Operational Environmental Management Plan

Crawfords Freightlines Sandgate Site

Document Control

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Table of Contents

1 Introduction....7

1.1 Background....7

1.2 Facility Overview....8

1.3 Purpose and Scope....11

1.4 Statutory Context....11

1.4.1 Legislation, Policies and Guidelines....11

1.4.2 Development Consent....12

1.4.3 Commitments....18

1.4.4 Environment Protection Licence....21

1.5 Roles and Responsibilities....28

1.6 Consultation....29

2 Review of Site Environmental Management Practices....30

2.1 Independent Environmental Audit....30

2.2 Environmental Management Improvements....30

2.2.1 Previous Improvements....30

2.2.2 Planned Improvements....30

3 OEMP Sub-plans and Strategies....32

4 Ammonium Nitrate Management....36

4.1 Ammonium Nitrate Hazards....36

4.1.1 Fire....36

4.1.2 Decomposition....36

4.1.3 Explosion....36

4.2 Relevant Standards and Codes of Practice for Ammonium Nitrate....37

4.2.1 AS 4326 – 2008 The storage and handling of oxidising agents....37

4.2.2 SAFEX....38

4.2.3 UN 1942....38

4.2.4 Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road and Rail 38

4.3 Operating Hours....38

4.4 Product Receival 39
4.5 Storage 39
4.5.1 Storage Sheds 39
4.5.2 Inventory and Separation Distance Management 40
4.6 Ammonium Nitrate Handling and Transport 43
4.6.1 Conveyors 43
4.6.2 Forklifts 43
4.6.3 Trucks 43
4.7 Product Distribution 44
5 Contamination Management 45
6 Visual Amenity Management 46
7 Flora and Fauna Management 47
8 Heritage Management 48
9 Training, Awareness and Competencies 49
10 Complaints Management 50
11 Environmental Performance, Monitoring and Auditing 52
11.1 Performance 52
11.2 Monitoring and Auditing 52
12 Reporting and Plan Review 54
12.1 Consent 54
12.1.1 Independent Environmental Audit 54
12.1.2 Hazard Audit 54
12.1.3 Off-site Restricted Access Strategy 55
12.1.4 Incidents 55
12.2 Environment Protection Licence 55
12.2.1 Annual Return 55
12.2.2 Notification of Environmental Harm 56
12.2.3 Written Report 56
12.2.4 Pollution Studies and Reduction Programs 56
12.3 Plan Review and Update 56
13 References 57

Appendix A – Development Consent 58
Appendix B – Consultation 59
Appendix C – Independent Environmental Audit Outcomes 60
Appendix D – Safety Management System 65
Appendix E – Site Emergency Plan 66
Appendix F – Off-site Restricted Access Area Strategy 67
Appendix G – Site Security Plan 68
Appendix H – Transport Code of Conduct and Rail Interface Agreements 69
Appendix I – Traffic Management Plan 70
Appendix J – Water Resources Management Plan 71
Appendix K – Flood Risk Management and Response Plan 72
Appendix L – Air Quality and Greenhouse Gas Management Plan 73
Appendix M – Noise and Vibration Management Plan 74
Appendix N – Waste Management Plan 75
Appendix O – Environmental Inspection Checklist 76
Appendix P – Ammonium Nitrate Storage Audit Checklist 77

1 Introduction

1.1 Background

Crawfords Freightlines Pty Ltd (Crawfords) has operated a storage and distribution facility (the Facility) for ammonium nitrate (AN) at the site since 2009. The development is located in Sandgate, NSW and involves the storage of up to 9000 tonnes (t) of AN in warehouses (Sheds A and B) (refer to Figure 1.1). The Facility is now completely leased by Crawfords with no other companies onsite, consists of an area for storage of shipping containers and aluminium ingots, general mixed freight, a workshop, a wash bay with an integrated water treatment system, a rail siding (refer to Figure 1.2).

In December 2011, following a site inspection from Newcastle City Council (NCC) (now City of Newcastle) and the NSW Environment Protection Authority (EPA), NCC issued the owners and occupiers of the premises a Notice of Intention to Give an Order. Following this, NCC issued an Order under Section 121B of the EP&A Act on the 2 February 2012. The Terms of the Order were:

1. Within fourteen (14) days of the date of the order, limit storage of Ammonium Nitrate at the premises to not more than 2000 tonnes; and

2. Within twelve (12) months of the date of the order, cease use of the premises as a chemical storage facility, including but not limited to the storage of Ammonium Nitrate.

NCC extended the Order on 18 February 2013, thereby requiring Crawfords to cease use of the premises as a chemical storage facility, including but not limited to the storage of AN on or by 31 August 2013.

The EPA also issued a Notice of Preventative Action to Crawfords on 13 December 2011 (Prevention Notice No. 1503295, which was subsequently varied by Prevention Notice 1503467 on 20 December 2011). The site was required to reduce in the quantity of AN products stored at the premises to not more than 2000 t, which is below the threshold value identified in Schedule 1 of *Protection of the Environment Operations Act 1997* (POEO Act) and thus not requiring an Environment Protection Licence (EPL).

In order to enable continued operations at the site, Crawfords engaged ERM to prepare an environmental impact statement (EIS) to accompany a state significant development application (SSD-5119) seeking approval to store and distribute 13 500 t of AN at the site. Development consent, subject to conditions (the Consent), was granted on 13 June 2013. On 18 July 2013, the EPA issued EPL 20295 and revoked Prevention Notice No 1503295, as varied by Prevention Notice No. 1503467. Although the Consent allowed for the storage of up to 13,500 t of AN, WorkSafe NSW has withdrawn approval to store AN in, and outside of, Shed C due to its proximity to the neighbouring aged care facility (St Josephs) north of the Facility and the current AN storage limit is 9,000 t.

1.2 Facility Overview

The site is located at Lot 12 DP 625053 Old Maitland Road, Sandgate, New South Wales (NSW) and has an area of 8.77 hectares (ha). The site is situated approximately 10 kilometres (km) to the north-west of Newcastle Central Business District and approximately 6.7 km west-north-west of industrial operations on Kooragang Island, NSW, within the local government area of Newcastle. A site locality plan is presented in Figure 1.1. Access to the site is via Old Maitland Road, off the Pacific Highway. Figure 1.2 shows the site layout. Crawfords lease the entire the site from Sierra Sun Pty Ltd.

Crawfords manages and operates a rail siding at the site adjacent to the Main Northern Railway Line which runs along the western Facility boundary. The siding is used exclusively for trains servicing Crawfords Port Botany container transport operation. Crawfords have exclusive use of the siding. Trains operating to and from and accessing the siding are operating under the direction of Crawfords. Crawfords have engaged '3801 Limited' to operate trains servicing the siding. 3801 Limited hold current accreditation as a train operator on the track network.

The operational boundary for entering the Crawfords siding is M106.8 (202) signal on the up main line located at 171.957 km (from Sydney). The operational boundary for departing the Crawfords siding is SS106.7 (235) signal within the Crawfords siding located at 171.685 km.

The track maintenance boundary is aligned with signal SS106.7 (235) at the operational boundary at 171.685 km.

Crawfords is responsible for the management of maintenance over its managed track beyond this point away from the Australian Rail Track Corporation's (ARTC's) main line. Crawfords is also responsible for inspection of the walkway adjacent to the up main line.

Figure 1.1 Site Locality Plan

Figure 1.2 Site Layout

1.3 Purpose and Scope

Facility operations including the storage and handling of AN and operation of mobile plant and trucks have the potential to have the following impacts on the receiving the environment including impacts on:

- Individual and societal risk (i.e. risk to health and safety of people on neighbouring properties).
- Water resources.
- Ambient air quality.
- Ambient noise and vibration.
- Traffic.

The purpose of this Operational Environmental Management Plan (OEMP) is to outline the management and mitigation measures that are to be implemented at the Facility during the operational phase to ensure, as far as practicable, that the impacts to the environment are consistent with those predicted in the EIS and to comply with the requirements of the Consent (SSD-5119), relevant environmental management commitments and EPL 20295.

1.4 Statutory Context

1.4.1 Legislation, Policies and Guidelines

Key legislation, policies and guidelines that applies to the Facility are listed below. Other legislation, policies and guidelines relevant to specific environmental aspects (e.g. water resources, air quality, noise etc) are identified within individual environmental sub-plans contained in the OEMP appendices. Standards and guidelines for the storage and handling of AN are outlined in Section 4.

Table 1.1 Legislation, Policies and Guidelines

Document	Application
Environmental Planning and Assessment Act 1979 (EP&A Act)	The relevant State planning legislation is the Environmental Planning and Assessment Act 1979 (EP&A Act). The EP&A Act institutes a system of environmental planning and assessment in NSW and is administered by the Department of Planning and Infrastructure (DP&I). Development consent for the Facility (SSD-5119) was granted on 13 June 2013 under the Act, subject to conditions.
Work Health and Safety Act 2011	The Act states the legal obligations that must be complied with to provide for the health and safety of workers. The definitions listed in Chapter 6B of the OH&S Regulations states classify the development as a Major Hazard Facility (MHF). Crawfords were approved by SafeWork NSW for MHF operation on 20 December 2016.

Contaminated Land Management Act 1997. Section 60	Under Section 60 of the Contaminated Land Management Act 1997, a person whose activities have contaminated land or a landowner whose land has been contaminated is required to notify the EPA when they become aware of the contamination. Notification of groundwater contamination is required within one month of the date of the issue of the consent. Notification was forwarded to the EPA by the landowner on 2 July 2013.
Protection of the Environment Operations Act 1997 (POEO Act)	The Protection of the Environment Operations Act 1997 (POEO Act) is the key piece of environment protection legislation administered by the EPA and provides a single licensing arrangement for environmental protection. The POEO Act enables the Government to set out explicit protection of the environment policies and adopt innovative approaches to reducing pollution. The development is defined as 'general chemical storage' which has the capacity to store more than 2,000t of chemicals. It is therefore classified under Schedule 1 as a "Scheduled Activity", requiring an Environment Protection Licence (EPL) under Section 55 of the Protection of the Environment Operations Act. EPL 20295 was issued for the premises by the EPA on 18 July 2013.
Dangerous Goods (Road and Rail Transport) Act 2008.	Dangerous Goods (Road and Rail Transport) Act 2008 stipulates that both vehicles and the drivers of trucks holding Dangerous Goods are sufficiently licenced. Crawfords trucks and drivers are required to be licenced under the Act, administered by the NSW EPA.
Explosives Act 2003	In NSW the licencing of AN facilities (as a security sensitive dangerous substance) is conducted by SafeWork NSW under the Explosives Act 2003. SafeWork NSW applies the requirements of the AS 4326-2008 when considering licences. A licence would be required prior to the use commencing. The design of the AN storage and facilities have been designed in accordance with AS 4326. Crawfords was originally issued an explosives licence by SafeWork NSW (then WorkCover NSW) on 25 June 2011.

1.4.2 Development Consent

Table 1.2 Presents the conditions of the Consent that are relevant to this OEMP. Consent conditions relevant to specific environmental aspects (e.g. water resources, air quality, noise etc) are identified within individual environmental sub-plans contained in the OEMP appendices. A full copy of the Consent is presented in Appendix A.

