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Orica Kooragang Island  
Independent Environmental Compliance Audit

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Orica Australia Pty Ltd

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# Orica Kooragang Island

## Independent Environmental Compliance Audit

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This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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### DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
610.13459	Revision 0	24 March 2014	Jon Panic	Sandy Lonergan Gary Graham	Gary Graham

## Executive Summary

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Orica Australia Pty Ltd (Orica) to undertake this independent environmental audit of compliance as required under Project Approval 08\_0129, first approved on 1 December 2009.

This independent environmental audit was conducted in accordance with Condition 52, prescribed in Schedule 4 of the Project Approval.

Of the 53 conditions audited, the audit identified compliance with 37 conditions, and non-compliance associated with aspects of seven (7) conditions. Nine (9) conditions were unable to be assessed as the condition had yet to be triggered.

Non-compliances were considered to generally be technical in nature; that is, they related to the submission timing of regulatory reports and Department of Planning approval of management plans.

In addition, although not directly related to the operation of the uprated ammonia plant, two (2) non-compliances identified were associated with environmental incidents that occurred at the site during the commissioning of the uprated Ammonia Plant. These incidents have since been managed in consultation with, and to the satisfaction of the Regulator.

A small number of non-compliances were also identified with respect to the implementation of commitments detailed in construction management plan documentation, namely the undertaking of and recording of weekly environmental inspections during periods of construction associated with the site's expansion project. These inspections provide an effective way of minimising the potential for environmental incidents and responding promptly to minor issues.

Overall, recent changes to the site's approach in managing the site's regulatory and environmental commitments since 2011 are understood by staff and are perceived as an effective measure in proactively managing the site's environmental risks.

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## 1 INTRODUCTION

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Orica Australia Pty Ltd (Orica) to undertake this independent environmental audit of compliance as required under Project Approval 08\_0129 first approved on 1 December 2009.

This independent audit was conducted in accordance with conditions prescribed in Schedule 4 of the Project Approval. Condition 52 of Schedule 4 states:

*Within 2 years of the commencement of operations of the Project, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:*

- a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;*
- b) assess the environmental performance of the Project, and its effects on the surrounding environment;*
- c) assess whether the Project is complying with the relevant standards, performance measures, and statutory requirements;*
- d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,*
- e) recommend measures or actions to improve the environmental performance of the Project, and/or any strategy/plan/program required under this approval.*

*Note: This audit team must include experts in the field of noise and air quality.*

The scope of the audit included an assessment of compliance against all relevant conditions in the audit for works carried out under Phase 1 (the uprate of the site's existing Ammonia Plant) of the Orica Ammonium Nitrate Expansion Project (the Project). To date, works have not yet commenced on subsequent phases (though some pre construction documentation has been, or is being prepared).

The scope was broadly confirmed with Department of Planning in an email from the Lead Auditor to Nicholas Hall dated 12 February 2014 (prior to written confirmation of approval as Lead Auditor):

*I wish to broadly confirm the scope of the audit, as due to the progressive nature of the works and their approval I felt it necessary to ensure there was no confusion over what should be included and what was not required to be included.*

*I understand that, to date, Orica has only completed "Phase 1" of the Project. This involved the increase of ammonia production to over 1000t/day. Works that supported this included the construction of a new cooling tower stack and a compressor building.*

*Detailed design, and the submission of some approval documents, has been undertaken for Phase 2 and 3 (also under the approval for DA 08\_129), however works (construction) have not commenced.*

*Accordingly, if approved we would limit the scope of the audit to Phase 1 of the Project, and the pre-construction reporting of Phase 2 of the Project. This will not preclude us from reviewing more broadly the management systems and operational procedures in place across the site; however this will be undertaken in the context of how they impact on Phase 1 operations.*

The audit included a desktop review and a two day site visit. The site component of the audit was undertaken by Jon Panic, an RABQSA / Exemplar accredited Lead Auditor (and approved by the Department of Planning), on 4<sup>th</sup> and 5<sup>th</sup> February 2014 and involved a walk-around of the site, attendance at the site induction and interviews with key staff. Jon was assisted by SLR Auditor Jessica Elmes. The audit team also included experts in the fields of noise and air quality – John Sleeman (Noise) and Martin Doyle (Air), who assisted in the review of Noise and Air Quality Management Plans. The audit report was quality-reviewed by SLR Auditor Sandy Lonergan.

**Table 1** lists the personnel interviewed during the site visit component of the audit.

**Table 1 Personnel Interviewed During the Audit**

Name	Title
Greg Holmes	General Manager Kooragang Island Site
Antony Taylor	Major Projects Statutory Manager
Dan Allen	Shift Superintendent
Scott Reid	Operations Manager
Paul Hastie	Safety Lead
Belinda Moos	Risk Engineer
Sherree Woodroffe	SHEC Manager Kooragang Island
Bruce Volkiene	Manager Maintenance Kooragang Island

## 1.1 Limitations

This report has been prepared for Orica to fulfil the requirements of the Independent Environmental Audit as specified in the Project Approval.

The scope of the audit, and subsequent report was limited and should not be used for any purpose other than that described above.

The following should be taken into account when reading and using this report:

- 1 A site visit was undertaken during this audit, the purpose of which was to familiarise the auditors with the site layout, site conditions and natural environment. Whilst the auditors requested to be shown all features of the sites that are impacted (environmentally) by the operations, the auditors have relied on information provided by Orica representatives during these site visits, including the selection of the areas of the site for the site inspection.
- 2 Orica provided at their sole discretion all of the documentation that has been accessible to the auditors. The auditors have relied on the information and documentation provided and have relied on Orica to provide all relevant and pertinent information. It should be noted that the range of documentation provided may not have included all of the relevant environmental related records held. The auditors asked to receive all relevant documentation. The auditors have not had the opportunity to verify any of the information provided nor have they had the opportunity to consult with any party other than Orica's nominated representatives during this audit.

## 2 AUDIT FINDINGS

### 2.1 Summary of Audit Findings

Table 2 shows a summary of the findings of this audit.

**Table 2 Summary Table of Compliance with 08\_0129**

Schedule	Conditions Audited	Compliance	Inability to be determined	Non-Compliance
Schedule 2	13	9	3	1
Schedule 3	35	23	6	6
Schedule 4	5	5	0	0
<b>Total</b>	<b>53</b>	<b>37</b>	<b>9</b>	<b>7</b>

Table 3 below presents a summary of the non-compliances and the relevant comments and recommendations for each.

**Table 3 Non-compliances**

Schedule	Condition	Requirement (Summary)	Auditors Comment	Auditors Recommendation
2	7	With the approval of the Director-General, the Proponent may submit any plan, study, or document required by this consent on a progressive basis	The timing of submission of studies and plans is generally meeting the requirements for submissions that have been negotiated with the Director-General; however there was one instance where a request for resubmission of the Stormwater Management Plan was not completed in the DoPI required timeframe.	Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.

Schedule	Condition	Requirement (Summary)	Auditors Comment	Auditors Recommendation
3	15	The Proponent shall develop and implement the plans: Transport of Hazardous Materials Plan Emergency Plan Safety Management System	Although Orica submitted the site Emergency Response Plan to DoPI two months prior to commencing commissioning of Phase 1, formal approval from the DoPI was not obtained prior to commissioning commencing.	Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.
	25	The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.	The CEMP details a range of measures, however Orica was not able to provide sufficient evidence to show that these measures (specifically weekly inspections) were being carried out at the time of the construction works.	Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan during future periods of construction associated with the project.  Consider including in subsequent revisions of the Construction Environmental Management Plan description of the types of triggers that may result in a requirement to implement a control (e.g. a water cart) and how the assessment of its effectiveness is determined.
	40	The Proponent shall ensure the Project meets the EPL requirements for stormwater and effluent discharges to the Hunter River.	Orica exceeded the effluent Arsenic discharge limit following an incident on the Ammonia Plant during the commissioning after the uprate. The discharge occurred during clean up works undertaken following the incident.	

Schedule	Condition	Requirement (Summary)	Auditors Comment	Auditors Recommendation
	42	Prior to the commencement of construction the Proponent shall prepare and implement a Stormwater Management Plan for the Project in consultation with the Newcastle Port Corporation and to the satisfaction of the Director-General.	The Plan has generally been prepared to the satisfaction of the Director-General, however one request for resubmission of the Stormwater Management Plan. Although the Plan was resubmitted and subsequently approved by the Director General as meeting the Conditions requirements, it was not strictly undertaken in accordance with the required timeframe.	Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.
3	45	Prior to commencement of operations of the Project, the Proponent shall submit to the Director-General a landscape plan providing details of native screening plants to be planted along the eastern boundary of the Project Site. The plan shall demonstrate that the landscaping does not compromise on-site security and shall include a program for implementation.	The plan was prepared as required however evidence of submission could not be provided at the time of the audit. Given the high rate of compliance with the other submission-related requirements of this approval, the auditor suspects the plan was submitted, however this must be found non-compliant without the required evidence.	Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.
	48	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General.	Orica's management plans include a range of appropriate measures for managing waste; however Orica was not able to provide sufficient evidence to show that these measures (specifically weekly inspections) were being carried out at the time of the construction works.	Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan.

## 2.2 Interviews

In some cases, information obtained and statements recorded during the interviews conducted whilst on site at the Kooragang Island facility were directly recorded as evidence (see **Appendix A**). More broadly, the auditor also used the interviews as an opportunity to gain an appreciation of the extent to which the systems in place to manage environmental impacts from site operations were understood and being implemented by key staff.

The interviews conducted allowed the auditor to form the opinion that the approach to environmental management (and operations more broadly) is well understood by staff and is considered by staff to be effective at improving the extent to which the business can manage risks proactively.

## 3 CONCLUSION

Of the 53 conditions audited, the audit identified compliance with 37 conditions, and non-compliance associated with aspects of seven (7) conditions. Nine (9) conditions were unable to be assessed as the condition had yet to be triggered.

Non-compliances were considered to generally be technical in nature; that is, they related to the submission timing of regulatory reports and Department of Planning approval of management plans.

In addition, although not directly related to the operation of the uprated ammonia plant, two (2) non-compliances identified were associated with environmental incidents that occurred at the site during the commissioning of the uprated Ammonia Plant. These incidents have since been managed in consultation with, and to the satisfaction of the Regulator.

A small number of non-compliances were also identified with respect to the implementation of commitments detailed in construction management plan documentation, namely the undertaking of and recording of weekly environmental inspections during periods of construction associated with the site's expansion project. These inspections provide an effective way of minimising the potential for environmental incidents and responding promptly to minor issues.

Overall, recent changes to the site's approach in managing the site's regulatory and environmental commitments since 2011 are understood by staff and are perceived as an effective measure in proactively managing the site's environmental risks.

### 3.1 Recommendations

The following recommendations, **Table 4**, related to non-compliances, are made to assist in responding to the issues raised in this audit.

**Table 4 Audit Recommendations**

Recommendation	Justification
Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.	Improved compliance with the Project Approval.
Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan.	Weekly inspections are a requirement of the approved Construction Environmental Management Plan.
Consider including in subsequent revisions of the Construction Environmental Management Plan description of the types of triggers that may result in a	Improve the effectiveness of the document and increase the likelihood of the document being used by on-the-ground staff.

Recommendation	Justification
requirement to implement a control (e.g. a water cart) and how the assessment of its effectiveness is determined.	

### 3.2 Opportunities for Improvement

**Table 5** summarises additional opportunities for improvement suggested for consideration by Orica to aid in environmental management on site and reduce the risk for potential environmental harm.

**Table 5 Additional Recommendations and Opportunities for Improvement**

Opportunity	Justification
The auditor recommends Orica to gain approval from DoPI and FRNSW 1 month prior to commencing construction of Phase OBL1(b) and Phase 3 as required by this condition (staged approval).	The existing approval is sufficient for the current phase of works, however it is necessary to ensure DoPI and FRNSW are satisfied with Orica's approach for subsequent phases.
The auditor recommends Orica request confirmation from DoPI that the status of actions as reported on 23 September 2013 is considered satisfactory in the context of the current stage of works on the Project (re HAZOP).	Confirm that the approach to date is considered satisfactory by DoPI.
The checkpoint audit template be modified to include a section that details the findings of the previous checkpoint audit and the action that has been taken to address those findings.	Ensure that items raised in previous audits are appropriately closed out.
Post full air quality reports on website, showing methods used to undertake monitoring are in accordance with requirements of EPL and work conducted by NATA accredited laboratories.	Improved transparency.
Whilst the Air Quality Verification study was able to demonstrate that the plant is operating within statutory limits, there was an opportunity for more thorough assessment of whether the plant is achieving ideal operational efficiency that should be factored into subsequent studies of this type undertaken for the Project.	Whilst it is important to ensure the plant operates within statutory limits, there may be an opportunity to improve efficiency by operating <i>beyond compliance</i> .
Check progress against these two proposed actions at the time of the next independent environmental audit: <ul style="list-style-type: none"> <li>Continuation of the AN1 Prill tower particulate monitoring program in agreement with the EPA.</li> <li>Commencement of process improvement activities designed to minimise the generation of coarse particulate from the Prill tower in accordance with the commitments outlined to the EPA.</li> </ul>	To ensure ongoing implementation of commitments made at the time of the audit.
A Noise Monitoring Summary Report be prepared following the completion of each phase of works.	The current version of the report is appropriate to the current phase of works and should be updated to ensure it remains relevant to future phases where the noise impacts may differ.
Ensure qualified soil scientist provides written justification for omission of sampling for any "contaminants of concern" as per the Soil Management Plan. Ensure sampling is able to be shown to be undertaken in accordance with the EPA Sampling Design Guidelines (1995).	This is a requirement of the Soil Management Plan.

