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## Orica Australia Pty Ltd

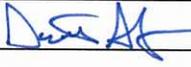
# Report on Kooragang Island Expansion Project Construction Air Quality Management Plan

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# 1. Introduction

## 1.1 Project Background

Orica Australia Pty Ltd (Orica) has obtained approval from the NSW Minister for Planning for the expansion of its existing Ammonium Nitrate Production Facility located on Kooragang Island.

The proposed expansion of the ammonium nitrate facility would primarily require:

- ▶ An additional Nitric Acid Plant (NAP4).
- ▶ An additional Ammonium Nitrate Plant (ANP3).
- ▶ Modification of the existing Ammonia Plant.
- ▶ Additional storages for nitric acid, solid ammonium nitrate and ammonium nitrate solution.
- ▶ Upgrading of existing infrastructure such as cooling towers, air compressors, loading facilities, electrical systems, effluent treatment systems and the steam system.

Currently, ammonium nitrate (AN) is produced onsite as a precursor for use in the manufacture of commercial explosives for the mining and quarry industries. AN product is produced either in solution form or as one of three solid forms. Minor quantities of ammonia and nitric acid from the facility are also sold.

The Orica Kooragang Island Facility is located on the south-eastern most part of Kooragang Island, within the Port of Newcastle. The surrounding area is industrial. The nearest residential premises are located at Stockton, approximately 800m to the east of the facility.

## 1.2 Description of Project

The proposed expansion includes the following:

- ▶ An upgrade to the existing Ammonia Plant to increase its capacity from 295 ktpa to 360 ktpa.
- ▶ Construction and operation of an additional Nitric Acid Plant (NAP4), which would produce approximately 260 ktpa of nitric acid, increasing the total capacity of the facility from approximately 345 ktpa to 605 ktpa.
- ▶ Construction and operation of an additional Ammonium Nitrate Plant (ANP3) to produce increased volumes of Ammonium Nitrate Solution (ANS) and the solid prilled product Nitropriil®. The third Ammonium Nitrate Plant would enable the facility to increase its maximum capacity from 500 ktpa to 750 ktpa.
- ▶ Construction and operation of additional storages for nitric acid, solid ammonium nitrate and ammonium nitrate solution.
- ▶ Some additional infrastructure such as cooling towers, effluent treatment system and boiler.

The proposed expansion also includes construction of additional minor storage facilities and improvements to product loading facilities for road.



### 1.3 Purpose

This Construction Air Quality Management Plan (CAQMP) for the Project has been prepared to specifically address mitigation and management of air quality impacts associated with the construction of the Project. This plan does not include requirements to address air quality during the operation of the Project.

### 1.4 Objectives

The objectives of the CAQMP are to:

- ▶ Outline measures to minimise the impact of air quality, associated with the construction of the Project.
- ▶ Highlight measures to protect the air quality amenity of nearby sensitive receivers (including local residents).
- ▶ Allow the works to be planned, carried out and maintained to minimise air quality impacts on the surrounding area.

### 1.5 Relevant Environmental Legislation, Guidelines and Policies

Works on the Project site are required to be undertaken with consideration to environmental legislation and government guideline documents. Key environmental legislation, policies and guidelines relating to air quality management include:

- ▶ NSW *Protection of the Environment Operations Act 1997* (POEO Act).
- ▶ DECC *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2005).
- ▶ DECC *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (2007).
- ▶ DECC *Assessment and Management of Odour from Stationary Sources in New South Wales* (2006).

## 1.6 Minister for Planning's Conditions of Approval (MCoA)

The Minister for Planning's Conditions of Approval (MCoA's) No. 08-0129 requires that the Project meet the following requirements in relation to construction air quality:

### Mitigation

25. The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.
26. During construction, the Proponent shall ensure that:
  - a) all trucks entering or leaving the Project Site with loads have their loads covered; and
  - b) trucks associated with the Project do not track dirt onto the public road network.

Condition 25	The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.
Condition 26	During construction, the Proponent shall ensure that: <ol style="list-style-type: none"> <li>a) All trucks entering or leaving the Project Site with loads have their loads covered; and</li> <li>b) Trucks associated with the Project do not track dirt onto the public road network.</li> </ol>

## 1.7 Sensitive Environmental Receivers

The nearest identified potentially affected residential receivers within the vicinity of the Project are located on Stockton approximately 800 metres from the site. Figure 1-1 shows the location of the nearest residences to the site.