Table 1.2 Relevant OEMP Development Consent Conditions (SSD 5119)

Condition	Requirement	Section(s) Addressed
SCHEDULE 2 ADMINISTRATIVE CONDITIONS		
LIMITS OF CONSENT		
5	Prior to the commencement of the Operation, the Applicant must, to the satisfaction of the Director General, demonstrate that suitable arrangements are in place to prohibit public access to the Off-Site Restricted Access Area as labelled and illustrated in Appendix D of this consent. As part of demonstrating the suitable arrangements for the Off-Site Restricted Access Area are in place, the Applicant must prepare and implement an Off-Site Restricted Access Area Strategy. This Strategy must be approved by the Director-General prior to the commencement of the Operation and shall: • provide details of the works proposed to prohibit public access, such as secure fencing and signage; • provide evidence that each landowner within the Off-Site Restricted Access Area has been consulted and agrees with the proposed measures, including Council and the lessee of Part Lot 33 DP 1118637 (i.e. the Sandgate Golf Practice Centre or its successors); and • investigate and detail options to purchase or secure land on a long-term basis within the Off-Site Restricted Access Area in perpetuity.	Off-site Restricted Access Area Strategy (refer to Appendix F)
6	The Applicant must also obtain the written approval of the Director-General of the Off-Site Restricted Access Area Strategy referred to in Condition 5 above: (a) every 12 months from the Director-General's approval of Condition 5 above (i.e. the yearly anniversary); and (b) the implementation of any actions or measures contained in these audits, reports, plans, programs, strategies, studies or correspondence submitted by the Applicant.	Section 12.1.3
OPERATION OF PLANT AND EQUIPMENT		
12	The Applicant shall ensure that all plant and equipment used for the development is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 4.6 and sub-plans
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONTROLS		
HAZARDS AND RISK		
General		
2	The Applicant shall ensure that the development complies with the requirements of the latest version of AS 4326. Measures to inspect and maintain the site to ensure compliance with the latest version of AS 4326 must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).	Section 4
3	The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity.	

General		
8	Twelve months after the commencement of operations of the proposed project and every two years thereafter, or at such intervals as the Director-General may agree, the Applicant shall carry out a comprehensive Hazard Audit of the proposed project and within one month of each audit submit a report to the Director-General for approval. The audits shall be carried out at the Applicant's expense by a qualified person or team, independent of the project, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines' (HIPAP No. 5). The audit reports shall, in addition to the requirements provided in HIPAP No. 5: • address all relevant findings and recommendations from all official investigation report/s (if available) on the accident at West, Texas (USA) in April 2013, and make recommendations if necessary; and • report on the findings of the audit in relation to compliance with the current version of AS 4326 – the Storage and handling of oxidizing materials and the relevant provisions of the current version of the SAFEX International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate. The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.	Sections 11.2 and 12.1.2
SOIL AND WATER		
Bunding		
12	The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's Storing and Handling Liquids: Environmental Protection – Participants Handbook.	Section 5
Contamination Management		
14	Prior to operation, the Applicant must, to the satisfaction of the Director-General, seal all AN: (a) storage areas on the site with impermeable hardstand concrete; and (b) trafficable areas (including internal roads) on the site with impermeable bitumen. Other impermeable materials shall be used to seal these areas if approved by the Director-General. Measures to inspect and maintain all sealed areas of the site for the life of the development must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent). *Note: The intent of this condition is to minimise the potential for AN contamination of soil and water and dust generation from vehicles.*	Section 2.2

Flood Design and Structural Certification		
17	Prior to the commencement of operation, and annually thereafter, the Applicant must obtain structural certification from a suitably qualified engineer that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500 mm freeboard depth design flood event. A copy of these structural certification documents must be included in the Flood Risk Management and Response Plan (see Condition 21 in Schedule 3 of this consent) and Operational Environmental Management Plan (see Condition 2 in Schedule 4 of this consent) for the development. *Note: Flood levels shall be determined considering the effects of climate change.*	FRMRP (refer to Appendix K)
SCHEDULE 4 ENVIRONMENTAL REPORTING & AUDITING		
ENVIRONMENTAL MANAGEMENT		
Operational Environmental Management Plan		
2	The Applicant shall prepare and implement an Environmental Management Plan for the development to the satisfaction of the Director-General. This Plan must:	
	(a) be prepared by a suitably qualified and experienced person;	Appendix B
	(b) be approved by the Director-General prior to the commencement of operation;	Appendix B
	(c) provide the strategic context for environmental management of the development;	Sections 1.1, 1.2, 1.3 and OEMP sub-plans (refer to Section 3 and appendices)
	(d) identify the statutory requirements that apply to the development;	Section 1.4
	(e) consolidate all relevant management plans and monitoring programs required in the conditions of this consent and committed to in the EIS;	This OEMP and appendices
	(f) outline the arrangements to ensure compliance with conditions of this consent for the life of the development, in particular Conditions 2, 3, 14 and 17 in Schedule 3;	Sections 4, 5, 11 and 12 and FRMRP (refer to Appendix K)
	(g) include a review of current site environmental management practices;	Section 2
	(h) based on the review required under subsection (g) of this condition, include a schedule of actions with timeframes to be implemented to improve site environmental management practices, in particular measures to improve handling of AN to minimise spillages;	Section 2.2.2
	(i) include final details of how the environmental performance of the development would be managed and monitored;	Section 11.1 and sub-plans (refer to Section 3 and appendices)

	(j) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • manage cumulative impacts; • respond to emergencies; and	Sections 10, 11.2, 12.1, 12.1.2, 12.1.4, 12.2 and SEP and FRMRP (refer to Appendices E and K.
	(k) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.	Section 1.5
TRAFFIC		
Rail Traffic		
36	The Applicant shall ensure that 1 train (2 movements) in total (with a maximum of 40 carriages at 76 tonnes per carriage) is permitted to ingress and egress from the site in any 24 hour period.	Section 4.4
Rail Traffic Management		
37	The Applicant shall prepare and implement a Rail Transport Code of Conduct for the development to the satisfaction of the Director-General. This Plan must: (a) be prepared in consultation with ARTC by a suitably qualified and experienced expert; (b) be approved by the Director-General prior to the commencement of operation; (c) detail operational rail traffic management measures including driver code of conduct, locomotive arrival and departure procedures (e.g. reduced locomotive speed); (d) outline measures to minimise rail traffic noise; (e) detail procedures to ensure trains do not queue on the public rail or road network; and detail measures to minimise rail traffic related conflicts with existing rail operations.	Sections 3, 4.4 and Appendix H
HERITAGE		
44	The Applicant shall conduct heritage education inductions for all construction personnel at the site (including procedures for keeping records of inductions) including site identification, protection and conservation of Aboriginal and historic heritage. Inductions must be developed in consultation with suitable representatives of the local Aboriginal community such as registered Aboriginal parties and inductions records must be kept and made available to the Director-General upon request.	Section 8

45	The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. In the event that an Aboriginal cultural object(s) is uncovered, a suitably qualified and experienced archaeologist, suitable representatives of the local Aboriginal community such as registered Aboriginal parties and the OEH must be contacted to determine the significance of the object(s). In addition, in the event that human remains are uncovered onsite, NSW Police are to be notified. Works shall not resume in the designated area until consent in writing from the NSW Police and/or the OEH has been obtained.	
VISUAL IMPACT		
Lighting		
46	The Applicant shall ensure that the lighting associated with the development: (a) complies with the latest version of 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.	Section 6
ENVIRONMENTAL REPORTING & AUDITING		
Incident		
3	Upon detecting an exceedance of the limits/performance criteria in this consent or the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall immediately (or as soon as practical thereafter) notify the Department and other relevant agencies of the exceedance/incident. Within 7 days of the date of the incident, the Applicant shall provide the Director General and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Section 12.1.4
Independent Environmental Audit		
4	Within one (1) year of the commencement of operations of the development, and every three (3) years thereafter, or as otherwise agreed by the Director-General, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this consent and any relevant EPL (including any plan or program required under these consents); (d) review the adequacy of any plans or programs required under these consents; and, if appropriate; (e) recommend measures or actions to improve the environmental performance of the development, and/or any plan or program required under these consents. *Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.*	Section 11.2 and Section 12.1

5	Within 6 weeks of completing any Independent Environmental Audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	Section 12.1

1.4.3 Commitments

Table 1.3 presents the management and mitigation measures relevant to this OEMP committed to as part of the Facility EIS. Commitments relevant to specific environmental aspects (e.g. water resources, air quality, noise etc) are identified within individual environmental sub-plans contained in the OEMP appendices.

Table 1.3 Management and Mitigation Measures

Item	Management and/or Mitigation Measure	Section(s) Addressed
General		
A1	Crawfords would implement all practical measures to avoid, or minimise any impacts to the environment that may arise from the operation of the proposal.	This OEMP and sub-plans
A2	Should the proposal be granted development consent, Crawfords would make a separate application to the NSW EPA for an EPL prior to the operation of the proposal.	Section 1.4.4
A3	Crawfords employees and contractors would undergo an updated training/induction program in accordance with the CEMP, OEMP, Safety Management System (SMS) and other training commitments as required by any consent conditions. All personnel involved in site and transportation operations will be made aware of their environmental obligations and the need to comply with conditions of consent.	Section 9
A4	Crawfords would continue the appointment of an Environment and Community Management Representative to ensure the implementation of all environmental management measures. The representative would ensure that all measures are being effectively carried out in accordance with the CEMP, OEMP, SMS and all environmental approval and legislative requirements.	Section 1.5
Hazard and Risk		
B1	The OEMP should incorporate the development of the SMS in accordance with HIPAP No.9 (DoP, 2011b) incorporating the following framework: • management of the SMS; • hazard identification and risk assessment; • standard operating procedures; • process safety information; • contractor management; • pre-commissioning reviews; • equipment integrity; • safe work practices; • management of change;	Section 3 and SMS (refer to Appendix D)

	• incident reporting and investigation; • employee selection, training and education; • procurement; • emergency planning (site emergency plan); • security; • auditing; • drug and alcohol testing; and rail work fatigue management.	
B2	An inspection, testing and preventative maintenance program would be developed, implemented and maintained as part of the OEMP/SMS to ensure the reliability and availability of key safety equipment.	Section 4.6 and sub-plans (refer to Section 3 and appendices)
B3	An inspection, testing and preventative maintenance program would be developed, implemented and maintained to ensure that all company owned and contracted mechanical equipment, including fleet vehicles, are maintained in accordance with Australian Standards and the SMS.	SMS (refer to Appendix D)
B3	Measures for the storage, handling and transportation of AN would be implemented in accordance with ISO 31000 and AS4326 (2008) to reduce the likelihood of an explosion due to fire, contamination or high energy impact. These measures are to be incorporated into the site SMS.	SMS and SSP (refer to Appendices D and G)
B4	All 'route plan and risk assessments' shall be included in the OEMP/SMS. A review of all 'route plan and risk assessments' shall be undertaken every six months.	TMP (refer to Appendix G)
B5	The current Site Emergency Plan (SEP) shall be reviewed and developed in accordance with HIPAP No.1 (DoP, 2011a) and incorporated into the CEMP and OEMP.	SEP (refer to Appendix E)
Soil and Water		
C8	Prior to the commencement of activities on site, the site should be notified under Section 60 of the CLM Act 1999.	Table 1.1
Groundwater		
D1	A Groundwater Management Plan (GWMP) will be developed and included within the OEMP to assess the effectiveness of improvements in management of AN on site. This plan will identify appropriate sampling techniques, locations and provide baseline data.	WRMP (refer to Appendix J)
Surface water and waste water		
E1	A surface water management plan (SWMP) would be developed as part of the CEMP and OEMP to manage stormwater runoff. This plan would be developed in accordance with 'The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2 (Landcom, 2004).	WRMP (refer to Appendix J)
E3	The OEMP will detail hydrocarbon spill procedures and ensure that servicing of plant, equipment and vehicles is appropriately managed.	SEP (refer to Appendix E)

