APPENDIX 14: AIR QUALITY AND DUST MANAGEMENT PLAN

KEYSBROOK MINERAL SANDS PROJECT

AIR QUALITY AND DUST ENVIRONMENTAL MANAGEMENT PLAN, KEYSBROOK MINERAL SANDS PROJECT, MS810

DOCUMENT REFERENCE

AIR QUALITY AND DUST ENVIRONMENTAL MANAGEMENT PLAN

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Aug 2023	6	Revised AQDMP	CB
Apr 2025	7	Revised AQDMP to incorporate RFI comments	CB

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GLOSSARY

TERM	DEFINITION
AER	Annual Environmental Report
BAM	Beta Attenuation Dust Monitor
CAR	Compliance Assessment Report
DWER	Department of Water and Environment Regulation
DMP	Nephelometer Dust Monitor
EP ACT	Environmental Protection Act 1986
PM_{10}	Particulate Matter less than 10 Micron
TSP	Total Suspended Particulates
$\mu g/m^3$	Micrograms per Cubic Metre

SUMMARY

This Air Quality and Dust Management Plan (AQDMP) has been prepared in accordance with Conditions 15-2,15-3 and 15-5 of Ministerial Statement No. 810 (MS810) for the Keysbrook Mineral Sands Mine (the Project). The proponent for the Project is Keysbrook Leucoxene Pty Ltd (KLPL). KLPL is a 100% owned subsidiary of Doral Mineral Sands Pty Ltd.

Table 1 below presents the environmental criteria to measure achievement of the conditioned environmental outcome that must be met through implementation of this Condition EMP.

TABLE 1: AQDMP SUMMARY

Proposal Name	Keysbrook Mineral Sands Mine	
Proponent Name	Keysbrook Leucoxene Proprietary Limited	
Ministerial Statement Number	MS810	
Purpose of the EMP	Fulfil the requirements of Implementation Condition 15.	
EPA Key Environmental Factor/s, outcome/s and objective/s	**Air Quality:** • To maintain air quality and minimise emissions so that environmental values are protected	
Implementation Condition Clauses	Condition 15-2 to 15-8	
Key Provisions of the Plan	1. Management measures to minimise dust emissions and ensure compliance with National Environmental Protection Measure Standards for particulates, as set in Condition 15-2. 2. Monitoring program to (i) characterise local dust environment; (ii) inform management measures and (iii) enable assessment of compliance.	
Environmental Criteria		
Trigger Criteria	Total Suspended Particulates (TSP): • 600 µg/m^3 15 minute average	Particulate Matter less than 10 micron (PM_{10}): • 200 µg/m^3 15-minute average • 40 µg/m^3 6 hour rolling average
Threshold Criteria	Total Suspended Particulates (TSP): • 1,000 µg/m^3 15 minute average	Particulate Matter less than 10 micron: • 50 µg/m^3 24 hour average

1. CONTEXT, SCOPE AND RATIONALE

1.1. PROPOSAL

Doral Mineral Sands Pty Ltd (Doral) through its subsidiary Keysbrook Leucoxene Pty Ltd (KLPL) operate a mineral sands mine and primary processing plant (the Project) within an area of rural land near the townships of Keysbrook and North Dandalup, 70 km south of Perth (Figure 1). The Project is within the Shire of Murray and the Shire of Serpentine-Jarrahdale.

The Keysbrook Mineral Sands Mine targets a deposit containing high grade leucoxene. Leucoxene is a fine, granular, weathered titanium mineral used as feedstock for titanium pigment plants. The surface mining operation migrates across the land, and the shallow mine void is backfilled to pre-disturbance contours and generally rehabilitated within two years of mining.

The Project is located on privately owned land, used for grazing and other rural land uses. The currently approved area of disturbance is 1,532ha, within a 3,015ha Development Envelope (Attachment 3, Figure 2 of MS810). Two additional requests under Section 45C for additional mining areas were submitted to EPA in August 2022(Lot 56) and May 2023 Lot 63. No clearing was required for the amendments. Inclusion of these two requests will result in a total disturbance area of 1,745ha. Native vegetation approved for clearing ranges in condition from good to degraded. Doral has secured 75 hectares of native vegetation in two parcels through conservation covenants as per Condition 6 MS810. The area of mining approved under MS810, provides for 9 years of mining, which commenced in October 2015.

Based on the current mining schedule, ore reserves within the approved mine area as defined in (Attachment 3, Figure 2 of MS810), are due to be exhausted in 2024. In order for the continuation of the mine and workforce, KLPL seeks a significant amendment to the approved Proposal under Section 40AA to include an additional 511.64ha of mine area located immediately to the west of the currently approved Proposal. The 'amendment area' would increase the total mine area from approximately to 2,249ha. The additional disturbance area includes 21.04ha of degraded to completely degraded native vegetation, with the remainder comprising cleared pasture and some planted non-native vegetation. Mining the amendment area will result in approximately 5.5years additional mining for the Project.

To support the request to EPA to amend the Project under Section 40AA, KLPL has updated this Air Quality and Dust Management Plan to demonstrate the amendment poses no significant impact and can be managed in accordance with Condition 15 of MS810.

1.2. KEY ENVIRONMENTAL FACTOR

The key environmental factor relevant to this AQDMP is Air Quality, focussed on airborne dust. Potential sources of dust from the Project are summarised in Table 2.

TABLE 2: POTENTIAL AIR EMISSION PROJECT RISKS

SOURCE	ACTIVITY	POTENTIAL POLLUTANTS	INHERENT RISK
Mining & Exploration	Clearing and grubbing Topsoil removal Excavating Truck loading Heavy and light vehicle movements General materials handling Exposed areas susceptible to wind Land rehabilitation works	Dust TSP, PM_{10}	High
Processing Area	Fixed plant General materials handling Exposed areas susceptible to wind	Dust TSP, PM_{10}	Medium
	Heavy mineral concentrate stockpiling	Dust TSP, PM_{10}	Low
Fuel consumption	Fixed and mobile plant Pumps and compressors Heavy and light vehicles	Exhaust emissions NOx, SOx, CO, VOC's, PM_{10}	Low[1]
Ancillary	Fuel storage (venting)	VOC's, PAH's	Negligible[2]

1.3. CONDITION REQUIREMENTS

The Project was assessed and approved under Part IV of the *Environmental Protection Act 1986* on 19 October 2019, with the issuing of Ministerial Statement 810. Revisions to the Project were approved via Section 46C in June 2011 and Section 45C in February 2013, October 2019 and August 2022. A Section 46 amendment to extend the time limit for commencement of the Project was made in October 2014. A further request under Section 40AA of the EP Act was requested in August 2023 (with an RFI issued in March 2025) to incorporate additional comments (subject of this AQDM)

This AQDMP has been prepared to address the following Conditions in MS810.

[1] This AQDMP focusses on management and monitoring high and medium risk activities only. Impacts from low or negligible risk activities are manageable through standard industry practice, a rigorous equipment maintenance plan and energy efficiency measures implemented by KLPL.

TABLE 3: CONDITION REQUIREMENTS

CONDITION NO.	CONDITION	RELEVANT SECTION OF WDMP
15-1	Prior to the commencement of operations, the proponent shall revise the Air Quality and Dust Management Plan to the requirements of the CEO.	Completed (MZI Resources, 2013)
15-2	The objectives of the Plan are to: a. ensure dust emissions from activities undertaken in implementing the proposal do not cause ambient dust concentration levels outside the boundary of the proposal area that are: i. higher than 1,000 µg/m^3 of Total Suspended Particulates as a 15-minute average; or ii. higher than 50 µg/m3 of Particulate Matter smaller than 10 microns as a 24-hour average, in excess of five times per year; b. identify measures to reduce dust emissions; and c. ensure that dust emissions do not harm or adversely affect environmental values or the health, welfare and amenity of people and land uses.	a) 2.2 b) 2.1 c) 2.1.1
15-3	The Plan shall: a. outline the results of on-site baseline dust monitoring and modelling; b. identify dust management measures for a range of predicted weather forecasts, including avoiding, ameliorating and protecting from dust impacts; c. identify dust management measures according to actual winds experienced at the site; d. identify a plan for each pit, which details the times of day and weather conditions under which parts of the pit could be mined; e. identify a monitoring program, incorporating trigger values for the implementation of management measures to ensure dust emissions from activities undertaken in implementing the proposal do not cause ambient dust concentration levels outside the boundary of the proposal area that are: i. higher than 1,000 µg/m^3 of Total Suspended Particulates as a 15-minute average; or ii. higher than 50 µg/m^3 of Particulate Matter smaller than 10 microns as a 24-hour average, in excess of five times per year; f. identify management measures to ensure dust emissions from activities undertaken in implementing the proposal do not cause	a) 1.4.1 b) 2.2.1 c) 2.1.1, 2.1.4 d) 2.1.4 e) 1.4, 2.2.1 (noting that NEPM update does not allow for 5 exceedances) f) 2.1.3, 2.1.5 g) 5.1 h) 2.1.2 and Figure 2

