



2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

**ORICA KOORAGANG ISLAND
SSD 08_0129**

DECEMBER 2024 (AMENDED MARCH 2025)



Revision	Date	Description	Author	Approver
5.1	12/3/2025	Amended 2024 Annual Environmental Management Report in response to DPHI RFI80379709	N Robinson	N. Robinson
5	15/12/2024	2024 Annual Environmental Management Report	N Robinson	P Cunsolo
4	15/12/2023	2023 Annual Environmental Management Report	N Robinson	P Cunsolo
3	20/12/2022	2022 Annual Environmental Management Report	N Robinson	P Cunsolo
2	17/12/2021	2021 Annual Environmental Management Report	N Robinson	P Cunsolo
1	18/12/2020	2020 Annual Environmental Management Report	D Williams	N Robinson
0	20/12/2019	2019 Annual Environmental Management Report	N Robinson	A Taylor

CONTENTS

1	INTRODUCTION	1
2	ANNUAL ENVIRONMENTAL MANAGEMENT REPORT REQUIREMENTS	5
3	PROJECT APPROVALS	4
4	ACTIONS IDENTIFIED FROM PREVIOUS ANNUAL ENVIRONMENTAL MANAGEMENT REPORT	4
5	PROJECT STANDARDS AND PERFORMANCE MEASURES	5
6	PROJECT STATUS	8
6.1	Project Progress Review	8
6.2	Planned Project Progress during 2020/2021	12
7	ENVIRONMENTAL MONITORING AND COMPLAINTS SUMMARY	13
7.1	Environmental Monitoring	13
8	COMMUNITY	12
8.1	Community Engagement Activities	12
8.2	Community Investment	12
8.3	Community Complaints	12
9	AN1 PRILL TOWER EMISSION REDUCTION INVESTIGATIONS	14
9.1	Particulate Minimisation Program	14
10	RECLAIMED WATER PROJECT	17
11	PROJECT APPROVAL COMPLIANCE	18
11.1	Condition Compliance	18
11.2	Summary of Submitted Reports	32
11.3	Independent hazard audit action plan	38
11.4	Independent environmental audit	49
	APPENDIX A – 2024 NOISE AUDIT REPORT	52

ABBREVIATIONS

AN3	No. 3 Ammonium Nitrate Plant
CEMP	Construction Environmental Management Plan
DECCW	Department of Environment, Climate Change and Water (superseded by DPHI)
DPHI	Department of Planning, Housing and Industry (formerly Department of Planning, Industry and Environment)
EPA	Environment Protection Authority
EPL	Environment Protection Licence
HAZOP	Hazard and Operability Study
ktpa	kilo tonnes per annum
NAP4	No. 4 Nitric Acid Plant
SH&E	Safety, Health and Environment

1 INTRODUCTION

Orica Australia Pty Ltd (Orica) operates an ammonium nitrate manufacturing facility on Kooragang Island, NSW (**Figure 1**). The facility commenced operations in 1969 and has undergone several projects aimed at increasing the ammonium nitrate production capability of the site since. The current site operations consist of an Ammonia Plant, three Nitric Acid Plants, two Ammonium Nitrate Plants and associated despatch and support infrastructure (Existing Operations). The key areas of the site are shown in the site layout in Figure 2.

An approval for the expansion of the Kooragang Island site (the expansion Project) was granted by the Department of Planning, Housing and Industry (DPHI) on 1 December 2009 allowing ammonium nitrate production to increase from 500 kilo tonnes per annum (ktpa) to 750ktpa. The expansion project broadly involved the uprate of the existing ammonia plant, construction of an additional Nitric Acid (NAP4) and Ammonium Nitrate Plants (AN3) and the upgrade and expansion of the site's ammonium nitrate storage and ancillary infrastructure.

Since the approval was granted in 2009, Orica has applied to DPHI to modify the approval on 6 occasions. Modifications to the 2009 approval included:

Project Modification 1 (approved 11 July 2012)

- The relocation of plant and equipment further away from the closest residential properties located in Stockton;
- Relocation of AN3 to NAP4 to reduce the pipeline distance in which ammonia is required to be transported;

Project Modification 2 (approved 17 December 2014)

- Rationalisation and upgrade of ammonia storage and distribution infrastructure including a reduction in ammonia inventories stored in plant ammonia storage tanks;
- The construction and operation of three ammonia flares; Instrumentation and integrity improvements to ammonia handling and storage systems; and
- The relocation and increase in storage quantity of a previously approved nitric acid tank.

Project Modification 3 (approved 17 December 2015)

- Increase the allowable annual production limit relating to the manufacture of ammonia at the site from 360,000t to 385,000t.

Project Modification 4 (approved 13 May 2021)

- Construction of a nitrates effluent tank to replace the existing nitrates effluent pond.

Project Modification 5 (approved 29 October 2021)

- Construction of a prill tower scrubber to remove particulate associated with the existing ANP1 Prill tower.

Project Modification 7 (approved 14 August 2023)

- Construction and Operation of a new ANSOL supply line from the AN1 Plant to the existing ANSOL export tank.

Project Modification 8 (pending)

- Construction and Operation of a new 33kV high voltage electricity substation and associated infrastructure for the site

This report has been prepared in accordance with Condition 50 of the expansion project's Development Consent (08-0129) which requires an Annual Environmental Management Report (AEMR) to be submitted to the DPHI.

A lease area of 2,181m² has been subdivided from Lot 3 DP234288 to support construction and operation of a research plant by Mineral Carbonation International Pty Ltd in the north-east corner of the Orica site. The development was approved by the City of Newcastle (DA2022/01203) in April 2023 and a lease authorised in September 2023. The lease area was subsequently excised from the premises details in the site Environment Protection Licence (EPL828) on 16 August 2024. Orica Australia Pty Ltd does not have operational control of the lease area, and it does not form part of the 2024 AEMR.



Figure 1: Site Location



Figure 2: Site Layout

2 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT REQUIREMENTS

Condition 50 of Project Development Consent (08-0129) requires that Orica submit an AEMR within the first 12 months of commencing the project and annually thereafter. This report details environmental compliance of the Project between the 1 December 2023 and 30 November 2024 and:

- a) Identifies the standards and performance measures for the project;
- b) Describes the works carried out in the past 12 months and the works to be carried out in the next 12 months;
- c) Includes a summary of complaints received in the past year and provides a comparison with previous years;
- d) Reports results of all monitoring required by this approval and the EPL for the Project;
- e) Provides analysis of monitoring results in the context of the relevant criteria and limits, previous monitoring results and predictions made in the EA;
- f) Identifies any trends in monitoring results over the life of the Project; and
- g) Reports on compliance with the project approval, summarises non-compliances in the previous 12 months and reports on actions taken to rectify non-conformances.

3 PROJECT APPROVALS

The following licences and permits are held by the site relating to the Project.

Requirement	Issuing Authority	Licence Identifier	Licence Activities	Changes made during 2024 AEMR reporting period
Licences				
Environmental Licence	NSW EPA	No. 828	Details the environmental performance standards, monitoring and reporting requirements for manufacturing activities at the Kooragang Island site.	EPL Variation approved in conjunction with EPA and issued 16 August 2024
Major Hazard Facility	Safework NSW	20-17-75	Manufacture and storage of NSW WHS Regulation Schedule 15 chemicals.	Licence granted 11/11/21 Licence expires 11/11/26
Licence to Manufacture Explosives and Security Sensitive Dangerous Goods	SafeWork NSW	XMNF100001	Authority to manufacture and store security sensitive dangerous goods (ammonium nitrate).	Licence granted 26/8/21 Licence expires 26/6/26
Notification of Dangerous Goods	SafeWork NSW	Acknowledgement No. NDG015329	Notifies SafeWork NSW of the storage of hazardous chemicals	Nil
Anhydrous Ammonia Pipeline Licence Agreement	Port of Newcastle	44400033	Licence for the operation of the anhydrous ammonia import and export pipeline between the site and the K2 berth.	Nil
Sewerage systems Collection tanks	NSW EPA	No. 828	Operation of a site-based sewerage system	Nil

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Requirement	Issuing Authority	Licence Identifier	Licence Activities	Changes made during 2024 AEMR reporting period
Transpiration system				
Ammonia Plant Main Cooling tower	Newcastle City Council	NCC-0077-01	Certificate of completion for independent audits	Submitted
Ammonia Storage Cooling tower	Newcastle City Council	NCC-0078-01	Certificate of completion for independent audits	Submitted
Nitric Acid Plant 1 Cooling System	Newcastle City Council	NCC-0079-01	Certificate of completion for independent audits	Submitted
Nitric Acid Plant 2 Cooling System	Newcastle City Council	NCC-0080-01	Certificate of completion for independent audits	Submitted
Nitric Acid Plant 3 Cooling System	Newcastle City Council	NCC-0081-01	Certificate of completion for independent audits	Submitted
Permit to Import Prohibited Chemicals - MDEA Import	Australian Government	2024/56	Permit to import MDEA for use in the ammonia plant.	Renewed
Consents				
Project Approval – Ammonium Nitrate Expansion Project	Minister for Planning and Infrastructure	08_0129		No change during reporting period. Modified as noted in Section 1.0 – Introduction.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Requirement	Issuing Authority	Licence Identifier	Licence Activities	Changes made during 2024 AEMR reporting period
Easements				
Effluent Pipeline	Roads and Maritime		Agreement with RMS for the effluent pipeline in the North Arm of the Hunter River.	Nil
Effluent Pipeline Easement	Port of Newcastle	N/A	Agreement with Port of Newcastle for the effluent pipeline between the site and the Hunter River	Nil
Lease Agreement				
Lot 91 Lease agreement	Port of Newcastle	44400157	Licence to enable access to land adjacent to the site effluent pipeline.	Nil

4 ACTIONS IDENTIFIED FROM PREVIOUS ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

DPHI feedback is summarized in Table 1

Table 1 – DPHI feedback resolution

Date	Request	Relevant Section
2024 AEMR Feedback (26 February 2025)	• Update DPHI feedback table • Provide additional information on non-compliances and incidents,	• Section 4 • Table 10B
2023 AEMR feedback (17 June 2024)	• Make a copy of the AEMR available on the project website • Identify incidents reported and corrective actions taken	• Published on Orica KI Public Website • Table 10B (commencing 2024 AEMR)
2022 AEMR feedback (17 March 2023)	• Make a copy of the AEMR available on the project website • Include Orica response to IEA • Add site Layout • Environmental complaints summary • Comparison of monitoring results to relevant criteria	• Published on Orica KI Public Website • Section 12.2 • Figure 2 (commencing 2024 AEMR) • Table 10B (commencing 2024 AEMR) • Section 7
2021 AEMR feedback (17 January 2022)	Make a copy of the AEMR available on the project website.	The 2021 AEMR was published 17 January 2022 on Orica KI Public Website
2020 AEMR feedback (22 January 2021)	Make a copy of the AEMR available on the project website, preferably by 5 February 2021.	The 2020 AEMR was published 22 January 2021 on Orica KI Public Website
2019 AEMR feedback (10 Feb 2020)	2019 AEMR to be on Orica Kooragang Island public website preferably by 11 March 2020	Published on Orica KI Public Website
2019 AEMR feedback (10 Feb 2020)	Make the 2016 hazard audit report available on the project website by 11 March 2020.	Published on Orica KI Public Website
2019 AEMR feedback (10 Feb 2020)	Submit the OEMP to the Department by 30 June 2020	Submitted to DPHI on 5 June 2020 and published on Orica KI Public Website
2018 AEMR feedback (19 Feb 2019)	Include a comparison of monitoring results to the predictions made in the Environmental Assessment(s) for air quality, noise and water; and	Air – 7.1.1 Noise – 7.1.2 Water – 7.1.3 and 10
2018 AEMR feedback (19 Feb 2019)	Identify any trends in monitoring results over the life of the Project for air quality, noise and water.	Air – 7.1.1 Noise – 7.1.2 Water - 7.1.3 and 10
2018 AEMR feedback (19 Feb 2019)	The above requests should be tabulated within the next AEMR, with specific references as to	Table in Section 4 (this table)

	where each point has been addressed within the document.”	
--	---	--

5 PROJECT STANDARDS AND PERFORMANCE MEASURES

The Project is required to meet the standards and conditions detailed in the following documents:

- Project Approval 08-0129 dated 1 December 2009 as subsequently modified (currently to MOD7)
- Project Environmental Assessment dated June 2009
- Statement of Commitments dated August 2009
- Modification Application 08-0129 MOD 1 and supporting documentation titled Kooragang Island Facility Modification Request dated 20 April 2011;
- Modification Application 08_0129 MOD 2 Environmental Assessment titled Kooragang Island Modification Request dated 13 November 2013;
- Response to MOD 2 submissions dated 10 February 2014;
- Orica Mining Services Report for Kooragang Island Uprate PHA MOD1 Report dated March 2012
- Orica Mining Services Kooragang Island Uprate PHA MOD2 rev 1 dated May 2014 including Appendix VIII" nitric Acid Tank PHA, Rev C dated May 2014.
- Submissions Report dated 13 October 2014
- Orica Kooragang Island Ammonia Annual Quantity Increase Environment Assessment dated 28 April 2015.

Key design criteria in these documents are detailed in Table 2 below.

Table 2 - Standards and performance implemented in plant design and construction

Criteria	Standard	Performance Measure	Comment
Noise Management	No increase in community noise levels as a result of implementing the Project.	Operating Project to be at least 10dB (A) less than the existing plant noise levels.	To enable the site to demonstrate compliance with the noise conditions detailed in the Development Consent, background noise testing at the community interface was performed prior to the Ammonia Plant uprate in 2011 in compliance with requirements detailed in Condition 31. Quarterly noise testing was subsequently performed during the 2013 AEMR period and annually thereafter in accordance with the DPHI approved noise management plan. Noise testing was undertaken during June 2024 and confirmed that noise contributions from the Project satisfied the project noise criteria. A full copy of the Annual Noise Audit is provided as Appendix A.
Air Quality	Minimisation of particulate emissions associated with the Project.	AN3 stack emissions to be $\leq 20\text{mg/Nm}^3$	Ammonium Nitrate Plant 3 has yet to be constructed; however, the requirement has been incorporated into the plant design. Particulate emission performance of AN3 will be confirmed during plant commissioning activities.
	Minimisation of NOx emissions associated with the project.	Existing Reformer Stack NOx emission $\leq 350\text{mg/Nm}^3$ (as NO ₂ equivalent)	A Purge Gas Scrubber was installed in 2011 during the Ammonia Plant uprate aimed at reducing NOx emissions from the Ammonia Plant Reformer Stack. A NOx reduction (ammonia injection) system was installed on the Reformer flue gas tunnels in September 2021. Orica has been undertaking a review of NOx emissions from the Reformer as part of a Pollution Reduction Study in the EPL (PRS52). Two stack tests have been performed during typical operating conditions (Purge Gas Scrubber ON and Ammonia Injection system ON) during the 2024 AEMR reporting period, both of which were within licence limits.

