

AGREEMENT NOT TO ISSUE ORDER DURING COMPLIANCE WITH A VOLUNTARY PROPOSAL

(Section 26 of the Contaminated Land Management Act 1997)

Agreement No.: 26093

Agreement Date: 8/12/06

Area No.: 3183

**This agreement relates to the attached proposal, which comprises three Parts:
Part 1 – Preliminary Details; Part 2 – Undertakings; and Part 3 – Performance
Schedule.**

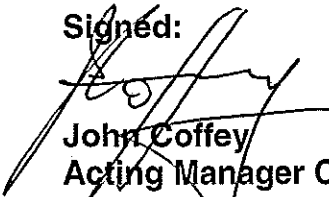
Proponent: Orica Australia Pty Limited (ABN 99 004 117 828)

Site: Lot 3, DP 234288 (15 Greenleaf Road, Kooragang Island)

Proposal Date: 6 September 2006

1. The EPA is satisfied that the terms of the proposal are appropriate.
2. The EPA notes for the purposes of section 26 of the *Contaminated Land Management Act 1997* (CLM Act) that the proponent has undertaken in writing to the EPA not to recover contributions under Part 3, Division 6 of the CLM Act in respect of implementation of the proposal.
3. The EPA agrees, in accordance with the provisions of Part 3 of the CLM Act, that it will not issue a remediation order against the proponent if and for so long as the proposal is complied with.
4. The EPA may issue a remediation order against the proponent in accordance with the CLM Act if the EPA is not satisfied that the proposal is being or has been complied with.
5. The EPA is not prevented by this agreement from making a remediation order against persons (whether or not they were originally parties to the proposal and including public authorities) other than the proponent.
6. The EPA is not prevented by this agreement from exercising its powers under the *Protection of the Environment Operations Act 1997* in relation to activities conducted in association with or under the proposal.
7. Each component of the proposal, as described in the proposal is to be completed by the date specified in the proposal. Failure to satisfactorily complete any component by the due date for that component may be taken as a failure to carry out the terms of the proposal for the purposes of section 27 of the CLM Act.
8. This agreement takes effect on the "Agreement Date" specified above and continues in effect subject to satisfactory performance and progress with implementation of the proposal.

Signed:



John Coffey

Acting Manager Contaminated Sites

Department of Environment and Conservation (NSW)

VOLUNTARY INVESTIGATION/REMEDATION* PROPOSAL UNDER CONTAMINATED LAND MANAGEMENT ACT 1997

Part 1

Preliminary Details

1. Proponent's Details

(a) Name and contact details

If a registered company, company name:

Trading as: **Orica Australia Pty Ltd**

ACN/ABN: **ACN: 004 117 828**

If not a registered company, your full name(s):

Trading as:

ABN:

Phone: (02) 4923 5400

Fax: (02) 4923 5600

Email:

Postal address: PO Box 80, Mayfield, NSW

Postcode: 2304

EPA licence number (if applicable): 828

(b) Who the EPA should contact with technical enquiries about the proposal

Employer/Company: **Orica Australia Pty Ltd**

Type of business: **Ammonium Nitrate Manufacturing**

Phone (business): (02) 4923 5529

Fax: (02) 4923 5510

*please strike out as appropriate

Proponent: **Orica Australia Pty Ltd**

Site: **Kooragang Island Works**

Proposal Date: **1 September 2006**

2. Site to which proposal applies

The site to which the proposal applies ("the site") is:

Lot 3 in DP234228 (15 Greenleaf Rd, Kooragang Island) in the local government area of Newcastle, New South Wales (refer Attachment 1)

3. The contamination

Groundwater within and beyond the site is contaminated in such a way as to present a significant risk of harm. The contaminants at the site include:

- Arsenic; and
- Nutrients (specifically total ammonia and nitrate)

4. The investigation/remediation* proposal

The remediation proposal ("the proposal") comprises:

- a) the information set out above;
- b) the actions, works and other components set out in the following document:
 - Stage 2 – Voluntary Remediation Agreement Proposal for Orica Facility Kooragang Island (URS, 31 August 2006);
- c) the undertakings set out in Part 2 of this document; and
- d) the performance schedule set out in Part 3 of this document.

Signed by the proponent 6 September 2006

Part 2

Undertakings Included in Voluntary Investigation/Remediation* Proposal

Explanatory Note:

Before the EPA can agree with one or more parties to a voluntary investigation or remediation proposal not to issue orders against them under section 17 or 23 of the Contaminated Land Management Act 1997, it has a statutory obligation to satisfy itself that the terms of the proposal submitted to it under section 19 or 26 are appropriate. In addition to including an appropriate investigation or remedial action plan, to be acceptable to the EPA a proposal must include the undertakings set out below. These undertakings are important. They must be complied with in order for the EPA to be satisfied that the terms of the proposal have been carried out.