CONDITION NO.	CONDITION	RELEVANT SECTION OF WDMP
	ambient dust concentration levels outside the boundary of the proposal area that are: i. higher than 1,000 ug/m^3 of Total Suspended Particulates as a 15-minute average; or ii. higher than 50 ug/m3 of Particulate Matter smaller than 10 microns as a 24-hour average, in excess of five times per year; g. identify a complaint management procedure; and describe the outcomes of landowner agreements when mining in close proximity to occupied residences.	
15-4	The proponent shall implement the Air Quality and Dust Management Plan.	Refer Annual CARs
15-5	The proponent shall review and revise the Air Quality and Dust Management Plan as and when directed by the CEO.	Section 4
15-6	The proponent shall implement revisions of the Air Quality and Dust Management Plan required by condition 15-5.	Refer Annual CARs
15-7	The proponent shall make the Air Quality and Dust Management Plan (including any revisions) and the results of monitoring publicly available in a manner approved by the CEO.	The approved AQDMP will be available at: www.doral.com.au
15-8	To the extent that the proposal is subject to a licence issued under Part V of the Act, that licence may impose conditions which are different from, or additional to, the requirements of this Statement.	N/A[2]

1.4. RATIONALE AND APPROACH

1.4.1. BASELINE DUST MONITORING (2007)

Baseline monitoring for particulate matter less than 10 microns in diameter (PM10) was carried out by SKM between 21 February and 17 April 2007. A Tapered Element Oscillating Microbalance (TEOM) fitted with a PM10 inlet was located in an open paddock, with no livestock in the immediate vicinity, south west of the Keysbrook townsite. The unit was located far enough from the South West Highway that vehicle emissions from this road would not be a factor, although it was noted that some local vehicle emissions may still be experienced at the monitoring site.

Readings were taken every five minutes, with these values used to calculate hourly and daily averages.

[2] The Project is licenced by the Department of Water and Environmental Regulation (DWER) under L8918/2015/1 for prescribed Category 6 (Mine Dewatering) and Category 8 (Mineral Sands Mining or Processing – 5.2 mtpa). No licence conditions relating to dust or air quality are applicable.

All averaged 24-hour readings for PM10 were below the NEPM value of 50 micrograms per cubic metre with the highest recording being 37.9 micrograms per cubic metre (79.4% of the NEPM value).

A comparison between dust concentrations and wind speed and direction indicated that the highest dust concentrations occurred with southerly or westerly winds, in contrast with the modelling which predicted easterly winds would generate higher dust concentrations. Additionally, the majority of high concentration readings coincided with wind speeds between 0.9 and 2.3 metres per second, though the highest concentrations were recorded during much higher wind speeds of 4.4 metres per second.

1.4.2. RESULTS OF AIR QUALITY MODELLING (2013)

As part of the initial environmental impact assessment for the Project, modelling of air quality impacts from mining operations at Keysbrook was undertaken using the Victorian EPA's AUSPLUME (Version 6.0) air dispersion model (MZI Resources, 2013). The model used three years of meteorological data to predict potential worst-case ground-level concentrations of particulates and determined that without management and mitigation measures, there was potential for air quality and dust impacts on those residences that are within 300 metres of active mining.

In areas where residences are relatively close to operations, it was recommended that a monitoring network be established between the operations and the nearest residence such that if high dust concentrations occur, an alert is raised and additional management measures can be implemented.

1.4.3. OPERATIONAL AIR QUALITY MONITORING EXPERIENCE

Construction of the project commenced in January 2015 and operations commenced following commissioning in October 2015. Monitoring ambient dust concentrations commenced in May 2015 in accordance with an approved Air Quality and Dust Management Plan (March 2012) as amended through an approved Air Quality and Dust Management Plan Addendum (October 2013).

Monitoring was conducted using three nephelometers (DMP) and one Beta Attenuation Monitor (BAM) each measuring ambient PM_{10} concentrations over a 15-minute averaging period, with the BAM also measuring ambient TSP concentrations over a 15-minute averaging period. The results of the monitoring indicated that no discernible trend was observed between PM10 and TSP concentration and that the ratio of PM10:TSP is dependent on wind conditions and particulate concentration.

Through a review of actual mining activities, processing experience and monitoring data gained since the commencement of operations, a number of opportunities to improve dust management and monitoring practices have been identified and are reflected in this updated Air Quality and Dust Management Plan.

The data confirms that the key predictions in the original modelling remain valid: namely that the highest risk of dust generation is from cleared or active areas exposed to easterly and south westerly winds during dry periods. Monitoring to date has also indicated elevated background dust levels at times above threshold values which is attributed to surrounding agricultural land and activities (i.e., cattle grazing, crop harvesting and strong winds across open paddocks). Appendix A indicates the location of the DMPs.

1.4.4. AUSTRALIAN STANDARDS

Dust monitoring will be undertaken in accordance with the applicable Australian Standards relevant to the technology used, including:

- AS/NZS 3580.1.1:2016 - Methods for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment.

- AS/NZS 3580.9.11:2016 - Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM_{10} beta attenuation monitors.
- AS/NZS 3580.12.1:2015 - Methods for sampling and analysis of ambient air - Determination of light scattering - Integrating nephelometer method.
- AS/NZS 3580.14:2014 - Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications.
- National Environment Protection (Ambient Air Quality) Measure (as amended, 2021), 24-hour PM_{10} goal.

1.4.5. MONITORING EQUIPMENT

Improvements since the commencement of the operations include;

- Selection of real time monitoring equipment to allow for more direct and accurate monitoring of parameters at a frequency and averaging period prescribed in Ministerial Condition 15.
- Monitoring data able to be analysed in conjunction with meteorological data and logs of site activities to investigate potential exceedances and community concerns
- Monitoring equipment is be solar powered and operates continuously with a target availability of 95% to account for planned servicing and maintenance and unplanned downtime.

TSP and PM_{10} Monitoring

In accordance with MS810, dust monitoring at the Keysbrook Mine is undertaken for Total Suspended Particulates (TSP) and particulate matter smaller or equal to 10 microns (PM_{10}).

KLPL uses three nephelometers operated and maintained in accordance with AS/NZS 3580.12.1:2015 - *Methods for sampling and analysis of ambient air - Determination of light scattering - Integrating nephelometer method*.

The current nephelometers utilised on site are Dust Master Pro's. The nephelometers will be configured to measure PM_{10} concentrations over a 15-minute averaging period.

The e-BAM unit previously in service during the commencement of the operation was struck by lightning hence it is no longer in service.

1.4.6. MONITORING LOCATIONS

The monitoring equipment will be located around the periphery of the Project area (Figure 2), with placement guided by:

- The location of proposed mining and rehabilitation activities;
- Prevailing seasonal wind conditions;
- Proximity of mining activity to sensitive human receptors; and
- An objective of characterising airborne dust concentrations upwind and downwind of the disturbance footprint. The upwind and downwind locations will be based on seasonal wind roses. Wind roses generated from the Bureau of Meteorology (BoM) Mandurah station 9977 are provided as Appendix B.

The locations of the monitoring points will require adjustment in respect of the moving mining operation and may also be adapted in response to ongoing data analysis and community feedback. The fluidity of the monitoring locations is pivotal in maximising the value and reliability of data.

The positioning of instruments will be cognisant of the likelihood of vandalism and theft. Monitoring locations will be chosen based on potential visual obscurity and where public access is minimised. To further minimise the risk of theft, all monitoring equipment will be equipped with anti-theft wheel clamps

1.4.7. TELEMETRY AND ALERTS

Monitoring equipment will be configured to include the following capabilities:

- Automated remote warning system that can send alerts when dust concentrations exceed the trigger values.
- Telemetry system to allow for remote downloading of monitoring data.
- Solar power or high-capacity battery system to provide continuous power.

1.4.8. METEOROLOGICAL MONITORING

An automated meteorological station located in proximity of the processing site, adjacent to the process water dam, provides a more comprehensive suite of weather data valuable for the interrogation of dust data. The equipment is mounted on a 10-metre mast and includes transducers for wind speed, wind direction, relative humidity and rainfall installed to Bureau of Meteorology standards.

1.4.9. MONITORING EQUIPMENT CALIBRATION

All equipment will be subject to a scheduled servicing and maintenance program managed via KLPL's PRONTO scheduling system. Servicing and calibration of dust monitors and the meteorological station will be in accordance with applicable Australian Standards or manufacturer specifications. This will typically occur on at least a quarterly basis by a trained monitoring technician. An annual calibration of all monitoring equipment will also be undertaken with records maintained by KLPL within a calibration register.

1.4.10. RATIONALE FOR CHOICE OF ENVIRONMENTAL CRITERIA

Environmental assessment criteria are prescribed in MS810 Conditions 15-2 and 15-3 and relate to PM_{10} and TSP dust. Accordingly, dust monitoring and the management of potential dust impacts focus on these parameters in order to ensure that environmental criteria are met.

Total Suspended Solids (TSP)

Total Suspended Particulates (TSP) is a measure of all detectable particles in the atmosphere. TSP measurements tend to be skewed by the inclusion of larger more massive particles which by their nature and size are less likely to be inhaled into the lungs. As a result, TSP monitoring is primarily a measure of impact on amenity more so than on health. Examples of amenity values that can potentially be affected by TSP dust include:

- Visual impacts;
- Preventing members of the community from undertaking outdoor activities in comfort;
- Soiling clothing on washing lines;
- Dust build-up on buildings, including roofs and vehicles requiring frequent washing.