Criteria	Standard	Performance Measure		Comment	
		Pre-Reformer Furnace Stack NOx emission ≤350mg/Nm³ (as NO₂ equivalent)		Annual stack emission testing has been performed following the commencement of operations on the 29 February 2012. One stack test was completed and analysed during the 2024 AEMR reporting period and complied with the site's EPL NOx concentration limit.	
		Expansion Boiler Stack NOx emission ≤350mg/Nm³ (as NO₂ equivalent)		Requirement has been incorporated into the Expansion Boiler design. One stack test was completed and analysed during the 2024 AEMR reporting period and complied with the site's EPL NOx concentration limit.	
		NAP4 Stack NOx ≤150ppm (99%tile)		NAP 4 has yet to be constructed; however, the requirement has been incorporated into the plant design.	
		Scrubbing of ammonia emissions under normal plant operations to be installed for NAP4 and AN3.		Requirement has been incorporated into design. The site has completed a project relating to the management of ammonia emissions generated from existing operating plants including the construction of three ammonia flares.	
Greenhouse Gas Emissions	Installation of abatement technology on Nitric Acid Plants	Site N₂O emissions to be reduced by ≤65% compared to a “do nothing” approach. Abatement projects to be completed within 6 months of commissioning of NAP4.		Not triggered as NAP4 has not been constructed. However, an N₂O emissions reduction strategy for the site has been implemented, with N₂O abatement technology installed in NAP2 from July 2013. N₂O emissions are continually monitored in all existing nitric acid plants. Tertiary abatement has been installed on the 3 nitric acid plants with the final plant installation completed July 2023 with all plants achieving abatement of >95% consistent with design.	
Water Emissions	New Plant and Equipment to comply with existing EPL conditions for effluent discharge parameters.		mg/L		Effluent discharged from the site is monitored daily and reported in the site's EPA Annual Return.
			90% limit	100% limit	
		Zinc		5.0	Effluent discharge parameters complied with the site limits for the 2023/2024 EPA Annual Return year with the exception of a single effluent temperature exceedance for a short duration as discussed in Section 7.1.3 of the report. The exceedance had no
		As		0.05	
		Oil and Grease		10	

Criteria	Standard	Performance Measure			Comment
		Nitrogen	1500	2000	significant off-site impact on the biophysical environment.
		Cr (6+)	0.05	0.2	
		TSS		50	
		pH		6.2 – 9.5	
		Temperature		43°C	
		Volume		4500kL/day	
		Nitrogen Mass Discharge		170tpa	
Production Limits	Production not to exceed prescribed levels.	Ammonia – 385ktpa Nitric Acid – 605ktpa Ammonium Nitrate – 750ktpa			Requirement incorporated into design. Production during the 2024 AEMR reporting period was as follows: Ammonia – 275 ktpa Nitric Acid – 306 ktpa Ammonium Nitrate – 389 ktpa

To ensure that environmental performance standards are appropriately integrated into the new plant design and associated construction activities, a Construction Environmental Management Plan (CEMP) was developed and approved for use by DPHI in 2011. The site CEMP template has been updated to reflect the additional requirements outlined in Condition 49A of the development consent. Environmental control measures addressed in the CEMP relate to air quality, water quality, contaminated soil and acid sulphate soil, waste management, traffic, heritage and erosion and sediment control. Project specific CEMP's are developed to support construction work associated with approved modifications to the development consent

6 PROJECT STATUS

6.1 PROJECT PROGRESS REVIEW

Orica has been undertaking the works associated with consent SSD08_129 in a number of construction phases. This approach has been adopted to ensure that construction works have minimal impact on the site's existing operations, and that if required upgraded ammonium nitrate product storage and loadout facilities are completed prior to the construction of the new nitric acid and ammonium nitrate plants and that market demand is accommodated in the construction timing. Project construction phases are as follows noting that in some cases construction of a Phase has not commenced (as noted in the Staging Plan shown in Figure 3) :

- *Phase 1:* Ammonia Plant Uprate: including improvement works designed to increase production capacity of the existing ammonia plant from 295 ktpa to 385 ktpa. This phase has been completed, with the uprated Ammonia Plant commencing operation on the 28 February 2012.

- *Phase 2:* Upgrade and improvement works to the site's supporting infrastructure: including the construction and upgrade of the site's ammonium nitrate storage facilities and product load out infrastructure. Construction works associated with this phase have been designed to reduce the site's risk profile associated with the storage of ammonium nitrate and the transportation and use of ammonia onsite.
- *Phase 3:* Ammonium nitrate expansion: construction works designed to increase ammonium nitrate production capability of the site from 500ktpa to 750ktpa through the construction of a new nitric acid and ammonium nitrate plant.
- *Phase 4:* The construction and operation of three ammonia flares (MOD 2). The flares were one component of the broader Ammonia Management Improvement (AMI) program that has now been completed at the site to reduce the risk associated with handling ammonia.
- *Phase 5:* The construction of a Nitric Acid tank. Orica has approval to change the proposed location and increase the storage capacity of a previously approved nitric acid tank (MOD 2).
- *Phase 6:* Construction and Operation of the Projects Boiler. Orica completed a consistency review to support a change to the expansion project boiler site location in 2018/2019. The Projects Boiler was completed in 2019 and commissioned on 12 December 2019.
- *Phase 7:* Construction and Operation of the Nitrates Effluent Tank. The Nitrates Effluent Tank was completed and commissioned in July 2023 (MOD4)
- *Phase 8:* Construction and Operation of the Prill Tower scrubber. The Prill Tower scrubber was completed and commissioned in September 2024 (MOD5)
- *Phase 9:* Construction and Operation of the AN1 ANSOL Supply System. The AN1 ANSOL Supply System was completed and commissioned in August 2024 (MOD7)
- *Phase 10:* Construction and Operation of the 33kV electrical infrastructure upgrade is scheduled to commence in May 2025. (MOD8 pending)
- Orica's DPHI approved project Staging Plan is detailed in Table 3:

Table 3 – Project Staging Plan (December 2024)

Phase Stage		Description of Work	Sub-Stage	Approval Status	Estimated Construction Timing
Ammonia Plant Uprate					
1	1a	Ammonia Plant Expansion – Plant Air Compressor Building Construction of Plant Air Compressor building shell (compressor installed in Stage 1(b)).	Completed	Construction Complete and Operational	Completed
	1b	Ammonia Plant Expansion - Installation/Modification of Plant Installation of new equipment including new compressor, process vessels pipework and instruments in the Ammonia Plant.	Completed		
Proposed Trident Nitrates Expansion Project Construction Scheduling					
2	2a	OBL 1(a) – Nitrates Infrastructure & ANS Loadout Installation of new site infrastructure including the new site entrances, internal access roads, security and weighbridge facilities, ANS product storage and despatch facilities.	1. Internal access roads and minor civil works. 2. Site entrances, security offices and weighbridges. 3. Major civil works including piling and foundations. 4. New ANS storage vessel loading equipment	Approval for Construction granted / construction yet to commence.	Yet to be determined
	2b	OBL 1(b) – Nitrates Despatch & Support Infrastructure Construction of new AN Bag store, AN Despatch facilities and amenities, demolition of existing AN Bag store and despatch, construction of new AN Bulk Store, modification to existing AN bulk store, construction of WANS, construction of new control room and electrical infrastructure.		Approval to commence construction not yet granted by DoPI.	Yet to be determined

Phase Stage		Description of Work	Sub-Stage	Approval Status	Estimated Construction Timing
3	3a	NAP4 – Nitric Acid & AN Solution plants and Support Infrastructure Construction of the NAP4/ ANS Plant and tie-ins Construction of Nitrates support infrastructure including new Nitric Acid Storage, Ammonia Storage, Boiler, Cooling Tower, Demin Plant expansion Instrument Air upgrades, new Ammonia pumps, pipebridges & transfer lines.		Approval to commence construction not yet granted by DoPI.	Yet to be determined
	3b	AN3 – AN Prill Plant Construction of ANP3 Dry Section plant and tie-ins		Approval to commence construction not yet granted by DoPI.	Yet to be determined
Ammonia Management Improvement Program					
4	4	Ammonia Flares Construction and operation of three ammonia flares.	1. Nitrates Plant Flare 2. Ammonia Storage Flare 3. Ammonia Plant Flare	Approval to commence construction of the flares was granted on 23 June 2015. Ammonia Flares The nitrates flare became operational during February 2016 The ammonia storage flare became operational during April 2016. The ammonia plant flare was commissioned during April 2017	Completed

Phase Stage		Description of Work	Sub-Stage	Approval Status	Estimated Construction Timing
Nitric Acid Tank					
5	5	Nitric Acid Tank Construction and Operation of a nitric acid tank and associated scrubber, capable of exporting and importing nitric acid via the site's nitric acid wharf pipeline.		Approval to commence construction not yet granted by DoPI.	Yet to be determined
Boiler					
6	6	Construction and operation of new Site Boiler Construction and Operation of a new site boiler (to replace the decommissioned original site boiler)		Approval to commence construction granted on 27 July 2015	Construction completed 12 December 2019
Nitrates Effluent Tank					
7	7	Construction and operation of new Nitrates Effluent Tank (MOD4) Construction and Operation of a new Nitrate Effluent Tank (to replace the Nitrates Effluent Pond)		Approval to commence construction granted on 13 May 2021	Construction completed July 2023
Prill Tower Scrubber					
8	8	Construction and operation of new Prill Tower Scrubber (MOD5) Construction and Operation of a Prill tower scrubber to remove particulate associated with the existing ANP1 Prill Tower		Approval to commence construction granted on 29 Oct 2021	Construction completed 5 September 2024

Phase Stage		Description of Work	Sub-Stage	Approval Status	Estimated Construction Timing
AN1 ANSOL supply line					
9	9	Construction and operation of new AN1 ANSOL supply line (MOD7) Construction and Operation of a new ANSOL supply line from the AN1 Plant to the existing ANSOL export tank (MOD7)		Approval to commence construction granted on 14 August 2023	Construction completed August 2024
Site 33 kV High Voltage supply upgrade					
10	10	Construction and operation of new site 33kV electrical supply infrastructure (MOD8 pending) Construction and Operation of a new 33kV electrical switchroom and associated supply infrastructure.		Development approval process in progress	Construction commencing May 2025
Ammonia Tank					
TBD	TBD	Construction and operation of new 30,000 tonne Ammonia Tank (MOD6)		SEARS issued. Development application yet to be made.	Yet to be determined

A summary of the Project works completed between 1 December 2023 and 30 November 2024 is detailed below.

6.1.1 PHASE 1: AMMONIA PLANT EXPANSION

Works that have been performed in the last 12 months associated with the uprate of the Ammonia Plant include:

- Stack emission testing of Reformer and Pre-Reformer monitoring points in accordance with the site's EPL.
- Annual compliance noise monitoring in compliance with the revised noise management plan.
- Regulatory reporting in accordance with the approvals Condition of Consent.

6.1.2 PHASE 2: OUTSIDE BOUNDARY LIMITS

No construction activities commenced in the previous 12 months associated with Phase 2 construction activities.

6.1.3 PHASE 3: NITRATES EXPANSION

No construction activities commenced in the previous 12 months associated with Phase 3 construction activities.

6.1.4 PHASE 4: AMMONIA MANAGEMENT IMPROVEMENT PROGRAM

The original liquid ammonia export pumps and associated piping at the 12,000-tonne ammonia storage tank were replaced in February 2020. This project was the final phase of the Ammonia Management Improvement (AMI) Program, which was implemented in stages over the previous seven years.

Detailed procedures, risk assessments and hazard studies were developed and reviewed by independent experts in preparation for the pump replacement. The relevant government agencies were briefed on the project in October 2019. The AMI project is now complete.

6.1.5 PHASE 5: NITRIC ACID TANK

No construction activities commenced in the previous 12 months associated with Phase 5 construction activities.

6.1.6 PHASE 6: EXPANSION PROJECT BOILER

Construction of the new Boiler was completed and commissioned on 12 December 2019. Orica completed stack emission testing to confirm environmental performance of the boiler combustion system (NO_x concentration) compared to that predicted in the project EA documentation upon commissioning of the expansion project boiler. This data was submitted to DPHI in the Project Stage Air Quality Verification Study (Condition 23).

6.1.7 PHASE 7: NITRATES EFFLUENT TANK

Construction commenced on 23 May 2022. Tank installation and tie ins/ancillaries were completed July 2023. Pond decommissioning was completed in September 2023.

6.1.8 PHASE 8: PRILL TOWER SCRUBBER

Construction commenced in November 2022 with completion of construction in September 2024.

6.1.9 PHASE 9: AN1 ANSOL SUPPLY SYSTEM

Construction commenced in September 2023 with completion of construction in August 2024.

6.1.10 PHASE 10: SITE 33KV ELECTRICAL SUPPLY INFRASTRUCTURE UPGRADE

Construction works expected to commence in May 2025 subject to development approval.

6.2 PLANNED PROJECT PROGRESS DURING 2023/2024

Market conditions have resulted in Stages 2, 3 and 5 being placed on hold.

Orica is still progressing with reporting requirements associated with Phase 1 as detailed in the project approval Condition of Consent.

Project works anticipated to be completed in the following twelve months include:

6.2.1 PHASE 1 AMMONIA PLANT UPRATE

- Environmental monitoring as outlined in the site's EPL.
- Annual noise monitoring in compliance with the updated project noise monitoring plan.
- Reporting requirements as detailed in the project's Development Consent

6.2.2 PHASE 2 - OUTSIDE BOUNDARY LIMITS (OBL)

No construction works associated with this phase are expected in the next 12 months.

6.2.3 PHASE 3 – NITRATES EXPANSION

No construction works associated with this phase are expected in the next 12 months.