**Figure 1-1 The Orca Kooragang Island Facility**

Source: Orca Environmental Assessment Report, AECOM 2009.



## 2. Potential Construction Air Quality Impacts

Once all approvals and licenses have been obtained, construction activities are proposed to take place in the following sequence:

**Table 2-1 Proposed construction activities**

Time Period	Works Milestone
Commencement	Commence general Civil Works and set up construction facilities
+5 months	Complete foundations
+7 months	Commence structural steelwork
+10 months	Commence mechanical erection
+16 months	Commence electrical and instrument work
+19 months	Delivery of large equipment to site
+25 months	Complete construction
+28 months	Complete commissioning

Construction activities involving ground disturbance and with the potential to produce air quality impacts include:

- ▶ Site establishment.
- ▶ Earthworks.
- ▶ Heavy vehicle movements.
- ▶ Sheet Piling.
- ▶ Piling.
- ▶ Civil works including foundations.
- ▶ Service relocations.
- ▶ Mechanical works.
- ▶ Construction of buildings.
- ▶ Installation of pipework.

### 2.1 Potential Construction Air Quality Impacts

Construction activities have the potential to produce air quality impacts on surrounding sensitive receivers. Potential impacts include:

- ▶ Airborne dust settling on people's property.
- ▶ Aesthetic affects as people see the dust.
- ▶ Exhaust fumes from construction machinery.
- ▶ Mud transported onto road surfaces where it can dry and then be disturbed by vehicles.



As the nearest sensitive receiver is approximately 800 metres to the east of the site, construction activities are not expected to produce dust or air quality impacts at these residences. Regardless, potential construction air quality impacts would be minimised and managed as part of the CSEMP.



### 3. Roles and Responsibilities

The personnel responsible for the implementation of this plan, to ensure compliance with regulatory requirements and for safe and effective management of construction air quality specified in Table 3-1.

**Table 3-1 Parties Involved in this Plan and Associated Responsibilities**

Title	Responsibility
Project Manager	The Project Manager is responsible for: <ul style="list-style-type: none"><li>▶ Reviewing and authorising this plan.</li><li>▶ Assigning environment responsibilities to the Project Environment Representative.</li><li>▶ Providing sufficient resources to ensure the CAQMP practices are implemented.</li><li>▶ Continually monitoring of project environment performance to ensure compatibility and continued effectiveness with the policy and objectives.</li></ul>
Project Environment Representative.	The Project Environment Representative is responsible for: <ul style="list-style-type: none"><li>▶ Developing, maintaining and updating this plan.</li><li>▶ Educating relevant staff and contractors to ensure all are aware of their obligations under this plan.</li><li>▶ Providing specialist advice on air quality management.</li><li>▶ Undertaking periodic reviews of compliance with this plan.</li></ul>
Construction Supervisor	The Construction Supervisor is responsible for: <ul style="list-style-type: none"><li>▶ Implementing this plan</li><li>▶ Coordinating any activities and investigations required under this plan.</li><li>▶ Being a point of contact in relation to construction air quality issues.</li><li>▶ Advising the Project Environment Representative of any construction air quality issues or community complaints.</li><li>▶ Undertaking periodic reviews to ensure implementation of this plan by the Contractor.</li></ul>



Title	Responsibility
Contractor Supervisor	<p>The Contractor Supervisor is responsible for:</p> <ul style="list-style-type: none"><li>▶ Implementing this plan</li><li>▶ Coordinating any activities and investigations required under this plan.</li><li>▶ Ensuring all personnel are aware their obligations in relation to this plan</li><li>▶ Being the first point of contact in relation to construction air quality issues.</li><li>▶ Advising the Project Environment Representative of any construction air quality issues or community complaints.</li><li>▶ Undertaking periodic reviews to ensure implementation of this plan.</li></ul>
Construction personnel	<p>Other staff and contractors of the proponent are responsible for:</p> <ul style="list-style-type: none"><li>▶ Being aware of their obligations under this plan.</li><li>▶ Being aware of the activities in their work area that could result in air quality impacts and the specific actions required under this plan to minimise impacts.</li><li>▶ Immediately informing their supervisor should changes to the work plan occur that may result in air quality issues.</li></ul>
Security Personnel	<p>Security Personnel at the site exit points will be responsible for ensuring:</p> <ul style="list-style-type: none"><li>▶ Loads are covered prior to exiting the site.</li></ul>