## SCHEDULE 2 – ADMINISTRATIVE CONDITIONS

**Table 6 Administrative Conditions**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Obligation to minimise harm to The environment</b>				
1	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction and/or operation of the Project	All information reviewed throughout this audit was considered during the assessment of compliance with this condition		C Throughout the audit, the Proponent was able to demonstrate a good level of compliance with the requirements of this approval and a comprehensive approach to environmental management in general. The recent incorporation of the Towards World Class (TWC) system, and internal reporting cycles has impacted positively on improving ownership of and accountability for environmental issues (from Operators to General Manager level) and also improved the likelihood of potential issues being identified and managed prior to their leading to or resulting in an environmental incident.
<b>Terms of Approval</b>				
2	The Proponent shall carry out the project generally in accordance with the: a) EA; b) statement of commitments;		Provided: 2009 EA titled <i>Proposed Ammonium Nitrate Facility Expansion</i> (Volumes 1 and 2) (AECOM, 2009) <i>DA 08_0129 (MOD 1) EA with supporting documentation</i>	C The Project is being carried out generally in accordance with the

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	<p>c) Submissions Report;</p> <p>d) Modification Application (08_0129 MOD 1) with supporting documentation titled <i>Kooragang Island Facility Update Modification Request</i>, prepared by AECOM for Orica Australia Pty Ltd and dated 20 April 2011;</p> <p>e) report titled <i>Orica Mining Services Report for Kooragang Island Update PHA MOD 1 Report</i>, prepared by GHD for Orica Australia Pty Ltd and dated March 2012; and</p> <p>f) conditions of this approval.</p>		<p><i>titled Kooragang Island Facility Update Modification Request Kooragang Island Facility Update Modification Request</i> (AECOM, 2011)</p> <p>Letter from AECOM to DoPI <i>Response to Submissions: Orica Modification 1</i></p> <p>Proposed Ammonium Nitrate Facility Expansion Submissions Report (AECOM, 2009)</p> <p><i>2009 Proposed Ammonium Nitrate Facility Expansion Statement of commitments</i></p>	<p>requirements of this condition, notwithstanding the non-compliances (mostly technical) raised in this audit.</p>
3	<p>If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.</p>			<p>NA</p> <p>No inconsistency between the documents was identified. Notwithstanding, the conditions of the approval are used as the basis for managing compliance on site.</p>
4	<p>The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:</p> <p>a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and</p> <p>b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.</p>			<p>C</p> <p>Orica demonstrated that they are generally complying with specific requests made by the Director-General.</p>
<b>Limits on Approval</b>				
5	<p>The Proponent shall not produce more than the following at the Project Site:</p> <p>a) 360,000 tpa of ammonia product;</p> <p>b) 605,000 tpa of nitric acid product;</p> <p>c) 750,000tpa of ammonium nitrate product</p>		<p>Viewed daily production report in "Globe" software.</p> <p>Viewed spreadsheet "13_12_2-13 production data". Showed annual tonnages for each at:</p> <p>a) 337kt for ammonia</p> <p>b) 274kt for nitric acid</p>	<p>C</p> <p>Production for the previous reporting year did not exceed the limits of approval.</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			c) 347kt for ammonia nitrate Viewed 2013 Annual Environmental Management Report. Included production data as per spreadsheet.	
6	Should the works covered by this approval be significantly delayed, or only partially completed, the Director-General may direct the Proponent to conduct the studies outlined in this approval for the completed works.	Antony Taylor: “The project has evolved into a 3-phase project. <i>This approach has been adopted to ensure that construction works associated with the upgrade have minimal impact on the site’s existing operations and that upgraded ammonium nitrate product storage and loadout facilities are completed prior to the construction of the new Nitric Acid and Ammonium Nitrate plants.</i> ”	Viewed 2013 Annual Environmental Management Report which included a description of the current project status. (Section 4)	C Studies and plans required by this approval are being submitted for approval as required by the Director-General.
<b>Submission of Documentation</b>				
7	With the approval of the Director-General, the Proponent may submit any plan, study, or document required by this consent on a progressive basis.  <i>Note: The conditions of this approval require certain documents to be prepared for the Project. They also require these documents to be reviewed and audited on a regular basis to ensure they remain effective. However, in some instances, it will not be necessary or practicable to prepare these documents for the whole Project at any one time; particularly as these documents are intended to be dynamic and improved over time. Consequently, the documents may be prepared and implemented on a progressive basis. In doing this however, the Proponent will need to demonstrate that it has suitable documents in place to manage the existing operations of the Project Site.</i>		Email from Carey W Gent, Nitrates Project Development Manager to Kerry Hamann (DoPI) <i>Orica AN Expansion KI - Letter re: reports for commencement of construction</i> dated 3 <sup>rd</sup> February 2010 advising: 1. Timing of first phases of project; and 2. Reports issued to DOPI to satisfy conditions for commencement of construction 3. Statement as to the nature of the first construction phase  Letter from David Kitto (DoPI) to Sherree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Submission of Management Plans</i> dated 9 <sup>th</sup> February 2010 noting that the Department has agreed to “ <i>submission of documentation in accordance with the following construction phasing:</i> ” • 1a – ammonia compressor building construction; • 1b – ammonia upgrade plant; and • 2a and 2b – Nitrate upgrades. The letter confirms that adequate documentation has been submitted to allow for commencement of phase 1a, subject to three conditions: a) Minor changes to the Construction Traffic Management	NC The timing of submission of studies and plans is generally meeting the requirements for submissions that have been negotiated with the Director-General; however there was one instance where request for resubmission of the Stormwater Management Plan had not been followed through in the agreed timeframe.  <b>Recommendation:</b> <b>Ensure all submission and re-submission requirements are entered into compliance tracking systems to</b>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
		<p>Antony Taylor:  <i>“For Phase 1a, there was a minor change to the catchment volume, for Phase 1b there was a reduction, therefore no calculation was required to be carried out.”</i></p>	<p>Plan as per Ports request.</p> <p>Viewed email from Andrew Wood (NPC) to Kerry Hamann (DoPI) dated 10<sup>th</sup> February 2010 advising of the issues that required revision on the plan.</p> <p>Viewed <i>Ammonium Nitrate Facility Upgrade Construction Traffic Management Plan</i> dated March 2010. It addressed each of the issues raised in the email from Andrew Wood</p> <ul style="list-style-type: none"> <li>• noting that NPC is <i>“the owner of the road network”</i>;</li> <li>• noting that <i>“oversized loads...will require separate approval from the RTA and Newcastle Port Corporation.”</i></li> <li>• removal of reference to 250 car spaces on Greenleaf Road and noting that <i>“Where these controls impact on road infrastructure, approval will be obtained from Newcastle Port Corporation.”</i></li> </ul> <p>b) Minor re-assessment of stormwater connection and no connection until Ports indicate their satisfaction</p> <p>Viewed submission of revised <i>Stormwater Management Plan</i> dated 31<sup>st</sup> March 2010 from Sherree Woodroffe to Kerry Hamann (DoPI).</p> <p>Viewed Project Memo <i>Stormwater Assessment</i> from John Remi (Hatch) to Sherree Woodroffe and Richard Sheehan (Orica), dated 9<sup>th</sup> July 2010 that stated that <i>“results of the hydraulic analysis for the 20yr ARI design event indicate there is no appreciable effect on the system by the increase in impervious area, and that the system is capable of conveying a 20yr ARI design event.”</i></p> <p>Viewed letter from Gary Webb (Newcastle Ports) to Sherree Woodroffe (Orica) re <i>Orica Stormwater Drainage at Walsh Point</i> dated 14 September 2010. The letter grants consent for connection to the stormwater subject to:</p> <ol style="list-style-type: none"> <li>1. Orica entering into a legal agreement for draining water on NPC land</li> <li>2. Orica preparing a report that shows the system has capacity to accept additional flow</li> <li>3. Orica acknowledge that NPC has right to alter system at a later date.</li> </ol>	<p><b>ensure they are followed through on in the prescribed timeframes.</b></p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
		<p>Antony Taylor:  <i>“The Sediment and Erosion Control Plan prepared was for Phase 1.  The erosion and sediment plan specific to Phase 1 (ammonia plant uprate) was included in the stormwater management plan in Appendix 1 titled “example sediment and erosion plan”. The DoPI requested that specific sediment and erosion plans be submitted for each stage/phase. Additional specific sediment plans were developed for Phase 2 and 3 however as Phase 2 has yet to commence, the specific sediment plan’s for Phase 2 and Phase 3 have not been submitted.</i></p>	<p>Stormwater connections issues relate to Phase 1b of the Project, as no additional connections were made for Phase 1a.</p> <p>c) submission of site and phase specific erosion control plans prior to commencement of each construction phase.</p> <p>Viewed Ammonia Nitrate Facility Upgrade – Sediment and Erosion Control Plan dated 14th December 2009 prepared by GHD. Viewed Early Works – Sediment and Erosion Control dated 21st November 2011 prepared by Hatch.</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that adequate information has been provided to allow commencement of construction on Phase 1a, provided Orica:</p> <ul style="list-style-type: none"> <li>• <i>Submit a revised Stormwater Management Plan for phase 1a</i></li> <li>• <i>Submit a sediment and erosion control drawing for phase 1</i></li> </ul> <p>Viewed Ammonia Nitrate Facility Upgrade – Sediment and Erosion Control Plan dated 14th December 2009 prepared by GHD. Viewed Early Works – Sediment and Erosion Control dated 21st November 2011 prepared by Hatch.</p> <ul style="list-style-type: none"> <li>• <i>Submit documentation to the Department confirming the NSW Fire Brigades approval of the Fire Safety Study.</i></li> </ul> <p>Viewed letter from Chris Brown at NSW Fire and Rescue to Orica (cc DoPI) re <i>Assessment of Orica Kooragang Island Site and Ammonia Plant Uprate Project, Phase 1, 15 Greenleaf Road, Kooragang Island, Newcastle</i> which includes the statement:  <i>“FRNSW believe that condition 14(a) of the Minister of Planning’s approval is satisfied”</i></p>	
Structural Adequacy				
8	The Proponent shall ensure that all new buildings and		Letter dated 28/02/2011 from Glenn Levick at BCA Certifiers	C

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	structures on the site are constructed in accordance with the relevant requirements of the BCA. <i>Notes:</i> <ul style="list-style-type: none"> <li>• Under Part 4A of the EP&amp;A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.</li> <li>• Part 8 of the EP&amp;A Regulation sets out the requirements for the certification of the project.</li> </ul>		to Orica "Modified Construction Certificate – 15 Greenleaf Rd Kooragang" issuing approved modified Construction certificate.  Modified Construction Certificate CN090262 issued 28/02/2011 for the Compressor Building. Fire safety certificate CN090262 issued 01/04/2011 for the Compressor Building. Final Occupation Certificate CN090262 issued 06/04/2011 for the Compressor Building. Fire safety Schedule CN090262 (no date).	New buildings constructed as part of the Project have been constructed in accordance with the relevant requirements of the BCA
<b>Protection of Public Infrastructure</b>				
9	The Proponent shall:  (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Project; and  (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Project.)	Antony Taylor:  "There has been no damage to public infrastructure as a result of the Project"		NA  This condition has not been triggered as there has been no damage to public infrastructure
10	Prior to commencement of construction, the Proponent shall prepare a dilapidation report of the public infrastructure in the vicinity of the Project Site (including roads, gutters, footpaths), in consultation with Newcastle Port Corporation and submit a copy of this report to the Director-General.	Antony Taylor:  "The Dilapidation Report was originally sent to Planning, who discussed the report with Ports and requested a resubmission."  "The approval from Planning dated 9 <sup>th</sup> February was based on our submission of the revised plan dated 1 <sup>st</sup> February and submitted 3 <sup>rd</sup> February.	Submission email from Sheree Woodroffe to Kerry Hamann (DoPI) dated 15/01/2010 (prior to construction commencing on Phase 1 of the Project in February 2010) with attached management plans:  <ul style="list-style-type: none"> <li>• Dilapidation Survey Rev.0</li> <li>• Air Quality Management Plan</li> <li>• Erosion and Sediment Control plan</li> <li>• Acid Sulphate Soil Management Plan</li> <li>• Construction Safety and Environmental Management Plan</li> <li>• Reference to KI website (access to information)</li> <li>• Construction Traffic Management Plan</li> <li>• Heritage Management Plan</li> </ul> Ammonium Nitrate Facility Upgrade Road Dilapidation Survey Rev 1 dated February 2010 prepared by GHD. Included a section on consultation with Newcastle Port Corporation was submitted to DoPI on 3 February 2010.	C  The original plan was submitted prior to commencement of construction, and a resubmission was submitted to the Department of Planning as required.

