



**Mudgee Stone Company Pty Ltd**

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## AIR QUALITY MANAGEMENT PLAN

# OBERON WHITE GRANITE QUARRY



## AIR QUALITY MANAGEMENT PLAN

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**Endorsement of AQMP by Mudgee Stone Company Director or Delegate**

Director

Date



20 December 2016

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**ABBREVIATIONS**

AQMP	Air Quality Management Plan
Department	NSW Department of Planning & Environment
EA	Environmental Assessment
EMPs	Environmental Management Plans
EMStrat	Environmental Management Strategy
HVAS	High Volume Air Sampler
LED	Light-emitting diode - type of lighting.
MSC	Mudgee Stone Co Pty Ltd
NATA	National Association of Testing Authorities, Australia
NSW EPA	NSW Environment Protection Authority
PM <sub>10</sub>	Particulate matter <10µm
TSP	Total suspended particulate matter
The project	The Oberon White Granite Quarry operating under PA07_0122.

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## 1. INTRODUCTION

### 1.1 Overview

Mudgee Stone Co (hereafter MSC) is a wholly owned subsidiary of Mudgee Dolomite and Lime Pty Ltd based in Mudgee, NSW. MSC own and operate the Oberon White Granite Quarry, located approximately 6km east south-east of Oberon, NSW, covering an area of approximately 40ha.

On 7 September 2012, the Minister for Planning approved the expansion of the Oberon White Granite Quarry, Major Project 07\_0122. The project includes expansion of the extraction area and the rate of extraction at the quarry resulting in recovery of up to 5 million tonnes of granite over a 30 year period, transported from the site via road.

MSC has an Environmental Management System to support commitments to minimising impact on the environment and community. The system has been prepared by MSC to establish the overarching framework for the monitoring and environmental management of activities undertaken at the Oberon White Granite Quarry in order to minimise environmental impacts, comply with legal requirements, and incorporate the principles of continuous improvement into environmental management at the site.

The components of the MSC Environmental Management System include:

- Environmental Management Strategy;
- Specific and separate Environmental Management Plans (EMPs), including this document, and Environmental Monitoring Programs which provide details on the management of environmental aspects and impacts;
- Site document control system including training records, monitoring results, site registers, environmental forms; and
- Management roles and accountabilities of key personnel.

### 1.2 Scope

This Air Quality Management Plan (hereafter AQMP) has been prepared to manage operational impacts associated with air quality for the Oberon White Granite Quarry. The scope of the plan applies to MSC operations, including MSC management and employees. The AQMP provides provision for the reduction of visible dust, as well as safe level of both dust and particulate matter.

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A copy of this Air Quality Management Plan will be made available to members of the public on the MSC website:

[www.mudgeedolomitelime.com.au](http://www.mudgeedolomitelime.com.au)

### **1.3 Objectives**

The objectives of the AQMP are to:

- Identify procedures for implementation of air quality management response consistent with industry best management practice.
- Implement a monitoring system to assess the effectiveness of air quality control measures.
- Record data suitable to demonstrate compliance with the conditions of PA 07\_0122.

MSC will provide people, materials, resources and systems to properly perform requirements of the AQMP. All MSC employees will be sufficiently competent, experienced and qualified to carry out the requirements.

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## 2. STATUTORY REQUIREMENTS

This AQMP has been developed to comply with the requirements of relevant legislation, Project Approval conditions and relevant standards and guidelines.

### 2.1 Legislation

The AQMP was prepared by MSC in conjunction with suitably qualified persons in consultation with the EPA for approval by the Department. Copies of the correspondence can be found in **Appendix B**.

The Protection of the Environment Operations (Clean Air) Regulation 2010 is the core legislation and regulatory instrument for air quality issues in NSW. The Protection of the Environment Operations (General) Regulation 2009 contain provisions relating to: environment protection licences, notification of incidents and penalties. MSC endeavour to meet requirements through compliance with approvals and licences, discussed below.

### 2.2 Approvals and Licences

**Table 1: MSC Statutory Approvals**

Approval/Licence	Activity	Date	Authority
Approval 07_0122	Project approval – ‘Oberon White Granite Quarry Project’	7 Sept 2012	NSW Department of Planning and Infrastructure
EPL 20551	Licence – Premises Based	17 June 2015	NSW Environment Protection Authority (NSW EPA)

MSC have developed this AQMP to address the conditions outlined in the Project Approval; Major Project 07\_0122 (refer to **Appendix A**).

Major Project 07\_0122 (Schedule 3, Condition 19) requires the preparation and implementation of an Air Quality Management Plan which must:

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- (a) Be prepared in consultation with the EPA by a suitably qualified and experienced person whose appointment have been approved by the Director-General;*
- (b) Describe the measures that would be implemented to ensure:
 
  - a. Best management practice is being employed;*
  - b. The air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; and*
  - c. Compliance with the relevant conditions of this approval**
- (c) Describe the proposed air quality system in detail*
- (d) Include a monitoring program that:
 
  - a. Evaluates and reports on
 
    - i. The performance of the project; and*
    - ii. The effectiveness of the air quality management system on site; and**
  - b. Includes a protocol for determining exceedances of the relevant conditions of this approval**

*The proponent will not carry out any development on the site under this approval before this plan has been approved by the Director-General.*

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### 3. BASELINE DATA

Baseline data has been extracted from the Environmental Assessment (EA) compiled by R.W. Corkery & Co. Pty Ltd. Information was drawn from the air quality assessment undertaken by Heggies Pty Ltd (2010) which described the existing air quality, i.e. prior to quarry extension under PA07\_0122.

#### 3.1 Existing Air Quality

In the absence of local data, the closest NSW DECCW air quality monitoring station, located in Bathurst approximately 50km to the northwest of the Project Site, was chosen as the most representative data available for assessment of background fine particulate conditions. The site specific air quality background levels for the air quality assessment are shown in **Table 2**.