Flora and Fauna		
F1	A Flora and Fauna Management Plan (FFMP) would be developed and incorporated as part of the CEMP and OEMP. The FFMP should include: • avoidance of the use of biocides and implementing erosion and sediment controls; • rehabilitation/landscaping works to incorporate native flora species that have the potential to provide foraging resources for native fauna species; • educate site personnel as to the appearance and location of native threatened and pest species. All sightings (location, time, date and description) of native threatened species shall be recorded; and lighting shall be redirected to reduce unnecessary light spill that may have potential to impact nocturnal fauna.	Section 7
Waste Management		
J1	A Waste Management Plan (WMP) will be prepared for the site as part of the CEMP and OEMP.	WMP (refer to Appendix N)
Traffic and Transport		
K1	The current Traffic Management Plan (TMP) will be reviewed and updated as part of the OEMP.	TMP (refer to Appendix I)
Heritage		
L1	The following measures will be undertaken to reduce potential impacts to indigenous heritage: all construction personnel working on site would receive training in their responsibilities under the National Parks and Wildlife Act 1974. Records of training undertaken, including names of staff / contractors and date of training will be kept by Crawfords for the duration of the project. Where practicable, training will be developed and implemented in consultation with representatives of the local Aboriginal community; in the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeological specialist and representative of the local Aboriginal community must be contacted to determine the nature, extent and significance of the object(s). The site is to be registered in AHIMS (managed by OEH) and the management outcome for the site included in the information provided to AHMS. Crawfords will consult with representatives of the local Aboriginal community and the archaeological specialist to develop and implement management strategies for all objects / sites. If impacts are unavoidable, mitigation measures are to be undertaken in accordance with the heritage component of the Construction Management Plan. All sites impacted must have an Aboriginal Site Impact Recording form completed and submitted to the AHIMS registrar within three (3) months of completion of these works; in the unlikely event that following surface disturbance human remains are located within the project area, all works in the immediate area are to halt to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be taken until the NSW Police provide written notification. If the skeletal remains are identified as Aboriginal, Crawford's will contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works will continue until OEH provides written notification; and	Section 8

	the Aboriginal cultural heritage management measures identified above are to be detailed in the Construction Environmental Management Plan and Operational Environmental Management Plan, as relevant.	
L2	In the event European heritage items currently unidentified are uncovered as a result of the operations, all works will cease immediately until the item has been inspected by a qualified archaeologist and recommendations relating to the management of the item are made.	
Visual and Landscape		
M1	Night time operations are directly limited to deliveries of AN to the site only.	Section 6
M2	Lighting should avoid the direct line of sight toward residences beyond the site.	
M3	The use of floodlighting is to be minimised.	
M4	Lighting would be focused only onto work areas during operation.	

1.4.4 Environment Protection Licence

The Facility operates under EPL 20295 issued under the Protection of the Environment Operations Act 1997 (NSW Government). Conditions in EPL 20295 relevant to the OEMP are listed below. EPL conditions specific to specific environmental aspects (e.g. water resources, air quality, noise etc) are identified within individual environmental sub-plans contained in the OEMP appendices.

1 Administrative Conditions

A1 What this licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical storage	General chemicals storage	> 5000 - 100000 kL storage capacity

A1.2 The licensee must not store at the premises at any time more than 13,500 tonnes of any chemical substance, including but not limited to ammonium nitrate, classified as a dangerous good under the *Australian Code for the Transport of Dangerous Goods by Road & Rail*.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
CRAWFORDS FREIGHTLINES SANDGATE
158 MAITLAND ROAD
SANDGATE
NSW 2304
LOT 12 DP 625053
PREMISES SHOWN BOUNDED BY A RED OUTLINE ON THE PLAN TITLED "PLAN SHOWING LOCATION OF DISCHARGE POINTS AND MONITORING WELLS AT CRAWFORDS FRIEGHTLINES FACILITY SANDGATE, NSW", PREPARED BY DAVID CANT SURVEYORS, DATED 10/12/2015 ("THE PLAN") (EPA REFERENCE DOC17/235604-01).

3 Limit Conditions

L4 Hours of operation

L4.1 Standard construction hours

Unless otherwise specified by any other condition of this licence, all construction activities are:

a) restricted to between the hours of 7:00am and 6:00pm Monday to Friday;

b) restricted to between the hours of 8:00am and 1:00pm Saturday; and

c) not to be undertaken on Sundays or Public Holidays.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and

b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

a) must be maintained in a proper and efficient condition; and

b) must be operated in a proper and efficient manner.

O5 Processes and Management

O5.1 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.

O5.2 Bunds must:

a) have walls and floors constructed of impervious materials;
b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed);
c) have floors graded to a collection sump; and
d) not have a drain valve incorporated in the bund structure, or be constructed and operated in a manner that achieves the same environmental outcome.

M5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;

d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must 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.

M5.2 The licensee 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.

M5.3 The preceding two conditions do not apply until 1 month the date of the issue of this licence.

M5.4 The licensee must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300.
Note: This condition does not apply until two (2) weeks after the date of issue of the licence.

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

Note: The licensee 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. R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

a) the cause, time and duration of the event;

b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;

d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;

e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and

g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Contact number for incidents and responsible employees

G2.1 The licensee must provide the EPA with up to date contact details to enable the EPA:

a) to contact either the licensee or a representative of the licensee who can respond at all times to incidents relating to the premises, and

b) to contact the licensee's senior employees or agents authorised at all times to:

i) speak on behalf of the licensee, and

ii) provide any information or document required under the licence.

G2.2 The contact details required by Condition G2.1 above must include:

a) the full name and title of the authorised representatives and the scope of their respective authorisations; and

b) the direct telephone number, mobile number, email address and postal address for contacting each authorised representative.

G2.3 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G3 Other general conditions

G3.1 Completed Programs

Program	Description	Completed Date
PRP 1 - Stormwater Management System Upgrade	Upgrade of stormwater management system to mitigate the pollution of waters and ensure compliance with section 120 of the POEO Act.	30-December-2014
PRP3: Installation of Vehicle Wash Bay	Installation of vehicle wash bay to prevent the runoff of polluted waters from the premises.	04-April-2018
PRP 4: Upgrade of Bio rentention basins	Upgrade Bio Retention basins to reduce pollutant concentrations in discharge waters.	13-June-2018

8 Pollution Studies and Reduction Programs

U1 PRP 2: Stormwater Upgrades

U1.1 Sealing of Roadways

The licensee must implement a staged construction programme for internal road sealing works (paving works) to prevent and minimise the generation and emission of dust, and pollutant concentrations in surface water runoff.

The construction programme must:

- By 5pm, 31 January 2018 - Have material testing and pavement designs completed.
- By 5pm, 31 January 2018 - Have received quotations for works.
- By 5pm, 31 January 2018 - Award paving contracts for construction works to commence.

Phase 1 - Paving works- Southern half of Rail siding Corridor (identified on map supplied to EPA on 22/11/2017, EPA reference DOC17/576259).

- By 5pm, 30 September 2018, the Southern Half of the rail siding corridor must have its paving works completed.
- By 5pm, 12 October 2018, a progress report must be supplied to the EPA, including but not limited to a description of works completed and areas where these works have been completed.

Phase 2 - Paving works - Northern half of rail siding corridor (identified on map supplied to EPA on 22/11/2017 DOC17/576259).

- By 5pm, 30 June 2020, the Northern Half of the rail siding corridor must have its paving works completed.
- By 5pm, 14 July 2019, a progress report must be supplied to the EPA, including but not limited to a description of works completed and areas where these works have been completed.
- By 5pm, 14 July 2020, a report must be supplied to the EPA, including but not limited to a description of works completed and areas where these works have been completed.

Phase 3 - Paving Works - Area surrounding C shed (identified on map supplied to EPA on 22/11/2017 DOC17/576259).

- By 5pm, 30 June 2021, the area surrounding C shed must have its paving works completed.
- By 5pm ,14 July 2020, a progress report is to be supplied to the EPA, including but not limited to a description of works completed and areas where these works have been completed.
- By 5pm, 14 July 2021, a report must be supplied to the EPA, including but not limited to a description of works completed and areas where these works have been completed. This report must include a plan showing all areas sealed as a result of this PRP.

The above required reports must be provided to the EPA's Director - Hunter at PO Box 488G, Newcastle NSW 2300, or emailed to hunter.region@epa.nsw.gov.au.

1.5 Roles and Responsibilities

Environmental management at the Facility is the responsibility of all employees with the Health, Safety, Security, Environment (HSSE) & Compliance Manager having overall responsibility for environmental management of the operations. Roles and responsibilities for implementation of this OEMP for key personnel at the Facility are outlined in Table 1.4.

Table 1.4 Roles and Responsibilities

Role	Responsibility
Director	Provide sufficient resources to enable full implementation of this plan.
HSSE & Compliance Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of water management measures and strategies in accordance with this plan. • Coordinate the review of this plan. • Ensure all monitoring and reporting is undertaken in accordance with the requirements of this OEMP and sub-plans. • Be aware of the environmental legislative requirements associated with the Facility and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.
HSSE Officer/ Major Hazard Facility (MHF) Coordinator	• Coordinate the monitoring program described in this plan. • Manage AN inventories and storage arrangement and implement Ammonium Nitrate Separation Distance TARP • Evaluate and report monitoring results as required by the Consent and EPL. • Coordinate investigations into incidents and complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Coordinate the preparation of a report to government agencies following incidents/non-compliances.
Dangerous Goods (DG) Yard Manager	• Assist Major Hazard Facility Coordinator with management of AN inventories and storage arrangement and implement Ammonium Nitrate Separation Distance TARP
Site Manager	• Ensures all employees and contractors have completed relevant site inductions. • Ensure appropriate environmental management measures are implemented and maintained on site. • Implement appropriate corrective or preventative actions where existing management measures are not to fulfilling the requirements of the OEMP or sub-plans. • Undertake weekly operational and environmental inspections. • Record all community complaints, provided incident notifications and reports to agencies and participate in complaint and incident investigations. • Ensure that all plant and equipment used at the Facility is maintained in a proper and efficient condition. • Arranges for management review and internal audits.
Employees and Contractors	• Comply with all requirements in this plan.

	• Report all potential environmental incidents to the HSSE Officer immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment.

1.6 Consultation

The consent does not require any specific consultation with agencies in relation to this OEMP. Consultation with relevant agencies in relation to any updated sub-plans and monitoring programs required by the Consent is included within the respective sub-plans and monitoring programs which are contained in the appendices of this OEMP. Records of consultation with DPE, and approval of this OEMP and previous versions, are contained in Appendix B.

2 Review of Site Environmental Management Practices

2.1 Independent Environmental Audit

Ramboll Australia Ltd (Ramboll) conducted an Independent Environmental Audit (IEA) of the Facility, as required by Condition 4 of Schedule 4 of the Consent, in November 2022. The IEA identified a number of non-compliances with the Consent and also provided a range of recommendations for improvement to environmental practices. The findings of the IEA have been considered as part of the review and update of this OEMP and relevant sub-plans. A summary of the non-compliances and recommendations from the IEA is provided in Appendix C.

