Woodlawn Site)

Tarago Operations area (The Project Site)

Veolia operational site (The Veolia Site)

Main road, secondary road

Powerline

Dam

Creek

Local Government Boundary

Drainage catchment boundary

Infigen Woodlawn Wind Farm turbines

35° 00' S

35° 10' S

149° 30' E

149° 40' E

Lake Bathurst

LAKE GEORGE

SML20

Tarago

WOODLAWN SITE

0 5 10km

Bungendore

Willeroo

Creek

"Willeroo"

6 120 000 N

735 000 E

740

SML 20

Allianoyonyiga Creek

Allianoyonyiga 1016m

Crisps Creek

Collector - Tarago Road

Woodlawn Farm

Powerline Creek

WOLLONDILLY CATCHMENT

PALERANG LGA

GOULBURN - MULWAREE LGA

EVAPORATION DAM 1 (ED1)

VEOLIA BIOREACTOR

MINE VOID

LAKE GEORGE CATCHMENT

TAILINGS DAM NORTH (TDN)

TAILINGS DAM WEST (TDW

TAILINGS DAM SOUTH (TDS)

GREAT DIVIDING RANGE

SML 20

SML 20

Tarago 831m

Tarago

6 115 000 N

MGA Zone 55

"Torokina"

"Pylara"

RFS

COLLECTOR ROAD

BUNGENDORE ROAD

Mulwarree River

Sally 930m

August 2015

Google earth

New South Wales

Woodlawn

Newcastle

SYDNEY

Wollongong

CANBERRA

200 km

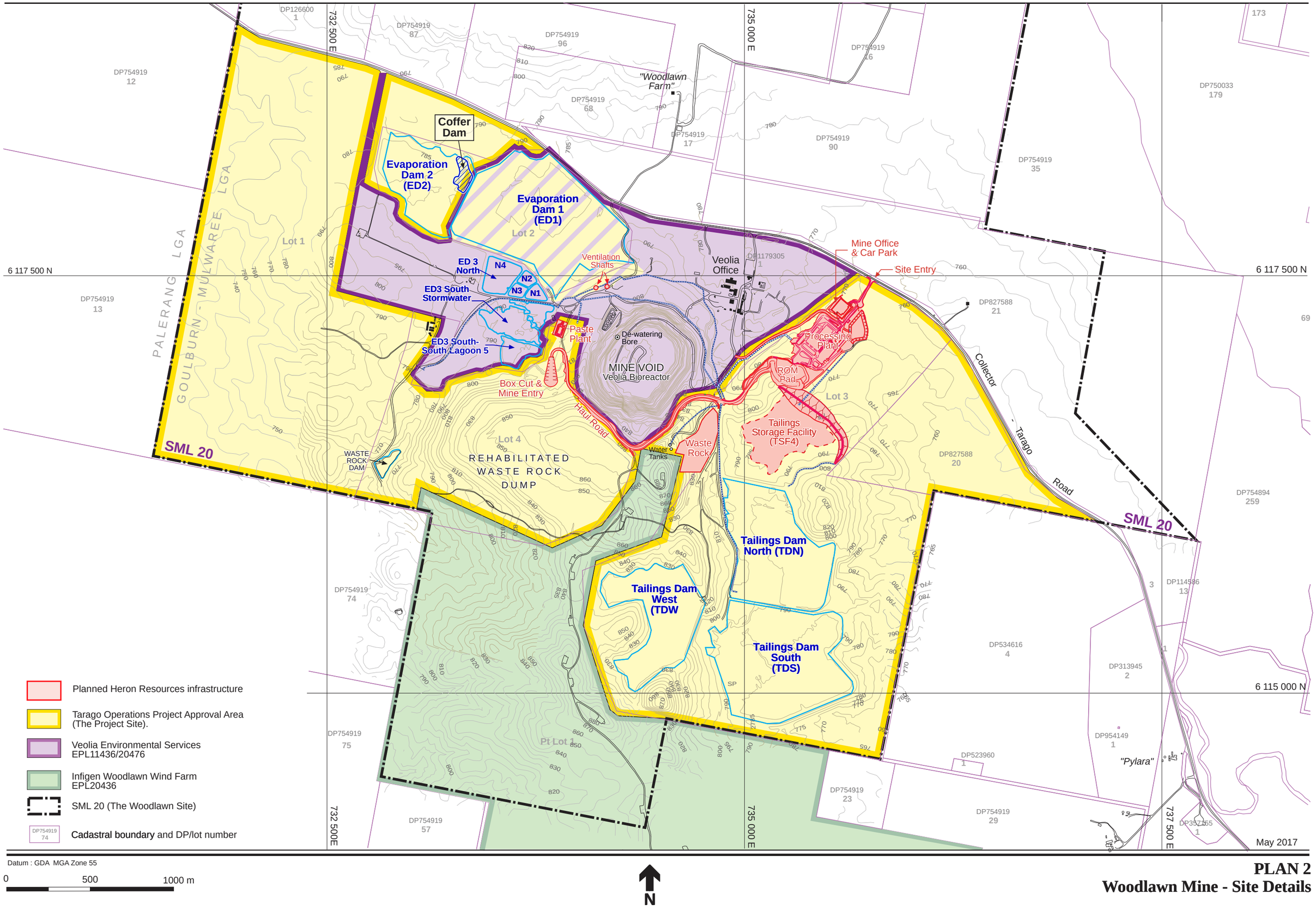
Topographic map source : Lake Bathurst 8827-4-N

0 500 1000 1500 2000 metres

N

Plan 1

Woodlawn Site - Locality Plan



Planned Heron Resources infrastructure

Tarago Operations Project Approval Area (The Project Site).

Veolia Environmental Services EPL11436/20476

Infigen Woodlawn Wind Farm EPL20436

SML 20 (The Woodlawn Site)

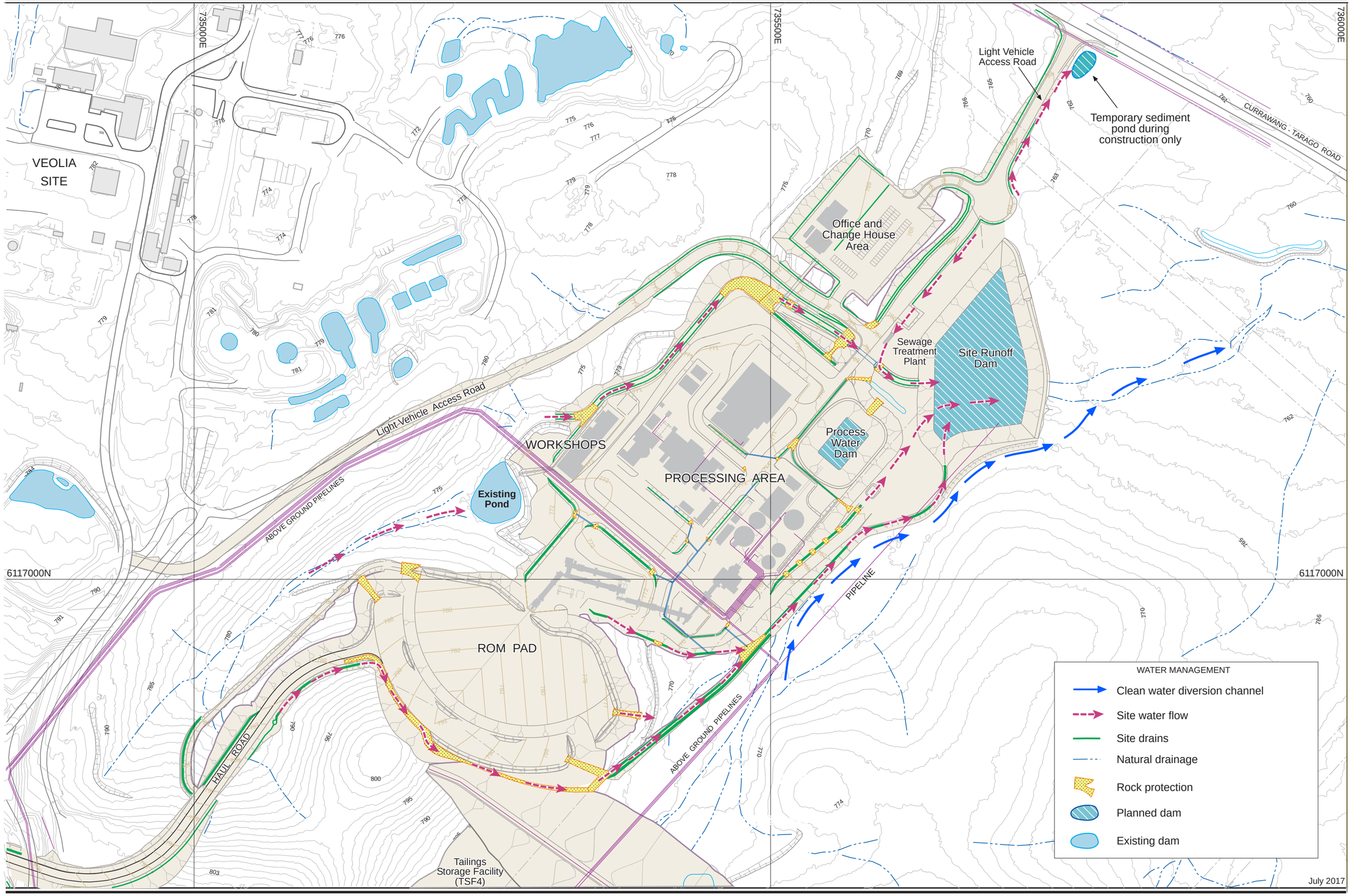
DP754919 74 **Cadastral boundary** and DP/lot number

Datum : GDA MGA Zone 55

0 500 1000 m

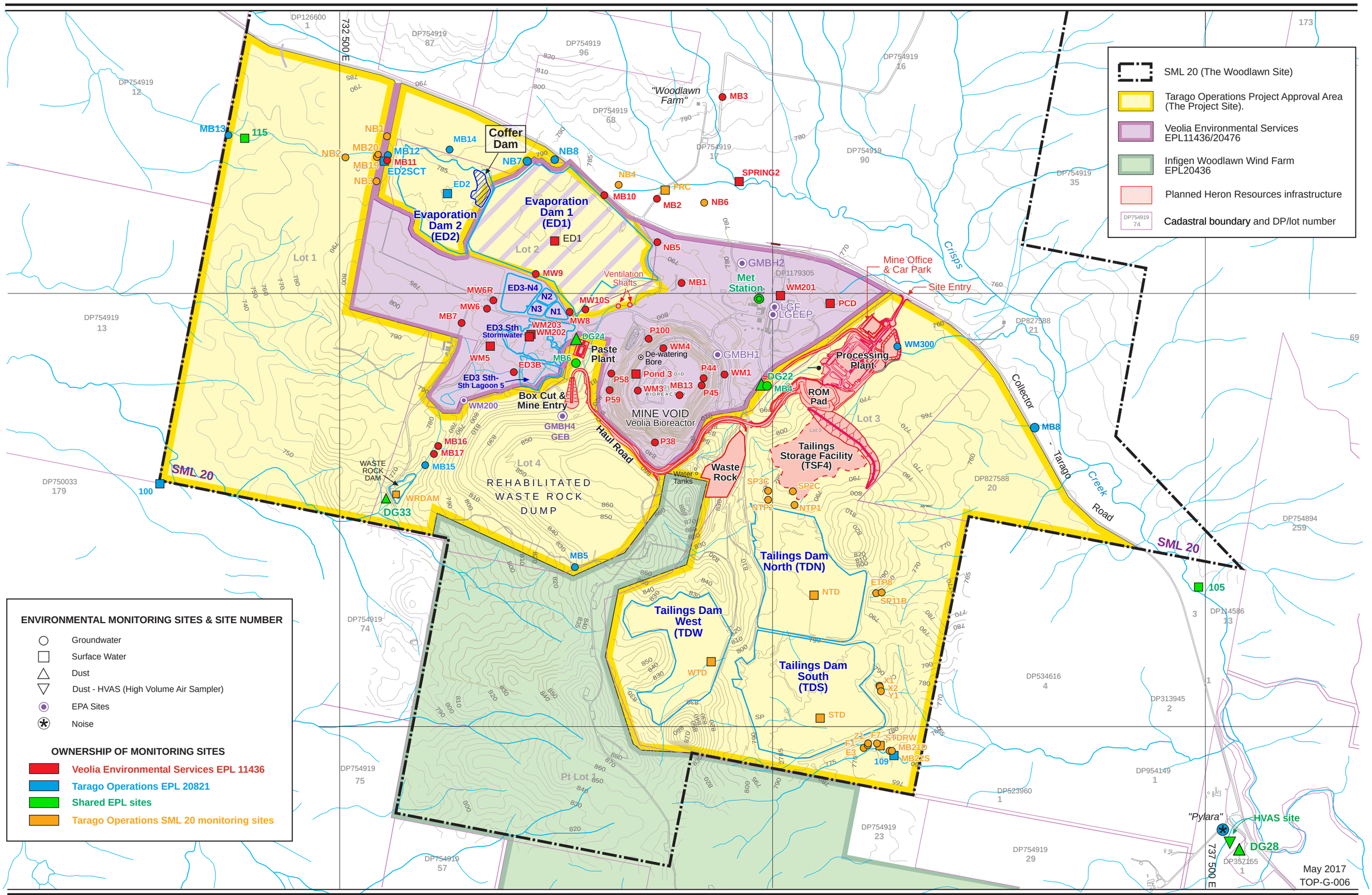
N

PLAN 2
Woodlawn Mine - Site Details



PLAN 3

Woodlawn Processing Plant - General Arrangement


SML 20 (The Woodlawn Site)
Tarago Operations Project Approval Area (The Project Site).
Veolia Environmental Services EPL11436/20476
Infigen Woodlawn Wind Farm EPL20436
Planned Heron Resources infrastructure
Cadastral boundary and DP/lot number
ENVIRONMENTAL MONITORING SITES & SITE NUMBER
Groundwater
Surface Water
Dust
Dust - HVAS (High Volume Air Sampler)
EPA Sites
Noise
OWNERSHIP OF MONITORING SITES
Veolia Environmental Services EPL 11436
Tarago Operations EPL 20821
Shared EPL sites
Tarago Operations SML 20 monitoring sites
Coffer Dam
Evaporation Dam 1 (ED1)
Evaporation Dam 2 (ED2)
ED3 Sth Stormwater
ED3 Sth- Sth Lagoon 5
Paste Plant
Box Cut & Mine Entry
MINE VOID Veolia Bioreactor
Haul Road
Waste Rock
Tailings Storage Facility (TSF4)
Tailings Dam North (TDN)
Tailings Dam West (TDW
Tailings Dam South (TDS)
REHABILITATED WASTE ROCK DUMP
WASTE ROCK DAM
Met Station
Ventilation Shafts
Mine Office & Car Park
Site Entry
Processing Plant
ROM Pad
Water Tanks
"Woodlawn Farm"
"Pylara"
Crisps Creek Road
Tarago - Collector Road
732 500 E
737 500 E
Lot 1
Lot 2
Lot 3
Lot 4
Pt Lot 1
Datum : GDA MGA Zone 55
0 500 1000 m
N
May 2017
TOP-G-006
PLAN 4
Woodlawn Project
Environmental Monitoring Sites

Appendix B – Air Quality Management Plan

Pacific Environment Limited

Consulting • Technologies • Monitoring • Toxicology

Report

WOODLAWN MINE PROJECT AIR QUALITY MANAGEMENT PLAN

HERON RESOURCES

Job ID. 09298

30 JANUARY 2014

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JOB ID:	09298
DOCUMENT CONTROL NUMBER	AQU-NW-004-09298
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CONTENTS

1 INTRODUCTION

1.1 Background

The Woodlawn Mine Project (WMP) is located approximately 50 km south of Goulburn in the NSW Southern Highlands. The location of the mine and sensitive receptors nearby the site are shown in **Figure 1.1**.