Particulate Matter (PM_{10})

Particulate Matter PM_{10}, includes only particles smaller than 10µm in aerodynamic diameter and are considered 'respirable'. These particles may enter through the nose and throat and be deposited in the trachea and bronchia sections of the respiratory tract, and have the potential to lead to adverse health effects.

Heavy deposition of finer particulates has the potential to affect vegetation health by limiting photosynthesis (leaf smothering) and gaseous exchange (blocked stomata). Blocked stomata can reduce the ability of a plant to transpire, thus increasing internal leaf temperature, which can result in a down regulation in photosynthesis (Turner, 2013).

1.4.11. RATIONALE FOR CHOICE OF TRIGGER LEVELS AND THRESHOLD CONTINGENCY ACTIONS

Trigger levels have been determined for short term monitoring parameters to facilitate investigation and pre-emptive preventative measures, where relevant, to minimise dust emissions in the event of an adverse trend and to maintain compliance with prescribed limits defined in Section 1.3.

Internal triggers are defined in Section 3.2 and have been determined through:

- Initial air dispersion modelling data;
- Assessment of monitoring data collated to date;
- Review of verified dust complaints from sensitive receptors;
- Identification of the activities and conditions that had contributed to significant dust events.

Triggers are then set as early response indicators so that significant dust events can be ameliorated where attributable to KLPL operations

2. ENVIRONMENTAL MANAGEMENT PLAN PROVISIONS

2.1. MANAGEMENT APPROACH

The following actions describe the overall management approach for dust control.

- Sowing of a 'dust crop' comprising of rye grass mix to open areas of profiled tails sand as an interim measure prior to the replacement of topsoil;
- Use of 'slime carts' which are modified water carts which allow the spreading of clay fines 'slimes' to open areas and stockpiles in preparation for and during moderate to high-risk weather conditions;
- Identification of activities and meteorological conditions conducive to dust generation;
- Establishment of standard practices to minimise dust generation. These practices reflect the risk of potential dust impacts on residents including their proximity to active mining;
- Use of weather forecasting to refine short term mine planning and associated activities;
- Monitoring of wind speed and direction, TSP and PM_{10} dust emissions from mining activities at selected boundary locations as well as at other locations within the Project area in order to identify and mitigate operational dust emissions;
- Implementation of a proactive consultation and communication procedure to inform residents of proposed mining activities in proximity to their dwellings and/or to respond to complaints efficiently;
- Development and implementation of contingency measures in the event of verified elevated dust events.

2.1.1. MINING ACTIVITIES NEAR RESIDENCES

Based on the result of modelling undertaken by SKM in 2007, an air quality buffer of 300 metres between mining active mining areas and occupied houses has been established. Mining may occur up to these buffers under any wind conditions. These air quality buffers correspond to the buffers established by noise modelling undertaken to educate the original Noise Management Plan developed for the site.

Under revised MS1089 (February, 2019), Condition 14 governing noise management was revised to extend the buffers for mineral processing and daytime mining to 2km. The revised statement did not apply to areas of the approved mining area that have already been mined.

The revised statement provides relief from the 2km buffer in the form of amenity agreements. Therefore, amenity agreements have been sought with all residences within 2km of the remaining approved mining area, to provide compensation for potential reduced amenity through noise and dust emissions from the project.

While amenity agreements do provide some relief for the Project from imposed noise and air quality restrictions, the project is still required to adhere to the noise emissions levels and air quality exceedance thresholds stipulated in MS810 and MS1089.

Therefore, if mining is to occur within 300m of a residence the following will apply:

- The residence is not occupied. This may be as a result of a commercial agreement between KLPL and the residences owner and occupier; or

- Mining is undertaken during times of wet soil and/or conditions (i.e., winter and autumn). Any such decision to mine within these areas would be based on assessment of the moisture content at the time as this is likely to be highly variable depending on climatic conditions; or
- Mining is undertaken during periods where winds are away from residences. Any such decision would be assessed at the time and would be subject to air quality standards documented in this Plan being complied with; or
- If mining does occur within these areas (i.e., within 300m of a residence), additional dust management measures may be required depending on the weather, wind direction and speed and moisture content of the soil materials.

It is not expected that additional measures will be required during the winter months (May to October) as soil moisture and rainfall will be sufficient to minimise dust lift off. During late spring, summer and early autumn (mid-October to late April) it is expected that soil conditions will be dry with insufficient moisture to prevent dust lift off during windy conditions.

2.1.2. USE OF WEATHER FORECASTS

Weather forecasts will be obtained and used on site as a proactive management tool. While not used as a primary management tool, weather forecasts are considered, in unison with other standard proactive measures, to assist in limiting potential dust generation when scheduling activities. Local weather forecast data for up to 4 days in advance will be accessed via proprietary products which enable easier data integration with site planning tools.

2.1.3. STANDARD DUST CONTROL ACTIONS

The following initiatives will be implemented to reduce the potential for dust impacts during operations:

- Use of weather forecasts to identify potentially high-risk conditions conducive to dust generation, and initiation of proactive dust management practices;
- Restriction of mining within 300m of a residence without agreement with the owner and occupier of the residence. Any mining within 300m of a residence will occur in accordance with the agreement, which will include provisions for minimising dust emissions (such as seasonal mining, appropriate soil moisture conditions, weather conditions and dust suppression);
- Use of water trucks over exposed areas susceptible to dust generation including active mining and rehabilitation areas, topsoil stockpiles, haul roads and access tracks;
- Restricting vehicles to designated roads and tracks;
- Limiting vehicle speeds on unsealed roads and tracks;
- Limit the area open ahead of mining and at the mine front to no more than 30 ha at any one time;
- Progressive rehabilitation to reduce the duration of land exposed and susceptible to dust generation;
- Stabilisation of disturbed areas and topsoil stockpiles using a clay/water slurry (which dries to a thin clay veneer resistant to wind erosion) or other stabilising agents, where possible;
- Growing of temporary ‘dust’ crops to bind soil and decrease wind velocity at ground level where appropriate, where groundworks for rehabilitation are partially completed;

- Regular housekeeping to remove spilled product or materials conducive to dusting;
- Covering heavy mineral concentrate product prior to despatch from site.

2.1.4. MANAGEMENT OF MINING AREAS

Where wind speeds on site are expected to (or actually do) exceed 23km/hr, additional management is required. The Site Manager is responsible for implementing the following hierarchy of management actions:

- Reduce vehicle speeds in the area until wind speeds reduce;
- Where reduction of vehicle speed does not result in decreased dust generation, increase the rate of watering to prevent dust lift off;
- When all other management actions have not resulted in decreased dust generation, cease mining activities within the buffer area and/or move to areas outside of the buffer.

To assist in managing dust impacts, a series of real time dust monitors will be established to provide a warning if dust emissions exceed trigger values outlined in Section 1.4.5. The Mining Superintendent is responsible for implementing additional management measures once an alert is raised. If these measures do not result in a decrease in dust emissions, the Mining Superintendent is responsible for adjusting mining operations until wind conditions abate. Management measures may still be required if conditions are such that wind generated dust lift off creates high dust concentrations in the absence of excavation activities.

2.2. TRIGGER LEVELS

2.2.1. TRIGGER LEVEL ACTIONS

The trigger level and threshold criteria provided in Table 4 have been adopted.

TABLE 4: MONITORING TRIGGER VALUES

PARAMETER	TRIGGER VALUES	
	TRIGGER CRITERIA	THRESHOLD CRITERIA/LIMIT
Total Suspended Particles (TSP)	600 µg/m^3 15-minute average	1,000 µg/m^3 15-minute average
Particulate Matter less than 10 micron (PM_{10})	40 µg/m^3 6 hour rolling average	50 µg/m^3 24-hour average*

*MS810 Condition 15-3(e) trigger criteria allowed in excess of 5 times per year (updated based on NEPM(,

In the event that real time particulate monitoring identifies that ambient TSP or PM_{10} trigger criteria are reached at any monitor, an alert will automatically be initiated to the Mining Superintendent and the site Environmental Officer.

If Trigger Criteria are reached or exceeded, and after review there are grounds, based primarily on wind direction to believe KLPL land or activities are the cause or significant contributor to the elevated dust, the following measures will be implemented to limit the risk of escalation of the dust event:

- A site inspection will be undertaken to identify the source(s) of the elevated results relative to wind conditions, mining activities and/or inactive exposed areas at the time. The presence of non-

operational dust generating activities will also be checked (such as stock activity, fertilizing, ploughing, harvesting);

- Where dust generation is determined to be attributable to KLPL ongoing activities, implementation of additional dust controls such as increased rate of application of water over the source area;
- Consideration given to ceasing mining activity in relevant areas until prevailing conditions subside and the risk of elevated dust concentrations exceeding threshold criteria is removed;
- Consideration given to liaison with potentially affected residents who may be susceptible to the dust event.

2.3. REPORTING PROVISIONS

2.3.1. ANNUAL REGULATORY REPORTING

KLPL will prepare a Compliance Assessment Report (CAR) for the period 20 July (of the previous year) to 19 July, which outlines performance and compliance in accordance with a Compliance Assessment Plan approved under Condition 4 of Ministerial Statement 810. The report will be submitted within 3 months of the end of the report period (i.e., by 19 October). This report will include:

- Evidence of compliance with Condition 15;
- An assessment of monitoring data collated in accordance with this AQDMP;
- A summary of identified exceedances of threshold criteria and associated mitigation measures;
- Actions undertaken to address potential non-conformances associated with key plan provisions in Table 6 of this AQDMP.