2.2 Environmental Management Improvements

2.2.1 Previous Improvements

Following approval of the previous version of the OEMP, the following environmental management measures have been implemented:

- Stormwater system upgrade (refer to Water Resources Management Plan in Appendix J for details) which included (2014):
    - Installation of a larger stormwater pipe network to ensure storm event conveyance capacity that meets NCC Development Control Plan (DCP) requirements.
    - Installation of four sediment basins coupled with four bioretention basins to treat stormwater runoff from operational areas.
    - Installation of rainwater tanks to capture roof runoff.
- Upgrades to bioretention basins (2018).
- Installation of a vehicle wash bay (2018).
- Sealing of internal roads including completion of the works specified in EPL 20295 condition U1 (2021).
- Tracking of daily AN storage inventory for each storage shed and individual stacks within each shed (2022).
- Refurbishment of sediment basin/bioretention basin systems to ensure optimum water treatment is maintained and basin liners are not allowing seepage to the underlying soils and groundwater table (2023).
- Replacement of timber walls in AN storage sheds with non-combustible Permalite panels approved by SafeWork NSW (2023).
- Installation of CCTV around site perimeter to improve security (2023).

2.2.2 Planned Improvements

Table 2.1 presents planned environmental management improvements and anticipated timing for implementation.

Table 2.1 Schedule of Environmental Improvements

Improvement	Anticipated Completion Timing
Development of a pollutant load Impact Assessment Criteria and monitoring regime for stormwater discharges (refer to WRMP, Appendix D)	18 months from approval of the updated WRMP
Site to be completely fenced to improve security	28 February 2024

3 OEMP Sub-plans and Strategies

The OEMP is required to consolidate all relevant management plans and monitoring programs required in the Consent and committed to in the EIS. All relevant standalone management plans, monitoring programs a well as strategies are included in the appendices of this OEMP. Management strategies for environmental aspects that were not considered to require a standalone management plan are included within the body of the OEMP. A list of the sub-plans and strategies consolidated as part of this OEMP as well as a brief description of each sub-plan and strategy are provided in Table 3.1.

Table 3.1 Sub-plans and Strategies

Sub-plan/Strategy	Location	Description
Safety Management System (SMS)	Appendix D	The SMS is a collection of policies, procedures and standards that sets out: • The safety objectives; • The systems and procedures by which these are to be achieved; • The performance standards which are to be met; and • The means by which adherence to these standards is to be maintained. Given the large amount of documentation within the SMS, only a summary of the SMS contents is provided in Appendix D.
Site Emergency Plan (SEP)	Appendix E	The SEP addresses the emergency preparedness and management requirements of the Consent and was prepared generally in accordance with *Hazardous Industry Planning and Advisory Paper No 1 Emergency Planning*.
Off-Site Restricted Area Access Strategy	Appendix F	The Off-Site Restricted Area Access Strategy has been created in accordance with the requirements of Schedule 2, Condition 5 of the development consent. The strategy covers the creation and ongoing management of the off-site restricted area, detailed in Appendix D of the development consent.
Site Security Plan	Appendix G	The SSP was prepared in accordance with *NSW Police Force Security Handbook Major Hazards Facilities* requirements. The SSP is designed as the minimum standard for the secure receival, storage, packing, and dispatch of Security Sensitive Ammonium Nitrate.
Rail Transport Code Of Conduct And Interface Agreements	Appendix H	Crawfords are classified as a Rail Infrastructure Manager and hold current accreditation as an infrastructure manager in accordance with the Rail Safety National Regulations 2012 Part 2 (8). Crawfords have engaged 3801 Limited who hold current accreditation as a train operator on the track network, to operate trains servicing the siding. Crawfords do not perform shunting movements, control train movements, or operate siding points with Crawfords rail activities being limited to limited to: • repairs and maintenance of the siding and adjoining infrastructure in accordance with contractual conditions of the lease; and • loading and unloading of trains using forklift trucks;

		A number of agreements are in place for the operation of the rail siding, including: • **Code of Conduct – Rail Transport and Siding Operations** This Code of Conduct sets out the conditions and precautions in relation to the operation of rail services to and from the Crawfords rail siding and protects the health, safety and environment of the community and Crawfords employees, contractors and visitors. • **Interface Agreement – Crawfords and ARTC** An interface agreement (reference number IA1506) has been established between ARTC and Crawfords for the siding accessing the site. This agreement outlines the management responsibilities and requirements of the siding. • **Interface Agreement – 3801 Limited and ARTC** An interface agreement has been established between ARTC and 3801 Limited for the operation of trains servicing the site. This agreement outlines the management responsibilities and requirements of the sidings use. • **Safety Interface Agreement – 3801 Limited and Crawfords** A Safety Interface Agreement has been established between 3801 Limited and Crawfords. The agreement assesses risk of the interface between the two operators and allocates responsibility for the management of safety-related issues.
Traffic Management Plan (TMP)	Appendix I	The TMP addresses the traffic management requirements of the Consent and includes: • Statutory requirements for the management of traffic at the Facility and the public road network. • Details of unloading and delivery activities. • A traffic control plan. • Route plans and associated risk assessments.
Water Resources Management Plan (WRMP)	Appendix J	The WRMP addresses the surface water and groundwater management and monitoring requirements of the Consent and includes: • Statutory requirements for the management of water resources at the Facility. • Descriptions of the existing surface water and groundwater environment including baseline receiving and site water quality. • A description of the Facility water management system (including the stormwater management plan). • Water management system inspection and maintenance measures. • Surface water and groundwater monitoring programs. • Surface water and groundwater impact assessment criteria (IAC) and exceedance response protocols. • Reporting and plan review and update requirements.

Flood Risk Management and Response Plan (FRMRP)	Appendix K	The FRMRP addresses the flood management requirements of the Consent and includes: • Statutory requirements for flood preparedness and flood emergency management at the Facility. • A description of site and local flood regimes. • The levels of flood emergencies that could impact the Facility. • Flood preparedness requirements including equipment that is to be available for flood response. • Flood emergency assessment and notification protocols. • Flood emergency response procedures including post-incident requirements.
Air Quality and Greenhouse Gas Management Plan (AQGGMP)	Appendix L	The AQGGMP addresses the air quality and greenhouse gas management and monitoring requirements of the Consent and includes: • Statutory requirements for the management of dust and greenhouse gas emissions at the Facility. • A description measures implemented to manage dust and greenhouse gas emissions at the Facility. • Air quality monitoring program. • Air quality criteria and exceedance response protocol. • Air quality complaints management requirements. • Reporting and plan review and update requirements.
Noise and Vibration Management Plan (NVMP)	Appendix M	The NVMP addresses the air quality and greenhouse gas management and monitoring requirements of the Consent and includes: • Statutory requirements for the management of noise and vibration at the Facility. • A description of the measures implemented to manage noise and vibration at the Facility. • Noise monitoring program. • Noise criteria and exceedance response protocol. • Reporting and plan review and update requirements.
Waste Management Plan (WMP)	Appendix N	The WMP addresses the waste management and monitoring requirements of the Consent and includes: • Statutory requirements for the management of waste at the Facility. • Waste classification requirements. • An inventory of the types and approximate quantities of waste generated at the Facility. • A description of the measures implemented to manage waste at the Facility in accordance with the hierarchy in the *Waste Avoidance and Resource Recovery Act 2001.* • Reporting and plan review and update requirements. • An asbestos management plan as an appendix.

4 Ammonium Nitrate Management

4.1 Ammonium Nitrate Hazards

The three main hazards associated with ammonium nitrate are fire due to its oxidising properties, decomposition and explosion. The key factors that govern the hazards of ammonium nitrate are particle size, bulk density or porosity, presence of contaminants, nitrogen content and confinement.

4.1.1 Fire

Ammonium nitrate is an oxidising agent and will support fires involving combustible material by providing oxygen, but it will not burn itself. Gases emitted include nitrogen oxides and ammonia. In its pure form, ammonium nitrate melts at approximately 170°C and in a fire can flow away from the fire location.

4.1.2 Decomposition

Ammonium nitrate can undergo thermal decomposition if it receives enough energy. Gases emitted include nitrogen oxides and ammonia. A key parameter is the temperature at which the ammonium nitrate-based products begin to self-heat through a runaway exothermic decomposition (decomposition onset temperature). Self-heating occurs when the rate of heat generation is greater than the rate of heat loss to the environment.

Once the decomposition onset temperature is reached, the decomposition proceeds exothermically at a rate that is an exponential function of the temperature. However, there is a secondary mechanism which has the potential to interrupt the self-accelerating decomposition and limit the temperature rise. This secondary reaction is the endothermic dissociation of ammonium nitrate into ammonia and nitric acid. Therefore, at moderate temperature, the exothermic decomposition is balanced by endothermic dissociation. Provided the gases produced can escape freely and no heat is being added to the system (e.g. through a fire) a steady state is reached.

The decomposition can also become self-sustaining in the presence of contaminants which catalyse the reaction (e.g. chlorides), in the presence of combustible materials which generate heat as they are oxidised, of if the initial temperature is high enough.

4.1.3 Explosion

An explosion of ammonium nitrate can occur by three different mechanisms:

- Heating and confinement: If there is insufficient ventilation, decomposition due to heating can result in a build-up in pressure and a subsequent explosion. Molten ammonium nitrate is more sensitive to initiation than solid ammonium nitrate.
- Run-away reaction: This occurs when the heat generated by the decomposition reaction exceeds the heat loss. For pure ammonium nitrate, this is difficult to achieve when unconfined.

- Detonation: Neither flame, nor spark, nor friction can cause detonation of uncontaminated ammonium nitrate. Initiation by shock wave requires large amounts of energy, and is strongly dependent on the presence of voids (i.e. the bulk density). Contamination by organic matter or fuel increases the risk of detonation.

4.2 Relevant Standards and Codes of Practice for Ammonium Nitrate

4.2.1 AS 4326 – 2008 The storage and handling of oxidising agents

AS 4326 – 2008 Storage and Handling of Oxidising Agents (AS4326) provides the requirements and recommendations for the storage and handling of oxidising agents for Division 5.1 dangerous goods. Condition 2 of Schedule 3 of the Consent requires the development to comply with the latest version of AS4326. AS4326 sets out requirements for storage, handling, operational safety, emergency planning and fire protection for all Division 5.1 dangerous goods and provides specific storage requirements for ammonium nitrate including, but not limited to:

- floor plan;
- separation distances between stacks/stockpiles of AN;
- construction materials;
- lighting;
- ventilation;
- electrical installation;
- security;
- surrounding land use;
- fire prevention;
- capacity; and
- vehicle access.

AS4326 refers users to State regulators for the specification of separation distances to protected places and boundaries. At present, there are no regulatory documents in NSW specifying for the storage of AN separation distances from protected places and boundaries. A hazard analysis for the storage of AN at the Facility determined that the level of risk to surrounding land users to be tolerable with the implementation of an off-site restricted access strategy for the sporting complex to the west of the Facility.

SafeWork NSW are responsible for the licencing of AN storage (as a security sensitive substance) under the Explosive Act 2003 and the granting of a licence is subject to compliance with the requirements of AS4326. Crawfords were originally granted a SafeWork NSW (then WorkCover NSW) licence for the storage of AN on 25 June 2011.

4.2.2 SAFEX

The *Good Practice Guide for the Safe Storage of Solid Technical Grade Ammonium Nitrate Rev 02* (SAFEX) is a SAFEX International publication (2014) that is commonly referred to as SAFEX. SAFEX was prepared by the International Industry Working Group on Ammonium Nitrate and provides guidance for the safe storage of Technical Grade Ammonium Nitrate (or TGAN which is the type of AN stored and handled at the Facility) at manufacturing, distribution and end-user sites.