On 4 July 2014, the Department of Planning and Environment, granted Project Approval to TriAusMin Limited for the Woodlawn Mine Project (the Project). The Woodlawn Project will be developed by Tarago Operations Pty Limited, a wholly owned subsidiary of Heron Resources Limited which merged with TriAusMin Limited who was the original proponent for the project. The Project Approval Condition 17 of Schedule 4 requires the preparation of an Air Quality Management Plan (AQMP).

The AQMP provides a working document for day-to-day management of the site which will assist with ensuring the operation complies with approval requirements. The plan covers all aspects of air quality management on site including: monitoring, complaints handling, performance indicators, training, roles and responsibilities and the recommended revision procedure.

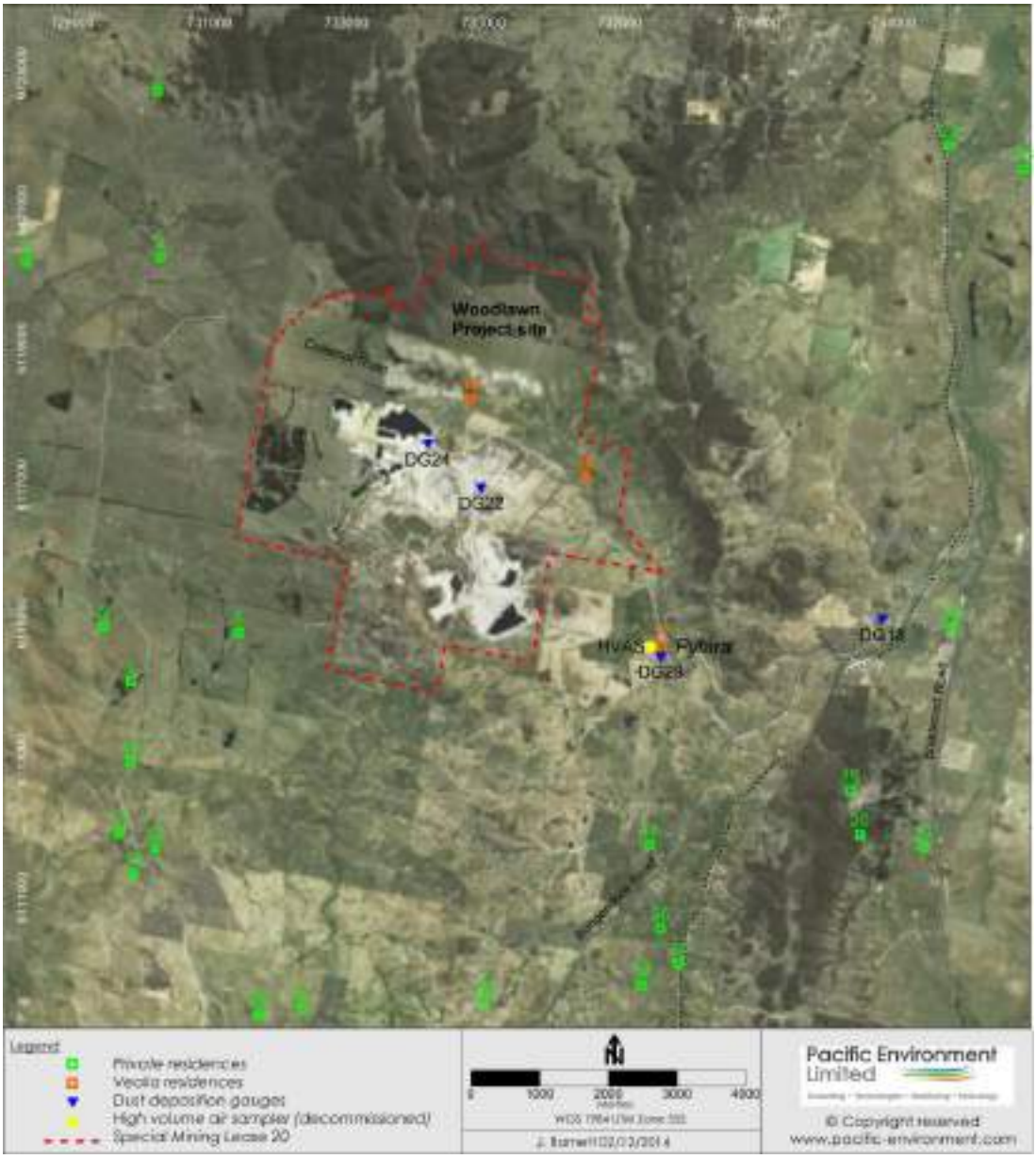


Figure 1.1: Project Site, Sensitive Receptors and Monitoring Network

1.2 Objectives of the Management Plan

This Air Quality Management Plan (AQMP) describes strategies for minimising and managing air quality (AQ) emissions for the Project. The AQMP forms part of the Environmental Management Strategy for the Project and has been developed in accordance with the consent operating conditions, as listed in **Table 1.1**.

Table 1.1: Woodlawn Mine Project Approval Conditions (Schedule 4, Condition 16 – Operating Conditions)

Schedule 4, Condition 16 Operating Conditions	Relevant Section of AQMP
The Proponent shall;	
(a) implement best management practice on site, including all reasonable and feasible measures to minimise off-site odour, fume and dust emissions generated by the project; and	**Section 5**
(b) minimise any visible air pollution generate by the project;	**Section 7**
to the satisfaction of the Director-General.	

The requirements for the preparation of the AQMP are outlined in **Table 1.2**.

Table 1.2: Woodlawn Mine Project Approval Conditions (Schedule 4, Condition 17 – Air Quality Management Plan)

Development Consent Requirement – Air Quality and Greenhouse Gas Management Plan	Relevant Section of AQMP
The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must:	
(a) be prepared in consultation with EPA, and be submitted to the Director-General for approval prior to commencing construction on the site;	**Whole Report**
(b) describe the measures that would be implemented to ensure compliance with Conditions 13 to 16;	**Sections 7** and **Section 8**
(c) include an air quality monitoring program that: • Uses a combination of high volume samplers and dust deposition gauges to evaluate the performance of the project ; and • Includes a protocol for determining exceedances of the relevant conditions of this approval; and	**Section 8**
(d) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site	**Section 6**

Additional requirements for the AQMP are outlined in Schedule 6 Condition 3 and are listed in **Table 1.3**.

Table 1.3: Woodlawn Mine Project Approval Conditions (Schedule 6, Condition 3 – Management Plan Requirements)

Development Conditions Requirement – Management Plan Requirements	Relevant Section of AQMP
The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
(a) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Section 2**
(b) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;	**Section 5**
(c) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see b above);	**Section 7** and **Section 8**
(d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Section 8**
(e) a protocol for managing and reporting any: • incidents and complaints; • non-compliance with statutory requirements a exceedances of the impact assessment criteria and/or performance criteria; and	**Section 9**
(f) a protocol of periodic review of the plan.	**Section 10**

2 AIR QUALITY CRITERIA AND APPLICABLE LEGISLATION

The management plan complies with the following legislation and standards:

- The Protection of the Environment Operations (Clean Air) Regulations 2010
- The Approved Methods for the Sampling and Analysis of Air Pollutants in NSW guideline (EPA, 2005)

2.1 Air Quality Assessment Criteria

In accordance with Schedule 4, Condition 15 of the Project Approval, all reasonable and feasible avoidance and mitigation measures are employed to ensure that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 6, 7 and 8 of the Approval (reproduced in this report as **Table 2.1**, **Table 2.2** and **Table 2.3** respectively), at any residence on privately-owned land.

An exceedance of any of these criteria constitutes an air quality incident.

Table 2.1: Long Term criteria for particulate matter

Pollutant	Averaging period	[d] Criterion
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter <10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 2.2: Short Term criteria for particulate matter

Pollutant	Averaging period	[d] Criterion
Particulate matter <10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 2.3: Long Term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables
[a] Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);
[b] Incremental impact (i.e. incremental increase in concentrations due to the project on its own);
[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and
[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

3 PROJECT OVERVIEW

The construction of the Woodlawn Project will be staged. The first stage covers the construction of the box cut, decline development to access the underground workings, ventilation facilities, installation of dewatering facilities, drill drives and exploration drilling. Surface facilities will include temporary office, workshop and hardstand areas. Stage 1 also includes emplacement of waste from the boxcut and decline, and rehabilitation of the initial construction area and portal surrounds.

The second stage of construction will include expansion of the initial hardstand area and facilities as well as the construction of the waste rock emplacement, development of the permanent processing plant, additional tailings dam, truck loading facilities and permanent access road. Subsequent stages will involve development of the permanent processing plant, additional tailings dam, truck loading facilities and permanent access road.

Once operational in Stage 2, the Woodlawn mine will consists of two components:

- Recommencement of the underground mine previously abandoned by Denehurst Pty Limited. The extent and life of the underground component will be governed by the remaining resource and includes additional drilling and resource definition studies.
- The re-treatment of approximately 11 million tonnes (Mt) of tailings material stored within three existing on site tailings dams in a purpose built processing facility. Tailings are to be processed at a rate of approximately 1.5 million tonnes per annum (tpa) over a period of approximately 8 years, overlapping with underground mine operations. The retreatment process will produce nominally 50,000 to 90,000 t of concentrate per annum.

Combined production from the underground and tailings dam retreatment project is anticipated to be up to 150,000 tpa of combined zinc, copper and lead concentrates. As the project will be staged, so too will be need for surface infrastructure. The facilities will be located in a separate area to the original Woodlawn Mine site which is now operated by Veolia.

The Project Plan shown in **Figure 3.1** is indicative only and shows the general location of the new surface facilities area to be operated by Heron Resources. Although some facilities may move, the approved footprint will not change. The exact location of the surface facilities is therefore not material in the establishment of appropriate Air Quality Management systems to be employed during construction or later operations. Updated project plans are contained in the Construction Management Plan.

Figure 3.1: Project Plan

3.1 Sources of Emissions to Air

3.1.1 Dust Emissions

Potential sources of dust emissions from both construction and operational phases of the Project include:

- Ventilation shafts,
- Stripping topsoil by bulldozer,
- Wind erosion from exposed areas, including dam surfaces, stockpiles and emplacement areas,
- Front End Loaders loading/unloading material,
- Wheel generated dust,
- Conveyor transfers, and
- Crushing.

3.1.2 Greenhouse Gas Emissions

The processes listed in **Section 3.1.1** above will also result in the generation of greenhouse gas emissions. The main sources of greenhouse gases generated by the project are identified as follows:

- Fuel combustion (mainly diesel) associated with the use of plant and equipment,
- Indirect emissions associated with electricity use, and
- Indirect emissions associated with the transport of product.

3.2 Air Quality Impact Assessment

In 2012, Pacific Environment (formerly PAEHolmes) completed an Air Quality Assessment (AQA) for the Woodlawn Mine Project (**PAEHolmes, 2012**). The assessment investigated the potential air quality impacts of the construction and operation of the project.

Dispersion modelling was used to predict off-site dust concentration and dust deposition levels, due to the dust generating activities that would occur as a result of the Project. Emissions inventories were developed for the maximum tailings re-treatment and ore extraction rate, chosen to represent worst case impact when activities are closest to sensitive receptors. The dispersion conditions for the area were characterised based on regional and local meteorological data and predictions made for the following pollutants and periods:

- Maximum 1 hour air toxics
- 24-hour $PM_{2.5}$ and PM_{10}
- Annual average $PM_{2.5}$, PM_{10} and TSP concentrations
- Annual average dust deposition

Detailed modelling in the AQA included predictions of air quality impacts both from the Project in isolation, and cumulatively. The assessment determined that the Project in isolation was unlikely to result in exceedances of the EPA's air quality assessment criteria, but that there was potential for some exceedances of the short-term cumulative PM_{10} criteria. Estimates of ground-level concentrations of air toxics were predicted to be below their relevant criteria.

The predictions presented in the AQA incorporated a level of conservatism due to worst case assumptions and the nature of dispersion modelling. As a result, it is expected that actual ground level concentrations would be lower than those predicted during normal operation of the Project.

4 EXISTING ENVIRONMENT

4.1 Meteorology

Local meteorological data are available at the Veolia weather station. Data between October 2009 and September 2010 were analysed and used for dispersion modelling in the air quality assessment (**PAEHolmes, 2012**). Annual and seasonal windroses are presented in **Figure 4.1**.

Windroses show the frequency of occurrence of winds by direction and strength. The bars correspond to the 16 compass points – N, NNE, NE, etc. The bar at the top of each windrose diagram represents winds blowing from the north (i.e. northerly winds), and so on. The length of the bar represents the frequency of occurrence of winds from that direction, and the colour of the bar sections correspond to wind speed categories, the lighter colour representing the lightest winds.

On an annual basis, winds are predominantly from the west-southwest and east-northeast quadrants. Spring and autumn reflect similar patterns, while these winds are rotated slightly clockwise in summer with more winds from the west. There are very few winds from the eastern sector during winter. On an annual basis the percentage of calms is 8.9%. Calms predominantly occur in autumn and winter which is as expected.