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			Orica Nitrate Facility Upgrade Revised Road Dilapidation Report Rev. 0 dated July 2011.	
11	Prior to the construction of any utility works, the Proponent shall obtain the relevant approvals from service providers, including Hunter Water Corporation.	Antony Taylor: <i>"No utilities connected as part of plant upgrades (phase 1 – AN Uprate). A formal agreement with Hunter Water to receive recycled water was signed."</i>		NA No utility constructions were undertaken as part of Phase 1 of the Project
<b>Operation of Plant and Equipment</b>				
12	The Proponent shall ensure that all plant and equipment used on the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Scott Reid: <i>"We undertake a cycle of maintenance shutdowns to manage repairs and upgrades to the plant. Some minor repairs are undertaken where possible outside the planned shutdowns however generally, more extensive works are scheduled for either a minor shutdown at two and half years, or a more comprehensive shutdown at five years."</i>	Viewed <i>Certificate of Analysis</i> for Legionella and Heterotrphic Plate Count in Cooling Tower Water – dated 30 December 2013 and 21 February 2014. Viewed work order for Pump Coupling Inspection for pump in Compressor Station. Preventative Maintenance work, dated 24 February 2014.	C All aspects of the plant viewed during the site visit were observed to be kept clean and tidy, and records provided for the compressor station and cooling towers show that maintenance is being undertaken as required.
<b>Section 94 Contributions</b>				
13	Prior to the operation of the Project, the Proponent shall pay Council \$272,000 in Section 94 contributions.  <i>Notes: This contribution is subject to indexation to reflect quarterly variations in the Consumer Price Index All Group Index Number for Sydney, as published by the Australian Bureau of Statistics.</i>		Email from DFP Planning Consultants to Orica <i>"Development contributions advice Proposed ammonium nitrate facility expansion (Orica Australia) Greenleaf road, Kooragang Island"</i> dated 23 April 2009. Letter from AECOM to Newcastle City Council <i>"Development contributions, proposed expansion of the Orica Ammonium Nitrate Facility, Kooragang Island"</i> dated 12 May 2009. Letter from Orica to Newcastle City Council <i>"Development contributions, proposed expansion of the Orica Ammonium Nitrate Facility, Kooragang Island"</i> dated 12 May 2009. <i>"Minutes Of The Development Applications Committee Held 2 June 2009"</i> City of Newcastle. : <i>Council is prepared to accept payment of a contribution of \$272,000 towards the upgrading of Corroba Oval at Stockton in association with the proposed major expansion of the</i>	C A payment in lieu of a direct Section 94 contribution was accepted by Council.

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>existing Orica ammonium nitrate plant on Kooragang Island, in lieu of any Section 94A contribution that may otherwise be payable.</p> <p>Item-24 Part 3a Application - Proposed Expansion Of Orica Ammonium Nitrate Facility - Greenleaf Rd, Kooragang Island - Section 94a Contribution (Strategic Planning And Development Group, no date)</p>	

## SCHEDULE 3 – SPECIFIC ENVIRONMENTAL CONDITIONS

**Table 7 Specific Environmental Conditions**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Hazards</b>				
14	<p>At least one month prior to the commencement of construction of the Project (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Director-General may agree, the Proponent shall prepare and submit for the approval of the Director-General the studies set out under subsections (a) to (d) (the pre-construction studies).</p>	<p>Antony Taylor</p> <p><i>“The existing site had a Fire Safety Study approved by NSW Fire and Rescue. As part of the uprate, a separate Fire Safety Study was completed (17th April 2010).</i></p> <p><i>Stage OBL 1(B) and phase 3 FSS have been submitted NSWFR, to date have not been approved. However this is outside the audit scope as stages have yet to commence.”</i></p>		<p>C</p> <p>The requirements of this condition were adequately met to allow for commencement of Phase 1a works.</p> <p><b>Recommendation: Orica to gain approval from DoPI and FRNSW 1 month prior to commencing construction of Phase OBL1(b) and Phase 3 as required by this condition (staged approval).</b></p>
	<p>(a) A Fire Safety Study to include the Existing Operations and Project. This study shall cover the relevant aspects of the Department’s of Planning’s Hazardous Industry Planning Advisory Paper No.2 - Fire Safety Study Guidelines and the New South Wales Government’s Best Practice Guidelines for Contaminated Water Retention and Treatment Systems. The study shall also be submitted for approval, to the NSW Fire Brigade;</p>	<p>Antony Taylor:</p> <p><i>“This was not required to be prepared for the compressor building”</i></p>	<p>Fire Safety Study, Ammonia Plant Uprate Project, Orica Australia Pty Ltd, Kooragang Island, NSW, Rev C. (Pinnacle Risk Management, 17 April 2010).</p> <p>Submission email from Orica to NSW Fire and Rescue dated 20 May 2010, regarding the Fire Safety Study.</p> <p>Letter from NSW Fire Brigades to Orica dated 25 August 2010, requesting amendments to the Fire Safety Study.</p> <p><i>Orica, Kooragang Island Radiant Heat Contours for all Transformers and Diesel Storage Tanks (Pinnacle Risk</i></p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>Management, no date).</p> <p>Submission letter from Orica to Fire and Rescue NSW dated 21 June 2011, RE: Orica Kooragang Island Department of Planning Project Approval 08_0129.</p> <p>Letter from Fire and Rescue to Orica <i>Re: Assessment of Orica Kooragang Island Site and Ammonia Plant Uprate Project, Phase 1, 15 Greenleaf Road, KOORAGANG ISLAND, NEWCASTLE</i>, dated 19 July 2011, approving the Fire Safety Study.</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that Fire Safety Study is approved <i>subject to approval of the study by the Fire Brigade</i>, which was provided by NSW Fire and Rescue (see above).</p>	
	<p>(b) A Hazard and Operability Study, chaired by a qualified person, independent of the development, approved by the Director-General prior to the commencement of the study. The study shall be consistent with the Department of Planning's <i>Hazardous Industry Planning Advisory Paper No.8 - HAZOP Guidelines</i>. The study report must be accompanied by a program for the implementation of all recommendations made in the report. If the Proponent intends to defer the implementation of a recommendation, reasons must be documented;</p>		<p>Letter from Department of Planning to Pinnacle Risk Management dated 4 June 2009, Subject: Orica Kooragang Island Ammonia Plant Modifications HAZOP, approving Pinnacle Risk Management to conduct the HAZOP.</p> <p>HAZOP Study Report, Ammonia Plant Uprate Project, Orica Australia Pty Ltd, Kooragang Island, NSW (Pinnacle Risk Management, 22 March 2010). The Department of Planning's <i>Hazardous Industry Planning Advisory Paper No.8 - HAZOP Guidelines</i> are included as a reference to the report. A program for implementation of the recommendations was appended to the report.</p> <p>Submission letter from Orica to DoPI dated 31 March 2010 <i>Subject: Submission of Phase 1b Construction Safety Study and HAZOP</i>.</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that the Hazard and Operability Study is approved <i>subject to implementation of all actions identified in the HAZOP minutes</i>".</p> <p>Viewed letter from Antony Taylor (Orica) to Lilia</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>Donkova (DoPI) re <i>Orica Kooragang Island Transport of Hazardous Materials Study and Hazard Audit Feedback</i> dated 23 September 2013. The letter provides a status on the implementation of recommendations made in the <i>Transport of Hazardous Materials Study</i> and the <i>Independent Hazard Audit</i>.</p> <p><b>Recommendation:</b> <b>Request confirmation from DoPI that the status of actions as reported on 23 September 2013 is considered satisfactory in the context of the current stage of works on the Project.</b></p>	
	<p>(c) A Final Hazards Analysis (FHA) of the Project, consistent with the Department of Planning's <i>Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis</i>. The study shall also update all aspects of the risks from the Existing Operations and the Project, as provided in the Preliminary Hazard Analysis Report for Kooragang Island Facility Upgrade, Rev 8, Dated 28 May 2009 and submitted to the Department with letter dated 9 June 2009;.</p>		<p><i>Orica Mining Services Report for Kooragang Island Phase 1 Uprate Final Hazard Analysis, Rev. 2</i>, (GHD, March 2010). The report includes the statement: <i>The FHA was completed in accordance with... Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.</i></p> <p>Submission email from Orica to DoPI dated 31 March 2010 for the <i>Final Hazard Analysis (FHA) for Phase 1 - Ammonia Plant Uprate</i>.</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that the Final Hazards Analysis is approved subject to <i>the implementation of Safety Integrated Level (SIL) Study as recommended in the FHA</i>.</p>	
	<p>(d) A Construction Safety Study consistent with the Department's Hazardous Industry Planning Advisory Paper No.7 - Construction Safety Guidelines. For a project in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.</p>		<p><i>Construction Safety Study Report, Air Compressor Building, Orica Australia Pty Ltd, Kooragang Island, NSW, Pinnacle Risk Management, December 2009.</i> Includes the statement: <i>The Construction Safety Study has been prepared in accordance with the NSW Department of Planning's Hazardous Industry Planning Advisory Paper (HIPAP) No. 7, "Construction Safety Study Guidelines".</i></p> <p>Supplementary Construction Safety Study Report, Ammonia Plant Uprate Project, Orica Australia Pty Ltd,</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>Kooragang Island, NSW, Pinnacle Risk Management, 29 March 2010.</p> <p>Submission Letter from Orica to DoPI dated 31 March 2010, RE: Submission of Phase 1b Construction Safety Study and HAZOP.</p> <p>Submission Letter from Orica to DoPI dated 3 February 2013, RE: Orica Ammonium Nitrate Facility Expansion, Kooragang Island (DA08_0129) – Construction Phase 1a.</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that the Construction Safety Study is approved.</p>	
<b>Pre-commissioning</b>				
15	<p>The Proponent shall develop and implement the plans and systems set out under subsections (a) to (c), no later than two months prior to the commencement of commissioning of the Project, or within such further period as the Director-General may agree. The Proponent shall submit, for the approval of the Director-General, documentation describing those plans and systems. Commissioning shall not commence until approval has been given by the Director-General.</p>	<p>Antony Taylor: <i>No earlier version of transport study. Orica and DoPI agreed that the study was not required for phase 1. The report was completed as the timing of the remaining stages is uncertain.</i></p>	<p>Viewed email from Richard Sheehan (Orica) to Lilia Donkova (DoPI) regarding the Transport of Hazardous Materials Plan, dated 11 March 2011 that discussed the requirement for submission of the study for Stage 1.</p> <p>Viewed email from Lilia Donkova (DoPI) to Richard Sheehan (Orica) regarding the Transport of Hazardous Materials Plan, confirming that: <i>The Department does not have objections in relation to the approach for the Transport Study.</i> <i>It is noted that a Transport Study will be submitted prior to commissioning of the No 3 Ammonium Nitrate Plant.</i></p>	<p>NC</p> <p>The Emergency Response Plan was not approved within the timeframe required by this condition.</p> <p><b>Recommendation:</b> <b>Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes.</b></p>
	<p>(a) Transport of Hazardous Materials Plan – arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the site (Existing Operations and Project). The routes selected shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No 11, '<i>Route Selection</i>'. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.</p>	<p>Antony Taylor: <i>"Routes used are those identified in the study".</i></p>	<p><i>Orica Kooragang Island Transport of Hazardous Materials Study</i> (AECOM, 2013). Includes details of routes to be used for the movement of vehicles carrying hazardous materials to or from the site. The report lists conducting the hazard and risk assessment in accordance with Hazardous Industry Planning Advisory Paper No 11, '<i>Route Selection</i>' as an objective of the report.</p> <p>Submission email from Orica to DoPI, dated 16 July 2013, for the <i>Transport of Hazardous Materials Study</i>.</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	<p>(b) Emergency Plan – An update of the existing Emergency Plan and the emergency procedures to include the Project. This plan shall include consideration of the safety of all people outside the facility who may be at risk from the Project. The plan shall be consistent with the Department of Planning’s Hazardous Industry Planning Advisory Paper No. 1, ‘Industry Emergency Planning Guidelines’. The study shall also be submitted for approval, to the NSW Fire Brigades.</p>		<p>Orica Kooragang Island KIW-1020: KI Emergency Response Plan, 11 April 2011. Includes a statement that:</p> <p><i>This current version of the plan followed a major re-formatting and update done during 2006 to bring it into line with the requirements of NSW Department of Planning “HIPAP1: Emergency Planning”</i> Includes a statement evidencing that people outside the facility were considered:</p> <p><i>...to minimise the adverse effects on people, property and the environment, both on site and off site</i></p> <p>Also includes statement that the plan “will be reviewed at least annually.”</p> <p>Viewed <i>Emergency Response Plan Document Management System “Change Description”</i> for “Annual update incorporating improvements identified in emergency response exercises” which included approximately 20 entries.</p> <p>Approval letter from Fire and Rescue NSW to Orica dated 13 July 2011, regarding the Emergency Plan.</p> <p>Approval letter from DoPI to Orica RE: <i>Orica Ammonium Nitrate Expansion Project, Kooragang Island (08_0129) Emergency Plan</i> dated 18 July 2011.</p>	
	<p>(c) Safety Management System – A document setting out a comprehensive Safety Management System, covering all onsite operations and associated transport activities involving hazardous materials. The document shall clearly specify all safety related procedures, responsibility and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on-site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be consistent with the Department of Planning’s Hazardous Industry Planning Advisory Paper No.9, ‘Safety Management’.</p>	<p>Antony Taylor:</p> <p><i>We don’t have a consolidated list of staff on the plant. We tied the uprate in to one of turnaround periods. Each company that is accredited to supply resubmits insurance and supply training records of employees.</i></p>	<p><i>Orica Kooragang Island Safety Management System Rev 0.</i> December 2010. The document covers onsite operations and transport (referencing the Truck Driver Induction)</p> <p>Advised in email by Antony Taylor (February 2014) that Content of the truck induction included :</p> <ul style="list-style-type: none"> <li>• <i>Your role in safety</i></li> <li>• <i>Onsite Chemicals and Hazards</i></li> <li>• <i>Emergency Response</i></li> <li>• <i>Incident Management</i></li> <li>• <i>Site Access Requirements</i></li> <li>• <i>PPE</i></li> </ul>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<ul style="list-style-type: none"> <li>• <i>Electrical and Electronic Equipment</i></li> <li>• <i>Hazardous Work</i></li> <li>• <i>Hazardous Manual Tasks</i></li> <li>• <i>Environmental Management</i></li> </ul> <p>Behavioural Safety Program Viewed signed contractor induction forms for three drivers all dated February 2014. The forms included a questionnaire that included questions on covering truck loads and site speed limits.</p> <p>A procedure is in place for managing selection of contractors responsible for transporting hazardous materials from the site (<i>MP-SG-017 Toll Manufacture and Other Contracted Offsite Operations.</i>)</p> <p>Viewed <i>Site Inductions</i> Procedure which outlined the minimum induction and training requirements for personnel working on or attending site.</p> <p>Approval letter from DoPI to Orica, Subject: Safety Management System Report for Orica Kooragang Island. dated 11 March 2011</p>	
<b>Pre-Startup</b>				
16	One month prior to the commencement of operation of the Project, the Proponent shall submit to the Director-General, a Pre-Startup Compliance Report detailing compliance with conditions 14 and 15, including:	Antony Taylor: "The Pre-compliance report includes dates of submissions and approvals".	<p><i>Pre-Startup Compliance Report Phase 1: Ammonia Plant Uprate, 22 June 2011 Rev.0.</i> Includes a summary of compliance with conditions 14 and 15.</p> <p>Submission email from Orica to DoPI dated 23 June 2011, for the Pre-Startup Compliance Report.</p>	C The required report was submitted within the specified timeframe
	(a) dates of study/plan/system submission, approval, commencement of construction and commissioning;		<i>Pre-Startup Compliance Report Phase 1: Ammonia Plant Uprate, 22 June 2011 Rev.0.</i> Section 2 includes dates of study/plan/system submission, approval, commencement of construction and commissioning;	
	(b) actions taken or proposed, to implement recommendations made in the studies/plans/systems; and		<i>Pre-Startup Compliance Report Phase 1: Ammonia Plant Uprate, 22 June 2011 Rev.0.</i> Section 3 outlines the actions taken or proposed, to implement recommendations made in the studies/plans/systems	
	(c) responses to any requirement as imposed by the Director-General under condition 4.		<i>Pre-Startup Compliance Report Phase 1: Ammonia Plant Uprate, 22 June 2011 Rev.0.</i> Section 4 includes responses to any requirement as imposed by the Director-General under condition 4	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Post-Startup</b>				
17	Three months after the commencement of operation of the Project, the Proponent shall submit to the Director-General, a Post-Startup Compliance Report verifying that:	Antony Taylor: "The Post-compliance Report has dates of approvals, construction commencement and operations commencement."	<i>Post-Startup Compliance Report Phase 1: Ammonia Plant Uprate, May 2012, Rev.0.</i> Submission email from Orica to DoPI dated 20 May 2012, for the <i>Post-Startup Compliance Report</i> .	C The sections of this condition triggered by Phase 1a works have been complied with.
	(a) transport routes specified under condition 15a) are being followed;		Email from Lilia Donkova, A/Team Leader, Major Hazards to Orica dated 14 <sup>th</sup> March 2011 stating that the Department has no objection to Orica delaying this particular requirement until subsequent phases of the Project as the Ammonia uprate has not impacted on vehicle movements.	<b>Recommendation:</b> <b>The checkpoint audit template be modified to include a section that details the findings of the previous checkpoint audit and the action that has been taken to address those findings.</b>
	(b) the Emergency Plan required under condition 15b) is effectively in place and that at least one emergency exercise has been conducted; and		<i>Post-Startup Compliance Report Phase 1: Ammonia Plant Uprate, May 2012, Rev.0.</i> Includes the following statement: <i>A site wide emergency exercise, in accordance with Condition 17(b) of the Project Approval was undertaken on 1 May 2012, approximately 2 months after the commencement of the Ammonia Plant Uprate operations</i> Viewed Incident Report No's MFG KI-00491, MFG KI-00554 and MFG KI-00566. Information recorded in each included date; summary; investigation details; root cause; and whether the incident is reported to the EPA.	
	(c) the Safety Management System required under condition 15c) has been fully implemented and that records required by the system are being kept.		<i>Post-Startup Compliance Report Phase 1: Ammonia Plant Uprate, May 2012, Rev.0.</i> Includes the statement: <i>To verify continual compliance of key components detailed in the Safety Management System, including the requirement for records to be kept, Orica routinely undertake both external and internal audits. An audit schedule specific to the Kooragang Island facility is created annually and is designed to determine the site's compliance to the core elements of the SMS.</i> Requested and was provided with two checkpoint audits	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			(July and August 2013) as evidence of implementation of the SMS.	
<b>Risk Reduction Program</b>				
18	<p>Within 12 months of the commencement of operations of the Project the Proponent shall prepare a program for further risk reduction to the neighbouring land uses. The program shall:</p> <p>(a) be approved by the Director General;</p> <p>(b) identify the overpressure propagation risk from the Project as per Figure 10.5 of the EA;</p> <p>(c) Identify the main risk contributors and analyse the appropriate measures to be implemented to reduce the risk; and</p> <p>(d) include an implementation schedule with due dates and a person responsible for the implementation of each measure.</p> <p><i>Note: In the case that the propagation risk from the Project is reduced earlier than anticipated in the EA, and it meets the NSW criteria, this condition will be satisfied and the risk reduction program will not be required.</i></p>	<p>Antony Taylor:</p> <p><i>“Not required as PHA Mod 1 EA reduced risk. In 2009 we originally put in all of our risk contours associated with the uprate.</i></p> <p><i>Typically you only do that to new plant and equipment. For us this process was confusing due to the mix of existing equipment and new equipment.</i></p> <p><i>We’ve done remodelling so that whole site is now compliant.</i></p> <p><i>Fatality overpressure is now contained within site.</i></p> <p><i>Irritation contour is outside of residential areas.</i></p> <p><i>PHA Mod 1 Report findings will verify that risk was reduced.</i></p> <p><i>We now comply with HIPAP requirements, following changes to 2011 PHA”.</i></p>	<p>Viewed <i>Report for Kooragang Island Uprate PHA MOD1 Report March 2012</i> prepared by GHD. The report found that:</p> <p><i>“The modification is seen as likely to reduce or result in negligible change to the project risk impacts.”</i></p>	<p>NA</p> <p>The propagation risk from the Project was reduced earlier than anticipated in the EA therefore the requirements of this condition were not triggered.</p>
<b>Hazard Analysis Update</b>				
19	<p>Three years after the commencement of operations of the Project, or as otherwise agreed to by the Director-</p>		N/A as this timeframe has not yet passed.	<p>NA</p> <p>Not yet triggered as</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	General, the Proponent shall undertake a Hazard Analysis of the Existing Operations and the Project to update the hazard analysis contained in the Preliminary Hazard Analysis and the Final Hazard Analysis.			this timeframe has not yet passed.
<b>Hazard Audit</b>				
20	Twelve months after the commencement of operations of the Project and every three years thereafter, or at such intervals as the Director-General may agree, the Proponent shall carry out a comprehensive Hazard Audit of the Existing Operations and the Project and within one month of each audit submit a report to the Director-General.		<p><i>Hazard Audit – 2013 Ammonium Nitrate Plant - Kooragang Island, Rev.0. AECOM, 28 March 2013.</i></p> <p>The report states that:</p> <p><i>The plant inspections and interviews were conducted during site visits undertaken on the 29 and 30 January and 4, 5, 28 February 2013.</i></p> <p>Letter from Orica to Nick Hall (DoPI) re <i>Kooragang Island Hazard Audit</i> dated 28 March 2013. The letter included the attached audit report and was sent within one month of the completion of the site component of the audit.</p>	C The Hazard Audit was completed within the specified timeframe.
	(a) The audits shall be carried out at the Proponent's expense by a qualified person or team, independent of the Project, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines', including with respect to the requirements of these guidelines in relation to records of inspection and testing of critical equipment and instrumentation as they specifically relate to significant risk reduction as outline in the document listed in Condition 2 e) in Schedule 2		<p>Approval letter from DoPI to Orica dated 25 January 2013 for AECOM (Steve Sylvester) to conduct the 2013 Hazard Audit.</p> <p><i>Hazard Audit – 2013 Ammonium Nitrate Plant - Kooragang Island, Rev.0. AECOM, 28 March 2013.</i></p> <p>The report states that:</p> <p><i>The main objectives of the study were to conduct a hazard audit of the Orica KI site, in accordance with DPI Hazardous Industry Planning Advisory Paper (HIPAP) No.5, Hazard Audit Guidelines</i></p> <p>The report also reported on the management of equipment integrity (Section 4.9) and noted:</p> <p><i>Updated PHA study (2011) reduced the site's risk contours to be compliant with HIPAP 5 criteria requirement within the risk assessment (e.g. 50ppmy fatality contours now retained on site).</i></p>	
	(b) The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Proponent intends to defer the implementation of a recommendation, reasons must be	Antony Taylor: <i>The actions were all put in SHERMIS database. The TWC action is to provide the DoPI with 6 monthly update regarding progress made in completing hazard</i>	Resubmission letter from Orica to DoPI dated 23 September 2013, RE: <i>Orica Kooragang Island Transport of Hazardous Materials Study and Hazard Audit Recommendation Feedback.</i>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	documented.	<i>audit actions.</i>	The letter included a revised program for implementation of the recommendations. Viewed "KI TWC-1&2 Projects Strategic Plan – 20130310" which included an action: "The site's DG Notification will be updated for Depot 50 to reflect the storage of four IBC's rather than one aboveground storage tank."	

