

Environmental Management Strategy - Operations

Orica, Richmond Vale Ammonium Nitrate Emulsion Plant

26-Jul-2024

Orica Ammonium Nitrate Emulsion Project, Richmond Vale

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Orica, Richmond Vale Ammonium Nitrate Emulsion Plant

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Table of Contents

Executive Summary	i
1.0 Introduction	1
1.1 Background	1
1.2 Scope	1
1.3 Environmental Policy	3
2.0 Planning	5
2.1 Environmental Aspects	5
2.2 Legal and Other Requirements	6
2.2.1 Project Approval	6
2.2.2 <i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	7
2.2.3 <i>Explosives Act 2003 & Explosives Regulation 2013</i>	8
2.2.4 <i>Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017</i>	8
2.2.5 <i>Cessnock Local Environmental Plan 2011</i>	9
2.2.6 <i>Biodiversity Conservation Act 2016</i>	9
2.3 Objectives and Targets	9
3.0 Implementation	11
3.1 Roles and Responsibilities	11
3.2 Training, Awareness and Competence	12
3.3 Communication	13
3.3.1 Internal Communication	13
3.3.2 External Communication	13
3.4 EMS Documentation	15
3.5 Document Control	16
3.6 Emergency Preparedness	16
4.0 Checking and Corrective Action	18
4.1 Monitoring and Evaluation	18
4.2 Non-conformance and Corrective and Preventative Action	19
4.3 Records	19
4.4 Audit	20
4.4.1 Internal Audits	20
4.4.2 Independent Audits	20
5.0 Review	21
6.0 References	22
Appendix A	
Project Approval	A
Appendix B	
Environmental Aspects Register	B
Appendix C	
Example ANE Plant Induction	C
Appendix D	
Site Induction Assessment Form	D
Appendix E	
Summary of Training	E
Appendix F	
Summary of Notifications	F
Appendix G	
Summary of Reporting	G
Appendix H	
Inspection Checklists	H

Appendix I	
Table of Monitoring Measures	I
Appendix J	
Summary of Auditing	J

List of Tables

Table 1	Project Approval Requirements - Schedule 4, Condition 1	1
Table 2	Objectives and Targets	10
Table 3	Roles and Responsibilities	11
Table 4	Emergency Contacts	17
Table 5	Routine Inspections	18

Executive Summary

This Environmental Management Strategy (EMS) for Orica's Ammonium Nitrate Emulsion (ANE) Facility at Richmond Vale provides an overview of environmental management at the Facility and its associated lands. The EMS outlines the environmental management principles and practices that will be implemented during the ongoing operations of the ANE Facility and its associated lands. The EMS has been prepared in accordance with Condition 1, Schedule 4 of the ANE Facility Project Approval (09_0090). The EMS provides the framework for environmental management at the Facility and its associated lands, but does not encompass all that is required for compliance with the Approval. The Approval is provided in Appendix A and should always be referred to as the primary compliance document.

Environmental management at the ANE Facility reflects Orica's environmental policy and commitment to manage its activities with concern for people and the environment. Orica's policy sets the framework for this EMS – and together with consideration of the specific environmental aspects and potential impacts of the Facility and its associated lands; and recognition of applicable legislation - forms the basis upon which the objectives and targets within this document have been set.

The key environmental aspects at the ANE Facility and its associated lands include: hazards, traffic, noise, air and odour, waste, ecology, bushfire, Aboriginal and historic heritage and water management. The EMS identifies the potential risks to the environment related to each environmental aspect, and outlines measures to mitigate potential environmental impacts. Mitigating measures include the implementation of the various site-specific management plans that are in place to manage site risks, and Orica's suite of Safety, Health, Environment and Security (SHES) procedures that are mandatory at all sites.

This EMS communicates the roles and environmental responsibilities for the implementation of environmental management at the ANE Facility and its associated lands. In addition, measures to facilitate implementation, training, communication, documentation, and emergency preparedness requirements have been outlined along with steps for checking, undertaking corrective action, and reviewing environmental performance and management at the site.

These aspects: enable the EMS to remain relevant; ensure that progress is being made toward the environmental objectives and targets; provide a feedback mechanism for improvements; and enable changes in environmental legislation and site management to be reflected in the EMS.

1.0 Introduction

1.1 Background

This Environmental Management Strategy (EMS) has been prepared for Orica Australia Pty Limited (Orica) and outlines the management measures proposed to mitigate the potential environmental impacts that may occur during operations at Orica's Ammonium Nitrate Emulsion Facility (ANE Production Facility) at Richmond Vale, NSW. It covers operations at the ANE Facility undertaken in accordance with the Project Approval (09_0090, as modified), the project approval application (Umwelt, 2009, Environmental Assessment (EA)) and subsequent modifications for the production of up to 250,000 tonnes per annum of ANE at Orica's Technical Centre site at Richmond Vale.

Condition 1, Schedule 4 of the ANE Facility Project Approval requires Orica to prepare and implement an EMS to the satisfaction of the Secretary¹ of the NSW Department of Planning, Housing and Infrastructure (DPHI)². The requirements of Condition 1 are shown at Table 1 below. The Project Approval is provided at Appendix A.

Condition 7, Schedule 2 of the Project Approval allowed for the submission of documents to the Secretary on a progressive basis. Consequently, a Construction EMS (Umwelt, 2010) was prepared and then approved by the Secretary on 7 October 2010 prior to the commencement of construction in accordance with the Project Approval. This EMS is for the operational phase of the ANE Facility.

This EMS provides a framework for environmental management at the ANE Facility. It is an overarching document that outlines the environmental management principles and practices - the plans, procedures, legislation and actions - that are in place, or that will be implemented, to meet Orica's environmental commitments during the ongoing operations of the ANE Facility and its associated lands, and to mitigate possible environmental impacts associated with the Facility.

1.2 Scope

This EMS brings together a number of components which collectively provide a means of achieving and demonstrating commitment to managing and minimising the potential impacts associated with operations at the ANE Facility.

The EMS covers only the site considered as the ANE Facility and its associated lands (such as the access road and the offset area) subject to the Project Approval, and not the adjacent Technical Centre.

This EMS has been developed in accordance with Condition 1, Schedule 4 of the Project Approval. The requirements of Condition 1 and where these requirements have been addressed in this EMS are shown at Table 1. This EMS has also been prepared in accordance with the requirements of ISO 14001: 2015.

Table 1 Project Approval Requirements - Schedule 4, Condition 1

Requirement	Where Addressed in this EMS
<i>The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Secretary. This strategy must be submitted to the Secretary prior to the commencement of construction, and:</i>	This EMS
<i>a. Provide the strategic context for environmental management of construction and operation of the Project;</i>	Section 1.3
<i>b. Identify the statutory requirements that apply to the Project;</i>	Section 2.2
<i>c. Describe in general how the environmental performance of the Project would be monitored and managed;</i>	Section 2.1 & Section 4.1

¹ The Project Approval still contains references to the Director-General. However, the Director-General is now referred to as the Secretary, and all references to the Director-General throughout this EMS have been updated to refer to the Secretary.

² Formerly the NSW Department of Planning and Environment (DPE).

Requirement	Where Addressed in this EMS
d. Describe the procedures that would be implemented to:	Section 3.3.2.1
- Keep the local community and relevant agencies informed about the operation and environmental performance of the Project;	
- Receive, handle, respond to, and record complaints;	Section 3.3.2.2
- Resolve any disputes that may arise in relation to operations at the Project;	Section 3.3.1
- Respond to any non-compliance;	Section 4.2
- Manage cumulative impacts;	Section 2.1
- Respond to emergencies; and	Section 3.6
e. Describe the role, responsibility, authority and accountability of all the key personnel involved in environmental management of the Project.	Section 3.1

While the ANE Facility is approved to operate 24 hours 7 days per week, it currently operates from 4.00am – 10.00pm Monday to Friday and 5.00am – 5.00pm Saturday and Sunday and requires three employees on discrete shifts. The facilities, activities, products and services at the ANE Facility considered in this EMS, include:

- Arrival of raw materials (Ammonium Nitrate Solution (ANS), palm oil, yubase 3 and diesel oil, thiourea, urea, acetic acid, caustic soda, solid ammonium nitrate, potable water and process water) at the ANE Facility via road transport;
- Truck weighing, loading and unloading facilities;
- Dedicated storage facilities for raw materials;
- A manufacturing plant for the production of up to a maximum of 250,000 tonnes per annum of ANE;
- Emulsion storage;
- Oxidiser solution batching;
- Companion (ammonium nitrate) solution manufacture and storage;
- Heat exchanger and cooling tower;
- Loading of emulsion, and companion solution produced at the ANE Facility onto road transport for distribution;
- An office facility, storage shed, ANE plant control room, electrical switch room, and plant quality control laboratory;
- Security fencing and maintenance of perimeter fire-breaks;
- Rainwater harvesting, storage and reuse;
- Firewater storage; and
- Surface water / firewater controls.

The ANE Facility has the capability to produce up to 250,000 tonnes of ANE per annum. Average total daily heavy vehicle movements associated with the ANE plant at full production is expected to be approximately 100 (i.e. 50 into the site and 50 out of the site).

The ANE Facility Manager has overall responsibility for this EMS and supporting documentation.

1.3 Environmental Policy

Orica's organisational Safety, Health, Environment and Security (SHES) Policy³ sets the framework for this EMS. Together with consideration of the site-specific environmental aspects and legislation applicable to the ANE Facility and its associated lands, the Policy forms the basis upon which the objectives and targets within this document have been set. Orica's SHES Policy has been defined and endorsed by Orica's senior management and it is a requirement that the Policy is known and understood by people at all levels of the organisation.

Orica's SHES Policy includes the following aspirations and commitments:

Together, we are committed to managing our operations and associated activities in a safe, secure and sustainable manner. We care for the environment as well as the health and safety of our people, customers and our communities.

SHES are essential to our business success and are foundational to Our Charter. Personal ownership through visible and felt leadership and individual responsibility at all levels is essential to our success.

OUR SAFETY, HEALTH, ENVIRONMENT AND SECURITY COMMITMENT

- *We drive behaviours which demonstrate a strong commitment to SHES and we empower our people to stop unsafe work when key controls are not in place.*
- *We always promote and protect our people's health and wellbeing and manage fitness for work. • We minimise adverse impacts of our operations on the environment and effectively engage with our local communities.*
- *We protect our people and secure our products, assets and workplaces.*
- *We develop, maintain, implement and review a robust SHES management system.*
- *We communicate, consult, and actively engage with our people in the identification, assessment, control and verification of risks, leveraging the hierarchy of controls.*
- *We comply with all relevant SHES legislation and implement a robust assurance framework to monitor ongoing compliance.*
- *We provide relevant training, instruction and supervision to all who carry out work in our business.*
- *We report, investigate, analyse, and take action to prevent reoccurrence of SHES events.*
- *We maintain SHES metrics, analyse and report on performance to support timely and proactive business decisions.*
- *We are committed to continuously improving our SHES performance through monitoring, reviewing and reporting and develop objectives, targets and programs to drive improvements.*
- *We create and maximise opportunities to learn and share SHES knowledge within Orica, the community and industry.*

We do all this, because we care and at Orica these are the core fundamentals to our organisation and our people.

Orica's approach to site SHES management is based on thorough identification of hazards and assessment and control of risks through:

- Management ownership and responsibility for SHES performance which is active and visible at all levels;
- Clear SHES expectations and objectives for managers and employees of both Orica and contractors;

³ Orica, August 2020, SHES Policy,
https://www.orica.com/ArticleDocuments/295/safety_health_environment_security_policy.pdf.aspx.

- Involvement of all project participants including Orica and Contractors in the SHES management program;
- Comprehensive SHES Procedures and instructions which:
 - Comply with the Orica SHES Management System and regulatory requirements, and
 - Are understood by all personnel working on the Project.
- Programs to help people anticipate potential injuries and incidents and to encourage personal action to minimise risk, such as:
 - Job Safety and Environment Risk Analysis (JSERA) Program;
 - Job Start;
 - Periodic Toolbox Talk Meetings;
 - Behavioural Safety Program;
 - Major Hazard Management Program;
 - Monthly Safety Meetings; and
 - Incident Investigation Process.
- Project SHES standards which are not compromised by conflicts in schedule, cost or quality objectives.

2.0 Planning

2.1 Environmental Aspects

The potential environmental aspects and impacts of the planned operational activities at the ANE Facility are presented in the Environmental Aspects Register at Appendix B. The aspects were determined from the EA, site inspection, and discussion with Orica staff.

The key environmental aspects identified were:

- Hazard and risk;
- Traffic;
- Noise;
- Air and odour;
- Waste;
- Ecology;
- Bushfire;
- Aboriginal and historic heritage, and
- Water management.

The Register of Environmental Aspects identifies the potential risks to the environment related to each of the environmental aspects and applies a ranking system in order to allow priorities for action to be established ranging from “high” risk to “low” risk. The matrices to determine risk are also provided at Appendix B.

The most significant potential hazard at the ANE Facility relates to potential critical incidents at the site – such as a spill, explosion or fire. To reduce the possibility of any such hazard, the site has been designed, and is managed to reduce the potential for possible incidents; and controls are in place to protect the safety and health of workers, and to protect the environment.

The measures to mitigate identified potential environmental impacts are included in the Register. Mitigating measures include implementation of the various site-specific management plans that are in place to manage site risks, and Orica’s SHES Procedures that are mandatory at all sites.

The Register will be reviewed every two years, and changes to the identification of aspects, the assessment of risk, and the identification of control measures to reduce the risk will be implemented as required.

Orica Procedure “GS.18 Risk Management” defines requirements for ongoing systematic identification, assessment and management of SHES risks associated with Orica’s activities, products and services. The procedure includes processes for:

- Identification of potential hazards events and environmental aspects;
- Assessment of the level of risk from hazardous events and environmental aspects;
- Identification of control measures to reduce the risk;
- Identification and communication of the “basis of safety” for the facilities;
- Selection of the critical control measures which warrant and require ongoing management to assure their integrity;
- Review of hazards, risk, and control measures:
 - Prior to the introduction of changes;
 - When new information regarding hazards and risk becomes available, and
 - At defined intervals.

In addition, Orica Group Procedure “SHES Assurance” describes the requirements for the periodic conduct of “Significant Risk Audits” to verify the suitability and effectiveness of the measures in place to manage high priority significant risks. In association with these procedures, the Orica Group Procedure “SHES Risk Management for Operating Sites” describes the requirements for the assessment and control of hazards at existing sites via “Periodic Hazard Studies”.

2.2 Legal and Other Requirements

This section identifies the environmental legislative requirements relevant to the ANE Facility (as at June 2024). It lists legislation applicable to the site, under which Orica holds permits or licences, or adheres to criteria that must be in place for current operations.

Should the scope of current operations change, or if a development application is to be lodged for alterations or extensions to the ANE Facility or its associated lands, applicable legislation and environmental planning instruments should be investigated, and this section should be updated, to ensure currency.

2.2.1 Project Approval

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) provide the framework for environmental planning in NSW. Project Approval for the ANE Facility was granted by the Minister for Planning on 26 July 2010 under the former Part 3A provisions of the EP&A Act (now repealed).

Two modifications to the Project Approval have been approved, including MP 09_0090 MOD 1 (approved 9 November 2012) for the construction of a storage shed and a 2 megalitre water tank, and MP 09_0090 MOD 2 (approved 4 July 2016) for the installation of a heat exchanger and cooling tower.

The Project Approval (as modified), the EA, the Statement of Commitments in the EA, the environmental assessments (and associated consent conditions) accompanying the modification applications, and the other plans required under the Project Approval, act as the guiding documents for the development of this EMS and for environmental planning compliance at the site.

In addition to Condition 1, Schedule 4 of the Project Approval, which requires preparation and implementation of an EMS, there are several conditions relating to operations at the site which are referenced in this EMS. In accordance with the conditions of approval, during operations Orica shall:

- Implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction and/or operation of the Project;
- Ensure that all plant and equipment used on the Project Site is maintained in a proper and efficient condition; and operated in a proper and efficient manner;
- Have in place an Emergency Plan and a Safety Management System;
- Have in place a Road Transport Protocol for heavy vehicles including a Traffic Management Plan, and a Driver Code of Conduct;
- Ensure that noise generated from the project does not exceed 35 dB(A) $L_{Aeq}(15 \text{ minute})$ at the nearest residential receptor at any time;
- Implement the recommendations of the “Bushfire Threat Assessment” included in the EA and measures outlined in the Submissions Report;
- Comply with Section 120 of the *Protection of the Environment Operations Act 1997*;
- Ensure that all chemicals, fuels and oils associated with the Project are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund;
- Have in place a Soil and Water Management Plan, including a Stormwater Management Plan and an Erosion and Sediment Control Plan;
- Ensure that lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network; and

- Ensure that all waste generated by the Project during construction and operation is classified in accordance with the Environmental Protection Authority (EPA) Waste Classification Guidelines 2014, and if required, disposed of to a facility via a transporter that may lawfully accept the waste.

Appendix B lists the appropriate controls, safeguards and compliance actions to ensure compliance with these conditions.

2.2.2 Protection of the Environment Operations Act 1997 (POEO Act)

Under the POEO Act, Orica holds an Environmental Protection Licence (EPL) 4121 for the Technical Centre. As such, all works and activities at the ANE Facility must be carried out in accordance with the EPL.

EPL 4121 authorises the carrying out of the following scheduled activities at the scales specified for the Orica Technical Centre:

- *Chemical production*
 - *Dangerous goods production (capacity to produce greater than 25000 T per year); and*
 - *Explosives production (capacity to produce 0 - 2000 T per year).*

Specifically, condition L6.1 of EPL 4121 notes that the licensee shall not produce more than 250,000 tonnes per annum of Ammonium Nitrate Emulsion (ANE) at the premises.

The EPL also applies to the ancillary activity relating to the Sewage Treatment System at the Technical Centre. Condition L2.1 allows up to 16,800 litres per day of treated effluent to be applied to the utilisation area, which comprises one hectare of office area lawns and gardens.

Condition L3 defines the wastes that may be received at the premises and specifies the waste limits that apply. Only 8 tonnes of each of the waste types are permitted on the premises at any one time and must be stored in accordance with any SafeWork specifications. Permitted wastes are defined as:

- Off-specification explosives and ordinance originally manufactured by the licensee – off-specification products returned to the licensee for research and development, testing and/or reprocessing;
- Waste: all other types – off-specification products or explosive materials sent to the licensee for research and development, testing and/or reprocessing.

Condition P1.3, L4 and M4 of the EPL also detail specific conditions relating to the noise limits for production:

- Noise generated from the premises must not exceed 35dB(A) $L_{Aeq,(15\text{ minutes})}$ at receptors R1-R21 referred to in “*Environmental Assessment, Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technical Centre, Richmond Vale, NSW*” 2009, at any time during construction and operations; and
- Noise limits do not apply under certain meteorological conditions;
- Noise monitoring must be undertaken following the receipt of a noise complaint if required by the EPA, and noise monitoring equipment must be located as specified.

In accordance with EPL 4121 Orica shall:

- Maintain in a proper and efficient condition, and operate in a proper and efficient manner, plant and equipment installed at, or used at, the site;
- Ensure that the quantity of effluent/solids applied to the utilisation area does not exceed the capacity of the area to effectively utilise the effluent/ solids;
- Monitor concentration of pollutants discharged to the utilisation area;
- Ensure that all licensed activities are carried out in a competent manner including the:
 - Processing, handling, movement and storage of materials and substances used to carry out the activity, and

- The treatment, storage, processing, reprocessing, transport, and disposal of waste generated by the activity.
- Ensure that all chemicals, fuels and oils stored at the premises are contained within appropriately designed bunded areas complying with Australian Standards, having impervious flooring, and a minimum capacity of 110% of the largest container stored therein;
- Not cause or permit the emission of offensive odour beyond the boundary of the site in accordance with section 129 of the POEO Act;
- Maintain the premises and undertake operations in a manner that minimises or prevents the emission of dust from the premises;
- Ensure trucks entering and leaving the premises have their loads covered at all times except during loading and unloading;
- Treat all sewage inflows to the sewage treatment plant with a minimum ultraviolet disinfection rate of 30 milliwatts-second per square metre prior to discharge;
- Ensure spray from effluent application does not drift beyond the boundary;
- Undertake effluent application in a manner that does not cause surface runoff;
- Deny public access to the effluent utilisation area during effluent application and until the effluent application area has dried;
- Install adequate notices warning the public not to drink or otherwise use the treated effluent on the site;
- Ensure the wastewater management system is inspected and assessed by a wastewater technician each quarter and record details of such inspections (including date and time of the inspection, and details of any follow up actions required and completed);
- Keep a legible record of all complaints in relation to pollution arising from any activity to which the licence applies;
- Prepare and submit Annual Returns (including certifying the Statement of Compliance and signing the Monitoring and Complaints Summary);
- Prepare and submit an Annual Performance Report for the Stormceptre Discharge with each Annual Return (which will include an assessment of stormwater discharge quality monitoring data obtained during the reporting year); and
- Notify the EPA of environmental harm.

2.2.3 Explosives Act 2003 & Explosives Regulation 2013

Under the *Explosives Act 2003* and the *Explosives Regulation 2013*, a person must not handle Security Sensitive Dangerous Substances (SSDSs) unless authorised to do so by a SafeWork NSW licence. Ammonium Nitrate is a listed SSDS. Orica has a SafeWork NSW licence to Manufacture, Supply, Possess, Store, and Export, and authorises its use of Ammonium Nitrate under the Explosives Act. Where required, individuals are also licensed to handle Security Sensitive Ammonium Nitrate (SSAN) in accordance with the Act.

2.2.4 Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017

The *Work Health and Safety Act 2011* (WHS Act) and *Work Health and Safety Regulation 2017* (WHS Regulation) set out the obligations for operators of Major Hazard Facilities. The WHS Regulation requires activities to reduce the risk of a major accident and to minimise the consequences in the event of a major accident. Orica's Richmond Vale site has been classified as a Major Hazard Facility and is required to adhere to the requirements of the WHS Regulation, including registration with the SafeWork NSW Major Hazard Team and notification where applicable.

2.2.5 Cessnock Local Environmental Plan 2011

The ANE Facility is located within the Cessnock Local Government Area (LGA). Under the *Cessnock Local Environmental Plan 2011* (Cessnock LEP) the land on which the ANE Facility is located is zoned as RU2 Rural Landscape. However, Clause 10, Schedule 1 of the Cessnock LEP provides that development for the purposes of a technical centre and explosives research and production facility is permitted with development consent on this land. Current activities at the site are consistent with the activity description in the Cessnock LEP permissible for that land.

2.2.6 Biodiversity Conservation Act 2016

The ANE Facility is subject to a Biobanking Agreement (ID #350) (Office of Environment and Heritage, 2019) under the former Part 7A Division 2 of the Threatened Species Conservation Act 1995 (TSC Act) (now repealed). On 25 February 2018, the *Biodiversity Conservation Act 2016* (BC Act) commenced and the TSC Act was repealed. Transitional arrangements allow for the continuation of both credits and credit obligations created under the TSC Act. Biobanking agreements remain in place and are managed under the BC Act as 'Biodiversity Stewardship Agreements'. Provisions relating to Biodiversity Stewardship Agreements are provided under Part 5, Division 2 of the BC Act. It is noted that 'Biobank Sites' are now referred to as 'Biodiversity Stewardship Areas'. For consistency with the terms used in the Biobanking Agreement (2019), this EMS will continue to refer to the 'Biobank Site'.

Under the Biobanking Agreement (2019), parts of Lot 2 DP809377 are designated as a Biobank Site, consisting of approximately 138.10 hectares. The Agreement states that Orica would receive biodiversity credits, determined in accordance with the Biobanking Assessment Methodology, related to the impact or likely impact of the management actions to be carried out in accordance with this agreement.

The Biobanking Agreement (2019) provides management actions and monitoring, record keeping and reporting requirements for this ANE Facility.

2.3 Objectives and Targets

This EMS incorporates site-specific environmental objectives and targets consistent with Orica's SHES Policy set out in Section 1.3 of this EMS. The objectives and targets will help ensure that operations at the ANE Facility and its associated lands are undertaken in a safe manner so as to protect people, to protect the amenity and values of the local environment.

The objectives have been determined based on:

- Orica's SHES policy;
- The site-specific environmental aspects and potential risks at the site; and
- The applicable legislation relevant to the site.

The objectives set the site's environmental priorities and desired environmental performance. The targets are a measure that the objectives are being achieved and that the site is being properly managed to deliver optimum performance and environmental outcomes.

The objectives and targets cover both long and short-term aspects. They were set prior to the commencement of operations at the ANE Facility and have been reviewed following start-up and during operations. The site objectives and targets are shown at Table 2.

Table 2 Objectives and Targets

Objective	Target
To maintain a safe and productive worksite.	No major accidents recorded at the ANE Facility or its associated lands.
	All incidents and near misses captured and investigated.
	Improvement plans are implemented for corrective actions associated with all near-misses.
To prevent off-site impact to the environment from the operations.	All staff and contractors have a thorough understanding of their environmental responsibilities. Contractors subject to 12 monthly inductions.
	No failures of on-site segregation and containment of dirty or contaminated water. Constantly monitor all bund levels and maintain bund levels at minimum levels at all times. Optimise plant by recycling all possible bund water and stormwater runoff into process.
To prevent off-site environmental events affecting the site operations such as storms, bushfires.	No detection of off-site odour or air emissions.
	No localised flooding events at the ANE Facility.
To prevent injuries to people or wildlife from snakes, avifauna or other wildlife entering the ANE Facility.	Fire Safety Study fully implemented. Document regular inspections of surrounding bush and actions taken to manage hazard reduction.
	All workers understand the ANE Facility site requirements to be implemented in the event that snakes or other wildlife are spotted within the plant area.
To be recognised as a “Good Neighbour” with the local community.	No community complaints regarding the ANE Facility operations impact to amenity.
	No complaints or enquiries regarding driver behaviour, parking, speeding or noise.
To operate a secure worksite.	Any unauthorised access is identified quickly preventing damage and/or injury.
To have excellent waste management practices in place.	Minimise production of waste, and reduction of all waste to landfill.
To achieve compliance with all environmental legislation applicable at the ANE Facility and its associated lands.	No breaches of Environment Protection Licence conditions or other relevant environmental legislation for the ANE Facility.

It is expected that these objectives and targets will be reviewed at least every two years to ensure they are actively achieving best practice in environmental management and are still relevant to local conditions and the legislative framework. New objectives may be determined, and new targets set over time.