SAFEX provides similar guidance to that provided in AS4326 including requirements for stack separation distances which are generally more conservative than the separation distances required by AS4326 (i.e. SAFEX separation distance recommendations are greater than AS4326 separation distances). Condition 3 of Schedule 3 of the Consent requires Crawfords to maintain AN stack separation distances in accordance with SAFEX guidance except for a short period of time when the storage is at maximum capacity to prevent involvement of more than half the storage capacity of each storage building in an explosion. Section 4.5 provides details on the management of AN storage inventories and separation distances

4.2.3 UN 1942

The United Nations (UN) has numbers that identify hazardous substances and articles for international transport. These numbers are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. The Committee provide recommendations on the responsible transport of each substance to be adopted by regulatory organisations.

The AN that is stored and distributed as part of Facility operations is classified as UN 1942 is defined as AN with not more than 0.2% combustible substances.

4.2.4 Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road and Rail

The *Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road and Rail* (ADG Code) sets out the requirements for transporting dangerous goods by road or rail. AN is a Division 5.1 dangerous good (Oxidising Agent) and as such, Crawfords transport AN in accordance to the ADG Code.

4.3 Operating Hours

Operational activities are limited to the hours of:

6:00 am to 10:00 pm – Monday to Sunday.

No works are permitted to occur on public holidays. Night time operations are directly limited to deliveries of AN to the site only.

4.4 Product Receival

AN shipments to Crawfords generally enter the country via the Port of Newcastle or the Port Botany. Shipments from Port Botany are transported to site by rail while shipments arriving in the Port of Newcastle are transported to site via road.

AN has not been delivered to the Facility via rail for a number of years, however, AN rail deliveries may occur in the future. AN is delivered to the Facility at the Crawfords rail siding. A container-forklift transfers the containers to the AN stores for unloading of flexible intermediate bulk containers (IBCs, these are typically 1.2 t individual bags of AN) from within the container. Bagged AN is unloaded promptly into the respective stores so that empty containers can be returned as quickly as possible. The standard train unloading and reloading time is one working day. Only 1 train (2 movements) in total (with a maximum of 40 carriages at 76 tonnes per carriage) is permitted to ingress and egress from the site in any 24 hour period as required Condition 36 of Schedule 3 of the Consent. Note that the restrictions relating to train movements in Condition 36 of Schedule 3 of the Consent only apply to train movements with loads of AN and not to train movements involving general freight.

One ship carrying AN is typically received at the Port of Newcastle each month. Unloading of the vessel typically involves five of Crawfords B-double trucks working in concurrent 12 hour shifts over a 24 hour period. It takes approximately two days to unload the vessel and deliver all AN to the Facility.

4.5 Storage

4.5.1 Storage Sheds

As indicated in Section 1.1 the Facility was originally approved to store up to 13,500 t of bagged AN in three storage sheds (13,000) as well as in shipping containers outside (500 t), however, is now restricted to the storage of 9,000 t in two sheds:

- Shed A – 4,500 t (indoor only); and
- Shed B – 4,500 t (indoor only).

Each shed occupies an area of approximately 4,440 m² (37 m x 120 m) and are constructed of reinforced concrete floors, exposed steel frames, metal roof sheeting and Permalite metal panel walls to a height of approximately 3 m and metal cladding to the walls to roof height.

Following SSD-5119 approval, Crawfords were required to implement flood emergency management measures and infrastructure upgrades for Shed A and Shed B to comply with AS4326 and enable operation at maximum capacity. The flood emergency management measures are detailed in the FRMRP (refer to Appendix K). The upgrades were completed in 2015 and included the following works:

- Reinforced concrete flooring with concrete bunding to a height of 0.550 m was provided in Shed A and Shed B.
- Installation of Tekflex hydraulic cement to encapsulate the existing timber walls to a height of 3 m to encapsulate the timber and seal of any gaps in the walls (note Tekflex is also referred to as Blue

Geo / Cement Latex Compound). However, the Tekflex coated timber walls were replaced with Permalite metal panels in June 2023.

- Installation of precast concrete walls in place of the rear access doors of Shed A and Shed B to a height of three metres, as well as the openings at the front of Shed A and B as a flood mitigation measure.
- Fire system upgrades including installation of fire hose reels and a fire water ring main in accordance with the final Fire Safety Study.

A structural engineer has provided certification of Storage Sheds A, B and C to withstand the 1% AEP design flood event plus 500 mm freeboard depth. Certification is to be obtained annually as required by Condition 17 of Schedule 3, SSD-5119.

4.5.2 Inventory and Separation Distance Management

AN is stored in accordance with the Australian Standard AS4326 *Section 9 Specific Requirements for Ammonium Nitrate* and with SAFEX separation distances between half the storage capacity of each shed. The following storage arrangements will be implemented within Shed A and Shed B:

- Maximum store inventory of 4,500 t.
- Maximum stack size of 500 t.
- Flexible IBCs of AN (medium density AN and high density AN) will all stacked three-high in a pyramidal arrangement (less than 4 m total stack height), with each layer set- back by a half-bag from the layer below on all sides of the stack.
- Separation between stacks
  - of at least 3 m (AS4326 requirement) for medium density AN (MDAN)
  - of at least 3 m for high density AN (HDAN) (Note that SAFEX requirement for HDAN stack separation is 1 m)
  - of at least 9 m between half of the storage capacity of each shed (e.g. between two rows of stacks up to 500 tonnes containing an aggregate capacity of up to 2,250 tonnes of AN).
- Separation between outer wall of the building and the nearest stack of at least 1.2 m.
- Stores separated from the site boundary by at least eight metres as required by AS4326.

Figure 4.1 presents a schematic diagram of the AN bag stacking arrangement applied in both Shed A and Shed B when at the maximum storage inventory of 9,000 tonnes. All stack locations are delineated within the sheds by painted lines on the concrete floors to ensure stacking does not occur outside of the defined stack locations.

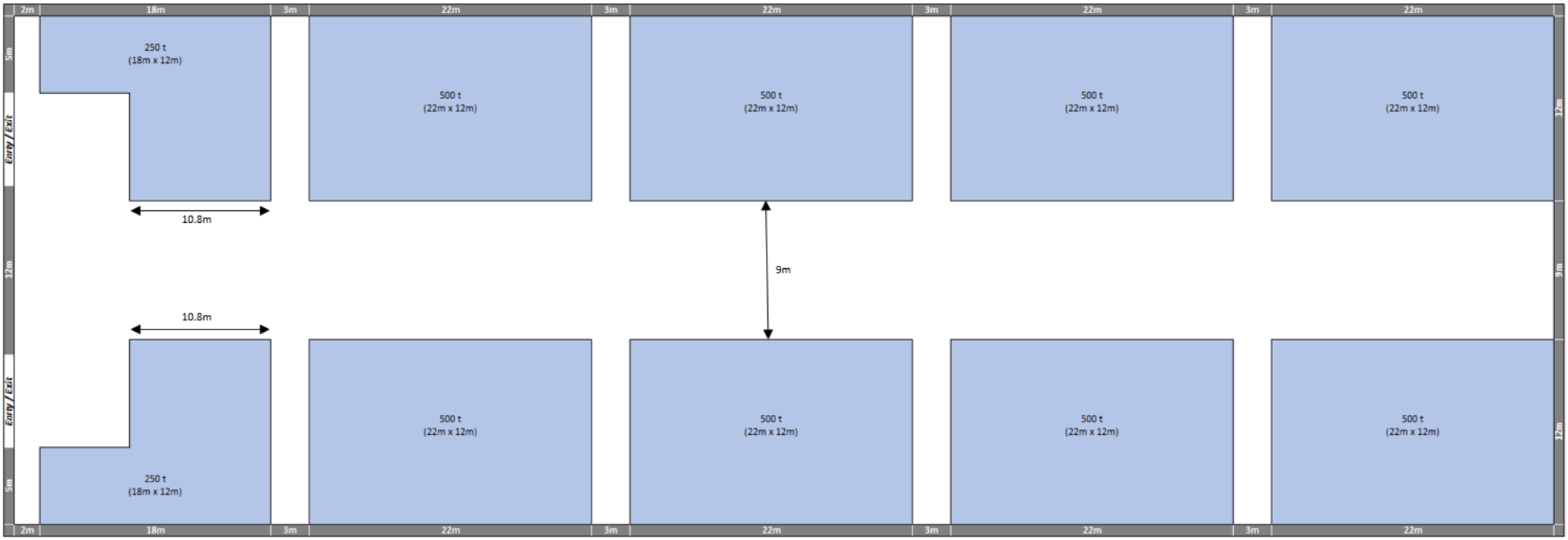


Figure 4.1 Ammonium Nitrate Bag Stacking Arrangement at Maximum Inventory (Shed A and Shed B)

4.5.2.1 Ongoing Management for SAFEX Compliance

As indicated in Section 4.5.2 stacking of AN is expected to remain in compliance with the requirements of the Consent with respect to SAFEX separation distances being maintained between half of the storage capacity of each shed. Whenever possible during normal operations, Crawfords will also prioritise despatch of the centre stacks in each row to further limit the maximum quantity of AN that could be involved in an explosion to 1,000 tonnes (i.e. two 500 tonne stacks).

Crawfords implement a daily AN inventory tracking system that records the inventory in each stack as shown in Figure 4.1 within both Shed A and Shed B. The system has been developed in Microsoft Excel and is updated daily as follows:

- Manual bag counts of the number of bags in each stack are undertaken following completion of loading for the day
- Bag counts are entered into the daily Excel stock count sheet to determine individual stack inventories
- The total tonnages based on the manual bag counts are checked against individual Shed A and Shed B inventories sourced from the Translogix warehouse tracking system.

Further to the monitoring of inventories, Crawfords will implement the Trigger Action Response Plan (TARP) (refer to Table 4.1) to manage AN inventories to reduce the risk of not maintaining SAFEX separation distances between half the storage capacity of each shed. The Major Hazard Facility Coordinator is responsible for implementing the actions in the TARP (refer to Table 4.1).

Table 4.1 Ammonium Nitrate Separation Distance TARP

Shed A or Shed B AN Inventory (tonnes)	Response	Responsible Persons
<3,000	• Continue as per normal operations. • Daily monitoring of stock movements & stack locations. • Monitoring of long range weather forecasts for possible rain events that could delay despatch of product.	MHF Coordinator and DG Yard Manager
3,000 - <4,000	All Actions taken under for inventories <3,000 tonnes are continued - as well as the following: • Liaise with customers to determine if they can receive product earlier. • Liaise daily with Allocators on possible movements coming into store and the possibility that they may need to be held back. • Liaise with clients about possible requirement for stock movements to other sites.	
4,000 – 4,500	All Actions taken for inventories <4,000 tonnes are continued - as well as the following: • Arrange product movement to other approved AN storage facilities if required. • Liaise with clients if vessels are due & need to be redirected or held out at sea.	

	• Re-direct any incoming shipments that would result in the inventory in either Shed A or Shed B exceeding 4,500 tonnes.	

In addition to daily AN inventory tracking, Crawfords complete a monthly AN storage audit which assesses compliance with sections 9.3 and 9.4 of AS4326.