**Table 2: Background Air Quality Environment for Assessment Purposes**

Air Quality Parameter	Averaging Period	Assumed Background Level
TSP	Annual	32.0µg/m <sup>3</sup>
PM <sub>10</sub>	24 hour	Hourly varying
	Annual	16.0µg/m <sup>3</sup>
Dust	Annual	2g/m <sup>2</sup> /month

Based on the available data, the annual average background PM10 has been calculated to be 16.0µg/m<sup>3</sup> and annual average total suspended particulate matter (TSP) of 32.0µg/m<sup>3</sup>. In the absence of relevant background monitoring data for dust deposition, a background value of 2g/m<sup>2</sup>/month can be adopted to reflect a conservatively high estimation of rural conditions for NSW (R.W. Corkery & Co. Pty Ltd, 2010).

Baseline data will be referred to in the Annual Review. A meteorological station has been installed in the vicinity of the site office location that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline (as per Schedule 3 Condition 20).

Two (2) dust deposition gauges have been installed and data collected since December 2015 to record data for comparison to dust deposition criteria. (Deposited dust has been

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recorded ranging between 0.2-1.1 g/m<sup>2</sup>/month, being below the adopted background value and criteria).

### **3.2 Predicted Air Quality**

Computer predictions of fugitive emissions from the Project Site were undertaken by Heggies (2010) using the Ausplume Gaussian Plume Dispersion Model Version 6.0 software (Ausplume) developed by EPA (Victoria). Ausplume combines the particulate emission factors for the various Project Site activities, meteorological data and local topography to predict the dispersion of dust and other particulate matter. The program indicates that:

- The annual average concentration of PM<sub>10</sub> (background plus incremental) associated with the Project would be well below the Project goal of 30µg/m<sup>3</sup> at all residential receptors;
- The annual average monthly dust deposition (background plus incremental) rates associated with the Project are predicted to be below the Project dust deposition goal of 4g/m<sup>2</sup>/month (background plus increment) for all receptors; and
- With each unit of production, emissions of CO<sub>2</sub>-Equivalent are estimated to be in the order of 0.001t/t granite.

### **3.3 Identified Air Quality Risks**

Based on the environmental risk analysis undertaken for the Project, the potential air quality impacts requiring assessment and their unmitigated risk rating are as follows.

- Deposited dust levels attributable to the Project occasionally (for one or two months every year) above DECCW guideline, affects only adjacent landholders (High Risk).
- Deposited dust levels attributable to the Project regularly (exceedances greater than DECCW guideline for >5 months per year) affects landholders some distance from the Project Site (High Risk).
- PM<sub>10</sub> levels attributable to the Project occasionally (once every 1 to 2 years) above the Project goal, affects only adjacent landholders (Moderate Risk).
- PM<sub>10</sub> levels attributable to the Project occasionally (>5 times per year) above the Project goal, affects landholders some distance from Project Site (Moderate Risk).
- Greenhouse gas emissions (Moderate Risk).

MSC will continue to assess and manage development related risks to ensure that there are no exceedances of the performance criteria.

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#### 4. PERFORMANCE CRITERIA

During the life of the project, MSC will endeavour to implement best management practice to comply with statutory requirements and adopted performance criteria. Performance criteria adopted under the AQMP is described in this section.

**Table 3: Performance Criteria – Air Quality Management**

Criteria	Note
To have nil substantiated complaints annually with regard to air quality issues. (Any dust related community complaints are to be addressed in a timely and effective manner (see <b>Section 9</b> ) and recorded on the Complaints Register).	MSC TARGET
Air quality impact assessment criteria are not exceeded, as outlined in <b>Section 4.1</b> for particulate matter.	Statutory requirements.

#### Greenhouse Gases

Greenhouse gas emission estimations have been undertaken with relevant guidelines and policies and it is considered that the proposed operations will result in a comparatively small contribution to greenhouse gas emissions (an annual increase of approximately 0.00006% of the total baseline Australian emissions and an annual increase of approximately 0.002% of the NSW baseline emissions), therefore no provision for greenhouse gas assessment criteria and monitoring has been made.

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#### 4.1 **Impact Assessment Criteria**

MSC shall ensure that particulate matter generated by the project does not exceed the criteria listed below at any residence on privately-owned land or on more than 25 per cent of any privately owned land.

**Table 4: Long term impact assessment criteria for particulate matter**

<b>Pollutant</b>	<b>Averaging period</b>	<b><sup>1</sup>Criterion</b>
TSP matter	Annual	<sup>2</sup> 90 µ/m <sup>3</sup>
Particulate matter < 10 µm	Annual	<sup>2</sup> 30 µ/m <sup>3</sup>

**Table 5: Short term impact assessment criterion for particulate matter**

<b>Pollutant</b>	<b>Averaging Period</b>	<b><sup>1</sup>Criterion</b>
Particulate matter < 10 µm	24-hour	<sup>2</sup> 50 µ/m <sup>3</sup>

**Table 6: Long term impact assessment criteria for deposited dust**

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Maximum increase in deposited dust level</b>	<b>Maximum total deposited dust level</b>
<sup>3</sup> Deposited dust	Annual	<sup>4</sup> 2 g/m <sup>2</sup> /month	2 4 g/m <sup>2</sup> /month

<sup>1</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

<sup>2</sup> Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources).

<sup>3</sup> 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.

<sup>4</sup> Incremental impact (i.e. Incremental increase in concentrations due to the project on its own).

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## 5. AIR QUALITY MANAGEMENT AND CONTROL MEASURES

### 5.1 Management measures – Dust and Particulate Matter

MSC has committed to managing its operations to minimise impact on the environment and community, including air quality issues. The AQMP is guided by the following management measures.

#### Design Controls

- Minimisation of the total disturbance footprint by only clearing minimum areas required and progressive site rehabilitation and revegetation in accordance with the approved staging.
- The mobile crushing plant will be located within the extraction area which provides topographical shielding from the effects of winds.

#### Planning Controls

- Avoid, where possible, blasting in strong winds from the eastern quadrant that may increase short term dust exposure for nearby sensitive receptors.
- A 10 000L water truck will be used to wet the active internal unsealed roads when trucks are planned to travel on those roads. For those days when watering of unsealed roads is required, watering will occur with an application rate of approximately 2L/m<sup>2</sup> per application. The water truck can be filled from either the quarry sump or Dam 2.
- Whenever possible, soil stripping will be undertaken at a time when there is sufficient soil moisture to prevent raising excessive dust.
- Progressive rehabilitation of disturbed areas, wherever practicable, to reduce the disturbed area exposed to wind erosion.