6.2.4 PHASE 4 - AMMONIA MANAGEMENT IMPROVEMENT PROGRAM

This project's final phase of the Ammonia Management Improvement (AMI) Program was completed in the 2020 AEMR reporting period, which was implemented in stages over the previous seven years. No further works associated this phase are expected.

6.2.5 PHASE 5 - NITRIC ACID TANK

No construction works associated with this phase are expected in the next 12 months.

6.2.6 PHASE 6 - EXPANSION PROJECT BOILER

Completed. No further works associated with this phase are expected.

6.2.7 PHASE 7 - NITRATES EFFLUENT TANK

Complete. No further works associated with this phase are expected.

6.2.8 PHASE 8 - PRILL TOWER SCRUBBER

Complete. No further works associated with this phase are expected.

6.2.9 PHASE 9 – AN1 ANSOL SUPPLY SYSTEM

Complete. No further works associated with this phase are expected.

6.2.10 PHASE 10 – SITE 33KV ELECTRICAL INFRASTRUCTURE UPGRADE

Construction works are expected to commence in May 2025, subject to development approval.

7 ENVIRONMENTAL MONITORING AND COMPLAINTS SUMMARY

7.1 ENVIRONMENTAL MONITORING

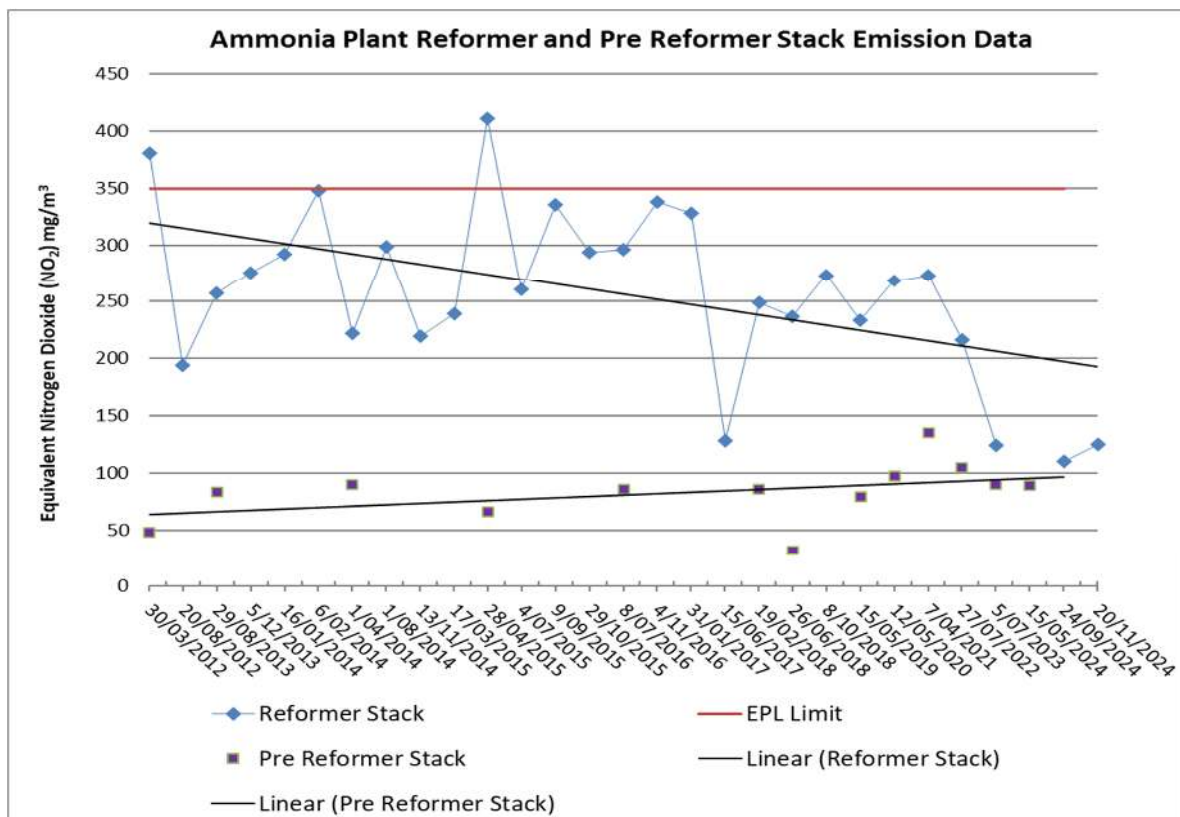
The Project Approval and EPL do not require environmental monitoring to be undertaken during the construction phase of the Project, however control measures specified in the project's CEMP have been implemented. The uprated Ammonia Plant has completed all required environmental monitoring in accordance with the site Environment Protection Licence (EPL 828).

7.1.1 AIR QUALITY

Orica is required to perform stack emission testing for both the Pre-Reformer and Reformer Stacks annually in accordance with the site's EPL anniversary date, 1 April each year.

Orica has been undertaking a review of NO_x emissions from the Reformer as part of a Pollution Reduction Study in the EPL (PRS52). Two stack tests have been performed during typical operating conditions (Ammonia Still ON and ammonia injection system ON) during the 2024 AEMR reporting period, both of which were within licence limits. The long-term NO_x emissions trends are stable to reducing for the Reformer, and stable to increasing for the Pre-Reformer.

Figure 2 – Stack emission testing for ammonia plant



Stack emission data collected during the 2024 AEMR reporting period complied with the site's Environment Protection Licence.

7.1.2 NOISE

In order to demonstrate compliance to noise criteria for new plant and equipment associated with the ammonia plant uprate, the following procedure was developed by Orica and detailed in the Project's Noise Management Plan (NMP). This plan was approved by DPHI in July 2011, with compliance to the project's noise criteria to be demonstrated through the:

- Update of the site's noise model (Table 4) following the commencement of operation of the Project to predict the noise contribution for expansion project new plant and equipment in relation to identified reference monitoring locations. This process assisted identification of noise reduction opportunities.
- Undertake attended and unattended noise monitoring to evaluate changes in noise levels and identify trends in ambient noise levels.

Noise modelling detailed in the 2009 environmental assessment predicted that the noise contribution associated with the site expansion would satisfy the 10dB below pre-expansion predicted levels consent requirement. As the expansion project is being implemented in three phases, the noise model is updated following the commencement of operations for each project phase.

Table 4 – Noise compliance modelling results detailed in 2011 MOD1 report

Assessment Location	Predicted Sound Pressure Levels LAeq, 15min	
	Existing Plant	Uprated Plant
Assessment Location R1	50	37
Assessment Location R2	53	41
Assessment Location R3	51	39

The site's noise model was updated following the commencement of operations of the uprated ammonia plant representing the completion of Phase 1 construction activities. This model was updated using noise data collected from near field noise monitoring. Site noise modelling results confirmed that that noise level contribution associated with the uprated ammonia plant were less than 10dB below the predicted noise levels for the reference locations in Stockton and therefore did not increase existing noise levels (Table 5).

Table 5 – Revised compliance modelling results (quarter 1 testing)

Assessment Location	Predicted Sound Pressure Levels LAeq,15min (dBA)		
	Existing Plant	Post Ammonia Plant Uprate	Ammonia Plant contribution
Assessment Location R1	50	50	20
Assessment Location R2	53	52	22
Assessment Location R3	51	50	21

Attended and unattended noise monitoring was also undertaken at six reference locations to establish noise trends for the entire site, consistent with the process previously undertaken in 2011. Noise monitoring reference points R4, R5 and R6 have predominately been utilised to establish Orica's contribution to surrounding noise levels. Monitoring Location R6 was relocated in 2014 due to access to the location being restricted by new tenancy. The location of each noise monitoring point is detailed in **Figure 3**.



Figure 3 – Noise Monitoring Locations

Whilst it is difficult to directly compare current noise data against historical trends due to variability in the meteorological conditions under which the data was collected, attended and unattended monitoring can be useful in gaining an increased understanding of the individual noise sources that contribute to the overall noise profile of the site. Noise monitoring was undertaken on a quarterly basis during the first 12 months of the ammonia plant being upgraded (2013) and annually thereafter.

Unattended and attended measurements were conducted during June 2024 to assess noise from the Orica site and ambient noise trends. Unattended noise monitoring results are detailed in Figure 4.

Following the completion of both attended and unattended monitoring, the data was evaluated against the baseline 2012 data, with median noise levels found to be consistent with the 2012 median range as detailed in Table 6

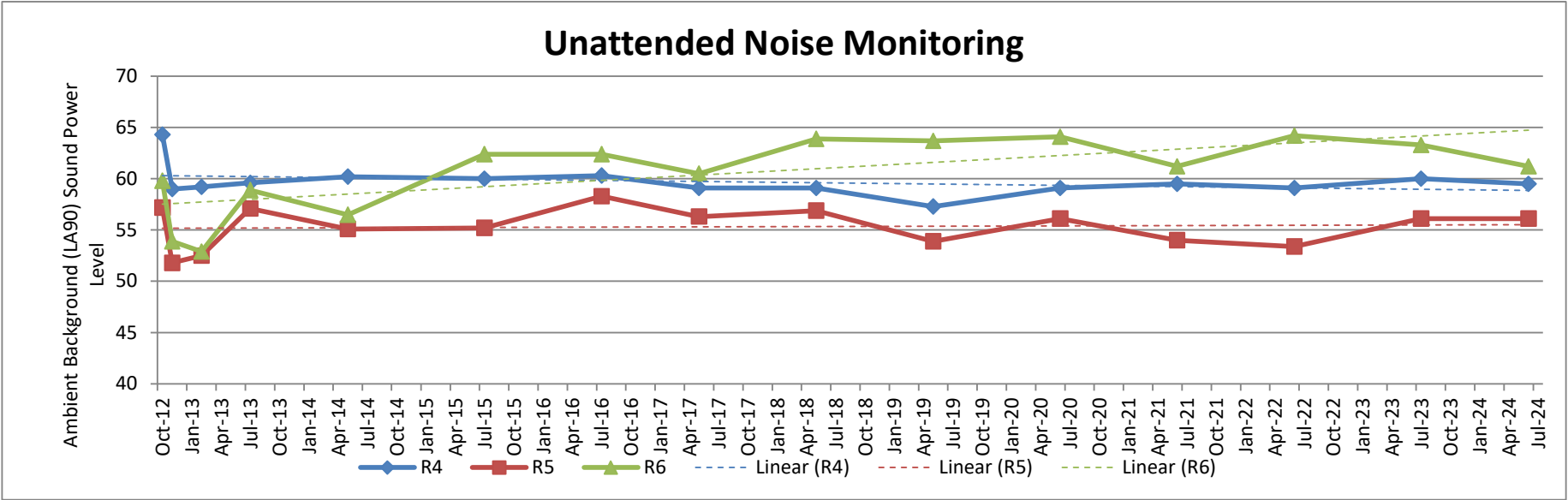


Figure 4 – Unattended noise results for Kooragang Island

Table 6: Comparison of baseline and attended and unattended monitoring results

Reference Measurement Location	Ambient Background RBL's dBA													
	Baseline Levels (2012)		Measured Levels 2012/2013	Measured Levels 2013/2014	Measured Levels 2014/2015	Measured Levels 2015/2016	Measured Levels 2016/2017	Measured Levels 2017/2018	Measured Levels 2018/2019	Measured Levels 2019/2020	Measured Levels 2020/2021	Measured Levels 2021/2022	Measured Levels 2022/2023	Measured Levels 2023/2024
	Median Range	Median	Median	Median	Median	Median	Median	Median	Median	Median	Median	Median	Median	Median
R4 - Roadside (South)	61.2 - 62.9	62	59.6	61.5	59.7	60.2	60.1	59.6	59.4	59.2	59.4	59.2	60.0	59.4
R5 - Riverside (Central)	55.8 - 58.2	57	55.4	55.0	54.9	55.5	55.9	55.6	55.9	56.0	55.8	55.4	56.1	55.8
R6 - Riverside (North)	58.2 - 60.6	59.8	57.7	60.0	62.8	62.5	62.2	62.5	62.6	62.9	62.7	64.2	63.3	62.9

Observations noted during attended measurement identified noise from the Ammonia Plant low frequency noise, NAP1 steam venting, general operational noise NAP and AN plants, and intermittent NAP galley steam pipe hammer.

Modelling undertaken utilising the unattended noise monitoring data demonstrated that noise contributions from the site satisfied the project noise criteria established in 2012. Attended night audits confirmed that Orica related maximum (L_{Amax}) noise levels were not observed to cause exceedances greater than 5dBA above the measured L_{Aeq} levels at any of the reference monitoring locations.

A copy of the 2024 Annual Noise Audit report is appended to the AEMR as Attachment A and is also available on the [Orica KI website](#).

7.1.3 WATER MANAGEMENT

Process effluent generated from the site's ammonia plant, three nitric acid plants and two ammonium nitrate plants is discharged to the north arm of the Hunter River via an effluent pipeline. An effluent monitoring station, located on the western bank of the north arm of the Hunter River, continually monitors effluent water quality in compliance with the requirements detailed in the site's Environment Protection Licence No. 828. Although the ammonia plant is one of several effluent sources onsite, no additional effluent sources are generated by the uprate of the ammonia plant. A summary of effluent monitoring results is detailed in Table 7 for completeness.

Table 7 – 2023/2024 EPL Annual Return Effluent Monitoring summary[#]

Pollutant	Units of Measure	Monitoring Frequency Required by Licence	Min. Value	Max. Value	90 percentile Licence Limit	100 percentile Licence Limit	Exceedence? (Yes/No)
Arsenic	mg/L	Daily	<0.01	0.022	-	0.05	No
Chromium (hexavalent)	mg/L	Daily	<0.001	0.036	0.05	0.2	No
Nitrogen (Total)	mg/L	Daily	36	695	1500	2000	No
Oil and Grease	mg/L	Twice per Week	<1.6	1.7	-	10	No
pH	pH	Continuous	6.4	9.3	-	6.2-9.5	No
Temperature	Degrees Celsius	Continuous	19.9	44.3	-	43	Yes
TSS	mg/L	Daily	2	27	-	50	No
Zinc	mg/L	Daily	<0.005	2.43	-	5	No
Flow	kL/day	Daily	1425	3639	-	4500	No

[#] EPL annual reporting period 1 April 2023 to 30 March 2024

Effluent quality and volumes have been generally consistent with previous years. The temperature exceedance was short in duration and had no significant off-site impact on the biophysical environment.