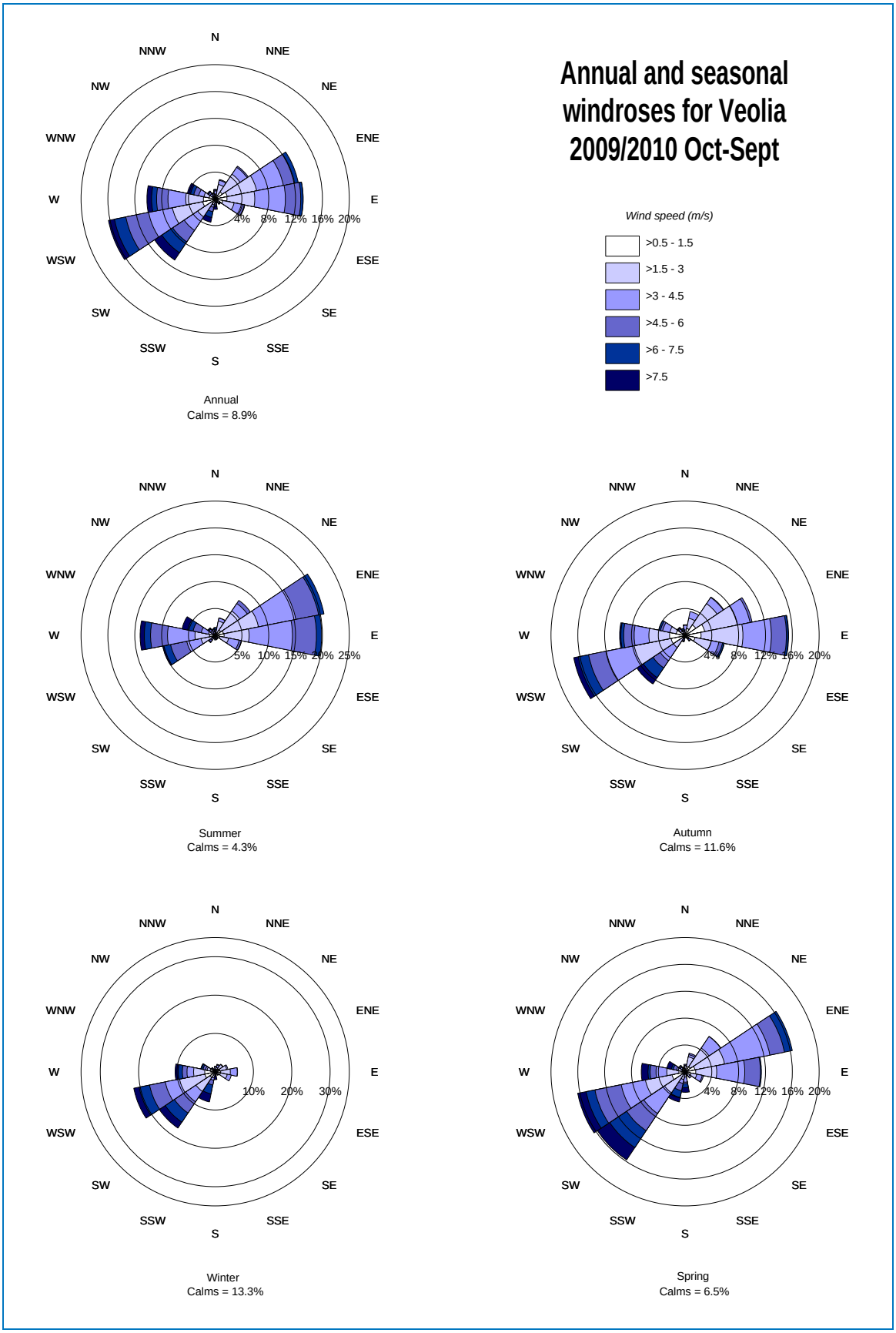


Figure 4.1: Annual and Seasonal Windroses for Woodlawn (October 2009-September 2010)

4.2 Ambient Air Quality Data

Dust deposition and dust concentration (PM_{10}) have been monitored in the area by Veolia for varying periods between August 2004 and July 2014 for the Woodlawn Bioreactor (**Veolia, 2010**). Monitoring was conducted using one high volume air sampler, measuring PM_{10} which was operational until 2007 and four dust deposition gauges. Data obtained from these monitors will represent the contribution of all dust sources in the area at the time of the monitoring, including those associated with the Veolia waste management facility. The monitoring data are summarised in **Figure 4.2** and **Table 4.1**.

The PM_{10} monitoring data show that 24-hour average concentrations were below the EPA assessment criterion of 50 µg/m³. The highest PM_{10} concentration recorded was 39 µg/m³, measured on 1 December 2004.

Annual averages were very low at 8, 4 and 2 µg/m³ for 2004, 2005 and 2006 respectively. These averages are well below the EPA's annual average criterion of 30 µg/m³. The average dust deposition level recorded across all dust gauges and all years was 1.9 g/m²/month. Both of these levels are well below their respective air quality criterion.

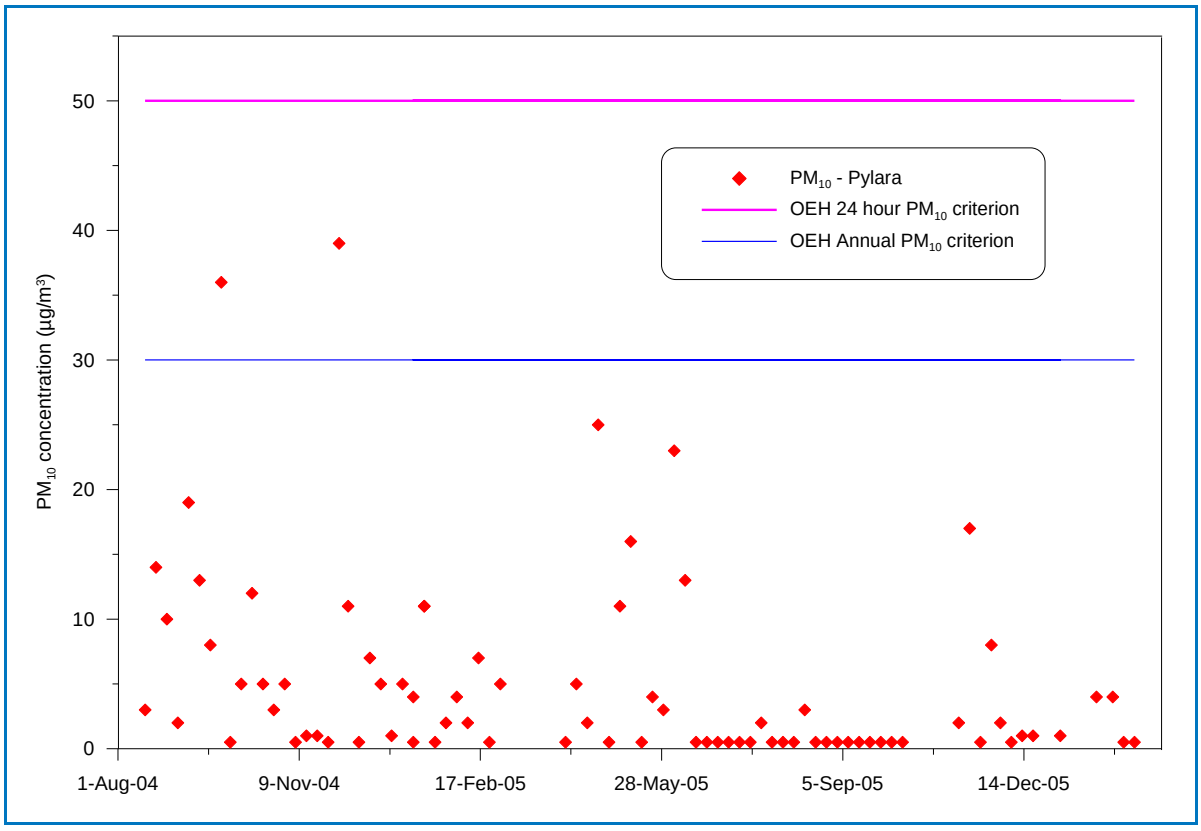


Figure 4.2: Measured 24-hour average PM_{10} concentrations south of the Woodlawn Mine Project site

Table 4.1: Dust deposition measured in the across the Woodlawn Mine site

Year	Measured annual average dust deposition (g/m²/month)			
	OEH criterion = 4 g/m²/month			
	DG-22	DG-24	DG-28	DG-18
2006	1.8	2.3	1.1	-
2007	2.0	1.2	1.3	-
2008	3.2	2.4	2.2	-
2009	3.2	3.1	3.1	-
2010	2.1	2.5	0.8	2.9
2011	1.6	1.7	1.4	0.7
2012	3.1	1.8	0.9	0.7
2013	1.7	2.0	1.5	1.3

4.3 Greenhouse Gas Emissions

The Greenhouse Gas emissions for the construction and every year of operation of the Project were estimated in the greenhouse gas assessment prepared by Parsons Brinckerhoff in 2012 (**PB, 2012**) and are summarised in **Table 4.2**.

Table 4.2: Greenhouse Gas emission estimates for the life of the Project

Parameter	Project	Total (tonnes CO_2-e)
Construction		
Scope 1 Emissions	WRP	3,912
	WUP	587
Scope 2 Emissions	WRP	4,748
	WUP	237
Operation		
Scope 1 Emissions	WRP	36,212
	WUP	42,982
Scope 2 Emissions	WRP	78,777
	WUP	59,325

5 AIR QUALITY MITIGATION AND MANAGEMENT

Mitigation and management measures were identified in the AQA for the Project, and these include:

- Watering of unsealed haul roads.
- Clearly defining haul roads and limiting the number of trafficable routes over unsealed surfaces.
- Imposing speed limits on unsealed surfaces for light vehicles.
- Rehabilitation of exposed areas as soon as practicable.

Table 5.1 provides a summary of these measures and their relevant performance indicators and timing. Odour and fume mitigation is also included in **Table 5.1**.

Table 5.1: Dust Management Measures at the Woodlawn Mine Project

Measure	Monitoring Method	Timing	Performance Indicator	Responsibility for Implementation
Haul road watering	Visual inspection	Ongoing as required	No visible dust above vehicle wheel arches	Environmental Manager Robert Byrnes*
Clearly defining haul roads	N/A	Ongoing as required	No haulage vehicles using unmarked roads	Environmental Manager Robert Byrnes*
Limiting speeds onsite	N/A	Ongoing	30 km/h onsite speed limit	Environmental Manager Robert Byrnes*
Minimise disturbed land	Actual surface disturbance in accordance with mine operation plan	As required	Compliance with mine plan and rehabilitation plan	Manager Mine Engineering Robert Byrnes*
Minimise visible off-site air pollution	Visual inspection	Ongoing	No visible dust leaving the site	Environmental Manager Robert Byrnes*

* Position to be filled with permanent employee

Table 5.2: Fume Management Measures at the Woodlawn Mine Project

Measure	Monitoring Method	Timing	Performance Indicator	Responsibility for Implementation
Maintain trucks and plant on-site	Manufacturer's specifications	Ongoing	Well maintained equipment and potential reductions in fuel costs and less downtime	Manager Mine Engineering Heath Sandercock*
Stand down vehicles with smoky exhausts (more than 10 seconds)	Visual inspection	As required	No smoky exhausts	Manager Mine Engineering Heath Sandercock*
Optimise fleet to reduce VKT where possible	N/A	Ongoing	Reduced VKT and fuel consumption	Manager Mine Engineering Heath Sandercock*

* Position to be filled with permanent employee

There are not expected to be any odour emissions from the proposed operation. Odour mitigation, as it pertains to Schedule 4 Condition 13, is therefore not addressed further in this report.

6 GREENHOUSE GAS MITIGATION AND MANAGEMENT

The main sources of greenhouse gases generated by Woodlawn Mine Project are listed below. Greenhouse gas management will focus on emissions management and reductions associated with:

- Fuel combustion associated with the use of plant and equipment,
- Indirect emissions associated with electricity use, and
- Indirect emissions associated with the transport of product.

In accordance with Schedule 4 Condition 14, all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site will be implemented. A summary of the measures used to manage and minimise greenhouse gas emissions at the Woodlawn Mine Project are listed in **Table 6.1** below.

Section 7.4 presents details of monitoring that will take place to measure greenhouse gas emissions.

Table 6.1: Greenhouse Gas Management Practices at the Woodlawn Mine Project

Action	Timing	Performance Indicator	Responsibility for Implementation
Review opportunities to increase energy efficiency such as minimising haul distances, reducing trips by coordinating delivery and removal of materials etc.	Ongoing	Energy is reduced	Manager Mine Engineering Heath Sandercock*
Consideration of the use of alternative fuels where economically and practically feasible	Ongoing	Identify potential energy efficiency and improvement	Manager Mine Engineering Heath Sandercock*
Regular maintenance of diesel powered equipment to ensure operation at peak efficiency	Ongoing as required	Energy efficiency is maximised	Manager Mechanical Engineering Heath Sandercock*
Consideration of energy efficiency for all electrical equipment, appliances, lighting and hot water system	Ongoing	Energy efficiency is maximised	Manager, Electrical Engineering Heath Sandercock*

* Position to be filled with permanent employee

Heron Resources will potentially utilise available wind energy generated by Infigen on site which will reduce greenhouse gas emissions from electricity usage.

7 AIR QUALITY MONITORING PROGRAM

7.1 Meteorological Monitoring

Schedule 4, Condition 18 of the Approval requires that;

"For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline."

Heron Resources has an agreement to use the existing on site weather station owned by Veolia which meets Australian Standard (AS) 2923 – 1987: "*Ambient Air Guide for the measurement of horizontal wind for air quality applications*".

The parameters to be measured are summarised in **Table 7.1**.

Table 7.1: Weather Station Parameters

Parameter	Units	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1-hour	AM-4
Temperature @ 2 m	°C		15 minute	AM-4
Temperature @ 10 m	°C			AM-2 and AM-4
Wind Speed @10 m	m/s			AM-2 and AM-4
Wind Direction @ 10 m	Degrees			AM-2 and AM-4
Sigma Theta	Degrees			AM-2 and AM-4
Solar Radiation	W/m^2			AM-4

7.2 Air Quality Monitoring

Schedule 4, Condition 17(c) of the Project Approval states that the air quality management plan must include an air quality monitoring program that uses a combination of High Volume Air Sampler (HVAS) and dust deposition gauges to evaluate the performance of the project and include protocols to determine any exceedances of the relevant conditions. The locations of these monitors are shown in **Figure 1.1**.

Veolia currently operate 4 dust deposition gauges, referred to as DG18, DG 22, DG 24 and DG 28. DG 22 is located immediately adjacent to the proposed surface facilities area while DG 24 is located on the western side of the existing mine void and to the south of ED 1. These two sites cover both the Veolia operation and the future mine development area. The third site, DG 28 represents the closest occupied residence 'Pylara', owned by Veolia, and overlooks the proposed infrastructure site. The 'Pylara' property also housed a High Volume Air Sampler (HVAS) which will be reinstated as part of this project. The HVAS was decommissioned in 2010 following continual low readings however in accordance with the consent it will be recommissioned to determine if there are any additional influences on air quality as a result of the project. A fourth deposition gauge, DG18, lies further east towards the railway line and has been operating since 2010.

Monitoring data will be reviewed annually as part of the annual reporting requirements discussed further in **Section 10.1**. Depending on the findings of each annual review, and in consultation with the relevant authorities, monitoring requirements may be discontinued or augmented.

The HVAS monitoring will be operated in accordance with *AS/NZS 3580.9.6:2003 Methods for sampling and analysis of ambient air – Determination of suspended particulate Matter – PM_{10} – high volume air sampler with size selective inlet – gravimetric method.*

The dust deposition monitoring will be operated in accordance with *AS/NZS 3580.10.1:2003 "Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method"*.

7.3 Summary of Standards

The Woodlawn Mine Project monitoring network will be operated in accordance with the standards outlined in **Table 7.2**.

Table 7.2: Relevant Standards

General	NSW EPA "Approved methods for the sampling and analysis of air pollutants in NSW". - AM-1 – Guide for the siting of sampling equipment. - AM-2 – Guide for measurement of horizontal wind for air quality applications. - AM-18 – Particulate matter – PM_{10} – HVAS. - AM-19 – Particulates – deposited matter – gravimetric method.
Siting	**AM-1** - Australian Standard (AS) 2922 – 1987, superseded by - Australian Standard (AS/NZS) 3580.1.1:2007 "Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment".
Meteorological Monitoring	**AM-2** AS 2923 – 1987: Ambient Air Guide for the measurement of horizontal wind for air quality applications **AM-4** USEPA (2000) – Meteorological Monitoring Guidance for Regulatory Modelling Applications (EPA 454/R-99-005)
PM_{10}	**AM-18** AS/NZS 3580.9.6:2003 Methods for sampling and analysis of ambient air – Determination of suspended particulate Matter – PM_{10} – high volume air sampler with size selective inlet – gravimetric method.
Dust Deposition	**AM-19** AS/NZS 3580.10.1:2003 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method.