Objectives and targets will be progressively achieved through the implementation of the various management plans, procedures and measures referred to in this EMS.

The implementation of these plans will ensure effective environmental performance and mitigate environmental impacts. Implementation of the plans is the responsibility of the Facility Manager.

3.0 Implementation

3.1 Roles and Responsibilities

Environmental management at the ANE Facility is the responsibility of all employees and contractors, with the Facility Manager having overall responsibility for environmental management at the Facility, and overall responsibility for this EMS.

Environmental roles and responsibilities for site personnel are shown in Table 3. In addition, the management plans and procedures outline specific roles and responsibility for key personnel.

Roles and environmental responsibilities are communicated to all staff and contractors at the ANE Facility during site induction, so that all personnel understand their role in environmental performance at the site and are aware of the key environmental management roles.

Table 3 Roles and Responsibilities

Role	Environmental Responsibility
Kurri ANE Facility Manager	Has overall responsibility for environmental management at the ANE Facility and its associated lands, and for this EMS.
	Provides the authority for environmental management in accordance with Orica's SHES Policy.
	Provides the authority for resourcing implementation of this EMS, associated EMPs, monitoring and audits.
	Maintains ongoing communication with the Site Facility Capability Specialist to ensure any potential environmental issues are brought to the manager's timely attention, and to ensure the Site Facility Capability Specialist is aware of any environmental obligations which may affect the operations.
	Provides the principal point of contact in relation to environmental performance of the project and with the EPA.
	Liaises with regulatory authorities on matters relating to the Project Approval and conditions.
	Coordinates ongoing environmental monitoring as required.
	Ensures that environmental documentation as required under the Project Approval is provided on the website.
	Investigates incidents and their causes and designs and implements suitable solutions.
	Coordinates the notification of regulatory authorities if notification is required.
	Reviews the Environmental Aspects Register at least every two years to ensure that the potential environmental aspects of the operations are current and are adequately understood and managed.
	Ensures that the objectives and targets in the EMS, and are being met, and reviews and amending these targets at least every two years.
	Conducts two-yearly (biennial) audits of the Management Plans referred to in this EMS and keeps auditable records of the results.
	Ensures that contractors at the ANE Facility operate under contracts that oblige them to work within the scope of the EMS, management plans and procedures.
	Ensures all employees and contractors attend a site induction (which includes environmental awareness component) prior to commencing work at the ANE Facility.
Employees	Ensures their compliance with the EMS, management plans and procedures as applicable to their duties.

Role	Environmental Responsibility
	Attends site induction (which includes environmental awareness and emergency procedures) prior to commencing work at the ANE Facility.
	Reports any environmental incident, or near miss, that occurs at the ANE Facility or its associated lands to their immediate supervisor.
Contractors	Attends site induction (which includes environmental awareness and emergency procedures) prior to commencing work at the ANE Facility.
	Reports any environmental incident, or near miss, that occurs at the ANE Facility or its associated lands to their immediate supervisor.

3.2 Training, Awareness and Competence

It is Orica policy that all personnel (including contractors) attend a site induction held at the ANE Facility prior to employment, or on commencement of activities.

An example of the ANE Plant Induction is included at Appendix C although it is noted that the induction is reviewed and updated on a regular basis. It is the responsibility of the Facility Manager to ensure that all employees and contractors receive appropriate induction prior to starting work.

The site induction for the Orica ANE Facility outlines Orica's environmental policies and responsibilities and covers the SHES requirements of working for Orica. The site induction includes an environmental awareness component so that all personnel understand their role and responsibilities in environmental performance at the ANE Facility.

As required, specific training or awareness programs would be conducted for workers with particular environmental duties or for those whose work could cause potential environmental impacts. Particular environmental training needs would be identified by the Orica SHES Team through "Change Awareness", and specific training programs developed as a result.

All contract drivers will be required to complete a Road Transport Protocol competency training and must be signed off on this training prior to attending site.

Competency will be demonstrated and managed through a short quiz during the induction/training program. The Contractor's Site Induction Assessment Form is provided at Appendix D. The employee or contractor will not be permitted to work at the ANE Facility if their level of competency is doubted by the trainer or Facility Manager.

The effectiveness of emergency training is assessed as part of the internal audits of the Emergency Plans and SHES Procedures for training, as well as during a debrief following emergency exercises.

Other Orica SHES programs are in place and have been implemented at the ANE Facility and its associated lands. These programs and events provide ongoing learning and awareness opportunities to help people anticipate potential incidents and to encourage personal action to minimise risk. Programs include:

- Job Safety and Environment Risk Analysis (JSERA) Program;
- Job Start;
- Periodic Toolbox Talk Meetings;
- Monthly Safety Meetings, and
- Behavioural Safety Program.

A summary of training to occur, timing and who is responsible is provided at Appendix E.

3.3 Communication

3.3.1 Internal Communication

Orica Procedure MP-SG-014 "Communication Process" describes the requirement for internal SHES communication and consultation between functions.

Both the ANE Facility Manager and the Orica SHES team are responsible for maintaining communications to ensure the commitments identified in this EMS are satisfied, potential environmental issues are discussed, and to ensure ongoing awareness of any environmental obligations which may affect the operations.

Orica's environmental policy and environmental awareness will be communicated to all staff and contractors through the site induction and ongoing training programs.

Any disputes that may arise in relation to operations at the ANE Facility and the measures outlined within this EMS will be managed by the Facility Manager. Orica procedures are in place to respond to disputes and ensure ongoing safety, health and environmental performance.

3.3.2 External Communication

3.3.2.1 General Enquiries, Information & Visitors

Orica Procedure MP-SG-013 "Visitors to Site" defines the requirements for management of the health, safety and welfare of visitors to site. In keeping with this procedure any general enquiries received from the public during business hours will be directed through to the Technical Centre switchboard. The call will then be directed to the appropriate business function (i.e. the ANE Facility or the Technical Centre site). If the call relates to an incident within the Technical Centre site it will be directed to the appropriate business function by the operator or directed to the Emergency Response Service (ERS) as appropriate.

When the call is made outside of office hours, the caller will receive a message directing them to Orica's ERS phone number (1800 033 111) if the call relates to an emergency. If the call is a general enquiry, the caller will be asked to leave a message with their contact information, and their call will be returned the next working day by a representative of the relevant business function.

Orica's ERS is staffed 24/7 by personnel dedicated to the effective management of emergencies. The types of incidents that can be classified as emergencies are:

- Human or animal exposures;
- Spills or leaks;
- Transport related incidents;
- Security concerns (i.e. bomb threats or suspicious packages; kidnapping or extortion threats; robbery, theft or unlawful entry); and
- Site incidents (i.e. fire; fatality or injury on site; alarms; noise or odour complaints; property damage affecting safety).

The contact numbers for the site are as listed below:

- Orica Technical Centre enquiry line - (02) 4939 5200 or 1300 665 719; and
- ERS - 1800 033 111.

These phone numbers are listed in the White Pages and on the Orica website, advertised via signage at the Orica Richmond Vale site entrance on George Booth Drive, and noted on relevant vehicles in the case of the ERS number in accordance with the Road Transport Protocol.

3.3.2.2 Complaints

In accordance with EPL 4121 (Condition M6), Orica must record all pollution complaints, retain the record for at least four years after the complaint was made, and provide records to the EPA if requested. As per Condition M4.1, following the receipt of a noise complaint and if required by the EPA, Orica will undertake noise monitoring to determine compliance with EPL noise limits.

In accordance with EPL 4121 (Condition M7), Orica must also:

...operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence... [Orica] must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

As the ANE Facility is approved to operate 24 hours 7 days per week, Orica has established a 24 hour Community Enquiry line for the operation of the project as outlined above in accordance with the site EPL. A log of all complaints will be maintained, with complaints relating to the ANE facility or the associated traffic movements directed to the ANE Facility Manager as soon as possible.

All phone complaints will be followed up on the next working day or as soon as is practicable. Where appropriate and / or requested, the complainant will be contacted to discuss the complaint.

Orica will maintain a register to record details of all enquiries received and actions undertaken in response. When the complaint relates to an incident that is directed to the ERS there will be a full report relating to the management and communication of the incident. Incidents which require investigation and corrective action will be entered into the Orica Safety Management Database (ENABLON) and assigned to an investigation manager. Orica will provide the EPA with a summary of complaints received as part of the Annual Return prepared in accordance with the site EPL.

3.3.2.3 ANE Facility Website

In accordance with the Project Approval (Schedule 4, Condition 5):

From the end of 2010, the Proponent shall provide regular reporting on the environmental performance of the Project on its website, including ensuring the following information is publicly available on its website:

- a. A copy of all current statutory approvals;*
- b. A copy of the current environmental management strategy and associated plans and programs;*
- c. A copy of any Annual Reports (over the last 5 years);*
- d. A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit;*
- e. Any other matter required by the Secretary.*

In addition, section 66(6) of the POEO Act requires licence holders to publish monitoring data that relates to pollution on the licence holder's website within 14 days of obtaining monitoring data. The results of monitoring conducted at Point 2 (located at the overflow from the water treatment system) are published on the Orica website in accordance with these requirements.

The Facility Manager is responsible for providing the environmental content to ensure compliance with the placement of relevant information on the website and for ensuring the content as required in Condition 5 is publicly available on the website:

<http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kurri-Kurri>.

3.3.2.4 Environmental Incidents and Notification

In accordance with EPL 4121 (Clause R2), Orica:

- *or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.*

Note that under Section 148(8) of POEO Act, pollution incidents must be reported to the "relevant authority" which includes the:

- appropriate regulatory authority (DPHI);
- EPA;

- local authority (Cessnock City Council);
- Ministry of Health;
- SafeWork NSW; and
- Fire & Rescue NSW (EPA extending to Police & Ambulance).

Under Clause R2.1 of EPL 4121, notifications will be made by telephoning the Environment Line service on 131 555.

In accordance with the Project Approval (Schedule 4, Condition 3):

- *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 associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.*

If an incident occurs, employees and contractors must notify their immediate supervisor, who will contact the SHES team representative responsible for environmental management at the ANE Facility and/or Safety Officer (as applicable). The SHES team representative will be responsible for notifying the EPA and the DPHI. In the absence of the SHES team representative, the Facility Manager will be responsible for notification to the EPA and DPHI.

A summary of site notifications, when they are specified and who is responsible, is provided at Appendix F.

3.3.2.5 External Agency

In addition to the website, relevant agencies, such as the EPA, will be kept informed of the environmental performance of the facility through Annual Returns, notification and reporting processes as required under EPL 4121 and the POEO Act.

The DPHI would be kept informed through reporting obligations identified in the Project Approval.

Other agencies such as Cessnock City Council would be consulted as required.

A summary of reporting to be undertaken, timing and the person responsible is provided at Appendix G.

3.3.2.6 Community Consultation and Support

Orica's Technical Centre site currently maintains a relationship with the local community and Council through sponsorship of various community and sporting groups. In addition the Orica Procedure SHE-GBL-PRO-COM-001 "Community Relations Programs" describes requirements for provision of information and involvement of the community in SHES issues to improve the relationship between the company and the community including SHES performance and other related information.

The Technical Centre site will implement a Community Consultation Strategy which will detail the methods used to inform the community and relevant stakeholders about the operation and its environmental performance, and the procedures to be implemented to manage community complaints and enquiries.

3.4 EMS Documentation

EMS documentation includes this EMS and supporting Environmental Management Plans (EMPs) and procedures cited in this EMS. All personnel must comply with this EMS and supporting documents in so far as they are applicable.

The procedures and site-specific EMPs are in place to guide operations at the ANE Facility. Current supporting site-specific plans include (though may not be limited to):

- An Emergency Plan;
- A Safety Management System;

- A Road Transport Protocol for heavy vehicles, including a Traffic Management Plan, and a Driver Code of Conduct;
- A Vegetation Management Plan for the ANE Facility lands, its surrounds and the offset area;
- A Soil and Water Management Plan, including: a Stormwater Management Plan, and an Erosion and Sediment Control Plan; and
- A Fire Safety Study.

Additional EMPs may be prepared for the site over time, if the need arises. Additional plans may be developed to address management of a particular issue; to achieve the objectives and targets; or to implement improvements where they have been identified.

In addition, if an incident occurs, the SHES team may design and implement site-specific solutions and/or procedures following incident investigation through Enablon.

3.5 Document Control

The ANE Facility Manager is responsible for maintaining and updating this EMS and the EMPs. Changes to the EMS and EMPs may arise from a corrective action request, a management review or changes to site works. Any changes to the documents must be clearly marked on a new draft document (so they can be readily identified) and comments sought from the ANE Facility Manager. The process of seeking comments and approval from the ANE Facility Manager is to ensure the Facility Manager's awareness of any changes, and to ensure possible impact to other areas of the operation have been considered.

Once changes are approved by the ANE Facility Manager, the updated document is issued for use on site. It will be the responsibility of the ANE Facility Manager to ensure that the changes are communicated to employees and contractors as applicable.

The ANE Facility Manager is responsible for keeping a copy of every revision of the EMS and EMPs issued for use at the site. When a new revision is issued, ANE Facility Manager is responsible for recalling and replacing the previous edition on the local network directory or wherever such documents would be filed for access at the site.

If they are updated, some documents, such as the Emergency Plan, will require submission to and the subsequent approval of government authorities. These reporting requirements are set out in the summary of reporting at Appendix G.

3.6 Emergency Preparedness

Orica Group Procedure "SHES Emergency Management" describes the site requirements for the development of an effective emergency response system. An Emergency Plan has been prepared for the ANE Facility.

The ANE Facility Manager shall ensure the Emergency Plan for the ANE Facility is maintained and includes adequate arrangements to protect the employees and contractors in the event of foreseeable emergency conditions. All employees and contractors will be made aware of the emergency procedures through attendance at the site induction. In addition Orica may conduct simulated emergency exercises at any time, without warning. All employees and contractors shall ensure they follow all requirements in the event of an emergency alarm. Anyone becoming aware of an emergency or potential emergency at the ANE Facility, must telephone the ANE Facility Manager in the first instance. ANE Facility emergency contact details are:

- Allan McClelland, Orica ANE Plant Senior Site Supervisor, ph: 0412 023 952;
- Orica ERS, ph: 1800 033 111; and
- Orica Kurri Kurri Technical Centre, switch ph: 02 4939 5200.

In addition, the organisations shown at Table 4 should be informed in the event of an emergency or infrastructure failure:

Table 4 Emergency Contacts

Organisation	Phone Number
Police, Fire, Ambulance	000
John Hunter Hospital	(02) 4921 3000
NSW EPA	131 555
Local Emergency Management Officer	(02) 4993 4300
SafeWork NSW	13 10 50

4.0 Checking and Corrective Action

4.1 Monitoring and Evaluation

Routine inspections of the ANE Facility site operations will be undertaken by the ANE Facility Manager. In addition, there will be regular checks to determine if the requirements set out in the EMPs are being implemented. Such checks will be carried out as required or in accordance with the EPL. All inspections are recorded on the shift pre-start and monthly housekeeping inspection checklists provided at Appendix H.

The following inspections are carried out by the site team:

Table 5 Routine Inspections

Inspection/Check	Frequency
Housekeeping Checklist (refer to <i>Shift Pre Start and Housekeeping Checklist</i> and <i>Monthly Housekeeping Audit Inspection Checklist</i>)	Daily / Monthly
Envirocycle Maintenance (refer to <i>Envirocycle Periodic Maintenance Checklist</i>)	Monthly
Stormceptor Maintenance (refer to <i>Test Stormceptor Oil Water Probe Checklist</i>)	Monthly
Bushfire Prevention Maintenance (refer to <i>RB – Bushfire & Perimeter Security Checklist</i>)	3 Monthly
Self-Bunded Tank– Maintenance (refer to <i>Monthly Checklist</i>)	Monthly

The checklists of monthly maintenance tasks undertaken during monthly inspections are provided at Appendix H.

In addition, the EMPs will be formally audited on a biennial basis by the Technical Centre Site Manager with the SHES team representative. Auditing will be used as the main checking mechanism to ensure that:

- The required tasks are being satisfactorily completed; and
- The tasks are achieving the desired environmental outcomes.

A compilation of monitoring tasks to be undertaken at the ANE Facility is provided at Appendix I. The monitoring tasks are grouped into the following categories to assist with onsite management:

- Routine site inspections;
- Periodic maintenance tasks;
- Monitoring and maintenance of the conservation area; and
- Monitoring related to specific activities:
 - Truck driving;
 - Bushfire hazard reduction; and
 - Noise monitoring.

4.2 Non-conformance and Corrective and Preventative Action

Orica Group Procedure “SHES Event Management” describes the requirements and response to any non-compliance.

Non-conformances may arise from routine inspections, audits or monitoring, or from an external complaint or a site incident. An environmental non-conformance can be defined as:

- Any inspection/test result that does not meet the acceptance criteria specified in the Project Approval or EPL 4121;
- Any notice or non-compliance issued by the EPA or any other regulatory authority with environmental jurisdiction;
- Any non-compliance with legislation, approvals or licences; or
- Any non-compliance with identified site-specific objectives and targets.

Should a non-conformance be identified, corrective and/or preventative actions are to be implemented in accordance with the relevant Orica procedures for incident reporting and investigation. They comprise:

- All non-conformances are to be classified as environmental incidents and documented;
- Investigate the cause of the potential non-conformance including stopping the activity if applicable;
- Identify potential corrective and/or preventative actions;
- Implement mitigation measures where applicable; and
- Provide feedback to employees and contractor personnel, where relevant.

Where improvements are identified, a plan for implementing those will be developed.

4.3 Records

Appropriate records are required to be maintained and should include records of:

- Any mandatory or voluntary Audits;
- Document revisions;
- Training records;
- Inspection and Monitoring records; and
- Complaints.

The Facility Manager is responsible for ensuring that the appropriate records required to maintain this EMS are created and stored appropriately. While the EMS documentation is in the format of ISO 14001; the format of the EMPs and other documents to support the EMS must ensure that the documentation is:

- Legible;
- Able to be readily retrieved;
- Compliant with all the records required if ISO 14001:2015 is to be implemented at the Facility; and
- Auditable by external parties.

All copies of final records should be lodged with Orica's document control and must be available for external audits.

4.4 Audit

4.4.1 Internal Audits

The EMS shall be audited on two-yearly (biennial) basis. Biennial audits will also be conducted of the site-specific Management Plans referred to in this EMS.

Where appropriate and/or required, internal audits may be undertaken by a suitably qualified external auditor.

Internal audits must assess the implementation of all documentation associated with the EMS and their effectiveness. The results of the audits must be recorded and communicated to the ANE Facility Manager, together with suggested corrective actions that may be required. The ANE Facility Manager will need to agree to any corrective or preventive actions which may be required, as these may need to be reflected in contractual conditions.

All auditing records will be maintained in Enablon. A formal audit report must be prepared for each audit undertaken.

Orica Group Procedure "SHES Assurance" describes requirements for the planning, administration, reporting, corrective action and follow-up of internal SHES audits.

4.4.2 Independent Audits

The following independent audits will also be undertaken in accordance with the Project Approval. The Orica Facility Manager will be responsible for arranging the audits. The requirements of the audits as set out in the Project Approval are outlined below:

- **Environmental Audit of the Project:** In accordance with the Project Approval (Schedule 4, Condition 4), within two years of the commencement of operations of the ANE Facility, and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project.
- **Traffic Audit:** In accordance with Project Approval (Schedule 3, Condition 11), within six months of the commencement of operation of the ANE Facility, and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission a suitably qualified person, whose appointment has been approved by the Secretary, to conduct an Independent Traffic Audit of the development.
- **Hazard Audit:** In accordance with Project Approval (Schedule 3, Condition 5), twelve months after the commencement of operations and every three years thereafter, or at such intervals as the Secretary may agree, the Proponent shall carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Secretary. The audit shall be carried out by a qualified person or team independent of the overall site approved by the Secretary.

A summary of auditing to be undertaken, timing and the person responsible is provided at Appendix J.

5.0 Review

This EMS will be reviewed every two years or in response to major operational changes, to determine the effectiveness of any corrective actions identified in the various audits. The review process will enable changes in environmental legislation and guidelines, and changes in site management to be reflected in the EMS.

The reviews should aim to review the continuing suitability and effectiveness of the EMS, and should at least include the following considerations:

- Are the EMS objectives and targets adequate? Are they still the key priorities? They may need to be revised to reflect changing conditions and information.
- Are the environmental outcomes at the site acceptable?
- Is the Environmental Aspects Register still relevant? Are there further environmental aspects that need to be considered? Are the mitigating measures effective?
- Is the site infrastructure functioning efficiently to allow the achievement of environmental goals?
- How could the EMS be improved?

The review will be led by the ANE Facility Manager.

If it is determined that the EMS is to be revised following the review, the revised EMS should be made available at the ANE Facility and communicated to employees and contractors, within four months following the review.

6.0 References

AECOM Australia Pty Ltd, July 2024, Operation Soil and Water Management Plan for Ammonium Nitrate Emulsion Production Facility.

Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

Office of Environment and Heritage (2019) Biobanking Agreement ID number: 350 (under the Threatened Species Conservation Act 1995 for Orica Australia Pty Limited for Richmond Vale Biobank Site, Lot 2 in Deposited Plan number 809377).

Orica Australia, Revision 24, 08/02/2023, Kurri Kurri Technical Centre Emergency Plan.

Orica Mining Services, November 2011, Orica Kurri Kurri Safety Management System.

Orica Australia Pty Ltd, June 2020, Richmond Vale ANE Production Facility: Heavy Vehicle Road Transport Protocol – Operations Rev E (Operational RTP).

Project Approval 09_0090 (in accordance with Section 75J of the *Environmental Planning and Assessment Act, 1979*), issued 26 July 2010 by the Minister for Planning.

Project Approval 09_0090 MOD 1 (in accordance with Section 75W of the *Environmental Planning and Assessment Act, 1979*), issued 9 November 2012 by the delegate of the Minister for Planning.

Project Approval 09_0090 MOD 2 (in accordance with Section 75W of the *Environmental Planning and Assessment Act, 1979*), issued 4 July 2016 by the delegate of the Minister for Planning.

Sherpa Consulting, Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011.

Sherpa Consulting, Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011.

Umwelt (Australia) Pty Limited, December 2009, Environmental Assessment Proposed Ammonium Nitrate Emulsion (ANE) Production Facility, and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW.

Umwelt (Australia) Pty Limited, September 2010, Environmental Management Strategy for the Construction of Orica's Ammonium Nitrate Emulsion (ANE) Production Facility, Richmond Vale, NSW.

Umwelt (Australia) Pty Limited, 2021, Biodiversity Offset Area Vegetation Management Plan.

Umwelt (Australia) Pty Limited, March 2010, Response to Submissions, Proposed Ammonium Nitrate Emulsion (ANE) Production Facility, and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW.

Umwelt (Australia) Pty Limited, October 2012, Section 75W Modification application, MOD 1 Environmental Assessment - Orica Australia Pty Limited, Ammonium Nitrate Emulsion Production Facility, Richmond Vale.

Umwelt (Australia) Pty Limited, April 2016, Section 75W Modification application, MOD 2 Environmental Assessment - Orica Australia Pty Limited, Ammonium Nitrate Emulsion Production Facility, Richmond Vale.

Appendix A

Project Approval

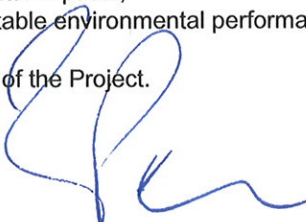
Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 4.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.



Richard Pearson
Deputy Director-General

Sydney

26th July

2010

SCHEDULE 1

Application Number:	09_0090
Proponent:	Orica Australia Pty Ltd
Approval Authority:	Minister for Planning
Land:	George Booth Drive, Lot 2 DP 809377, Richmond Vale NSW
Project:	Orica Ammonium Nitrate Emulsion Project

TABLE OF CONTENTS

DEFINITIONS	1
ADMINISTRATIVE CONDITIONS	2
Obligation to Minimise Harm to the Environment	2
Terms of Approval	2
Limit on Approval	2
Surrender of Existing Development Consents	2
Submission of Documentation	2
Structural Adequacy	2
Protection of Public Infrastructure	2
Operation of Plant and Equipment	3
SPECIFIC ENVIRONMENTAL CONDITIONS	3
Hazards	3
Traffic and Transport	5
Flora and Fauna	6
Air Quality	7
Noise	7
Soil and Water	7
Visual	8
Waste	8
Aboriginal Heritage	8
ENVIRONMENTAL MANAGEMENT AND MONITORING	9
Environmental Management Strategy	9
Environmental Reporting	9
Auditing	10
Access to Information	10
APPENDIX A: SITE PLANS	11
APPENDIX B: BIODIVERSITY OFFSET STRATEGY	13

DEFINITIONS

Ammonium nitrate emulsion product	Ammonium nitrate emulsion (ANE) which conforms to the UN3375 classification. ANE is an explosive precursor which is sensitised to become an explosive only at the point of use i.e. the mine site.
ANE	Ammonium Nitrate Emulsion
BCA	Building Code of Australia
Council	Cessnock City Council
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
EA	Environmental Assessment titled <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> and dated October 2009
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence
Minister	Minister for Planning, or delegate
Project	The development as described in the EA titled " <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> ", Prepared by Umwelt Australia and dated December 2009.
Proponent	Orica Australia Pty Ltd, or its successors in title
Reasonable and Feasible	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build
Project Site	The land referred to in Schedule 1
Statement of Commitments Documents	Statement of Commitments prepared by Umwelt within the EA Any report, plan, management plan, study or strategy required by this project approval
Submissions Report	Submissions Report titled <i>Proposed Ammonium Nitrate Emulsion (ANE) Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW Response to Submissions</i> and dated March 2010
tpa	tonnes per annum

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction and/or operation of the Project.

Terms of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
 - a) EA;
 - b) statement of commitments
 - c) Submissions Report; and
 - d) conditions of this approval.
3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and
 - b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

Limits on Approval

5. The Proponent shall not produce more than 250,000 tpa of ammonium nitrate emulsion product at the Project site.

Surrender of Existing Development Consents

6. Within 12 months of this approval, the Proponent shall surrender all existing development consents and project approvals for the site, apart from this project approval, in accordance with Clause 97 of the EP&A Regulation.

Submission of Documentation

7. With the approval of the Director-General, the Proponent may submit any plan, study or document required by this approval on a progressive basis.