#### Operational Controls

- Activities occurring in or on the premises must be carried out in a manner that will minimize the generation, or emission from the premises, or wind-blown or traffic generated dust<sup>5</sup>.
- Implement best management practice to minimize the dust and fume emissions from any blasting in accordance with the Blast Management Plan. Blasting to take place, with consideration to wind conditions and residential receivers.

<sup>5</sup> Operating condition – 03 Dust - 03.1 of EPL 20551.

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- Operational controls are to be responsive to visible dust occurrences. MSC will implement reactive dust management, including ceasing activities and application of additional engineering measures.
- In the event of adverse meteorological conditions MSC will relocate, modify and/or stop extraction operations and/or haulage to minimise the short term air quality impacts.
- The drop heights between front-end loader buckets and trucks carrying raw materials, products or soil will be minimised through operator training and education on the management of dust.
- Haul road drivers will ensure adherence to the speed limit of 30km/h on unsealed roads to minimize dust disturbance.
- Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during unloading and loading<sup>6</sup>.
- The use of designated haul and access roads only, minimization of roads and removal of obsolete routes.
- Minimize double handling of material.
- Watering work areas and minimizing dozer travel speed and distance, as practical.
- Revegetation of topsoil and overburden stockpiles when not used for extended periods (6 months).

### **Engineering Controls**

- The drill rig used for drilling and blasting will utilize water injection or alternatively, be fitted with dust collectors.
- Dust suppression sprays are planned to be fitted to the crushing plant if monitoring showed a need for further measures.

The safeguards and management procedures will be reviewed annually and any required changes to the dust management strategies will be adopted.

## **5.2 Greenhouse Gas Output Reduction Measures**

Although no provision for performance criteria or measurement of greenhouse gas limits have been made, measures can still be put in place to ensure that energy usage is kept at a minimum. MSC will implement all reasonable and feasible measures to minimize the release of greenhouse gas emissions from the site by adopting the following measures:

<sup>6</sup> Operating condition – 03 Dust - 03.2 of EPL 20551.

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- Active promotion of carpooling among employees,
- Consider the installation of various power saving devices and conditioners in lieu of standard electric systems,
- Investigate the use of LED lighting in any new infrastructure,
- Utilize lighting, cooling, and heating only as required,
- Adopt operational practices that are economic and conserve energy use onsite, and
- Improve energy use and efficiency in the transport and haulage of quarry material by minimizing haul routes and machine idling on site.

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## 6. MEASUREMENT AND EVALUATION

### 6.1 Air Quality Monitoring System

Monitoring of deposited dust levels will be undertaken at two (2) locations surrounding the Project Site for a period of 5 years following commencement of operations. The location of the monitoring sites are depicted in **Figure 1**, and are representative of residential receivers predicted to be impacted by the operation.

Following the initial 5 years of operation, the need for ongoing dust monitoring will be reviewed in consultation with The Secretary and NSW EPA. All monitoring results will be reported within each Annual Review and posted quarterly on the MSC website.

MSC, prior to the commencement of operations, will establish an air quality monitoring network consisting of:

- Two (2) dust deposition gauges; and
- One (1) meteorological station.

It is proposed that HVAS PM<sub>10</sub> monitoring is carried out in accordance with the Final Statement of Commitments (dated June 2011, updated as part of Response to Submissions) for a campaign period to demonstrate compliance, once production exceeds 100 000tpa, with the agreement of the Secretary. It is proposed that monitoring of particulate matter <10microns (PM<sub>10</sub>) for a period of 2 years following annual production rates exceeding 100 000tpa. The frequency of monitoring will be reviewed after 2 years' operation at maximum production. Any changes must be approved by DPE.

#### 6.1.1 Siting Monitoring Equipment

Locations are selected to demonstrate compliance with the air quality criteria, based on identifying whether criteria is exceeded within the quarry land, as method of demonstrating that criteria is not exceeded at any residence or on more than 25% of any privately owned land. Monitoring locations for dust deposition have been installed at two (2) sites since December 2015 within the land owned/occupied by MSC, at locations north and south of the quarry to provide a representation of localised dust levels, which are not be overly impacted by agricultural activities (and considered privacy of residents).

Specific dust deposition locations were determined in consultation with ALS Environmental (NATA accredited Laboratory and Service provider installed December

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2015 and audited (26 Oct 2016) to comply with locational criteria AS/NZS3580.1.1:2016 & AS/NZS3580.10.1:2003). Air quality monitoring locations will be reviewed and where necessary modified over the life of the quarry as a result of progressive monitoring results, changes to operation (progression of stages), construction and changes to land ownership.

Any future monitoring locations are planned to be responsive to any pattern of complaint, and based on interpretation of monitoring results. Additional/alternative sites are able to be selected for being representative of residential receivers predicted to be potentially impacted by operations, outside of the quarry land (with permission of the landowner).

### 6.1.2 Meteorological Monitoring

A suitable meteorological station has been installed within the MSC property, which complies with the requirements in the *Approved Methods for Sampling Air Pollutants in New South Wales* guideline. The station is to be representative of site conditions, providing a Full Meteorological compliment consisting of:

- Wind speed at 10m;
- Wind direction at 10m;
- Standard deviation of wind direction (sigma-theta) at 10m;
- Temperature at 2m;
- Relative humidity at 2m;
- Solar radiation at 2m;
- Temperature difference between 2m and 10m; and
- Rainfall (gauge at ground-level).

### 6.1.3 PM<sub>10</sub> Monitoring

A suitable monitor will be installed in the future, once production exceeds 100 000tpa, to establish that actual levels do not exceed predicted levels of particulate matter.

In accordance with the Final Statement of Commitments (June 2011) (Action 10.9) MSC commit to undertaking monitoring of particulate matter (PM<sub>10</sub>) for a period of two (2) years following annual production rates exceeding 100000tpa. The frequency of monitoring will be reviewed after 2 years' operation at maximum production. Any changes must be approved by DPE.