8 COMMUNITY

8.1 COMMUNITY ENGAGEMENT ACTIVITIES

Orica Kooragang Island is committed to effective and targeted stakeholder engagement by ensuring that the community is informed during each stage of the Project. To do so, the site undertakes the following activities.

- The production and distribution of four community newsletters per year, which are delivered to residents in the neighboring suburbs of Stockton, Carrington, Tighes Hill, Mayfield East, Fern Bay and Maryville;
- Regular (3-monthly) Community Reference Group (CRG) meetings, a number of which feature independent guest speakers to talk about specific matters;
- Regular site tours for the general community and special interest groups;
- Annual emergency response briefings with industrial neighbours; and
- Regular briefings with EPA and SafeWork.

8.2 COMMUNITY INVESTMENT

Orica Kooragang Island aims to have a positive contribution to the community by supporting local initiatives and events. Through the Orica Kooragang Island Community Investment Program, we support a range of projects that promote education and lifelong learning, improve and protect the environment, and build strong communities. In the 2024 reporting period, Orica Kooragang Island provided approximately \$308,000 in community grants to support 44 beneficiaries including:

- Local Sporting Clubs
- Local schools
- Got Your Back Sista
- Curious Legends
- Spiritual Waterways
- Awabakal
- Hunter Region Botanic Gardens
- Friends of the School Master's House
- Harry's House
- Hunter Homeless Connect
- Soul Hub
- Newcastle All Blacks
- Variety the Children's Charity
- Nova for Women and Children

8.3 COMMUNITY COMPLAINTS

Information on how the community can contact Orica to discuss the Project or make a complaint in relation to site activities is provided in community newsletters, which are distributed to adjacent suburbs including Stockton, Fern Bay, Carrington, and areas of Mayfield, Maryville and Tighes Hill, via the Orica Kooragang Island website (www.orica.com/kooragang), the White pages, a community calendar which is distributed to Stockton and Fern Bay and in periodic advertorials run in the local print media.

All complaints received by Orica are documented in the site's incident reporting system (Enablon). All complaints are investigated to establish the root cause of the concern and determine whether the complaint is justified.

During the 2024 AEMR reporting period 7 complaints were received relating to the Project. A summary of the complaints can be found in the following table (Table 8). More detail in relation to the complaints can be found in Table 10B.

Table 8 – Community complaints (note that justified and unjustified complaints are included)

Year	Total	Concern raised in complaint/notification
2024	7	2 complaints in relation to noise during an Ammonia Plant shutdown 2 visible emissions complaints (related to one acid plant startup event) 3 visible emissions complaints (related to one acid plant startup)
2023	15	6 complaints in relation to noise during an Ammonia Plant shutdown where steam relief valves lifted 1 complaint in relation to noise during venting after backend trip of ammonia plant 1 odour complaint (unjustified based on wind direction) 7 visible emissions complaints (2 unjustified, 4 related to normal acid plant startups)
2022	6	2 complaints in relation to visible emissions or flames 1 complaint related to odour near Hunter River 1 complaint in relation to white substance on house and car 1 litter complaint in relation to delivery of community newsletter 1 noise complaint related to ammonia plant startups
2021	6	3 complaints relating to a fire on 102E vessel in the ammonia plant 1 complaint raised in relation to noise from Ammonia plant trip 1 complaint related to odour 1 complaint related to offsite staining of concrete
2020	5	1 complaint relating to ignition of vent stack in Ammonia Plant during plant start up 2 complaints related to odour received by an industrial neighbour and by a community member at Nobby's Break wall on separate occasions 1 complaint related to noise received from a resident of Stockton 1 complaint in relation to visible steam from cooling towers and site boiler
2019	1	1 complaint relating to noise received from nearby residents.

Year	Total	Concern raised in complaint/notification
2018	3	3 complaints related to odour received from residents of Stockton.
2017	5	3 complaints related to odour received from residents and industrial neighbours 2 complaints related to noise from Stockton residents
2016	14	10 complaints related to odour received from residents and industrial neighbours 3 complaints were received regarding noise 1 complaint regarding ignition of ammonia plant vent
2015	8	6 complaints related to odour received from residents and industrial neighbours 2 complaints related to noise generated from steam venting
2014	10	7 complaints were received relating to ammonia odour 1 complaint received regarding noise from the Ammonia Plant 2 complaints relating to ignition of vent stack in Ammonia Plant during plant startup.
2013	7	6 complaints relating to noise 1 complaint relating to ammonia odour as a result of an incident in the Ammonia Plant
2012	27	18 related to ignition of vent stacks during Ammonia Plant restart 9 complaints relating to noise

9 AN1 PRILL TOWER EMISSION REDUCTION INVESTIGATIONS

9.1 PARTICULATE MINIMISATION PROGRAM

Condition 27 of the Project Approval requires:

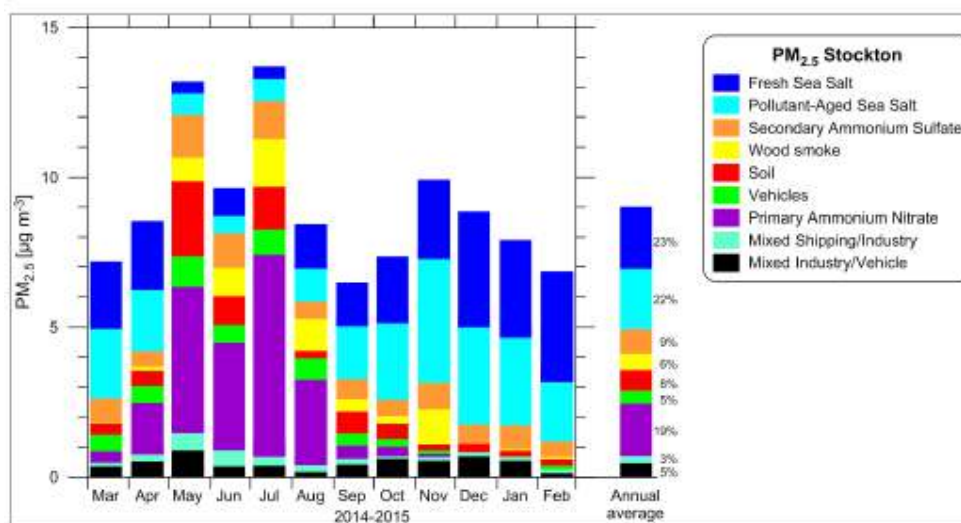
The Proponent shall investigate and report on the progress to reduce PM10 emissions from the existing Prill Tower on the Ammonium Nitrate Plant No. 1. The report shall:

- (a) *be provided annually, and can be reported through the Annual Environmental Management Report required by condition 50; and*
- (b) *Provide an update on the timeframe for the implementation of emission controls.*

9.1.1 EPA PARTICLE CHARACTERISATION STUDY

The Lower Hunter Particle Characterisation Study (LHPCS) was initiated in 2013 by the NSW EPA in response to community concerns regarding the health effects of particle pollution in the community. The project focused on the composition and likely sources of airborne PM 2.5 particles.

The study utilised monitoring data from existing monitoring stations, with the closest station to Orica's Kooragang Island facility located 700m to the south-east of the site. Composition analysis performed on PM2.5 samples collected from the Stockton monitoring station identified that ammonium nitrate contributed to 19% of the annual average and up to 40% of the mass during May to July, corresponding to predominately north-westerly winds. Orica's Kooragang Island Ammonium Nitrate Prill Tower was cited in the report as being a likely source of the elevated ammonium nitrate concentrations monitored at the Stockton monitoring station.



9.1.2 PM2.5 PARTICLE CHARACTERISATION STUDY

In response to the findings of the Lower Hunter Particle Characterisation Study Orica entered into a Pollution Reduction Program (PRP46) with the following requirements:

U3.1 – The licensee must fund the analysis of the ammonium and nitrate component of samples collected at the Stockton Air Quality Monitoring Station as part of the ANSTO Aerosol Sampling Program (ASP) PM2.5 during the period April to September 2015 and April to September 2016.

Within one month of receiving the results the licensee must submit them to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au.

U3.2 – The licensee will undertake an investigation to determine the contribution of ammonium nitrate particles with a diameter of 2.5µm or less (PM2.5) discharged from sources located at the site to total PM2.5 concentrations at the Stockton Air Quality Monitoring Station.

A report detailing this investigation and its findings must be submitted to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au.

Date for completion: 28 February 2018

U3.3 - The licensee must undertake a review that identifies feasible options to reduce PM2.5 ammonium nitrate particle emissions from sources identified as being significant as a result of the investigation completed in U3.2.

A report detailing the outcomes of the review must be submitted to the EPA's Regional Manager – Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au.

Date for completion: 28 February 2018

A review of feasible technologies for reducing PM2.5 emissions from the site's Prill Tower was completed and a report submitted to the EPA. These technologies varied from simple dry filtration units, to more complex wet scrubbing systems and less conventional technologies such as electrostatic precipitation. The review concluded that irrigated fibre-bed scrubbing technology was the most suitable technology to reduce Prill Tower Emissions.

Following the completion of PRP 46, Orica committed to evaluating the feasibility of installing irrigated fibre-bed scrubbing technology into the existing Prill Tower, through the completion of a further pollution reduction program *PRP 47 - Feasibility Assessment of Irrigated Fibre-Bed Scrubbing Technology to Reduce PM2.5 Emissions from the Prill Tower* (EPL 828 August 2020 variation) which was completed and submitted in December 2019.

As part of the EPL 828 variation dated August 2020, a further pollution reduction program; *PRP 50 - Installation of new Pollution Controls* was added to the license. Details of PRP 50 are as follows (from EPL 828);

U3.1 Background

The Lower Hunter Particle Characterisation Study (2015) found that a portion of the PM2.5 detected at the Stockton ambient air quality monitoring station was composed of primary ammonium nitrate. Primary ammonium nitrate was subsequently found to make up about 40 % of the PM2.5 detected at the Stockton ambient air monitoring station in winter; a time when the monitor is often downwind of the Prill Tower.

The licensee has completed Pollution Reduction Program (PRP) 46 and PRP 47, which were investigations into feasible options to reduce PM2.5 emissions from the Prill Tower. The licensee has identified that irrigated fibrebed scrubber technology is an appropriate pollution control for the Prill Tower air emissions. This PRP is the next step, being formalisation of the installation of new pollution controls to address PM2.5 emissions from the Prill Tower.

U3.2 Deliverables

U2.2 The licensee must install an irrigated fibrebed scrubber at the Prill Tower (Point 16) to minimise PM2.5 ammonium nitrate emissions from the premises. The licensee must carry out the project as follows:

- a) By 1 February 2021, the licensee must complete all geotechnical and structural engineering investigations associated with the current Prill Tower (including but not limited to intrusive structural investigations of the Prill Tower foundations) and prepare a stakeholder engagement and a regulatory approvals plan for the project – COMPLETED*
- b) By 1 October 2021, the licensee must complete all necessary final engineering designs for the project to allow for the procurement tendering process to commence for long lead time items*
- c) By 1 April 2022, the licensee must finalise orders for all long lead-time items for the project*
- d) By 30 September 2023, the licensee must complete all necessary pre-works for the project (including earthworks, civil, electrical, structural and mechanical works) and receive the scrubber at the premises;*
- e) By 30 September 2024, the licensee must achieve practical completion of the project;*
- f) By 30 November 2024, the licensee must achieve final completion of the project..*

Note: This PRP has been added to the licence during the COVID-19 pandemic in mid-2020. COVID has resulted in delays, particularly for items that need to be imported from abroad. The EPA recognises that there might need to be some refinement to the above dates depending upon how the COVID pandemic plays out.

U3.3 The licensee must submit to the EPA's Director Metro North a progress report within sixty days of each of the dates given in the condition above. Each progress report must include, but need not be limited to:

- a) an overview of the project;*

- b) a description of the project activities and works completed during the period;
- c) a description of the project activities and works proposed for the next period;
- d) a summary of any significant deviation(s) from the engineering design or the milestones given in the condition above, along with their cause.

U3.4 The licensee must notify the EPA's Director Metro North within thirty days of becoming aware of any significant deviation from the engineering design or the milestones and their cause.

Progress reports for milestones 4, 5 and 6 (U2.2d, e and f) have been submitted to NSW EPA in accordance with EPL requirement and the scrubber commenced operation on 5 September 2024. Orica is undertaking emissions testing over the next 6 months as part of Special Condition E3 to assess performance and determine an appropriate ongoing monitoring regime, in addition to assessing appropriate options for community access to emissions performance data (PRS 53). PRP50 has now been closed out.

10 RECLAIMED WATER PROJECT

As detailed in Condition 37 of the Project Approval, Orica was required to investigate the feasibility of receiving recycled water from Hunter Water Corporation's recycled water scheme. The site commenced receiving recycled water on 28 November 2014. The water is used in the Ammonia Plant Cooling Tower, Ammonia Storage Cooling Tower, Demineralised Water Treatment Plant and No. 1, 2 and 3 Nitric Acid Plant Cooling Towers. A breakdown of potable water usage compared with recycled water usage is detailed in Figure 5.