**Table 8 Air Quality**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Design</b>				
21	The Proponent shall implement the emission control measures identified in the EA (Section 7.8.1) prior to the commencement of operations of the Project. These shall include:			C
	(a) absorption columns in the new Nitric Acid Plant No.4 (NAP4) to reduce the NO <sub>x</sub> ;		N/A as this hasn't been built yet	The scrubber required for Condition 21(d) has been installed, all other requirements of this condition are yet to be triggered.
	(b) catalytic reduction from the NAP4 stack to reduce the NO <sub>x</sub> ;		N/A as this hasn't been built yet	
	(c) air scrubbing and recirculation technology in the new Prill Tower as part of the new Ammonium Nitrate Plant No. 3 (ANP3) to minimise particulates, including PM <sub>10</sub>		N/A as this hasn't been built yet	
	(d) a refrigeration purge gas scrubber to be installed in the existing Ammonia Plant to reduce NO <sub>x</sub>		Implemented NO <sub>x</sub> stack emissions testing. Observed scrubber in place. Viewed document available on web ( <a href="http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kooragang-Island/Air-Monitoring#data">http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kooragang-Island/Air-Monitoring#data</a> ) "Orica Kooragang Island Monitoring Points 16, 17, 18, 19, 20, 21 and 29" that included annual stack emissions for Point 20 (Ammonia Plan Reformer Stack) and Point 29 (Ammonia Plant Pre Reformer Stack). The report showed annual emissions taken as per the requirements of the EPL, and showed no exceedances..	
<b>Recommendation:</b>				

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	(e) scrubbers on the new NAP4 and APN3 to remove ammonia		Post full air quality reports on website, showing methods used to undertake monitoring are in accordance with requirements of EPL and work conducted by NATA accredited laboratories.	
			N/A as this hasn't been built yet	
<b>Monitoring</b>				
22	The Proponent shall undertake air emission monitoring as required by the EPL for the Project.		Data from website (monthly SHEC report) Viewed document available on web ( <a href="http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kooragang-Island/Air-Monitoring#data">http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kooragang-Island/Air-Monitoring#data</a> ) "Orica Kooragang Island Monitoring Points 16, 17, 18, 19, 20, 21 and 29" that included annual stack emissions for Point 20 (Ammonia Plant Reformer Stack) and Point 29 (Ammonia Plant Pre Reformer Stack). The report showed annual emissions taken as per the requirements of the EPL, and showed no exceedances.. <i>Annual Return, Licence No 828</i> for the period 1 <sup>st</sup> April 2012 to 31 March 2013. Report included completed details for the discharge to air monitoring points: <ul style="list-style-type: none"> <li>• Discharge &amp; Monitoring Point 20</li> <li>• Discharge &amp; Monitoring Point 29</li> </ul>	C  The required air emissions monitoring is being undertaken.  <b>Recommendation:</b> <b>Post full air quality reports on website, showing methods used to undertake monitoring are in accordance with requirements of EPL and work conducted by NATA accredited laboratories.</b>
23	The Proponent shall undertake an air quality verification study for the Project. The study shall: <p>(a) be prepared by a suitably qualified expert;</p> <p>(b) be completed within 12 months of the commencement of operation or as otherwise agreed to by the Director-General;</p>		<i>Air Quality Verification Study, Ammonium Nitrate Plant Upgrade</i> (AECOM, 27 February 2013)  The report was signed off by James McIntyre of AECOM  The report was completed in February 2013, which was within 12 months of commencement of operations (29/2/2012)  Approval letter from DoPI to Orica RE: <i>Phase 1 Air Quality Verification Report and Waste Management Plan</i> , dated 19 July 2013.	C