Note: The conditions of this approval require certain documents to be prepared for the Project. They also require these documents to be reviewed and audited on a regular basis to ensure they remain effective. However, in some instances, it will not be necessary or practicable to prepare these documents for the whole Project at any one time; particularly as these documents are intended to be dynamic and improved over time. Consequently, the documents may be prepared and implemented on a progressive basis. In doing this however, the Proponent will need to demonstrate that it has suitable documents in place to manage the existing operations of the Project Site.

Structural Adequacy

8. The Proponent shall ensure that all new buildings and structures on the Project Site are constructed in accordance with the relevant requirements of the Building Code of Australia.

Notes:

- Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project.

Protection of Public Infrastructure

9. The Proponent shall:
 - a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Project; and
 - b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Project.

10. Prior to commencement of construction, the Proponent shall prepare a dilapidation report of the public infrastructure in the vicinity of the Project Site (including roads, gutters, footpaths, etc) in consultation with the RTA and submit a copy of this report to the Director-General.
11. Prior to the construction of any utility works, the Proponent shall obtain the relevant approvals from service providers.

Operation of Plant and Equipment

12. The Proponent shall ensure that all plant and equipment used on the Project Site is:
 - a) maintained in a proper and efficient condition; and
 - b) operated in a proper and efficient manner.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

HAZARDS

Pre-construction

1. At least one month prior to the commencement of construction of the proposed project (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Director-General may agree, the Proponent shall prepare and submit for the approval of the Director-General the studies set out under subsections (a) to (d) (the pre-construction studies). Construction, other than of preliminary works, shall not commence until approval has been given by the Director-General and, with respect to the Fire Safety Study, approval has also been given by the Commissioner of the NSW Fire Brigades.
 - a) An update of the Fire Safety Study of the site to include the proposed ANE Facility. This study shall cover the relevant aspects of the Department of Planning's Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines' and the New South Wales Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. The study shall also be submitted for approval, to the NSW Fire Brigades.
 - b) A Hazard and Operability Study for the proposed ANE Facility, chaired by a qualified person, independent of the development, approved by the Director-General prior to the commencement of the study. The study shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'. The study report must be accompanied by a program for the implementation of all recommendations made in the report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.
 - c) A Final Hazard Analysis of the proposed ANE Facility, consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 6, 'Guidelines for Hazard Analysis'.
 - d) A Construction Safety Study for the ANE Facility, consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety Study Guidelines'. If the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.

Pre-commissioning

2. The Proponent shall develop and implement the plans and systems set out under subsections (a) to (b). No later than two months prior to the commencement of commissioning of the project, or within such further period as the Director-General may agree, the Proponent shall submit, for the approval of the Director-General, documentation describing those plans and systems. Commissioning shall not commence until approval has been given by the Director-General.
 - a) An update of the existing Emergency Plan and the emergency procedures to include the ANE Facility. This plan shall include consideration of the safety of all people outside of the facility who may be at risk from the Facility. The plan shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 1, 'Industry Emergency Planning Guidelines'.
 - b) A document setting out a comprehensive Safety Management System, covering all operations and associated transport activities involving hazardous materials associated with the ANE Facility. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on-site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'.

Pre-startup

3. One month prior to the commencement of operation of the project, the Proponent shall submit to the Director-General, a Pre-startup Compliance Report detailing compliance with conditions 1 and 2, including:
 - a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
 - b) actions taken or proposed, to implement recommendations made in the studies/plans/systems; and
 - c) responses to each requirement imposed by the Director-General under condition 6.

Post-startup

4. Three months after the commencement of operation of the ANE Facility, the Proponent shall submit to the Director-General, a Post-startup Compliance report verifying that:

- a) transport routes specified under in the *Technical Note ANE and ANS Transport Hazard Analysis*, rev. 0 prepared by Sherpa and dated 8 Oct 2009, or other routes in accordance with the Traffic Management Plan, are being followed;
- b) the Emergency Plan required under condition 2a) is in place and that at least one emergency exercise has been conducted; and
- c) the Safety Management System required under condition 2b) has been fully implemented and that records required by the system are being kept.

Ongoing

- 5. Twelve months after the commencement of operations of the proposed ANE Facility and every three years thereafter, or at such intervals as the Director-General may agree, the Proponent shall carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Director-General.
 - a) The audits shall be carried out at the Proponent's expense by a qualified person or team, independent of the overall site, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'.
 - b) The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Proponent intends to defer the implementation of a recommendation, reasons must be documented.
- 6. The Proponent shall comply with all reasonable requirements of the Director-General in respect of the implementation of any measures arising from the reports submitted in respect of conditions 1 to 5 inclusive, within such time as the Director-General may agree.

TRANSPORT

Design of Site Access, Internal Roads and Parking

- 7. The Proponent shall ensure that new site access points, internal roads and parking associated with the ANE Facility are designed, constructed and maintained in accordance with the latest versions of the Australian Standards AS 2890.1:2004 and AS 2890.2:2002 or as otherwise agreed by Council.
- 8. Prior to the commencement of operation of the ANE Facility, the Proponent shall prepare and implement a Concept Design Plan of the intersection of Echidna Drive with George Booth Drive. The Plan shall be prepared in consultation with the RTA and to the satisfaction of the Director-General. The Plan shall include:
 - a) Details of the upgrade works to the existing advance intersection warning signage to type GI-207 and reposition the signage further in advance of George Booth Drive / Echidna Drive Intersection;
 - b) Details of improvements of the delineation of the double barrier lines in George Booth Drive on the approaches to Echidna Drive; and
 - c) Install a "Stop" sign at the Echidna Drive intersection.
- 9. The applicant will be required to enter into a Works Authorisation Deed with the RTA for implementation of required road works on George Booth Drive. In this regard the developer is required to submit detailed design plans and all relevant additional information, as may be required in the RTA's Works Authorisation Deed documentation, for each specific change to state road network for the RTA's assessment and final decision concerning the work.

Road Transport Protocol

- 10. Prior to the commencement of construction of the ANE Facility, the Applicant shall prepare and implement a Road Transport Protocol for heavy vehicles, in consultation with the RTA, to the satisfaction of the Director-General. This Protocol shall detail the management of heavy vehicles during both construction and operation of the ANE Facility, and where relevant:
 - a) Define the routes to be used for heavy vehicles; the maximum number of road movements and the haulage hours;
 - b) Include a **Traffic Management Plan**, which incorporates the requirements of the site's existing Traffic Management Protocol and addresses:
 - procedures to ensure that drivers adhere to the designated haulage route as required under this Protocol;
 - measures to achieve a low-frequency, regular trucking schedule during normal business hours rather than a high-frequency, campaign trucking schedule;
 - contingency plans where, for example the designated transport route is disrupted. This shall also address procedures for notifying relevant agencies and affected communities of the required implementation of any such contingency plans;

- details of procedures for receiving and addressing complaints from the community concerning traffic issues associated with haulage from the site; and
 - measures to ensure that the provisions of the Traffic Management Plan are implemented, eg. education of drivers and any contractual agreements with operators of heavy vehicles which service the site;
- c) Include a **Driver Code of Conduct** that addresses:
- driver licencing and training requirements in relation to the transport of dangerous goods;
 - travelling speeds;
 - staggering of truck departures to ensure a regular trucking schedule throughout the day;
 - instructions to drivers not to overtake each other on the haulage route, as far as practicable, and to maintain appropriate distances between vehicles;
 - instructions to drivers to restrict the use of exhaust brakes in accordance with the Submissions Report;
 - instruction to drivers to adhere to the designated haulage route;
 - instruction to drivers to be especially safety conscious and to ensure that traffic regulations are obeyed strictly;
 - driver training in the Code to ensure that all drivers are made aware and to adhere to the Code; and
 - procedures for ensuring compliance with and enforcement of the Code.

Independent Traffic Audit

11. Within 6 months of the commencement of operation of the ANE Facility, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission a suitably qualified person, whose appointment has been approved by the Director-General, to conduct an Independent Traffic Audit of the development. This audit must:
- a) have the verification component of the audit undertaken without prior notice to the Proponent,
 - b) assess the impact of the development on the performance of the road network;
 - c) investigate any incidents involving haulage vehicles from the development;
 - d) assess the effectiveness of the Driver's Code of Conduct; and, if necessary,
 - e) recommend measures to reduce or mitigate any adverse (or potentially adverse) impacts.

Within 1 month of commissioning the audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, with a response to any of the recommendations contained in the audit report.

FLORA AND FAUNA

Offset Strategy

12. Within 6 months of the date of this approval, the Proponent shall implement the offset strategy to the satisfaction of the Director-General. The Proponent shall:
- a) implement the offset strategy described in the Response to Submissions and summarised in Table 3 (shown in Appendix B); and
 - b) make suitable arrangements, in consultation with DECCW, to provide for appropriate long term conservation security for the offset area.

Table 3: Offset Strategy

Offset Area	Minimum Size
Biodiversity Offset Area	31.7 ha

13. The mechanism for securing the Biodiversity Offset Area, referred to in condition 12, shall not be extinguished or altered without the written consent of the Director-General.

Vegetation Management Plan

14. The Proponent shall prepare and implement a Vegetation Management Plan for the project to the satisfaction of the Director-General. The plan must:
- a) be prepared in consultation DECCW, and be approved by the Director-General prior to the commencement of operation of the ANE Facility;
 - b) describe the detailed measures that would be implemented to protect the Biodiversity Offset Areas; and

- c) describe the ongoing management measures that would be undertaken to maintain the Biodiversity Offset Areas for the life of the project.

Vegetation Clearing Protocol

- 15. The Vegetation Clearing Protocol shall:
 - a) clearly identify the location and type of vegetation to be retained and to be removed from the site;
 - b) detail measures that would be implemented for vegetation clearing;
 - c) detail procedures to manage impacts on fauna including translocation of fauna (if appropriate); and
 - d) detail the staging of construction to avoid, where possible, breeding times for key species on site or alternatively minimise impacts during clearing activities.

AIR QUALITY

Mitigation

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

NOISE

- 18. The Proponent shall ensure that the noise generated from the construction and operation of the project does not exceed 35 dB(A) $L_{Aeq}(15 \text{ minute})$ at the nearest residential receptor at any time.

Notes:

- a) *To determine compliance with the $L_{Aeq}(15 \text{ minute})$ noise level limit in condition 17, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling (rural situations) is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the Department may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
 - b) *The noise emission limits identified above apply under meteorological conditions of:*
 - wind speeds of up to 3 m/s at 10 metres above ground level; and
 - temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.
- 19. The Proponent shall conduct a Noise Audit for the premises within 3 months of the commencement of operation of the ANE Facility or as otherwise agreed by the Director-General. This audit shall:
 - a) be undertaken by a suitably qualified and experienced person during a period in which the ANE Facility is operating at normal capacity;
 - b) assess whether the project is complying with the noise limits in this approval;
 - c) identify what additional measures would be implemented to ensure compliance should any non-compliance be detected and clearly indicate who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General; and
 - d) provide details of any complaints received relating to noise generated by the project, and action taken to respond to those complaints.

Within one month of conducting the Noise Audit, the Proponent shall provide the Director-General and DECCW with a copy of the Noise Audit report.

BUSHFIRE MANAGEMENT

- 20. The Proponent shall implement the recommendations of the 'Bushfire Threat Assessment' included with the EA and also any additional bushfire hazard reduction measures outlined in the Submissions Report.

SOIL AND WATER

Discharges

- 21. The Proponent shall comply with Section 120 of the *Protection of the Environment Operations Act 1997*.

Bunding

22. The Proponent shall ensure that all chemicals, fuels and oils associated with the Project are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. The bund(s) shall be designed and installed in accordance with:
- a) the requirements of all relevant Australian Standards; and
 - b) the DECCW's Storing and Handling Liquids: Environmental Protection, Participants Manual.

Soil and Water Management Plan

23. The Proponent shall prepare and implement a **Soil and Water Management Plan** for the project to the satisfaction of the Director-General. This plan must:
- a) be submitted to the Director-General for approval prior to construction;
 - b) be prepared by a suitably qualified and experienced expert; and
 - c) include, where relevant:
 - a Stormwater Management Plan; and
 - an Erosion and Sediment Control Plan.
24. The Stormwater Management Plan must:
- a) include detailed plans of the stormwater management system for the site, including any rainwater harvesting infrastructure;
 - b) be consistent with the guidelines *Managing Urban Stormwater: Harvesting and Reuse (DECC)*;
 - c) demonstrate that post development flows will not exceed predevelopment flows for a range of ARI from 1 year up to and including the 100 year ARI;
 - d) describe the procedures for the installation, inspection and maintenance of the stormwater system; and
 - e) include a stormwater quality monitoring program for including procedures to be undertaken if any non-compliance is detected.
25. The Erosion and Sediment Control Plan shall be prepared in accordance with *Landcom's 2004 Managing Urban Stormwater: Soils and Construction*.

VISUAL

Lighting

26. The Proponent shall ensure that lighting associated with the Project:
- a) complies with the latest version of *Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting*; and
 - b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

WASTE

Operating Conditions

27. The Proponent shall ensure that all waste generated by the Project during construction and operation is classified in accordance with the DECCW's *Waste Classification Guidelines 2008* and if required, disposed of to a facility that may lawfully accept the waste.

ABORIGINAL HERITAGE

28. In the event that skeletal remains, or an Aboriginal object is identified, all construction activities that will or would have the potential to impact on indigenous heritage item(s), shall cease until the DECCW is consulted and their directions complied with.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to commencement of construction, and:
 - a) provide the strategic context for environmental management of construction and operation of the Project;
 - b) identify the statutory requirements that apply to the Project;
 - c) describe in general how the environmental performance of the Project would be monitored and managed;
 - d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the Project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise in relation to operations at the Project;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies; and
 - e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the Project.

ENVIRONMENTAL REPORTING

Annual Environmental Management Report

2. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an Annual Environmental Management Report (AEMR) for the Project to the Director-General. The report must:
 - a) identify the standards and performance measures for the Project;
 - b) describe the works carried out in the past 12 months and the works to be carried out in the next 12 months;
 - c) include a summary of complaints received in the past year and provide comparison with previous years;
 - d) report results of all monitoring required by this approval and an EPL for the Project;
 - e) provide analysis of monitoring results in the context of relevant criteria and limits, previous monitoring results and the predictions made in the EA;
 - f) identify any trends in monitoring results over the life of the Project; and
 - g) report on compliance with the project approval, summarise non-compliances in the previous 12 months and report on actions taken to rectify non-compliances.

Incident

3. The Proponent shall notify the Director-General and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

AUDITING

Independent Environmental Audit

4. Within 2 years of the commencement of operations of the ANE Facility, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:
 - a) be conducted by a suitably qualified, experienced, and independent expert whose appointment has been endorsed by the Director-General;
 - b) assess the environmental performance of the Project, and its effects on the surrounding environment;
 - c) assess whether the Project is complying with the relevant standards, performance measures, and statutory requirements;
 - d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - e) recommend measures or actions to improve the environmental performance of the Project, and/or any strategy/plan/program required under this approval.

ACCESS TO INFORMATION

5. From the end of 2010, the Proponent shall provide regular reporting on the environmental performance of the Project on its website, including ensuring the following information is publicly available on its website:
 - a) a copy of all current statutory approvals;
 - b) a copy of the current environmental management strategy and associated plans and programs;
 - c) a copy of any Annual Reports (over the last 5 years);
 - d) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and
 - e) any other matter required by the Director-General.

APPENDIX A SITE PLANS



Legend

- Technology Centre Boundary
- Proposed ANE Production Facility and Access Road
- 30m Bushfire Buffer Clearance Area

FIGURE 1.3

Figure 1: Site Layout

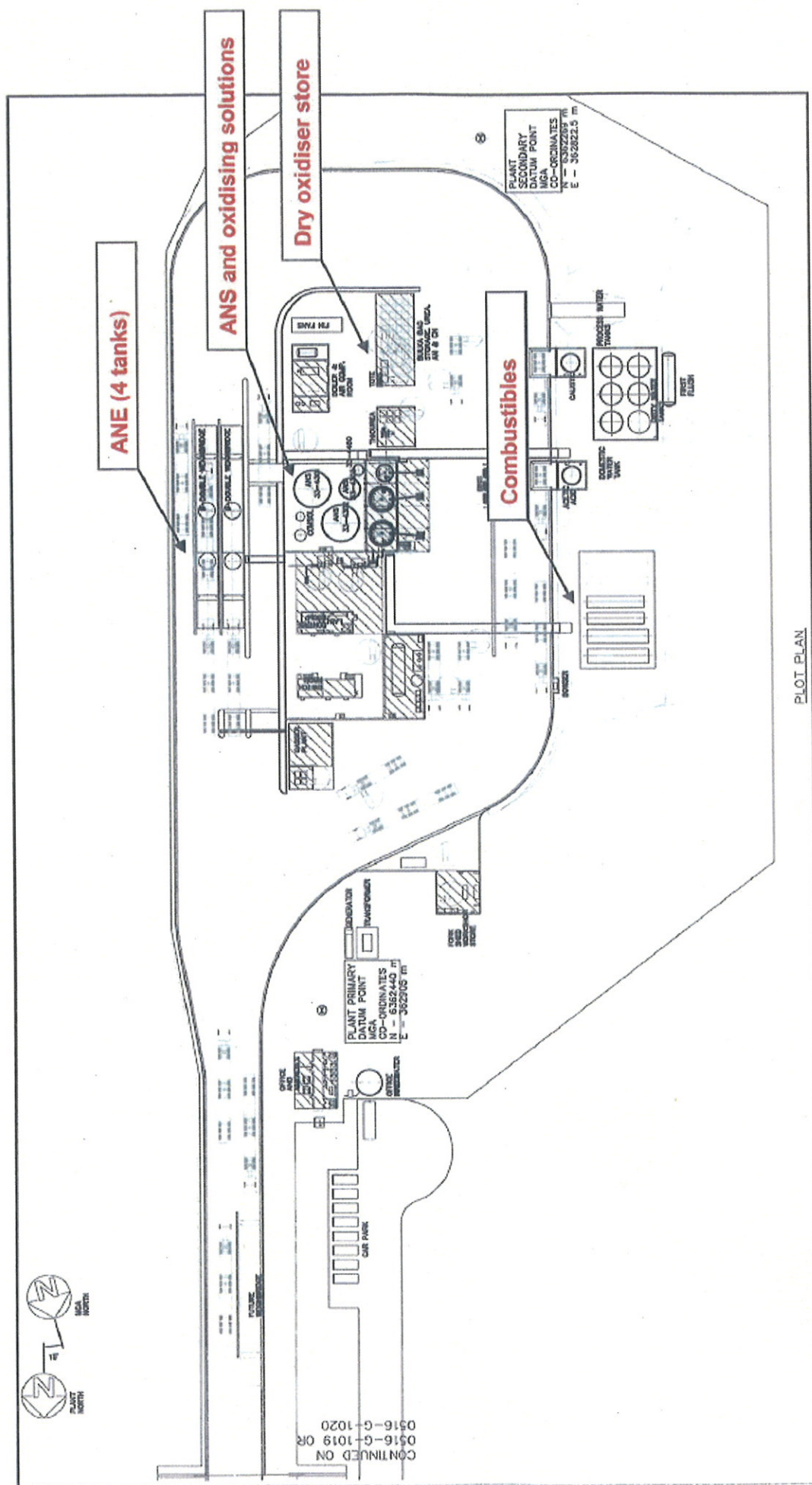


Figure 2: Conceptual Plant Layout

APPENDIX B BIODIVERSITY OFFSET AREA



Legend

- Technology Centre Boundary
- Sugarloaf State Conservation Area
- Proposed Biodiversity Offset Area
- Previously Proposed Biodiversity Offset Area
- River-flat Eucalypt Forest EEC
- Lower Hunter Spotted Gum-Ironbark Forest EEC

- Coastal Plains Smooth-barked Apple Woodland
- *Grevillea parviflora* subsp. *parviflora* (DECCW Recording)
- *Malaleuca linearifolia* (DECCW Recording)
- Possible Feed Tree for Yellow-bellied glider (DECCW Recording)

FIGURE 2

Revised Proposed
Biodiversity Offset Area

Figure 3: Biodiversity Offset Area

7.0 Draft Statement of Commitments

The DGRs for the Project require that the EA includes a Statement of Commitments which details the measures proposed by Orica for environmental mitigation, management and monitoring of the Project.

If approval is granted under Part 3A of the EP&A Act for the proposed Project, Orica will commit to the following controls.

Issue	Commitment	Timing
Compliance with the EA	The Project will be carried out generally in accordance with the Project application and the EA.	Ongoing
Ecology	The Construction Safety Environmental Management Plan (CSEMP) will include: - measures to clearly define the limits of the clearing activities associated with the proposed ANE Production Facility and associated works. - a clearing procedure for the protection of fauna will be developed in accordance with the procedures outlined in Section 6.2.4 of the EA and implemented during clearing activities. - requirements for the management of erosion and sedimentation during the construction of the facility.	Prior to clearing Prior to and during construction During construction
	The security fencing for the ANE Production Facility will be restricted to the building perimeter at the 30 metre fire break and will not require further vegetation clearing.	During clearing
	Existing Technology Centre site perimeter fencing will remain unchanged so as to allow fauna movement through the site.	Ongoing
	Utility easements needing to be created will, where possible, following existing fire trails/roads and other cleared areas to minimise vegetation clearing. Any minor clearing associated with utility easements will be stabilised and reseeded, where necessary, following completion of works.	During construction
	A Biodiversity Offset area is proposed to be established within the study area to offset the vegetation clearing associated with the proposed ANE Production Facility.	Ongoing

Issue	Commitment	Timing
Aboriginal Heritage	Surface collection of artefact scatter Orica AS will be undertaken in accordance with the methodology in the Aboriginal Cultural Heritage Assessment.	Prior to disturbance of the site
	Topsoil removal associated with the construction of the ANE Production Facility will be subject to monitoring by representatives of the Aboriginal community in accordance with the methodology in the Aboriginal Cultural Heritage Assessment.	During topsoil removal
	An Aboriginal Cultural Heritage module will be developed in consultation with the registered Aboriginal stakeholders for inclusion in the site induction training for construction personnel.	Prior to construction
	The CSEMP will detail the management of Aboriginal heritage material in accordance with Aboriginal Heritage Assessment Report.	During construction
Historical Heritage	If any places, sites or items of potential European heritage significance are identified during the construction phase of the Project, all activities would cease in the immediate area of the site until such time as an appropriate assessment of heritage significance is undertaken and plans to manage the site have been developed in consultation with DoP and, where relevant, the NSW Heritage Office.	During construction
Traffic	A Traffic Management Protocol and Code of Conduct for Drivers operating heavy vehicles to and from the Technology Centre will be implemented.	Prior to the commencement of transport activities associated with the proposed ANE Production Facility
Noise	The use of exhaust brakes will be restricted in both directions between John Renshaw Drive and the intersection of Echidna Drive and George Booth Drive.	Operation
	During construction, higher noise generating activities will be conducted during the day where possible.	During construction
	Investigations will be undertaken in response to any concerns raised by the community regarding traffic noise associated with the Project.	Ongoing
Hazards	Orica will design, construct and manage the Project such that the relevant risk criteria are met within the Technology Centre boundary and do not extend off site.	Ongoing
	Orica will manage potential hazards related to the transport of ANE and ANS in accordance with measures outlined in Section 6.6.2.2 including product contamination, heavy vehicles controls, and driver training.	Ongoing
Air and odour	The CSEMP will include measures to minimise air and odour impacts as a result of construction.	During construction
	The Operational Environmental Management Plan (OEMP) will detail measures to minimise air and odour during ongoing operations.	During operation

Issue	Commitment	Timing
Greenhouse Gas and Energy	A review of energy efficiency will be undertaken as part of plant and equipment procurement.	During construction
	Orica will consider the implementation of energy efficiency opportunities as described in Section 6.8.3.	Ongoing
Water	The CSEMP will include requirements to manage the erosion and sediment control measures.	During construction
	An OEMP will detail the measures to be undertaken to ensure that the water controls are being effectively maintained. This plan will include the requirements for any water quality monitoring, inspection of the diversion drains, erosion control measures and maintenance of the water management systems within the operational areas of the plant.	Operation
Bushfire	A 30 metre Asset Protection Zone (APZ) will be constructed around the proposed ANE Production Facility and maintained in accordance with the requirements of the Inner Protection Area.	During construction and ongoing
	Construction materials for the proposed ANE Production Facility will comply with the Building Code of Australia (BCA) for bushfire protection where applicable.	During construction
	The proposed ANE Production Facility access road will be sized to provide sufficient width to allow fire fighting access.	During construction
	Water supplies will be easily accessible and suitable connections for water tanks will be provided so Rural Fire Service (RFS) tankers can refill.	Ongoing
	The Site Emergency Plan and Fire Safety Management Plan will be updated to include the proposed ANE Production Facility.	During construction and operation
Waste	The CSEMP will include measures to manage waste through the design and procurement of construction materials and establishment of recycling and waste disposal systems.	During construction
	The OEMP details the management of waste materials generated during the operation of the Project.	Ongoing

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning and Infrastructure, I hereby modify the project approval (MP 09_0090) referred to in Schedule 1, subject to the Conditions in Schedules 2 and 3.

Chris Wilson
Executive Director
Major Projects Assessment

Sydney

9 November

2012

SCHEDULE 1

Project approval (MP 09_0090), granted by then Minister for Planning on 26 July 2010 for the Orica Ammonium Nitrate Emulsion Project, Richmond Vale in the Cessnock City local government area.

DEFINITIONS

1. Replacing the definition of 'Project' in the definitions list as follows:

Project	The development as described in the EA titled " <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> ", Prepared by Umwelt Australia and dated December 2009, as modified by MP 09_0090 MOD 1.
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SCHEDULE 2

2. Replacing Condition 2 in Schedule 2 with the following:

Limits of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
 - a) EA;
 - b) modification application MP 09_0090 MOD 1 dated 10 October 2012, environmental assessment dated 8 October 2012 and accompanying plans, prepared by Umwelt (Australia) Pty Ltd;
 - c) statement of commitments;
 - d) Submissions Report; and
 - e) conditions of this approval.

SCHEDULE 3

3. Inserting new Conditions 6A, 6B and 6C after Condition 6 in Schedule 3 as follows:

Hazards and Risk (MP 09_0090 MOD 1)

- 6A. Prior to the commencement of construction works associated with MP 09_0090 MOD 1, the Proponent shall identify all hazards arising from the potential interaction of construction works associated with MP 09_0090 MOD 1 with the existing operations which are related to Schedule 15 materials identified in the *NSW Work Health and Safety Regulation 2011*.

6B. During construction works associated with MP 09_0090 MOD 1, the Proponent shall implement all necessary control measures to reduce the risks from those hazards identified by Condition 6A of this Schedule to as low as reasonably practicable.