THE PROPOSAL INCLUDES THE FOLLOWING UNDERTAKINGS:

General

1. All activities carried out in connection with the proposal including sampling and preparation of associated reports ("the activities") will be carried out in accordance with applicable provisions of *State Environmental Planning Policy 55 – Remediation of Land* and any requirements imposed under it in relation to the works.
2. All matters listed as relevant to a remediation action plan by the EPA's *Guidelines for Consultants Reporting on Contaminated Sites* (1997) will be taken into account in the carrying out of the activities.
3. All the activities will be carried out consistently with guidelines made or approved under section 105 of the CLM Act.
(See <http://www.environment.nsw.gov.au/clm/guidelines.htm>)
4. All the activities will be carried out in compliance with applicable NSW environmental legislation, and in particular:
 - i) All the activities, including:
 - (1) the processing, handling, movement and storage of materials and substances used to carry out the activities; and
 - (2) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activitieswill be carried out in a competent manner;
 - ii) All plant and equipment installed at the site or used in connection with the activities:
 - (1) will be maintained in a proper and efficient condition; and
 - (2) will be operated in a proper and efficient manner.
5. All the activities at the site will be carried out in a manner that prevents or minimises the emission of dust, odour and noise from the site.
6. Waste generated or stored at the site will be assessed, classified and managed in accordance with the EPA's *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes*.

(See <http://www.environment.nsw.gov.au/waste/envguidlms/index.htm>)

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7. All hazardous, industrial, Group A or controlled waste generated by the activities at the site and which is to be transported from the site will be tracked in accordance with the *Protection of the Environment (Waste) Regulation 2005* and any licence under the *Protection of the Environment Operations Act 1997* in relation to the activities.

(See <http://www.environment.nsw.gov.au/waste/wastetracking.htm>)

8. The proponent will, and acknowledges that the EPA may, make all documents and information relating to the activities available to the public free of charge.
9. The proponent will:
- i) prior to the implementation of the proposal provide for the EPA's approval a strategy for communicating about that implementation, particularly the actual remediation works, with members of the public who are likely to have a real interest in or be affected by that implementation and
 - ii) implement the strategy as approved by the EPA.

Monitoring, Record Keeping & Reporting

10. At least until the EPA has notified the proponent that the EPA no longer considers that the contamination poses a significant risk of harm, record and retain all monitoring data and information and provide this record to the EPA at any reasonable time if so requested by the EPA and as specifically provided under the proposal.

[Note: Specific details of monitoring and data reporting requirements, requirements for progress reports, etc are to be set out in the performance schedule in Part 3 of this document.]

11. The EPA will be informed in writing within 7 days of the proponent becoming aware of information or data indicating a material change in conditions at the site or in its surrounding environment which could adversely affect the prospects of successful investigation or remediation of the site or result in harm to the environment.
12. The EPA will be informed in writing within 7 days of the proponent becoming aware of any failure, either by the proponent or any other person, to comply with any component or aspect of the proposal.
13. The EPA will be informed in writing as soon as practicable of any notification by the proponent, its employees or its agents to an appropriate regulatory authority other than the EPA of any pollution incident at the site within the meaning of the *Protection of the Environment Operations Act 1997*.

(See <http://www.environment.nsw.gov.au/licensing/dutytonotify.htm>)

Performance Schedule

14. The performance schedule which is in Part 3 of this document will be adhered to.

Signed by the proponent 6 September 2006

***please strike out as appropriate**

Proponent: Orica Australia Pty Ltd

Site: Kooragang Island Works

Proposal Date: 1 September 2006

Part 3

Performance Schedule

Explanatory Notes:

The performance schedule required must provide a clear and concise list of:

- key milestones and dates by which they are to be achieved and
- the objectives and principal features of the investigation or remedial action plan.

The performance schedule is very important because it provides a concise set of performance indicators which will be used, along with an evaluation of compliance with the undertakings in Part 2 of this document, to assess whether or not the terms of the proposal have been carried out.

To be acceptable to the EPA, the performance schedule **must** include precise, measurable and time-bounded performance indicators. Where it is appropriate for the investigation or remediation to be done in stages, performance measures for each stage must be provided, and approval for later stages will be dependent on the completion and/or performance of earlier stages being demonstrated to the EPA's satisfaction.

The performance schedule should adhere to the structure set out in the following table.

PART 3 - PERFORMANCE SCHEDULE	
The schedule should concisely set out:	
1. Objectives of the proposal	
2. Principal features of the proposal	
a. <u>Capital works</u>	
b. <u>Remediation and/or Investigation</u>	
c. <u>Monitoring</u>	
3. Reporting requirements and timeframes for submission of reports	
4. Key milestones for investigation or remediation activities	

An example of a performance schedule is set out on the next page.

Example of a performance schedule

PERFORMANCE SCHEDULE

1. Objectives of the proposal

This proposal builds on the Stage 1 VRA proposal, which was completed in March 2006. The Stage 1 works involved the implementation of works to address ammonia contamination of groundwater and arsenic contamination of soil and groundwater.