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	(c) include a comparison of monitoring results with the predictions outlined in the EA (including predictions for ground level concentrations at Stockton) and with any limits or conditions in the EPL;		<p><i>Air Quality Verification Study, Ammonium Nitrate Plant Upgrade (AECOM, 27 February 2013)</i></p> <p>Includes a statement in the methodology (Section 4) that:</p> <p><i>This report compared the performance of the upgraded ammonia plant against predictions made in the EA, the Consistency Report and the conditions of the facility's Environment Protection Licence (EPL 828) in terms of NO<sub>x</sub> emissions and resultant ground level concentrations of NO<sub>2</sub> at Stockton.</i></p>	
	(d) verify the effectiveness of the implemented emission controls.		<p><i>Air Quality Verification Study, Ammonium Nitrate Plant Upgrade (AECOM, 27 February 2013)</i></p> <p>The conclusion (Section 5) states:</p> <p><i>The purpose of this report was to verify the performance of the modifications to the Orica facility against predictions made in the EA submitted to support the modifications. As the Reformer Stack is the only plant that has been modified under the development approval, this was the only source addressed, with NO<sub>x</sub>/NO<sub>2</sub> the only pollutants investigated. The verification consisted of comparison of modelled and measured parameters of the Reformer Stack and comparison of the predicted ground level concentrations of NO<sub>2</sub> at the Roxburgh Street monitoring station against measured concentrations.</i></p> <p>It goes on to conclude that:</p> <p><i>...these two sources (The Reformer Stack and Pre-Reformer Stack) are operating within statutory limits.</i></p> <p><b>Recommendation:</b></p> <p><b>Whilst the study was able to demonstrate that the plant is operating within statutory limits, there was an opportunity for more thorough assessment of whether the plant is achieving ideal operational efficiency that should be factored into subsequent studies of this type undertaken for the Project</b></p>	
24	Should the air quality verification study or routine	Antony Taylor:	Condition not applicable as the Department has made	NA

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	monitoring required by the EPL indicate that emissions from the Project exceed the relevant regulatory criteria, the Department may request that Orica implement all reasonable and feasible measures to minimise emissions.	<i>One exceedance was reported in our 2013 annual return regarding reformer stack. This occurred prior to the still being commissioned. Since then there have been no exceedances.</i> <i>This was reported to the EPA and Planning</i>	no requests for Orica to implement further emissions minimisation measures.	The Department made no requests for Orica to implement further emissions minimisation measures
<b>Mitigation</b>				
25	The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.		<p><i>Construction Environmental Management Plan</i> September 2011.</p> <p>Details dust management and suppression methods (Section 7.2.4) for construction.</p> <p><i>Viewed Kooragang Island Works Environmental Audit Checklist</i> template.</p> <p><i>Viewed Kooragang Island Works Safety Audit Checklist</i> template</p> <p><i>Viewed "Completed housekeeping audit and environment audit for 2014 turnaround" dated 27 February 2014</i></p>	<p>NC</p> <p>The CEMP details a range of measures, however, Orica was not able to provide sufficient evidence to show that these measures (specifically weekly inspections) were being carried out at the time of the construction works</p> <p><b>Recommendation: Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan. Consider including in subsequent revisions of the Construction</b></p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
				Environmental Management Plan description of the types of triggers that may result in a requirement to implement a control (e.g. a water cart) and how the assessment of it's effectiveness is determined.
26	<p>During construction, the Proponent shall ensure that:</p> <p>(a) all trucks entering or leaving the Project Site with loads have their loads covered; and</p> <p>(b) trucks associated with the Project do not track dirt onto the public road network.</p>		<p><i>Construction Environmental Management Plan</i> September 2011. Includes requirement for covering truck loads (Section 7.2.4) for construction. "No complaints regarding dust were received during construction".</p> <p><i>Construction Environmental Management Plan</i> September 2011. Includes requirement for managing outgoing trucks and sweeping of roads to minimise accumulation or deposition of dust from trucks (Section 7.2.4) for construction</p>	<p>C</p> <p>There was no evidence of non-compliance with this condition, however weekly inspection checklists required under the CEMP could not be provided.</p> <p><b>Recommendation:</b> Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan</p>
<b>Further Emissions Reductions</b>				
27	The Proponent shall investigate and report on the progress to reduce PM <sub>10</sub> emissions from the existing		<i>Annual Environmental Management Report</i> December 2013.	C Progress to reduce

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	Prill Tower on the Ammonium Nitrate Plant No. 1. The report shall:			PM <sub>10</sub> emissions from the existing Prill Tower on the Ammonium Nitrate Plant No. 1 have been investigated and reported on.
	(a) be provided annually, and can be reported through the Annual Environmental Management Report required by condition 50; and		<p><i>Annual Environmental Management Report December 2013.</i></p> <p>The report includes annual monitoring results for PM<sub>10</sub> for the Prill Tower. The report states:</p> <p><i>The particulate results demonstrated that particulate levels associated with PM<sub>10</sub> and PM<sub>2.5</sub> are significantly below regulatory limits and also lower than the conservative PM<sub>10</sub> concentration data that was utilised in the air quality assessment that was previously submitted to the DoPI to support Orica's expansion project approval.</i></p>	
	(b) provide an update on the timeframe for implementation of emission controls.	<p>Antony Taylor</p> <p><i>"...the report was "hand-delivered on 20<sup>th</sup> December and that no correspondence has been received back regarding the issue. We have been in discussions with the EPA since."</i></p>	<p><i>Annual Environmental Management Report December 2013.</i></p> <p>The report summarises the activities undertaken in the previous 12 months (in accordance with the Pollution Reduction Program) and those activities proposed for the following 12 months.</p> <p>The auditor requested evidence that the following action was implemented:</p> <p><i>"The report being prepared in accordance with EPL condition U1.3 will be submitted to the EPA prior to 31 December 2013, as required by the licence".</i></p> <p><b>Recommendation:</b></p> <p><b>Check progress against these two proposed actions at the time of the next independent environmental audit:</b></p> <ol style="list-style-type: none"> <li>1. Continuation of the AN1 Prill tower particulate monitoring program in agreement with the EPA.</li> <li>2. Commencement of process improvement activities designed to minimise the generation of coarse particulate from the Prill tower in accordance with the commitments outlined to the EPA.</li> </ol>	

**Table 9 Greenhouse Gas Emissions**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Emission Reductions for the Project</b>				
28	Prior to the operation of the Project, the Proponent shall implement the emissions reduction technology identified in the EA including:		-	C
	(a) N <sub>2</sub> O abatement technology on the new Nitric Acid Plant (NAP4); and		N/A as this plant hasn't been built yet.	Gas efficiency is monitored daily in comparison to target efficiency.
	(b) energy efficiency improvements to the Ammonia Plant		Monitored daily (snapshot reports) "Energy efficiency improvement recommendations in the EA related to gas efficiency are monitored daily" Viewed <i>Production Report 14 February 2014</i> which included results of daily monitoring of gas efficiency in comparison to the target efficiency. On the report viewed, efficiency was always greater than the target efficiency.	
<b>Emission Reductions for the Existing Site</b>				
29	Within 6 months of the commencement of operations of NAP4, the Proponent shall implement N <sub>2</sub> O abatement technology on the three existing Nitric Acid Plant (NAP1, 2 and 3)	Antony Taylor: "NAP4 has not yet commenced operations"		NA This plant has not yet been built

**Table 10 Noise**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Noise Limits</b>				
30	The Proponent shall ensure that noise levels from the operation of the Project are at least 10dB(a) below noise levels from Orica's Existing Operations as specified by conditions 31 & 32 below		<i>Noise Verification Assessment, Orica Australia Pty Ltd. Orica Ammonium Nitrate Expansion Project, Rev.2. Atkins Acoustics and Associates Pty Ltd, March 2010. Noise verification assessment, Orica Australia Pty Ltd. Orica ammonium nitrate expansion project. By Atkins Acoustics and Associates Pty Ltd. Dated March 2011. The report found that: Field investigations have confirmed that direct noise measurement at Stockton would not be reliable for quantifying the level of</i>	C Noise levels from the operation of the Project have been shown to be at least 10dB(A) below noise levels from Orica's Existing Operations