7.4 Greenhouse Gas Monitoring

Greenhouse gas monitoring throughout the year will be undertaken primarily through the monitoring of diesel use, oil and grease use and electricity use for Scope 1 and 2 emissions.

Monitoring will be undertaken in accordance with the requirements of the National Greenhouse and Energy Reporting Act 2007 (NGER Act) and the National Greenhouse and Energy Reporting Regulations 2008 (**NGER, 2008**).

As a result of reporting under the NGER Act, emissions data will be made available publically via the Department of Climate Change and Energy Efficiency website: www.climatechange.gov.au.

Table 7.3 lists the greenhouse gas related monitoring that will be completed at the Woodlawn Mine Project.

Table 7.3: Greenhouse Gas Monitoring

Parameter	Monitoring Point	Frequency of Monitoring	Emissions Calculated	Comments
Diesel Use	Calculated from invoices	Annually	Emission factor to convert kL use to tonnes of CO2-e	Reported from invoices. Opening stock and Deliveries minus Closing Stock equals usage
Oil Use	Calculated from invoices	Annually	Emission factor to convert kL use to tonnes of CO2-e	
Grease Use	Calculated from invoices	Annually	Emission factor to convert kL use to tonnes of CO2-e	
Electricity Use	Calculated from invoices and adjusted according to renewable energy usage	Annually	Emission factor to convert kWh use to tonnes of CO2-e	

7.5 Data Handling Procedures

Data from the HVAS monitoring station will be handled as follows:

- Samples retrieved from monitoring instrumentation on a six day cycle
- Samples sent to a laboratory for analysis
- Data entered into electronic database (or similar) for comparison with relevant air quality criteria
- Data compared with relevant criteria and any exceedances noted and investigated.

8 AIR QUALITY MANAGEMENT SYSTEM

The Air Quality Management System will be implemented by the Environmental and Community Coordinator (or delegate), using monitoring data obtained as described in **Section 7**.

8.1 Protocol for Compliance Evaluation

The following section outlines the protocol for how compliance against the Impact Assessment Criteria will be evaluated and reported. Proving compliance with the conditions as written is not always straightforward. It may be difficult, for example, to distinguish between the dust generated from the project and any other sources in the area.

The following protocol for compliance testing will be conducted to determine if elevated levels recorded at the Compliance site have resulted from, or are likely to have resulted from, dust generated at the site.

8.1.1 Compliance with the 24-hour Average PM_{10} Criterion

Compliance with the 24-hour PM_{10} goal will be assessed at the monitoring site, using the exposed HVAS filter papers. Where 24-hour PM_{10} concentrations are below the levels indicated for the Impact Assessment Criterion, no further action is required and results are reported with no additional analysis.

Where air quality monitoring data are above the levels indicated for the Impact Assessment Criterion, the following additional analysis will be conducted to test non-compliance.

- Investigate the meteorological data for the period to determine dominant wind direction, average wind speeds, percentage calm conditions (< 0.5 m/s) and significant periods of strong winds (> 5.4 m/s).

Where the dominant wind direction is not blowing across the site and towards the monitoring location, the level above the Impact Assessment Criteria is unlikely to have resulted from site activities and does not represent non-compliance.

Where the dominant wind direction is blowing across the site and towards the monitoring location, the following additional analysis is required to determine if dust from the site has contributed to the elevated levels and / or if wind-blown dust from other upwind sources are also contributing.

- Determine if the wind speeds are conducive to wind erosion from exposed surfaces (moderate winds > 5.4 m/s) or if calm conditions were prevalent (< 0.5 m/s). Calm conditions can result in poor dispersion of activity dependent emissions from the site, however, wind erosion from exposed surfaces would not be expected to occur under these conditions.
- Obtain a site activity log for the elevated level day to determine what activities were occurring and characterise the activities based on being wind speed independent, wind speed dependent or wind erosion sources.
- Request additional microscopic analysis of the exposed filter paper to determine the likely dust source (i.e. is the dust similar or different to material handled at the site).

On the basis of the wind conditions, the activities occurring on-site and the potential contribution from upwind sources, determine the likelihood of the Project contributing to elevated levels above the Impact Assessment Criterion.

8.1.2 Compliance with the Annual Average PM_{10} and Dust Deposition Criterion

It is noted that the long term Impact Assessment Criteria are applicable to an averaging period of one year, and until sufficient representative data are collected, compliance with the long term criteria cannot be tested. The analysis presented in **Section 8.1.1** can be applied similarly for annual average

PM_{10} concentrations, by comparing the monitoring station data to annual wind patterns and annual average background / regional pollutant levels.

8.1.3 Non-Compliance and Corrective Action

Where the compliance evaluation indicates non-compliance with the Impact Assessment Criteria, the following actions will be undertaken:

- Identify the activities that were occurring at the time of the non-compliance
- Determine the activities that were most likely contributing to the non-compliance
- Review the process and current controls in place for these activities

Corrective action may be required and involve modification of activities or program to avoid any recurrence or minimise its adverse effects.

8.1.4 Implementation of Air Quality Mitigation and Management Measures

This stage of the protocol involves the implementation of the air quality mitigation and management measures (**Section 5**). The operations manager will be responsible for the timely implementation of the selected measures.

8.1.5 Review of Air Quality Mitigation and Management Measures Employed

The effectiveness of the adopted measures will be assessed against the relevant criteria identified in **Section 2.1**. The management strategy phase of the protocol will be revisited as required.

In addition, the Environmental and Community Coordinator (or delegate) will note any trends in the monitoring data that may emerge in regards to particular operating scenarios or meteorological conditions.

The outcomes of the Air Quality Management System will be reported in the Annual Review.

9 COMPLAINTS RESPONSE PROTOCOL

9.1 Introduction

In accordance with Schedule 6, Consent Condition 3 (e), the AQMP will detail the procedures for managing and reporting complaints in relation to air quality.

The objective of the Complaint Response Protocol is to facilitate prompt and comprehensive responses to community concerns that relate to air quality. The Protocol will be the responsibility of the Environmental and Community Manager (or delegate).

9.2 Assessment

Preliminary investigations will commence as soon as practical of the complaint receipt to determine likely causes of the complaint using information regarding prevailing meteorological conditions, the nature of activities taking place and recent air quality monitoring results.

This preliminary investigation will be used to develop specific mitigation measures which will be presented to the landowner.

9.3 Implementation of Mitigation Measures

Those mitigation measures developed as a result of the complaint investigation will be implemented by the operations manager. Following implementation, monitoring will further assess the effectiveness of the additional dust control measures.

9.4 Management of Complaints Where Criteria are Exceeded

Complaints will be managed as detailed in the overall Environmental Management Strategy for the site. Any complaints will be logged in the complaints register, which will document the following information:

- Date and time the complaint was logged,
- Personal details, if provided by the complainant,
- Nature of the complaint,
- Actions taken or if no action taken then the reason why, and
- Follow up with the complainant.

In the event of a complaint, where dust levels are demonstrated to be below the relevant criteria (see **Section 2**) the resolution process will be one of informed discussion involving the complainant and the Environmental and Community Coordinator (or delegate). The complainant will be made fully aware of the monitoring and reporting procedures used at the site. Every effort will be made to ensure that concerns are addressed in a manner that results in a mutually acceptable outcome.

10 REPORTING AND REVIEW

10.1 Annual Review

In accordance with Schedule 6, Condition 4 of the Approval, Woodlawn Mine Project will, by the end of December each year, or timing as may be agreed by the Director-General, review the environmental performance of the project to the satisfaction of the Director-General. This review will:

- describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the next calendar year;
- include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these records against:
  - relevant statutory requirements, limits of performance measures/criteria;
  - requirements of any plan or program required under this approval;
  - the monitoring results of previous years; and
  - the relevant predictions in the EA
- identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the project;
- identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next calendar year to improve the environmental performance of the project.

10.2 Community Consultative Committee

In accordance with Schedule 6, Condition 6, a Community Consultative Committee (CCC) will be established and operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* and to the satisfaction of the Director-General. The CCC will be established and operating before construction of the Project commences.

10.3 Incident Reporting

An incident is defined here as an exceedance of any of the relevant air quality assessment criteria. In accordance with Schedule 6, Condition 7, Woodlawn Mine Project will notify the Director-General and the NSW EPA of any incident as soon as practicable after becoming aware of it. Within 7 days of the date of the incident, the Proponent shall provide the Director-General with a detailed report on the incident.

10.4 Regular reporting

In accordance with Schedule 6, Condition 8, Woodlawn Mine Project will provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans of the conditions of this approval.

10.5 Independent Environmental Audit

An Independent Environmental Audit will be undertaken within one year of commencing construction, and every three years thereafter (unless directed otherwise by the Director-General). In accordance with Schedule 6, Condition 9 of the approval, the audit will:

- be conducted by a suitable qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;

- include consultation with the relevant agencies;
- assess the environmental performance of the project and assess whether it is complying with the requirements in the approval and any relevant EPL (including any assessment, plan or program required under these approvals);
- review the adequacy of any adopted strategies, plans or programs required under the abovementioned approvals; and
- recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy, plan or program required under these approvals.

In accordance with Schedule 6, Condition 10, within six weeks of completion this audit, or as otherwise agreed by the Director-General, Woodlawn Mine Project will submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

10.6 Access to Information

Prior to the commencement of construction on the site, in accordance with Schedule 6, Condition 11, Woodlawn Mine Project will make copies of the following publically available on its website:

- the EA
- the conditions of this approval
- all relevant statutory approvals for the project in relation to air quality
- approved air quality management strategies, plans or programs required under this approval
- a comprehensive summary of the air quality monitoring results of the project, reported in accordance with the specifications of this approval, or approved plans or programs
- a complaints register, updated monthly
- minutes of the CCC meetings
- the annual reviews of the project
- the independent environmental audit, and Woodlawn Mine Project's response to the recommendations in the audit
- any other matter required by the Director-General.

The above information must be kept up-to-date.

10.7 Review

In accordance with Schedule 6, Condition 5 of the approval, within 3 months of the submission of:

- an annual review (Section 10.1)
- an incident report (Section 10.3)
- an audit report (Section 10.5), or
- any modification to the conditions of the approval, (unless the conditions require otherwise),

Woodlawn Mine Project will review these strategies, plans and programs, and revise if necessary, to the satisfaction of the Director-General.

11 ROLES AND RESPONSIBILITIES

In addition to the specific responsibilities for dust and greenhouse gas management which are outlined in **Section 5** and **Section 6**, general roles and responsibilities for the implementation of the AQMP are presented in **Table 11.1**.

Table 11.1: Roles and Responsibilities

Task	Responsibility	Timing
Monitoring of air quality in accordance with **Section 7**.	Environmental Manager Robert Byrnes*	Ongoing
Assessment of air quality data against relevant criteria outlined in **Section 2**.	Environmental Manager Robert Byrnes*	Ongoing
Exceedances of air quality criteria to be managed in accordance with the Air Quality Management System described in **Section 8**.	Environmental Manager Robert Byrnes*	As required
Air quality complaints to be responded to and recorded in accordance with the Complaints Response Protocol in **Section 9**.	Environmental Manager Robert Byrnes*	As required
Annual Review to include air quality results, complaints, mitigation measures undertaken and a review of the performance of monitoring and measures undertaken in accordance with **Section 10**.	Environmental Manager Robert Byrnes*	Annually
Regular review of the AQMP to be completed in accordance with **Section 10**.	Environmental Manager Robert Byrnes*	As required

* Position to be filled with permanent employee

12 REFERENCES

AS2724.3 - 1984 - Determination of total suspended particulates (TSP) - High volume sampler gravimetric method

AS/NZS 3580.1.1:2007 "Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment".

AS/NZS 3580.9.8:2008 "Methods for sampling and analysis of ambient air - Method 9.8 Determination of suspended particulate matter - PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser".

AS/NZS 3580.9.6:2003 "Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM_{10} high volume sampler with size-selective inlet - Gravimetric method".

AS/NZS 3580.10.1:2003 "Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method".

EPA (2005), "Approved methods for the sampling and analysis of air pollutants in NSW" New South Wales EPA 59-61 Goulburn Street, Sydney, NSW, August 2005.

NGER (2008), National Greenhouse and Energy Reporting (Measurement) Determination

PAEHolmes (2012), "Air Quality Assessment – TriAusMin Woodlawn Project", prepared for Parsons Brinckerhoff on behalf of TriAusMin Limited, February 2012. Job number 5665

PB (2012), "Chapter 16 - Greenhouse Gas Assessment", prepared by Parsons Brinckerhoff on behalf of TriAusMin Limited.

13 GLOSSARY

Term	Definition
Ambient air quality	The state of quality and chemical characteristics of air as it exists in the environment.
Dust deposition	Dust deposition is the process of particles (mostly greater than 10 µm in diameter) settling and accumulating on surfaces.
Criteria	Descriptive factors taken into account by EPAs in establishing standards for various pollutants; used to determine allowable concentration levels.
Emissions	Release of pollutants to air.
Environmental Impact Statement (EIS)	Applicants need to submit an environmental impact statement (EIS) with the development application. The EIS will provide a comprehensive assessment of the impacts of the proposal.
EMS	Environmental Management System
Erosion	The process by which material, such as rock or soil, is worn away or removed by wind or water.
Fugitive Emissions	Substances which escape to air from a source not associated with a specific process but scattered throughout the plant, e.g. leaks from equipment, dust from stockpiles.
g/m^2/month	Grams per metre square per month
kL	Kilolitre
kWh	Kilowatt hour
µg/m^3	Micrograms per cubic metre
NGER	National Greenhouse and Energy Reporting
Odour nuisance	Odour leading to complaints.
Particulate matter (PM)	Dust particles that are introduced or resuspended into the air through certain activities such as soil cultivation, or vehicles operating on open fields or dirt roadways.
Pollution	An alteration in the character or quality of the environment, or any of its components, that renders it less suited for certain uses. The alteration of the physical, chemical, or biological properties of water by the introduction of any substance that renders the water harmful to use.
Rehabilitation	The process of environmental restoration to a former condition or status after some process (business, industry, natural disaster etc.) has damaged it.
Sensitive receptors	Locations that may be sensitive to air quality that exceeds the assessment criteria objectives for air quality.
Standard	Level of pollutants prescribed by law that cannot be exceeded. Legally enforceable.
t $CO_{2\text{-}e}$	Tonnes of carbon dioxide equivalent.
Wind roses	Wind roses show the frequency of occurrence of winds by direction and strength.