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**Table 7: Table of HVAS PM10 Monitoring Sites**

Location	ID	Parameter	Frequency	Justification
TBA	-	PM <sub>10</sub>	Every 6 days	Representative of nearest non-mine owned land

These monitors require the exchange of filter paper on a six (6) day cycle and gravimetric analysis by a NATA registered laboratory of the filter paper to determine the concentration of PM<sub>10</sub>. The HVAS is programmed to operate for a period of 24 hours (typically midnight to midnight) every 6 days so that no particular day of the week is biased.

The HVAS PM<sub>10</sub> location would likely be to the west of the quarry to monitor impacts on nearest privately owned land holding identified in the EA that may be impacted by the development. Specialist air quality consultants will be engaged to carry out monitoring campaigns.

All maintenance and calibration is to be conducted in accordance with AS/NZS 3580.9.7:2009 *Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Dichotomous sampler (PM10, coarse PM and PM2.5) – Gravimetric method*.

The locations and methodologies to be performed by MSC for monitoring particulate matter will be updated as part of the Annual Review and Management Plan review processes.

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#### 6.1.4 Dust Deposition

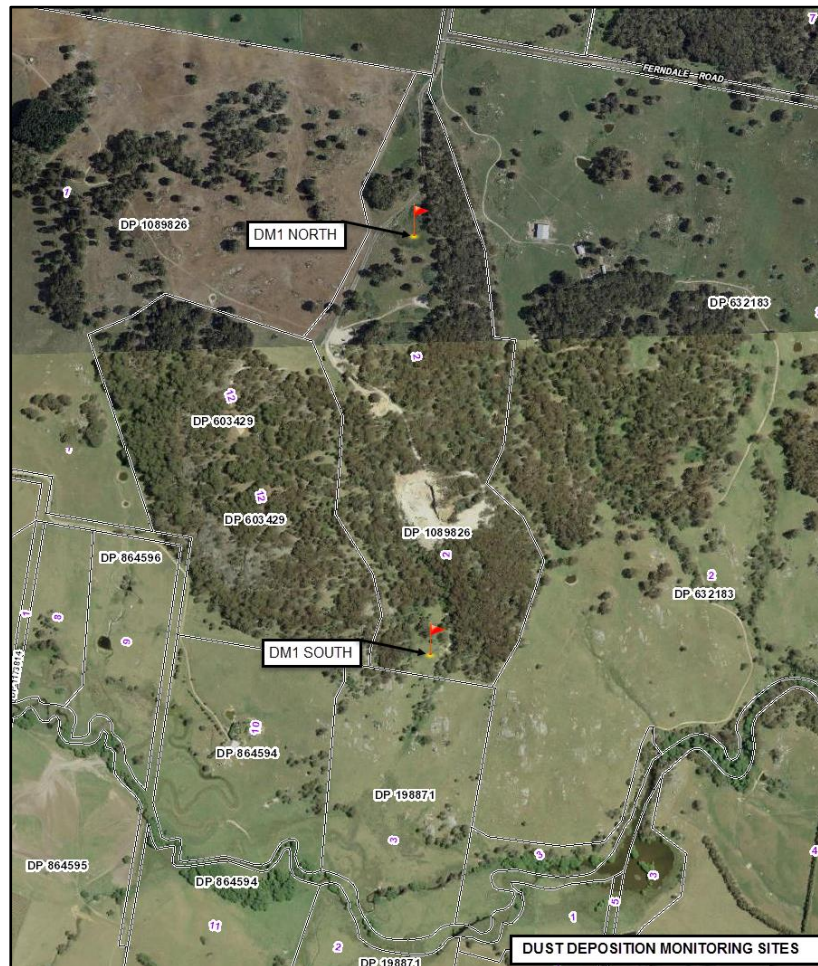
Dust deposition will continue to be monitored at two (2) locations near MSC White Granite Quarry (refer to Figure 1: Dust Deposition Monitoring Sites).

**Table 8: Table of Dust Deposition Monitoring Sites**

Parameter	Frequency	ID	Justification
Dust deposition	Every 30 days, +/- 2 days	DM1 North	Representative of non-project related residences (lands in vicinity to haulage route)
		DM2 South	Representative of non-project related residences to south of quarry and background levels.

All dust gauges will be sampled monthly (30 days, +/- 2 days) for insoluble matter (g/m<sup>2</sup>/month) in accordance with Australian Standard 3580.10.1 2003 *Deposited Matter – Gravimetric methods for insoluble solids*. The locations and methodologies performed by MSC for dust deposition will be updated as part of the Annual Review and Management Plan review processes.

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**Figure 1: Dust Deposition Monitoring Sites**

## 6.2 Air Quality Records

Data relevant to the AQMP will be kept in the databases established under the EMStrat. The records within the air quality monitoring system include:

- Meteorological condition records (noting any dust storms etc. that may affect monitoring results);
- Air quality records:
  - Annual and 24 hour Particulate matter (PM<sub>10</sub>) records;
  - Annual TSP records;
  - Monthly and Annual dust deposition records;
  - Incidents Register;
  - Complaints Register; and

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- Statutory Requirements register.

MSC will keep accurate records of the data collected by the meteorological station and the dust deposition indicators positioned at representative residences. All air quality records are required to be included in the Annual Review and posted on the web site.

The following is recorded for each sample

- Date(s) of sample collection
- Time(s) of sample collection
- Location that sample was collected from; and
- Name of person who has collected the sample.

Results of monitoring will be kept in the records of MSC for at least 4 years after collection. Records will be available to any authorised officer of the DPE and NSW EPA when requested.

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## 7. CONTINGENCY PLAN

Where air quality mitigation measures have been instigated in accordance with the AQMP, and unauthorised impact is considered likely, based on monitoring or other observation, contingency measures will be implemented:

- As soon as practicable for direct impacts; and
- After appropriate evaluation, consultation, planning and design for indirect impacts.

Measures include:

- Haulage will cease or quarry operations will be modified until issues can be determined and managed.
- Strategic deployment of water carts to control road dust/focused activities.
- Controls prompted based on visual cues (levels of raised dust) will be at the discretion of the Production Manager.
- In the case of air quality incidents and emergencies the Production Manager will discuss management actions in consultation with NSW EPA as appropriate.
- Management will undertake review and ensure that ongoing impacts are within acceptable limits or issues resolved as quickly as possible.