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p><i>noise emitted from Orica or assessing compliance with conditions of consent due to the range of sources contributing to the ambient noise and the effects of variable prevailing meteorological conditions.</i></p> <p>And also states:</p> <p><i>In the opinion of Atkins Acoustics noise measurements on Kooragang Island provide more reliable information for assessing noise trends from Orica.</i></p> <p><i>Environmental Noise Audit Overview, 2012-2013 by Atkins Acoustics dated August 2013 states:</i></p> <p><i>Modelling has confirmed that noise contributions from the Project (Table 3) satisfy the project noise criteria.</i></p>	
<b>Existing Operations – Noise Verification Program</b>				
31	Prior to the commencement of construction the Proponent shall prepare and implement an Existing Operations Noise Verification Program to the satisfaction of the Director-General. The Program shall:		<p><i>Orica Kooragang Island, Existing Operations – Noise Verification Program prepared by Orica and submitted by email to Kerry Hamann and Jeff Parnell on 5/2/2010 (prior to construction commencing on 10/2/2010).</i></p> <p><i>Approval letter from DoPI to Orica RE: Orica Ammonium Nitrate Expansion Project, Kooragang Island (08_0129) Noise Verification Assessment, dated 17 May 2011.</i></p>	C The plan was prepared in accordance with the requirements of this condition
	(a) be undertaken by a suitably qualified and experienced person;		<p>Atkins Acoustics were engaged to undertake the program.</p> <p>Submission email from Orica to Felicity Greenway (DoPI) for the <i>Existing Noise Verification Assessment</i> undertaken by Atkins Acoustics, dated 5 May 2011.</p>	
	(b) identify future reference points that will be used to demonstrate compliance;		<p><i>Orica Kooragang Island, Existing Operations – Noise Verification Program prepared by Orica and submitted by email to Kerry Hamann and Jeff Parnell on 5/2/2010 (prior to construction commencing on 10/2/2010).</i></p> <p>States that:</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>Prior to the completion of the proposed expansion project (Project) it is proposed to undertake additional monitoring to assist in the determination of the following:</p> <ul style="list-style-type: none"> <li>- Establishing reference points to enable the facility to demonstrate compliance with the project approval.</li> </ul> <p>This was undertaken as part of the study completed by Atkins Acoustics (Existing Noise Verification Assessment dated 5 May 2011).</p> <p>Six (6) reference locations were selected, three (3) at Stockton (Figure 2) and three (3) on Kooragang Island. The Stockton locations were selected as being representative of residential properties likely to be exposed to noise from Orica.</p>	
	(c) collect new or review existing data, and report on the seasonal background levels for the noise catchment; and;		<p>Noise Verification Assessment by Atkins Acoustics, submitted by email from Sherree Woodroffe to Felicity Greenway (DoPI) on 5 May 2011.</p> <p>Attended noise measurements were taken in March 2010, June 2010, October 2010, and January 2011 accounting for seasonal variation. Unattended noise measurements were also taken across the seasons.</p>	
	(d) confirm the noise levels from Orica's Existing Operations. <i>Note: Some construction activities may occur under the Project Approval provided that such activity are not undertaken during the monitoring period of that Orica can demonstrate that the activity would not contribute to the background noise level, to the satisfaction of the Director-General.</i>	<p>Antony Taylor: <i>Existing operational noise levels were detailed in the Noise Verification Report and approved by the DoPI. Noise measurements at Stockton were not reliable, we then came up with strategy of monitoring noise along the boundary. This was used as an indication of what the noise from operations would be. Noise at the boundary is what we're required to comply with.</i></p>	<p>Noise Verification Assessment by Atkins Acoustics, submitted by email from Sherree Woodroffe to Felicity Greenway (DoPI) on 5 May 2011: <i>Field investigations have confirmed that direct noise measurement at Stockton would not be reliable for quantifying the level of noise emitted from Orica or assessing compliance with conditions of consent due to the range of sources contributing to the ambient noise and the effects of variable prevailing meteorological conditions.</i></p> <p>And also states: <i>In the opinion of Atkins Acoustics noise measurements on Kooragang Island provide more reliable information for assessing noise trends from Orica.</i></p> <p><i>Environmental Noise Audit Overview, 2012-2013 by Atkins Acoustics dated August 2013 states:</i></p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<i>Modelling has confirmed that noise contributions from the Project (Table 3) satisfy the project noise criteria.</i>				
<b>Noise Management Plan</b>				
32	Prior to the commencement of operations of the Project, the Proponent shall prepare and implement a Noise Management Plan in consultation with EPA and to the satisfaction of the Director-General. The Program shall:	Originally submitted in August 2011. Revised and resubmitted in February 2012. Part of the review was to do 12 months' worth of monitoring. At the completion a report was supplied outlining the results and recommending that the Noise Monitoring be changed from quarterly to annually.	<p><i>Orica Australia Pty Ltd. Noise Management Plan Atkins Acoustics and Associates Pty Ltd, August 2011.</i></p> <p>Prepared prior to commencement of operations in February 2012. The plan includes a statement that the EPA advised they would not review the Noise Management Plan.</p> <p>Approval Letter from DoPI to Orica, for the Noise Management Plan, dated 11 March 2012, <i>RE: Orica ANE Project – Kooragang Island (08_0129) Commencement of Stage 2A.</i></p> <p>Email from Orica to DoPI regarding submission of a noise monitoring summary report, dated 23 September 2013.</p> <p><i>Orica Australia Pty Ltd. Environmental Noise Audit Overview 2012-2013 Atkins Acoustics and Associates Pty Ltd. Rev 00. August 2013.</i></p> <p><b>Recommendation:</b> <b>A Noise Monitoring Summary Report be prepared following the completion of each phase of works.</b></p>	C The revision undertaken in February 2012 was considered satisfactory evidence of meeting the annual review requirements for the 12 month period August 2011-August 2012.
	(a) be undertaken by a suitably qualified and experienced expert;		Atkins Acoustics were engaged to develop the plan.	
	(b) demonstrate how noise levels from the Project would be managed to ensure noise levels would be 10dB(A) below noise levels from Orica's Existing Operations (see conditions 30 & 31);		<p><i>Orica Australia Pty Ltd. Noise Management Plan Atkins Acoustics and Associates Pty Ltd, August 2011.</i></p> <p>Includes noise Assessment summary (Section 5.1) that: <i>The modelling (Atkins Acoustics Feb '09) undertaken specifically for Phase 1 of the Project predicted that noise would satisfy the noise criteria, as levels would be 10dB(A) below the existing noise levels emitted by Orica.</i></p> <p>Section 5.2 details specific management measures that will be implemented to manage noise from the existing plant and the Project.</p>	
	(c) include a detailed monitoring program for reporting		<i>Orica Australia Pty Ltd. Noise Management Plan Atkins</i>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	<p>on ongoing compliance. The monitoring program shall:</p> <ul style="list-style-type: none"> <li>• Outline the proposed receiver sites at Stockton and sites on Kooragang Island that would be monitored;</li> <li>• Include both attended and unattended noise monitoring;</li> <li>• Verify that actual noise levels from the Project are consistent with the predictions made in the EA; and</li> <li>• Verify that noise levels from the Project are 10dB(A) below the noise levels identified in condition 31 for Orica's Existing Operations;</li> </ul>		<p>Acoustics and Associates Pty Ltd, August 2011. Section 6 of the Plan describes the way in which monitoring for reporting on ongoing compliance will be achieved.</p>	
	(d) provide details of any complaints received in the preceding year relating to noise generated by the Project, and action taken to respond to those complaints;		<p>Noise complaints are reported in the <i>Annual Return</i> to the EPA each year.</p>	
	(e) detail procedures for implementing additional reasonable and feasible noise mitigation measures for the Project in response to exceedances of limits and/or noise complaints; and		<p><i>Orica Australia Pty Ltd. Noise Management Plan</i> Atkins Acoustics and Associates Pty Ltd, August 2011. Section 8.3 of the Plan states that: <i>...the Sustainability Manager will initiate further investigation into the cause of the exceedance and the requirements for noise control actions</i></p>	
	(f) be updated annually, unless otherwise agreed to by the Director-General.	<p>Antony Taylor: <i>The Noise Management Plan was revised on the 2 February 2012 following feedback from DoPI.</i> <i>The Noise Management Plan was reviewed, via the noise monitoring summary report, following the completion of the Noise Monitoring Program dated August 2013.</i> <i>Quarterly testing was initially required to verify compliance. There were delays as the ammonia plant was operating after commissioning but not at post-expansion levels.</i> <i>We applied to extend by three months.</i> <i>At end of the 12 month monitoring period there was another review that allowed noise monitoring to be</i></p>	<p><i>Orica Australia Pty Ltd. Noise Management Plan</i> Atkins Acoustics and Associates Pty Ltd, August 2011.  <i>Environmental Noise Audit Overview 2012-2013</i> by Atkins Acoustics dated August 2013 states:  <i>Considering the Review Process documented in Section 8.4 of the SNMP, the findings of the noise audits and that no significant noise incidents have been reported post commissioning of the Project, it is considered appropriate for Orica to review the quarterly frequency of the environmental noise audits. From the above findings it is recommended that annual audits be considered. Notwithstanding the recommendation to</i></p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status													
		<i>relaxed to annual monitoring.</i>	<i>reduce the frequency of scheduled environmental noise audits, reported noise incidents should be assessed and documented in accordance with the SNMP procedures.</i>														
<b>Construction and Operating Hours</b>																	
33	The Proponent shall comply with the restrictions in Table 2, unless otherwise agreed by the Director-General.  <i>Table 2: Construction hours for the Project and Operation hours for the Project</i>		<i>Construction Environmental Management Plan</i> September 2011.  Includes project construction times as listed in this condition (Section 3.6) <i>Annual Return, Licence No 828</i> for the period 1 <sup>st</sup> April 2012 to 31 March 2013. Did not report any non-compliance against these requirements.	C There was no evidence of non-compliance with this condition, however weekly inspection checklists required under the CEMP could not be provided.  <b>Recommendation: Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan.</b>													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Activity</th> <th>Day</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Construction</td> <td>Monday – Friday</td> <td>7.00am to 6.00pm</td> </tr> <tr> <td>Saturday</td> <td>8.00am to 1.00pm</td> </tr> <tr> <td>Sundays and Public Holidays</td> <td>Nil</td> </tr> <tr> <td>Operation</td> <td>All days</td> <td>24 hours</td> </tr> </tbody> </table> <p><i>Notes:</i></p> <ul style="list-style-type: none"> <li>• <i>Construction activities may be conducted outside the hours in Table 2 provided that the activities are not audible at any residence beyond the boundary of the Project Site.</i></li> </ul>	Activity	Day	Time	Construction	Monday – Friday	7.00am to 6.00pm	Saturday	8.00am to 1.00pm	Sundays and Public Holidays	Nil	Operation	All days	24 hours			
Activity	Day	Time															
Construction	Monday – Friday	7.00am to 6.00pm															
	Saturday	8.00am to 1.00pm															
	Sundays and Public Holidays	Nil															
Operation	All days	24 hours															

**Table 11 Transport**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Design of Site Access, Internal Roads and Parking</b>				
34	The Proponent shall ensure that new site access points, internal roads and parking associated with the Project are designed, constructed and maintained in accordance with the latest versions of the Australia Standard AS 2890.1:2004 and AS 2890.2:2002.		N/A as this related to OBL1a	NA This condition has not yet been triggered.

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Vehicle Queuing and Parking</b>				
35	The Proponent shall ensure that all vehicles associated with the Project do not impede traffic flow on Greenleaf Road and Heron Road.	Antony Taylor: "No complaints regarding the use of the road have been received".	<p><i>Construction Traffic Management Plan</i>, Rev 0, GHD, dated Jan 2010.</p> <p>Two of the objectives of the plan are listed as:</p> <ul style="list-style-type: none"> <li>• Ensure that road users are not inconvenienced and the road network kept at a satisfactory level of performance.</li> <li>• Ensure access to adjacent premises is maintained at all times.</li> <li>• Viewed random sample of complaints register during the audit and no complaints relating to road use were observed.</li> </ul>	<p>C</p> <p>There was no evidence of non-compliance with this condition, however weekly inspection checklists required under the CEMP could not be provided.</p> <p><b>Recommendation: Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan.</b></p>
<b>Construction Traffic Management</b>				
36	Prior to the construction of the Project, the Proponent shall prepare and implement a Construction Traffic Management Plan, consistent with the requirements of the RTA. The plan shall be prepared in consultation with Newcastle Port Corporation and submitted to the Director-General as part of the environmental management strategy for the Project, as required by condition 49.		<p><i>Construction Traffic Management Plan</i>, Rev 0, GHD, dated Jan 2010.</p> <p>Email from Orica to DoPI regarding submission of the <i>Construction Traffic Management Plan</i>, dated 15 January 2010.</p> <p>Section 1.4 of the Plan (Consultation) acknowledges the requirements of the RTA. Newcastle Ports are noted as consulted stakeholders (meeting took place on 15 December 2009).</p> <p>Letter from DoPI dated 9 February 2010 <i>RE: Orica Ammonium Nitrate Expansion Project Submission of Management Plans</i>. Included comments on the <i>Construction Traffic Management Plan</i>, requesting edits</p>	<p>C</p> <p>The plan was prepared in accordance with the requirements of this condition.</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>and resubmission.</p> <p>Viewed email from Andrew Wood (NPC) to Kerry Hamann (DoPI ) dated 10<sup>th</sup> February 2010 advising of the issues that required revision on the plan.</p> <p>Viewed <i>Ammonium Nitrate Facility Upgrade Construction Traffic Management Plan</i> dated March 2010. It addressed each of the issues raised in the email from Andrew Wood</p> <ul style="list-style-type: none"> <li>noting that NPC is "the owner of the road network";</li> <li>noting that "oversized loads...will require separate approval from the RTA and Newcastle Port Corporation."</li> <li>removal of reference to 250 car spaces on Greenleaf Road and noting that "Where these controls impact on road infrastructure, approval will be obtained from Newcastle Port Corporation."</li> </ul>	

**Table 12 Water Efficiency**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
Water Efficiency				
37	<p>The Proponent shall prepare and implement a Water Efficiency Plan for the Project to the satisfaction of the Director-General. The plan must:</p> <p>(a) be submitted to the Director-General within 12 months of this approval or as otherwise agreed to by the Director-General;</p> <p>(b) be prepared with reference to the <i>Guidelines for Water Savings Action Plans (DEUS 2005)</i>; and</p>	<p>Antony Taylor: <i>The report was submitted within 12 months of gaining approval to commence construction of Phase 1b.</i></p>	<p><i>Water Efficiency Plan. Phase 1: Ammonia Plant Upgrade. Rev.C. Worley Parsons, dated 13 April 2011.</i></p> <p>Submission letter from Orica to DoPI RE: <i>Project Approval 08_0129 Condition 39: Water Efficiency Plan</i>, dated 20 April 2011 Approval to commence Phase 1b construction was granted on 19 May 2010.</p> <p>Approval letter from DoPI to Orica, dated 09 June 2011, RE: <i>Orica Ammonium Nitrate Expansion Project, Kooragang Island (08_0129) Water Efficiency Plan.</i></p> <p><i>Water Efficiency Plan. Phase 1: Ammonia Plant Upgrade. Rev.C. Dated 13.04.2011.</i></p> <p>Section 1 of the report states that: <i>This report is based on preparation of a Water</i></p>	<p>C</p> <p>The Plan was prepared in accordance with the requirements of this condition.</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	(c) include a report on the progress of investigations to receive recycled water from Hunter Water Corporations' recycled water scheme.	Antony Taylor: <i>Updates were provided in the in the Phase 1 and Phase 3 water efficiency plans</i>	<i>Efficiency Plan with reference to the DEUS Guidelines</i>  <i>Water Efficiency Plan. Phase 1: Ammonia Plant Upgrade. Rev.C. Dated 13.04.2011.</i>  Viewed email from Sherree Woodroffe to Chris Ritchie (DoPI) dated 14 April 2011 re "Project Approval 08_0129: Orica Kooragang Island : Condition 37: Water Efficiency Plan" that included the report "Water Efficiency Plan Phase 1: Ammonia Plant Upgrade Technical Review". The report provides a summary of progress with Hunter Water on "Substitution of Recycled Water for Potable Water" (Section 5.25).  Viewed email from Antony Taylor to Nick Hall (DoPI) dated 16 July 2013 re "Orica Kooragang Island letter" that included the report "Orica Kooragang Island Expansion Project Water Efficiency Plan (Phase 3)" that included an update "Hunter Water Corporations Recycled Water Scheme" (Section 4)	

**Table 13 Contamination**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
38	Prior to construction of the Project, the Proponent shall provide to the Director-General a detailed Project Site Plan showing the location of known soil and groundwater contamination areas. If the plan identifies that construction of the Project is likely to impact on known contamination areas, the Proponent shall prepare and implement a Remedial Action Plan (RAP), or update the existing RAP, to manage and remediate contaminated material in accordance with the requirements of the <i>Contaminated Land Management Act 1997</i> and the recommendations of the RAP.	Antony Taylor: <i>Soil was disturbed as detailed on the Sediment And Erosion Plan however the soil was tested and beneficially reused onsite.</i>	<i>Orica Australia Pty Ltd Soil Management Plan, Rev 0, GHD, 14 January 2010.</i> Submission email from Orica to DoPI regarding the Soil Management Plan, dated 15 January 2010. <i>Viewed Final Preliminary Report: Targeted Soil and Groundwater Quality Assessment at Proposed Excavation Areas - Orica Kooragang Island Facility</i> dated 13 April 2012. Viewed sampling results for samples taken on 16 November 2009 and 10 December 2009. Analytes tested were <i>As, Cd, Cr, Cu Ni, Pb and Zn</i> . <i>The recorded data fell below the NEPM (Industrial HIL)</i>	C Management of groundwater contamination was addressed as required in the Soil Management Plan.  <b>Recommendation:</b> <b>Ensure qualified soil scientist provides written</b>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p><i>limits.</i></p> <p>Viewed <i>Excavation Acid Sulphate Soil Test (Certificate of Analysis)</i> for Work Order EB1002666, for soil samples received by the lab on 16 February 2010 and sampled to QC level NEPM 1999 Schedule B(3) and ALS QCS3 requirement.</p> <p>Viewed Orica Laboratory Report for sample requested 5 March 2010 and 24 March 2010. Analytes tested were As, Cd, Cr, Cu Ni, Pb and Zn. <i>The recorded data fell below the NEPM (Industrial HIL) limits.</i></p>	<p><b>justification for omission of sampling for any “contaminants of concern” as per the Soil Management Plan. Ensure sampling is able to be shown to be undertaken in accordance with the EPA Sampling Design Guidelines (1995)</b></p>
39	Prior to construction of the Project, the Proponent shall prepare an Acid Sulphate Soil Management Plan in accordance with the Acid Sulphate Soils Manual, Acid Sulphate Soils Management Advisory Committee 1998.	<p>Antony Taylor: <i>“There are no acid sulphate soils present on site”</i></p>	<p><i>Orica Australia Pty Ltd Soil Management Plan, Rev 0, GHD, 14 January 2010.</i></p> <p>Submission email from Orica to DoPI regarding the Soil Management Plan, dated 15 January 2010.</p> <p>The report states that: <i>The screening tests undertaken suggest that soils from this single borehole are unlikely to be ASS.</i></p> <p>The Acid Sulphate Soils Manual, Acid Sulphate Soils Management Advisory Committee 1998 is listed in the relevant environmental legislation, guidelines and policies (Section 3.1).</p>	<p>C</p> <p>Management of Acid Sulphate Soils was addressed as required in the Soil Management Plan.</p>