Appendix C - Project Approval

Project Approval

Section 75J of the *Environmental Planning & Assessment Act 1979*

As delegate for the Minister for Planning and Infrastructure, I approve the project application referred to in Schedule 1, subject to the Conditions in Schedules 2 to 6.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Chris Wilson
Executive Director
Development Assessment Systems and Approvals

Sydney 2013

SCHEDULE 1

Application Number:	07_0143
Proponent:	TriAusMin Limited
Approval Authority:	Minister for Planning and Infrastructure
Land:	See Appendix 1
Project:	Woodlawn Mine Project

Blue type represents the April 2016 modification
Green type represents the July 2017 modification

TABLE OF CONTENTS

DEFINITIONS

AWT	Alternative Waste Technology
Annual Review	The review required by Condition 4 of Schedule 6
Approval	This project approval
ARI	Annual Recurrence Interval
BCA	Building Code of Australia
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 6 inclusive
Construction	The demolition of buildings or works, carrying out of works and erection of buildings covered by this approval
Council	Goulburn Mulwaree Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Environment
DPI – Water	Division of Water within the Department of Primary Industries
DRG	Division of Resources and Geoscience within the Department of Planning and Environment
DSC	Dam Safety Committee
EA	Environmental Assessment titled '*Environmental Assessment: TriAusMin Woodlawn Project*' dated April 2012 and associated response to submissions titled '*Submissions Report: TriAusMin Woodlawn Project*', dated September 2012, as amended by: • modification application and supporting Environmental Assessment titled 'Woodlawn Mine Environmental Assessment: Proposed Modification to Project Approval 07_0143 for the Relocation of the Underground Mine Entry' dated January 2016 and associated response to submissions titled 'Woodlawn Mine Project Application 07_0143 MOD1 Response to Submissions', dated March 2016; and • modification application and supporting Environmental Assessment titled 'Application to Amend PA 07_0143MOD1 - Woodlawn Mine' dated 9 June 2017
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build or to implement
Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 5 and 6 of this approval where it is defined to mean the whole of a lot, or contiguous lots, owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mining operations	Includes the removal of waste rock and the extraction, processing, handling storage and transportation of ore material from the WRP and WUP
Minister	Minister for Planning, or delegate
Minor	Small in quantity, size and degree given the relative context
Mitigation	Activities associated with reducing the impacts of the project prior to or during those impacts occurring
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OEH	Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
Privately-owned land	Land that is not owned by a public agency or a mining company (or its subsidiary)
Project	The project described in the EA
Proponent	TriAusMin Limited, or any other person or persons who rely on this approval to carry out the development that is subject to this approval
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment
RMP	Rehabilitation Management Plan
RMS	Roads and Maritime Services
Secretary	The Secretary of the Department, or nominee and/or delegate
Site	The land within the project boundary defined in Appendix 1

Veolia	Veolia Environmental Services Pty Ltd which operates the *Woodlawn Waste Facility* (06_0239) and the *Woodlawn Bioreactor and Crisps Creek Intermodal Facility* (10_0012)
WRP	Woodlawn Reprocessing Project
WUP	Woodlawn Underground Project

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

TERMS OF APPROVAL

1. The Proponent shall carry out the project generally in accordance with the:
   (a) EA; and
   (b) conditions of this approval.

2. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

3. The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
   (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this approval; and
   (b) the implementation of any actions or measures contained in these documents.

4. In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the project.

LIMITS ON APPROVAL

Mining Operations

5. The Proponent may carry out mining operations on the site until 31 December 2034.

   Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of both the Secretary and the Department of Resources and Energy. Consequently, this approval will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.

Ore Extraction and Processing

6. The Proponent shall not:
   (a) process more than 1.5 million tonnes of tailings and/or ore on the site in a calendar year; or
   (b) transport more than 150,000 tonnes of concentrate from the site in a calendar year.

Transportation

7. The Proponent shall transport all concentrate from the site via Collector Road (east of the site), the Tarago-Bungendore Road (north of Collector Road), Braidwood Road and the Hume Highway.

Hours of Operation

8. The Proponent shall comply with the operating hours in Table 1.

Table 1: Operating Hours

Activity	***Operating Hours***
Construction and rehabilitation	7am to 7pm, 7 days per week
Mining, maintenance and processing operations	24 hours, 7 days per week
Transportation of ore concentrate from the site	7am to 10pm, 7 days per week

STRUCTURAL ADEQUACY

9. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA and the DSC.

   Notes:
   - *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the project; and*
   - *Under the Dams Safety Act 1978, the Proponent will require a further approval for the project's new tailings storage facility (TSF4).*

DEMOLITION

10. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures,* or its latest version.

PROTECTION OF PUBLIC INFRASTRUCTURE

11. Unless the Proponent and the applicable authority agree otherwise, the Proponent shall:
    (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
    (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

OPERATION OF PLANT AND EQUIPMENT

12. The Proponent shall ensure that all the plant and equipment used at the site, or to transport materials from the site, is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

STAGED SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM

13. With the approval of the Secretary, the Proponent may:
    (a) submit any strategy, plan or program required by this approval on a progressive basis; and
    (b) combine any strategy, plan or program required by this approval with any similar strategy, plan or program required for the project.

    Notes:
    - *While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the operations on site are covered by suitable strategies, plans or programs at all times; and*
    - *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

DEVELOPER CONTRIBUTIONS

14. Prior to the commencement of operations on the site, and during the operational life of the project, unless otherwise agreed by the Secretary, the Proponent shall pay Council:
    (a) a minimum annual road maintenance payment of $0.043 per kilometre per tonne for product transported along Council maintained roads in accordance with Council's *Section 94 Development Contributions Plan 2009 Amendment No. 2* (indexed to inflation); and
    (b) a community enhancement payment of $1.26 million over the life of the project in accordance with Council's *Section 94A Development Contributions Plan 2009 Amendment No. 2*,

    to the satisfaction of Council.

SCHEDULE 3
ENVIRONMENTAL PERFORMANCE CONDITIONS

TAILINGS DAMS

Performance Measures

1. The Proponent shall ensure that the:
   (a) design of all tailings dams on the site is in accordance with the requirements of the Dam Safety Committee under the *Dams Safety Act 1978*;
   (b) lining of the floor and walls of Tailings Storage Facility 4 achieves a permeability of no less than 1×10^{-9} m/s to a depth of at least 900 millimetres of clay (or equivalent) in accordance with the *EPA's Environmental Guidelines for Solid Waste Landfills*;
   (c) material used to repair the facilities achieves a permeability of no less than 1×10^{-9} m/s to a depth of at least 900 millimetres of clay (or equivalent) if the floor and walls of Tailings Dams North, South and West require repairing;
   (d) capping of the tailings dams is generally consistent with the site capping requirements contained in the *EPA's Environmental Guidelines for Solid Waste Landfills*, and achieves a final landform that is safe, long term stable, and suitable for achieving the rehabilitation objectives in Table 2 below;
   (e) tailings and evaporation dams are maintained with a minimum freeboard of 600 mm or a minimum freeboard sufficient to accommodate a 1 in 100-year ARI, 72-hour rainfall event without overtopping at all times, whichever is greater;
   (f) the clean water diversion around Tailings Storage Facility 4 shall be designed, constructed and maintained to prevent the flood waters (up to the probable maximum flood level) from entering the facility;
   (g) source of seepage from Tailings Dam South is indentified and repaired within 3 years of commencing tailings reprocessing operations on the site; and
   (h) existing seepage collection area is lined with a low permeability geotextile membrane within 1 year of completing the repair work on Tailings Dams South,

   to the satisfaction of the Secretary.

   Alternative permeability and thickness standards for the lining and capping of tailings dams may be acceptable following completion of an appropriate risk assessment undertaken in accordance with the *Environmental Guidelines – Management of Tailings Storage Facilities* (VIC DPI, 2004) - or equivalent, with the written agreement of the Dam Safety Committee, EPA and the Secretary.

Tailings Rehabilitation Strategy

2. The Proponent shall prepare and implement a Tailings Rehabilitation Strategy for the project to the satisfaction of the Secretary. The strategy must:
   (a) be prepared in consultation with DRG;
   (b) be submitted to the Secretary for approval prior to commencement of construction on the site;
   (c) confirm there would be sufficient capping material to rehabilitate the tailings and evaporation dams;
   (d) confirm this material would be available in time for the progressive rehabilitation of the tailings and evaporation dams;
   (e) confirm that the physical characteristics of the capping material would be able to achieve the rehabilitation objectives for the tailings dams and the evaporation dams;
   (f) confirm the capping material would not result in any additional adverse environmental consequences;
   (g) confirm that manner in which the compost from the Veolia AWT is proposed to be used on the site is covered by a valid exemption issued by the EPA; and
   (h) include contingency measures to be implemented if the organic material proves to be unsuitable, including detailed plans of the location, nature and quantity of alternative rehabilitation material to be sourced from the site.

UNDERGROUND MINING

Performance Measures

3. The Proponent shall ensure that:
   (a) there is *no measurable subsidence* caused by underground mining beneath the Woodlawn Landfill, tailings dams, and evaporations dams on the site;
   (b) apart from the access decline, no underground mining is undertaken within 200 m of the perimeter of the Woodlawn Landfill;
   (c) remnant underground voids are long term stable to prevent subsidence; and
   (d) material used to backfill underground voids is physically and chemically stable and non-polluting.

Extraction Plan

4. The Proponent shall prepare and implement an Extraction Plan for all underground mining at the Woodlawn Mine, to the satisfaction of the Secretary. Each Extraction Plan must:
   (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
   (b) be approved by the Secretary before the Proponent carries out any underground mining (excluding construction of the underground access decline) at the Woodlawn Mine that is covered by the Extraction Plan;
   (c) include detailed plans of existing and proposed underground workings and any associated surface development;
   (d) describe in detail the performance indicators and the actions that would be undertaken to ensure compliance with the performance measures in Condition 3 above, and manage or remediate any impacts and/or environmental consequences to meet the rehabilitation objectives in Condition 6 below; and
   (e) include a Subsidence Monitoring Program to assist with the management of the risks associated with subsidence, which validates the subsidence predictions, analyses the relationship between the predicted and resulting subsidence effects, and informs contingency planning and the adaptive management process in the underground workings.

   The Proponent shall pay all reasonable costs incurred by the Department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.

   Notes: In accordance with Condition 13 of Schedule 2, the preparation and implementation of Extraction Plans may be staged, with each plan covering a defined area of underground workings. In addition, these plans are only required to contain management plans that are relevant to the specific underground workings that are being carried out.

Paste Fill

5. The Proponent shall commission a suitably qualified expert, whose appointment has been endorsed by the Secretary to:
   (a) carry out trials and testing to clarify the physical and leaching characteristics of the paste fill;
   (b) prepare a program for the ongoing testing of the paste fill to ensure it meets the performance measures in Condition 3 above; and
   (c) prepare a report on the findings of trials and testing, and submit the report to the Secretary for approval prior to the commencement of underground mining operations on the site (excluding construction of the underground access decline).

REHABILITATION OBJECTIVES

6. The Proponent shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the proposed rehabilitation plan described in the EA (and reproduced in Appendix 4), and comply with the rehabilitation objectives in Table 2.

Table 2: Rehabilitation Objectives

Feature	***Objectives***
Mine site (as a whole)	• **Safe, stable and non-polluting with no final voids on the surface** • **Integrated with the rehabilitation of the Woodlawn Landfill** • **Revegetated with plant species characteristic of Western Tablelands Dry Forest vegetation community**
Underground workings	• No measurable subsidence effects on the Woodlawn Landfill, evaporation dams and tailings dams on the site
Surface infrastructure	• To be decommissioned and removed, unless otherwise agreed with the Secretary
Waste rock dumps	• Any seepage from the waste rock dumps to be contained and treated on the site
Tailings dams	• All tailings contained within low permeability structures with no seepage to surrounding areas from tailings dams • Final landform and vegetation cover to be stable, self sustaining, free draining and consistent with surrounding rehabilitated areas
Evaporation dams	• Final landform and vegetation cover to be stable, self sustaining, free draining and consistent with surrounding rehabilitated areas
Rehabilitated slopes	• All rehabilitated slopes to be less than 10 degrees and free draining (except for the dam walls which are permitted to have a final slope of up to 18 degrees)
Drainage lines	• Hydraulically and geomorphologically stable, with vegetation that is in the same condition or better than that which existed prior to mining under this approval
Revegetation area	• Establish at least 71 hectares of the Western Tablelands Dry Forest vegetation community shown in Appendix 3.
Community	• Minimise the adverse socio-economic effects associated with mine closure

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT CONDITIONS

WATER RESOURCES

Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain all necessary water licences for the project.

Water Supply

1. The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Secretary.

Water Discharges

2. Except as may be expressly provided by an EPL, the Proponent shall comply with Section 120 of the POEO Act during the carrying out of the project.

Existing Acid Drainage

3. Within 5 years of the date of this approval, the Proponent shall identify the passive system to treat seepage from the existing Waste Rock Dump in consultation with DRG, and implement the preferred system to the satisfaction of the Secretary.

Water Management Plan

4. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must be prepared in consultation with EPA, DPI – Water, WaterNSW, Infigen Energy and Veolia, by suitably qualified and experienced persons whose appointment has been approved by the Secretary, and submitted to the Secretary for approval prior to the commencement of mining operations under this approval. This plan must include:
   (a) a Site Water Balance that includes details of:
      - sources of water supply;
      - water use on site, including any potable water use;
      - water transfers to/from the site; and
      - any off-site water discharges;
   (b) a Surface Water Management Plan, which includes:
      - baseline data on surface water flow and quality in natural waterbodies that could be affected by the project;
      - a detailed description of the surface water management system on the site, including the:
         - clean water diversions;
         - erosion and sediment controls;
         - water storage structures; and
         - tailings and evaporation dams;
   (c) design objectives and performance criteria for the following:
         - the surface water management system;
         - tailings and evaporation dams; and
         - waterbodies that could be affected by the project;
      - a program to monitor:
         - the effectiveness of the water management system;
         - surface water flows, quality, and impacts on other water users;
         - potential acid rock drainage from the waste rock dumps;
         - potential seepage from tailings and evaporation dams; and
         - post-closure water quality;
   (d) a Groundwater Management Plan, which includes:
      - baseline data of all groundwater levels, yield and quality of any privately-owned groundwater bores that could be affected by the project;
      - groundwater assessment criteria;
      - definition of areas of existing groundwater contamination;
      - a program to monitor:
         - existing groundwater contamination indentified on the site;
         - impacts on the groundwater supply of potentially affected landowners;
         - the volume of groundwater inflow into the underground workings;
         - regional groundwater levels and quality in potentially affected aquifers;
         - potential groundwater quality impacts from paste fill operations;
         - potential acid rock drainage;
         - potential seepage from tailings and evaporation dams; and
         - the effectiveness of the seepage collection, treatment and storage system associated with the tailings dams, waste rock dumps, evaporation dams and all other water storages that receive contaminated or salt-laden water;

- reporting procedures for the results of the monitoring program;

(e) a Surface and Ground Water Response Plan that includes:
- trigger levels for investigating any potential adverse surface water and groundwater impacts of the project, including but not limited to seepage of contaminated water from the tailings dams, waste rock dumps, evaporation dams and the Woodlawn Landfill;
- a protocol for the investigation, notification and mitigation of existing groundwater contamination on the site and any exceedances of the surface water and groundwater assessment criteria;
- measures to mitigate and/or compensate potentially affected landowners (including compensatory water supply if required);
- the procedures that would be followed to determine any appropriate action to be taken to mitigate or offset any surface or groundwater impacts caused by the project that constitute material harm to the environment.

Note: The effectiveness of the Water Management Plan is to be reviewed and audited in accordance with the requirements in Schedule 6. Following this review and audit the plan is to be revised to ensure it remains up to date (see Condition 5 of Schedule 6).

Water Management Performance Measures

4A The Proponent shall comply with the performance measures in Table 3 to the satisfaction of the Secretary.

Table 3: Water Management Performance Measures

Feature	***Performance Measure***
Erosion and Sediment - General	• Design, install and maintain erosion and sediment controls generally in accordance with the series *Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries*
Paste Fill Plant	• Design, install and maintain the paste fill plant to minimise potential for uncontrolled flows of tailings, materials, chemicals or waters (including but not limited to bunding of the tailings storage tanks) in accordance with the relevant Australian Standards.