6C. The Proponent shall ensure that the safety aspects of all construction works associated with MP 09_0090 MOD 1 are carried out in accordance with the existing Safety Management System for the site.

Note: Management of change procedures which must be followed and documented in accordance with the Work Health and Safety Regulation 2011.

4. Inserting the following Note under Condition 23 in Schedule 3 as follows:

Note: The provisions of this plan shall be implemented for all construction works associated with the project and/or modification approved thereafter.

5. Replacing Figure 2 in Appendix A with the following:



Figure 2: Detailed Site Layout

DO NOT SCALE	 DIMENSIONS IN MILLIMETERS DIMENSIONS IN INCHES (IN)	NOTES:	STATUS: PRELIMINARY RELEASED UNDER: UNRELEASABLE	DRAWN: Ken Reynolds CHECKED:	DATE: 19 Aug 12	TEAM: KURRI ANE ANE SYSTEM ANE MANUFACTURING STRUCTURAL WORKS GENERAL ARRANGEMENT	ORIGINATING OFFICE: KURRI CURRI MAIL:
DRAWING LIST	39920		* THIS DRAWING IS PRELIMINARY AND FOR INFORMATION ONLY. * IT CANNOT BE USED FOR CONSTRUCTION OR FOR ANY OTHER PURPOSE. * IT IS THE RESPONSIBILITY OF THE USER TO OBTAIN THE LATEST REVISIONS OF THIS DRAWING. * PRINTED COPIES ARE NOT CONTROLLED	FAILED	DATE:	WORK ORDER NO.: 8005846	DRAWING NO.: 56077
REFERENCE DRAWINGS	39921-23	V		APPROVED:	DATE:	SCALE:	SHEET NO.: 1 of 1 VERSION NO.: 0

Notice of Modification

Section 75W of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning, I modify the Project Approval referred to in Schedule 1, subject to the conditions in Schedule 2 and 3.



Anthony Witherdin
Acting Director
Modification Assessments

Sydney 4 July 2016

SCHEDULE 1

Development Approval:	MP 09_0090 granted by the Minister for Planning on 26 July 2010
For the following:	Orica Ammonium Nitrate Emulsion Project
Applicant:	Orica Australia Pty Ltd
Consent Authority:	Minister for Planning
The Land:	George Booth Drive (Lot 2 DP 809377, Richmond Vale, NSW)
Modification:	MP 09_0090 MOD 2: the modification includes: installation of a heat exchanger and cooling tower to enable the cooling of the ANE during production.

SCHEDULE 2

The above approval is modified as follows:

- (a) Schedule 2 - Condition 2 is amended by the insertion of the **bold and underlined** words / numbers as follows:

Limits of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
- EA;
 - modification application MP 09_0090 MOD 1 dated 10 October 2012, environmental assessment dated 8 October 2012 and accompanying plans, prepared by Umwelt (Australia) Pty Ltd;
 - modification application MP 09_0090 MOD 2 dated 14 April 2016 and accompanying plans, prepared by Umwelt (Australia) Pty Ltd and the Response to Submissions dated 25 May 2016 prepared by Umwelt (Australia) Pty Ltd.**
 - statement of commitments;
 - submissions report; and
 - conditions of this approval.

SCHEDULE 3

- (b) Schedule 3 - Condition 4.1 is included by the insertion of the **bold and underlined** words/ numbers as follows:

HAZARDS

Post-startup

- 4.1 Within 3 months of the approval of Modification 2. or further time agreed with SafeWork NSW, the applicant shall update the current MHF Safety Case for the facility and provide the relevant information of SafeWork NSW.**

- (c) Schedule 3 - Condition 6D, 6E, 6F Hazards and Risk(MP 09_0090 MOD 2) – is added by the insertion of **bold and underlined** words / numbers as follows:

Hazards and Risk (MP 09_0090 MOD 2)

- 6D. Prior to the commencement of construction works associated with MP 09_0090 MOD 2, the Proponent shall identify all hazards arising from the potential interaction of construction works associated with MP 09_0090 MOD 2 with the existing operations which are related to Schedule 15 materials identified in the NSW Work Health and Safety Regulation 2011.**

- 6E. During construction works associated with MP 09_0090 MOD 2, the Proponent shall implement all necessary control measures to reduce the risks from those hazards identified by Condition 6A of this Schedule as low as reasonably practicable.**

- 6F. The Proponent shall ensure that the safety aspects of all construction works associated with MP 09_0090 MOD 2 are carried out in accordance with the existing Safety Management System for the site.**

Note: Management of change procedures which must be followed and documented in accordance with the Work Health and Safety Regulation 2011.

- (d) Schedule 3 - Condition 29 is included by the insertion of the **bold and underlined** words / numbers as follows:

SAFETY

- 29. Prior to finalising the detail design of the additional plant approved by Modification 2, the applicant must consult with the Major Hazards unit of SafeWork NSW with regard to the safety systems to be incorporated into the modification, and incorporate the safety measures to the satisfaction of SafeWork NSW.**

- (e) Appendix A – Figure 2 detailed site layout is removed and replaced with the following revised Figure 3 titled ANE System – ANE Manufacturing – Structural Works Manufacturing Drawing No. 56077 revision 1 prepared by Orica Australia Pty Ltd.

Figure 3: Detailed ANE facility site layout



Appendix B

Environmental Aspects Register

Appendix B Environmental Aspects Register

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
1. Hazardous Event								
1.1 An explosion event	Fire at the site. Possible fatality or injury to people.	Unlikely	Extremely Serious	II	An Emergency Plan is in place	As per the Emergency Response Plan.	As per the Emergency Response Plan.	As per the Emergency Response Plan.
					A Safety Management System is in place.	As per the Safety Management System.	As per the Safety Management System.	As per the Safety Management System.
					Orica Procedure MP-SF-005 "Fire Risk Management" defines requirements to ensure proper management of fire and fire-related risks in plants handling hazardous materials. In accordance with the procedure, each plant or site handling hazardous materials shall prepare a Fire Risk Management Plan. A Fire Safety Study for the ANE Facility has been prepared.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.

⁴ Refer Table 2, Appendix B

⁵ Refer Table 3, Appendix B

⁶ Refer Table 4, Appendix B

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-SG-018 "Major Hazard Facilities" identifies key requirements for compliance with the Australian National Standard for the Control of Major Hazard Facilities. The objective of the procedure and the National Standard is to prevent major incidents and near misses, and to minimise their effects. For example, Hazard Assessments shall be carried out for all Major Hazard Facilities. A Hazard Analysis and Hazard Study have been prepared for the ANE Facility.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
					Measures and safeguards as outlined in the Final Hazard Analysis, and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.
	Fire at the site. Possible fire in bushland as a consequence.	Possible	Highly Significant	II	Implementation of the measures and safeguards within Fire Safety Study recommendations.	As per the Fire Safety Study.	As per the Fire Safety Study.	As per the Fire Safety Study.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Implement the recommendations of the “Bushfire Threat Assessment” included in the EA and measures outlined in the Submissions Report, including:	Check access road clearance.	Weekly.	Technical Centre Manager.
					- Maintain a minimum 4 m vertical clearance to any overhanging obstructions including tree branches along the access road; - Maintain 2 x 70,000 litre water tank dedicated to fire-fighting purposes.	Check water level in tank.	Continuous via Control System Low level Alarms set	ANE operational staff.
					Maintenance of the 30 metre wide perimeter bushfire clearance zone in accordance with the Bushfire Threat Assessment” included in the EA.	Check perimeter bushfire clearance zone.	3 Monthly.	Technical Centre Manager.
					Water supplies will be easily accessible and suitable connections for water tanks will be provided so Rural Fire Service tankers can refill.	Checks of connections and water levels.	Monthly.	Technical Centre Manager

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
1.2 Chemical spill	Chemical entering the stormwater system.	Likely	Serious	II	Spill kits and spill management procedures.	Visual inspection to confirm kits appropriately stocked and located.	Weekly or after use.	ANE Operational Staff.
					Chemical storage areas are maintained in a clean and usable condition.	Check for cleanliness, usable condition, leaks.	Daily.	ANE Operational Staff.
					Chemical storage containers are in good working order and contents clearly marked.	Check for cleanliness, usable condition, leaks.	Daily.	ANE Operational Staff.
					Control valves on the stormwater system will ensure that no chemicals will be released offsite in the event of spill event outside of the bunded areas.	Clean and test "Stormceptor" and maintain waste water system.	Monthly and after rainfall.	ANE Facility Manager.
1.3 Leakage of storage tank	Chemical entering the stormwater system.	Unlikely	Serious	III	Orica Procedure MP-SF-025 "Storage and Handling of Dangerous & Non-Dangerous Goods" defines the requirements for the	Bund level and cleanliness checked.	Daily.	ANE Facility Manager. ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					safe storage and handling of company owned “chemical” goods, both dangerous and non-dangerous, including raw materials. For example, potential ignition sources shall be excluded from areas where flammable and combustible goods are stored and handled. At the ANE Facility, all chemicals, fuels and oils are stored in bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund.			
					Chemical storage containers and storage areas are maintained in a clean and usable condition.	Check for cleanliness, usable condition, leaks.	Daily.	ANE operational staff.
					Process areas are fully contained within bunded areas. Stormwater from these areas is captured for reuse by the water management system.	Bund level and cleanliness checked.	Daily.	ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
2. Traffic								
2.1 Preservation of neighbourhood amenity	Illegal parking outside of site, speeding or unsafe driving causing safety risk to others on road.	Unlikely	Notable	IV	Speed limits and parking areas signposted clearly.	Check signs are in place, and visible.	As required.	ANE Facility Manager.
					Road Transport Protocol, including a Traffic Management Plan and a Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.
					Orica Procedure TM-01 “Vehicles on site” defines requirements for the safe operation of all vehicles on company owned or controlled sites, including those of contractors, in order to minimise the risks to the health and safety of employees and others working with or near vehicles. For example: - Where there is mixed occupation of vehicle and pedestrians, all pedestrians must wear high visibility clothing. - Vehicles left unattended must be parked in designated parking areas.	Regular visual checks.	As required.	ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
2.2 Vehicle Accidents	Chemical Spill/ possible fatality or injury.	Unlikely	Highly Significant	III	Road Transport Protocol, including a Traffic Management Plan and a Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.
					Each vehicle carries an Emergency Procedure Guide which summarises the actions to be undertaken in the event of a vehicle fire and a guide for each type of product being carried.	Vehicle inspections.	Random as required and as per biennial audit.	ANE operational staff.
2.3 Fuel/Oil leakage	Fuel entering the stormwater system.	Very Unlikely	Serious	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.
					Control valves on the stormwater system will ensure that no fuels or oils will be released into downstream drainage lines.	Confirm operation of Control valve	Monthly.	Contractor
3. Noise								
3.1 Preservation of	Disruption to residents by heavy vehicle noise.	Likely	Significant	II	Measures within Road Transport Protocol, including Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
neighbourhood amenity					An Independent Traffic Audit of the development will be conducted within six months of the commencement of operation of the ANE Facility, and every three years thereafter.	Random monitoring	Three Yearly	Independent DOP Approved Auditor
					Investigations will be undertaken in response to any concerns raised by the community regarding noise associated with the ANE Facility.	Monitoring as required.	Monitoring as required.	ANE Facility Manager.
	Disruption to residents by operational noise at the Facility.	Unlikely	Significant	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.
					Noise generated from the project will not exceed 35 dB(A) $L_{Aeq(15 \text{ minute})}$ at the nearest residential receptor at any time.	Check equipment in good working order, and that there is no damage or other condition occurring that could affect noise levels.	As Required	Independent Auditor

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-EP-014 "Neighbourhood Impact" defines requirements for the management of the impact of operating sites on neighbours (e.g. Noise). For example, the potential for the introduction of new equipment and modification of existing equipment to generate unacceptable impacts beyond the site boundaries shall be assessed.	Monitoring as required.	Monitoring as required.	ANE Facility Manager.
4. Air Quality and Odour								
4.1 Preservation of local air quality	Atmospheric pollutants	Extremely Unlikely	Significant	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
4.2 Preservation of local amenity value	Lights and other amenity issues disturbing neighbours.	Extremely Unlikely	Significant	IV	Orica Procedure MP-EP-014 "Neighbourhood Impact" defines requirements for the management of the impact of operating sites on neighbours (e.g. Dust, vibration, odour, light, aesthetic impact). For example, where required, nuisance management plans shall be developed to address community expectations and/or local legislative and licence requirements.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
					All lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network to comply with the latest version of <i>Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting</i> .	Check lighting is compliant with requirements.	Biennial compliance audit or as required via change.	ANE Facility Manager.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
5. Water Quality and Management								
5.1 Surface Water Control	Contaminated or dirty water exits the site.	Unlikely	Highly Significant	III	Implementation of Water Management Plan which segregates clean water runoff, stormwater and process water from process areas, non-process areas, and the surrounding areas.	Check no obstructions to water flow and segregation of waters.	Daily.	ANE operational staff.
					A Soil and Water Management Plan for Operation, including a Stormwater Management Plan and an Erosion and Sediment Control Plan is in place.	As per the Soil and Water Management Plan for Operation.	As per the Soil and Water Management Plan for Operation.	As per the Soil and Water Management Plan for Operation.
					Comply with Section 120 of the POEO Act 1997.	Check no obstructions to water flow and segregation of waters.	Daily.	ANE operational staff. ANE Facility Manager.
					Control valves on the stormwater system will ensure that no fuels or chemicals will be released into downstream drainage lines.	Confirm operation of Control valve	Monthly	Contractor

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Ensure that all chemicals, fuels and oils associated with the ANE Facility are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund.	Bund level and cleanliness checked.	Daily and after rainfall.	ANE operational staff. ANE Facility Manager.
5.2 Overflow of Surface water from adjacent bushland	Local flooding	Possible	Notable	III	Maintenance of surface water diversion channels and underground drains to prevent scour, erosion and sedimentation.	Visual inspection to ensure no obstructions to drains and to detect any signs of erosion.	Monthly	ANE operational staff.
	Flooding of site and sediment build up at the ANE Facility.	Very Unlikely	Significant	IV	Maintenance of surface water diversion channels and underground drains.	Visual inspection to ensure no obstructions and no damage.	Monthly	ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
6. Waste Management								
6.1 Poor waste management	Waste not collected and disposed appropriately.	Unlikely	Significant	IV	Orica Procedure MP-EP-004 "Waste Management" defines requirements for waste management and reporting. For example, the sources of waste streams shall be identified, characterised and quantified and the material hazards, environmental impact and cost of management of each waste stream shall be assessed.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	As Required	ANE operational staff. ANE Facility Manager.
					Ensure that all waste generated by the Project during operation is classified in accordance with the <i>Waste Classification Guidelines – Part 1: Classifying Waste 2014</i> and if required, disposed of to a facility that may lawfully accept the waste.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	Weekly.	ANE operational staff. ANE Facility Manager.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
	Waste taken to inappropriate disposal sites.	Very Unlikely	Significant	IV	All non-recyclable wastes would be assessed in accordance with the <i>Waste Classification Guidelines – Part 1: Classifying Waste 2014</i> and disposed of by an approved licensed contractor to a facility that may lawfully accept the waste.	Check that any waste produced on site is taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.
6.2 Re-use and recycling	Recyclables taken to local landfill rather than recycled.	Very Likely	Notable	IV	Recycling provisions in accordance with council requirements and the <i>Waste Avoidance and Resource Recovery Act 2001</i> .	Check that any waste produced on site is taken to the appropriately labelled storage bin and taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.
6.3 Use of natural resources	Natural resources not conserved.	Very Unlikely	Serious	IV	The Water Management Plan details the sourcing of water collected at the site to reduce the need to source potable water from off-site.	As per the Water Management Plan.	As per the Water Management Plan.	As per the Water Management Plan.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-EP-007 "Resource Conservation" defines requirements to conserve natural resources through the minimisation of the consumption of energy and non-renewable resources throughout the company's operations as a step towards the sustainability of the company's activities. For example, where practicable, reused or recycled materials shall be selected for use in preference to virgin materials.	Orica Procedure Audit.	Ongoing.	ANE Facility Manager.
					Orica will implement energy efficiency opportunities as described in the EA.	As required.	Ongoing	ANE Facility Manager

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
7. Ecology								
7.1 Wildlife or avifauna entering site	Harm/distress of native fauna.	Likely	Serious	III	Orica Procedure MP-EP-009 "Wildlife Conservation" defines requirements to conserve the flora and fauna within the site's ecosystem and sensitive areas outside the site's boundary which may be affected by site activities. For example, a survey shall be carried out to assess the conservation value of the flora and fauna established within the site.	Monitoring N/A.	Monitoring N/A.	Capability Specialist.
	Safety risk to site workers.	Likely	Highly Significant	II	An ecologist or similar may be contacted to assist removal of the animals (e.g. snakes) or birds from the site where they are threatened by the operations or present a threat to the safety of the operational personnel.	Monitoring N/A.	Monitoring N/A.	Capability Specialist
7.2 Impact on adjacent native bushland	Spread of weed species into adjacent native bushland.	Unlikely	Significant	IV	"Landscaped" areas at the ANE Facility and Technology Centre site to be regularly maintained and checked to ensure they are weed-free.	Visual inspection to check areas tidy and weed-free.	Weekly.	ANE Facility Manager and Capability Specialist

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
	Damage to native vegetation as a result of operations.	Unlikely	Highly Significant	III	Implementation of the relevant measures in the Vegetation Management Plan.	As per the Vegetation Management Plan.	As per the Vegetation Management Plan.	As per the Vegetation Management Plan.
8. Bushfire								
8.1 Bushfire in adjacent bushland	Potential explosion at the ANE Facility. Fatality or injury to staff at the ANE Facility.	Unlikely	Catastrophic	I	Implementation of the safeguards and recommendations of the Fire Safety Study and the "Bushfire Threat Assessment" included in the EA.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.
					Implement the recommendations of the "Bushfire Threat Assessment" included in the EA and measures outlined in the Submissions Report.	Check access road clearance and water level in tank.	Daily.	Capability Specialist.
					Maintenance of the 30 metre wide perimeter bushfire clearance zone in accordance with the Bushfire Threat Assessment" included in the EA.	Check perimeter bushfire clearance zone.	3 Monthly.	ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/ Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Water supplies will be easily accessible and suitable connections for water tanks will be provided to Rural Fire Service tankers can refill.	Check water level in tank.	Daily.	ANE operational staff.
					2 x 68,000 litre water tanks for bushfire fighting purposes are located on the site.	Check water level in tank.	Daily.	ANE operational staff.
9. Aboriginal and Historic Heritage								
9.1 Aboriginal archaeology uncovered at the site	Damage to relics/ artefacts.	Very Unlikely	Serious	IV	In the event of an Aboriginal artefact being discovered, work in the immediate vicinity shall cease and Heritage NSW shall be notified.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
9.2 Damage to Historical Heritage	Damaging the significance of any heritage listed items on site or surrounds.	Very Unlikely	Serious	IV	Orica Procedure MP-EP-020 "Heritage Protection" defines requirements and a methodology for identification, determination, conservation and protection of places of significant natural, cultural, historical, heritage and/or aesthetic value (referred to as heritage sites).	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
10. Site Access								
10.1 Unauthorised access to site	Damage to property / Interruption to production / Harm to unauthorised person who entered site.	Unlikely	Extremely Serious	II	Maintenance of security fence, security cameras, controlled entry, and security procedures.	Check all security measures in place and functioning.	Daily.	ANE Facility Manager. ANE operational staff
11. Cumulative Impact								
11.1 Cumulative Impacts	Long-term degradation of land.	Unlikely	Extremely Serious	II	Orica Procedure MP-EP-003 "Land Protection Management" describes requirements for the investigation and maintenance of records of present and past activities, which have the potential to adversely impact on the beneficial use of the land and/or groundwater within and surrounding the site. For example, information regarding historic incidents, past practices and the discovery of contamination due to past events shall be reported to the Company Land Remediation Manager.	Recording of all spills. Regular checks of all bund and chemical storage areas to ensure integrity.	As required.	ANE Facility Manager. ANE operational staff.

Issue	Effect	Likelihood ⁴	Consequence ⁵	Risk/Level ⁶	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-EP-001 "Decommissioning, Decontamination & Removal of Plant & Equipment & Remediation of Land" describes requirements to ensure safety, health and the environment are protected when decommissioning and removing plant and equipment during maintenance outages or when remediating land. For example, a Responsible manager shall be appointed to manage any significant decommissioning, decontamination and removal projects and/or the remediation of land.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
	Long-term impact to water quality.	Unlikely	Significant	IV	Implementation of the Water Management Plan to segregate waters of different quality and contain all dirty/contaminated surface runoff within the footprint of the ANE Facility site.	As per the Water Management Plan.	As per the Water Management Plan.	As per the Water Management Plan.

Table 2 Likelihood Definitions

SHES LIKELIHOOD MATRIX	
Almost Certain	- Expected to occur during task / activity; - Would occur within a year.
Likely	- Likely to occur during task / activity; - Would occur within 10 years.
Possible	- May occur during task / activity; - Will occur once in the life of the facility.
Unlikely	- Unlikely to occur during task / activity; - Has occurred somewhere in the world.
Rare	- Highly unlikely, but possible to occur during task / activity; - Could theoretically occur.

Table 3 Consequence Matrix

SHES CONSEQUENCE MATRIX					
	Safety & Health	Environment	Community & reputation	Legal compliance	Property damage
Critical	Multiple fatality	> 6 month impact	Prolonged global media	Loss of licence to operate	> A\$20M
Very High	Single fatality	3 – 6 months impact	Global media	Suspension of licence to operate	> A\$10M
High	Lost workday	> 1 month impact	National media	Major fine	> A\$1.0M
Medium	Medical treatment	> 1 week impact	Regional media	Minor fine	> A\$ 0.5M
Low	First Aid	< 1 week impact	Local media	Official caution	> A\$0.1M

The risk rating at Table 4 is determined by combining the likelihood result (Table 2) and consequence result (Table 3).

Where the matrix approach is used, undertake the following, based on risk ranking:

- if the risk ranking is level 1, the activity must not proceed until additional controls are identified to reduce the risk level, or, the activity is approved; or
- if the risk ranking is level 2, the activity must not proceed until additional controls are identified to reduce the risk level, or, the activity is approved; or
- if the risk ranking is level 3, attempt to identify additional controls. If no additional controls are identified, the activity can proceed after it is approved; or
- if the risk ranking is level 4, the activity can proceed without approval.

Table 4 Risk Assessment Matrix

	Low	Medium	High	Very High	Critical
Almost Certain	Level II	Level II	Level I	Level I	Level I
Likely	Level III	Level II	Level II	Level I	Level I
Possible	Level III	Level III	Level II	Level II	Level I
Unlikely	Level IV	Level IV	Level III	Level III	Level II
Rare	Level IV	Level IV	Level IV	Level IV	Level III

Appendix C

Example ANE Plant Induction



Kurri ANE Plant Site Induction

Orica Mining Services – Kurri

Updated – 06/04/2022

CONFIDENTIAL

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Kurri ANE Plant

The Kurri ANE Plant, being an ammonium nitrate emulsion manufacturing facility, has been determined by the SafeWork NSW Major Hazard Facilities Unit to be a Major Hazard Facility.

The ANE Plant is a production facility for the manufacturing of primarily Ammonium Nitrate Emulsion that is utilised for explosive blasting at mine sites primarily in the Hunter region. This ANE product, a class 5.1 oxidising agent, once manufactured is transported via chemical B-double or single transit trucks to these mine sites at which they are sensitised to a class 1.1D product for blasting purposes. The plant has the capability for the production of up to approximately 250,000 tonnes.

Why are you doing this induction?

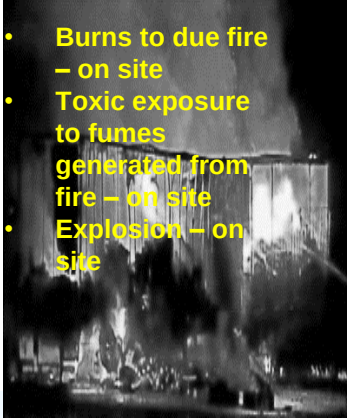
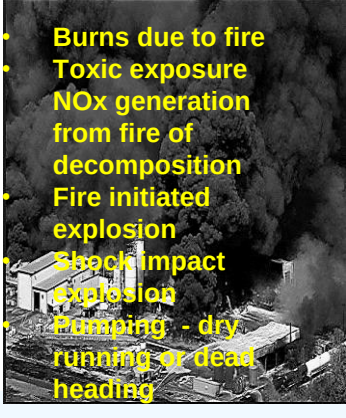
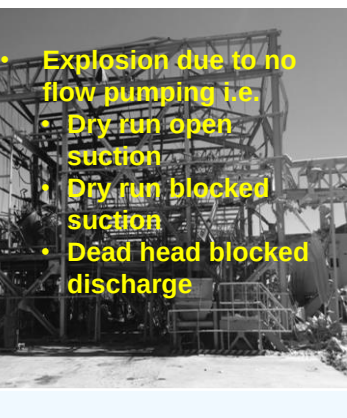
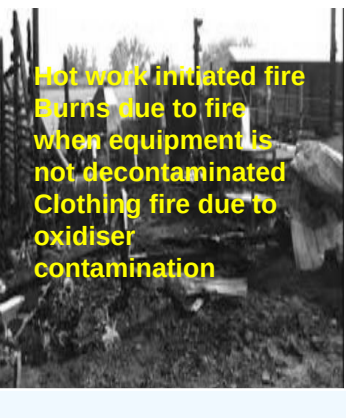
You have not yet been inducted

- You are a contractor
- You are an employee

You are inducted but are due for a re-assessment

- You should be re-assessed every 12 months

Kurri ANE Plant -Top 5 Fatal Risks

1. Vehicle, Mobile Equipment and Pedestrian Interactions On-Site	2. Fire on Vehicles and Mobile Equipment	3. Decomposition of Ammonium Nitrate Emulsion (ANE)	4. Pumping ANE and Oxidiser Solutions	5. Hot Work on ANE and Oxidiser Equipment
- Person impacted by vehicle or in a collision - Vehicle impacts pedestrian - Forklift or frontend loader impacts pedestrian - Person impacted by vehicle Forklift / frontend loader rollover - Vehicle impacts structure	 - Burns to due fire – on site - Toxic exposure to fumes generated from fire – on site - Explosion – on site	 - Burns due to fire - Toxic exposure NOx generation from fire of decomposition - Fire initiated explosion - Shock impact explosion - Pumping - dry running or dead heading	 - Explosion due to no flow pumping i.e. - Dry run open suction - Dry run blocked suction - Dead head blocked discharge	 - Hot work initiated fire - Burns due to fire when equipment is not decontaminated - Clothing fire due to oxidiser contamination
Controls				
- Cabin protection system - Seat belts fitted and worn - Traffic Management Plan - Pedestrian crossings must be used at all times - Site Emergency Plan - Site Induction - First Aid training	- Battery isolation switch outside vehicles - Vehicle mounted fire extinguishers - Placarding of loads / vehicle EIPs - Emergency Procedure Guides (EPGs) carried - Specific vehicle - Traffic Management Plan - Site Emergency Plan - Routine emergency exercises (drills)	- Gap separation requirements for AN Storage - Plant personnel are trained to evacuate - Personnel trained in pump operations	- Personnel trained in pump operations - High temperature alarm/trip interlock system - High and low pressure alarm/trip interlock system - Thermofuse - Pump trip speed limited - Maintenance and inspection programme	- Decontamination procedure - Decontamination Permit to Work - Personnel trained in decontamination procedures - Site Emergency Plans

Commitment to Safety

- Employees and Contractors must sign SHEC Charter.
- Charter to be completed every 12 months.