Exceedances of statutory limits will be notified and reported, to the Department and the NSW EPA as appropriate, likewise as an incident that has caused or threatens to cause material harm to the environment.

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## 8. INCIDENT RESPONSE PROTOCOL

All incidents must be reported to the Production Manager immediately. Every person is responsible for reporting accidents and near miss incidents, without delay after the occurrence. Incidents will be responded to in accordance with the Incident Response Communication Protocol outlined in **Figure 2**.

The Production Manager will assess the incident and where deemed necessary will stop all operations of the quarry immediately until a full investigation of the incident is carried out and the safety of all employees and environmental factors on site are determined.

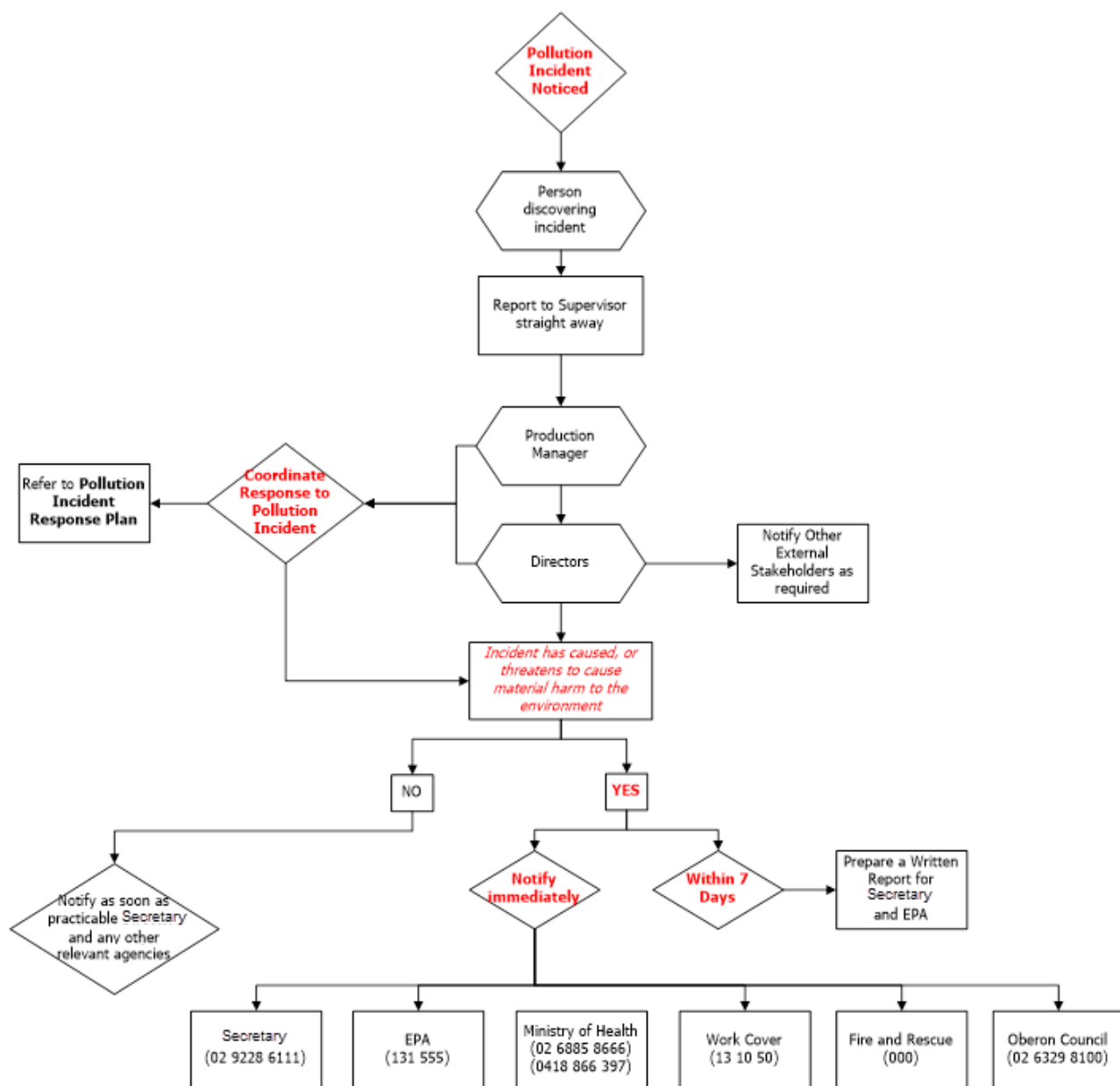
The people listed in the table below are authorised to manage the response to any incident. The particulars are 24 hour contact details.

**Table 9: Details for People Responsible for Incident Management**

Position	Individual	Phone Number
General Manager	Robert Murdoch	0438 722 389
Quarry Production Manager	John O'Heir	0467 171 416

In the event of an exceedence of any relevant air quality criteria adopted as performance criteria under this AQMP, in accordance with Condition 2(b) Schedule 3 of PA07\_0122 MSC 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). This provision includes any future tenants of any land owned by MSC.

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**Figure 2: Incident Response Communication Protocol**

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## 9. COMPLAINTS RESPONSE

The MSC community complaints response process outlined in this EMStrat details how to receive, respond to, and record any community complaints. Where possible a proactive approach will be taken to engage the community in discussing proposed activities that may affect them. Any complaints received will be recorded and responded to in a professional and timely manner by the Production Manager, Director or delegate.

The Community Complaints recording requires information including:

- The nature of the complaint;
- Method of the complaint;
- Monitoring results, meteorological data, at the time of the complaint;
- Site investigation outcomes;
- Site activity and activity changes; and
- Any necessary actions assigned.