2.3.2. REPORTING ON EXCEEDANCE OF THRESHOLD CRITERIA

Verified exceedance with the threshold criteria defined in Table 4 will be reported to DWER. Verification involves confirming the result is valid (i.e., not caused by smoke or instrument interference) and that there is a reasonable likelihood that KLPL land or activities caused, or significantly contributed to, the elevated dust level.

The number of exceedances of the PM_{10} target per calendar year will be tracked by the Environmental Officer. Any PM_{10} verified exceedance in a calendar year, or verified exceedance of the TSP threshold criterion will be reported to DWER as a (potential) non-compliance with the NEPM within two business days of verification (as per Condition 4-5).

Dust complaints and remedial actions will be summarised in the Annual Environmental Report (AER) as required under the site Part V EP Act licence.

2.3.3. INTERNAL REPORTING

The Environmental Officer will report to the Environmental Coordinator on a monthly basis or at an alternative agreed interval:

- Summary graphs of TSP and PM_{10} data;
- Number of alert level triggers and regulatory limit exceedances (if any); and
- Circumstances leading to triggers and regulatory limit exceedances.

2.3.4. EMP PROVISIONS

Table 5 provides a summary of the objective based EMP to meet legal requirements of Condition 15 of MS810.

TABLE 5: OBJECTIVE BASED EMP PROVISIONS

MANAGEMENT TARGETS	MANAGEMENT ACTIONS	MONITORING / PERFORMANCE INDICATOR	TIMING/ FREQUENCY OF ACTIONS	REPORTING
Management Target 1	Management Actions 1			
	Use of weather forecasts to identify potentially high-risk conditions conducive to dust generation, and with reference to Table 4, plan mining to suit the potential wind conditions and initiate of proactive dust management practices.	Daily weather report. Supervisor shift report.	Daily	AER
	If wind conditions are in excess of 23km/per hr initiate the following additional management actions: • Reduce vehicle speeds in the area until wind speeds reduce; • Where reduction of vehicle speed does not result in decreased dust generation, increase the rate of watering to prevent dust lift off; and, • When all other management actions have not resulted in decreased dust generation, cease mining activities within the buffer area and/or move to areas outside of the buffer.	Current wind conditions.	Annual	CAR
	No mining within 300 m of a residence without the agreement of the owner and residents.	Mining footprint in relation to residences.	Annual	CAR
	Regular use of water trucks during dry periods.	Supervisor shift report. Site rainfall records.	Ongoing	Monthly reporting

MANAGEMENT TARGETS	MANAGEMENT ACTIONS	MONITORING / PERFORMANCE INDICATOR	TIMING/ FREQUENCY OF ACTIONS	REPORTING
	Limit area open ahead of mining and at the mining front to no more than 30 ha at any one time. Stabilisation of trafficable open areas post mining through full rehabilitation or interim stubble crop	Mining footprint (surveyor), monthly updates. Annual areas of rehabilitation and stabilisation seeding.	Monthly Feb-Oct	AER CAR CAR
Management Target 2 Monitoring program to: (i) characterise local dust environment; (ii) inform management measures; and (iii) enable assessment of compliance.	**Management Actions 2** Maintain a network of automated dust monitoring stations. Regularly assess data in relation to land and weather conditions and report. Report potential exceedances of threshold criteria.	PM_{10} continuously measured a minimum of 300 days/year (including period October – June) at minimum of 2 sites around project boundary TSP continuously measured a minimum of 300 days (including period October – June) at higher risk downwind site by one monitor Monthly report. Threshold criteria • TSP - 1,000 µg/m^3 15-minute average. • 50 µg/m^3 24-hour average (PM_{10})	Ongoing Ongoing As necessary	Monthly report (internal) CAR CAR CAR AER DWER (potential non-compliance report).

3. RESPONSIBILITY AND ACCOUNTABILITY ALLOCATION

The Mine Manager has overall accountability and responsibility for management of operations of the site and is therefore responsible for the implementation of this AQDMP.

The Environmental Coordinator has responsibility for ensuring implementation of the AQDMP, auditing and reporting environmental performance, and periodic reviews to of the plan to ensure its ongoing effectiveness.

The Environmental Officer has responsibility for implementing the monitoring, data review and reporting elements of this plan.

Responsibilities and accountability allocation are defined in the following table.

TABLE 6: ROLES AND RESPONSIBILITIES

ROLE DESCRIPTION	RESPONSIBILITY
Allocation of resources to implement AQDMP	Mine Manager
Assessment of dust generation potential relative to short and medium mine plan, proximity to sensitive receptors, forecasted meteorological conditions.	Mine Manager Environmental Officer
Implementation of dust controls during mining activities.	Mining Superintendent
Implementation of contingency measures in the event that monitoring triggers are reached or a validated complaint is received.	Mining Superintendent Environmental Officer
Coordination of dust monitoring program	Environmental Officer
Review and analysis of monitoring data.	Environmental Officer
Internal reporting of dust incidents and complaints.	Mining Superintendent
External reporting to regulatory agencies.	Environmental Officer
Community and stakeholder liaison.	Environmental Officer
Training of personnel on aspects of this AQDMP relevant to their role	HSEC Advisor
Annual review of this AQDMP	Environmental Officer

4. ADAPTIVE MANAGEMENT AND REVIEW OF AQDMP

Adaptive management is a structured, iterative approach for improving the efficacy of actions and quality outcomes. It aids ongoing decision-making by reducing uncertainty over time through monitoring, analysis and interpretation and adaption both to environmental, economic and social changes.

The key steps of the approach applied by Doral and embodied in the Environmental Management System are illustrated and explained below.

- Define & Plan: Technical assessment, modelling and analysis based on key characteristics to determine the range of possible outcomes and impact scenarios. Through an assessment process the strategic approach is developed; identifying goals, objectives and performance indicators to guide the project through operation.
- Implement & Monitor: Work plans and procedures are developed and implemented. Monitoring, auditing and compliance reporting are progressively undertaken.
- Analyse: Data acquired is assessed to determine if the operating strategy remains consistent with project and approval objectives.
- Adjust: Adaptions at strategic and operational levels as appropriate in response to analysis conclusions, changes in regulatory framework and stakeholder feedback.
- Share: Communicating performance and learnings within Doral, key matters of interest with the community, and reporting performance and compliance with regulatory agencies in conformance with approval and statutory obligations.

4.1. REVIEW OF AQDMP

The AQDMP will be reviewed annually or in the event of a significant change to the dust emission risk. The plan may also be revised on the instruction of the CEO of DWER in accordance with Condition 15-5.

The review of the AQDMP will consider:

- Any change in relevant standards, codes of practice or regulatory limits;
- Monitoring data including trends and anomalies;
- Applicability of adopted trigger criteria;
- Effectiveness of management measures, documented procedures and equipment to ongoing operations and control of environmental risks;
- The ability of the AQDMP to achieve defined objectives and targets;
- The efficacy in achieving compliance with Condition 15;
- Maintenance of records of monitoring data and dust incidents, and follow-up action that had been implemented; and
- Outcomes of inspections.

5. STAKEHOLDER ENGAGEMENT

Stakeholders who have been identified as having an interest in the environment surrounding the proposed amendment have been consulted and will continue to be consulted and informed through the approvals phase. KLPL commenced stakeholder engagement at the start of 2021 in support of its plans to expand its Keysbrook mining operations. Consultation has been ongoing throughout the life of the Keysbrook operations. Targeted communications and meetings with key stakeholders specific to the proposed amendment has been undertaken subject to landholder approval.

KLPL will continue to maintain a stakeholder register, which documents communication with stakeholders, any issues/ concerns raised and the outcome of the consultation.

A summary of stakeholder engagement is outlined in the following table.

TABLE 7: STAKEHOLDER ENGAGEMENT

STAKEHOLDER	DATE	ISSUES/TOPICS RAISED	PROPONENT RESPONSE/OUTCOME
DWER (OEPA) – Samara Rogers	03/03/23	Pre-referral meeting to discuss the future of the Keysbrook project including proposed stages of extension and subsequent requests for approvals including the submission of this section 40AA.	EPA services is very busy, prioritise the most critical approval to the top of the list. Therefore, the submission of this 40AA was postponed from April pending the approval of proposed 45c to Lots 56 and 63.
DWER (OEPA) – Aidan Walsh, Helen Butterworth	15/03/23	Presentation of foreseeable end of Keysbrook approved mine reserves, proposal to submit 45c application for 45c amendment to allow time for larger Western Extension approvals to be processed	45c application (for Lot 56) needs to be low risk (and was subsequently submitted in October 2022). The larger Western Extension project would need to be referred as a Section 40AA significant amendment to approved project.
DWER (OEPA) – Rowan Inglis	27/6/23	Request for clarity on sequencing of Keysbrook mine progress and future proposed approval requirements	General email provided outlining future operational proposals for the Keysbrook mine
DWER (OEPA)	09/10/23	Submission of s38 Referral for the Western Extension to the Keysbrook Mineral Sands Project	Determination by the CEO 06/11/23 to assess with 4 week Public Review
DWER (OEPA) – Rowan Inglis	Nov 23- May 24	General correspondence	General correspondence with progress updates of assessment stages between Doral and DCCEEW
DWER (OEPA) – Rowan Inglis	09/05/24	Correspondence with DCCEEW Notification of project to be assessed by Accredited Assessment	Noted