4.6 Ammonium Nitrate Handling and Transport

4.6.1 Conveyors

A diesel powered tubular belt conveyor is used to decant AN from bags to bulk transport trailers. AN decanting is only undertaken within a defined area adjacent to Shed A which has a sealed surface, roof and shipping containers that support the roof as well as acting as wind breaks. The following standards and codes relating to handling of AN specify requirements for belt conveyor and electric screw-conveyors apply:

- *Australian Standard 4326-2008 The Storage and Handling of Oxidising Agents, Section 9.3.7;*
- *Australian Explosives Industry and Safety Group: Code of Good Practice – Precursors for Explosives, Section 6; and*
- *Australian Standard 2187.2-2006 Explosives – Storage and Use – Use of Explosives, Section 3.4.1.*

The conveyors are subject to routine maintenance and inspection after every 100 hours of service.

4.6.2 Forklifts

AN bags are transported around the site and stacked in respective stores by forklift. The forklift carries the bags by the reinforced loop at the top which is the recommended method for transportation, loading and stacking.

Three diesel-powered forklifts are used to transfer AN between vehicles, shipping containers and storage sheds.

AS 4326 specifies requirements for the handling of AN by forklifts. A forklift compliance audit was conducted in 2011 by Downer (*Downer Reload Equipment and Amenities Compliance Audit*). The audit identified the requirement for some rectification measures, which were subsequently implemented to the conveyors, to comply with AS4326.

Pre-start checks are conducted daily for each forklift. Maintenance is conducted by Crawfords mechanics after every 250 hours of service.

4.6.3 Trucks

Crawfords has a fleet consisting of over 100 trucks and multiple light vehicles. The types of trucks include Western Star, Volvo, Kenworth, Nissan UD, Scania, Mercedes and Isuzu. These vehicles range in engine size from 4.4 L to 15 L. Crawfords operate a fleet of vehicles and undertakes maintenance under the National Heavy Vehicle Accreditation Scheme (NHVAS) which gives accreditation for recognising operators

who have good safety and management systems in place. Trailers used to transport AN are licenced to transport dangerous goods by the NSW Environment Protection Authority (EPA). Vehicle movement routes are detailed in the TMP (refer to Appendix I).

4.7 Product Distribution

Depending on customer requirements, AN is distributed in both flexible IBCs or is decanted from bags into bulk transport trailers.

AN is normally distributed from the site in bags on flat-top trucks direct to Hunter Valley and other NSW mining areas. Single trailer vehicles carry up to 24 bags (approximately 26.4 t) while B-double vehicles (two trailers) carry up to 36 bags (approximately 43.2 t). The number of trucks per day varies depending on when a shipment of product is received, approximately three to four vehicles per day is typical to meet customer requirements.

Approximately five bulk trailers per day are distributed in this manner with single trailer vehicles carrying approximately 26.4 t and B-double vehicles carrying approximately 43.2 t in total.

5 Contamination Management

All construction activities required to upgrade the Facility to meet EIS commitments and satisfy EPL conditions with regard to contamination management, including stormwater management system upgrades (refer to WRMP in Appendix J) and sealing of permeable areas/roads, have now been completed. Management of soil contamination and acid sulphate soils (ASS) during the construction phase was managed under a construction environmental management plan (CEMP) for those works.

In the event that future construction works are required that may impact potentially contaminated soils or ASS, a new CEMP will be prepared that will:

- be prepared in accordance with the relevant best practice industry guidelines such as the NSW State Government's Acid Sulphate Soils Manual (ASSMAC 1998);
- detail how excavated soil will be tested for contamination, handled and stockpiled; and
- outline how contaminated soil and water will be disposed of off-site at a licensed facility.

Ongoing contamination management for Facility operations is achieved through implementation of the WRMP (refer to Appendix J), storage and handling of AN in accordance with this OEMP, the provision of bunding in accordance with EPL condition O5 and the EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook* and inspection and maintenance of sealed surfaces.

6 Visual Amenity Management

The following mitigation measures are to be applied to minimise impacts on visual amenity:

- on site lighting will be minimised wherever possible and:
  - comply with the latest version of AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting; and
  - be mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.
- the use of flood lighting is to be minimised as far as practicable without compromising safety; and
- the site shall be maintained in a clean and tidy manner that does not detract from the surrounding visual amenity.

7 Flora and Fauna Management

The following mitigation measures are to be applied to minimise impacts on ecology within the surrounding area:

- the use of biocides is to be minimised;
- any rehabilitation/landscaping works will incorporate native flora species that have the potential to provide foraging resources for native fauna species;
- a wildlife care organisation will be called if fauna is injured during operational activities;
- lighting will be redirected to reduce unnecessary light spill that may have potential to impact nocturnal fauna; and
- application of the WRMP (refer to Appendix J).

8 Heritage Management

The investigations undertaken for the Facility EIS did not identify any Aboriginal sites or places that have been recorded or declared within the project area and found that the Facility site has no known historic heritage value (ERM, 2012).

All construction activities required to upgrade the Facility to meet EIS commitments and satisfy EPL conditions have now been complete with potential heritage impacts managed under a CEMP for those works. For any future construction activities to be undertaken at the Facility that include ground disturbance:

- A new works specific CEMP will be prepared and will include protocols for management of unexpected Aboriginal and/or historic heritage finds. The unexpected finds protocol will include the following requirements should Aboriginal cultural objects or human remains be found.
    - works will cease immediately;
    - Heritage NSW, local Aboriginal community representatives (if the find is suspected to be an aboriginal heritage object) and a suitably qualified and experienced archaeologist are to be contacted and engaged to determine the significance of the find;
    - NSW Police are to be notified if suspected human remains are found;
    - works will not recommence until written notification from Heritage NSW is received; and
- All construction personnel will undergo a works specific induction that will include training in:
    - Aboriginal and historic heritage site identification;
    - protection of heritage sites; and
    - the unexpected finds protocol.

In the event that an unexpected find is confirmed as a heritage site:

- If the find is an aboriginal heritage object, the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by Heritage NSW) and the management outcome for the site included in the information provided to AHIMS registrar.Crawfords will consult with representatives of the local Aboriginal community (if the find is an aboriginal heritage object), Heritage NSW and the archaeological specialist to develop and implement management strategies for all objects/sites.
- If impacts are unavoidable, mitigation measures are to be undertaken in accordance with the heritage component of the Construction Management Plan.

9 Training, Awareness and Competencies

Crawfords employees, contractors and visitors are required to participate in relevant Facility induction programs and other position specific training. Induction programs include relevant operation environmental aspects of this OEMP, sub-plans and strategies (refer to Section 3) and the SMS (refer to Appendix D). All employees, contractors and visitors involved in site and transportation operations will be made aware of their environmental obligations and the need to comply with requirements of this OEMP, sub-plans and strategies (refer to Section 3) and the SMS (refer to Appendix D).

In addition to the inductions, regular tool box meetings will be held on site which will include a discussion on environmental aspects, recent incidents and observations and possible improvements in procedures. These meetings reinforce the training and promote greater awareness of specific issues. “Toolbox” training topics will include, but not be limited to:

- Site safety hazard and risk awareness;
- Work methods;
- Emergency response;
- General site health, safety and environment (HSE) issues;
- Waste management, minimisation and recycling;
- Noise and vibration minimisation;
- Dust management; and
- Wastewater control.

From time-to-time staff may also attend specific training sessions when deemed necessary by the Site Manager or HSSE personnel. Records of training undertaken by employees, contractors and visitors are to be maintained in Crawfords training management system.

10 Complaints Management

During operational hours, Crawfords operate 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. So that the public is notified, the complaints telephone line is detailed on the front gate of the site and can be located on Crawfords website.

Complaints arising from operations will be treated sensitively and in a manner that recognizes the potential for operational site activities to cause environmental impacts. All complaints received by Crawfords regarding the Facility operations will be directed to the HSSE and Compliance Manager.

Any complaint will be immediately investigated to determine likely operational causes (e.g. Facility activities that are generating excessive dust or noise excessive emissions). Should the impacts associated with the complaint be found to be associated Facility operations, Crawfords will act swiftly to:

- mitigate any ongoing impacts(e.g. cease the activity that is the cause of the impact);
- identify any ongoing additional mitigation measures to minimise the potential for a similar impact to occur;
- if required, engage a suitably qualified and experienced specialist (e.g. air quality scientist, water resources engineer, acoustic engineer) to assist with identifying suitable ongoing mitigation measures;
- provide prompt feedback to the complainant as to the cause of the impact as far as can be practically determined and what is being done to mitigate the impact.

Should the impact associated with the complaint be found to be associated with activities off-site that are not within Crawfords control, Crawfords will:

- where possible, notify the party responsible for the impact of the issue and request mitigation measures be implemented; and
- notify the complainant of that the impact is considered to be outside of Crawfords operation control and provide any details of the suspected cause of the impact that is/was the subject of the complaint.

Recording of complaints will be undertaken in accordance with condition M4 of EPL 21295 (refer to Section 1.4.4). At a minimum, the following will be recorded for received complaints:

- The date and time of the complaint;
- The method by which the complaint was made;
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- The nature of the complaint;

- The action taken by Crawfords in relation to the complaint, including any follow-up contact with the complainant; and
- If no action was taken by Crawfords, the reasons why no action was taken.

11 Environmental Performance, Monitoring and Auditing

11.1 Performance

Key Performance Indicators (KPIs) have been created to determine the effectiveness of this OEMP. The KPIs and associated goals and targets are listed in Table 11.1. Performance criteria specific to water resources, flooding, air quality, noise, traffic and waste are presented in the respective sub-plans for these environmental aspects (refer to Table 3.1 and relevant appendices).

Table 11.1 Environmental KPIs

KPI	Goals/Measure	Reporting/Monitoring
Environmental Compliance	Demonstrated compliance with legislative requirements and permits/approvals.	Weekly inspections (refer to Section 11.2) Auditing (refer to Section 11.2, 12.1.1, 12.1.2 and 12.2.1)
Environmental Management	Refer to performance criteria within sub-plans	Weekly inspections (refer to Section 11.2) Refer to sub-plans: • TMP (Appendix I); • WRMP (Appendix J); • FRMRP (Appendix K); • AQGGMP (Appendix L); • NVMP (Appendix M); and • WMP (Appendix N).
AN Storage Compliance	Total storage inventory does not exceed 9,000 tonnes. The storage inventory in either Shed A or Shed B does not exceed 4,500 tonnes. The separation distance between half the storage capacity of Shed A or Shed B is maintained to be at least 9 m.	Refer to Section 4.5.2.1 and 12.1.4
Employee/site personnel training including contractors	Staff including relevant contractors to have site inductions and role specific training/certifications/licences	Training Management System
Community Complaints	All complaints managed in accordance with Section 10 and condition M4 of EPL 20295	Complaints Register.

11.2 Monitoring and Auditing

Monitoring requirements specific to water resources, air quality, noise, traffic and waste are presented in the respective sub-plans for these environmental aspects (refer to Table 3.1 and relevant appendices). Table 11.2 presents the environmental monitoring and auditing program required under this OEMP and by the Consent.