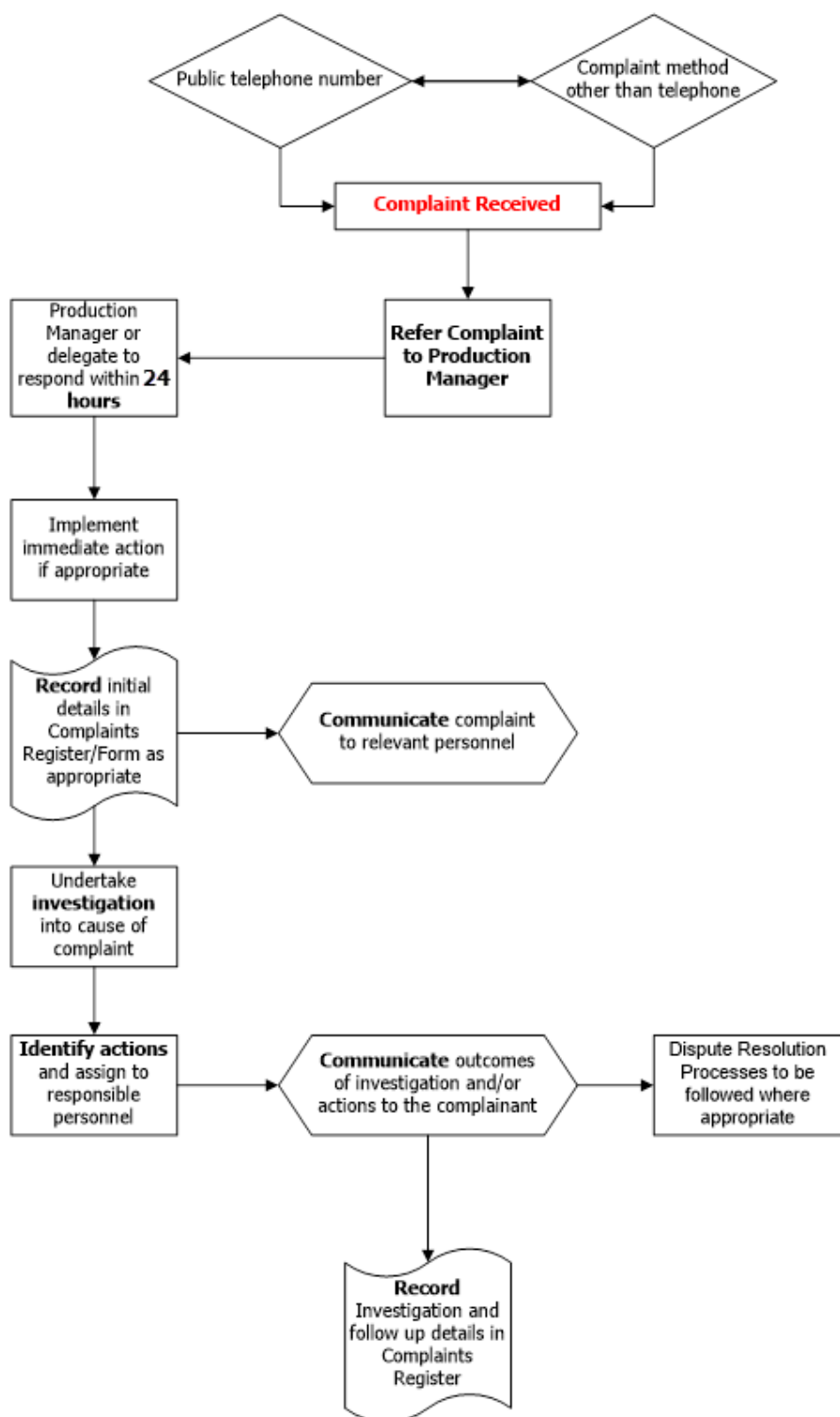
MSC has a phone number advertised in the local media, displayed at the site entry and available at <http://www.mudgeedolomitelime.com.au/> for the community to report complaints.

Complaints will be recorded and reported to the Production Manager, Directors or appropriate delegate who will respond to all complaints received and attend to required action items. Complaints details will be retained in a register on site. Records of complaints will be kept on site for at least 4 years.

An overview of the community complaint management process is detailed within **Figure 3**.

Every effort will be made to ensure that concerns are addressed in a manner that facilitates a mutually acceptable outcome for both the complainant and MSC. If required, the Independent Dispute Resolution Process will be entered into. This process is illustrated in the Environmental Management Strategy (EMStrat).

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**Figure 3: Community Complaints Response Process**