## 4. Air Quality Management Framework

The air quality control program to be implemented for construction operations is outlined in Table 4-1 below:

**Table 4-1 Requirements for Control of Air Quality**

Environmental Management Control	Timing	Responsibility
On-site dust suppression measures		
Where required, water shall be applied through the use of water carts, sprays, sprinkler systems and/or water cannons to reduce dust from stockpiles, roads or work area.	Construction	Contractor Supervisor
Water spraying equipment shall be available at all times and regularly maintained to enable dust control.	Construction	Contractor Supervisor
Water use for dust suppression shall not create run-off that could enter surface water bodies.	Construction	Contractor Supervisor
Where possible, construction vehicle traffic will use existing sealed roads or dust suppression measures will be implemented.	Construction	Contractor Supervisor Construction Supervisor
Disturbed areas will be minimised during construction at all times.	Construction	Contractor Supervisor Construction Supervisor
Disturbed areas will be sealed or revegetated as soon as practicable to minimise dust generation.	Construction	Contractor Supervisor Construction Supervisor



Environmental Management Control	Timing	Responsibility
<b>Materials Transport</b>		
Loads will be covered when transporting material off-site.	Construction	Contractor Supervisor
Vehicles will be inspected prior to exiting the site to ensure they have been covered.	Construction	Security Personnel
Where there is material build-up, trucks associated with the project will wash down tyres when leaving site.	Construction	Contractor Supervisor
Speed restriction will be utilised to minimise dust generation on-site. The site speed limit of 15km/h on site will be adhered to.	Construction	Contractor Supervisor Construction Supervisor
Where required, internal roads and exit points will be swept to control the accumulation of dust generating material.	Construction	Contractor Supervisor Construction Supervisor
Tailgates of all trucks leaving the premises will be securely fixed to prevent loss of materials.	Construction	Contractor Supervisor
Where material is deposited on an offsite road, the material will be cleaned up immediately.	Construction	Contractor Supervisor Construction Supervisor
<b>Stockpiles</b>		
Stockpiles locations will be planned to minimise the number of affected areas.	Construction	Contractor Supervisor Construction Supervisor
Stockpiles will be managed to minimise dust generation, including water spraying, covering or temporary seeding as necessary.	Construction	Contractor Supervisor Construction Supervisor



Environmental Management Control	Timing	Responsibility
Contingencies in event of dust generation		
Weather forecasts will be obtained during working days to provide adequate warning of likely strong winds to assist with management of wind blown dust. The existing site weather station will be used to provide additional site information to assist in the management of dust generation..	Construction	Contractor Supervisor Project Environmental Representative
<p>In the event of excessive dust generation the following measures are to be implemented, including where appropriate:</p> <ul style="list-style-type: none"> <li>▶ Increased use of water sprays.</li> <li>▶ Reduction of speed on roads.</li> <li>▶ Halting of work in the area generating the dust until effective dust control measures can be applied.</li> </ul>	Construction	Contractor Supervisor Construction Supervisor
General Air Quality Controls		
All construction vehicles and machinery will be operated and maintained in accordance with the manufacturers' guidelines in relation to exhaust emissions.	Construction	Contractor Supervisor Construction Supervisor
Excessively smoky vehicles will be removed from site.	Construction	Contractor Supervisor Construction Supervisor
Where possible, no plant or equipment will be left idling.	Construction	Contractor Supervisor



## 5. Monitoring and Reporting

**Table 5-1 Monitoring and Reporting Commitments**

<b>Monitoring and Reporting Commitments</b>	<b>Responsibility</b>
Daily inspection of the construction site to ensure ongoing compliance with the mitigation measures.	Contractor Supervisor Construction Supervisor
Regular inspection of the construction site to ensure ongoing compliance with the mitigation measures.	Project Environment Representative
Regular review of results from the air quality monitoring station at Stockton will be undertaken to assess the effectiveness of the controls.	Project Environment Representative
Review to confirm the effectiveness of any recommended corrective actions resulting from a complaint.	Project Environment Representative



## 6. References

AECOM (2009), Proposed Ammonium Nitrate Facility Expansion, Environmental Assessment, prepared for Orica Australia Pty Ltd.

Department of Planning (2009), Project Approval, Orica Proposed Ammonium Nitrate Expansion Project.

DECC Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2005).

DECC Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (2007).

DECC Assessment and Management of Odour from Stationary Sources in New South Wales (2006).



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