Table 11.2 Monitoring and Auditing Program

Activity	Resources	Responsibility	Frequency	Reported to
Routine Inspections				
Weekly Environmental Inspection	Weekly Environmental Inspection Checklist (refer to Appendix O)	Site Manager	Weekly	General Manager HSSE & Compliance Manager
Structural Inspection and Certification of Shed A and Shed B	-	Site Manager	Annual	General Manager HSSE & Compliance Manager
Audits				
Ammonium Nitrate Storage AS4326 Audit	Monthly Audit checklist (refer to Appendix O)	Site Manager	Monthly	General Manager HSSE & Compliance Manager
Non-routine Client and Regulator Audits		HSSE & Compliance Manager	At least Annually	General Manager Site Manager
Independent Environmental Audit	-	HSSE & Compliance Manager	After one year of commencement of operations and every three years thereafter	General Manager Site Manager
Hazard Audit	-	HSSE & Compliance Manager	After one year of commencement of operations and every two years thereafter	General Manager Site Manager

The results of any inspections and monitoring conducted under this OEMP and sub-plans will be recorded and retained in accordance with the following:

- in a legible form, or in a form that can readily be reduced to a legible form;
- kept for at least four (4) years after the monitoring or event to which they relate took place; and
- produced in a legible form to any authorised officer of the EPA or DPE upon request.

All environmental monitoring results (i.e. water quality, air quality and noise) are to be published on the Crawfords website.

12 Reporting and Plan Review

12.1 Consent

12.1.1 Independent Environmental Audit

Within one year of the commencement of operations, and every three years thereafter, or as otherwise agreed by the Director-General, Crawfords will commission an Independent Environmental Audit of the Facility site. The audit will:

- be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
- include consultation with the relevant agencies;
- assess the environmental performance of the development and assess whether it is complying with the relevant requirements in the consent and
- any relevant EPL (including any plan or program required under the consent);
- review the adequacy of any plans or programs required under the consent; and, if appropriate; and
- recommend measures or actions to improve the environmental performance of the development, and/or any plan or program required under the consent.

Within six weeks of completing any Independent Environmental Audit, or as otherwise agreed by the Director-General, Crawfords will submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

12.1.2 Hazard Audit

Every two years following the Hazard Audit prepared 12 months after the commencement of operations Crawfords shall engage a qualified person or team, independent of the project and approved by the DPE prior to commencement of the audit to undertake a Hazard Audit that is consistent with the *Hazardous Industry Planning Advisory Paper No. 5 - Hazard Audit Guidelines* (HIPAP No. 5).

In addition to the requirements provided in HIPAP No. 5, the audit will:

- address all relevant findings and recommendations from all official investigation report/s (if available) on AN storage hazardous event that have occurred across the world (e.g. Beirut (Lebanon) in August 2020 and West, Texas (USA) in April 2013, and make recommendations for improvements to safe AN storage at the Facility if necessary; and
- report on the findings of the audit in relation to compliance with the current version of AS 4326 – the Storage and handling of oxidizing materials and the relevant provisions of the current version of the SAFEX International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate.

The Hazard Audit report will be accompanied by a program for the implementation of all recommendations made in the audit report or justification for deferral of any recommendations made in the Hazard Audit report.

12.1.3 Off-site Restricted Access Strategy

Every 12 months following approval of the original Off-Site Restricted Access Area Strategy (refer to Appendix F), Crawfords will request written approval of the current Off-Site Restricted Access Area Strategy from DPE.

Crawfords will also obtain the written approval from DPE for a revised Off-Site Restricted Access Area Strategy at when any of the arrangements established under the approved Off-Site Restricted Access Area Strategy change.

12.1.4 Incidents

If an exceedance of the criteria within this OEMP and sub-plans (refer to Table 3.1 and relevant appendices) is recorded or an incident that causes, or threatens to cause, environmental harm, immediately after becoming aware of the exceedance/incident (or as soon as practical thereafter), Crawfords shall notify DPE and other relevant agencies of the exceedance/incident. Within 7 days of the date of the incident, Crawfords shall provide the Director General and any other relevant agencies with a detailed report on the incident, and such further reports as may be requested by DPE and any other relevant agencies.

12.2 Environment Protection Licence

12.2.1 Annual Return

Under condition R1 of EPL 20295 (refer to Section 1.4.4), Crawfords are required to submit an Annual Return to the EPA at the end of each reporting period. The annual reporting period for EPL 20295 is **18 July to 17 July**. At the end of each reporting period, the EPA will provide Crawfords with a notification indicating that the Annual Return is due.

The Annual Return is required to include the following information:

- The number of complaints relating to air, water, noise, waste or any other relevant environmental aspects.
- A summary of monitoring undertaken as detailed in the WRMP (refer to Appendix J).
- A statement of compliance with EPL conditions.
- Confirmation that a Pollution Incident Response Management Plan (PIRMP) has been prepared for the Facility is available at the premises and on the Facility website.
- The dates for the last update of the PIRMP and when the PIRMP was last tested.
- Confirmation that pollution monitoring data is published on the Facility website.
- A statement of compliance in regard to environmental management and practices.

12.2.2 Notification of Environmental Harm

Notification of environmental harm or incidents that threaten to cause environmental harm will be undertaken in accordance with condition R2 of EPL 20295 (refer to Section 1.4.4).

12.2.3 Written Report

Written reports requested by an authorised officer of the EPA will be prepared as required in accordance with condition R3 of EPL 20295 (refer to Section 1.4.4).

12.2.4 Pollution Studies and Reduction Programs

All reporting associated with pollution studies and reduction programs under condition 8 of EPL 20295 has been completed. Any reporting for future pollution studies and reduction programs included in EPL variations will be undertaken as per stated conditions.

12.3 Plan Review and Update

This OEMP will be reviewed and updated as required every three years following the completion of the Independent Environmental Audit required under Condition 4 of Schedule 4 of the Consent.

13 References

Ammonium Nitrate Storage and Distribution Facility Environmental Impact Statement—Final, ERM, 2012.

The Good Practice Guide for the Safe Storage of Solid Technical Grade Ammonium Nitrate Rev 02, SAFEX International, 2014.

AS 4326 – 2008 Storage and Handling of Oxidising Agent.

Appendix A – Development Consent

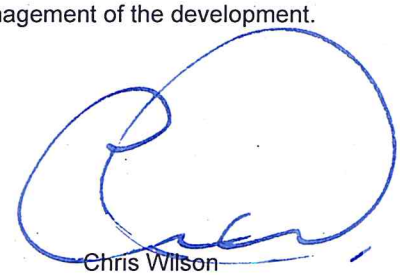
Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Infrastructure under delegation executed on 27 February 2013, I approve the development 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 development.



Chris Wilson
Executive Director
Development Assessment Systems and Approvals

Sydney 13 June 2013

SCHEDULE 1

Application Number:	SSD-5119
Applicant:	Crawfords Freightlines Pty Ltd
Approval Authority:	Minister for Planning and Infrastructure
Land:	158 Old Maitland Road, Sandgate (Lot 12 DP 625053)
Development:	Crawfords Ammonium Nitrate Storage and Distribution Facility

TABLE OF CONTENTS

DEFINITIONS **1**

ADMINISTRATIVE CONDITIONS **2**

Obligation to Minimise Harm to the Environment 2
Terms of Approval 2
Limits of Consent 2
Lapsing on Consent 2
Management Plans/Monitoring Programs 2
Structural Adequacy 3
Protection of Public Infrastructure 3
Operation of Plant and Equipment 3
Staged Submission of Plans or Programs 3
Development Contributions 3

SPECIFIC ENVIRONMENTAL CONDITIONS **4**

General 4
Hazards and Risk 4
Soil and Water 5
Noise and Vibration 8
Air Quality 9
Traffic 10
Waste 11
Heritage 12
Visual Impact 12
Energy and Water Efficiency 12
Security 12
Fire Management 13

ENVIRONMENTAL MANAGEMENT REPORTING & AUDITING **14**

Environmental Managemet 14
Environmental Reporting and Auditing 14

APPENDIX A: MANAGEMENT AND MITIGATION MEASURES **16**
APPENDIX B: SITE PLAN **25**
APPENDIX C: NOISE RECEVIER LOCATIONS **26**
APPENDIX D: OFF-SITE RESTRICTED ACCESS AREA MAP **27**

DEFINITIONS

Applicant	Crawfords Freightlines Pty Ltd
AN	Ammonium Nitrate
ANZECC Guidelines	*Australian and New Zealand Guidelines for Freshwater and Marine Water Quality (Australian Government 2000)*
AS	Australian Standard
BCA	Building Code of Australia
Construction	The demolition of buildings or works, carrying out of works, including bulk earthworks and erection of buildings and other infrastructure covered by this consent
Council	The Council of the City of Newcastle
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DCP	*Newcastle Development Control Plan 2012*
Development	The development as described in the EIS and RTS
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department of Planning and Infrastructure, or his nominee
EIS	The Environmental Impact Statement titled *'Ammonium Nitrate Storage and Distribution Facility'* and accompanying appendices, prepared by Environmental Resources Management Australia and dated December 2012
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
Evening	The period from 6pm to 10pm
Facility	The development as described in the EIS
Flood Proof	Meaning the structural integrity of a structure cannot be compromised by loads caused by flood waters and is unable to inundated by flood water, up to a specified maximum flood event limit
FRNSW	Fire and Rescue NSW
Major Flood Event	Any flood event that is rarer than, and including, a 5% Annual Exceedance Probability flood event
Management and Mitigation Measures	The Applicant's Management and Mitigation Measures (Appendix A)
Minister	Minister for Planning and Infrastructure, or delegate
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OC	Occupational Certificate
Off-Site Restricted Access Area	The Off-Site Restricted Access Area as shown in blue in Appendix D of this consent and referred to in Conditions 5 and 6 of Schedule 2 of this consent.
Operation	The development as described in the EIS for the storage and distribution of more than 2,000 tonnes of ammonium nitrate at the site and associated works and infrastructure.
POEO Act	*Protection of the Environment Operations Act 1997*
Project	Has the same meaning as development (see above)
Reasonable and Feasible	Reasonable relates to the application of judgement 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.
RMS	Roads and Maritime Services
RTS	The Response to Submissions titled *'Ammonium Nitrate Storage and Distribution Facility'* and accompanying appendices, prepared by Environmental Resources Management Australia and dated April 2013
Site	The land referred to in Schedule 1
WorkCover	WorkCover NSW

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Applicant 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 development.

TERMS OF APPROVAL

2. The Applicant shall carry out the development generally in accordance with the:
   (a) EIS;
   (b) RTS;
   (c) Management and Mitigation Measures (see Appendix A);
   (d) Site Plans (Appendix B) and Drawings in the EIS; and
   (e) conditions of this consent.

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 consent shall prevail to the extent of any inconsistency.

4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any audits, reports, plans, programs, strategies, studies or correspondence that are submitted in accordance with this consent; and
   (b) the implementation of any actions or measures contained in these audits, reports, plans, programs, strategies, studies or correspondence submitted by the Applicant.

LIMITS OF CONSENT

5. Prior to the commencement of the Operation, the Applicant must, to the satisfaction of the Director-General, demonstrate that suitable arrangements are in place to prohibit public access to the Off-Site Restricted Access Area as labelled and illustrated in Appendix D of this consent. As part of demonstrating the suitable arrangements for the Off-Site Restricted Access Area are in place, the Applicant must prepare and implement an Off-Site Restricted Access Area Strategy. This Strategy must be approved by the Director-General prior to the commencement of the Operation and shall:
   - provide details of the works proposed to prohibit public access, such as secure fencing and signage;
   - provide evidence that each landowner within the Off-Site Restricted Access Area has been consulted and agrees with the proposed measures, including Council and the lessee of Part Lot 33 DP 1118637 (i.e. the Sandgate Golf Practice Centre or its successors); and
   - investigate and detail options to purchase or secure land on a long-term basis within the Off-Site Restricted Access Area in perpetuity.