**Table 14 Stormwater and Effluent Management**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Discharges</b>				
40	The Proponent shall ensure the Project meets the EPL requirements for stormwater and effluent discharges to the Hunter River	<p>Antony Talyor: <i>No specific limit’s detailed in the EPL for stormwater however still required to meet Section 120 requirements. Stormwater exceedances were not directly related to ammonia plant uprate but rather legacy site issues.</i></p>	<p><i>Annual Return, Licence No 828 for the period 1<sup>st</sup> April 2012 to 31 March 2013</i></p> <p>Viewed Incident Report Notification from Orica to the Office of Environment and Heritage relating to an incident on 8 August 2011. The incident related to an airborne release of sodium chromate and subsequent</p>	<p>NC</p> <p>Orica exceeded the effluent Arsenic discharge limit following an incident on the Ammonia</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
		<i>Effluent has specific licence limits which are reported against in the annual return.</i> <i>Orica did exceed the effluent Arsenic discharge limit following the Chrome (VI) incident/ammonia plant uprate startup.</i>	fallout on the Stockton Peninsula. Viewed facsimile from Carey Gent (Orica) to Felicity Greenway (DoPI) notifying of the incident. The incident report issued to OEH was attached.	Plant.
41	The Proponent shall comply with Section 120 of the <i>Protection of the Environment Operations Act 1997</i> .	Antony Taylor <i>We have been issued two notices for pollution of stormwater with Nitrogen. The penalty notices associated with nitrogen levels in stormwater are not related to the ammonia plant. The penalty notices related to catchment 4 (AN plant area).</i>		C There have been no instances of non-compliance with the <i>Protection of the Environment Operations Act 1997</i> that relate to the Ammonia Plant uprate.
<b>Stormwater Management Plan</b>				
42	Prior to the commencement of construction the Proponent shall prepare and implement a Stormwater Management Plan for the Project in consultation with the Newcastle Port Corporation and to the satisfaction of the Director-General. The plan must:		<i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan - Phase 1, 1a – Ammonia Plant 103H Building Construction, 1b – Ammonia Plant General Construction</i> , GHD, March 2010, Rev.0. Submission email from Orica to DoPI for the Stormwater Management Plan dated 15 January 2010. Viewed email correspondence from Kerry Hamann (DoPI) to Andrew Wood (NPC) dated 11 February 2010 asking to be notified when all issues are addressed. Viewed email from Sherree Woodroffe (Orica to Kerry Hamann (DoPI) advising: <i>We will update the Stormwater Management Plan after we have completed the physical inspection and recalculated the performance of the system under the 20yr ARI and tidal/harbour influences as noted by Andrew. I will include an action in the Stormwater Management Plan regarding obtaining approval from NPC prior to the undertaking of any works on their land.</i>	NC The Plan has generally been prepared to the satisfaction of the Director-General, however one request for resubmission of the Stormwater Management Plan had not been followed through on in sufficient time.  <b>Recommendation: Ensure all submission and re-submission requirements are entered into</b>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p>Viewed submission of revised <i>Stormwater Management Plan</i> dated 31<sup>st</sup> March 2010 from Sherree Woodroffe to Kerry Hamann (DoPI).</p> <p>Letter from Chris Ritchie to Sheree Woodroffe re <i>Orica Ammonium Nitrate Expansion Project (08_0129) Pre-construction Management Plans</i> dated 19<sup>th</sup> May 2010. Letter states that adequate information has been provided to allow commencement of construction on Phase 1a, provided Orica:</p> <ul style="list-style-type: none"> <li>• <i>Submit a revised Stormwater Management Plan for phase 1a</i></li> </ul> <p>Letter from Newcastle Port Corporation to Orica RE: <i>Orica Stormwater Drainage at Wash Point</i>, dated 14 September 2010 approving connection of Orica's stormwater system to Newcastle Port Corporations stormwater system.</p> <p>"The most recent Stormwater study shows no impact on stormwater flows as a result of the Ammonia uprate project"</p> <p>"<i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan November 2011</i>" The report includes a section on consultation, including reference to ongoing meetings with Ports (2009; 2010; 2011).</p>	<p><b>compliance tracking systems to ensure they are followed through on in the prescribed timeframes</b></p>
	<p>(a) include detailed plans of the stormwater management system for the Project, incorporating the requirements for a retention system as specified in the Fire Safety Study;</p>	<p>Antony Taylor: "Construction of a first flush system (210m<sup>3</sup> volume) on the new stormwater connection has been included in OBL1(a) design."</p>	<p><i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan - Phase 1, 1a – Ammonia Plant 103H Building Construction, 1b – Ammonia Plant General Construction</i>, GHD, March 2010, Rev.0.</p> <p>Includes appended detailed stormwater drainage plans. The plan acknowledges that incorporation of the requirements for a retention system as specified in the Fire Safety Study must be included in the plan (Section 1.3).</p> <p>The document <i>Fire Safety Study, Ammonia Plant Uprate Project, Orica Australia Pty Ltd, Kooragang Island, NSW, Rev C. (Pinnacle Risk Management, 17</i></p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			<p><i>April 2010</i>) states that:  “Fire water will be directed to associated pits where there is some retention capacity”  Viewed drawing 15-02417 which showed the location of a <i>proposed</i> first flush tank of capacity of 210m3</p>	
	<p>(b) include an engineering assessment of the capacity of the Walsh Point stormwater system to accept additional flows;</p>		<p><i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan - Phase 1, 1a – Ammonia Plant 103H Building Construction, 1b – Ammonia Plant General Construction, GHD, March 2010, Rev.0.</i></p> <p>Section 2.2 of the report assesses the capacity of the Walsh Point stormwater system to accept additional flows.</p>	
	<p>(c) describe the procedures for the installation, inspection and maintenance of the stormwater system for the Project; and</p>		<p><i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan - Phase 1, 1a – Ammonia Plant 103H Building Construction, 1b – Ammonia Plant General Construction, GHD, March 2010, Rev.0.</i></p> <p>Section 2.3 describe the procedures for the installation, inspection and maintenance of the stormwater system for the Project</p>	
	<p>(d) ensure that water sensitive design options avoid infiltration in areas of known soil and groundwater contamination</p>		<p><i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Stormwater Management Plan - Phase 1, 1a – Ammonia Plant 103H Building Construction, 1b – Ammonia Plant General Construction, GHD, March 2010, Rev.0.</i></p> <p>Section 1.3 (Minister for Planning’s Conditions of Approval) records this requirement, and it is further noted in Section 1.4 (Consultation) where it is noted that <i>Newcastle Ports Corporation “raised concerns regarding the use of this technique in areas where there may be potential soil contamination and indicated that if this approach is to be utilised then an</i></p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<i>assessment of potential contamination in the vicinity would need to be undertaken"</i>				
<b>Bunding</b>				
43	<p>The Proponent shall ensure that all chemicals, fuels and oils associated with the Project are stored in appropriately banded areas, with impervious flooring and sufficient capacity to contain 100% of the largest container stored within the bund. The bund(s) shall be designed and installed in accordance with:</p> <p>(a) the requirements of all relevant Australian Standards; and</p> <p>(b) the DECC's <i>Storing and Handling Liquids: Environmental Protection, Participants Manual</i>.</p>	<p>Antony Taylor: <i>Bunding Improvement Works report submitted to the EPA</i></p>	<p>Program to progressively upgrade bunds</p> <p>Bunding reports to EPA</p> <p>Viewed <i>Environmental Statement (Appendix 1.J)</i>.</p> <p>The report states: <i>It is a condition of the project consent that bunding is designed in accordance with the relevant Australian Standard, ADG code and the DECC's "Storage and Handling Liquids: Environmental Protection: Participants Manual" DECC, 2007. A bunding standard procedures document has been prepared for the site and applies to this project. Viewed "Condition U3 PRP – 30 Bunding Improvement Works March 2013" The report details bunding improvement works in the preceding 12 months as well as new bunding projects proposed for the following 12 months. This report is submitted annually to the EPA in accordance with the Environment Protection Licence.</i></p>	<p>C</p> <p>Chemicals, fuels and oils observed during the site visit were seen to be stored correctly in banded areas.</p>
<b>Erosion and Sediment Control</b>				
44	<p>Prior to construction of the Project, the Proponent shall prepare an Erosion and Sediment Control Plan in accordance with Landcom's 2004 <i>Managing Urban Stormwater: Soils and Construction</i>.</p>		<p><i>Orica Australia Pty Ltd Ammonium Nitrate Facility Upgrade Erosion and Sediment Management Plan</i>, GHD, 14 January 2010, Rev. 0</p> <p>Section 1.1. states that the plan was prepared "in accordance with Landcom's 2004 <i>Managing Urban Stormwater: Soils and Construction</i>."</p> <p>Submission email from Orica to DoPI regarding the Erosion and Sediment Management Plan dated 1 February 2010</p>	<p>C</p> <p>The plan has been prepared in accordance with the requirements of this condition</p>

**Table 15 Visual**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Visual</b>				

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
45	Prior to commencement of operations of the Project, the Proponent shall submit to the Director-General a landscape plan providing details of native screening plants to be planted along the eastern boundary of the Project Site. The plan shall demonstrate that the landscaping does not compromise on-site security and shall include a program for implementation.		<p><i>Landscape Plan, Ammonium Nitrate Facility, Kooragang Island</i> AECOM, 3 June 2011.</p> <p>Section 1.1. states that: <i>This Plan has been prepared to meet the requirements of Condition 45.</i></p> <p>Section 3.2 outlines the planting guidelines, and a (graphical) landscape plan showing the proposed location and types of plants is appended to the Plan.</p> <p>A program for implementation is included (Section 3.4). The plan states that: <i>The selected species are low growing to meet security and fire hazard requirements.</i></p>	<p>NC</p> <p>The plan was prepared as required however evidence of submission could not be provided at the time of the audit. Given the high rate of compliance with the other submission-related requirements of this approval, the auditor suspects the plan was submitted, however this must be found non-compliant without the required evidence.</p> <p><b>Recommendation</b> <b>Ensure all submission and re-submission requirements are entered into compliance tracking systems to ensure they are followed through on in the prescribed timeframes</b></p>
<b>Lighting</b>				
46	The Proponent shall ensure that lighting associated with	Antony Taylor:	Letter from Wadco lighting to Orica, dated 28 March	NA

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	the Project:	<i>There is no external lighting on the compressor building. Lighting on the ammonia plant was existing</i>	2011, confirming the compressor room lighting complies with AS1680. There is no external lighting on the compressor building.	There is no external lighting on the compressor building or new lighting on the ammonia plant.
	(a) complies with the latest version of Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting; and			
	(b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.			

**Table 16 Waste**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
Operating Conditions				
47	The Proponent shall ensure that all waste generated by the Project during construction and operation is classified in accordance with the DECC's <i>Waste Classification Guidelines 2008</i> and if required, disposed of to a facility that may lawfully accept the waste.	<p>Antony Taylor:</p> <p><i>"There is no operational waste associated with the Ammonia uprate project" in addition to the existing wastes already generated by the ammonia plant other than waste collected as a result of the Hex Chrome incident during the plant startup. This generated Arsenic-contaminated water.</i></p> <p><i>Also part of the shutdown all plant catalyst was replaced. Catalyst was redrummed and exported to Europe, and transported in accordance with the requirements of export permits issued by the Federal Government</i></p> <p><i>All of our off site waste disposal is managed by JRR. They handle our waste transport certificates. It is hard to demonstrate waste records specific to construction as separate bins/skips were not used, we just used bins that were already in place operationally.</i></p> <p><i>Sent monthly audit sheet for waste tracking we do. Hard to match dates with construction as</i></p>	<p>Viewed:</p> <ul style="list-style-type: none"> <li>• <i>Summary of Liquid Sludge Waste</i> for August 2011 which included the docket for each of the four entries in the report, prepared by JRR.</li> <li>• <i>Transport Certificate 2T00272746</i> for J120 wastes (oils etc.) dated 17 June 2011 for wastes picked up 3 June 2011</li> <li>• <i>Transport Certificate 2T00272745</i> for J120 wastes (oils etc.) dated 17 June 2011 for wastes picked up 6 June 2011</li> <li>• <i>Transport Certificate 2T00263104</i> for J100 wastes (waste mineral oils) dated 28 April 2011 for wastes picked up 7 June 2011</li> <li>• <i>Transport Certificate 2T00473836</i> for J100 wastes (waste mineral oils) dated 16 September 2013 for wastes picked up 12 September 2013</li> <li>• <i>Transport Certificate 2T00239797</i> for N100 wastes (containers etc.) dated 28 February 2012 for wastes picked up 23 August 2012 (incorrect dates)</li> </ul>	C Waste materials were found to be generally managed in accordance with the requirements of this condition.