DWER (OEPA)	24/06/24	Notice to Doral requiring Request for Information (RFI) incorporating comments from regulatory authorities and including DCCEEW under the Accredited Assessment	Noted
DWER (OEPA) – Rowan Inglis	Jul 24 – Jan 25	General correspondence	General correspondence by Doral providing updated on progress of RFI noting that further field studies and consultancy work were required
DWER (OEPA)	04/02/25	Updated ERD Document and inclusive of Request for information was uploaded to EPA link	Some minor issues were encountered with uploading to Environment online
DWER (OEPA)	March 2025	General correspondence, agency responses to RFI due by 14th March	Noted
DWER (OEPA)	02/04/25	Notification of second Request for Further Information prior to public comment period	Doral to update and provide response
DCCEEW	30/11/23	Submission of EPBC Referral and payment of Referral fee	Payment acknowledged
DCCEEW	Jan-Mar 2024	Correspondence with EPBC Portal staff to meet the detail required by the system to upload the referral	Noted, however some disappointment by Doral with time delays and non-transparent complexities of uploading to the Portal
DCCEEW	07/03/24	Notification of receipt of referral on EPBC Portal. Published for 10 day period, decision due 9th April 2024.	Noted
DCCEEW – Maddi Wenzel, Neil Riches	March 2024	Contact with appointed assessing Officer. Several queries relating to radioactive minerals. Several Teams meetings and correspondence continued	Radiation related information supplied - minerals monitoring, management plans and State regulatory management of radioactive minerals by DEMIRS.
DCCEEW	25/03/24	DCCEEW Request to 20 business day extension of statutory timeframe for assessment	Request accepted
DCCEEW – Maddi Wenzel, Neil Riches	April 2024	Correspondence and Teams meeting to query Fauna surveys and reports.	Responded to queries and ongoing correspondence via email and Teams meetings

		Query relating to project boundary relative to existing operations and shapefile accuracy	
DCCEEW	09/05/24	Determination of Project as a Controlled Action under the EPBC Act and to be assessed by Accredited Assessment under the EP Act 1986 (WA).	Noted Doral also requested a Statement of Reasons on 30th May 2024 and accepted an extension of statutory timeframe
DCCEEW – Maddi Wenzel, Neil Riches	21/06/24	General assessment progress Teams meeting and proposed offset site	Communicated by Doral was at the point of signing purchase agreement with proposed offset land
DCCEEW – Maddi Wenzel, Neil Riches	28/06/24	DCCEEW Officers commented that proposed offset did not allow for enhancement to meet needs of EPBC Offsets calculator and was therefore unsuitable	Disappointment by Doral due to invested time (18 months) and resources (surveys and land negotiations) and unclear expectations based on previously acceptable Land Offsets. Significant impact to timing of achieving approvals to meet Company operational continuity.
DCCEEW – Maddi Wenzel, Neil Riches, OWS Officers	09/10/24	Meeting to discuss response to hydrological queries in Request for Information	Comprehensive response prepared and delivered to DCCEEW Office of Water Sciences officers. No further issues noted
DCCEEW – Maddi Wenzel, Neil Riches	25/10/24	Meeting to discuss second proposed Offset site at Jelcobine Site in West Brookton, WA	Doral to follow up with relevant surveys
DCCEEW – Maddi Wenzel, Neil Riches	Nov 24 – Mar 25	General correspondence discussing Offset Strategy and including Offset Calculator vales for Jelcobine site	Offsets Strategy submitted with RFI response to OEPA. Followup discussions on Offsets strategy for clarification held
Shire of Serpentine Jarrahdale – Andrew Trosic	24/10/24	General meeting and presentation of Keysbrook Mine and in particular proposed Western Extension	Commitment to keep Shire informed of progress and meet with relevant staff prior to submission of Extractive Industries Licence application
Shire of Serpentine Jarrahdale – Helen Maruta, Mark Angeloni, Marius La Grange	03/04/25	General meeting to discuss the Western Extension to the Keysbrook Mine proposal, current approvals progress, proposed rehabilitation and community engagement.	No specific issues noted by SOSJ
LANDOWNERS (require approvals and/or agreements)			

Lot 1, 67 – Hopeland Road (2 residences)	Receives community update letters as outlined in communications list. Various meetings held from 23 August 2023 to 15 April 2025	Discussions with landowner remains ongoing. Concerns raised include: noise can be heard at night on occasions, dust is a significant concern and especially in regard to the race horses, clearing of native vegetation.	At meetings, Environment Manager detailed mitigation and preventative measures to be implemented to address concerns raised. Further meetings and discussions held in regard to environmental management plans to be implemented. Dust monitor was placed on property in December 2024 to obtain baseline recordings and bore monitoring has been ongoing since February 2025. Communications are continuing.
Lot 2 – Hopeland Road	Meeting 4 September 2024, added to community database and now receives all community updates.	Meeting was held to discuss western extension proposal, no issues raised. Discussions with landowner remains ongoing.	Continue to keep informed in regard to Western Extension proposal and associated timings.
Lot 501 – Hopeland Road	Receives community update letters as outlined in communications list. Meeting held 23/08/23	No issues, has worked with Doral (previously MZI Resources previously).	Continue to keep informed in regard to Western Extension proposal and associated timings.
Lot 1 Hopeland Road	Previous owner received all communications.	Property is under offer, new owner details not available.	House was previously a rental, follow up with new owners.
Lot 309 and 310 – Hopeland Road	Receives community update letters as outlined in communications list.	No feedback received in regard to extension letters. Residence is a rental.	Keep informed in regard western extension and further follow up required in regard to rental.
Lot 500 – Elliott Road	Receives community update letters as outlined in communications list. Further meeting held 27 May 2024 Phone conversation 7/08/23	Property is Under Offer, has been on market for significant time. Various conversations around Iluka tenement. Email received from Owner on 7/10/21 providing approval to EPA for Doral to mine Lot 64. No issues in regard to current western extension.	Doral requested when property is sold, to advise who the new owners are to arrange a meeting. Follow up required to ascertain new owners.
DORAL OWNED PROPERTY			

Lot 63 – Hopeland Road	Leaseholder receives regular site update letters as outlined in communications list, various meetings held with Doral's Mine Manager.	No residence. Doral purchased in 2022, subject to lease arrangement. Ongoing engagement. Property included in western extension.	Alternative grazing provided until lease is at an end being end of 2025. Ongoing communications with leaseholder in regard to timing.
Lot 62 – Hopeland Road	Doral owned, site administration offices located on site, mining and cattle grazing on land.	No residence, Doral owned since 2012.	
Lot 507 - Elliott Road	Deceased estate, currently under offer with Doral, subject to settlement. Executor receives community update letters as outlined in communications list. Ongoing discussions with Executors of the estate.	No residence. Discussions ongoing in regard to extension proposal and sale.	Keep Executors informed of mining activities and proposed development. Post settlement, land will be leased to local landholder.
Lot 20 – Hopeland Road	House currently vacant, potential to be an employee residence.	Future tenants required to sign an Occupant Deed in regard to Western Extension.	Future tenant to be kept informed in regard to Western Extension mining development.
Lot 211 – Hopeland Road	Ongoing engagement with tenant. Receives community update letters as outlined in communications list.	Under Occupant Deed Agreement. Tenanted, lease to expire at the end of the year, informed of extension and timelines.	Keep informed in regard to approval developments for the remainder of the year.
Lot 201 – Elliott Road	Doral purchased in August 2023.	Doral owned, land surrounding the house included in extension.	Ongoing engagement with tenant, limited lease based on mining

	Receives community update letters as outlined in communications list. activities.	Tenant is under Occupant Deed agreement.	development. Will assist to find alternative rental.
Lot 57, Elliott Road	No residence, mined by Doral	Rehabilitation in progress, some land leased to local landholders.	
Lot 101, 103, 104 and 105	One residence, contractors office, land mined by Doral	Rehabilitation in progress, some land leased to local landholders.	
NEAREST NEIGHBOURS			
Lot 508 – Elliott Road	Various meetings held. Receives community update letters as outlined in communications list.	Land subject to mining agreement, regular engagement, property included in western extension.	Supportive of project, timing around commencement of mining being the highest priority.
Lot 64 – Elliott Road	Receives community update letters as outlined in communications list, site is regularly in touch with owner in regard to mining activities..	Ongoing engagement, primary concerns are noise and dust. Property is included in extension, no mining agreement secured.	Continue to work with landholder in regard to management of these matters. Proactive actions remain being avoidance of topsoil removal in high winds, water cart usage on roads, predictive noise modelling to manage mine activities based on weather. Keep informed of timing associated with northern lots. Continued discussion with Mine Manager on operational matters.
Lot 503 – Elliott Road	Phone call 25/07/23. Receives community update letters as outlined in communications list from July 2023.	No issues, house not tenanted. Land managed by caretaker / farm manager, owner resides overseas, no intention to rent. Western extension letter sent to Farm Manager to forward on to owner. Farm manager advised no issues with the proposal and will seek feedback from owner.	Will keep informed of any developments.
Lot 20 – Elliott Road	Receives regular site update letters. Receives community update letters as outlined in	No major issues, noted on some occasions can hear site on still nights, clearing of native vegetation.	Toured site on 23/08/23, will keep informed of any developments.