In the Stage 1 VRA source control activities were undertaken to prevent the ongoing contamination of groundwater with ammonia and arsenic. In addition a conceptual model was developed to assist in understanding the behaviour of arsenic in the aquifer.

Following a review of the outcomes of the Stage 1 Voluntary Remediation Agreement (VRA) programme it was determined that whilst no additional remediation activities were required to minimise the potential for the discharge of arsenic contaminated groundwater into the Hunter River, there may be opportunities to provide additional assurance that arsenic remains immobilised in the aquifer.

The Stage 2 VRA details works to be undertaken to examine the natural attenuation processes and methods that could be used to enhance these processes. Management strategies will also be developed to ensure that affected landowners are made aware of the presence of the contamination and the requirements for managing the land to minimise the potential for adverse affects on people and the environment.

The main objectives of the Stage 2 VRA is to achieve the following outcomes within the timeframes specified in the proposal:

- O1. Implement strategies to ensure that the identified arsenic contamination of soil and groundwater is managed to minimise potential exposure or mobilisation.
- O2. Undertake periodic monitoring of both arsenic and ammonia in groundwater to ensure that contaminants are either not migrating further towards the Hunter River or are decreasing after source control activities.
- O3. Validate and enhance the conceptual model to confirm the process of arsenic immobilisation/adsorption/attenuation by aquifer materials and assess options for the enhancement of this process.
- O4. If applicable, implement a pilot trial to assess the practicability of full scale enhancement of the arsenic immobilisation/adsorption/attenuation.

2. Principal features of the proposal

The principal features of Stage 2 VRA include, but are not limited to:

1. Management Strategy

An Environmental Management Plan (EMP) will be developed to describe the process to be implemented when works are to be undertaken in the vicinity of the identified contamination. The EMP will be provided to other landowners for implementation on their properties.

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The EMP will include the development and implementation of a Communication Plan to ensure that stakeholders are fully aware of the residual contamination and management tools required to ensure that personnel or the environment are not adversely affected. A communication briefing will be undertaken with identified stakeholders and a copy of the EMP provided. Annual communication will be undertaken to ensure that site operators are continually made aware of the issue and the management tools.

2. Monitoring

Groundwater monitoring will be undertaken in the vicinity of the arsenic and ammonia contamination to ensure that contaminants are either not migrating further towards the Hunter River or are decreasing after source control activities.

3. Validation and Enhancement of Conceptual Plan

The following activities will be undertaken to validate the conceptual model developed to describe the behaviour of arsenic contamination in the aquifer:

- Geochemical modelling to assess the geochemical processes within the aquifer, identify the key processes associated with arsenic sorption and determine the sensitivity of the system to changes in aquifer conditions.
- Assessment of the adsorption capacity of the aquifer materials to determine the attenuation capacity of the aquifer materials and the potential for desorption of arsenic with time and changing conditions.

In addition the following activities are proposed to be undertaken to assess the potential to enhance the adsorption capacity within the aquifer, thus enhancing the attenuation processes and further reducing potential for remobilisation.

- Identification of additives which may be suitable for use in enhancing the attenuation processes.
- Assessment of the potential adverse effects the additive may have on the aquifer, and/or the Hunter River and/or the built environment.
- Assessment of options for introducing the additives into the aquifer.

In the event that changes to this programme are recommended as a result of the findings from prior work, this will be discussed and agreed in writing with the DEC prior to any additional work.

Depending upon the outcomes of the programme of works assessing the potential to enhance the adsorption capacity a field pilot trial may be undertaken. The field pilot trial will be undertaken to assess the effectiveness and technical feasibility of the enhancement process. The scope of this programme will be documented for review and comment by the DEC. The programme will not proceed until DEC approval has been received in writing.

The decision to undertake the field pilot trial would be based on whether a beneficial long-term reduction in arsenic concentrations in groundwater can be demonstrated.

3. Reporting requirements and timeframe for submission of reports

The EPA will be provided with the following summaries, updates and/or reports by the deadlines specified below. The type of deliverable is detailed in the VRA proposal:

Report	Deadline
EMP and Communication Plan	September 2006
Consultation with Stakeholder	December 2006
Bi-annual Monitoring – Arsenic	August 2006
	February 2007
	August 2007
Bi-annual Monitoring - Ammonia	August 2006
	March 2007
	August 2007 (subject to agreement)
Geochemical Modelling	March 2007
Assessment of Adsorption	November 2006
Assessment of Enhancement	March 2007
Arsenic (Report)	May 2007
Field Trial (if required)	March 2008

Key milestones for investigation, remediation and other actions

All works set out in the proposal will be completed by the deadlines specified below:

Works	Deadline
T1. Consultation with Stakeholders on Environmental Management Plan	30 November 2006
T2. Completion of Geochemical Model	March 2007
T3. Completion of investigations into the potential to enhance natural attenuation of the arsenic contamination of groundwater.	May 2007
T4. Completion of the field pilot trial into the enhancement of natural attenuation of the arsenic contamination of groundwater.	March 2008

Signed by the proponent 6 September 2006