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
		<i>Numbers are tracked monthly so we can trend identify.</i>	<ul style="list-style-type: none"> <li>• <i>Transport Certificate 2T00374747 for J100 wastes (waste mineral oils) dated 24 August 2012 for wastes picked up 23 August 2012</i></li> <li>• <i>Transport Certificate 2T00374170 for F100 wastes (waste ink, dye etc.) dated 21 August 2012 for wastes picked up 20 August 2012</i></li> </ul> <p><i>Viewed JR Richards Programmed Facility Management Monthly Summary Report 2013. The report included monthly data for all the individual waste streams managed by JR Richards on the Kooragang Island Site (approximately 50 separate removal items/streams)</i></p> <p><i>Viewed Incident Report issued to the Office of Environment and Heritage on 8 August 2011 regarding the Hexavalent Chromium release. The report included the statement that:</i></p> <p style="padding-left: 40px;"><i>Offsite disposal of chromium VI containing solution has been undertaken to an appropriately licensed facility using a licenced transport company. In addition, treatment of low concentration chromium VI containing solutions by sodium bisulphite has been undertaken to convert it to chromium III.</i></p> <p><i>Viewed 3 separate Notice Of Application Received Under The Hazardous Waste (Regulation Of Exports And Imports) Act 1989 for "export of spent catalyst" dated:</i></p> <ul style="list-style-type: none"> <li>• <i>4 December 2013</i></li> <li>• <i>12 December 2013 (footer)</i></li> <li>• <i>4 December 2013</i></li> </ul>	
<b>Waste Management Plan</b>				
48	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must:		<p><i>Orica Kooragang Island Ammonia Plant Uprate Waste Management Plan, Rev 0, 28 February 2013.</i></p> <p><i>Viewed JR Richards Programmed Facility Management Monthly Summary Report 2013. The report included monthly data for all the individual waste streams managed by JR Richards on the Kooragang Island Site</i></p>	<p>NC</p> <p>Orica's management plans include a range of appropriate measures for</p>

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			(approximately 50 separate removal items/streams)	managing waste,
	(a) be submitted to the Director-General for approval within 1 year of the commencement of operations of the Project;		Submission email from Orica to DoPI regarding the Waste Management Plan, dated 28 February 2013. Approval letter from DoPI to Orica <i>RE: Orica ANE Project – Kooragang Island (MP 08_0129) Phase 1 Air Quality Verification Report and Waste Management Plan</i> , dated 19 July 2013.	however, Orica was not able to provide sufficient evidence to show that these measures (specifically weekly inspections) were
	(b) characterise the various waste streams of the Project and include details of the quantities and destinations of all waste materials;		Orica Kooragang Island <i>Ammonia Plant Uprate Waste Management Plan</i> , Rev 0, 28 February 2013. Section 3 characterises the waste streams and details quantities and destinations of all waste materials.	being carried out at the time of the construction works
	(c) describe what measures would be implemented to reuse, recycle or minimise the waste generated by the project; and	Antony Taylor: <i>“There have been no changes to the catalysts as a result of the ammonia uprate. All our catalysts are exported for recycling. Historically, all catalysts removed as part of uprate were stored on site. We have redrummed these for sending to Europe and US for metal recovery.”</i>	Orica Kooragang Island <i>Ammonia Plant Uprate Waste Management Plan</i> , Rev 0, 28 February 2013. Table 1 describes measures to be implemented to reuse, recycle or minimise the waste generated by the project.	<b>Recommendation:</b> <b>Ensure weekly environmental inspections are undertaken, and records of each inspection kept, as required in the Construction Environmental Management Plan</b>
	(d) identify a waste reduction target for the Project and detail procedures for measuring the Projects performance against the target;		Orica Kooragang Island <i>Ammonia Plant Uprate Waste Management Plan</i> , Rev 0, 28 February 2013. The plan states that Orica is <i>“committed to reducing total waste generated by the site by 5% over the next plant turnaround cycle”</i> The report also states that <i>“performance against this waste reduction target will be determined through annually reporting.”</i>	
	(e) include a program to monitor the effectiveness of these measures.		Orica Kooragang Island <i>Ammonia Plant Uprate Waste Management Plan</i> , Rev 0, 28 February 2013. The report states that <i>“performance against this waste reduction target will be determined through annually reporting.”</i>	

## SCHEDULE 4 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

**Table 17 Environmental Management Reporting and Auditing**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Environmental Management Strategy</b>				
49	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to carrying out any development related to the Project, and:	<p>Observed daily meeting in which management discuss incidents, plant operations, general status of operations, progress against KPIs.</p> <p>Belinda and Paul talked us through the incident investigation proves. Their team (Paul) reviews every logged incident, classifies and assigns most appropriate incident manager. Procedure for management includes root-cause-analysis. All RCAs going to Greg (GM for review)</p> <p>"Hazard Safety process occurs pre-design, informs environmental strategy".</p> <p>Scott Reid (Operations Manager):</p> <p>We implement a 3 tier training program – the first tier is the standard IT, code of conduct, harassment training and statutory obligations training that all staff do. Next is more specific to their job, including some 'how to operate' training, safety management systems and permits to work. The last level is the 'operator skills' level and is most specific to their tasks. This will also include specific environmental considerations relevant to their role. This can include effluent management systems"</p>	<p><i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009.</i></p> <p>Submission email from Orica to DoPI regarding the Environmental Management Strategy, dated 15 January 2010. This was prior to commencement of construction in February 2010.</p> <p>Letter from DoPI dated 9 February 2010 <i>RE: Orica Ammonium Nitrate Expansion Project Submission of Management Plans</i>. Included approval for <i>Construction Safety Environmental Management Plan</i>.</p> <p>Implementation evidence reviewed included:</p> <ul style="list-style-type: none"> <li>• Visual boards in communal office areas that reported on progress against key safety and environment KPIs</li> <li>• Viewed "compliance calendar" in communal office areas that reported visually on specific staff progress against compliance</li> <li>• Towards World Class (TWC) system in place that captures all high level commitments and compliance requirements for regular reporting to Plant General Manager</li> <li>• RAR Process involves weekly meeting between all managers and the Plant General Manager to discuss their progress against KPI's, and TWC requirements. Each manager subsequently sits down with their staff and undertakes the same proves. This allows the teams to highlight areas of concern well in advance, as opposed to reacting to problems.</li> </ul>	C
	(a) provide the strategic context for environmental management of construction and operation of the Project;		<p><i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009.</i></p> <p>Section 4 outlines the strategic context for environmental management of construction and operation of the Project</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	(b) identify the statutory requirements that apply to the project;		<i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009. (contains a copy of the PA and EPL)</i> Section 6 identifies the statutory requirements that apply to the project	
	(c) describe in general how the environmental performance of the Project would be monitored and managed;		<i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009.</i> Section 8 describes how the environmental performance of the Project would be monitored and managed.	
	(d) describe the procedures that would be implemented to: •keep the local community and relevant agencies informed about the operation and environmental performance of the project; •receive, handle, respond to, and record complaints; •resolve any disputes that may arise in relation to operations at the Project; •respond to any non-compliance; •manage cumulative impacts; and •respond to emergencies; and		<i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009.</i> Description of the procedures that are implemented for various purposes are described in: <ul style="list-style-type: none"> <li>• Section 9 (keeping community and agencies informed, managing complaints, and resolving disputes)</li> <li>• Section 10 (responding to non-compliances)</li> <li>• Section 8 (managing cumulative impacts)</li> <li>• Section 11 (responding to emergencies).</li> </ul>	
	(e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the project		<i>Orica Kooragang Island Environmental Management Strategy, Rev. 0, dated 21 December 2009.</i> Section 7 describes the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the project	

**Table 18 Environmental Reporting**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Environmental Reporting</b>				
50	The Proponent shall submit an Annual Report to the Director-General and other relevant agencies. This report must:		Submission letter to Nick Hall, Mining and Industry Projects (DoPI) re <i>Orica Kooragang Island Annual Environmental Management Report (2013) with report attached.</i>	C The Annual Report is being prepared in accordance with the

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
			2010-2013 AEMRs	requirements of this condition and submitted as required.
	(a) identify the standards and performance measures for the Project;		<i>Annual Environmental Management Report</i> , December 2013. Section 3 identifies the standards and performance measures for the Project	
	(b) describe the works carried out in the past 12 months and the works to be carried out in the next 12 months;		<i>Annual Environmental Management Report</i> , December 2013. Section 4 outlines the project status (past and future)	
	(c) include a summary of the complaints received in the past year, and provide comparison with previous years;		<i>Annual Environmental Management Report</i> , December 2013. Section 5 provides a summary of complaints and compares against previous years.	
	(d) report results of all monitoring required by this approval and an EPL for the Project;		<i>Annual Environmental Management Report</i> , December 2013. Section 5 of the report states that: <i>The uprated Ammonia Plant has completed all required environmental monitoring in accordance with the site Environment Protection Licence (EPL 828).</i>	
	(e) provide analysis of monitoring results in the context of relevant criteria and limits, previous monitoring results and the predictions made in the EA;		<i>Annual Environmental Management Report</i> , December 2013. Analysis of air quality and noise monitoring results in the context of EPL Limits (air) and EA (noise) is included in Section 5.	
	(f) identify any trends in monitoring results over the life of the Project; and	Antony Taylor: <i>AEMR provides summary on annual reporting of production data, project life regarding environmental monitoring and DC compliance reporting.</i>	<i>Annual Environmental Management Report</i> , December 2013. The report includes a comparison of the noise monitoring results for 2012/13 against the 2012 baseline and the comparison of 2011/2012/2013 number of community complaints received. Air quality monitoring results (NO <sub>x</sub> sampling in the reformer and prereformer stacks) are compared for March 2012, August 2012 and August 2013.	
	(g) report on compliance with the project approval, summarise non-compliances in the previous 12 months and report on actions taken to rectify non-compliances.		<i>Annual Environmental Management Report</i> , December 2013. Section 7 provides a detailed summary of project	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Incident</b>				
51	The Proponent shall notify the Director-General and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.		<p>approval compliance.</p> <p>Viewed Incident register.</p> <p>Viewed Incident Report Notification from Orica to the OEH relating to an incident on 8 August 2011. The incident related to an airborne release of sodium chromate and subsequent fallout on the Stockton Peninsula.</p> <p>Viewed facsimile from Carey Gent (Orica) to Felicity Greenway (DoPI) notifying of the above incident. The incident report issued to OEH was attached.</p> <p>Viewed email from Antony Taylor (Orica) to Chris Ritchie (DoPI) dated 11 March 2013 and notifying of an incident related to the ammonia plant wherein a relief valve was lifted, causing a release of detectable levels of ammonia.</p>	C Orica are notifying the Director-General and other relevant authorities as required.

**Table 19 Auditing**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
<b>Independent Environmental Audit</b>				
52	<p>Within 2 years of the commencement of operations of the Project, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <p>(a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;</p> <p>(b) assess the environmental performance of the project and, and its effects on the surrounding environment;</p> <p>(c) assess whether the Project is complying with the relevant standards, performance measures, and statutory requirements;</p> <p>(d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary</p>		<p>C</p> <p>This audit report provides the evidence required for compliance with this condition.</p> <p>Viewed letter from Nick Hall (DoPI) to Antony Taylor (Orica) approving the audit team from SLR who carried out this audit dated 25 February 2014.</p> <p>Viewed email from Jon Panic (auditor) to Nick Hall (DoPI) confirming the scope of the audit dated 12 February 2014.</p>	

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
	(e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval. <i>Note: This audit team must include experts in the field of noise and air quality</i>			

**Table 20 Access to Information**

Condition	Requirement	Interviews and Inspections	Documentation Viewed	Compliance Status
Access to Information				
53	From the end of 2009, the Proponent shall provide regular reporting on the environmental performance of the Project on its website, including ensuring the following information is publicly available on its website:			C
	(a) a copy of all current statutory approvals;		A copy of the development consent and the Environmental Assessment are available on the website. A link to the EPL (on the EPA website) is also available.	Orica is making the required information available on the website as required by this condition.
	(b) a copy of the current environmental management strategy and associated plans and programs;		Soil Management Plan, Erosion and Sediment Control Plan, Stormwater Management Plan, Environmental Management Strategy, and Existing Noise Verification Program are available on the website.	
	(c) a copy of any Annual Reports (over the last 5 years);		AEMRs from 2010 to 2013 are available on the website, none required prior to 2010.	
	(d) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and		N/A – has not yet been triggered.	
	(e) any other matter required by the Director-General		Other documents on the website include a copy of the 'Report for Kooragang Island Upgrade PHA MOD1 Report' Rev.5. GHD, March 2012. And environmental monitoring data (air quality, stormwater, water, weather etc.).	