	communications list. Meeting 3/8/21, 15/08/23, 26/02/24, 26/02/25 site tour on 23/08/23		
Lot 1 – Elliott Road	Receives community update letters as outlined in communications list. Meeting in April 2023 with Environment Manager and 29 May 2024 Phone call 14/08/23	Receives all site update letters, involved in site native revegetation program and in contact with Doral team. Dust and operational impact on water table is primary concern.	Various meetings to run through annual water monitoring data. Participates in the community bore monitoring program, bore is tested every quarter. Advised noise not an issue. Keep informed in regard to approval developments for the western extension.
Lot 501 – Elliott Road	Receives community update letters as outlined in communications list. Meeting held on 29 May 2024 Phone call 16/08/23	Main issue primarily noise, can sometimes hear loader at night, not constant. Concerns around clearing of native vegetation.	Feedback noted. Aware of sites native revegetation program. Keep informed in regard to approval developments for the western extension.
Lot 701 – Hopeland Road	Receives community update letters as outlined in communications list. Meeting held 15/7/23 and various other meetings including site tour, ongoing communications with the Mine Manager.	Ongoing engagement. Concerns raised as to proximity of mining to residence, noise and dust.	Advised same mitigation measures will be implemented and commitment to further discussion and collaborative approach when mining relocates closer to residence. Have provided a refill of the rain water tank for the last two years and will continue to do so as part of the EIL community commitments. Proactive phone calls made to nearest neighbours during periods of high wind forecasts.
Lot 700 – Hopeland Road	Receives community update letters as outlined in communications list. Phone call and text to owner 23 /08/23 and other communications in	House is tenanted, participated in site tour in 2024 in relation to the current operation and future expansion. Concerns are focused mainly around dust and some light pollution.	Explained the dust mitigation measures Doral had implemented. Spoke to the owner of the property, whom we are in regular communication with and forwarded on concerns. Commitment to keep informed and to contact us if any environmental concerns. Dust

	relation to exploration and location of dust monitor.	Communications continue with owner of property.	monitor is located on property since early late 2024. Proactive phone calls made to nearest neighbours during periods of high wind forecasts.
Lot 12 – Hopeland Road (2 residences)	Receives community update letters as outlined in communications list. Meeting 3/5/23, Text on 21 /08/23 in addition to regular communication with the Mine Manager.	Two houses. Discussions held around western extension.	No specific concerns, advised same mitigation measures will be implemented and commitment to further discussion and collaborative approach. Continue to keep informed. Have provided a refill of the rain water tank for the last two years and will continue to do so as part of the EIL community commitments. Proactive phone calls made to nearest neighbours during periods of high wind forecasts.
Lot 212 – Hopeland Road	Ongoing engagement. Receives community update letters as outlined in communications list. Meeting 9/06/23	Tenanted, various conversations with owner, receives community updates.	Keep informed in regard to approval developments for the western extension.
Lot 3 – Hopeland Road	Receives community update letters as outlined in communications list. Phone conversation 14/08/23	No issues, mining not a concern in previously mined areas. House/shed has been vacant for many years.	Property is currently under Offer. Ascertain the new owners. Commitment to keep informed in regard to approvals and the western extension.
Lot 11 – Readheads Road	Receives community update letters as outlined in communications list.	No residence.	Keep informed in regard to approval developments and broader western extension.
Lot 12 – Readheads Road 2 residences	Ongoing engagement Receives community update letters as outlined in communications	Advised in 2023 had noticed water table had dropped, no other issues raised. No issues raised at last meeting.	Advised we had community bore monitoring program and could be included on this. Will revert if any issues, will also pass on message to neighbour.

	list. Phone call 16/08/23 Meeting 5 December 2024		Keep informed in regard to western extension.
Lot 101/ 102 – Readheads Road	Receives community update letters as outlined in communications list. Meeting 23/08/23	At meeting discussed proposed mine plan and timings. Queried if exploration had been completed on property.	Mine Geologist visited property re potential mining. No issues raised, keep informed in regard to western extension.
Lot 5 – Readheads Road	Ongoing engagement Receives community update letters as outlined in communications list.	Deceased estate, have included new owners details and have spoken in regard to project.	No issues following conversation and details have been added to receive all community updates.
Lot 506 – St Blaise Grove	Receives community update letters as outlined in communications list. Phone call 16/08/23	No issues. Receives all site community update letters, issued quarterly.	No issues raised, keep informed in regard to western extension.
OTHER NEIGHBOURS			
Lot 500 – Hopeland Road		In progress to ascertain contact details.	
Lot 70 – Hopeland Road	Receives community update letters as outlined in communications list Phone call 21/08/23 and other calls / emails to respond to dust concerns.	No residence Land is utilised for cattle grazing. Landholders raised concerns in regard to impact of dust on cattle and site's management of dust during strong easterlies. Meetings held on site with owners, offer of site tour.	Continue to keep informed of the western extension and the day-to-day Keysbrook operations. Explained the mitigation measures site implements on site to manage dust.
Lot 71 – Hopeland Road	Receives community update letters as outlined in communications list. Various phone calls in regard to exploration program undertaken on	No residence. Discussions have been around exploration access for neighbouring property which was undertaken in 2023 and 2024.	No issues raised, keep informed in regard to western extension.

	property in 2023/2024		
Lot 56 – Westcott Road	Receives community update letters as outlined in communications list Various meetings. Phone call 23/08/23 specifically in regard to western extension.	Ongoing engagement. Concerns raised in regard to dust from site. Landholder leases rehabilitated land and other pastoral land from Doral. Land is EPA approved for mine development.	Continue to work with landholder in regard to lease arrangements and future mining in regard to the western extension.
Lot 4 – Westcott Road	Receives community update letters as outlined in communications list Various meetings.	Ongoing discussions in regard to mining on Lot 56, Doral at this stage not proceeding. Concerns raised in regard to dust and noise.	Advised same mitigation measures for current operations will be implemented and commitment to further discussion and collaborative approach.
Lot 508 – St Blaise Grove	Receives community update letters as outlined in communications list. Phone call 16/08/23	No issues.	Continue to keep informed of the western extension and the day-to-day Keysbrook operations.
Lot 13 and 14 – Westcott Road	Receives community update letters as outlined in communications list. Phone call and email, 16/08/23	No issues. Receives all site community update letters. Have met previously through discussions regarding mine access to Lot 56.	Continue to keep informed of the western extension and the day-to-day Keysbrook operations.
Lot 54 – Westcott Road	Receives community update letters as outlined in communications list. Phone conversation 7/08/23 and various meetings in regard to Lot 56 proposal.	No issues. Advised mining for Lot 56 is delayed and advised plans for Western Extension.	No issues in regard to Western Extension. Advised we would keep them informed as to any plans in regard to Lot 56, which is closer to their residence than the Western Extension.
Residents south of Readheads Road	Various	Doral intends to operate under an Approved Noise Management Plan for the limited duration of mining at the southern project locations within proximity to the	Commitment to keep local community members informed in person and by newsletters as well as the local North Dandalup community group, Shire of Murray and Local MP.

		Residents south of Readheads Road.	
962 Yangedi South Road	Meeting held on 7 August 2024 in response to phone call in regard to operations	Concerns were around current operations and the dust observed during the summer months.	Detailed the mining process, how the environmental factors were managed being dust and noise. Provided details around the dust monitoring and mitigation measures site undertakes. Request next time dust is observed to let us know so we can investigate. They were added to the community database to receive the community updates.
OTHER STAKEHOLDERS			
Local MP Robyn Clarke MLA Member for Murray Wellington	Receives community update letters as outlined in communications list Meeting held 21 Nov 2023	No issues, supportive of Company's community funding program.	Commitment to keep informed in regard to current operations and western extension. Note: Robyn Clarke was not re-elected. David Bolt MLA is the new member and a meeting request has been sent to provide update on the western extension.
Local MP Hugh Jones MLA Member for Darling Range	Receives community update letters as outlined in communications list Meeting held on 21 Nov 2023 and Site visit to Keysbrook site on 19 November 2024	No issues, supportive of current operations, extension program and Company's community funding program.	Commitment to keep informed in regard to current operations and western extension.
CY O'Connor Research Facility C/- Professor Dawkins	26 July 2023 Receives community update letters as outlined in communications list	Presentation to Group on western extension. Questions in regard to mine life, water allocation, rehabilitation techniques.	Advised of monthly water monitoring and reporting process and rehabilitation commitments. Offered site tour for those interested.
North Dandalup and Keysbrook Volunteer Bushfire Brigades	Annually, every October	An annual site visit by the Brigades to ensure members are provided with the latest information in regard to its operations and identify and confirm the site's ability to respond to emergency situations.	Any corrective actions or suggestions will be implemented as identified.