NOISE

Noise Criteria

5. The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 4 at any residence on privately-owned land.

Table 4: Noise Criteria dB(A)

Receivers	***Day/Evening /Night*** ($L_{Aeq(15\text{-}minute)}$)	***Night*** ($L_{A1(max)}$)
All residential receivers	35	45

Note: After the first review of any EPL granted for this project under Section 78 of the POEO Act, nothing in this approval prevents the EPA from imposing stricter noise limits on the mining operations on site under the EPL.

Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the relevant owner(s) to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

Operating Conditions

6. The Proponent shall implement best management practice, including all reasonable and feasible noise mitigation measures, to minimise the construction, operational, low frequency and road noise from the project, to the satisfaction of the Secretary.

Noise Management Plan

7. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. The plan must:
(a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to commencing construction on the site;
(b) describe the measures that would be implemented to minimise noise generated by the project, including road noise at the St Andrews Anglican Church;
(c) include a monitoring program that:
- uses attended monitoring to evaluate the performance of the project;

- includes a protocol for determining exceedances of the criteria identified in Table 3;
- evaluates and reports on the effectiveness of the noise management system on site; and

(d) describe how noise management and monitoring on the site would be integrated with the Woodlawn Landfill.

BLASTING

Blasting Criteria

8. The Proponent shall ensure that blasting on the site does not cause exceedances of the criteria in Table 5.

Table 5: Blasting Criteria

Location	***Time of Blasting***	***Airblast overpressure ($dB_{(Lin\ Peak)}$)***	***Ground vibration (mm/s)***	***Allowable exceedance***
Residence on privately-owned land	Any time	120	10	0%
	Day	115	5	5% of the total number of blasts over a period of 12 months
	Evening	-	2	
	Night, and all day on Sundays and public holidays	-	1	0%

Note: All blasts are to be designed by a suitably qualified and experienced blasting engineer.

Blasting Hours

9. The Proponent shall comply with the blasting hours in Table 6.

Table 6: Blasting Hours

Activity	***Blasting Hours***
Surface blasting	9am – 5pm Monday to Friday, excluding public holidays
Underground blasting	Anytime

Blasting Frequency

10. In relation to above ground blasting, the Proponent may carry out a maximum of 1 blast per day, unless an additional blast is required following a blast misfire.

This condition does not apply to blasts required to ensure the safety of the site or its workers, and to minor additional blasts required during the construction of the box cut to access the underground workings.

Note: For the purpose of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the site.

Operating Conditions

11. During operation of the project, the Proponent shall implement best management practice to:
(a) protect the safety of people and livestock in the surrounding area;
(b) protect public or private infrastructure/property in the surrounding area from any damage; and
(c) minimise the dust and fume emissions from any blasting; and
to the satisfaction of the Secretary.

Blast Management Plan

12. The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary. This plan must:
(a) be prepared in consultation with the Veolia and Infigen Energy, and submitted to the Secretary for approval prior to commencing blasting on the site;
(b) describe the process for incrementally developing and monitoring blasting design;
(c) describe the blast mitigation measures that would be implemented to ensure compliance with the blasting criteria in Table 4; and
(d) include a blast monitoring program to evaluate the performance of the project.

AIR QUALITY

Odour

13. The Proponent shall ensure that no offensive odours generated by the project are emitted from the site, as defined under the POEO Act.

Greenhouse Gas Emissions

14. The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Secretary.

Air Quality Criteria

15. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 7, 8 and 9 at any residence on privately-owned land.

Table 7: Long term impact assessment criteria for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 8: Short term impact assessment criterion for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 9: Long term impact assessment criteria for deposited dust

Pollutant	***Averaging Period***	***Maximum increase in deposited dust level***	***Maximum total deposited dust level***
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

However, the criteria listed in Tables 6, 7 and 8 do not apply if the Proponent has an agreement with the relevant owner(s) to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

Notes to Tables 6, 7 and 8:

- [a] *Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);*
- [b] *Incremental impact (i.e. incremental increase in concentrations due to the project on its own);*
- [c] *Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and*
- [d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fog, fire incidents or any other activity agreed by the Secretary.*

Operating Conditions

16. The Proponent shall:
    (a) implement best practice air quality management on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project; and
    (b) minimise any visible air pollution generated by the project;
    to the satisfaction of the Secretary.

Air Quality Management Plan

17. The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with the EPA, and be submitted to the Secretary for approval prior to commencing construction on the site;
    (b) describe the measures that would be implemented to ensure compliance with Conditions 13 to 16 above;
    (c) include an air quality monitoring program that:
        - uses a combination of high volumes samplers and dust deposition gauges to evaluate the performance of the project; and

- includes a protocol for determining exceedances of the relevant conditions of this approval; and

(d) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site.

Meteorological Monitoring

18. For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants* in New South Wales guideline.

LAND MANAGEMENT

Waste Rock Management Plan

19. The Proponent shall prepare and implement a Waste Rock Management Plan to the satisfaction of the Secretary. The plan must:
    (a) be developed in consultation with DRG, EPA and DPI – Water;
    (b) be submitted for the approval of the Secretary prior to commencing underground mining operations;
    (c) include a detailed description of the procedures to be implemented to monitor and manage potential acid forming material, including:
        - testing for potentially acid forming waste rock prior to it being brought to the surface;
        - prioritising the relocation of potential acid forming material to suitable underground locations prior to oxidation;
        - using all reasonable and feasible measures to prevent waste rock emplaced underground from further oxidising or causing impacts on groundwater;
        - trigger levels for any material that has oxidised to the extent that it cannot be placed underground without impacting groundwater quality, and procedures for adequate capping and sealing of such material at the surface;
        - effective isolation and/or neutralisation of potential acid forming material in waste rock dumps; and
    (d) reflect the groundwater and surface water monitoring programs to monitor potentially acid forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation (covering monitoring methods, trigger levels and proposed management and/or treatment actions).

Vegetation Management Plan

20. The Proponent shall prepare and implement a Vegetation Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with OEH and submitted to the Secretary for approval prior to commencing construction;
    (b) describe how the additional 71 hectares of revegetation area (shown in Appendix 3) would be integrated with the overall rehabilitation of the site;
    (c) describe the short, medium, and long term measures that would be implemented to:
        - manage the remnant vegetation and habitat on the site and in the revegetated area/s; and
        - implement revegetation, including detailed performance and completion criteria;
    (d) include a detailed description of the procedures to be implemented for:
        - minimising the impacts on fauna on site, including pre-clearance surveys;
        - enhancing the quality of existing vegetation and fauna habitat;
        - restoring native vegetation and fauna habitat on the revegetated area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features, including establishing and maintaining bat habitat for the Eastern Bent-wing Bat and Yellow-bellied Sheathtail-bat;
        - establishing a revegetation planting density that is consistent with the rehabilitation objectives in Table 2 of Schedule 3;
        - maximising the salvage of resources within the approved disturbance area – including vegetative and soil resources – for beneficial reuse in the rehabilitation of the site;
        - collecting and propagating seed;
        - bushfire management;
        - controlling weeds, feral pests, erosion and access to the revegetation areas; and
    (e) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and
    (f) include details of who would be responsible for monitoring, reviewing and implementing the plan.

Progressive Rehabilitation

21. The Proponent shall carry out rehabilitation of the site progressively, that is, as soon as reasonably practicable after disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot be permanently rehabilitated until later in the project life.

Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the project.

Rehabilitation Management Plan

22. The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Director- General. This plan must:
    (a) be prepared in consultation with the DRG, EPA, DPI – Water, WaterNSW and Council;
    (b) be submitted to the Secretary for approval prior to carrying out mining operations on the site;
    (c) be prepared in accordance with any relevant DRG guideline;
    (d) outline the procedures to be implemented to achieve the rehabilitation objectives in Condition 6 of Schedule 3;
    (e) outline the operational procedures (including testing, monitoring and performance criteria) used to verify the ongoing suitability of the compost material to be used in rehabilitation;
    (f) include detailed designs for the short term and long term rehabilitation of tailings and evaporation dams, including surface water management and capping design which takes into account total predicted settlement;
    (g) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site;
    (h) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use; and
    (i) include a program to monitor, independently audit and report on the ongoing effectiveness of the measures and progress towards the detailed performance and completion criteria.

TRANSPORT

Dangerous Goods

23. Transportation of all dangerous goods to or from the site shall be undertaken in strict accordance with *Australian Code for the Transport of Dangerous Goods by Road and Rail.*

Access Road and Intersection Construction

24. The Proponent shall construct the site access road for heavy vehicles, and associated intersection of this access road, prior to commencing construction of other components of the project on the site. The intersection shall be designed and constructed to the satisfaction of Council and in accordance with the applicable AUSTROADS standards.

Monitoring of Concentrate Transport

25. The Proponent shall:
    (a) keep accurate records of the:
        - amount of copper, lead and zinc concentrate transported from the site (on a monthly basis); and
        - the date and time of loaded heavy vehicle movements from the site; and
    (b) provide the Secretary with a summary of these heavy vehicle movements in the Annual Review.

Road Transport Protocol

26. The Proponent shall prepare and implement a Road Transport Protocol for the project, to the satisfaction of the Secretary. The protocol shall:
    (a) be prepared in consultation with the RMS and Council;
    (b) be submitted to the Secretary for approval prior to carrying out any development on the site;
    (c) include a detailed Transport Code of Conduct that addresses:
        - measures to ensure that heavy vehicles adhere to the designated haulage route in Condition 7 of Schedule 2;
        - staggering of heavy vehicle departures in consultation with Veolia to minimise impacts on the road network;
        - driver behaviour including adherence to speed limits, safe overtaking, and maintaining appropriate distances between vehicles;
        - contingency plans when the designated haulage route is disrupted; and
        - procedures for ensuring compliance with and enforcement of the Code.

HERITAGE

27. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary. The Plan must:
    (a) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);
    (b) be submitted to the Secretary for approval prior to commencing construction on site;
    (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site;
    (d) include programs/procedures and management measures for appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site.

VISUAL

28. The Proponent shall:
    (a) establish a vegetation screen along the fence line next to Collector Road within 6 months of commencement of construction;
    (b) implement all reasonable and feasible measures to minimise the visual impacts of the project; and
    (c) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*,

    to the satisfaction of the Secretary.

WASTE

29. The Proponent shall:
    (a) minimise the waste generated by the project;
    (b) ensure that the waste generated by the project is appropriately characterised, stored, handled and disposed of in accordance with the *Waste Classification Guidelines* (EPA, 2009), or its latest version; and
    (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council,

    to the satisfaction of the Secretary

BUSHFIRE MANAGEMENT

30. The Proponent shall:
    (a) ensure that the project is suitably equipped to respond to any fires on site; and
    (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the surrounding area.

SCHEDULE 5
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. Within two weeks of obtaining monitoring results showing:
   (a) an exceedence of any relevant noise criteria in Schedule 4, the Proponent shall notify affected landowners and/ or tenants in writing of the exceedence, and provide regular monitoring results to each of these affected parties until the project is again complying with the relevant criteria; and
   (b) an exceedence of any relevant air quality criteria in Schedule 4, the Proponent shall send the affected landowners and/ or tenants a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time).

INDEPENDENT REVIEW

2. If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 4, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.

   If the Secretary is satisfied that an independent review is warranted, then within two months of the Secretary's decision the Proponent shall:
   (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
      - consult with the landowner to determine his/ her concerns;
      - conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 4; and
      - if the project is not complying with these criteria then identify measures that could be implemented to ensure compliance with the relevant criteria.
   (b) give the Secretary and landowner a copy of the independent review.

3. If the independent review determines that the project is complying with the relevant criteria in Schedule 4, then the Proponent may discontinue the independent review with the approval of the Secretary.

4. If the independent review determines that the project is not complying with the relevant criteria in Schedule 4, then the Proponent shall:
   (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until the project complies with the relevant criteria; or
   (b) secure a written agreement with the landowner to allow exceedences of the relevant criteria,
   to the satisfaction of the Secretary.

SCHEDULE 6
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:
   (a) be submitted for approval to the Secretary within 12 months of this approval;
   (b) provide the strategic framework for the environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance;
      - respond to emergencies; and
   (f) include:
      - copies of any strategies, plans and programs approved under the conditions of this approval; and
      - a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.

Adaptive Management

2. The Proponent shall assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedules 3 and 4. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

   Where any exceedance of these criteria and/or performance measures has occurred, the Proponent shall, at the earliest opportunity:
   (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;
   (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
   (c) implement remediation measures as directed by the Secretary,
   to the satisfaction of the Secretary.

Management Plan Requirements

3. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   (a) a description of:
      - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
      - any relevant limits or performance measures/criteria;
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
   (b) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
   (c) a program to monitor and report on the:
      - impacts and environmental performance of the project;
      - effectiveness of any management measures (see b above);
   (d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
   (e) a protocol for managing and reporting any:
      - incidents and complaints;
      - non-compliances with statutory requirements and exceedances of the impact assessment criteria and/or performance criteria; and
   (f) a protocol for periodic review of the plan.

   Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.

Annual Review

4. By the end of December each year (or other such timing as agreed by the Secretary), the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:
   (a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;
   (b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the:
      - the relevant statutory requirements, limits or performance measures/criteria;
      - requirements of any plan or program required under this approval;
      - the monitoring results of previous years; and
      - the relevant predictions in the EA;
   (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
   (d) identify any trends in the monitoring data over the life of the project;
   (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
   (f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

Revision of Strategies, Plans and Programs

5. Within three months of:
   (a) the submission of an annual review under Condition 4 above;
   (b) the submission of an incident report under Condition 7 below;
   (c) the submission of an audit under Condition 9 below; or
   (d) any modification to the conditions of this approval (unless the conditions require otherwise),
   the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.

   Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

6. The Proponent shall establish and operate a CCC for the project in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary. This CCC must be operating prior to commencing construction of the project.

   Notes:
   - *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
   - *In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community.*

REPORTING

Incident Reporting

7. The Proponent shall notify the Secretary and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within seven days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.

Regular Reporting

8. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any approved plans of the conditions of this approval.

INDEPENDENT ENVIRONMENTAL AUDIT

9. Within one year of commencing construction of the project, and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. The audit must:
   (a) be conducted by a suitably qualified, experienced and independent team of experts (including a mine site rehabilitation and water quality expert) whose appointment has been endorsed by the Secretary;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
   (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/ or any assessment, plant or program required under the abovementioned approvals.

   Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.