To be signed by your line manager

MY COMMITMENT TO SHEC

EXPECTATIONS - LINE MANAGERS

- Clearly communicate our SHE Policy, Our Charter, Our Values and our expectations and keep SHEC central to all of our decisions, actions and communications
- Know the site Major Hazards and ensure that Key Controls are in place and effective 100% of the time
- Conduct regular Leadership Interactions and Key Control Verifications with your team
- Lead the development and implementation of SHEC plans
- Ensure rules and procedures for preventing SHEC incidents are in place and are enforced
- Lead by example - set high SHEC standards, follow rules, procedures and use good work practices
- Know the SHEC requirements of the job performed by the people you lead and ensure they are appropriately trained
- Audit work practices frequently and do not tolerate deviations from required standards, addressing known SHEC non-conformance or improvement opportunities with proper priority
- Ensure all contractors are managed or supervised to the same standards as Orica employees
- Create an environment of openness, trust and mutual respect allowing everyone to excel and be recognised for good SHEC performance
- Participate in SHEC incident investigations and ensure actions are followed through to effective completion
- Promptly arrange rehabilitation for an ill or injured employee providing full support for them and their family.

Line Manager

Signed _____

Name _____

Date _____



Safety is our priority. Always.

The most important thing is that we all return home, safely, every day.

We respect and value all.

Our care for each other, our customers, communities and the environment builds trusted relationships.

Together we succeed.

Collaboration makes us better, individually and collectively.

We act with integrity.

We are open and honest, and we do what is right.

We are committed to excellence.

We take accountability for our business and for delivering outstanding results.

OUR SAFETY, HEALTH, ENVIRONMENT & COMMUNITY COMMITMENT

 **Safety** is our priority. Always.

To achieve our vision of Zero Harm, the way we work and live must be consistent with **Safety, Health, Environment & Community (SHEC)** behaviours such as:

- Personal accountability
- Active participation
- Constant promotion
- Awareness on and off the job
- Visible line leadership
- Adherence to procedures
- Setting clear expectations
- Taking care of yourself and others

If you see someone working in an unsafe manner and you don't confront that person on the issue, are you really valuing that person?

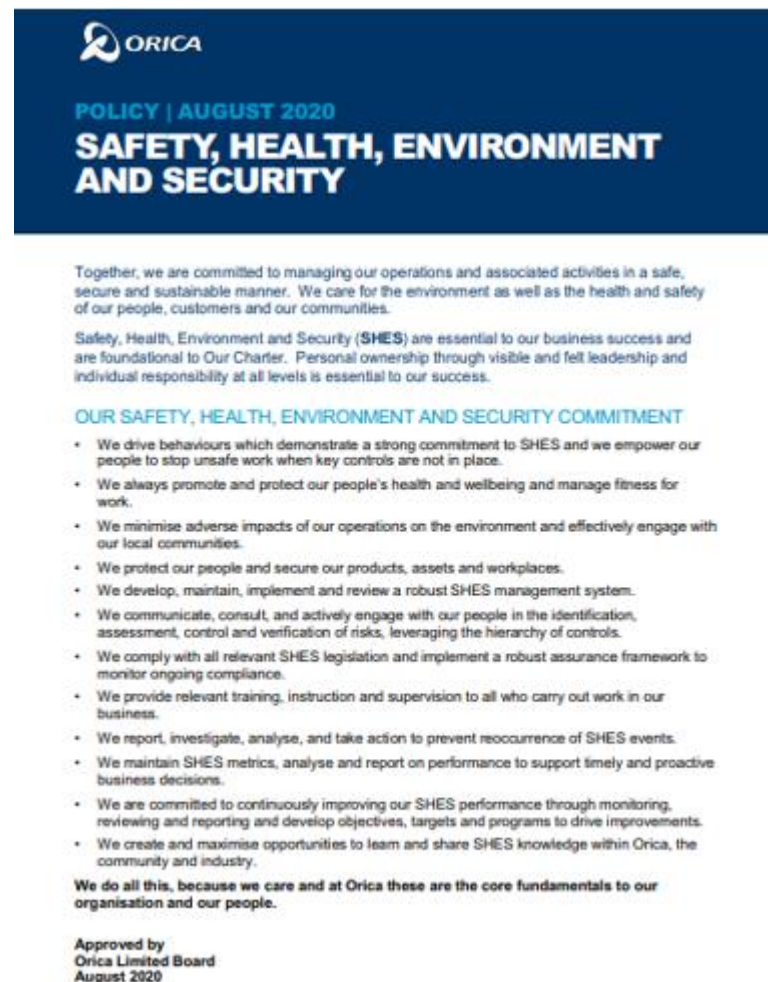
Don't be afraid to stop the job if it's not safe.

Discussing, confirming and signing off on our commitment each year demonstrates that we care for each other and clearly support Our Charter and Our Values.



Orica SHES Policy

- The Orica SHES Policy is displayed on the SH&E noticeboard located in the administration building hallway



The image shows a document titled 'Orica SHES Policy'. The top section is a dark blue header with the Orica logo and the text 'POLICY | AUGUST 2020' and 'SAFETY, HEALTH, ENVIRONMENT AND SECURITY'. Below this, the document contains a commitment statement, a list of 12 commitments, and a concluding statement. The bottom of the document is signed off by the Orica Limited Board, dated August 2020.

ORICA

POLICY | AUGUST 2020

SAFETY, HEALTH, ENVIRONMENT AND SECURITY

Together, we are committed to managing our operations and associated activities in a safe, secure and sustainable manner. We care for the environment as well as the health and safety of our people, customers and our communities.

Safety, Health, Environment and Security (SHES) are essential to our business success and are foundational to Our Charter. Personal ownership through visible and felt leadership and individual responsibility at all levels is essential to our success.

OUR SAFETY, HEALTH, ENVIRONMENT AND SECURITY COMMITMENT

- We drive behaviours which demonstrate a strong commitment to SHES and we empower our people to stop unsafe work when key controls are not in place.
- We always promote and protect our people's health and wellbeing and manage fitness for work.
- We minimise adverse impacts of our operations on the environment and effectively engage with our local communities.
- We protect our people and secure our products, assets and workplaces.
- We develop, maintain, implement and review a robust SHES management system.
- We communicate, consult, and actively engage with our people in the identification, assessment, control and verification of risks, leveraging the hierarchy of controls.
- We comply with all relevant SHES legislation and implement a robust assurance framework to monitor ongoing compliance.
- We provide relevant training, instruction and supervision to all who carry out work in our business.
- We report, investigate, analyse, and take action to prevent reoccurrence of SHES events.
- We maintain SHES metrics, analyse and report on performance to support timely and proactive business decisions.
- We are committed to continuously improving our SHES performance through monitoring, reviewing and reporting and develop objectives, targets and programs to drive improvements.
- We create and maximise opportunities to learn and share SHES knowledge within Orica, the community and industry.

We do all this, because we care and at Orica these are the core fundamentals to our organisation and our people.

Approved by
Orica Limited Board
August 2020

Protocols for COVID19

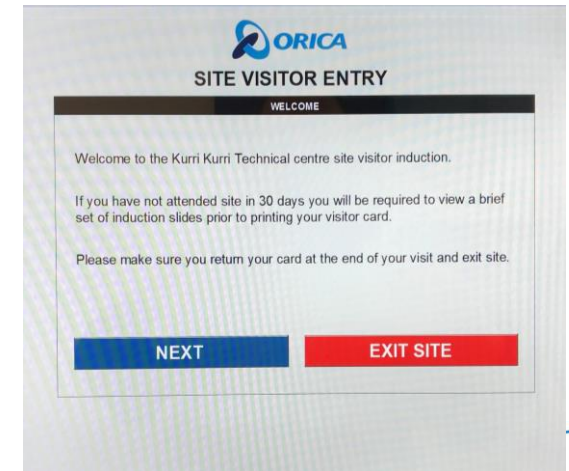
Protocols for control of risks associated with COVID19 have been implemented on site & are described in full in the Kurri ANE Infectious Disease Management Plan. A copy of the plan is available in the Administration building.

Main controls are:

- All employees, visitors & contractors entering site must complete RA testing when entering site & every 72 hours thereafter
- For contractors / visitors, RA test results conducted within the last 72 hours by approved providers that can be visually confirmed will be accepted as valid.
- Any persons that have been confirmed as a positive case or who are or suspect they may be a close contact will be refused entry to site until they have satisfied all conditions contained in the Kurri ANE Covid Safe Plan & the Orica Australia / NZ Covid-19 Positive Case & Close Contact Management protocol.
- If using plant amenities including crib room, please disinfect area using equipment supplied.
- Ensure social distancing is maintained at all times

Visitors

- Visitors are required to Log in to the Site Visitors Entry Computer Database located inside the Administration Building.
- All Visitors to remain accompanied by a designated Orica employee during the visitor's access to the site.
- Visitors are required to Log out of the Computer Database upon leaving the Site.



Before you Start

Obtain competency record:

- From your site contact;
- Complete this as you watch this screen show.

Complete personal information:

Photo ID required for Site access

- Contact details;
- Licence details;

Including: SSAN, DG, Drivers Licence and relevant tickets if performing work on site (e.g. Rigger, Crane Operator),
Copy of Contractor Passport (pump competency).

All details must be legible on induction form.

If your details are not completed in full, your induction will be invalid, and will not be entered into the electronic system.



Site Contacts

Senior Supervisor - Plant : **Allan McClelland**

Supervisors: **Dean Thomson, Andrew Ong, Ben Roberts, Aaron Bucior**

Maintenance Planner: **John Galley**

Supervisor - Site Facilities (KKTC): **Ryan Bremmell**

Mandatory Site PPE Equipment

- Hard Hat
- Safety Glasses at all times on plant
- Long sleeves, long trousers or overalls
No rolling up sleeves!
- High Visibility shirt/jacket & trousers
- Safety Boots – **Ankle height lace up**
- **Correct Gloves, must be worn or on glove clip at all times ready for use**
- Face shield as required
- Additional PPE as required for the task



Hazards of Oxidiser Contaminated PPE

Personal Protective Equipment is detailed in the Kurri ANE Operating Manual. The selection of PPE has been considered using the Safety Data Sheet (SDS) and a risk assessment.

Oxidiser solution:

- Supports combustion;
- May intensify a fire.

You should:

- Avoid contamination with other chemicals;
- Avoid skin and eye contact.

Prevention:

- Keep contaminated clothing away from heat / sparks / open flames / hot surfaces. No smoking
- Ensure contaminated clothing is thoroughly washed;
- Take any precaution to avoid mixing with combustibles / incompatible materials.
- Wash hands thoroughly after handling.
- Wear eye protection.

IF CLOTHES ARE CONTAMINATED DO NOT CONDUCT ANY HOT WORK



Site Security

- Security Cameras monitor all operational areas on the ANE site.
- Cameras constantly record all activity on site.



Site Security and SSAN

**SSAN = Security Sensitive Ammonium Nitrate
(Security Clearance)**

- Report all suspicious activity.
- Only SSAN approved personnel to have un-supervised access to Ammonium Nitrate and Ammonium Nitrate Emulsion.



Chemicals

The Kurri ANE Plant is a chemical processing plant:

- Do not handle chemicals without authorisation;
- Do not bring chemicals onto site without prior approval;
- Refer to a chemicals SDS before handling for the first time.



**Ammonium Nitrate heated under confinement
can explode.**

Prohibited Items

- Explosives and Firearms
- Copper Never Seize; Copper based materials, brass, bronze;
- Matches, cigarette /Zippo Lighters;
- Recording devices
- Fixed Bladed Knives (eg Stanley);
- Portable tools without dead-man switch and handle (eg grinder)
- Zinc, Cadmium Plated materials;

Copper reacts with Ammonium Nitrate to form a potential explosive. TACN

Emergency Evacuation

The evacuation announcement can be heard over the loud speaker system and will clearly state:

“evacuate now”

OR

“evacuate via the fire trail now”

EMERGENCY RESPONSE

In an Emergency make your area safe.

Prevent a secondary incident or spill

Shut down pumps

Close Valves Eg: Fuel Tanker Valves

Proceed to the initial emergency muster point via the quickest
& safest route then await further instruction from Area
Emergency Warden

Initial Emergency Assembly Point – “Evacuate Now” or “Evacuate Via the Fire Trail Now”

The initial emergency assembly point for the announcements **“evacuate now”** or **“evacuate via the fire trail now”** is located on the Northern side of the administration building. Adjacent to the turnstile entry.



Emergency Evacuation

- In the event of an evacuation:
 - › Listen to the Emergency Warden for instructions. Depending on the type & location of emergency, wardens will provide information as to whether evacuation to the Kurri Technical Centre evacuation point or off site is required & which route should be used.
 - › Take your keys with you.
 - › Carry swipe card at all times

Emergency Assembly Point Rules

No smoking

Listen to wardens instructions and follow their directions

Keep noise to a minimum so that wardens can relay important information

Only use your mobile phone for emergency communications

Emergency Evacuation

- Evacuation alarm is tested each Monday at 10am and is proceeded by a test warning announcement.
- No action is required during this system test.
- During an evacuation red lights and a flashing sign will be activated at the site entry gates.
- If lights activated on arrival, heavy vehicles should wait at the boomgate for a Fire Warden to attend gate. The Fire Warden will allow entry to turn around the round-about & exit site. Proceed to an approved heavy vehicle parking area & wait for further instruction.

Front Boom Gate Alerts

- Red Flashing lights & signage activated in the event of an EWIS evacuation:
 - Flashing “**Fire Alarm, Do Not Enter**” sign at the entrance gate
 - Red Flashing Lights located on Echidna Drive prior to boom gates
- If you arrive at site & these signals are active, **DO NOT ENTER**, proceed to the Kurri Kurri Bowling Club car park & await direction from wardens. Wardens will allow heavy vehicles through boom gate to use round-a-bout & then exit site
- Wardens and security will be re-directing traffic at the front gate to prevent backup onto George Booth Drive.

**DO NOT PARK IN FRONT OF THE
ENTRANCE GATES AS THIS WILL BLOCK
EMERGENCY SERVICES**



Emergency Evacuation Siren

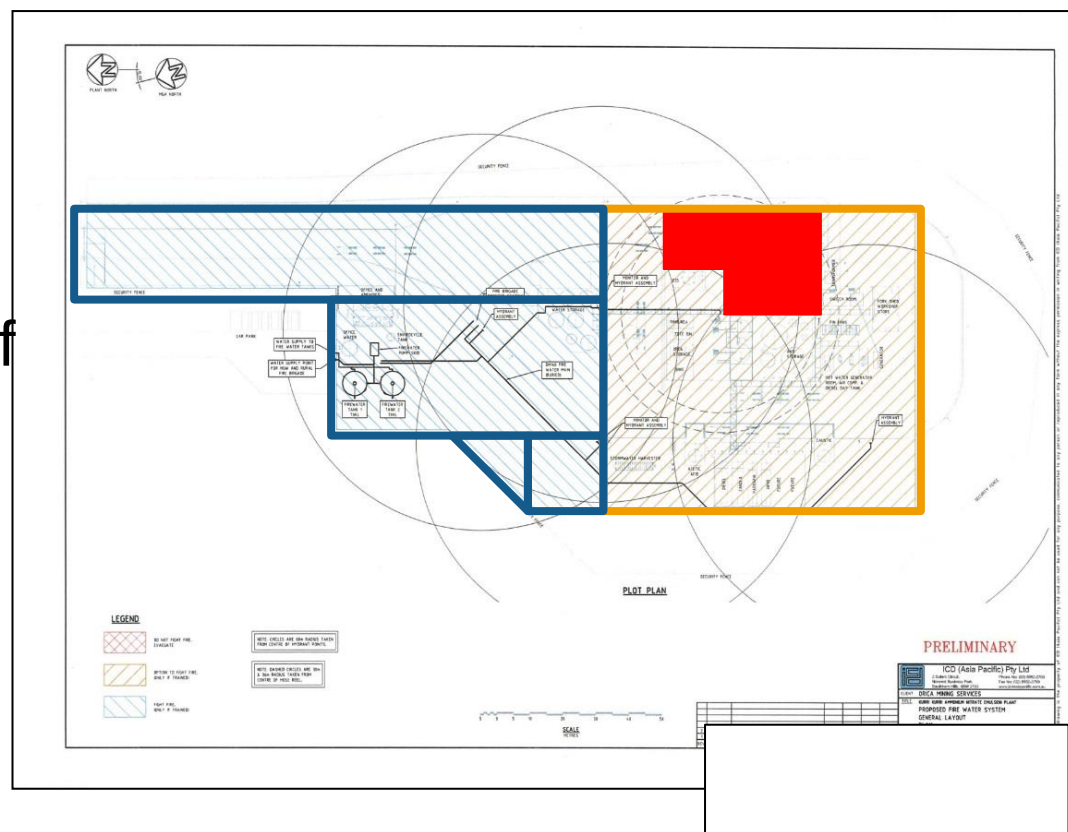
- Internal Activation points are located in:
 - Administration building
 - Plant control room
 - Plant laboratory

Break glass & press button to activate

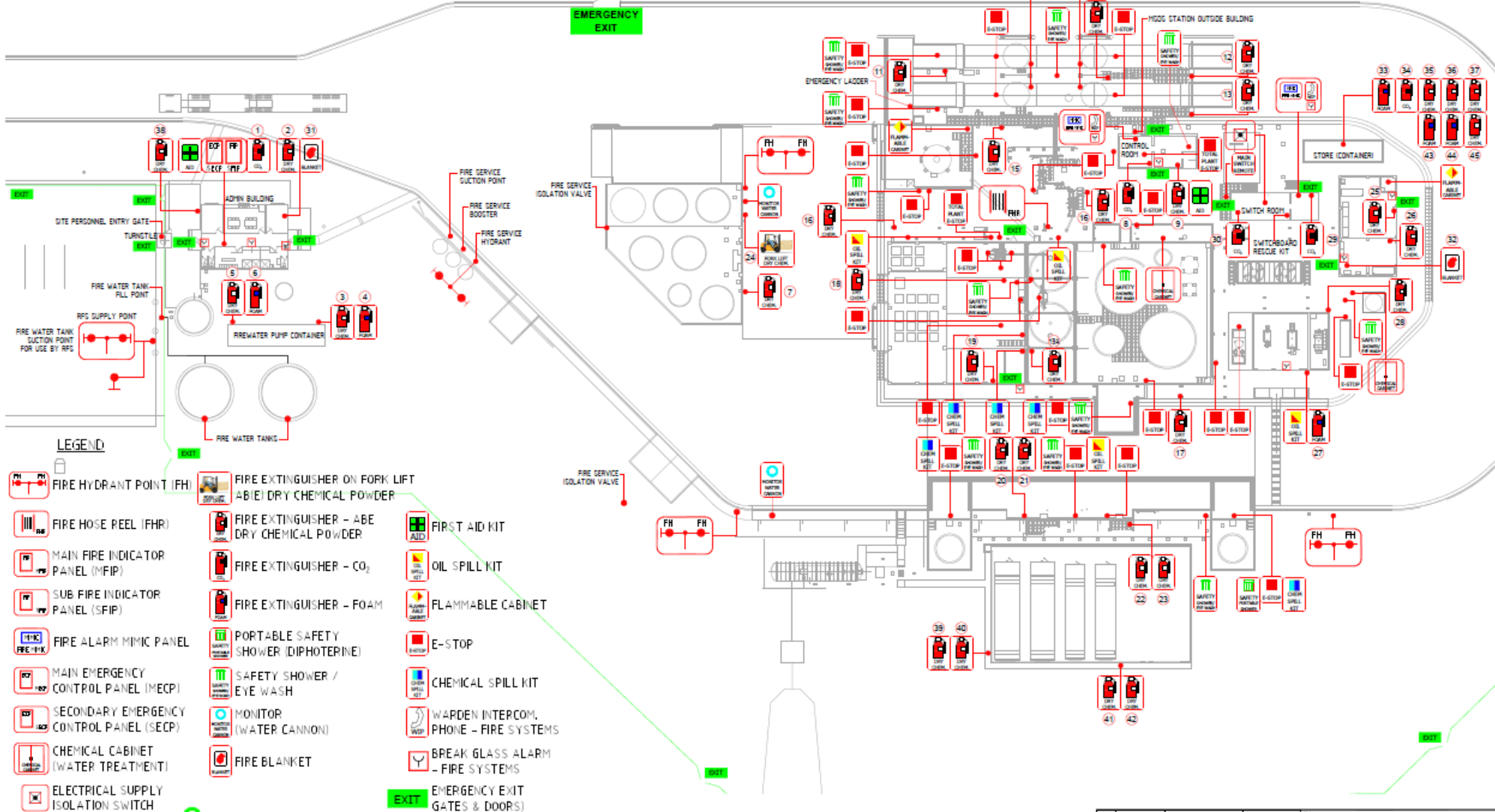


Fire Response Categories

- **RED ZONE** Elk Area & ANE surge Tanks
 - **DO NOT FIGHT FIRES**
- **ORANGE ZONE** remainder of site south of water tanks
 - Option to fight fire if trained
- **BLUE ZONE** North of Water Tanks
 - Fight fire “if trained”



ANE PLANT



E	Dec. 2018	Revised	Dec. 2023	OKKERP-011 EMERGENCY EQUIPMENT PLAN
D	July 2018	COLUMBIA TOWER SAFETY WORKING GROUP	July 2020	
H	MAR. 2019	E-Stop Revised	DEC. 2019	
G	MAY. 2019		DEC. 2019	
F	JAN. 2019	Revised	DEC. 2019	
A	Jan. 2018	Original	October 2017	

Emergency Showers / Eyewash Stations



There are 15 safety showers and eyewash stations located throughout the plant. The showers are for **use in case of chemical contact with eyes or skin.**

EMERGENCY USE ONLY

Not for general use to cool off or wash hands and face.

In addition to audible alarms, some of the safety showers are interlocked with the control system to stop or prevent equipment from running.

Road Transport Protocol (excerpt)

- Designated Truck Route to Kurri ANE Plant is via John Renshaw and George Booth Drives Only. Emergency Services diversions excepted.
- Access to Kurri ANE plant is through **Rural Residential Area** please minimise all use of engine braking in this area!
- Only designated & approved parking areas shown in the Road Transport Protocol are to be used when traveling to or from the site.

Road Transport Protocol (excerpt)

George Booth drive has no overtaking lanes

- No overtaking other traffic unless directed by emergency Services:
- Police, RMS, SES, Fire etc.
- Heavy vehicles are to park only in designated parking areas enroute. (**Not on George Booth Drive**)

Access to ANE Plant

- Access off George Booth drive is onto Echidna Drive then Wattle Drive to the ANE Plant .
- Heavy Vehicle Truck parking is in place alongside Wattle drive. Empty ANE Vehicles only (residue only)
- Pedestrian Crossings are in place for truck drivers to access facilities, these are to be used at all times.

Be aware of slow moving merging traffic.

TOLL Tanker Parking Area

Only Unladen ANE tankers are permitted to park in designated area. →



Obey Pedestrian Crossings

Ensure positive communication with drivers before crossing



← Only Unladen A trailers are permitted to park in designated area located outside plant gates on right-hand side of access road.



Parking on Site

- Plant car park located to the right of plant main access gate.
- Park only in designated area's shown by road markings.
- One way traffic only within car park.
- Light vehicles only.
(water truck excepted)



Heavy Vehicle Parking

Heavy Vehicle parking is only permitted in the holding bay located outside plant gates on left hand side of access road.

If vehicle is left unattended in this area wheel chocks must be used. Wheel chocks available in wheel chock station



Site Access

- Access to site is via swipe card system for authorised and inducted personnel. A swipe card will be issued by Orica to approved persons.
- Access for visitors can be arranged by use of the intercom system located at both plant gates and the main boom gate at George Booth Drive. Press the ANE Plant Button.
- If access is granted through main boom gate via intercom then you must proceed directly to the ANE plant.

Pedestrian Access in Plant

Access across roads by pedestrian crossings.

STOP and confirm intention to cross with vehicle driver



Access to Control Room

From Ansol, Acid, Caustic,
Hydrocarbons via services rack
path



From Weighbridge



Heavy Vehicle Access to Site

- Prior to arriving at the boom gates and accessing site Inducted drivers need to call the Control Room on UHF channel 30 and gain permission to enter site.
- May be required to park in heavy vehicle parking area until access is granted.
- This is to manage the amount of vehicles on the plant at any one time.

Speed Limit

- Speed limit between George Booth Drive and ANE plant is 20km/h as sign posted.
- Speed limit within plant for all vehicles including forklifts is 10km/h (***walking pace***)

Drive to road and weather conditions.



Vehicle Traffic

The site has **HEAVY** traffic movement - ensure the path is clear before moving into work areas.

AVOID REVERSING VEHICLES UNLESS ABSOLUTELY NECESSARY!

- Use spotters at all times if reversing is necessary.
- Petrol powered vehicles must **not** be taken beyond plant gates without approval and extra precautions in place.
- Personal vehicles only permitted in designated car parks, and must **not** be driven into plant ***without permission.***

Traffic Management

- Traffic through plant is managed in a one direction only indicated by road markings. Exceptions will only be allowed if covered by a permit to work.
- Heavy vehicles must only stop in designated load/unload area's.
- All vehicles on site must comply with Orica headlights on at all times policy **L.O.A.T.**

Prohibited Areas

No vehicles to be driven around High Voltage Transformer, Forklifts or EWPs.