COMMUNICATIONS			
Western Extension letter, sent to closest neighbours for western extension.	4 April 2023. Sent to 44 neighbours.	Detailed letter outlining environmental measures and operating details associated with the Western Extension.	No phone calls or feedback received on receipt of letter.
Keysbrook site community update letters, sent to all on community database.	14 April, 23 August, 28 November 2023 3 April, 27 June, 6 November 2024 17 March and 14 April 2025 Sent to 85+ close and interested neighbours.	Current operations including Western Extension update. Community update letters are sent approximately every 8 – 12 weeks and have been sent to nearest neighbours since 2012.	No phone calls or feedback received on receipt of letter.
Keysbrook Community Consultative Group (CCG), meeting since 2012	2 May, 2 August, 1 November 2023 7 February, 1 May, 7 August and 6 November 2024 5 February 2025	All meetings discussed the western extension and current timings, community consultation, approvals process. Queries were based on mine life, future deposits, ongoing employment and crossing of Elliott Road.	Continue to keep informed of developments, timings and any community concerns raised during the consultation period. Minutes are made available on the Doral website.
Annual Newsletter	October 2023 Next scheduled May 2025	Details current operations and the western extension.	

5.1. COMPLAINTS MANAGEMENT

KLPL has established internal protocols to receive, investigate and respond to community complaints. On being notified of a concern or complaint, the call or interaction is logged by KLPL personnel using the Stakeholder Interaction Report Form (SIRF) (Appendix B).

The matter of each contact is investigated and where appropriate measures are taken to rectify substantive issues as soon as possible., with actions recorded. Initial feedback will be provided to the complainant within a 24-hour period. This may be to advise the matter has been rectified, or to advise that the matter continues to be being investigated. The aim is to close out all investigations and provide notice in writing within 5 working days.

Analysis of feedback and complaints will be reviewed as required to identify trends and possible concentration of complaints and target areas of improvement.

6. CHANGES TO AN EMP

The following minor changes have been made to the AQDMP to support the submission of the Section 45C request.

TABLE 8: CHANGES TO EMP

COMPLEXITY OF CHANGES		MINOR REVISIONS ✓	MODERATE REVISIONS	MAJOR REVISIONS
NUMBER OF KEY ENVIRONMENTAL FACTORS		One ✓	2-3	>3
DATE REVISION SUBMITTED TO EPA		Aug 2023/April 2025		
PROPONENT'S OPERATIONAL REQUIREMENT TIMEFRAME FOR APPROVAL OF REVISION		<1 month	<6 months	>6 months ✓
ITEM NO.	EMP SECTION NO.	EMP PAGE NO.	SUMMARY OF CHANGE	REASON FOR CHANGE
1	Section 1.1	1	Updated to include proposed S40AA details for Amendment Area (Western Expansion)	Update EMP to include proposed Amendment Area to support submission of S40AA
2	Section 1.3	2	Updated to include proposed S40AA details for Amendment Area (Western Expansion)	Update EMP to include proposed Amendment Area to support submission of S40AA
3	Section 2.2	11	Removed allowance of 5 PM10 exceedances as per EPA RFI request	Update required due to NEPM
4	Section 5	19-29	Updated Stakeholder Consultation	Updated Stakeholder Consultation required for S40AA request
5	Section 6	30	Table of Changes to EMP	As required by EMP guidance

7. REFERENCES

MZI Resources. (2013). Air Quality & Dust Management Plan Addendum. Perth, WA.

Turner, G. F. (2013). 'Vulnerability of Vegetation to Mining Dust at the Jack Hills, Western Australia', pp. 8-9. Master of Science Thesis, School of Plant Biology, University of Western Australia.

FIGURE 1: SITE LOCATION

396000 399000 402000

N

0 250 500 750 1,000 1,250
Meters

6411000 6408000 6405000 6402000

Lot 2 Lot 66 DIRK BROOK Lot 54 Lot 1 DIRK RD
Lot 67 Lot 4964 Lot 1 Lot 2 Lot 507 Lot 508 Offset Area Lot 202 Lot 201 Lot 56 Lot 7 Lot 8 MYARA BROOK
Lot 5 Lot 9 Lot 11 Lot 12 WESCOTT RD BADEN RD
ELLIOTT RD Lot 4965
Lot 20 Lot 12 Lot 64 Lot 57 Lot 1
Lot 701 Lot 700 Lot 52 Lot 50 Lot 1
Lot 105 Lot 101 Lot 111 Lot 105 PAGE RD
Lot 103 Lot 104 Lot 112 Lot 104
Lot 63 Lot 70 Lot 6 Lot 113 Lot 103 Lot 1
HOPELAND RD
Lot 62 Lot 59 Lot 300 Lot 301 ATKINS RD
Offset Area Lot202 Lot 71
Lot 20 Lot 101 Lot 506 Lot 505 Lot 100
Lot 1 Lot 5 Lot 12 Lot 102 ST BLAZE GR WESTCOTT RD Lot 110
READHEADS RD
MCMAHON RD BEAU SOVEREIGN CT SOUTH WESTERN HWY JENNIE PL

Legend

Ministerial Statement 810
- Development Envelope
- Approved Mining Area
- Lot 202 Offset Area
- Lot 62 Offset Area

Section 40AA Request
- Proposed Development Envelope
- Proposed Mining Area

Section 45C Request
- Amendment Area

Regional Cadastre
- Regional Cadastre

Doral

Keysbrook Mineral Sands Project

S40AA Request – Proposal Area

Scale	Datum: GDA2020	Sheet Size A3
1:30,000	Projection: MGA Zone 50	
Figure: 2-2		14/08/2023

FIGURE 2: KEYSBROOK MINE DUST MONITORING LOCATIONS

394500 396000 397500 399000 400500 402000

6414000 6412500 6411000 6409500 6408000 6406500 6405000 6403500 6402000

Legend

Ministerial Statement 810
- Development Envelope
- Approved Mining Area

Section 40AA Request
- Proposed Development Envelope
- Proposed Mining Area

Section 45C Request
- Amendment Area

Dust Monitoring Locations
- New Location
- Proposed Location

DMP1
DMP2
DMP3
DMP4

0 200 400 600 800 1,000
Meters

Doral

Keysbrook Mineral Sands Project

Sensitive Premises

Scale	Datum: GDA2020	Sheet Size A3
1:35,000	Projection: MGA Zone 50	
Figure: 8-2		11/04/2025

APPENDIX A: SEASONAL WIND ROSES (BOM STATION 9977 MANDURAH)

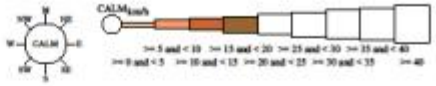
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

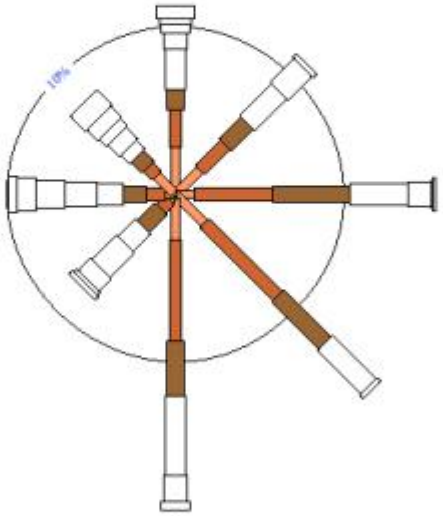
Site No: 009577 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am Spring
793 Total Observations

Calm 1%



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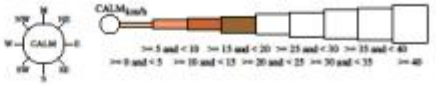
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

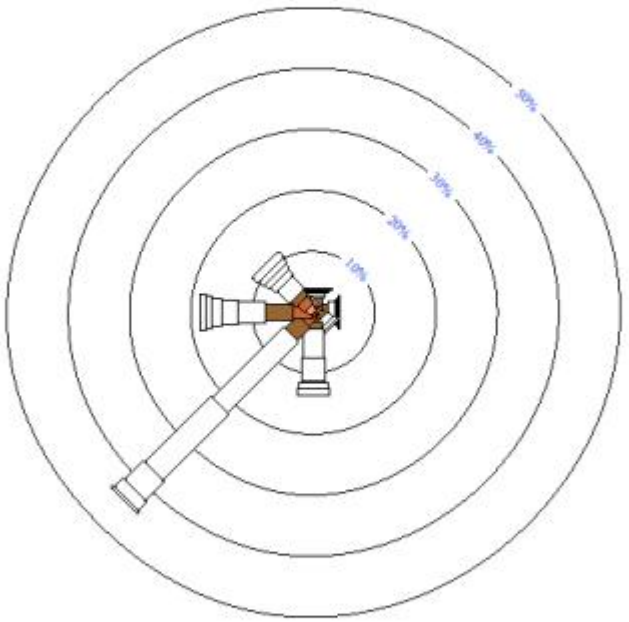
Site No: 009577 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



3 pm Spring
791 Total Observations

Calm *



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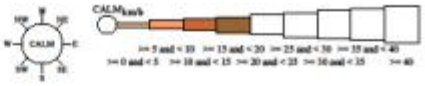
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

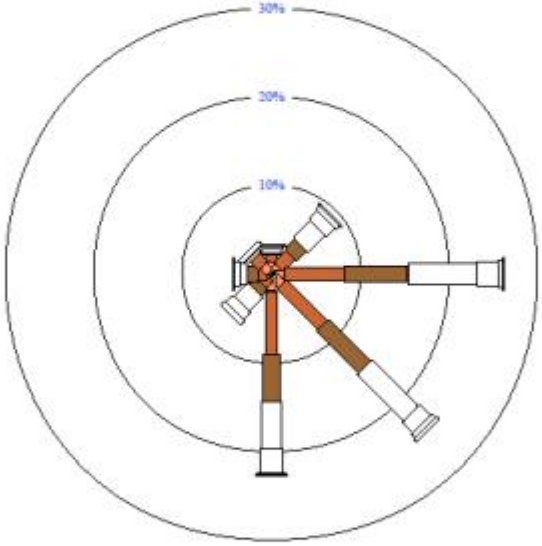
Site No: 009977 • Opened Oct 2001 • 9am Open • Latitude: -32.6219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am Summer
812 Total Observations