10. Within six weeks of the completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

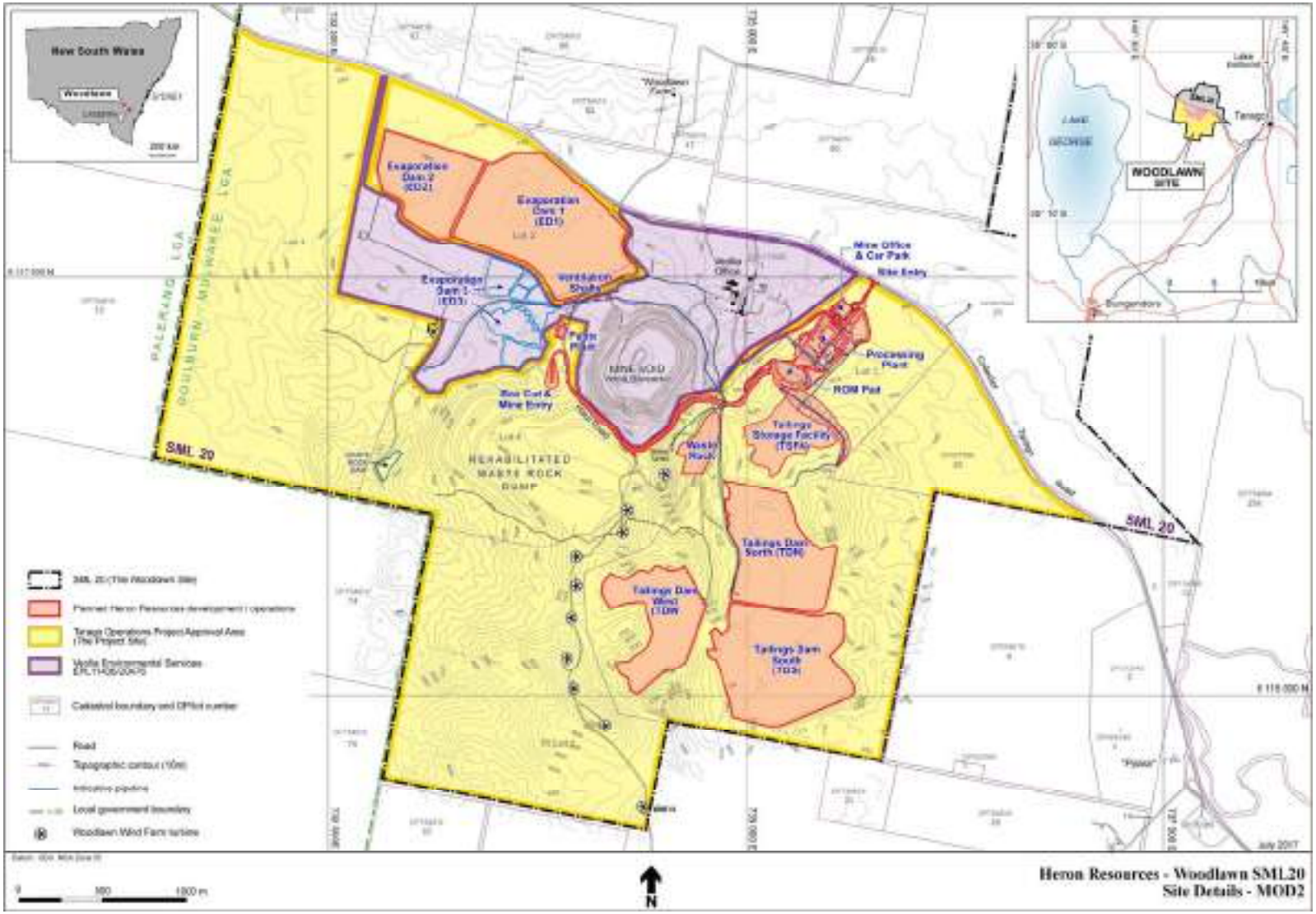
11. Prior to the commencement of construction on the site, the Proponent shall:
   (a) make copies of the following publicly available on its website:
      - the documents referred to in Condition 1 of Schedule 2;
      - all relevant statutory approvals for the project;
      - all approved strategies, plans and programs required under the conditions of this approval;
      - a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval;
      - a complaints register, which is to be updated on a monthly basis;
      - minutes of CCC meetings;
      - the annual reviews required under this approval;
      - any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit;
      - any other matter required by the Secretary; and
   (b) keep this information up-to-date,

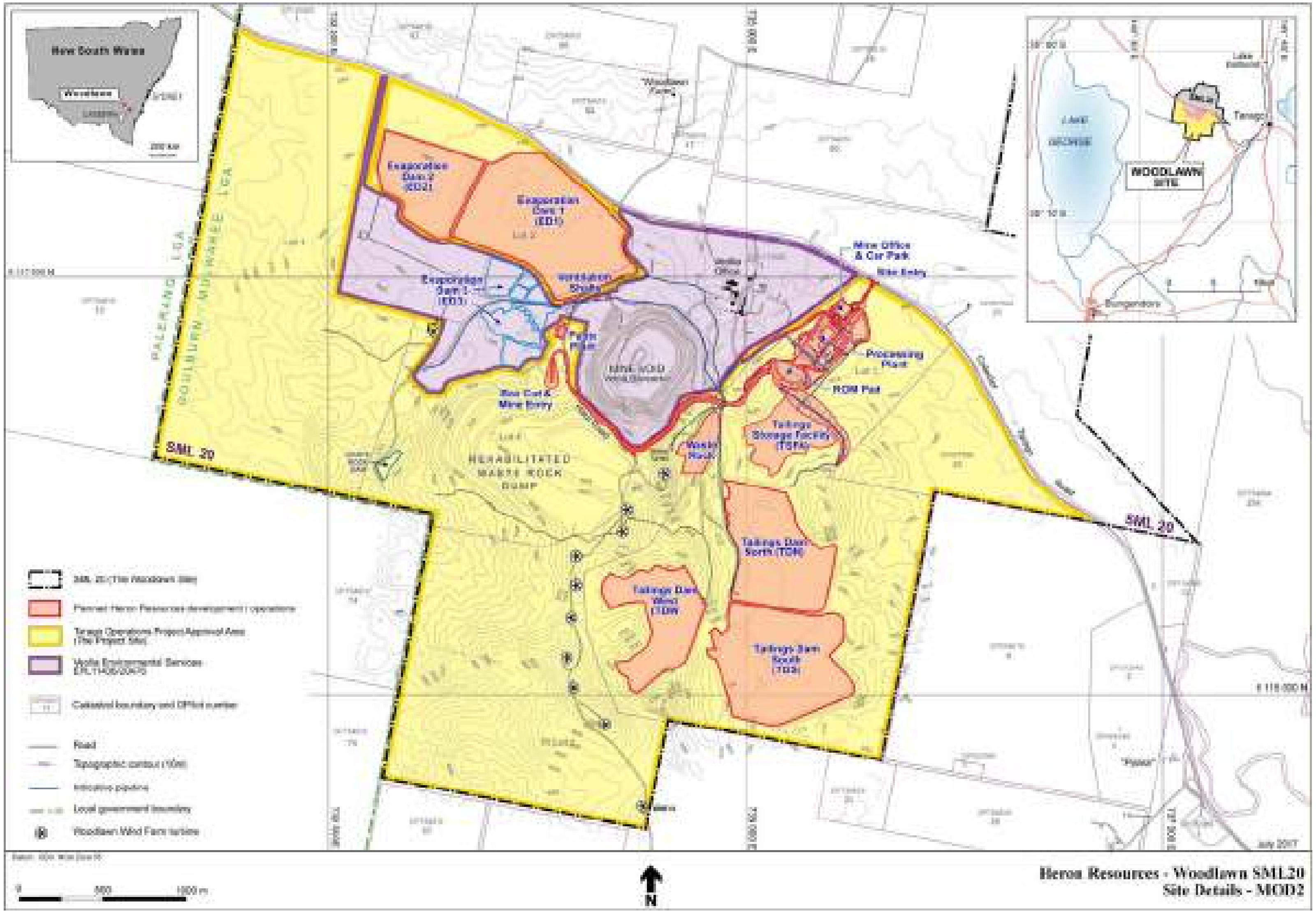
   to the satisfaction of the Secretary.

APPENDIX 1
SCHEDULE OF LAND

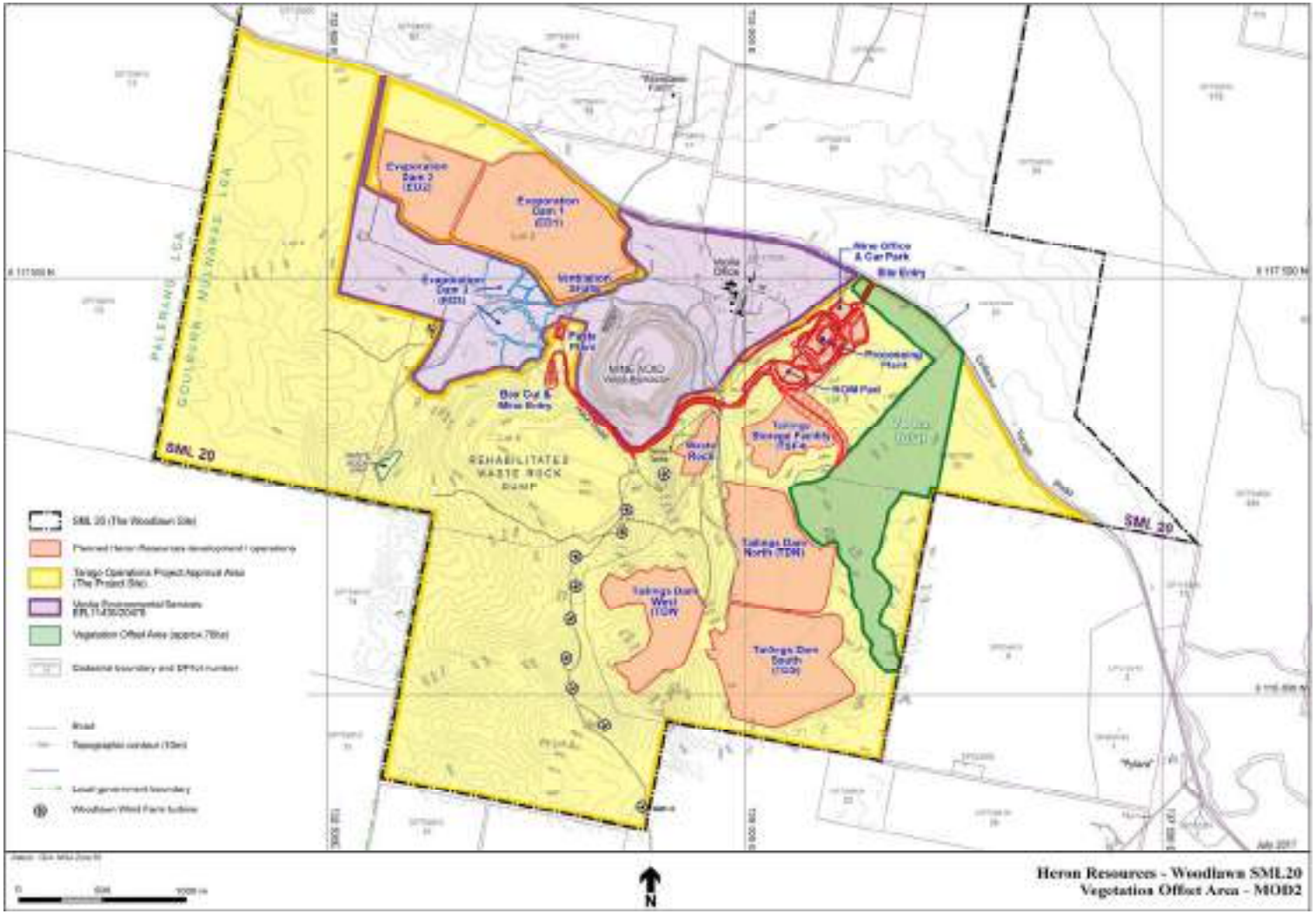
Mine Site (SML 20)	
Lot	***DP***
19	827588
21	
20	
70	754919
88	
92	
25	
14	
30	
86	
91	

APPENDIX 2
PROJECT LAYOUT

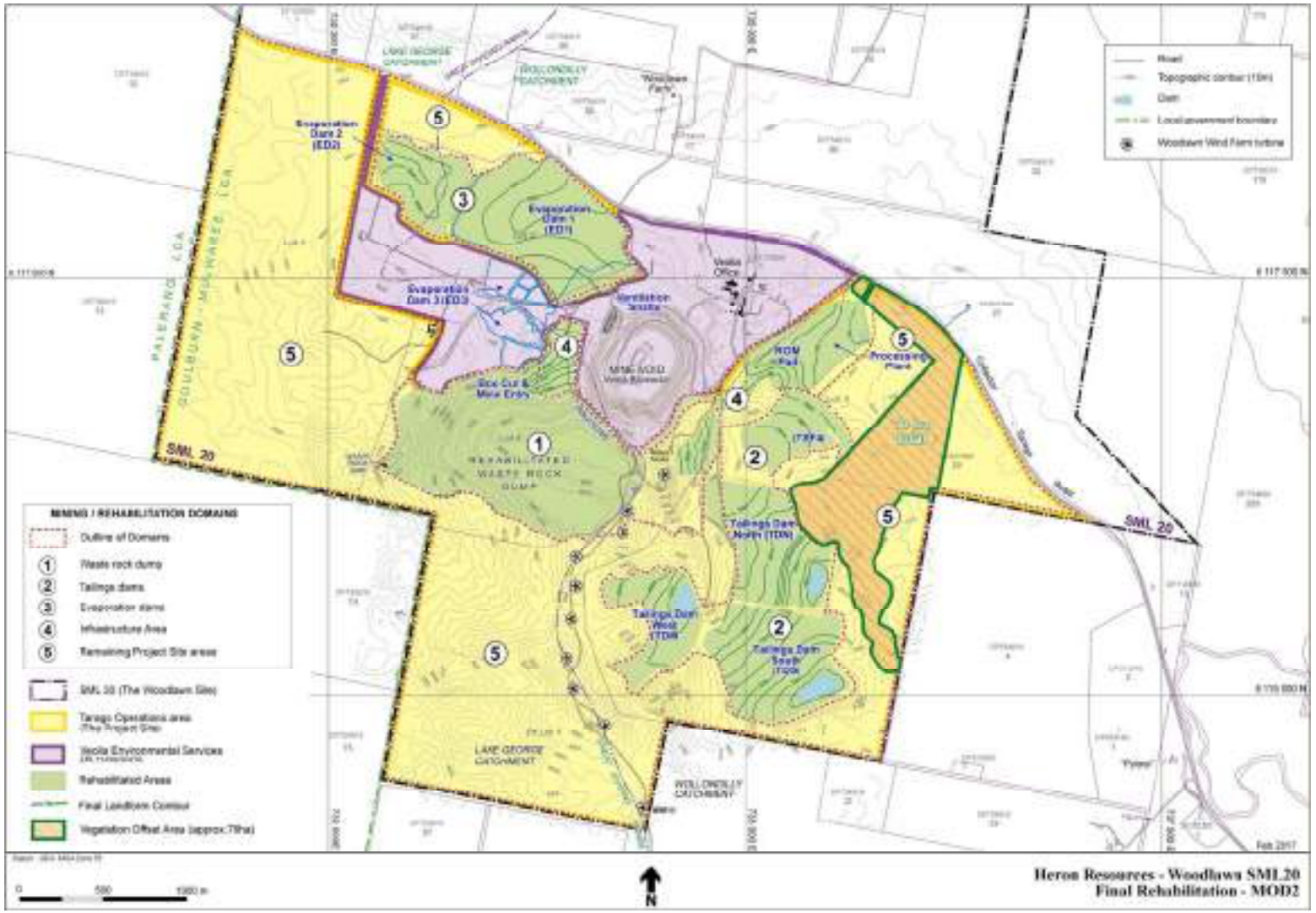



New South Wales
Woodlawn
Evaporation Dam 2 (ED2)
Evaporation Dam 1 (ED1)
Evaporation Dam 3 (ED3)
Ventilation Shafts
Mine Office & Car Park
Site Entry
Processing Plant
ROM Pad
Paste Plant
Box Cut & Mine Entry
MINE VOID
REHABILITATED WASTE ROCK DUMP
Waste Rock
Tailings Storage Facility (TSF)
Tailings Dam North (TDN)
Tailings Dam West (TDW)
Tailings Dam South (TDS)
SML 20
GOULBURN MULWAREE LGA
PALERANG LGA
LAKE GEORGE
WOODLAWN SITE
Tarago
Bungendore
SML 20 (The Woodlawn Site)
Planned Heron Resources development / operations
Tarago Operations Project Approval Area (The Project Site)
Veolia Environmental Services
Cadastral boundary and DP/lot number
Road
Topographic contour (10m)
Indicative pipeline
Local government boundary
Woodlawn Wind Farm turbine
0
500
1000 m
N
July 2017
Heron Resources - Woodlawn SML20
Site Details - MOD2