ANSOL Unloading Operation

- Personnel in unloading area during unloading operation must have Full ANSOL PPE.
- Vehicles not to remain stationary beside unloading area in centre driveline.



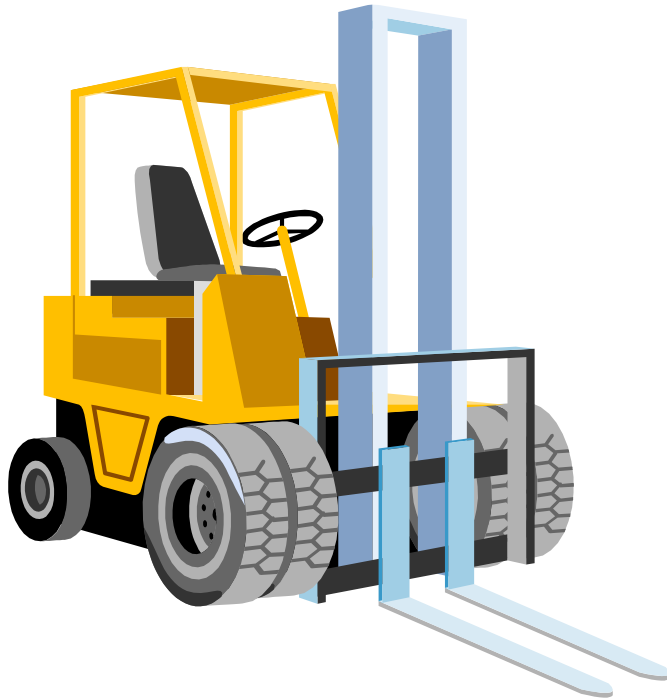
Driving on Site

- Be aware of forklift and other mobile equipment movement.
- Be aware of pedestrian movement on site.



Pedestrians on Site

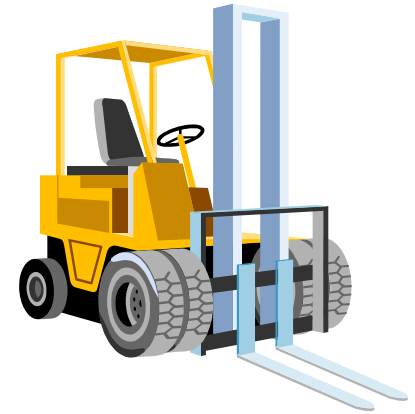
Pedestrians who enter an area where mobile equipment is operating must obtain permission to enter from the mobile equipment driver.



Forklift Operation

Only personnel who have been trained, deemed competent and appointed by the Snr Site Supervisor are permitted to operate plant forklift.

- Forklift must be only operated on roads and concreted areas.
- Forklift is **not** permitted to be driven off road.
- Drivers not permitted to stay in vehicle during loading/unloading

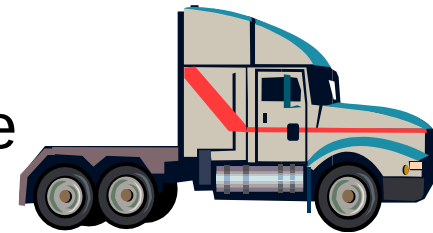


Plant Equipment

Plant equipment such as Forklifts, Lifting Equipment, Trucks, can only be operated, if you have:

- Authorisation from Supervisor;
- Are trained and deemed competent in the safe use of the equipment.

All Equipment and Vehicles must be operated in a safe manner following all traffic rules and signage on site.



i.e. no speeding, no reversing without a spotter

Permit to Work System

Permit to Work - General/Hot Work

- **Permits to Work** are required for **ALL** work completed on site by contractors, Orica Operators require a permit for work that is not covered by an existing approved written procedure.
- **Hot Work Permits** are required for hot work **NOT** completed in hot work area *OR* on process equipment:
 - Hot work examples: Welding, grinding, drilling.
 - Decontamination methods must be documented and approved as completed.
- **Permits** are prepared by authorised personnel
 - John Galley, Allan McClelland, Dean Thomson, Ben Roberts, Aaron Bucior
 - Confirm Isolations before commencing work

Ensure you understand all the requirements of a permit before signing.
Permit must be changed and countersigned if work scope changes.

Permit to Work System

Special permits are required for:

- Confined space entry;
- Excavation and break in;
Examples:
 - Drilling into walls or cavities
 - Trenching or digging within plant boundary
- Work on high voltage.
 - Defined as $> 1000V$
- Work on roofs or at heights.

Alteration Authorities

- Alteration Authority (AA) is required for any modifications to:
 - Equipment
 - Procedures
 - Formulations
 - Introduction of new chemicals for production or maintenance.
- AA must be signed off *BEFORE* modification is implemented.
- Anyone can raise an AA
 - contact supervisor to enter into Lotus Notes AA system.

Portable Tools - Grinders

- Before each use the condition of the grinder must be inspected. Unserviceable equipment must be immediately withdrawn from service.
- Use of grinding machines and selection and mounting of abrasive wheels must be restricted to competent tradespeople or other specifically trained personnel.
- All portable grinders must be fitted with:
 - Dead-man switches and handle
- Contractors portable equipment shall be inspected as part of the work permit process by the permit issuer.



Electrical Equipment

- All portable electrical equipment must not be used unless it has a current electrical inspection tag.
- Contractors electrical equipment shall be inspected as part of the work permit process by the permit issuer.



Inspect electrical equipment each time before use

Isolation of Plant and Equipment

- No contractor or sub-contractor employee shall perform any isolation.
- Trained and authorised Orica personnel will conduct the isolation and witness the attachment of personal protection by the contractor.

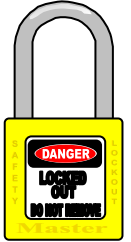
Locks and Tags

- **Personal red locks** are used for the sole purpose of protecting their owner. They are the **only** locks that provide personal protection.
- Every person working on isolated equipment shall fit their own personal **red** lock/s.
- Personal **red** locks **MUST**:
 - be Identified by owners name and company name;
 - only be removed by the person who applied them.



Locks and Tags

- **Yellow locks** – are not for personal protection. **Yellow** locks are used to lock out equipment that is faulty or damaged. An out of service tag is attached to the **yellow** lock detailing:
 - Tag placed by:
 - Date and Time:
 - Reason:



Locks and Tags

- **Purple locks** – are not for personal protection. **Purple** locks are used for process activities to ensure the integrity of the system preventing e.g. unauthorised adjustments to process equipment.
- **Purple** locks are numbered and controlled by a register. These locks can only be removed under a work permit.



Locks and Tags

- **Orange locks** - are not for personal protection. **Orange** locks are used for the sole purpose to prevent cross contamination between acetic acid and caustic soda during the unloading process.
- **Orange** lock keys are locked in the key box in the control room and only accessible to designated ANE Plant personnel.



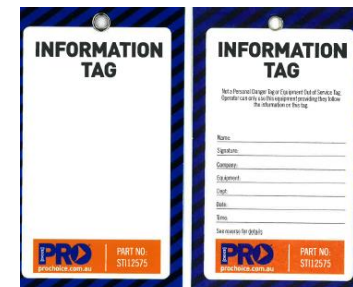
Locks and Tags

- **Out of Service Tags** are a way of informing others that equipment is unsafe to use, and that injury to persons or further damage could occur to the equipment if operated.

Always print clearly on the tag using a permanent marker.



- **Information Tag** – is not a personal danger tag or equipment out of service tag. An operator can only use the equipment with an information tag attached providing they follow the information on the tag.
- Always print clearly on the tag.



Locks and Tags

- Personal red locks must only be removed by the person who applied them.
- In the event that the person who applied the lock is ill (or other similar situation), their lock may only be removed in accordance with a management-approved procedure.
- Out of Service tag may only be removed by a person authorised to do so by a supervisor, on completion of repairs.

Mobile Phones/Electronic/Media Devices Policy

- Personal mobile phones may be used in the control room for emergency contact or dual identification purposes for Orica IT. Personal mobile phones are not to be used on plant outside of control room & must not be used while operating the plant.
- Orica issued mobile phones & iPads etc may be used anywhere on site however, must not be used while operating any equipment. Where the phone is being used to obtain technical advice etc to complete a task an exemption to this rule applies. You must stop & stand in a safe place while using phone.

Camera Policy

Photo's within the plant are strictly forbidden unless permission has been granted by management.



Jewellery and Personal Objects Policy

There is a risk of accident or personal injury due to uncovered jewellery and uncontrolled personal objects.

- **Necklaces:** Necklaces are not permitted to be worn.
- **Bracelets:** Must not be worn except for Medic Alert bracelets and should be completely covered by clothing cuffs, gloves.
- **Rings:** Rings to be removed where possible, if not removable it must be covered by gloves when working on plant.
- **Earrings:** Earrings must be small, stud or sleeper type, or flat plugs to be worn in stretched ears, no flairs or tapers permitted.
- **Piercings:** Piercings that risk entanglement or injury must be removed.
- **Watches:** Watches should be completely covered by clothing cuffs.
- **Mobile phones:** Personal mobile phones are not permitted on the Kurri ANE Plant, company mobile phones should be removed from top pockets when accessing process areas..
- **Electronic devices** are not permitted on the Kurri ANE Plant unless under permit. Eg : Laptops, Signal injectors, Multimeters. Company issued electronic/media devices can be used on site.
- **Wallets:** Must not be in top pockets.
- **Swipe cards:** Lanyards must be of the tearaway type.
- **Ignition sources (lighters/matches/zippos):** Are not permitted on site and to be placed in the "Visitor Register" box at the entry side of the administration building before entering plant areas.

Applies to all Employees, Contractors and Visitors to the site. (only exempt when in office environment)

Loose Articles

- Ensure all articles in pockets are secured or removed to prevent falling into tanks.
- Report any foreign objects falling into tanks immediately to supervisor.

Drug and Alcohol Policy

All personnel must be fit for work.

- Drugs and alcohol are **not** permitted on site.
- Report to your supervisor if you are using prescription medication
- Personnel under the influence of drugs and alcohol **are not** permitted on site.
- Management of Potentially Impaired Persons - Any visitor, employee or contractor exhibiting signs consistent with impairment due to drug or alcohol must be prevented from activities which could endanger their safety or the safety of others.
- All employees, contractors and visitors on site are subject to random drug testing.



Compulsory Alcohol Testing

- Breath Alcohol testing is compulsory for all persons entering the Plant area. Persons only accessing the Administration building for a short period will not be subject to compulsory testing.
- Persons entering the plant on more than one occasion in the same day need only test the first time they enter the plant.
- An Alcohol self testing unit is located near the Control room entrance.
- All persons entering the plant area must immediately perform a self test using the Alcoholiser testing unit.
- Swipe your Kurri ANE access or visitors card at the card reader on the unit, then follow instructions on screen. All tests are recorded & cross referenced to site access list.
- As per the Orica APA SHES Drug & alcohol procedure, Orica has a 0.00 BAC policy. Any person testing above this level will be subject to further action described in the procedure.

Compulsory Alcohol Testing



Location of alcohol testing unit



Breath alcohol testing unit

Swipe card reader

Smoking Policy

No Smoking on ANE Plant including E-Cigarettes

Kurri Technical Centre is a NON-SMOKING Site

Note:

Smoking is not permitted:

- Within 15m of MMU's or Vehicles carrying explosives or Dangerous Goods as per ADG7 clause 13.1.3.2.2.3

No lighters, matches or sources of ignition on plant



Exclusion of Mobile Ignition

- The introduction of mobile ignition sources such as cigarettes, matches and lighters to process areas creates a significant fire risk.
- Cigarettes, matches and lighters are to be placed in the “Visitor Register” box at the entry side of the administration building before entering plant areas.

Food and Beverages

Food and beverages only to be consumed in:

- Lunch room;
- BBQ area in front of Administration Building;
- Administration Building;
- Elk Control Room (**Water only** – water to be drank from ‘sport bottle’ type containers only)

No eating or drinking on the plant

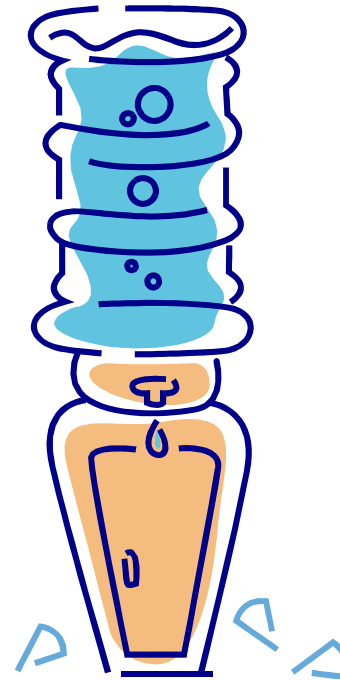
All Personnel who use the facilities on site must “clean up” after themselves when they have finished, prior to leaving the lunch room.

Water

Water on the plant is **NOT** suitable for drinking.

Drinking water is available in:

- Administration Building
- Elk Control Room



Toilets

Toilets are situated in:

- Administration Building
- ELK Control Room

Swipe card access - see Orica operator



Health and Hygiene standards must be adhered to at all times.

Restricted Areas

- There are confined spaces on site identified by signage. You must **not** enter these confined spaces unless authorised to do so under a permit to work.
- There are several “restricted area’s on site identified by yellow chain & signs.
- Visitors & contractors must **not** enter these area’s unless authorised to do so under a permit to work.
- Authorised Orica plant operators may enter if conditions of entry contained in specific work instructions have been met.

Events (Incidents / Near Misses)

- All events must be reported immediately to the Snr Man. Supervisor or 2IC.
- An “Event” report must be completed prior to leaving site after **any incident / near miss.**



Injuries

All injuries are to be immediately reported to the Plant Supervisor.



“Safety is our priority. Always.”

First Aid

- Class A first aid kit located in ELK control room with site first aider's list.
- Additional First Aid Kits are located in:
 - All Orica vehicles
 - Administration Building
 - AED in Admin Office

Housekeeping

- Keep all work areas clean, tidy and in a safe condition.
- Dispose of waste in correct receptacle.
- No contaminated waste in domestic waste bins.
- No domestic waste in chemical bins.



Housekeeping

- Cross contamination of chemical waste can cause severe chemical reaction. All chemical waste must be disposed of according to SDS and site procedures.
- General waste skips are located near water storage bund.
- Waste oil container located in dedicated self bunded container at rear of plant. See an Orica operator for access.

Environmental Responsibilities

Environmental management at the Kurri ANE Plant is the responsibility of all employees and contractors.

Traffic – adhere to traffic controls.

Noise - ensure all plant and equipment at the site is maintained in proper and efficient condition and operated in a proper manner to keep noise levels at a minimum.

Air and Odour - ensure the plant and equipment used is in optimum condition to ensure no atmospheric pollutants.

Waste - ensure hazardous wastes do not go to landfill or be discharged to the sewer or stormwater system.

Bushfire - remove fire fuels such as fallen leaves, twigs and bark.

Aboriginal & Historical Heritage - do not damage or interfere with artefact or site. Report immediately to supervisor.

Water Management - recycle all possible bund water and stormwater runoff into process water.

Environmental Responsibilities - Hazards

The most significant potential hazard at the Kurri ANE Plant relates to any potential chemical incident such as a spill, explosion or fire. To reduce the possibility of any such hazard

- All spills to be contained and reported immediately. Spill kits located at each unload point. **Red** for Fuels, **Yellow** for Chemicals.
- No detergent to be used on under any circumstance.
- Dry clean up of all spills, store in approved containers. No wash down.

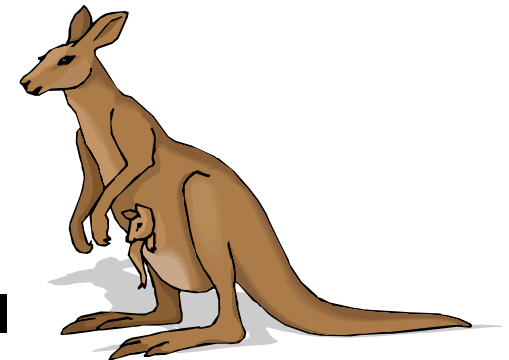
Orica's employees and contractors must ensure their compliance with environmental management plans, procedures and report incidences or near misses to their immediate supervisor.

Environmental Responsibilities – Ecology

Orica Kurri site is committed to preservation of native plants & wildlife.

- Unauthorised removal or pruning of plants is not permitted.
- Any accidental damage must be reported.
- For personal safety and animal welfare reasons
 - Do not approach any wildlife injured or not
 - Do not attempt to remove or harm the animal.
- Contact reception 49395204 in business hours
- Contact Native Animal trust 0418628438 out of hours

Do not attempt remove or harm the animal



Kurri ANE Plant “Rules to Live By”

- No task shall be undertaken that cannot be completed in a “Safe manner”.
- All vehicles will be operated/driven safely within accordance to site rules and signage.
- Speed through the main plant area is “**at a walking pace**”.
- Contractors and new Personnel, are to be closely supervised at all times.
- **We Respect and value all.**

Our Golden Rules

READ



ONLY start a task if you have a written procedure or have completed a risk assessment.



ALWAYS meet the requirements of the 'Permit to Work'.



ONLY carry out authorised alterations or changes.

WEAR



ALWAYS use the correct PPE for task and location.



ALWAYS wear seatbelts and **NEVER** exceed the speed limit or hold phones while driving.



ALWAYS use appropriate fall protection when working at heights and within 2 metres of a fall-off point.

CHECK



ALWAYS isolate machinery and equipment from all energy sources before maintenance commences.



ONLY use machinery, equipment or vehicles that you are trained to operate.



NEVER work or drive under the effects of drugs, alcohol or when suffering from severe fatigue.

1. READ

2. WEAR

3. CHECK



Safety is our priority. Always.

The most important thing is that we all return home, safely, every day.



Remember

Safety is our priority. Always.

The most important thing is that we all
return home, safely, every day.

We will not undertake any work that
cannot be done “Safely”

If you do not know – **ask!**



Appendix D

Site Induction Assessment Form

1.0 INSTRUCTIONS

- Use the induction screen show to answer the following questions;
- Complete the personal information;
- Have questionnaire marked;
- Sign off induction as read and understood;
- Have assessment countersigned by Orica Kurri Site Representative.

2.0 ASSESSMENT

1. State re-assessment period of inductions?

2. List all personal protective equipment required to be worn at the Kurri Site?

3. Who can have un-supervised access to ammonium nitrate or ammonium nitrate emulsions?

4. What action do you take following the emergency announcement 'evacuate now' or "evacuate via fire trail now"?

5. Name the location of the initial emergency assembly point.

6. Name the designated route to the Kurri ANE Plant?

7. Are heavy vehicles allowed to stop on George Booth Drive for any reason other than Emergency or Breakdown?

8. What do you need to complete before you start Hot Work (i.e. Welding)?

9. What is the only lock used to provide personal protection?

10. Who is subject to random drug and alcohol screening?

11. Is smoking allowed on site?

12. Name all areas where food can be consumed on site?

1 _____ 2 _____ 3 _____

13. Who should incidents / injuries be reported to?

14. Who is responsible for the environmental management on the plant?

15. What actions need to be taken in the event of a spill?

16. What are the 3 principle areas for our 9 Golden Rules?

1 _____ 2 _____ 3 _____

IF YOU CAN'T DO IT SAFELY, YOU CAN'T DO IT!

2.1 PERSONAL DETAILS – please print neatly so it is legible!

Full Name:	
Residential Address:	
Contact Phone Number:	
Emergency Contact Name and Phone Number:	
Company Name:	
Company Phone:	
Company Contact:	
Drivers Licence Number:	Expiry Date:
Dangerous Goods Lic. Number:	Expiry Date:
SSAN Licence Number:	Expiry Date:
Contractor Passport Completed:	
Kurri Swipe Card Number:	

3.0 COMPETENCY SIGN OFF

I have read and understood the information in the induction screen show:

Contractor:

The above Contractor has satisfactorily completed the induction assessment.

Orica Representative:
Date:

Appendix E

Summary of Training

Appendix E Summary of Training / Inductions / Drills

The below table is a summary of training requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Technical Centre Emergency Plan: Revision 24, 08/02/2023 (Orica);
- Orica ANE Production Facility Road Transport Protocol Rev E (Orica, 2020) (Operational RTP),
- Inspection checklists (EMS Appendix H):
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Summary of Training / Inductions / Drills

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Driver training	All contract drivers will be required to complete and be signed off on a Road Transport Protocol training competency	Prior to attending site	Contractor, SHES team representative.	This EMS	3.2
	All drivers of vehicles carrying ANE and ANS are to undergo emergency response training for incidents such as vehicular accidents or fires as part of their Dangerous Goods certification and internal Orica emergency training.	Prior to commencing work driving vehicles carrying ANE and ANS.	Contractor, SHES team representative.	Response to Submissions.	Table 2.1
	Truck drivers operating the ANE and ANS deliveries with Toll are given a site induction at the ANE Facility where they are trained by an Orica authorised representative.	Prior to commencing work driving vehicles carrying ANE and ANS.	ANE Operational Staff.	This EMS.	3.2
	Orica requires that all ANS, ANE and any other heavy vehicle driver complete specific training including information on Orica's Safety Management Systems, information on the products being transported and the controls in place to ensure safe transport of the product. The SHES induction provided to all heavy vehicle drivers will include operational traffic components including those outlined in the Operational RTP. Ensure the reinforcement of the community impacts associated with traffic movements during site meetings and inductions such as the restrictions on the use of exhaust brakes along George Booth Drive between John Renshaw Drive and the site.	Prior to commencing work driving vehicles carrying ANE and ANS.	ANE Facility Manager.	Road Transport Protocol.	1.3 and 2.3
Site Induction	Conduct site induction for all personnel that includes details of: - Emergency arrangements (including nature of emergencies); - Site Emergency Alarm; - Muster point operation;	Prior to any new personnel commencing at the site and reassessment at least every 12 months thereafter.	ANE Operational Staff	Kurri Kurri Emergency Plan.	12.1
				This EMS.	2.3 and 3.1

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	- Emergency evacuation procedures; - Initial responses to site incidents.				
	During site induction, roles and environmental responsibilities will be communicated to all staff and contractors at the ANE Facility, so that all personnel understand their role in environmental performance at the site and are aware of the key environmental management roles.	Prior to any new personnel commencing at the site and reassessment at least every 12 months thereafter.	ANE Operational Staff	This EMS.	2.3 and 3.1
Fire Warden Training	Fire wardens have a skills matrix and undertake formal training from external providers with certificates of compliance. The three core training courses to be completed include: - Apply First Aid - Warden Training (external Registered Training Organisation) - Warden Training (internal site-specific course)	Annually	ANE Facility Manager, Fire Wardens	Kurri Kurri Emergency Plan.	12.1 and Appendix 19
Emergency Training	Conduct routine desktop exercises and drills to build competency in the Orica Kurri Kurri Emergency Response Organisation Structure and to confirm that capability is in place.	To be determined.	Chief Warden.	Kurri Kurri Emergency Plan.	6.1
	Hold an emergency exercise involving sounding of the Site Emergency Alarm, activation of the emergency plan and on-site response to a simulated scenario (scenarios will be chosen to cover a range of possible events identified in the emergency plan).	At least one per year.	Capability Specialist.	Kurri Kurri Emergency Plan.	12.3
	Invite external emergency services to participate and/or critique emergency exercise.	Critique at least one exercise per annum.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.3
	A full debrief of each emergency exercise will be undertaken, with actions and opportunities for improvement identified. These actions will be loaded into the ENABLON action management module.	Within one month following each emergency exercise.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.3

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	Assess the effectiveness of emergency training.	As part of the internal audits of the Emergency Plans, & SHES Training Procedures, as well as during the debriefing of emergency exercise.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.1

Appendix F

Summary of Notifications

Appendix F Summary of Notifications

The below table is a summary of notification requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Technical Centre Emergency Plan: Revision 24, 08/02/2023 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011;
- Biobanking Agreement, ID number: 350 (under the Threatened Species Conservation Act 1995 for Orica Australia Pty Limited for Richmond Vale Biobank Site, Lot 2 in Deposited Plan number 809377), 2019.

The table should be read in conjunction with these management plans and site documents.

Summary of Notifications

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
If Site Incident occurs.	Notify the relevant authorities of pollution incidents causing or threatening material harm to the environment immediately upon becoming aware of the incident.	Notify immediately upon becoming aware. (Written details within 7 days)	ANE Facility Manager.	EPL 4121.	R2
	Notify the Secretary of the DPHI and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project.	Notify immediately. (Report within 7 days)	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 3
If Conservation Area or Biobank Site Deteriorates.	Inform the Secretary of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) as soon as practicable after becoming aware of the deterioration of any of the natural values or cultural values of the conservation area, or of any threat to these values.	As soon as practicable after becoming aware of the deterioration.	Technical Centre Manager.	Conservation Agreement (2011).	3.2
	Notify the Secretary of DCCEEW in writing as soon as practicable after becoming aware of any failure to comply with the Biobanking Agreement or any other incident at the Biobank Site (or surrounds) which may result in a sudden or significant decline of biodiversity values at the Biobank Site.	As soon as practicable after becoming aware	Technical Centre Manager.	Biobanking Agreement (2019)	7.3

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
If Ownership Changes.	Notify the Secretary of the DCCEEW in writing of any change of ownership or control of the conservation area or Biobank Site. The notice must include the name and address of the new owner and other relevant contact details.	Within 28 days after the change of ownership and control of the conservation area. Within 7 days after the change of ownership of the Biobank Site.	Technical Centre Manager.	Conservation Agreement (2011). Biobanking Agreement (2019)	5 9.1
If Sighting Threatened Species.	When threatened species are sighted, contact the DCCEEW to record the sighting on the NSW Wildlife Atlas and obtain the latest management advice relating to the particular species.	When threatened species are sighted (including but not limited to species listed in Annexure B of the Conservation Agreement).	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1i
If Thinning Revegetation.	If thinning of regenerating indigenous species which are altering the structure of the vegetation and/or reducing conservation values.	Thinning should be planned in consultation with the DCCEEW and may require approval under relevant legislation.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1m

Appendix G

Summary of Reporting

Appendix G Summary of Reporting

The below table is a summary of reporting requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Technical Centre Emergency Plan: Revision 24, 08/02/2023 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Orica ANE Production Facility Road Transport Protocol Rev E (Orica, 2020) (Operational RTP),
- Biodiversity Offset Area Vegetation Management Plan (Umwelt, 2021);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011
- Biobanking Agreement ID number: 350 (under the Threatened Species Conservation Act 1995 for Orica Australia Pty Limited for Richmond Vale Biobank Site, Lot 2 in Deposited Plan number 809377), 2019.