Calm *



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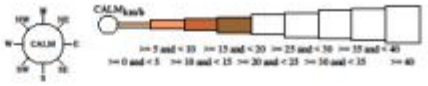
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

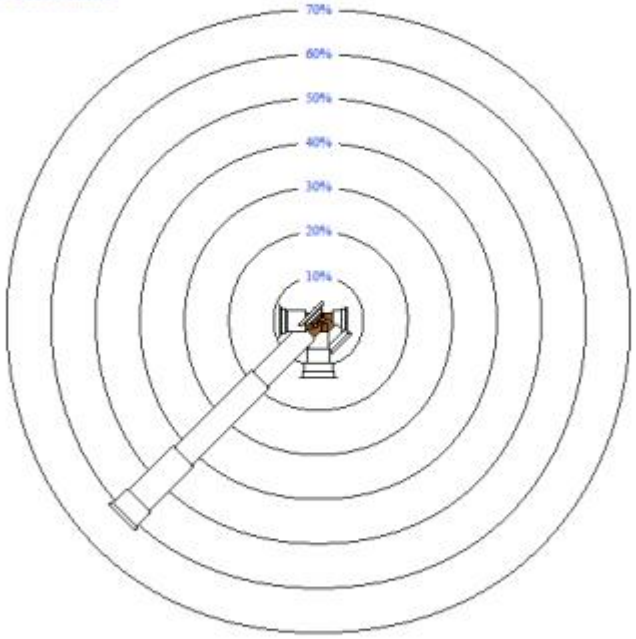
Site No: 009977 • Opened Oct 2001 • 9am Open • Latitude: -32.6219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



3 pm Summer
811 Total Observations

Calm *



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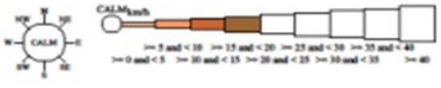
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

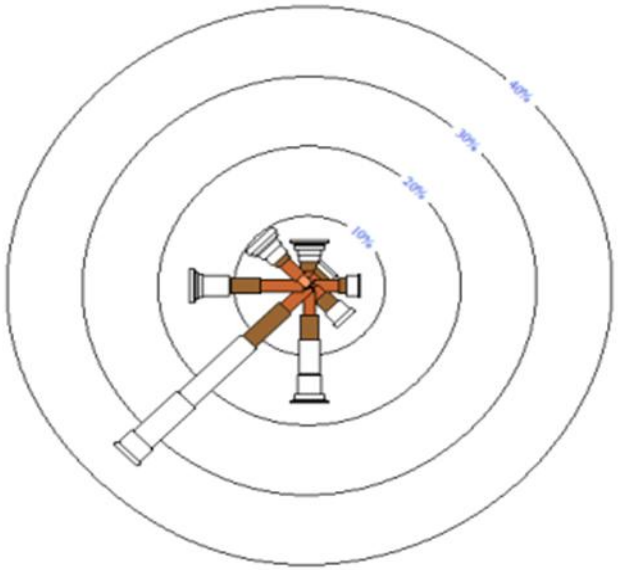
Site No: 009977 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



3 pm Autumn
828 Total Observations

Calm *



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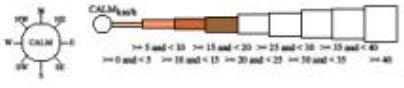
Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

MANDURAH

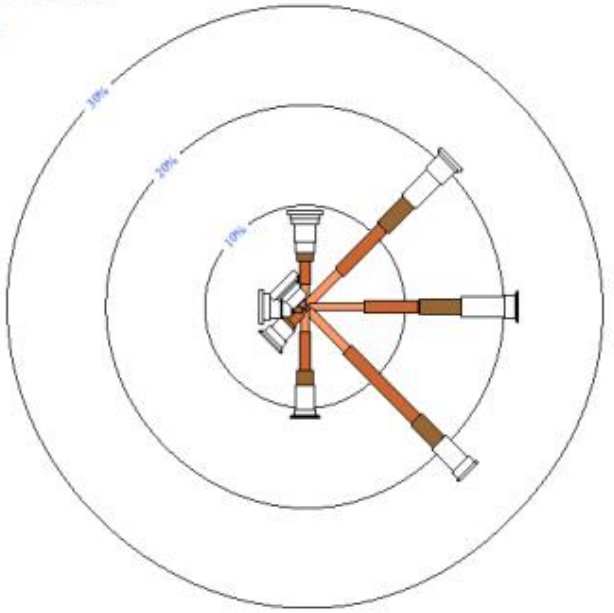
Site No: 009977 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7119° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am Autumn
826 Total Observations

Calm 1%



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Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

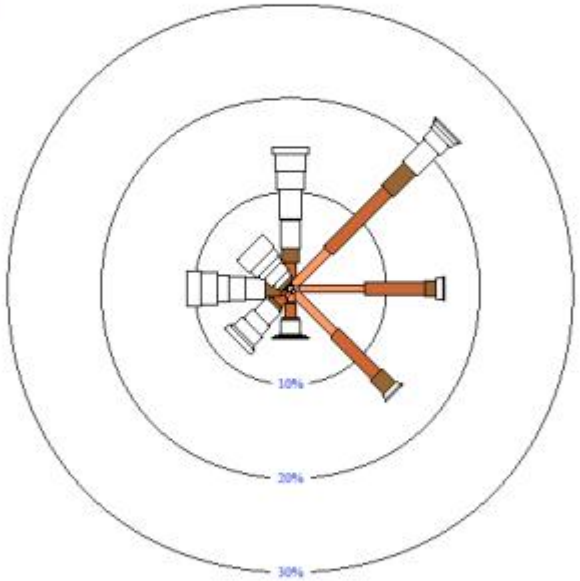
MANDURAH

Site No: 009977 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7115° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

9 am Winter
826 Total Observations

Calm 1%



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Rose of Wind direction versus Wind speed in km/h (25 Oct 2001 to 30 Sep 2010)

Custom times selected, refer to attached note for details

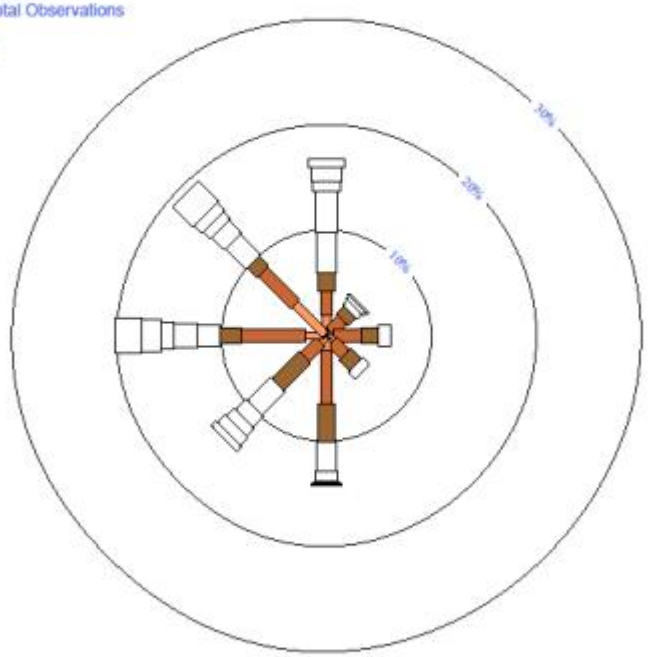
MANDURAH

Site No: 009977 • Opened Oct 2001 • Still Open • Latitude: -32.5219° • Longitude: 115.7115° • Elevation 3m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

3 pm Winter
822 Total Observations

Calm *



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APPENDIX B: STAKEHOLDER INTERACTION FORM

KLPL STAKEHOLDER INTERACTION REPORT FORM *Note: Stakeholder responded to within 24 hours, written close out within 5 business days*		
DOCUMENT NO		
Date: **Time:**	**Call taken by:**	
Stakeholder Name:		
Phone Number:		
Address:		
Subject of contact: *i.e. environmental (dust, noise, water, light), economic, social etc.*		
Details: *effects, frequency, time of event, location etc.*		
# Action taken *(if any)* **#** Take immediate action to rectify matter if reasonable and practical to do so, let stakeholder know what you have done		
Action Completed by: *(KLPL personnel)*	**Phone Number** **Date**	
Email this form to: *community@klpl.com.au*		
Company investigation / stakeholder feedback / close out action:		
Response to stakeholder: *(KLPL personnel with 5 business days)*	**Date**	**Time**
Signed by: *(KLPL personnel)*	**Date**	**Time**
Logged as a complaint?	Yes / No	
Logged in Radix and Consultation Manager: *(by MZI Administration Assistant)*	**Date**	**Reference**

ADDITIONAL NOTES IF REQUIRED:

Prepared by:

ABEC ENVIRONMENTAL CONSULTING PTY LTD

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