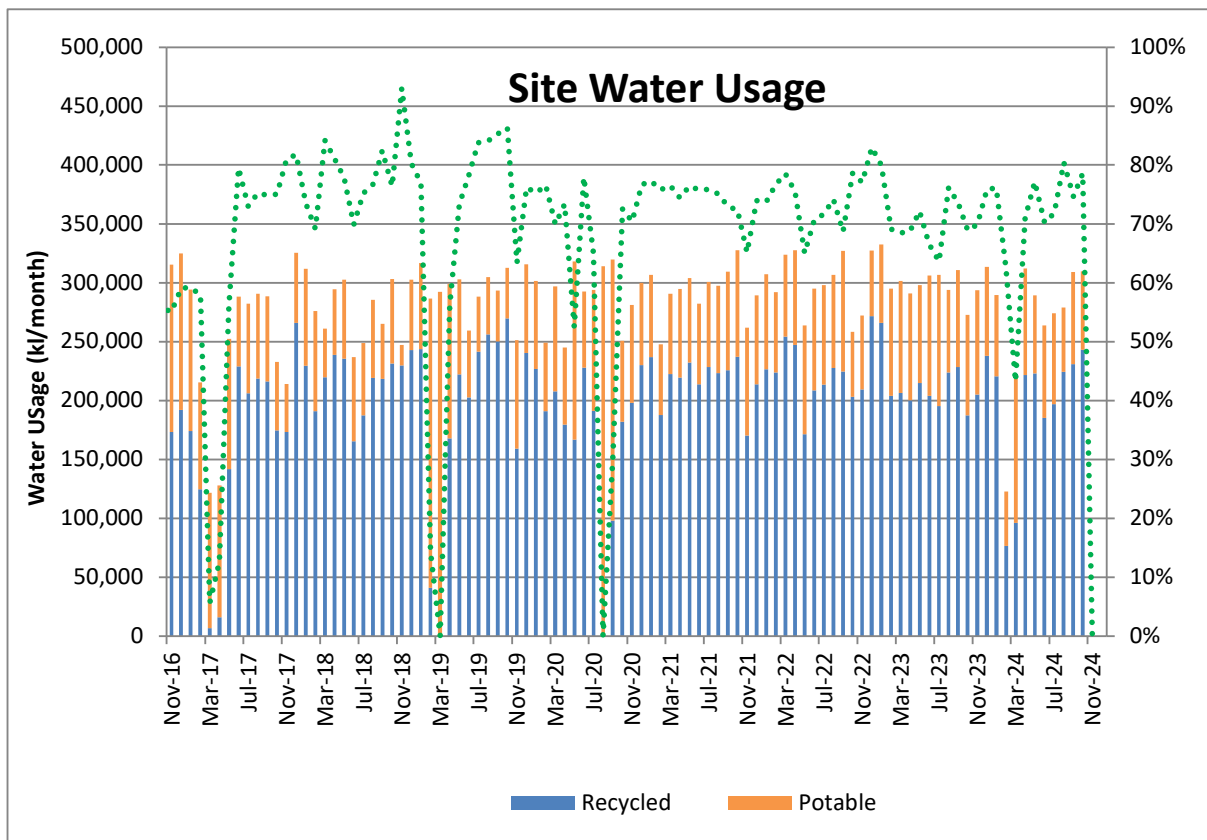


Figure 5 Potable water and recycled water usage comparison

Recycled water continued during the 2024 AEMR period, with recycled water contributing approximately 75% of water consumed at the site when supply was available. The Ammonia Storage cooling system was transitioned to recycled water in December 2023. This improvement project is estimated to have reduced potable water usage by a further 10-15%.

11 PROJECT APPROVAL COMPLIANCE

11.1 CONDITION COMPLIANCE

A review of the status of compliance with the Project Approval 08-0129 is detailed in the table below. Where there was not complete compliance with the condition, actions to address the issues are detailed. Any non-compliance identified in Table 10, have been identified in accordance with the following risk level detailed in below.

Table 9 – Non-compliance risk level ranking

Risk Level	Colour Code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: - potential for serious environmental consequences, but is unlikely to occur - potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: - potential for moderate environmental consequences, but is unlikely to occur - potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where non-compliance does not result in any risk of environmental harm (eg submitting a report to government later than required under an approval condition)

Table 10A Summary of Compliance with Project Approvals during 2024 AEMR Reporting Period

Issue	Condition	Requirement	Compliance Status	Comment
General Responsibilities	1	Implement all reasonable and feasible measures to prevent pollution and minimise harm to the environment.	Compliant	Management plans and project management activities are in place to ensure that environmental harm during construction and operational activities is minimised.
	2	Project to be carried out in accordance with the EA, Statement of Commitments, Project Approval and Submission Approval, Modification report and PHA.	Compliant	Project documentation has been updated to reflect development consent MOD1, MOD2 and MOD3, MOD4, MOD5 and MOD7 documentation.
	3	Management of inconsistencies between the various Project Approval documents.	Compliant	No issues were identified during the period.
	4	Comply with the requirements of the Secretary	Compliant	No issues were identified during the period.
	5	Production capacity limits for ammonia, nitric acid and ammonium nitrate.	Compliant	Ammonia – 275 ktpa Nitric Acid – 306 ktpa Ammonium Nitrate – 389 ktpa
	6	Management of Project Approval conditions in the event that there are delays to the stages of the project.	Compliant	No construction works were undertaken in relation to Phase 2, 3 and 5 of the expansion construction program. Regulatory reporting associated with the uprated ammonia plant (Phase 1) has continued in accordance with the conditions of the project approval.
	7(a) 7(b)	The project shall be carried out generally in accordance with the approved Staging Plan	Compliant	A revised Staging Plan was submitted to DPHI in the 2024 AEMR reporting period incorporating MOD7. Updated staging plan (December 2024) included in this AEMR.
	7 (e)	Submission of plans on a progressive basis.	Compliant	Orica has submitted plans on a progressive basis following discussions with the DPHI. A revised Staging Plan outlining the

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
				progressive submission of plans is submitted annually to DPHI in the AEMR as required under the consent.
	7(f)	Minor design Variations	Compliant	No minor design variations were sought during the 2024 AEMR period. DPHI confirmed the upgrade of the existing NOx abatement systems on the NAPs could proceed without planning approval or post approval documentation on 29 October 2021.
	8	Buildings and structures to be constructed in accordance with the requirements of the Building Code of Australia.	Compliant	Construction of the NAP1 Stack Replacement (as a minor design variation under Condition 7F) was completed during the 2022 AEMR reporting period and has been constructed in accordance with the relevant Codes and Standards.
	9	The Proponent is required to repair any public infrastructure damaged as a result of the Project.	Compliant	No construction works requiring the use of public roads were undertaken during the 2024 AEMR reporting period.
	10	Undertaking of a dilapidation report prior to the commencement of construction. The report is to be undertaken in consultation with NPC and submitted to DPHI.	Compliant	No updates to the dilapidation report were required during the 2024 AEMR reporting period.
	11	Obtain approval from service providers prior to commencement of utility construction activities	Compliant	Recycled water was connected to the site in cooperation with Hunter Water Corporation in 2014. No additional utilities were connected to the site during the 2024 AEMR reporting period. Orica is consulting with Ausgrid to obtain the necessary approvals as part of the design phase of the 33kV electricity infrastructure upgrade (MOD8).
	12	Ensure all equipment is maintained and operated in a proper and efficient manner.	Compliant	Maintenance and training activities associated with SSD 08_0129 as modified have been incorporated into routine plant activities.
	13	Section 94 contribution to NCC.	Compliant.	Section 94 contribution was submitted to NCC in September 2010. No further contributions were determined to be required for MOD4 and MOD5 given their nature. The applicability of a development contribution levy was contested for MOD7 and the

Issue	Condition	Requirement	Compliance Status	Comment
				outcome was determined in Orica KI's favour by DPHI. The same position has been taken in the modification application the 33kV electricity infrastructure upgrade (MOD8).
Hazard Management	14	Undertake the following studies and submit to DPHI Secretary for approval:		
	a)	• Fire Safety Study	Compliant	Orica elected to update the FSS in June 2019 and submitted to DPHI as part of Phase 6 Pre-Start Up Compliance Report under condition 16. No FSS updates occurred during the 2024 AEMR period.
	b)	• HAZOP	Compliant	HAZOP reports for MOD5 (Prill Tower Scrubber) and MOD7 (ANSOL supply system) were submitted to DPHI during the 2024 AEMR reporting period.
	c)	• Final Hazard Analysis	Compliant	No updated FHA's were submitted during the 2024 AEMR period however review letters were supplied outlining why the FHA did not require update for MOD5 (Prill Tower Scrubber) and MOD7 (ANSOL supply system).
	d)	• Construction Safety Study	Compliant	CSS's for the relevant stages of MOD5 (Prill Tower Scrubber) and MOD7 (ANSOL supply system) were submitted to DPHI and approved during the 2024 AEMR reporting period.
	15	Undertake the following studies and submit to DPHI Secretary for approval: • Transport of Hazardous Materials Study	Compliant	The transport of hazardous materials study was not updated during the 2024 AEMR reporting period as MOD5 (Prill Tower Scrubber) and MOD 7 (ANSOL supply system) did not impact hazardous materials transport.
		• Emergency Plan	Compliant	General updates were made to the site's Emergency Plan and a copy supplied to DPHI on 2 August 2019. No updates of the Emergency Plan were made during the 2024 AEMR reporting period.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
		Safety Management System	Compliant	No changes to the site safety management system were made during the 2024 AEMR reporting period.
	16	Submission of Pre-Startup Compliance Report	Compliant	A Pre-Startup Compliance Report for MOD5 (Prill Tower Scrubber) and MOD7 (ANSOL supply system) were submitted during the 2024 AEMR reporting period.
	17	Submission of Post-Startup Compliance Report	Compliant	A Post-Startup Compliance Report was submitted for MOD5 (Prill Tower) and MOD7 (ANSOL supply system) during the 2024 AEMR reporting period.
	18	Submission of Risk Reduction Program to reduce risk to neighbouring land	Compliant	This Condition is deemed satisfied through the risk reduction measures detailed in the MOD1, MOD 2 and MOD3 PHA's.
	19	Undertake a Hazard Analysis of the site operations	Compliant	This report was not required to be submitted during the 2024 AEMR reporting period. A rationale for updates not being required was supplied for MOD5 (Prill Tower Scrubber) during the 2024 AEMR reporting period.
	20	Undertake a comprehensive Hazard Audit of the Project and submit a report to the DPHI Secretary	Compliant	A Hazard Audit report was submitted to DPHI on 14 November 2016. An action plan to address recommendations was also submitted on 14 December 2016. An update regarding the status of actions included in the plan is detailed in Section 12.1 The 3 yearly Hazard Audit was last completed in August 2022 and was submitted to DPHI during the 2022 AEMR reporting period.
Air Quality	21	Emission controls detailed in Section 7.8.1 of the Environmental Assessment are to be incorporated into the design.	Compliant	The Refrigeration Purge Gas Scrubber was commissioned in 2012 and is operating in accordance with the environmental assessment. Some still outages have occurred and are reported through the EPL Annual Return. Selective Non catalytic Reduction (SNCR - ammonia injection in the exit flue tunnels of the Reformer) was installed in 2021 to also reduce NOx emissions from the Reformer. Stack testing conducted to date indicates NOx emissions remain below licence limits when the

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
				Refrigeration Purge Gas Scrubber is unavailable and the SNCR system is operating.
	21 (a)	The site will operate the flares in a proper and efficient manner	Compliant	The ammonia plant, ammonia storage and nitrates flares were operational during the 2024 AEMR reporting period.
	22	Air emission monitoring required by the EPL is to be undertaken for the Project.	Compliant	Orica has undertaken stack testing during the 2024 AEMR reporting period.
	23	Undertake an Air Quality Verification Study	Compliant	Orica sought clarification from DPHI regarding the requirement for an Air Quality Verification Study to be completed relating to the site's three ammonia flares on 29 March 2018 which was viewed as not practical from a technical perspective. Orica did not receive a response and is operating under the assumption this conclusion is acceptable to DPHI. An AQVS for Phase 6 – Boiler was submitted in May 2021. No AQVS submission was required during the 2024 AEMR reporting period. An AQVS will be submitted for the Prill Tower Scrubber (MOD 5) in the 2025 AEMR reporting period)
	24	Implement reasonable and feasible actions to address exceedances identified in the Air Quality Verification Study or routine monitoring.	Compliant	No exceedances were identified in the previous Air Quality Verification Study or routine monitoring.
	25	Minimisation of dust generation from Project using reasonable and feasible means.	Compliant	Measures for the control of dust were included in the Construction Environmental Management Plan which was approved by DPHI in February 2010. The CEMP was not updated during the 2024 AEMR period. Project specific CEMP's were submitted for MOD4, 5 and 7 as part of pre-construction documentation during the 2023 AEMR reporting period.
	26	Trucks entering or leaving the Project site must have their loads covered and must not track dirt onto public roads	Compliant	Measures for the control of dust were included in the Construction Environmental Management Plan which was approved by DPHI in February 2010.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
	27	An annual report must be prepared detailing the progress of the project to reduce PM10 emission from the existing Prill Tower	Compliant.	A summary of the progress is detailed in this Annual Environmental Management Report. The Prill Tower Scrubber project (MOD5) addresses this issue and the scrubber became operational 5 September 2024.
	27 (a)	Air Quality Management Plan	N/A	An operational AQMP was submitted and approved by DPHI during the 2022 AEMR reporting period. Updates to include the Prill Tower Scrubber (MOD5) which became operational in September 2024 were submitted for approval in December 2024.
	27 (b)	Consult with IPL in regard to the Air Quality Risk Management Strategy	N/A	IPL expansion project has lapsed
	27 (c)	Consult with IPL in regard to the Air Quality Risk Management Strategy	N/A	IPL expansion project has lapsed
Greenhouse Gas Emissions	28	Emission reduction technologies to be implemented in accordance with EA commitment	Compliant	The following emission reduction technologies were included in the Ammonia Plant; a Pre-Reformer, a new compressor powered by a steam turbine and a larger motor generator (Item 28b) has been installed in the plant.
	29	Implementation of N ₂ O abatement technology on NAP1, NAP2 and NAP3.	Compliant	Secondary N ₂ O abatement technology was previously installed in the No. 2 and No 3 Nitric Acid Plants. While not a consent requirement, tertiary N ₂ O abatement was installed on NAP1 during the 2022 AEMR reporting period and on NAP2 and NAP3 during the 2023 AEMR reporting period.
Water Management	37	Water management Plan, including reporting on progress of investigations to receive recycled water from Hunter Water Corporations recycled water scheme.	Compliant	A Water Management Plan for Phase 1 was completed. Infrastructure associated with receiving recycled water has been installed and commissioned, with recycled water received at site from 28 November 2014. Recycled water continues to be used