APPENDIX 3
REVEGETATION AREAS



APPENDIX 4
REHABILITATION PLAN



APPENDIX 5
NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Table 3 of the conditions are to apply under all meteorological conditions except the following:
   (a) during periods of rain or hail;
   (b) average wind speed at microphone height exceeds 5 m/s;
   (c) wind speeds greater than 3 m/s measured at 10 m above ground level; or
   (d) temperature inversion conditions greater than 3°C/100 m.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

Compliance Monitoring

3. Unless otherwise agreed with the Secretary, monthly attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.
4. Unless otherwise agreed with the Secretary, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
   (a) monitoring locations for the collection of representative noise data;
   (b) meteorological conditions during which collection of noise data is not appropriate;
   (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
   (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

Appendix D - Environment Protection Licence

Environment Protection Licence

Licence - 20821

Licence Details	
Number:	20821
Anniversary Date:	29-March

Licensee
TARAGO OPERATIONS PTY LTD
LEVEL 7, SUITE 702, 191 CLARENCE STREET
SYDNEY NSW 2000

Premises
WOODLAWN MINE PROJECT
507 COLLECTOR ROAD
TARAGO NSW 2580

Scheduled Activity
Concrete works
Contaminated groundwater treatment
Crushing, grinding or separating
Mineral processing
Mining for minerals

Fee Based Activity	Scale
Concrete works	> 50000 m3 annual production capacity
Contaminated groundwater treatment	Any annual handling capacity
Crushing, grinding or separating	> 500000-2000000 T annual processing capacity
Mineral processing	> 500000-2000000 T annual processing capacity
Mineral waste generation	> 100 T annual volume of waste generated or stored
Mining for minerals	> 100000-500000 T annual production capacity

Environment Protection Licence

Licence - 20821

Region
South East - Queanbeyan 11 Farrer Place QUEANBEYAN NSW 2620
Phone: (02) 6229 7002
Fax: (02) 6229 7006
PO Box 622 QUEANBEYAN NSW 2620

Environment Protection Licence

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Environment Protection Licence

Licence - 20821

Environment Protection Licence

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 20821

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

TARAGO OPERATIONS PTY LTD
LEVEL 7, SUITE 702, 191 CLARENCE STREET
SYDNEY NSW 2000

subject to the conditions which follow.

Environment Protection Licence

Licence - 20821

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2:
Infrastructure and facilities in support of mining. Construction activities including a new ore processing plant, buildings and ancillary equipment, new tailings storage facility, box cut and overland haul road..

Note: Until such time as the scheduled development works are completed, Condition A1.1 supersedes Condition A1.2.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Concrete works	Concrete works	> 50000 m3 annual production capacity
Contaminated groundwater treatment	Contaminated groundwater treatment	Any annual handling capacity
Crushing, grinding or separating	Crushing, grinding or separating	> 500000 - 2000000 T annual processing capacity
Mineral processing	Mineral processing	> 500000 - 2000000 T annual processing capacity
Mineral processing	Mineral waste generation	> 100 T annual volume of waste generated or stored
Mining for minerals	Mining for minerals	> 100000 - 500000 T annual production capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
WOODLAWN MINE PROJECT
507 COLLECTOR ROAD
TARAGO
NSW 2580

Environment Protection Licence

Licence - 20821

THE PREMISES IS DEFINED IN THE MAP "ATTACHMENT 1 WOODLAWN SITE EPL - MONITORING SITES" SUBMITTED BY THE LICENSEE TO THE EPA ON 17 MARCH 2017. DRAWN BY DEAN OLIVER 17-03-2017, DRAWING NO. TOP - G - 001.

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Dust monitoring		Dust Monitoring DG28 - located at Pylara farm
2	Dust monitoring		Dust Monitoring DG22 - eastern side of the EPL 11436 Bioreactor void
3	Dust monitoring		Dust Monitoring DG24 - western side of the EPL 11436 Bioreactor void
4	Dust monitoring		Dust Monitoring DG33 - (EPL 20476 dust deposition monitoring point 7)
5	Meteorological		Meteorological station located at the EPL 11436 premises.

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Environment Protection Licence

Licence - 20821

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
6	Surface Water Monitoring		Site 115 - Allianoyonyiga Creek
7	Surface Water Monitoring		Site 105 - Crisps Creek
8	Surface Water Monitoring		Site 100 - Woodlawn/Willeroo Boundary South, below Waste Rock Dam.
9	Surface Water Monitoring		Site 109 - Pylara Boundary below South Tailings Dam.
10	Surface Water Monitoring		Site 300 - Processing Plant Pollution Control Dam. Final dam below the new processing facility.
11	Ground Water Monitoring		MB4
12	Ground Water Monitoring		MB5 - southern face of the rehabilitated waste rock dump
13	Ground Water Monitoring		MB6 - adjacent to mine entry
14	Ground Water Monitoring		MB8 - adjacent to Collector Road and downstream of proposed processing plant site
15	Ground Water Monitoring		MB12 - below ED2 dam wall
16	Ground Water Monitoring		MB13 - western premises boundary
17	Ground Water Monitoring		MB14 - background ground water quality site
18	Ground Water Monitoring		MB15 - measures seepage from Rehabilitated Waste Rock Dump
19	Surface Water Monitoring		Evaporation Dam 2 (ED2)
20	Surface Water Monitoring		Tailings Storage Facility 4 (TSF4)
21	Ground Water monitoring		MB11 - below ED2 dam wall
22	Ground Water Monitoring		MB16 - measures seepage from Rehabilitated Waste Rock Dump
23	Ground Water Monitoring		MB17 - measures seepage from Rehabilitated Waste Rock Dump

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Noise limits

L2.1 Noise from the premises must not exceed an $L_{Aeq,15\ minute}$ noise level of 35 dB(A) at any sensitive receivers.

L2.2 For the purpose of Condition L2.1:

'Day' is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays;

'Evening' is defined as the period from 6pm to 10pm on any day; and

'Night' is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

L2.3 The noise emission limits identified in Condition L2.1 apply under meteorological conditions of:

a) Wind speeds up to 3 m/s at 10m above ground level; or
b) temperature inversion conditions of up to 3 °C/100m and wind speeds up to 2 m/s at 10m above ground level

L2.4 **Determining Compliance**

To determine compliance:
a) with the Leq(15 minute) noise limits in Condition L2.1, the noise measurement equipment must be located:
i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable

L3 Blasting

L3.1 The licensee must ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in the below table at any residence on privately owned land:

Location	Time of Blasting	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedence
Residence on any privately-owned land	Any time	120	10	0%
	Day	115	5	5% of the total number of blasts over a period of 12 months
	Evening	-	2	5% of the total number of blasts over a period of 12 months
	Night, and all day on Sundays and public holidays	-	1	0%

Environment Protection Licence

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L4 Hours of operation

L4.1 Construction activities at the premises must only be conducted between the times specified in the table below:

Activity	Operating Hours
Construction	7am to 7pm, 7 days per week.
Blasting (surface)	9am to 5pm Monday to Friday, excluding public holidays
Blasting (underground)	Any time

L5 Potentially offensive odour

L5.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L6 Other limit conditions

Use and transfer of waters

L6.1 Only treated leachate, treated and untreated mine water, stormwater runoff, raw water from the Woodlawn Dam and water from the Waste Rock Dam may be utilised on-site or discharged to the premises defined in EPL 11436. The discharges and transfers permitted are those shown in Attachment 2 Woodlawn Site EPL Water Transfers, held by the EPA as DOC17/172868.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

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) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 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.

O4 Waste management

O4.1 The liner for Tailings Storage Facility 4 must achieve a permeability of no less than $1x10^{-9}$metres per second to a depth of at least 900mm of clay (or equivalent) in accordance with the EPA's Environmental Guidelines - Solid Waste Landfills (2016).

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

Environment Protection Licence

Licence - 20821

POINT 6,7,8,9,10,19,20

Pollutant	Units of measure	Frequency	Sampling Method
BOD	milligrams per litre	Quarterly	Grab sample
Conductivity	microsiemens per centimetre	Quarterly	Grab sample
Dissolved Oxygen	milligrams per litre	Quarterly	Probe
Nitrogen (ammonia)	milligrams per litre	Quarterly	Grab sample
pH	pH	Quarterly	Grab sample
Potassium	milligrams per litre	Quarterly	Grab sample
Redox potential	millivolts	Quarterly	Grab sample
Total dissolved solids	milligrams per litre	Quarterly	Grab sample
Total organic carbon	milligrams per litre	Quarterly	Grab sample

POINT 11,12,13,14,15,16,17,18

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Quarterly	Grab sample
Aluminium	milligrams per litre	Quarterly	Grab sample
Arsenic	milligrams per litre	Quarterly	Grab sample
Barium	milligrams per litre	Quarterly	Grab sample
Benzene	milligrams per litre	Quarterly	Grab sample
Cadmium	milligrams per litre	Quarterly	Grab sample
Calcium	milligrams per litre	Quarterly	Grab sample
Chloride	milligrams per litre	Quarterly	Grab sample
Chromium (hexavalent)	milligrams per litre	Quarterly	Grab sample
Chromium (total)	milligrams per litre	Quarterly	Grab sample
Cobalt	milligrams per litre	Quarterly	Grab sample
Copper	milligrams per litre	Quarterly	Grab sample
Ethyl benzene	milligrams per litre	Quarterly	Grab sample
Fluoride	milligrams per litre	Quarterly	Grab sample
Lead	milligrams per litre	Quarterly	Grab sample
Magnesium	milligrams per litre	Quarterly	Grab sample
Manganese	milligrams per litre	Quarterly	Grab sample
Mercury	milligrams per litre	Quarterly	Grab sample
Nitrate	milligrams per litre	Quarterly	Grab sample
Nitrite	milligrams per litre	Quarterly	Grab sample
Nitrogen (ammonia)	milligrams per litre	Quarterly	Grab sample
Organochlorine pesticides	milligrams per litre	Quarterly	Grab sample
Organophosphate pesticides	milligrams per litre	Quarterly	Grab sample

pH	pH	Quarterly	Grab sample
Polycyclic aromatic hydrocarbons	milligrams per litre	Quarterly	Grab sample
Potassium	milligrams per litre	Quarterly	Grab sample
Sodium	milligrams per litre	Quarterly	Grab sample
Standing Water Level	metres	Quarterly	In situ
Sulfate	milligrams per litre	Quarterly	Grab sample
Toluene	milligrams per litre	Quarterly	Grab sample
Total dissolved solids	milligrams per litre	Quarterly	Grab sample
Total organic carbon	milligrams per litre	Quarterly	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Quarterly	Grab sample
Total Phenolics	milligrams per litre	Quarterly	Grab sample
Xylene	milligrams per litre	Quarterly	Grab sample
Zinc	milligrams per litre	Quarterly	Grab sample

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

Environment Protection Licence

Licence - 20821

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Special Conditions

E1 Mine dewatering

E1.1 The licensee submitted a methodology for the removal, treatment and storage of underground mine water to the EPA on 10 April 2017. The EPA provided written approval of the methodology in writing on the 9th of May 2017.

E1.2 The licensee may carry out dewatering of the underground mine workings in accordance with the proposal contained in the document “Application Under Condition 8 E1.1 of EPL 20821 - Mine Dewatering”, submitted to the EPA on 10 April 2017 (DOC17/221071).

E1.3 Stage 1 “Pump Set Up, Commissioning and Pumping” may proceed at the licensee’s convenience. The licensee must provide a report to the EPA following the completion of Stage 1 documenting the methodology, results and lessons learnt from Stage 1.

E1.4 Stage 2 “Pumping” must not proceed without written approval from the EPA. The licensee must provide a report to the EPA following the completion of Stage 2 documenting the methodology, results and lessons learnt from Stage 2.

E1.5 Stage 3 “Ongoing Mine Dewatering” must not proceed without written approval from the EPA. If, following the successful completion of Stages 1 and 2, the dewatering strategy has proven to have no environmental impacts with regard to odour and water quality, the licensee may proceed with mine dewatering as part of normal operations at the premises following written approval from the EPA.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Julian Thompson

Environment Protection Authority

(By Delegation)

Date of this edition: 29-March-2017

End Notes

2 Licence varied by notice 1551976 issued on 12-May-2017

Appendix E - Consultation Log

Consultation Log - Noise, Dust and Blasting Management Plans

Date	Form/Agency	Comments and Outcomes	Response/how addressed
3/7/2014	Initial consultation letter to: NSW Trade and Investment Environment Protection Authority NSW Office of Water Sydney Catchment Authority Office of Environment and Heritage Department of Planning and Environment	These letters were the initial consultation and sought specific advice from each agency according to the respective relevant management plan.	Noted
11/9/14	Letter to DPE	Seeking approval of Experts engaged in relevant management Plan	Approval provided
10/10/14	Email to Julian Thompson and Michael Heinz EPA	Confirmation of meeting details	Noted
13/10/14	Meeting with EPA and OEH Queanbeyan Office	General project briefing, need for EPL separation with Veolia EPL, monitoring conditions, lack of archaeology sites and impact, need to define vegetation offset area and outcomes	Ongoing negotiation with EPA in relation to licensing requirements
9/3/16	Meeting with Community Consultation Committee	Presentation to Woodlawn Community Consultation Committee which included overview of project, monitoring program, construction program, workforce numbers, exploration and environmental management plan preparation and content.	Draft EMPs provided on web page for download by committee members
27/05/16	email to Julian Thompson EPA	Copy of Noise and Blast Management Plan provided to EPA for comment	Noted
27/05/16	Email to Julian Thompson EPA	Copy of Air Quality Management Plan provided to EPA for comment	Noted
10/8/16	EPL Application to EPA	Application for new EPL covering Woodlawn Mine construction and operation	Noted
12/10/16	Letter to DPE re additional Experts	Letter from Heron Resources requesting approval of additional experts engaged in management plan preparation	Noted and approved by DPE
12/10/16	Email from EPA re licence application	First draft EPL provided for comment with request for additional plans	6 emails to and from EPA and various phone calls in relation to comments on draft EPL
20/10/16	Letter from EPA re draft EPL	Provision of second draft EPL 20821 for the Heron operation	Noted
13/1/17	Meeting with EPA Queanbeyan	Meeting with EPA to discuss licence finalisation and amendments to allow dewatering of the underground workings to commence. Advice received to seek an amendment to the existing Veolia EPL 114336 and to include details of staged	Additional consultants commissioned and dewatering strategy

Date	Form/Agency	Comments and Outcomes	Response/how addressed
		dewatering and treatment	developed. No specific comments received in relation to noise, blasting or dust management. The inclusion of the 4 dust deposition gauge was added to the licence