The table should be read in conjunction with these management plans and site documents.

Summary of Reporting

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Website	Provide regular reporting on the environmental performance of the Project on Orica's website, including: a. A copy of all current statutory approvals; b. A copy of the current environmental management strategy and associated plans and programs; c. A copy of any Annual Reports (over the last 5 years); d. A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; e. Any other matter required by the Secretary (DPHI); f. Any pollution monitoring data as required by section 66(6) of the POEO Act.	From the end of 2010. Pollution monitoring data must be published within 14 days of obtaining the data.	ANE Facility Manager.	Project Approval (09_0090) (as modified). POEO Act	Schedule 4, Cndtn 5 Section 66(6)
Road Transport Protocol.	The Operational RTP will be made available on the Orica website and hard copies available on request and kept in each delivery vehicle.	During operations.	ANE Facility Manager	Road Transport Protocol.	2.6
Annual Environmental Management Report	Submit an Annual Environmental Management Report for the Project to the Secretary of the DPHI as per the requirements of Schedule 4, Condition 2 of the Project Approval.	Within 12 months of the Project Approval and annually thereafter.	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 2
	Control of weeds and use of herbicides will be undertaken in accordance with the control methods described in the Vegetation Management Plan. A summary of the weed management activities carried out on site will be reported each year in the Annual Environmental Management Report.	Annually.	Capability Specialist.	Vegetation Management Plan.	4.4.3
	A weed control report will be submitted to the Biodiversity Conservation Trust, DCCEW annually. The results of the weed control program will be	Annually.	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	included in the Annual Environmental Management Report for the site.				
	An Ecological Monitoring Report will be prepared after each monitoring event and will document the monitoring methods and results from the monitoring program. This report will provide a comparison of the data collected with previous results as well as include management recommendations and ameliorative methods for ongoing management of the Biodiversity Offset Area. A copy of the Ecological Monitoring Report will be provided to the Biodiversity Conservation Trust, DCCEE as part of the reporting requirements for the Conservation Agreement. Results of the ecological monitoring will also be included in the Annual Environmental Management Report provided to DPHI.	Annually for five years.	Technical Centre Manager.	Vegetation Management Plan.	6.0
Annual Return	Complete and supply to the EPA an Annual Return in the approved form for each reporting period. The reporting period is the period of 12 months after the issue of the licence, and each subsequent period of 12 months. EPL 4121 was issued 4 January.	Annually. To be supplied to the EPA by registered post not later than 60 days after the end of each reporting period.	Technical Centre Manager.	EPL 4121.	R1
Annual Performance Report – Stormceptre Discharge	Complete an Annual Performance Report for the ANE plant Stormceptre Discharge, which must include an assessment of stormwater discharge quality monitoring data obtained during the reporting period. The report must be submitted to the EPA with each Annual Return.	Annually. To be supplied to the EPA with each Annual Return.	ANE Facility Manager.	EPL 4121.	E1
Emergency Plan	Audit the Emergency Plan based on the audit checklist and requirements of Orica Group Procedure “SHES Emergency Management”. The audit	Annually.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.4

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	outcomes and any actions identified will be recorded in ENABLON.				
	The Emergency Plan will be updated following the internal audit process. The following activities may also trigger an update of the plan: • Changes to staffing; • Changes to neighbourhood populations; • Changes to adjacent premises; • Changes to Orica or Statutory requirements; • Outcomes of incident investigations; • Outcomes of the periodic hazard study process; • Learning from emergency exercises; • After a near miss on any part of the site; • After a Significant Incident in a similar plant; • Change in surroundings, i.e. land use; • After capital improvement or plant project modifications; • After revision of Basis of Safety.	Biennially following the internal audit process.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.5
	Resubmit the Emergency Plan to the Secretary of the DPHI for approval when there are significant changes to the plan.	If there are significant changes.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	1.6.1
	Provide the updated Emergency Plan to the FRNSW for review as per the requirements in the <i>NSW Work Health and Safety Regulation 2017</i> .	If the Emergency Plan is updated.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	1.5 and 5.7
Monitoring Report.	Complete a monitoring report, including photo-point photos, noting changes occurring in the Conservation Area. This will form the basis for decisions about ongoing management actions. A copy of all monitoring reports should be forwarded to the DCCEEW.	From time to time.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1u
Annual Report	Complete an annual report for each reporting period and provide to the Secretary of the DCCEEW by	Annually from the date of the first report	ANE Facility Manager	Biobanking Agreement (2019)	Annexure D, Item 2

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	registered post no later than 30 days after the end of each reporting period. The annual report must contain: • the results of any monitoring, inspections or surveys required from Annexure C of the Biobanking Agreement (2019) • Contain results of the inspections required to be conducted by item 1.2 of Annexure D • Include photographs taken at photo points listed in Annexure D of the Biobanking Agreement (2019) • Include any other information required in annual reporting template from Annexure D of the Biobanking Agreement (2019).				

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Appendix H

Inspection Checklists

Shift Pre Start and Housekeeping Checklist

Bund Area	Bund Level %	Ph Result	Nitrate Result mg/L	Conform to Standard		Non Conformance Issue	Action Taken to Return to Non Conformance Standard
				Yes	No		
Acetic Acid Bund	%						
Oxidiser / ANS unload Area Bund	%						
Caustic Bund	%						
Auger Area Bund	%						
Process Water Bund	%						
ANE Area Bund	%						
Comsol Export Bund	%						
Fuel Storage Bund	%						
Fuel Blend Storage (E25) Bund	%						
Diesel Day Tank Bund	%						
General Areas	Conform to Standard		Non Conformance Issue			Action Taken to Return to Non Conformance Standard	
	Yes	No					
HWG Shed							
Pump Workshop							
Air Compressor							
Hot Work Shed							
ANE Area							
Raw Material Area							
General Yard							
QC Lab & Control Room							

Site	Start of Shift Security Check	Yes	No	Report Issues Immediately	
Security Check	Is plant perimeter fence intact?				
	All plant perimeter gates locked?				
	Are all swipe gates in locked mode?				
	All packages/deliveries accounted for?				
Plant Alarms	System Review	Yes	No	Action Taken to Rectify Fault or Alarm	
EWIS System	Are there any alarms showing on EWIS panel?				
	Are there any sector isolations showing on EWIS panel?				
	Is the Pennstop valve in the open position?				
DC System	Have Citect alarms been reviewed as per standard?				
	Is DC System in safe state to run plant?				
Critical Pumps	Pump Checks	Yes	No	Comments	
	Have critical pumps been checked as per standard?				
	Were any faults found with pumps?			If yes discuss required action with 2iC and raise maintenance notification	
				SAP Notification No. for fault	
Plant Reporting	Standard Checks	Yes	No	Comments	
Rainfall	Rain gauge checked and emptied @ 6:00am				
	Rainfall recorded in 24hr period	mm	N/A		
	Has rainfall been recorded n "H" drive spread sheet?				
Storm Harvester	Level indicator (LI4439) @ start of shift	%	N/A		
	Is Storm Harvester in sequence mode?				
	Has Storm Harvester overflowed during shift?			If yes record time of overflow started	
Water Testing (Only complete if Storm Harvester has overflowed)	Was a water sample required as per standard?			If yes record time sample taken	
	Has a sample been prepared for external testing?				
	Has internal testing of sample been performed?			If yes record results	Ph: Nitrate mg/L:
Inspection Sign Off	Checks	Yes	No	Signatures:	
	Have actions for all Non Conformance issues being raised, given a priority and agreed to by 2iC?			Operator: 2iC:	
	Have all actions required before plant start up been completed?				
	Is the plant in a safe state to start?				
Completion of Shift	Checks	Yes	No	Operator: 2iC:	
	Have all actions raised been completed during shift?				
	Have actions not completed been included in shift handover?				
Actions not completed at the end of shift must be included in handover to next shift					
Date of Inspection:	Time of Inspection:	Operator conducting Inspection: (Print Name)			

HOUSEKEEPING INSPECTION

Equipment Location:

Descriptions: This housekeeping inspection audit is used to keep combustible materials (pallets, paper, plastics, and cardboard) minimized in process areas or in proximity to oxidizers and fuels. All personnel shall maintain a high standard of housekeeping in their work area in accordance with OMS Critical Controls 09 and Model Procedure MP-SF-13C.

Inspection Completed By:

Completed Date:

Others:

A Monthly Inspection Checks Required

Tick inspection
being undertaken

Mark box with Yes/No/N/A as appropriate

Clause	Observations		
	Yes	No	N/a
1. Ammonium Nitrate Storage Area			
Combustibles			
Walls, floors, access ways and surrounding areas are clean and free of contaminants.			
A free air space/ gap is maintained of at least 1.2 metres between the AN and the outer walls of the buildings. Air gap is not used for storage of any materials.			
No chemical spills, , litters, rags, plastics, packagings, pallets and other combustible materials present in the AN Store.			
Drainage is clean and free of organic matter eg. leaves, grass, etc.			
Ventilations (if used) are free of build up of combustible materials eg. Bird nests, windblown debris etc.			
No unused wooden pallets, empty bags and packaging stored in the AN store.			
Pallets, ropes, slings, covers, machinery equipment are not contaminated with build up of AN.			
Area surrounding AN store is cleared of any vegetation by at least 10 metres.			
Incompatibles			
AN store is segregated by >5m from all incompatible materials such as flammables, combustible liquids, flammable solids, organic chemicals, alkalis, acids and other corrosives, compressed flammable gases.			
No copper/ brass/ bronze (unless painted) is in contact with oxidizers to avoid formation of TACN impact sensitive explosive.			
No possible ignition sources (eg. Smoking and naked flames) inside AN store with notice to this effect is displayed (eg signage)			
Vehicle are not parked inside the store			
All powered AN transfer equipment (if used) are free of any leaks of fuels, lubricating oils and hydraulic oils.			

Leakages/ Spillages			
Bulka bags are stored in stable stacks (eg. Max 2 stack height)			
No visible leaks of prills in the AN store.			
Damaged bags are suitably sealed up and contained to prevent additional spillage.			
Suitable waste containers are available for clean-up of spillage. (labelled & dedicated)			
Appropriate PPE and spillage kit are available and suitable for use with oxidizers eg. Only use inorganic absorbents. Do not use saw dust for oxidizer spills.			

2. Ammonium Nitrate Emulsion Storage Area			
Combustibles			
Concrete pad is clean and free of contaminants.			
No contaminated rags are being placed on top of the pump motor.			
No chemical residues, litters, rags, plastics, packagings, pallets and other combustible materials present within 5 metres of area surrounding the ANE tanks.			
Leakages/ Spillages			
No visible leaks from the ANE transfer pump and hoses.			
Hoses are neat and tidy. Hose ends are capped or fitted to docking points.			
Secondary containments (drip trays) are cleaned and emptied of residual product.			
ANE waste are stored in dedicated bucket and labelled properly			
Appropriate PPE and spillage kit are available and suitable for use with oxidizers eg. Only use inorganic absorbents. Do not use saw dust for oxidizer spills.			
Incompatibles			
ANE store is segregated from all incompatible materials such as flammables, combustible liquids, flammable solids, organic chemicals, alkalis, acids and other corrosives, compressed flammable gases.			
No possible ignition sources (eg. Smoking and naked flames) inside AN store with notice to this effect is displayed (eg signage)			
All powered AN transfer equipment (if used) are free of any leaks of fuels, lubricating oils and hydraulic oils.			

3. Raw Material Storage Area			
Combustibles			
Chemical storage containers are clean and in useable condition			
Signage are neat and clearly visible			
No chemical residues, litters, rags, plastics, packagings, pallets and other combustible materials present within 5 metres surrounding the storage area			
Leakages/ Spillages			
Hoses (if used) are neat and tidy and free of leaks			
No visible leaks from the IBCs eg. Gasser and companion solution			
Bunds/sumps are clean and free of contaminants			
Appropriate PPE and spillage kit are available.			
Drainage is clean and not full of organic matter eg leaves			
Incompatibles			
Gasser is separated from nitrate by at least 5 metres			
Flammables are stored in flammables cabinet located at least 3 m from the designated hot work area			
Waste is stored in a separate designated area. Dedicated bins available for various waste type. Waste buckets are labelled properly (eg.DG, Do Not Use, SHG). Nitrite bags are not disposed together with AN bags			

3. Fuel Storage Area			
Combustibles			
Concrete pad is clean. No chemical spills, litters, rags, plastics, packagings, pallets and other combustible materials present near the diesel storage tank.			
Fuel bunds are clean and free of organic matter/contaminant (eg. rainwater)			
Leakages/ Spillages			
Tank, pipe-work and other associated equipments are clean and free of leaks			
Secondary containments (eg drip trays) are provided for self-bunded tank			
Hoses are neat and tidy.			
Hose caps are used or fitted to docking point when not in			
Appropriate PPE and spillage kit available and suitable for use with diesel spill.			
Incompatibles			
Separated away from oxidizers and other incompatible materials			
No possible ignition sources around diesel tank			
Signage are neat and clearly visible			

4. Site General (eg. Workshop, office, laboratory)			
Combustibles			
Everything is in place. Workbench areas, cupboard and equipment are clean, tidy and stored appropriately. No unnecessary tools lying around.			
Aisles, walkways, corridors, staircases, doorways, entrance halls, foyers and exits shall be unobstructed, free from tripping (hoses, cables etc) and slipping hazards and the accumulation of combustible materials.			
Leakages/ Spillages			
Floors are clean. No visible spills. Work bench areas are tidy and equipment and tool are stored appropriately			
Secondary containments (eg. drip trays) if used are clean and free of contaminants			
General waste (eg. Rubbish, scrap or unwanted material) is stored and disposed of safely. Lids of the skip bins are closed when not in use.			
Appropriate PPE and spillage kit are available.			
Incompatibles			
Oxy/Acetylene Flammable Gas bottles are stored appropriately			
All flammables (eg. Paints, solvents, aerosol cans, etc) are stored in the approved flammable cabinet			
Signage is neat and clearly visible.			
Compressed air shall not be used for housekeeping activities or for dusting down clothing			
Fire extinguisher is in good working order and maintained.			

=00==End of Checklist=00=

[illegible]

3M ENVIROCYCLE PERIODIC MAINTENANCE

QUALIFIED CONTRACTOR TO PERFORM PERIODIC MAINTENANCE ON WASTE
WATER SYSTEM

MAINTENANCE TO BE PERFORMED:

CONTROLLER:

- ☐ CHECK PUMP CONTROLLER PANEL CONDITION
- ☐ INSPECT ELECTRICAL EQUIPMENT

AIR:

- ☐ CHECK AIR PUMP OPERATION
- ☐ CLEAN AIR PUMP FILTER
- ☐ MONITOR AND ADJUST THE BALANCE OF AERATION

WATER:

- ☐ CHECK WATER IRRIGATION PUMP
- ☐ CHECK WATER CIRCULATION
- ☐ CLEAN TREATED WATER FILTER
- ☐ CHECK LEVEL SWITCH OPERATION

DISINFECTION:

- ☐ CHECK UV DISINFECTING LIGHT CONDITION
- ☐ CLEAN UV LIGHT GLASS THIMBLE

TANK:

- ☐ RECORD WATER pH READING _____
- ☐ MEASURE WATER CLARITY
- ☐ MEASURE SLUDGE LEVELS ACCEPTABLE

COMPLIANCE:

- ☐ RAISE NOTIFICATION FOR REQUIRED REPAIRS
- ☐ COMPLETE SERVICE REPORT TO PLANT SUPERVISOR
- ☐ SUBMIT SERVICE REPORT TO LOCAL COUNCIL

TEST STORMCEPTOR OIL WATER PROBE AI4437

PH ELECTRODE CLEANING

If the electrode is coated or dirty, clean as follows:

1. REMOVE PROBE FROM WATER & CHECK ALARM OPERATED OK
2. WIPE CLEAN WITH CLEAN WET RAG & PLACE BACK INTO PIT
3. CLEAR ALARM

RB - BUSHFIRE & PERIMETER SECURITY

EN.PMR0800.00

Equipment Locations / Descriptions
Inspection Completed By:
Date:
Permit to Work No (where required):

Equipment Checks Required

Mark box N/A where item is not applicable

Mark box ✓ where item is satisfactory

Mark box X where item is defective and note actions in Service Log

3 MONTHLY

NOTE: The information contained in this Red Book has been aligned with the Bulk Depots document, Ref: CLR-00096, which can be found in the OMS Global Engineering DMS.

You may need environmental approval for clearing activities to maintain a fire break or asset protection zone.

Minimum effective width for a fire break or asset protection zone is 10m (33ft).

However greater distances maybe required depending on slope of the land and vegetation type as per Bushfire Management Plan.

☐ Review adequacy of precautions as per Bushfire Management Plan

☐ Inspect the condition of the boundary fence, including gates, latches and locks for damage

☐ Check there are no holes under the fence or signs of potential security breaches

☐ Ensure that the all of signage is in place secure and legible.

Ground Cover

☐ Ensure there is no build up of fuels such as logs, branches, excess fallen leaves, twigs and bark

☐ Ensure grass is short, green and well watered

☐ Ensure there are no large piles of mown grass

Trees & Shrubs

The management of existing vegetation involves selective fuel reduction (removal, thinning and pruning) and retention of vegetation, which may have beneficial effects by acting as windbreaks and radiant heat barriers.

- [] Ensure trees within 2m (6ft) to 5m (16ft) of buildings do not overhanging
- [] Ensure tree crowns are separated by 2m (6ft) to 5m (16ft)
- [] Ensure understorey plants, trees and shrubs are less than 3m (10ft) in height
- [] Remove more flammable species such as those with rough, flaky or stringy bark
- [] Remove noxious and environmental weeds
- [] Check condition of firebreaks (should be at least 10m (33ft) wide) around plant and ensure cleared area complies with fuel free zone as per Bushfire Management Plan
- [] Ensure an Asset Protection Zone is maintained as per the Bush Fire Management Plan, or a minimum fire break of 10m (33ft) is maintained around all buildings and magazines
- [] Ensure standing timber within 15m (49ft) metres of magazines is trimmed, lopped or removed to ensure that it could not fall into the 10m (33ft) exclusion zone

MONTHLY

- [] Check integrity of main tank bund by checking Interstitial space alarm or dipstick for moisture level
- [] Record result _____mL
- [] Check pump / equipment bay bund empty, free of sludge and litter and clean
- [] Check pump / equipment bay bund is in place & secure
- [] Check exterior is undamaged and has no sign of defects or leakage
- [] Check vents & fittings are undamaged and have no sign of defects, leakage or blocked
- [] Check Hi Alarm, press alarm test, and confirm there is an audible alarm
- [] Check covers & hatches are in place and fitted correctly and not damaged
- [] Check guards are in place, secure and undamaged
- [] Check ladders, walkways, handrails are in place, secure and are free from defects and damage
- [] Check pipe work/valves/fittings, visual check, no leaks
- [] Check refuelling pump, visual check, no leaks and not damaged
- [] Check refuelling discharge hoses (where provided), visual check, no leaks & not damaged
- [] Test all start / stop and emergency stop buttons for correct operation
- [] Check static earthing cable & clamp (where provided), for damage
- [] Remove a sample from bottom tank drain and check for water. If water is found continue to drain until no water is found in the sample. Dispose of contaminated product appropriately. (On some tanks this is done using the dewatering pump)
- [] Check firefighting equipment is accessible and ready
- [] Check spill kit is accessible and stocked and not damaged
- [] Check Site Lighting (where provided), is operational

Appendix I

Table of Monitoring Measures

Appendix I Table of Monitoring Measures

The table of Monitoring Measures is a consolidated list of routine and regular tasks that are undertaken at the ANE Facility and Orica's Kurri Kurri Technical Centre, Richmond Vale, to ensure the health and safety of the environment and all personnel at the site.

The table is divided into routine inspections and regular testing/servicing tasks.

The table is derived from mitigation measures outlined in the following documents in place at the ANE Facility:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Technical Centre Emergency Plan: Revision 24, 08/02/2023 (Orica);
- Orica ANE Production Facility Road Transport Protocol Rev E (Orica, 2020) (Operational RTP),
- Biodiversity Offset Area Vegetation Management Plan (Umwelt, 2021);
- Operation Soil and Water Management Plan for Ammonium Nitrate Emulsion Production Facility (AECOM, 2020);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the *NSW National Parks and Wildlife Act (1974)* and Orica Australia for 'Orica Richmond Vale'), 2011;
- Biobanking Agreement, ID number: 350 (under the Threatened Species Conservation Act 1995 for Orica Australia Pty Limited for Richmond Vale Biobank Site, Lot 2 in Deposited Plan number 809377), 2019.

The table should be read in conjunction with these management plans and site documents.

Notes to the table:

- ANE Facility Manager - Manager responsible for the operation and management of the ANE Facility; and
- Technical Centre Manager - Manager responsible for the whole of the Orica Richmond Vale site.

Routine Site Inspections / Ongoing Site Checks (Is it in Place?)

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Daily Routine Inspections and Ongoing Site Checks					
General Housekeeping.	Undertake daily housekeeping inspection and record results in accordance with the "Shift Pre Start and Housekeeping Checklist" (Appendix H). The following areas are to be checked • Bund areas; • General areas; • Site security; • Plant alarms; and • Critical pumps. Plant recording is required for: • Rainfall; • Storm harvester; and • Water test results.	Daily.	ANE Operational Staff	"Shift Pre Start and Housekeeping Checklist".	Whole Checklist.
Firewater Tanks.	Check firewater tank levels. Minimum of 200,000 litres to be retained for firefighting.	Check water level in tank daily.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
				Environmental Aspects Register.	1.1 and 8.1
	Check connections for water tanks so Rural Fire Service tankers can refill.	Monthly	Technical Centre Manager	Environmental Aspects Register.	1.1
Water Quality and Management.	Check no obstructions to site water flow and segregation of clean water runoff, stormwater and process water from process areas, non-process areas, and surrounding areas.	Monthly	SHES team representative.	Soil and Water Management Plan.	5.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Ensure there is no blockage of pipes or pits for the stormwater containment system. Maintain all bunds around processing area.	Daily and after each rainfall event.	SHES team representative.	Soil and Water Management Plan.	6.1
	Maintain bund surrounding hydrocarbon tank loading and storage area. Ensure prompt and full removal of any material which has collected in the sump provided within the bunded area to maintain sump capacity.	Daily.	SHES team representative.	Soil and Water Management Plan.	6.1
Chemical Storage Areas.	Maintain chemical storage areas in a clean and usable condition. Check for cleanliness, usable condition, leaks.	Daily.	ANE Facility Manager ANE operational staff.	Environmental Aspects Register.	1.2 and 1.3
	Check chemical storage containers are in good working order and contents clearly marked. Check for cleanliness, usable condition, leaks.	Daily.	ANE Facility Manager ANE operational staff.	Environmental Aspects Register.	1.2
	Check bund level and cleanliness of bunded areas.	Daily.	ANE operational staff. ANE Facility Manager.	Environmental Aspects Register.	1.3 and 5.1
	Maintain all bunds around processing area to ensure capacity and ensure bunds comply with all relevant legislation.	Daily.	Site Safety/Environment Representative or ANE Site Manager	Soil and Water Management Plan.	6.1
Traffic Management.	Check speed limits and parking areas are clearly signposted, signs are in place, and visible.	As required.	ANE Facility Manager.	Environmental Aspects Register.	2.1
Site Security.	Check all security measures (security fence, security cameras, controlled entry, and security procedures) are in place and functioning.	Daily.	ANE Facility Manager. ANE operational staff	Environmental Aspects Register.	10.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Vehicle Access and Roads.	Check all access crossings and driveways are in good order for the life of the development. Maintain new site access points, internal roads and parking associated with the ANE facility in accordance with the latest versions of the Australian Standards AS 2890.1:2004 and AS 2890.2:2002 or as otherwise agreed by Council.	Ongoing. In accordance with the Australian Standards.	ANE Facility Manager and Technical Centre Manager.	Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 7
				Response to Submissions.	Table 2.1
	Maintain sealed site access road and unbunded plant hardstand areas and repair as required.	Ongoing. In accordance with the Australian Standards.	ANE Facility Manager and Technical Centre Manager.	Soil and Water Management Plan.	6.1
Plant and Equipment	Check plant and equipment is in good working order, and that there is no damage or other condition occurring that could affect noise levels. Maintain and operate in a proper and efficient condition all plant and equipment installed at the premises or used in connection with the licensed activity (in accordance with manufacturers guidelines for each item of plant or equipment). Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.	EPL 4121.	O2.1
				Project Approval (09_0090) (as modified).	Schedule 2, Cndtn 12
				Environmental Aspects Register.	2.3, 3.1 and 4.1
Pedestrians.	Check that all pedestrians wear high visibility clothing.	Regular visual checks/	ANE operational staff.	Environmental Aspects Register.	2.1
Vehicle Parking.	Check that all unattended vehicles are parked in designated parking areas.	Regular visual checks/	ANE operational staff.	Environmental Aspects Register.	2.1
Weekly Routine Inspections					
Emergency Preparedness.	Check Emergency Spill Kits. Undertake visual inspection to confirm kits appropriately stocked and located.	Weekly or after use.	ANE operational staff ANE Facility Manager.	Kurri Kurri Emergency Plan.	General reference throughout doc.
				Environmental Aspects Register.	1.2
				Soil and Water Management Plan.	6.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Water Quality and Management.	Maintain surface water diversion channels and underground drains to prevent scour, erosion and sedimentation. Undertake visual inspection to ensure no obstructions to drains and to detect any signs of erosion.	Weekly.	SHES team representative.	Soil and Water Management Plan.	5.1
Waste Management.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	Weekly.	ANE operational staff. ANE Facility Manager.	Environmental Aspects Register.	6.1
Garden areas.	Maintain and check “Landscaped” areas at the ANE Facility and Technical Centre site to ensure they are tidy and weed-free.	Weekly.	ANE Facility Manager.	Environmental Aspects Register.	7.2
Monthly Routine Inspections					
General Housekeeping.	Undertake a monthly housekeeping inspection and record observations and actions in accordance with the “Monthly Housekeeping Audit Inspection Checklist” (refer Appendix H) in order to maintain a high standard and keep combustible materials (pallets, paper, plastics, and cardboard) minimized in process areas and in proximity to oxidizers and fuels. The following work areas are to be inspected: • Ammonium Nitrate Storage Area; • Ammonium Nitrate Emulsion Storage Area; • Raw Material Storage Area; • Fuel Storage Area; • Site General (e.g. Workshop, office, laboratory).	Monthly.	ANE Facility Manager.	“Monthly Housekeeping Audit Inspection Checklist”.	Whole Checklist
Bushfire Hazard Reduction / Preparedness.	Check leaf guards on all buildings and clear as required.	Check leaf guards monthly.	Technical Centre Manager.	Response to Submissions.	3.6.1
	Inspect Technical Centre. Regular program of inspection to be undertaken by the Rural Fire Service.	To be determined (regular inspection).	Rural Fire Service. ANE Facility Manager to ensure it happens.	Response to Submissions.	3.6.1
Waste Management.	Check that any waste produced on site is taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.	Environmental Aspects Register.	6.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Stormwater Management.	Monthly inspections of stormwater management measures are to be undertaken by the ANE Facility Manager	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.1
	Regular maintenance of all erosion and sediment controls.	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.3
	The sediment levels in the structures and the need for de-silting will be determined through a visual assessment as part of the regular inspections. Material accumulated by erosion and sediment control structures is to be removed when it reaches 50% of the height. If the inspections identify that the type, location or condition of the control structures are ineffective, the control structure will be modified, repaired or replaced in consultation with the Environmental Representative as soon as practicable.	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.3
	Monitor vegetation along access road in grass lined swales and grassed buffer strips to ensure no erosion is occurring. Ensure no blockages of pipes or pits carrying runoff and remove accumulated materials if blockages occur. Monitor geo-fabric lined rock channels to ensure no erosion is occurring, and remove any deposited materials (e.g. sedimentation).	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
	Monitor scour protection installed at the outlets of the access road culverts to ensure it is adequate for the erosion potential of the water. If damage is occurring, extend or improve existing scour protection area. Remove any accumulated material from within the scour protection area.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
	Regular inspection of the downstream overland flow paths, following discharge events, to ensure that discharged stormwater does not increase the erosion and scouring of surface material. If areas of scouring are identified, appropriate remediation measures will be implemented.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Regularly inspect rock lined level spreaders at the stormwater discharge points and clear sediment as required.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.2
Clean Water Diversion	Regular inspection of clean water diversions, especially following rainfall events. Carry out repairs as required ensuring they remain in good working condition.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
Tanks	Ensure all tanks are regularly inspected and replaced or repaired should deterioration be observed.	Monthly.	ANE operational staff.	Soil and Water Management Plan.	6.1

Periodic Testing / Servicing / Maintenance of Equipment (Is it working?)