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
				to the extent possible. Phase 7,8 and 9 of the Project do not materially impact site water use.
	40	The Project is to meet the requirements of the EPL in relation to stormwater and effluent discharge	Non-Compliant	The site's effluent and stormwater were monitored in accordance with the requirements of the EPL. One non-compliance relating to a temperature exceedance was recorded during the 2024 AEMR reporting period as discussed in Section 7.1.3.
	37	A Water Efficiency Plan is to be prepared and implemented to the satisfaction of the DPHI Secretary	Compliant	No amendments to the Project's water efficiency plans were completed in the 2024 AEMR reporting period. Phase 7, 8 and 9 of the Project do not materially impact site water use.
	41	Compliance with s120 of POEO	Compliant	There were no water pollution related incidents directly attributed to construction activities associated with the Project recorded during the 2024 AEMR reporting period.
	42	A Stormwater Management Plan is to be prepared and implemented	Compliant	No changes to the Project's approved stormwater plan were required during the 2024 AEMR reporting period. Phases 7, 8, 9 and 10 of the Project will utilise existing stormwater arrangements.
	43	Bunding design to meet Australian and DECCW requirements	Compliant	A bunding specification in accordance with the Australian standard has been implemented into the design of the plants. Orica continues to upgrade existing bunds in accordance with Special Condition detailed in the EPL.
Noise Management	30	Noise emissions from Project to be 10dB(A) below that of the existing operations.	Compliant	Annual noise monitoring was completed during the 2024 AEMR reporting period and was compliant. A copy of the full 2024 noise audit report is provided in Appendix A.
	31	Existing Operations Noise Verification Program to be developed and implemented to the satisfaction of the DPHI Secretary	Compliant	An updated noise management plan, including details of the Project's noise verification program, was submitted and approved by DPHI in July 2024.
	32	A Noise Management Plan is to be developed and implemented. The plan is to be updated annually.	Compliant	An updated noise management plan, including details of the Project's noise verification program was submitted and approved by the DPHI in July 2024.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment	
	32 (a)	Ports Precinct Noise Management	n/a	Study yet to commence.	
	33	Construction hours for the Project are:		Compliant	Construction activities related to MOD 4, MOD5 and MOD7 were within these construction hours during the 2024 AEMR period.
		Monday – Friday	7am to 6pm		
		Saturday	8am to 1pm		
		Sunday and Public Holidays	Nil		
		Construction outside of these hours is permitted if inaudible at the nearest residences.			
		Operational hours for the Project are:		Compliant	The Project operated in accordance with the requirements.
All days		24 hours			
Land Management	38	Provide a Project Site Contamination Plan to the DPHI Secretary	Compliant	Phase 1 - Complete. Phase 2, 3 and 5 – no construction activities have commenced at this time. However, the revised CEMP for Phase 2 and 3, which includes measures for the management and identification of contamination, was submitted to DPHI on 05/11/2011. Phase 6 – N/A Phase 7, 8, 9 and 10 – No significant contamination in project areas	
	39	Prepare an Acid Sulphate Soil Management Plan	Compliant	Phase 1 - Complete. Phase 2, 3 and 5 – no construction activities have commenced at this time. However, the revised CEMP for Phase 2 and 3, which has measures for the management and identification of ASS, was submitted to DPHI on 05/11/2011. Phase 6 – N/A Phase 7, 8, 9 and 10 – Considered as part of project CEMP's	
	44	Prepare an Erosion and Sediment Control Plan	Compliant	Phase 1 - Complete.	

Issue	Condition	Requirement	Compliance Status	Comment
				Phase 2, 3 and 5 – no construction activities have commenced at this time. However, the revised CEMP for Phase 2 and 3, which has measures for erosion and sediment control, was submitted to DPHI on 05/11/2011. Phase 6 – N/A Phase 7, 8, 9 and 10 – Considered as part of project CEMP's
Traffic Management	34	All roads, access points and parking to comply with the nominated Australian Standards	n/a during the period.	N/A
	35	Traffic associated with the Project must not impede traffic on Greenleaf Road and Heron Road	Compliant	Phase 1 - Complete. Phase 2, 3 and 5 – no construction activities have commenced at this time. However a revised Construction Traffic Management Plan for Phase 2 and 3, which includes measures for the management of traffic during construction, was submitted to DPHI on 05/11/2011. Phase 6 – N/A Phase 7, 8, 9 and 10 – Considered as part of project CEMP's
	36	A Construction Traffic Management Plan (CTMP) is to be submitted to the DPHI Secretary	Complaint	A CTMP for Phase 2 and 3, including measures for the management of traffic during construction has been submitted to DPHI (05/11/2011). No amendments were made to the plan during the 2023 AEMR reporting period. Phase 7, 8, 9 and 10 – Considered as part of project CEMP's
Visual	45	Prepare a Landscape Plan for the Project and submit to the DPHI Secretary	Compliant	A landscape plan has been submitted for the project.
	46	Lighting to comply with Australian Standards and avoid nuisance to surrounding land users and roadways.	n/a during the period.	Phase 1 – There was no additional external lighting installed by the project during the 2019 AEMR reporting period. Phase 6, 7, 8, 9 – The project has completed an assessment and the lighting is compliant with this requirement.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
Waste Management	37	Water management Plan, including reporting on progress of investigations to receive recycled water from Hunter Water Corporation's recycled water scheme.	Compliant	A Water Management Plan for Phase 1 has been completed. Infrastructure associated with receiving recycled water has been installed and commissioned with recycled water received at site on the 28 November 2014. The Reclaimed Water Management Plan has been reviewed and updated during the 2024 AEMR reporting period (December 2023).
	47	Waste to be classified in accordance with DECCW guidelines and disposed to approved premises	Compliant	All wastes disposed of from site are classified in accordance with the relevant EPA guidelines and disposed of via licensed waste facilities where relevant.
	48	Prepare and implement a Waste Management Plan which has been submitted to the DPHI Secretary	Compliant	A waste management plan for the uprated Ammonia Plant was submitted to the DPHI on 28 March 2013. Phase 7, 8, 9 and 10 – Considered as part of project CEMP's
Environmental Reporting and Auditing	49(a)	Construction Environmental Management Plan	Compliant	CEMP was reviewed during the 2024 AEMR reporting period.
	49(b)	Operational Environmental Management Plan	Compliant	Orica submitted an OEMP for the Project to DPHI for approval by 30 June 2020. Comments were received in August 2021 and the OEMP is now approved. An updated OEMP was submitted in November 2023 and approved in December 2023.
	50	Prepare an Annual Environmental Management Report and submit to the DPHI Secretary	Compliant	Submission of this report occurs annually
	51(a) and b)	The proponent shall notify the Secretary 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	Compliant	No incidents requiring notification to DPHI under this condition occurred during the 2024 AEMR reporting period.

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Issue	Condition	Requirement	Compliance Status	Comment
		associated with the facility immediately after the Proponent becomes aware of the incident.		
	51(c)	Flare activation reporting	Compliant	An annual flare activation report was submitted to DPHI during the 2024 AEMR period.
	52	An Independent Environmental Audit by a team of experts is to be undertaken in relation to the Project	Compliant	The independent environmental audit report was submitted to DPHI on 31 August 2023. Following discussions with DPHI an amended IEA was submitted in February 2024 and approved in April 2024. The next independent audit is scheduled for August 2026, and will include per audit consultation with DPHI in accordance with NSW Planning Independent Audit Post Approval Requirements (2020).
	53	The following information regarding the Project is to be included on the website: • Copy of all current statutory approvals • Copy of the current EMS and associated plans and programs • Copy of the last 5 years of Annual Reports • Copy of Independent Environmental Audit reports and responses to recommendations	Compliant	Copies of relevant information relating to the project continue to be included on the Kooragang Island website (www.orica.com/kooragang) subject to the limits on publication of post approval documents that contain sensitive design and risk information as noted in correspondence to DPHI in 2018 and confirmed via further correspondence in May 2023

Table 10B- Non-Compliance and community complaints details - 2024 AEMR Reporting Period (where relevant)

Event type	Condition	Description	Date	Corrective actions (where relevant)
Non compliance	40	Licence monitoring data recorded site effluent exceeding the temperature limit of 43 degrees celsius (on an hour block average basis) for a period of 4 hours between 10:30am and 1:30pm, with a peak temperature of 44.3 degrees C. The following sequences of events allowed the event to occur: 1) Effluent levels in the Site Effluent Pit were lowered to the point where TI7521 was no longer reading effluent temperature (ie. it was reading ambient air temperature). 2) Elevated temperature effluent (ie. >43 deg. C) was generated when effluent flows (blowdowns) from the Nitrates cooling systems were choked to facilitate pipe relining work being conducted near the boiler 3) Diversion control logic was held out by diversion reset logic being dependent on probe TI7521	8/3/2024	• Effluent diversion logic modified • New temperature transmitter installed to replace TI7536. • Low level alarm point on LI7524 (Effluent Pit Level) changed from 20% to 35% to ensure the temperature probe remains in the effluent.
Complaint type	Event Date	Event Description	Complainant	Corrective actions (where relevant)
Industrial Neighbour	29/7/2024	Noise - Ammonia plant was in the process of shutting down when it tripped and the medium pressure steam header pressure spiked resulting in RV103JA1/2 lifting generating noise.	Port of Newcastle Superintendent sent an email to their Orica Site Contact to discuss significant noise that was identified coming from the Orica site.	Capital project raised for noise attenuation of steam drains and vents around the 103JAT/BT steam supply pipe network.
Community (Stockton)			Security gatehouse received a complaint from Stockton resident regarding noise from the Ammonia Plant, and a steam release. No callback was requested.	

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Complaint type	Event Date	Event Description	Complainant	Corrective actions (where relevant)
Industrial Neighbour	19/2/2024	Failed startup on Nitric Acid Plant 1	Enquiry received from NCIG in relation to air emissions during failed startup on NAP1.	While acid plants generate visible NOx emissions during normal startup Acid plant stacks are designed for startup concentrations. Subsequent investigations suggested catalyst deactivation had contributed to the startup failing in this case. Catalyst was changed out and plant stability improved afterwards.
Community (via Regulator)			EPA advised they had received multiple complaints (number not specified) from the community in relation to the failed NAP1 restart attempts. Advised cause. No further detail requested.	
Industrial neighbour	20/1/2024	During NAP1 start up an elevated NOx discharge was reported to have been emitted from the NAP1 stack for an extended duration. Following investigation the increased duration of NOx emission is believed to be due to the cooling air bypass valve being closed during start up resulting in low flow through the economiser and low outlet temperature.	Complaint received by Security from Carrington Port Authority in relation to visible emissions associated with acid plant startup. No call back requested upon explanation of cause (ie. normal emissions associated with NAP startup).	Updates to operating procedures to limit how long the plant can work through troubleshooting before shutting down.
Community (Stockton)			Community complaint received from Stockton resident by Security in relation to visible emissions associated with plant startup. No call back requested upon explanation of cause.	
Community (via Regulator)			Community complaint received by Security from EPA in relation to visible emissions associated with plant startup based on call from community member	

11.2 SUMMARY OF SUBMITTED REPORTS

Details on the reports submitted in compliance with the Project Approval are detailed in the table below.

Table 11: Reporting Requirements and Status (December 2024)

✓ = Submitted to DPHI and Approved ✓ = Submitted to DPHI awaiting approval from DPHI or Other ✓ = Yet to be submitted to DPHI x = not submitted to DPHI NR = Update not required/triggered following review

Condition	Condition Requirement												Reports submitted to DPHI to date	
		Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9		Phase 10
		Ammonia Plant Uprate	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line		33kV upgrade (pending)
Reporting Requirements for Commencing Construction														
14 (a)	A Fire Safety Study	✓	✓	✓	✓	NR*	NR	✓^	NR	NR	NR	✓	1. FSS Kooragang Island Site (21 June 2011) 2. FSS Ammonia Uprate project (17 April 2010) 3. FSS Phase 2 OBL 1(a) (17 February 2012) 4. FSS Phase 2 OBL 1(b) (23 October 2012) 5. FSS Phase 3 Nitric Acid and Ammonium Nitrate plants (7 January 2013) 6. FSS reviewed and no updates required for MOD4 (noted in pre-construction documents submitted to DPHI on 8 March 2022 under condition 14) 7. FSS reviewed and no updates required for MOD5 (noted in pre-construction documents submitted to DPHI on 1 December 2022 under condition 14) 8. FSS reviewed and no updates required for MOD7 (noted in pre-construction documents submitted to DPHI on 14 August 2023 under condition 14) 9. FSS review to be undertaken for MOD8 * No formal requirement for FSS associated with Phase, however reduction in ammonia inventories to be updated to site FSS in next FSS revision ^ Boiler detailed in Site FSS. New location updated in Site FSS	

Condition	Condition Requirement	Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10	Reports submitted to DPHI to date
		Ammonia Plant Uprate	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line	33kV upgrade (pending)	
14 (b)	A Hazard and Operability Study	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	1. Ammonia Plant Uprate (22 March 2010) 2. Phase 2 OBL 1(a) (27 March 2012) 3. Phase 2 OBL 1(b) (30 October 2012) 4. Ammonium Nitrate Prill Plant (15 Nov 2012) 5. Nitric Acid 4 and Ammonium Nitrate Solution 3 (28 Oct 2012) 6. AMI HAZOP Report (dated 12 January 2015) 7. KI Steam HAZOP Report (dated 22 June 2015) 8. Nitrates Effluent Tank HAZOP (submitted 8 March 2022) 9. Prill Tower Scrubber HAZOP (submitted 1 December 2022) 10. ANSOL supply line HAZOP (submitted 14 August 2023) 11. 33kV upgrade HAZOP (to be submitted)
14 (c)	A Final Hazard Analysis	✓	✓		X		✓	X	NR	NR	NR	NR	NR	1. N/A
14 (d)	Construction Safety Study	✓	✓	✓	✓*		✓	X	✓	✓	✓	✓	✓	1. CSS for air compressor building (5 December 2009) 2. CSS for ammonia plant uprate (29 March 2010) 3. CSS OBL 1 (a) (3 December 2011) 4. CSS OBL 1(b) (1 August 2012) 5. CSS AMI Rev C (dated 2 April 2015) 6. CSS Boiler Rev B (dated 15 June 2015) 7. CSS Nitrates Effluent Tank (civil works) (submitted 8 March 2022) - Addendum 1 (Structural strengthening works) submitted 28 April 2023) - Addendum 2 (Structural, Mechanical and Piping Construction and Commissioning Works) – submitted 15 November 2023 8. CSS Prill Tower Scrubber (submitted 1 December 2022) 9. CSS ANSOL supply line (submitted 14 August 2023) 10. CSS 33kV upgrade (to be submitted)

* Civil construction activities associated with phase 3 considered in OBL 1(b) CSS only