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## 10. NONCOMPLIANCE, CORRECTIVE ACTION AND PREVENTATIVE ACTION

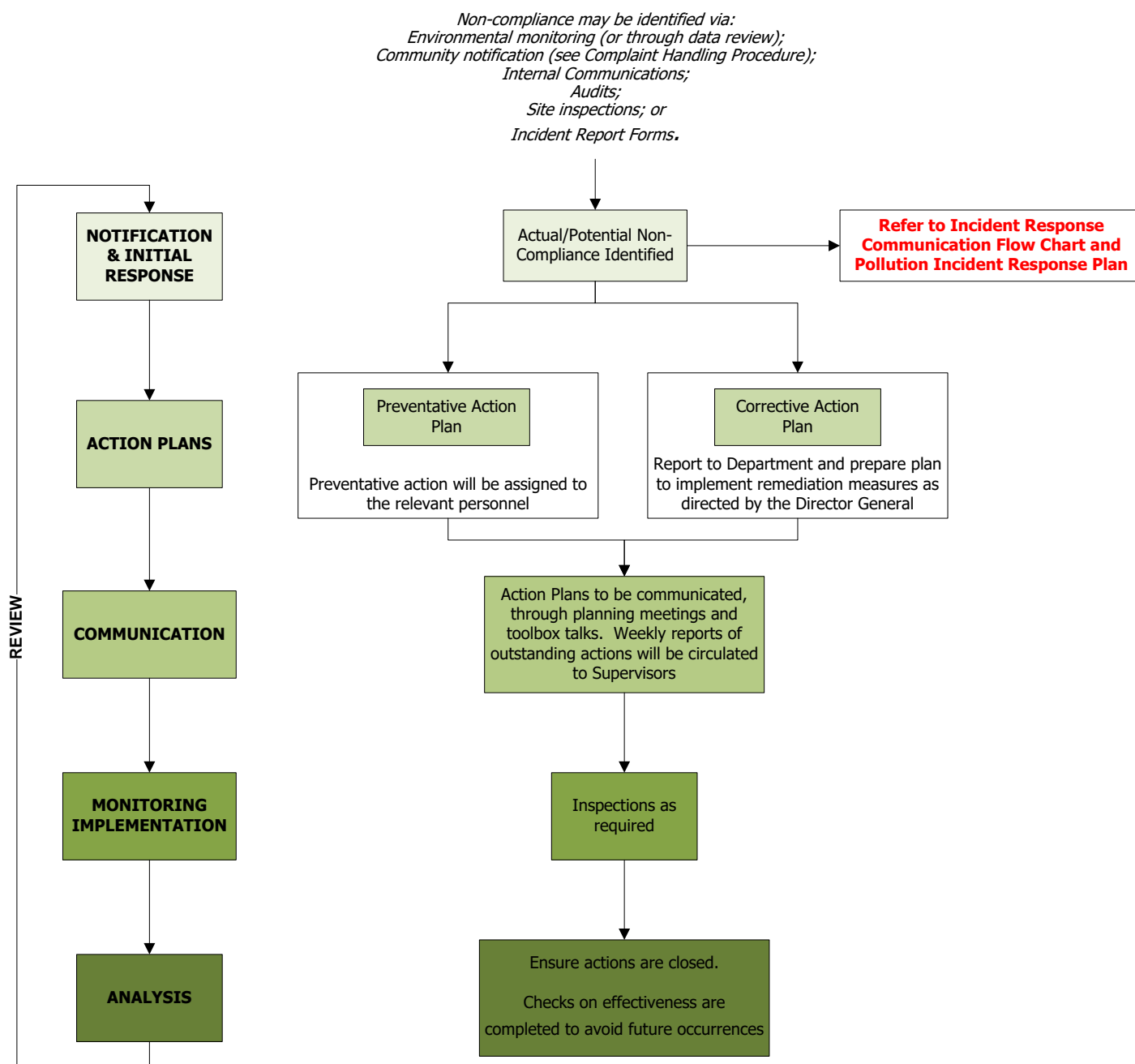
Any actual or potential non-compliance against environmental criteria will be investigated initially by the Production Manager. Environmental incidents will then be recorded on the Incident Form. Corrective actions and relevant reporting will be implemented, if necessary, according to the EMStrat and the process below.

Monthly inspections, along with the review of environmental monitoring results, and any incidents and/or community complaints, will determine any trends and need for preventative action or identify compliance issues and be reported to the Directors on a monthly basis. Refer to **Figure 4** the protocol for managing any non-compliance with statutory requirements, and exceedances of the assessment criteria and/or performance criteria.

Internal reporting will occur in accordance with the provisions within the EMStrat. Externally, in accordance with the requirements of Project Approval 07\_0122, at the earliest opportunity of detecting an exceedance of the limits/performance criteria, MSC shall notify the Department and other relevant agencies of the exceedance/incident.

MSC will take all reasonable and feasible measures to ensure that the exceedances do not recur. A report to the Department considering reasonable and feasible options and preferred remediation measures or other course of action will be prepared in that event.

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**Figure 4: Protocol for managing non-compliance with statutory requirements, and exceedances of the assessment criteria and/or performance criteria**

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## 11. REVIEW

MSC will review the AQMP to ensure it is appropriate and is being implemented effectively. Changes may arise from a change of scope, incident management or from opportunities for improvement.

The Plan will then be updated to reflect any changes which have occurred. The revised document and the input which led to the revisions will be reviewed by MSC directors, approved by him/her and then forwarded to stakeholders as relevant.

The planned target dates (or frequencies) at which the AQMP will be subject to formal review and the personnel who will participate in the review are identified below:

This plan will be reviewed:

- Every three (3) years and / or;
- When triggered by any event, incident or finding(s) that identifies improvement in the controls that effectively manage the identified hazards;
- Within 3 months of any changes to project approval or licence conditions relating to pollution incidents and after an annual review;
- Following an independent environmental audit which recommends changes to the management plan;
- If there is a relevant change in technology or legislation.

At the conclusion of each calendar year after the commencement of development on the site under project approval 07\_0122, a review will be undertaken regarding the environmental performance of the project adhering to the criteria in Condition 4 of Schedule 5 of this project approval and, if necessary, within three months of submission of the Review revise the strategies, plans, and programs required under this approval.

The Directors, Production Manager and Quarry Supervisors and consultant specialists may take part in the review of the AQMP. MSC will maintain records of any review and document version will be noted on the Plan.

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## 12. TABLE OF RESPONSIBILITIES

**Table 10: Responsibilities**

Position	Task	Timing
Directors	Provide adequate resources to implement the AQMP.	During budget planning.
Production Manager	Ensure that the air quality results are within the limits set in the project proposal.	Annually/over a 24 hour period.
	Consult with surrounding residents/landholders in order to monitor deposited dust levels on their properties.	Annually and/or as required.
	Co-ordinate the monitoring and review tabulated results.	Monthly.
	Implementing contingency measures and incident protocol when, if ever, necessary.	As required.
	Implement all reasonable and feasible measures to minimize greenhouse gas emissions.	On going.
	Implementing all design, planning and engineering controls.	On going.
	In the event of adverse weather conditions direct staff to relocate, modify and/or stop extraction operations and/or haulage to minimise short term air quality impacts.	As required.
Quarry Supervisor	Brief all operators on operational and planning controls in <b>Section 5</b> .	During training.
	Ensure that the watering truck is deployed in conditions that require dust suppression on the haul road.	Daily -when necessary.
	Monitor dust created as extraction and processing material occurs within the quarry site. Where dust is excessive ensure mechanisms are put into place to reduce the dust (e.g. water spray devices on equipment).	Daily -when necessary.
	Ensure the drivers Code of Conduct and Communication Protocol is adhered to at all times.	At all times.

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Operators	Abide by the best management practices outlined in management measures.	At all times.
All Employees	Report and record incidents.	As required.