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weekly Testing					
Weekly Site Alarms, Fire Panel and Emergency Communications.	Test the Site Emergency Alarm – Early Warning Intercom System (EWIS).	The EWIS is tested on Monday at 9.50 am.	The front desk receptionist.	Kurri Kurri Emergency Plan.	8.8
	Test the thunderstorm alert.	Test weekly each Monday at 10.00 am.	The front desk receptionist conducts weekly test as part of testing the EWIS.	Kurri Kurri Emergency Plan.	5.2.13
	Test site emergency radios.	Radios are tested each Monday as part of the emergency alarm testing.	The Front desk receptionist.	Kurri Kurri Emergency Plan.	8.9.1
	Test site Fire Indicator Panel and backup. <i>Note: fire system infrastructure is maintained under contract with a third party service provider (see monthly testing below). Maintenance and testing is undertaken to comply with applicable statutory requirement.</i>	Test for operation and reset weekly each Monday at 9.50 am.	The front desk receptionist conducts weekly test as part of testing the EWIS.	Kurri Kurri Emergency Plan.	8.8

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Safety Showers.	Check safety showers in all plants.	Every two weeks.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
Monthly Periodic Testing					
Front Gate.	Check site boom gate entry warning lights are operational.	Monthly.	Kurri Kurri Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check mimic panel front gate.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check occupancy report front gate.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
Monthly Fire Panel Test.	Test for operation of site Fire Indicator Panel and backup. <i>Note: fire system infrastructure is maintained under contract with a third party service provider. Maintenance and testing is undertaken to comply with applicable statutory requirement.</i>	Monthly during the last week on the month.	Contractor undertakes monthly test.	Kurri Kurri Emergency Plan.	8.8
Smoke Detector.	Test smoke and thermal detectors.	Monthly.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
First Aid Equipment.	<i>Note: First aid equipment is maintained under contract with third party service provider.</i>	Not required.	Technical Centre Manager to ensure contract in place and contractor provides service.	Kurri Kurri Emergency Plan.	12.2
Waste Water System.	Undertake periodic maintenance on the waste water system in accordance with the "Envirocycle Maintenance Checklist" (refer Appendix H).	Monthly	Qualified contractor under instruction from	"Envirocycle Maintenance Checklist".	Whole Checklist

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
			the ANE Facility Manager.		
	Clean and test "Stormceptor" and maintain waste water system in accordance with "Stormceptor Maintenance Checklist" (refer Appendix H).	Monthly and after rainfall.	ANE Facility Manager.	Environmental Aspects Register.	1.2
				"Stormceptor Maintenance Checklist".	Whole Checklist
Bunded Tanks.	Check and undertake maintenance of bunded tanks in accordance with the "Self-Bunded Tank Maintenance Checklist" (refer Appendix H).	Monthly.	ANE Facility Manager.	"Self-Bunded Tank Maintenance Checklist".	Whole Checklist
Fire Fighting Equipment	Test run of firewater system pumps.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Service of firewater system diesel pumps.	Monthly.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check fire hoses, hydrants and extinguishers. The fire safety equipment is tested and maintained in accordance with relevant code requirements.	Monthly.	Technical Centre site personnel.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
Electrical Supply Check.	Ensure electrical supply is in good operating condition and avoid electrical faults.	Regular. As required by the equipment.	Inspection and maintenance by energy regulator.	Fire Safety Study: Kurri Kurri Technology Centre.	Table 5.4. Point 12

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Periodic Testing					
Lighting.	Check all lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network and compliant with the latest version of <i>Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting</i> .	Biennial compliance audit or as required via change.	ANE Facility Manager.	Environmental Aspects Register.	4.2
Firewater System Hydrant.	Test firewater system hydrant flow.	Once every 3 years.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
As required by manufacturer					
Stormceptor	Maintain the trap in the SPEL Stormceptor™ in accordance with manufacturer's specifications and ensure collected waste is removed as required.	As required by manufacturer.	ANE Facility Manager.	Soil and Water Management Plan	6.1

Deliveries and Transport

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Pre-start checks.	Maintenance and pre-start checks will be undertaken in accordance with manufacturer requirements and the National Heavy Vehicle Accreditation Scheme requirements.	Prior to commencement of deliveries.	Driving Contractor.	Road Transport Protocol.	1.3
Truck Movements.	Monitoring of truck movements will be undertaken to ensure drivers adhere to the designated haulage route as required by the Driver Code of Conduct and transport route risk assessment. Monitoring will include the use of a GPS system which will be fitted to each vehicle used in deliveries to and from the site. Drivers found to be non-compliant may be subjected to Orica's disciplinary process or prevented from delivering to the site in the case of contract delivery drivers.	Periodic.	ANE Facility Manager and Haulage Contractor.	Road Transport Protocol.	2.3 and 3.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Driver compliance with Code of Conduct.	Monitoring of haulage contractors will be undertaken to ensure drivers are complying with the requirements of the Driver Code of Conduct as outlined in the Operational RTP	Periodic.	ANE Facility Manager	Road Transport Protocol.	2.3

Bushland Hazard Reduction

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weekly Tasks					
Access Road Clearance.	Check access road clearance and maintain a minimum 4 metre vertical clearance to any overhanging obstructions including tree branches along the access road.	Weekly.	Technical Centre Manager.	Environmental Aspects Register (Recommendations of the "Bushfire Threat Assessment" included in the EA)	1.1
Monthly Tasks					
Vegetation Clearance.	Manual Hazard Reduction. Maintain a minimum 30 m clear zone of vegetation around perimeter of the plant (designated Asset Protection Zones) in accordance with the relevant NSW Rural Fire Service Planning for Bushfire Protection 2006 Guidelines.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
				Environmental Aspects Register (Recommendations of the "Bushfire Threat Assessment" included in the EA).	1.1 and 8.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Ensure low fuel zones up to 60 m from facilities including lawns, planted garden strips, roads and pathways.	Regularly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
Fire Trails	Check fire trails.	Monthly. Increasing frequency during fire season.	Trained Technical Centre site personnel.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1 and 8.2
				Response to Submission.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
Bushfire Inspection.	Undertake bushfire inspection and record results in accordance with the “<i>RB – Bushfire & Perimeter Security Checklist</i>” (refer Appendix H). The following tasks are to be undertaken: • Raking or manual removal of fine fuels; • Mowing grass; • Slashing and trittering; • Removal or pruning of trees and shrubs; • Check condition of firebreaks; • Ensure Asset Protection Zone is maintained as per the Bush Fire Management Plan; • Ensure standing timber within 15 metres from magazines is trimmed, lopped or removed.	3 Monthly. <i>Timing as agreed with DPHI during 2022 EMS review.</i>	Technical Centre Manager.	“ <i>RB – Bushfire & Perimeter Security Checklist</i> ”.	Whole Checklist.

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Yearly Tasks					
Back Burning.	Periodic back burning. The continuation of regular controlled hazard reduction and backburning operations undertaken by the Rural Fire Service.	Yearly. Timing and location as advised by the Rural Fire Service.	Rural Fire Service. Technical Centre Manager to ensure it happens.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1

Maintenance of the Conservation Area

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weed Control	Undertake a periodic weed control program to control weeds and non-indigenous flora in the Conservation Area using the following appropriate control methods: • Use Glyphosate based herbicide by direct application to cut surfaces (cut and paint or scrape and paint methods); • Spraying of Glyphosate based herbicide can be performed (only according to the directions on the label) and ensuring that off-target damage is minimised; • Use appropriate control measures as recommended in the Department of Primary Industries <i>New South Wales Weed Control Handbook – A guide to weed control in non-crop, aquatic and bushland situations 7th Edition</i> or equivalent replacements for control of weeds, ensuring minimal off target damage; • Remove weeds by hand ensuring that all plant parts which can reproduce are removed and that soils do not become prone to erosion;	To be determined. Ensure control programs are commenced when timing and extent of weed removal will minimise adverse effects on wildlife (weeds may provide protection or habitat for native fauna).	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1a

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Other weed control methods may be undertaken with prior written permission of the Secretary.				
	Control of the class 3 and 4 weeds (blackberry, bitou bush and lantana) is required to control the growth and spread of the weed to the extent specified by the LCP using the following control measures: - The plant must not be sold, propagated or knowingly distributed; - The plant must be prevented from flowering or seeding; - The plant material must be prevented from spreading through movement and/or transport by any means; - The plant must be prevented from growing within 10 metres of a property boundary or watercourse.	Ongoing.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.2
	Continue to check the Conservation Area for weed invasion and regrowth and treat any outbreaks. Check adjacent areas and gardens for invasive plant species and remove, or control their spread.	Monthly.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1a
	Within approximately three months of the initial weed control effort an inspection by the bush regeneration specialist in the areas currently known to contain weeds (refer to Figure 4.1 of the Vegetation Management Plan) will be undertaken to monitor and determine the success of the initial weed control effort and identify any new weed occurrences within the Biodiversity Offset Area. In addition to these objectives the inspection will also include a walkover inspection and general walking transects through the Offset area to determine whether any weed species are establishing in new areas.	Within 3 months of the initial weed control effort.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3.1
	Following the first three monthly inspection, the timing for the next weed control effort and the areas of the conservation area that are to be the focus of weed control activities will be agreed with the bush regeneration specialist. For example, if there is still significant weed density the next inspection and	Within 4 months of the initial weed control effort.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	weed control effort may be undertaken in 3 months' time, however if the weed density has been significantly reduced then the frequency may be decreased to six months. Follow-up weed control activities will then be undertaken in the areas identified during this inspection as requiring additional maintenance activities.				
	An annual weed control program across the Biodiversity Offset Area to target noxious weeds will be undertaken in accordance with the Department of Primary Industries <i>New South Wales Weed Control Handbook – A guide to weed control in non-crop, aquatic and bushland situations 7th Edition</i> including: • Control of weeds in accordance with relevant legislation; • The use of herbicides as per control methods provided in the Vegetation Management Plan; • Removal of weeds by hand; • Weed control undertaken when the timing and extent of weed removal will minimise adverse effects on wildlife; • Monitoring and inspections of areas to assess the effectiveness of the weed control program and to ascertain the requirement for further work; and • Ongoing consultation with the relevant authorities regarding weed listings, weed occurrence and management technologies.	Annually.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3
	Monitoring of the success of weed control activities and weed occurrences within the Biodiversity Offset Area will be undertaken through walkover inspections of areas known to contain well as general walking transects through the offset area to determine whether any weed species are establishing in new areas. The results of the inspections will determine the level of weed control required and the areas to be the focus of weed control activities.	Every six months (preferably prior to any planned control works). The frequency may be reduced to annual as the occurrence and	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		density of weed species continues.			
Pest Animals	Monitor impacts to the Conservation Area by pest animals and undertake on-going control programs for pest animals if appropriate. - Methods for monitoring pest animal activity can include: - Observations and/or hearing calls; - The use of standard "sand plots"; - The use of non-poisoned "bait stations"; - Scat counts; and - Other quantitative techniques which can be designed in discussion with the Environment and Heritage Group, DCCEEW or Local Land Services. - Methods for control can include shooting, trapping and use of poisonous baits consistent with advice from the Environment and Heritage Group, DCCEEW and the Livestock Health and Pest Authority.	Ongoing.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1b
	Participate in community pest animal control programs, and encourage neighbours to implement pest animal control programs. Contact your local National Parks office to find out if community control programs are occurring in the area.	TBD. Contact National Parks on an annual basis to determine if there are community control programs in the area.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1b
Native Animals	Monitor numbers and reduce the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation with the Conservation Area and inhibiting natural regeneration and the owner is granted a licence to cull under the Biodiversity Conservation Act 2016.	Ongoing visual checks.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1c
Ecological Monitoring	Baseline monitoring is to occur at the four monitoring points specified within the Vegetation Management Plan.	Initial baseline monitoring to occur by March 2012.	Technical Centre Manager.	Vegetation Management Plan.	5.1.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Monitoring requirements are specified in the Vegetation Management Plan (section 5).				
	In accordance with the monitoring protocol in the Vegetation Management Plan, the ecological monitoring will be undertaken annually. Details of flora and fauna monitoring is set out in the Vegetation Management Plan (section 5). Qualitative monitoring of management issues will be undertaken using the monitoring report form included in Appendix 1 of the Vegetation Management Plan.	Annually for five years.	Technical Centre Manager.	Vegetation Management Plan.	5.1.2.3
Fire Hazard Reduction.	Undertake fire hazard reduction to protect the natural assets of the Conservation Area, in appropriate locations, with any required approvals and/or permits using: • Raking and hand clearing; • Pile burning; and • Fuel reduction burns. Ensure: • Both live and dead trees with hollows are protected from burning to preserve nesting habitat for hollow dwelling animals; and • Where possible, fallen and dead timber are protected from burning to preserve fauna habitat.	Recommended timing for fire hazard reduction burns and controlled burning: • In Wet Sclerophyll Forest vegetation, acceptable fire intervals are 25 to 60 years. Crown fires should be avoided in the lower end of this range. • In Sclerophyll Grassy Woodland vegetation, acceptable fire intervals are 5 to 50 years.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1e and 1f

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		Crown fires should be avoided in the lower end of this range.			
Revegetation (if doing)	If undertaking revegetation to establish indigenous plants to maintain the vegetation structure in keeping with the identified vegetation community: • Revegetate using species produced from material sourced locally and without fertilisers, where: - The ability to regenerate naturally within a reasonable time frame has been lost, or - To prevent soil erosion. • Revegetation methods can include: - Planting; - Brush mulching; and - Direct seeding.	To be determined if undertaking revegetation.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1k
Sediment Control.	Control and prevent further erosion along tracks, trails, and watercourses within the conservation area.	Carry out sediment and erosion control works within streams and on water front land in consultation with the Environment and Heritage Group, DCCEEW and in accordance with a Controlled Activity Approval under the <i>Water Management Act 2000</i> or subsequent Act.	Technical Centre Manager.	Conservation Agreement (2011).	2.9 and Annexure C, Item 1q

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Photograph Conservation Area.	Take photographs at the identified photo-points indicated in the Conservation Agreement for the purposes of ongoing monitoring of the conservation values.	From time to time in consultation with officers of the Environment and Heritage Group, DCCEEW.	Technical Centre Manager.	Conservation Agreement (2011).	Annexure C, Item 1t
Access	Illegal access to the area will be monitored periodically and if the signage is not effective in deterring the illegal use Orica will design and implement additional measures in consultation with the Environment and Heritage Group, DCCEEW.	Periodically.	Technical Centre Manager.	Vegetation Management Plan.	4.2

Maintenance of Biobank Site

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weed control	Monitoring of the weed control activities must be undertaken by an ecologist or other appropriately qualified person by undertaking a visual inspection of the Biobank Site. For each management zone, the report should provide: • A summary and review of all weed control activities undertaken within the previous 12 months for each zone and their success • Photo point monitoring at permanent monitoring locations • Description of general site conditions within each zone (including weeds regeneration occurring, erosion, feral animal presence, threatened flora and fauna observed etc.) • Description of any newly emerging weed infestations • Recommendations, if necessary, for any adaptations to the weed control measures previously applied. A site inspection is to be carried out within 3 months of the initial treatment and the effectiveness of control measures reducing weed densities across the site must be recorded.	Within 3 months of initial weed control measures	Technical Centre Manager. Suitably qualified ecologist or specialist.	Biobanking Agreement (2019)	Annexure C, Section 3

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Consider the following when undertaking weed management within the Biobank Site: • Weed control is to be undertaken when the timing and extent of weed removal will minimise adverse effects on wildlife • Conduct ongoing consultation with the relevant authorities regarding weed listings, weed occurrence and emerging management technologies • Minimise spraying/ damage to native flora species when conducting weed control activities and spraying with ute or back pack.	As required	Technical Centre Manager. Suitably qualified ecologist or specialist.	Biobanking Agreement (2019)	Annexure C, Section 3
Ecological burns	Visual auditing and noting of observations in a diary record (template within Annexure C). Results and data from this activity will be included in the annual report.	Annually	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3
	Condition mapping (floristic and habitat field survey assessment) to determine vegetation quality and ecological condition. Results and data from this activity will be included in the annual report.	Five yearly	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3
Feral / overabundant native herbivores	Monitoring of feral/overabundant native herbivores is to include: • A walk over of the Biobank Site by a suitably qualified person • Ongoing documentation by bush regenerators, other workers and staff at the ANE facility • Reporting using the Template for reporting of monitoring activities must record: - The number and location of any tracks, traces or sightings of feral or overabundant native herbivores - Whether the level of activity is negligible, minimal, moderate or high	Annually from year 1	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	- The number, date and location of any animals shot, dens destroyed or baits taken. This information is to inform the adaptive revision of this management plan for feral and overabundant native herbivores.				
	Record will be kept of opportunistic sightings by the landholder in the diary template for feral and overabundant herbivore management from Annexure C in the Biobanking Agreement. These records will be submitted within the annual report for review and discussion of suitable future control methods (refer to Annexure D of the Biobanking Agreement).	As required	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3
Existing and new vertebrate pests	Monitoring of foxes and miscellaneous vertebrate pests is to include: • At least a yearly walk over of the Biobank Site by a suitably qualified person. • Ongoing documentation by bush regenerators, other workers and staff at the Biobank Site • Report using the 'Template for reporting of monitoring activities' must record: - The number and location of any tracks, traces or sightings of feral or overabundant native herbivores - Whether the level of activity is negligible, minimal, moderate or high - The number, date and location of any animals shot, dens destroyed or baits taken. This information is to inform the adaptive revision of this management plan for feral and overabundant native herbivores.	Annually from 1 year	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3
	Record will be kept of opportunistic fox and miscellaneous vertebrate pest sightings by the landholder in the diary template for feral and overabundant herbivore management from Annexure C in the Biobanking Agreement. These records will be submitted within the annual report for review and	As required	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 3

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	discussion of suitable future control methods (refer to Annexure D of the Biobanking Agreement).				
Vegetation quality / degradation	Photographs are to be taken at photo-points at each of the locations listed within Annexure D of the Biobanking Agreement (2019)	Within 12 months of commencement date and annually thereafter	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Item 1
Pest animal movement	Inspection of the Biobank for the percentage of ground cover present.	Annually	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Section 1
	Inspection of the Biobank Site for the presence of stock. Record the number of stock and the date/s observed.	Every 3 months	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Section 1
Infrastructure deterioration	Inspect the physical condition of the fencing and gates to determine they are maintained to a standard that can: - Control the movement of stock if required under Annexure C, Section 1, Item 1 - Control human disturbance if required under Annexure C, Section 1, Item 4 - Control the movement of feral and overabundant native herbivores if required under Annexure C, Section 2, Item 10 - Control vertebrate pests if required under Annexure C, Section 2, Item 11	Annually	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure C, Section 1 and 2, Annexure D, Section 1
Human disturbance	Record any human disturbance on the Biobank Site	Every 6 months	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Section 1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Erosion	Inspect for evidence of erosion	Every 6 months	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Section 1
Waste	Inspect for evidence of waste	Every 6 months	Technical Centre Manager.	Biobanking Agreement (2019)	Annexure D, Section 1

Noise Monitoring

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Noise Monitoring	Monitor for compliance with noise limits at the nearest potentially affected residence. Monitor at the most affected point within the residential boundary, or at the most affected point within 30 m of the dwelling where the dwelling is more than 30 m from the boundary. Noise limits are stipulated in the Project Approval and EPL 4121. Investigations will be undertaken in response to any concerns raised by the community regarding traffic noise associated with the Project.	Monitoring as required.	ANE Facility Manager.	Response to Submissions.	Table 2.1
				Environmental Aspects Register.	3.1
				EPL 4121.	L4 and M4

Safety during Construction

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Hazard Identification	Identify all hazards arising from the potential interaction of construction works associated with the Modifications and the existing operations which are related to Schedule 15 materials identified in the WHS Regulation.	Prior to the commencement of construction works associated with respective modifications	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3 Cndtn 6A and Cndtn 6D

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		(MOD 1 and MOD 2).			
	Implement all necessary control measures to reduce the risks from those hazards to as low as reasonably practicable.	During construction works associated with respective Modifications (MOD 1 and MOD 2).	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3 Cndtn 6B and Cndtn 6E
	Ensure that the safety aspects of all construction works associated with the modifications are carried out in accordance with the existing Safety Management System for the site.	During construction works associated with respective Modifications (MOD 1 and MOD 2).	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3 Cndtn 6C and Cndtn 6F
Hazards	Consult with the Major Hazards unit of SafeWork NSW with regard to the safety systems to be incorporated into the modification, and incorporate the safety measures to the satisfaction of SafeWork NSW.	During construction works associated with MOD2. (SafeWork NSW was consulted prior to detailed design).	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3 Cndtn 29.

Appendix J

Summary of Auditing

Appendix J Summary of Auditing and Assessment

The below table is a summary of auditing requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Technical Centre Emergency Plan: Revision 24, 08/02/2023 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Umwelt (Australia) Pty Limited, 2021, Biodiversity Offset Area Vegetation Management Plan;
- Conservation Agreement (between the Minister Administering the *NSW National Parks and Wildlife Act (1974)* and Orica Australia for 'Orica Richmond Vale'), 2011;
- Biobanking Agreement, ID number: 350 (under the Threatened Species Conservation Act 1995 for Orica Australia Pty Limited for Richmond Vale Biobank Site, Lot 2 in Deposited Plan number 809377), 2019.

The table should be read in conjunction with these management plans and site documents.

Summary of Auditing and Assessment

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Traffic Audit.	Commission a suitably qualified person, whose appointment has been approved by the Secretary, to conduct an Independent Traffic Audit of the development as per the requirements of Schedule 3, Condition 11 of the Project Approval.	Within six months of the commencement of operation of the ANE Facility, and every three years thereafter, unless the Secretary of DPHI directs otherwise.	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 11
Transport Route and Risk Assessment.	Carry out a Transport Route Risk Assessment for the alternate route identified for transport of the ANE product.	To be determined.	Technical Centre Manager and ANE Facility Manager.	Road Transport Protocol.	2.3
Hazard Audit.	Carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Secretary of the DPHI as per the requirements of Schedule 3, Condition 5 of the Project Approval.	Twelve months after the commencement of operations and every three years thereafter or at such intervals as the Secretary of the DPHI may agree.	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 5
Emergency Procedure Guide.	Check each vehicle carries an emergency procedure guide which summarises the actions to be undertaken in the event of a vehicle fire and also a guide for each type of product being carried in accordance with Dangerous Goods requirements.	Random as required and as per Biennial audit.	ANE operating staff	Response to Submissions.	Table 2.1
				Environmental Aspects Register.	2.2
Energy Efficiency Opportunities.	Undertake a Biennial Compliance Audit to check Orica is implementing energy efficiency opportunities as described in the EA.	Biennially.	ANE Facility Manager.	Environmental Aspects Register.	6.3

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Independent Environmental Audit.	Commission an Independent Environmental Audit of the Project as per the requirements of Schedule 4, Condition 4 of the Project Approval.	Within two years of the commencement of operations of the ANE Facility, and every three years thereafter, unless the Secretary of the DPHI directs otherwise.	ANE Facility Manager.	Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 4
Weed Control.	The annual weed control program will be reviewed following each ecological monitoring event of the Biodiversity Offset Area and where required modified to address any significant weeds that have not been discussed in the Vegetation Management Plan or any newly established weed infestations.	Annually.	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1
	The weed management plan for the Biobank Site must be reviewed at intervals of no less than 4 years and no more than 6 years by an appropriately qualified person. The updated plan must include the additional matters outlined within item 2.1 of Section 1, Annexure C.	Ongoing from first payment date	ANE Facility Manager	Biobanking Agreement (2019)	Annexure C, Section 1
Hazards	Update the current Major Hazard Facility Safety Case for the facility and provide relevant information of SafeWork NSW.	Submitted to SafeWork NSW on 5 May 2017	Technical Centre Manager.	Project Approval (09_0090) (as modified)	Schedule 3 Cndtn 4.1
Fire	The fire management plan for the Biobank Site must be reviewed at intervals of no less than 4 years and no more than 6 years by an appropriately qualified person. The updated plan must include the additional matters outlined within item 3.2 of Section 1, Annexure C.	Ongoing from first payment date	ANE Facility Manager	Biobanking Agreement (2019)	Annexure C, Section 1