Condition	Condition Requirement												Reports submitted to DPHI to date	
		Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9		Phase 10
		Ammonia Plant Upgrade	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line		33kV upgrade (pending)
36	Construction Traffic Management Plan	✓	✓				NR	NR	NR	NR^	NR^	NR^	NR^	1. Ammonium Nitrate Facility Upgrade CTMP (March 2010) 2. Ammonium Nitrate Facility Upgrade CTMP (September 2011) ^ Incorporated in Project CEMP
37	Water Efficiency Plan	✓	NR	NR		✓	NR	NR	NR	NR	NR	NR	NR	1. Water efficiency Plan Phase 1: Ammonia Plant Upgrade (April 2011) 2. Water efficiency Plan Phase 3: NAP4 and AN3 (May 2013)
38	Soil and Groundwater Contamination investigation	✓									NR	NR	NR	1. Soil Management Plan (December 2009) 2. Targeted soil and groundwater quality assessment (13 April 2012)
42	Stormwater Management Plan	✓									NR	NR	NR	1. Stormwater Nitrate Facility Upgrade Stormwater Management Plan Phase 1 (March 2010) 2. Stormwater Nitrate Facility Upgrade Stormwater Management Plan (November 2011)
45	Landscape plan	✓									NR	NR	NR	1. Landscape Plan (3 June 2011)
49A	Construction Environment Management Plan	✓								✓^	✓^	✓^	✓	1. Construction Environment Management Plan rev 2 dated September 2011 and updated periodically 2. Nitrates Effluent Tank Project CEMP (submitted 8 March 2022) 3. Prill Tower Scrubber Project CEMP (submitted 1 December 2022) 4. AN1 ANSOL supply line CEMP (submitted 14 August 2023) 5. 33kV upgrade CEMP (to be submitted) ^ Project specific CEMP prepared
Reporting Requirements for Commencing Commissioning														
15 (a)	Transport of Hazardous Materials Study	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	NR	1. Transport of hazardous materials study (22 April 2013) 2. Transport of hazardous materials study (June 2023) – updated in response to IEA recommendation, not a project phase
15 (b)	Emergency Plan	✓					✓*	X*	X*	NR#	✓*	✓*	✓	1. KI emergency response plan (11 April 2011) 2. KI emergency response plan (27 February 2023) – (updated generally, not in relation to a MOD)

Condition	Condition Requirement												Reports submitted to DPHI to date	
		Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9		Phase 10
		Ammonia Plant Uprate	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line		33kV upgrade (pending)
													1. *Update to approved ERP required for Phase 2. # General update supplied (not phase related) as part of Pre-Start up Compliance report for Phase 7 Nitrates Effluent Tank	
15 (c)	Safety Management System	✓					✓*	X*	X*	NR#	NR	NR	✓	1. Safety management system (December 2010) 2. #Safety management system (January 2023) *Update to approved SMS required for Phase # General update supplied (not phase related) as part of Pre-Start up Compliance report for Phase 7 Nitrates Effluent Tank
16	Pre-Startup Compliance Report	✓	X	X	X	X	✓	X	✓	✓	✓	✓	✓	1. Pre-Start up Compliance report Phase 1 Ammonia plant uprate (June 2011) 2. Pre-Start up Compliance report Phase 4 AMI (dated August 2015) 3. Pre-Start up Compliance report Phase 6 Boiler (dated August 2019) 4. Pre-Start up Compliance report Phase 7 Nitrates Effluent Tank (submitted 10 March 2023) 5. Pre-Start up Compliance report Phase 8 Prill Tower Scrubber (submitted and approved June 2024) 6. Pre-Start up Compliance report Phase 9 AN1 ANSOL supply line Project (submitted and approved June 2024) 7. Pre-Start up Compliance report Phase 10 33kV upgrade (to be submitted)
49B	Operational Environmental Management Plan	✓^									NR#	NR#	NR	1. Environmental Management Strategy (December 2009) ^ update to approved EMS completed to meet additional requirements incorporated into Development Consent following the completion of modification approval processes. # General updates to OEMP were submitted and approval received in August 2021. A further updated OEMP was submitted to DPHI for review and approval in November 2023.
Reporting Requirements for Commencing Operation														
														1. Post-Startup Compliance report Phase 1 Ammonia plant uprate (May 2012) 2. Post-Startup Compliance report Phase 6 Boiler (Dec 2019)

Condition	Condition Requirement	Reports submitted to DPHI to date												
		Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10	
		Ammonia Plant Uprate	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line	33kV upgrade (pending)	
17	Post-Startup Compliance Report	✓	X	X	X	X	X	X	✓	✓	✓	✓	✓	3. Post-Start up Compliance report Phase 7 Nitrates Effluent Tank (submitted January 2024) 4. Post-Start up Compliance report Phase 8 Prill Tower Scrubber (submitted September 2024) 5. Post-Start up Compliance report Phase 9 AN1 ANSOL supply line project (submitted September 2024) 6. Post-Start up Compliance report Phase 10 33kV upgrade (to be submitted)
18	Further risk reduction program	NR									NR	NR	NR	Not required given updated PHA is now compliant
19	Hazard Analysis Update	X									NR	NR	NR	3 years after the completion of the Project
20	Hazard Audit of the Project	✓											✓	1. Hazard Audit (2013) 2. Hazard Audit (2016) 3. Hazard Audit (2019) 4. Hazard Audit (2022) 5. Hazard Audit (2025) – to be scheduled * Three yearly schedule
23	Air quality verification study	✓	NR	NR	X	X	X	X	✓	NR	✓	NR	NR	1. Ammonia Plant uprate air verification study (27 February 2014) 2. Boiler Air Quality Verification study (May 2021) 3. Phase 8 Air Quality Verification study (to be submitted)
27A	Air Quality Management Plan	✓	X	X	X	X	X	X	X	NR	✓	NR	NR	1. Construction Air Quality Management Plan dated 15 January 2010 2. Operational Air Quality Management Plan (submitted to DPHI for review December 2021) 3. Operational Air Quality Management Plan (submitted to DPHI for review December 2024)
30	Noise Verification Program	✓											NR	Refer to Condition 32

Condition	Condition Requirement												Reports submitted to DPHI to date	
		Phase 1	Phase 2		Phase 3		Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9		Phase 10
		Ammonia Plant Upgrade	OBL 1(a)	OBL 1(b)	NAP4 & ANS	ANP	AMI	Nitric Acid Tank	Boiler	Nitrates Effluent Tank	Prill Tower Scrubber	AN1 ANSOL supply line		33kV upgrade (pending)
32	Noise Management Plan	✓											✓	1. Noise Management Plan (August 2011) 2. Annual Noise Audit (2010-current) * Initial quarterly noise testing compliance completed (2012-2013) * Noise and vibration management plan last reviewed and approved in July 2024 * Annual noise audit report prepared and submitted in Appendix A
45	Landscape plan	✓											NR	1. Landscape plan (3 June 2011)
48	Waste Management Plan	✓	✓				✓	NR	NR	NR^	NR^	NR^	NR^	1. Ammonia Plant waste management plan (February 2013) ^Part of project CEMP
50	Annual Environmental Management Report	✓											✓	1. Annual Environmental Management Report (2010-current)
52	Independent Environmental Audit	✓											✓	1. Independent Environmental audit dated (2014) 2. Independent Environmental audit dated (2017) 3. Independent Environmental audit dated (2020) 4. Independent Environmental Audit dated (2023) 5. Independent Environmental Audit dated (2026 – to be scheduled) * 3 yearly audit schedule.

12 STAGING PLAN REVIEW TRIGGERS

The Staging Plan shall be reviewed and if necessary updated:

- In accordance with requirements of Condition 7C
- As part of submission of the AEMR

12.1 INDEPENDENT HAZARD AUDIT ACTION PLAN

A summary of the status of Hazard Audit Actions is provided in Table 12 below.

Table 12 – Independent Hazard Audit Action Status

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
1. Observation: the available Safety policy at the time of the audit (Sept 2016) was signed in July 2013 by previous CEO (this is a corporate issue and can't be addressed at the KI site level). Noted that at the time of the audit there was a review of the SHECMS being undertaken at corporate level so the policy would most likely be updated as part of this). Check at next Hazard Audit (2019).	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Sherree Woodroffe	30/6/2019 Complete
2. Confirm lightning protection is adequate for AN bulk store and AN bag store	Orica has completed an audit of lightning protection in both the bag and bulk storage areas.	Paul Hastie	15/12/2017 Complete
3. Observation: The QRA (in FHA) appears to use the total inventory of the Bag Store (Table AV-5) in the consequence assessment. Given the storage configuration with 8m between stacks there may be scope to reduce this to a single stack basis in future revision of the QRA. Orica to review QRA AN bag store basis when QRA update is next required	Orica will ensure that this observation is considered when updating the site's QRA	Sherree Woodroffe	N/A
4. Observation: The wooden walkways between the disused building adjacent to the AN bulk store are the only identified combustible building materials in the vicinity of the Bulk Store. Whilst ignition and escalation are unlikely, removal is suggested which would eliminate all combustibles in the vicinity of the Bulk Store.	The wooden walkway has been removed.	Paul Hastie	30/6/2017 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
5. Confirm the design fire / suppression basis for the fire protection systems in the AN Bulk and Bag Stores to ensure they are "adequate", eg meet relevant codes or control measure adequacy tests adopted in MHF risk assessments.	Orica has completed a verification process to confirm that fire suppression systems in the bulk and bag store are adequate.	Yasmine Vosper	15/12/2017 Complete
6. Observation: It is not clear what "adequate" ventilation is for the AN storage buildings. It is suggested that this be clarified ie is it to meet relevant codes or control measure adequacy tests adopted in MHF risk assessments and whether provided systems achieve this	Orica has completed a ventilation assessment for both the bulk and bag stores.	Yasmine Vosper	15/12/2017 Complete
7. Develop implementation plan for improving HA compliance with gaps identifies in HA inspection activities (which were completed Dec 2015) and verify progress in next Hazard Audit (2019)	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Sherree Woodroffe	30/6/2019 Complete
8. Observation: (2013 Hazard Audit Rec 4) Fire pump test log results are available in electronic form but not in pump house. If hard copy local records are not preferred by Orica, it is suggested that information be provided in the Pump house as to where to find the records.	Fire pump test log now maintained at pumphouse.	Bruce Volkiene	30/6/2017 Complete
9. (2013 Hazard Audit Rec 7) Clarify the process for providing feedback on completion of a job completed under a WO, ie if there is an issue with completion of work confirm how is this captured and how any patterns are identified over time.	Orica has competed a review of the WO closeout procedure including an audit of WO's to ensure that they are completed appropriately.	Bruce Volkiene	15/12/2017 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
10. (2013 Hazard Audit Rec 14) The installed pressure / flow capability of the modified fire water system at the AN Bag store needs to be confirmed to ensure that it meets the required design basis. Confirmation the velocities in firewater piping do not exceed AS requirements is also required	Orica has completed a verification process to demonstrate that the AN Bag Store fire system upgrades have achieved the site's performance objective.	Paul Hastie	15/12/2017 Complete
11. Confirm that the separation distance between the H2 cylinders and the adjacent oxidising gas cylinders is adequate, for example meets requirements in AS 4332 <i>The storage and handling of gases in cylinders</i>	Orica will undertake an audit to confirm that the H2 cylinders located in plant areas are appropriately located and stored.	Steve Hessel	30/9/2017 Complete
12. Observation: Overall reduction in combustibles in vicinity of AN can only be achieved by removal of wooden pallets and potentially change in AN bag material. It is suggested that Orica ensure that the current project investigating use of non-combustible pallets / bags include a formal SFARP demonstration that supports the project decision (as required under MHF regulations) and also that project outcomes be checked in next Hazard Audit (2019)	Orica has completed building modifications to enable the use of pallets in the bag store to cease.	Paul Hastie	15/12/2017 Complete
13. Observation: Orica has previously had in place Technical Panels to provide advice to the sites on best practices for the various technologies (AN, ammonia). These are referred to in the SHEC MS and the BoS. If this structure is changed, KI will need to update process for seeking technical advice in various systems, for example Modifications. Check in next Hazard Audit (2019)	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Mick Gill	30/6/2019 Complete
14. Observation: The TWC system appears to be being phased out. It was unclear at time of the audit if all compliance information had been migrated to Enablon. Check in next Hazard Audit (2019).	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Sherree Woodroffe	30/6/2019 Complete