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# APPENDIX A

## TABLE OF STATUTORY REQUIREMENTS

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Condition	Action	Section Addressed																							
Schedule 3 Condition 16	<p>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 Table 3, Table 4 and Table 5 at any residence on privately-owned land or on more than 25 per cent of any privately owned land.</p> <p><b>Table 3: Long term impact assessment criteria for particulate matter</b></p> <table><tr><td>Pollutant</td><td>Averaging period</td><td><sup>d</sup> Criterion</td></tr><tr><td>TSP matter</td><td>Annual</td><td><sup>a</sup> 90 µ/m<sup>3</sup></td></tr><tr><td>Particulate matter &lt; 10 µm</td><td>Annual</td><td><sup>a</sup> 30 µ/m<sup>3</sup></td></tr></table> <p><b>Table 4: Short term impact assessment criterion for particulate matter</b></p> <table><tr><td>Pollutant</td><td>Averaging Period</td><td><sup>d</sup> Criterion</td></tr><tr><td>Particulate matter &lt; 10 µm</td><td>24-hour</td><td><sup>a</sup> 50 µ/m<sup>3</sup></td></tr></table> <p><b>Table 5: Long term impact assessment criteria for deposited dust</b></p> <table><tr><td>Pollutant</td><td>Averaging Period</td><td>Maximum increase in deposited dust level</td><td>Maximum total deposited dust level</td></tr><tr><td><sup>c</sup> Deposited dust</td><td>Annual</td><td><sup>b</sup> 2 g/m<sup>2</sup>/month</td><td><sup>a</sup> 4 g/m<sup>2</sup>/month</td></tr></table> <p><i>Notes to tables:</i></p> <ul style="list-style-type: none"><li><sup>a</sup> Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources);</li><li><sup>b</sup> Incremental impact (i.e. Incremental increase in concentrations due to the project on its own)</li><li><sup>c</sup> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:203: Methods for sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method; and</li><li><sup>d</sup> excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.</li></ul>	Pollutant	Averaging period	<sup>d</sup> Criterion	TSP matter	Annual	<sup>a</sup> 90 µ/m <sup>3</sup>	Particulate matter < 10 µm	Annual	<sup>a</sup> 30 µ/m <sup>3</sup>	Pollutant	Averaging Period	<sup>d</sup> Criterion	Particulate matter < 10 µm	24-hour	<sup>a</sup> 50 µ/m <sup>3</sup>	Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level	<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month	Section 4.1
Pollutant	Averaging period	<sup>d</sup> Criterion																							
TSP matter	Annual	<sup>a</sup> 90 µ/m <sup>3</sup>																							
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Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level																						
<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month																						
Schedule 3 Condition 17	The Proponent shall implement all reasonable and feasible measures to minimize the release of greenhouse gas emissions.	Section 5.2																							

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Schedule 3 Condition 18	<p>The Proponent shall:</p> <ul style="list-style-type: none"> <li>(a) implement best management practice to minimize the off-site fume and dust emissions of the project;</li> <li>(b) minimize the air quality of the project during adverse meteorological conditions and extraordinary events (see note d in condition 16);</li> <li>(c) minimize any visible off-site air pollution; and</li> <li>(d) minimize the surface disturbance of the site generated by the project, to the satisfaction of the Director-General</li> </ul>	<p>Section 5</p> <p>Section 5.1, &amp; 12</p> <p>Section 5</p> <p>Section 5.1</p>
Schedule 3 Condition 19	<p>The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> <li>(a) Be prepared in consultation with the EPA by a suitably qualified and experienced person whose appointment have been approved by the Director-General;</li> <li>(b) Describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> <li>a. Best management practice is being employed;</li> <li>b. The air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; and</li> <li>c. Compliance with the relevant conditions of this approval</li> </ul> </li> <li>(c) Describe the proposed air quality system in detail</li> <li>(d) Include a monitoring program that: <ul style="list-style-type: none"> <li>a. Evaluates and reports on <ul style="list-style-type: none"> <li>i. The performance of the project; and</li> <li>ii. The effectiveness of the air quality management system on site; and</li> </ul> </li> <li>b. Includes a protocol for determining exceedances of the relevant conditions of this approval</li> </ul> </li> </ul> <p>The proponent will not carry out any development on the site under this approval before this plan has been approved by the Director-General.</p>	<p>The whole of this Plan.</p> <p>Appendix B</p> <p>Section 1.3, &amp; 5</p> <p>Section 5.1, &amp; 12</p> <p>Section 10</p> <p>Section 6.1</p> <p>Section 4, &amp; 6</p> <p>Figure 4</p>
Schedule 3 Condition 20	<p>During the life of the project, the proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> guideline.</p>	<p>Section 6.1.2</p>
Schedule 4 Condition 2	<p>As soon as practicable after obtaining monitoring results showing:</p> <ul style="list-style-type: none"> <li>(a) an exceedence of any relevant noise criteria in schedule 3, 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</li> <li>(b) an exceedence of any relevant air quality criteria in schedule 3, 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), including the tenants of any land owned by the Proponent.</li> </ul>	<p>Section 8</p>

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# APPENDIX B

## COPIES OF CORRESPONDENCE

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Your reference :  
Our reference : EF13/4935; DOC13/41414  
Contact : Mr Andrew Helms; (02) 6332 7604

Ms Emma Yule  
Environmental Scientist  
Minespex Pty Limited  
PO Box 604  
MUDGEE NSW 2850

8 August 2013

Dear Ms Yule

I refer to the draft noise, air and landscape management plans (the Plans) for the Oberon White Granite Quarry received by the Environment Protection Authority (EPA) on 2 August 2013.

Thank you for forwarding the Plans for our records. The EPA encourages the development of Environmental Management Plans/Programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project/Development Approval and/or the conditions of an environment protection licence. However, the EPA does not review these plans/programs (unless in circumstances deemed necessary) as the role of the EPA is to set conditions/criteria for environmental protection and management, not to be directly involved in the development of strategies to comply with such conditions/criteria.

In this instance, the EPA will not be reviewing or endorsing the Plans.

As a management tool, such plans should assist Mudgee Stone Company Pty Limited in meeting their commitment to statutory compliance and wider environmental management and where appropriate should be integrated with other operational or management plans. The EPA recommends that such plans be audited to an industry standard or certified to the ISO 14001 standard (if applicable) as part of any overall environmental management system.

Should you have any further enquiries in relation to this matter please contact Mr Andrew Helms at the EPA's Central West Office (Bathurst) by telephoning (02) 6332 7604.

Yours sincerely

**DARRYL CLIFT**  
Head Central West Unit  
Environment Protection Authority

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