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
15. An overall risk profile for the KI site should be developed to allow identification of the highest site risks, and also used to show risk reduction over time or effect of removal of safeguards. From a hazard perspective this should cover risk with a safety consequence. (However it is noted that SHECMS requires that each site maintain a record of their current hazards in a Major Hazard Register, with Major Hazards definition covering Safety as well as Health, Environment, Community, Business)	Orica will consolidate the site's risk assessment processes to allow for the prioritisation of the site's risks to be developed. Action Taken: Orica is currently in the process of consolidating risk assessments that aim to enable the site to compare the risk contribution associated with each risk scenario.	Belinda Moss	Refer to Observation
16. Develop a system for managing actions arising from hazard studies and risk assessments that allows demonstration of progress to be shown. This should include: - prioritisation of the actions in a timely manner as they arise out of studies such as periodic hazard study 2 and 3. (Priority could be based on addressing non-compliance with regulations, magnitude of potential risk reduction / effectiveness, ease of installation, cost etc similar to the SFARP process for MHF) - implementation schedule and associated resources that suit allocated priority. A KPI could also be developed around completion rate or overdue high priority actions.	Orica has developed a procedure to prioritise actions in HAZOPS and risk assessment processes to ensure that resources are effectively deployed to the highest priorities.	Yasmine Vosper	30/9/2017 Complete
17. Observation: The Nitrates area operating procedures include specific guidance and instructions for responding to abnormal process situations, the NH3 plant doesn't although there is some coverage in scenario based training. Orica to review whether the NH3 plant should adopt a similar approach to developing	Orica will develop a procedure to include specific guidance and instructions for responding to abnormal process situations in the Ammonia Plant, consistent with the approach adopted by nitrates.	Paul Hastie	15/12/2017 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
procedures for response to abnormal situations as has been done in the Nitrates areas. Check in next Hazard Audit (2019)			
18.Observation: The FSS has been updated (Feb 16) and provides a clear summary of firewater demands however does not refer to the basis for these (for example an AS or NFPA, process dilution rate or something else). The protection basis should be identified and included in the next FSS revision.	The basis of fire water demand will be included in the next update of the site FSS. Action Taken: The FSS has been updated to include the basis of the fire water demand for the bag store.	Sherree Woodroffe	28/2/2019 Complete
19.Observation: Labelling standard in new equipment was good. Some areas of older plant also good. Check progress of equipment labelling project in next audit (2019)	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Sherree Woodroffe	30/6/2019 Complete
20.Develop a formal process covering required response to Capstone pressure vessel failure criticality ratings, and required documentation and authorization / acceptance process for any deferrals of inspection or maintenance.	Orica has developed a formal process covering required response to Capstone pressure vessel failure criticality ratings, and required documentation and authorization / acceptance process for any deferrals of inspection or maintenance.	Bruce Volkiene	30/6/2017 Complete
21.Observation: Lockout isolation sheets appear to be developed as a list of valves / isolation points on isolation sheet on a case by case basis. A potential improvement would be to have predefined isolation plans for common isolations and also to attach the marked up PIDs to the isolation sheet for all process isolations.	Orica will develop and trial the effectiveness of standard isolation sheets for routine isolations.	Paul Hastie	15/12/2017 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
22.Observation: A potential improvement would be to add the Modification number to the WO information in SAP so it also appears with the PTW and it is immediately clear the proposed work is part of a modification.	Orica will evaluate the feasibility of including the modification number to the PTW documentations.	Bruce Volkiene	15/12/2017 Date extended to 30/4/2018 Complete
23.Observation: The MHF Process HIRACs have identified some procedures as critical controls. It is suggested that Orica determine a process for differentiating these from other procedures, eg "critical" tag on document, different review frequency, specific observations, auditing or training requirements. Check in next Hazard Audit (2019)	Orica will develop a procedure to ensure that procedures associated with HIRAC's are easily recognizable.	Steve Hessel	15/12/2017 Complete
24.Observation: Organizational change assessment was not reviewed in 2016 audit. Ensure this is covered in 2019 Hazard Audit	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken: Included in the scope of the 2019 hazard audit	Sherree Woodroffe	30/6/2019 Complete
25.Observation: the quality of closeout of some hazard study actions associated with Mods was variable. To monitor this it is suggested that some sample mods be selected periodically and a detailed check of closeout action quality be carried out to identify any patterns and determine if there the need for any actions such as refresher training.	Orica has developed and implement an auditing schedule of closed out mods to ensure that close out actions quality is maintained at a high standard.	Mick Gill	30/9/2017 Complete
26.Observation: It would be useful for KPI tracking for MHF purposes to include a Process Safety Event (PSE) flag in Enablon. It is recognised that this would need to be done at a corporate level . Check progress of PSE tracking at next Hazard Audit (2019)	Orica will ensure that this recommendation is included in the 2019 Hazard Audit Scope. Action Taken:	Sherree Woodroffe	30/6/2019 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
	Included in the scope of the 2019 hazard audit		
27. Observation: Notes from emergency response exercise debriefs are available. However it is suggested that any actions are formally prioritised and completion tracked (eg using Enablon)	Orica has updated the emergency response procedure to include the requirement to upload actions resulting from emergency exercises into Enablon.	Steve Hessel	30/9/2017 Complete
28. Check progress on compliance with site firewater booster arrangements against AS2419 in next Hazard Audit (2019)	Orica will continue to investigate the feasibility of upgrading the site's fire water booster arrangement in compliance with AS2419. Action Taken: See below.	Sheree Woodroffe	15/12/2019 Complete
	To ensure that the risks are appropriately managed, Orica will undertake a risk assessment to identify whether additional controls are required in the interim to manage this risk until the system is upgraded to meet Australian Standard requirement. Action Taken: A SFAIRP analysis has been undertaken to determine whether modification of the fire water booster connections is justified. The analysis concluded that modifications to the	Paul Hastie	Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
	connections could not be justified as that the current design is SFAIRP.		
Additional Recommendations associated with Department of Planning Feedback			
a. Please clarify why, taking into account that contaminated TGAN may occur in site as Orica, which manufacture and store significant quantities of AN.	Orica has undertaken a review of the procedure including ensuring additional control measures are implemented to ensure compliance with the maximum permissible quantity allowed to be stored onsite with consideration to SAFEX requirements.	Paul Hastie	31/7/2017 Complete
b. Orica to provide 6 monthly updates regarding the progress made in address recommendations detailed in the 2016 Hazard Audit	Orica will recommence provision of six monthly hazard audit updates to DPHI from 30 June 2017 and will continue until all actions detailed in the 2016 Hazard Audit are completed.	Antony Taylor	Complete
Orica has been implementing a program to progressively upgrade labelling of pipes and valves within the site's existing plants. Several of these areas were inspected during the audit. On page 17 of the 2016 Hazard audit report a recommendation was made to inspect progress made in implementing this program in 2019. This requirement will be transferred to the hazard audit action plan to ensure it is addressed during the next audit.	30. Orica to provide 6 monthly updates regarding the progress made in addressing recommendations detailed in the 2016 Hazard Audit. Action Taken: Included in the scope of the 2019 hazard audit	Antony Taylor	30 June 2019 Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
2022 (current) Hazard Audit Actions/Recommendations			
1. Observation: there are 16 HSE related KPIs are part of a larger list of KPIs managed in a 'bowling chart'. Of the 16 KPIs: 9 have a numerical target, 3 have a target 'to plan', 3 are 'record only' and 1 has a target of 'measure'. Of the 9 numerical KPIs 4 are 'on target'. 5 KPIs are marked as not on track. Interviewees were aware of process safety information and HSE statistics being recorded and reported and there was a good awareness and visibility of managing inventories of AN below thresholds. However, there was a low-level awareness of the KPIs and current level of compliance outside of the site management team.	2023-AP00279038 - Review the process of communicating and updating KPIs to the wider site.	Paul Cunsolo	Complete
2. Observations: There was limited evidence that KPIs are driving behaviour with KPIs such as 'less than 200 open MoCs' viewed as not being achievable due to project modifications and not achieving 90% action close out as OK as the failure was due to medium actions. The 4 'record only' KPIs are tagged as being on track which does not drive behaviour. The current KPI's are not driving the desired behaviour and non-attainment may be normalised. For all KPIs, review the need to clearly define requirements for action or revisiting KPIs if targets not met.	2023-AP00279037 - Document outcomes of KPI review in minutes of KI Management Team Meeting	Paul Cunsolo	Complete
3. Observation: The MoC KPI is to have less than 200 open MoCs. The actual number is approaching 400 open MoCs with an upward trend evident in the records. The KPI is not driving the desired outcome and it may have unintended consequences if MoCs are not raised or closed before all the activities are completed.	For all the MoC process, review the effectiveness of the current KPI (limit of 200 open MoCs) to manage the desired outcome of the MoC process.	Addressed by action above	Addressed by action above
4. Observation: Actions (child actions) are being raised for follow up or define supporting activities to address an action (parent action) that is	2023-AP00279036 - Establish a process for ensuring actions that are rolled over or modified	Sherree Woodroffe	Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
then closed. If parent action is linked in Enablon to the to source (e.g an incident) then its closure means the incident is closed even though child actions remain open. There is a risk that the context of the child action is lost when deciding its priority. Review the practice of closing actions by raising new actions where the original context is then lost.	are linked to the original source – revise relevant SHES management system documents source – revise relevant SHES management system documents		
5. Observation: The level of compliance with training as reported is low (50-60%). This is thought to be due to training that is allocated but modules are not available. However, it is not possible to determine the level of compliance with mandatory, critical or available training. Routinely reporting low level of compliance may lead to risk normalisation and prevent flagging critical training. Review how non-available training can be screened to provide a clear report of current, active training status.	2022-AP00279035 - Review the existing Training Report so that it clearly identifies where high priority training requirements are not being met	Sherree Woodroffe	Complete
6. Observation: Follow up to 2019 Hazard Audit Observation 10: There is a need for an additional action to follow on to make sure the action is fully closed.	2022-AP00279034 - Raise a new action to close 2019 hazard audit recommendation (Observation 10)	Belinda Moss	Complete
7. Observation: Follow up to 2019 Hazard Audit Action Observation 6. An action was raised and subsequently close by raising a new action. The final action was not resolved.	2022-AP00279033 - Raise a new action to close 2019 hazard audit recommendation (Observation 6)	Sherree Woodroffe	Complete
8. Observation: SHESMS is overdue for review (scheduled May 2023).	2022-AP00279032 - Review and update the SHESMS as per schedule.	Sherree Woodroffe	Complete
9. Observation: Documents were routinely found that were overdue for review (e.g. HSE MS, certificate of appointment for Paul Gallagher as responsible engineer). Document review periods may not be	2022-AP00279031 - Review the process for setting document review schedules and consider	Paul Cunsolo	Complete

ORICA 2024 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT – DECEMBER 2024

Previous Audit Actions/Recommendations			
Recommendations	Proposed Action	Area Owner	Proposed completion date
appropriate and are no actively being managed. There is no KPI for document review.	adding a KPI for document update if compliance is required		
10. Observation: there is no formal documented process for assessing, approving and managing extension of open temporary MoCs. Develop a process to manage extension of temporary MoCs.	2023-AP00279030 - Document process for assessing, approving and managing extension of expired temporary MoCs in the CM Management of Change Procedure	Kira McGrath	Complete

12.2 INDEPENDENT ENVIRONMENTAL AUDIT

Recommendations from previous audits are shown in Table 13 below and are all complete.

Most recently (2023), Orica KI engaged Ramboll Australia Ltd (Ramboll) to conduct an independent environmental audit (IEA) in accordance with condition 52 of SSD 08_0129 (combined report with separate audit of SSD 7831), with the final report dated 19 February 2024. The report was submitted to DPHI on 23 February 2024 and can be found on the [Orica KI Public Website](#).

5 opportunities for improvement were identified in the 2023 IEA as noted in Table 14 below and are also all complete.

Table 13: 2017 IEA Auditor Actions / Recommendations

Previous Audit Actions/Recommendations			
Condition	Auditors recommendation	Orica response	Date of Action
2017 IEA Opportunities for Improvement			
7C, 17	Ensure the submission requirements relating to new stages in the Project are fully complied with	Orica has updated the Projects staging plan to ensure that Project milestone reports are submitted in accordance with the relevant timeframes.	Complete
45	Prepare and submit to the Secretary an updated landscape plan and gain approval for a staged implementation of landscaping required under the approval, potentially tied to the broader staging plan submitted annually.	A landscape plan has been developed for the project submitted to DPHI or implemented. Orica has sought clarification from DPHI regarding the timing of the landscaping requirements as landscaping is linked to stage 2 of the project which is yet to commence.	Complete
48	Commence implementation of a weekly environmental inspections program when undertaking construction activities associated with the project.	This requirement has been detailed in the Projects Construction Environment Management Plan (CEMP)	Complete
49B/C	Prepare and implement an Operational Environmental Management Plan for the flares.	Orica submitted an OEMP for the Project to DPHI in June 2020.	Complete
53	Ensure all relevant post approval and audit documents are available on the website	Orica has clarification regarding what reports are required to be published on the website as project documentation can contain sensitive design and risk management data.	Complete

Previous Audit Actions/Recommendations			
Condition	Auditors recommendation	Orica response	Date of Action
	Noting the infrequent use of the flares (one reported activation between April and June 2017) it is recommended that Secretary confirmation be sought that an update to the Air Quality Management Plan is not required and that volumetric flow determination remains a suitable method for describing the emissions at points 24-36.	Orica sought clarification from DPHI regarding the requirement for an Air Quality Verification Study to be completed relating to the site's three ammonia flares on 29 March 2018 which was viewed as not practical from a technical perspective. Orica did not receive a response, and is operating under the assumption this conclusion is acceptable to DPHI.	Complete
	The Noise and Vibration Management Plan should include LAeq and LMax noise management for the site following the addition of the boiler.	Annual Noise Report incorporates this requirement.	Complete
	Once the boiler is constructed and operational, conduct noise verification assessment to ensure noise levels from operation are below 10db. Low frequency components of boilers may require special attention.	Annual noise Report incorporates this requirement.	Complete
	Whilst there have been no complaints regarding traffic management, it is recommended that weekly inspections are undertaken during construction and recorded and that occasional review of this requirement is included.	Requirement included in Project CEMP	Complete
	The Water Efficiency Plan should be updated after the boiler is operational.	Conditions 37 a), b) and c) have been completed. Recycled water has been implemented, which was the main component of the Water Efficiency Plan. Reclaimed Water Management Plan was updated during 2021 AEMR period. Further review of water efficiency may occur if the Kooragang Island Water Scheme operator makes additional reclaimed water available.	Complete
23	That formal acceptance be sought from the Department that an Air Quality Verification Study of the flares is not required.	Orica sought clarification from the Department and was deemed compliant with Schedule 2, Condition 23 as the relevant phase (5) has not yet commenced.	Complete

Previous Audit Actions/Recommendations			
Condition	Auditors recommendation	Orica response	Date of Action
40	As the non-compliances with EPL conditions have been reported to the EPA and are subject to improvement programs under the EPL and/or discussions between the EPA and Orica, the Auditors make no further recommendation.	Orica sought clarification from the Department and the non-compliance was upheld.	Complete
2020 IEA Opportunities for Improvement			
15 (a)	That the Transport of Hazardous Materials Plan be reviewed for any changes that may be required as a result of changes in the road network since 2013.	Review in progress	Complete
19	That Orica seek clarification from the Department of the intended application of this condition as it appears likely that it is relevant to Phase 3 (expansion of nitric acid and ammonium nitrate capacity), which has not commenced.	Position noted in correspondence submitted to DPPI in relation to the IEA on 2 September 2020	Complete
32	That the Noise Management Plan be updated when the new boiler is fully operational.	Annual noise report incorporates this requirement.	Complete

Table 14: 2023 IEA Auditor Actions / Recommendations

Most Recent Audit Actions/Recommendations (2023 IEA)			
Condition	Auditors recommendation	Orica response	Date of Action
2023 IEA Opportunities for Improvement			
4a	Correct the link to 2022 AEMR on Orica website.	Link updated	Complete
27A	Follow up with the Department to resolve approval of the operational AQMP.	Approval letter supplied by DPPI on 11 October 2023 (MP08_0129-PA-31)	Complete
32	Follow up with the Department to resolve approval of the updated Noise Management Plan.		Complete
49B	Follow up with the Department to resolve approval of the updated OEMP.		Complete
51A	Reinforce incident notification procedures to ensure all relevant agencies are notified of an incident.	Procedures reinforced through internal communications	Complete

APPENDIX A – 2024 NOISE AUDIT REPORT