6. The Applicant must also obtain the written approval of the Director-General of the Off-Site Restricted Access Area Strategy referred to in Condition 5 above:
   (a) every 12 months from the Director-General's approval of Condition 5 above (i.e. the yearly anniversary); and
   (b) at any time any arrangement established under Condition 5 above changes or is modified.

7. In any case, the Applicant shall not store more than 13,500 tonnes of AN on the site at any one time, comprising the storage of a maximum of up to:
   - 4,500 tonnes of AN in Shed A;
   - 4,500 tonnes of AN in Shed B;
   - 4,000 tonnes of AN in Shed C; and
   - 500 tonnes of AN in shipping containers in the outdoor compound of Shed C.

LAPSING OF CONSENT

8. This consent will lapse five (5) years from the date of consent unless the works associated with the development have physically commenced.

MANAGEMENT PLANS AND MONITORING PROGRAMS

9. With the approval of the Director-General, the Applicant may:
   (a) submit any management plan or monitoring program required by this consent on a progressive basis; and

(b) combine any management plan or program required by this consent with any similar management plan or program that have been approved under previous consents or approvals.

STRUCTURAL ADEQUACY

10. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, on the site are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Applicant 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 development.*

PROTECTION OF PUBLIC INFRASTRUCTURE

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

OPERATION OF PLANT AND EQUIPMENT

12. The Applicant shall ensure that all plant and equipment used for the development is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

STAGED SUBMISSION OF PLANS OR PROGRAMS

13. With the approval of the Director-General, the Applicant may submit any plan or program required under this consent on a progressive basis.

DEVELOPMENT CONTRIBUTIONS

14. Prior to the commencement of operation, the Applicant shall pay to Council a development contribution to a maximum amount of $6,000 determined in accordance with Council's *Section 94A Development Contributions Plan 2009,* updated 22 April 2013, in consultation with Council, and to the satisfaction of the Director-General.

Note: The amount of contribution payable under this condition has been calculated on the basis of the current rate as at the date of consent and is based on the most recent quarterly Consumer Price Index (CPI) release made available by the Australian Bureau of Statistics (ABS). The CPI index rate is expected to rise at regular intervals and therefore the actual contribution payable is indexed and should be recalculated at the CPI rate applicable on the day of payment.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

GENERAL

1. The Applicant shall comply with the requirements of the EPA set out in any EPL issued for the development.

HAZARDS AND RISK

General

2. The Applicant shall ensure that the development complies with the requirements of the latest version of *AS 4326*. Measures to inspect and maintain the site to ensure compliance with the latest version of *AS 4326* must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).

3. The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX *International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate* or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity

Pre-construction

4. 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 Applicant shall prepare and submit for the approval of the Director-General the studies set out under subsections (a) to (c) (the pre-construction studies) of this Condition. 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 Fire and Rescue NSW.
   (a) CONSTRUCTION SAFETY STUDY
   A Construction Safety Study, consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety'*. For projects in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.
   (b) FIRE SAFETY STUDY
   A Fire Safety Study for the proposed project. 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 Fire and Rescue NSW.
   (c) FINAL HAZARD ANALYSIS
   A Final Hazard Analysis of the proposed project, consistent with the Department of Planning's Hazardous *Industry Planning Advisory Paper No. 6, 'Hazard Analysis'*. The FHA shall:
   - address all relevant findings and recommendations from all official investigation report/s (if available) on the accident at West, Texas (USA) in April 2013;
   - re-evaluate and confirm all relevant data and assumptions from the Preliminary Hazard Analysis; and
   - re-evaluate and confirm all control measures proposed for the prevention and mitigation of incidents, particularly those controls relevant to ammonium nitrate.

Pre-commissioning

5. The Applicant shall develop and implement the plans and systems set out under subsections (a) to (c) of this Condition. No later than two months prior to the commencement of commissioning of the proposed project, or within such further period as the Director-General may agree, the Applicant 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) TRANSPORT OF HAZARDOUS MATERIALS
   Arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the proposed development. The routes shall be selected in accordance with the Department of Planning' draft 'Route Selection' guidelines. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.
   (b) EMERGENCY PLAN
   A comprehensive Emergency Plan and detailed emergency procedures for the proposed project. This plan shall include consideration of the safety of all people outside of the project who may be at risk from the project, including the assets and employees of Scafflink or its successors. The plan shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'*.

(c) SAFETY MANAGEMENT SYSTEM

A document setting out a comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. 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

6. PRE-STARTUP COMPLIANCE REPORT

One month prior to the commencement of operation of the project, the Applicant shall submit to the Director-General, a report detailing compliance with Conditions 4 and 5 of this Schedule, including:

(a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
(b) actions taken or proposed, to implement the recommendations and safety-related control measures in the studies/plans/systems; and
(c) responses to each requirement imposed by the Director-General under Condition 10 of this Schedule.

Post-startup

7. POST-STARTUP COMPLIANCE REPORT

Three months after the commencement of operation of the project, the Applicant shall submit to the Director-General, a report verifying that:

(a) the transport routes specified under Condition 5(a) are being followed;
(b) the Emergency Plan required under Condition 5(b) is effectively in place and that at least one emergency exercise has been conducted; and
(c) the Safety Management System required under Condition 5(c) has been fully implemented and that records required by the system are being kept.

Ongoing

8. HAZARD AUDIT

Twelve months after the commencement of operations of the proposed project and every two years thereafter, or at such intervals as the Director-General may agree, the Applicant shall carry out a comprehensive Hazard Audit of the proposed project and within one month of each audit submit a report to the Director-General for approval.

The audits shall be carried out at the Applicant's expense by a qualified person or team, independent of the project, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'* (HIPAP No. 5).

The audit reports shall, in addition to the requirements provided in HIPAP No. 5:

- address all relevant findings and recommendations from all official investigation report/s (if available) on the accident at West, Texas (USA) in April 2013, and make recommendations if necessary; and
- Report on the findings of the audit in relation to compliance with the current version of AS 4326 - the Storage and handling of oxidizing materials and the relevant provisions of the current version of the SAFEX International *Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate*,

The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.

On-site Risks

9. The Applicant shall ensure that the Construction Safety Study (see Condition 4(a) of this Schedule), the Final Hazard Analysis (see Condition 4(c) of this Schedule), Safety Management System (see Condition 5(c) of this Schedule) and the Emergency Plan (see Condition 5(b) of this Schedule) for the site include an assessment and evaluation of all hazards that could contribute to both on site and off-site risks to the satisfaction of WorkCover NSW. All maps showing the risk contours for on site and off-site risks shall be included in each of the aforementioned documents.

10. FURTHER REQUIREMENTS
The Applicant 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 4 to 9 of this Schedule inclusive, within such time as the Director-General may agree.

SOIL AND WATER

Surface Water Discharge Limits

11. The Applicant shall ensure that all licensed surface water discharges from the site comply with the discharge limits (volume and quality) set for the development in any EPL or relevant provisions of the POEO Act.

Bunding

12. The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook*.

Erosion and Sediment Control

13. During the construction of the development, the Applicant shall implement suitable erosion and sediment control measures on site, in accordance with the relevant requirements in the latest version of the EPA's *Managing Urban Stormwater: Soils and Construction* guideline.

Contamination Management

14. Prior to operation, the Applicant must, to the satisfaction of the Director-General, seal all AN:
    (a) storage areas on the site with impermeable hardstand concrete; and
    (b) trafficable areas (including internal roads) on the site with impermeable bitumen,

    Other impermeable materials shall be used to seal these areas if approved by the Director-General. Measures to inspect and maintain all sealed areas of the site for the life of the development must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).

    Note: The intent of this condition is to minimise the potential for AN contamination of soil and water and dust generation from vehicles.

15. The Applicant shall prepare and implement a Contamination Management Plan for the development to the satisfaction of the Director-General. This Plan must:
    (a) be prepared by a suitably qualified and experienced expert in consultation with the EPA and NOW;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) detail the protocols to be put in place and followed in the event that contaminated soil (including Acid Sulphate Soils) or water is encountered during construction;
    (d) be prepared in accordance with the relevant best practice industry guidelines such as the *NSW State Government's Acid Sulphate Soils Manual* (ASSMAC 1998);
    (e) detail how excavated soil will be tested for contamination, handled and stockpiled;
    (f) detail the measures that will be employed to prevent erosion and sedimentation of contaminated soil and suppress odour; and
    (g) outline how contaminated soil and water will be disposed of off-site at a licensed facility.

Flood Design and Structural Certification

16. The Applicant must ensure that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500mm freeboard depth design flood event and are maintained in this manner for the life of the development.

    Note: Flood levels shall be determined considering the effects of climate change.

17. Prior to the commencement of operation, and annually thereafter, the Applicant must obtain structural certification from a suitably qualified engineer that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500mm freeboard depth design flood event. A copy of these structural certification documents must be included in the Flood Risk Management and Response Plan (see Condition 21 in Schedule 3 of this consent) and Operational Environmental Management Plan (see Condition 2 in Schedule 4 of this consent) for the development.

    Note: Flood levels shall be determined considering the effects of climate change.

Flood Management

18. The Applicant must ensure that any shipping containers that are used to store AN on site are unloaded to the AN storage sheds (A, B or C) as soon as practicable once they arrive on site.

19. The Applicant must ensure that no AN is left inside a shipping container during a major flood event and that all AN is contained within the AN storage sheds (A, B or C) during a major flood event.

20. The Applicant must ensure that all flood emergency response equipment is able to withstand floodwaters up to and including the 1% AEP plus 500mm freeboard depth flood event.

    Note: Flood levels shall be determined considering the effects of climate change.

21. The Applicant must prepare and implement a Flood Risk Management and Response Plan for the development to the satisfaction of the Director-General. The Plan must:
    (a) be prepared by a suitably qualified and experienced expert in consultation with Council and OEH;
    (b) be approved by the Director-General prior to the commencement of operations;
    (c) be prepared in accordance with Council's *Newcastle City-wide Floodplain Risk Management Study and Plan 2012* and the *NSW Floodplain Development Manual*;
    (d) include a copy of the structural certification documents required in relation to flood proofing by Condition 17 of this Schedule;
    (e) identify the procedures that would be implemented to ensure compliance with Conditions 18 to 20 of this Schedule;
    (f) identify the procedures that would be implemented to ensure that employees are given sufficient warning regarding an impending flood event;
    (g) identify the procedures to be followed and contingency actions to be implemented in the event that the site is inundated during a flood event to protect:
        - the integrity of structures on site that are used to store ammonium nitrate to prevent release of ammonium nitrate into floodwaters and the local environment;
        - human safety;
    (h) identify emergency evacuation routes, flood warning alarms, and evacuation procedures; and
    (i) include a staff training program to be implemented to ensure existing and future employees are well trained and drilled in executing the flood emergency response procedures detailed within this plan.

Water Management

22. The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Director-General. This plan must:
    (a) be prepared in consultation with Council, OEH and NOW by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) include final details of water use, management and license requirements for the development;
    (d) include a Stormwater Management Plan that demonstrates how the requirements of Condition 23 of this Schedule have been addressed; and
    (e) include a Surfacewater and Groundwater Monitoring and Mitigation Plan that includes:
        - a methodology to be followed to establish baseline data on surface and groundwater quality and groundwater levels;
        - a program to monitor surface water flows and quality, and ecosystem health immediately downstream of the site;
        - a program to monitor groundwater levels and quality beneath the site and groundwater dependent ecosystems;
        - surface and groundwater impact assessment criteria including trigger levels for investigating adverse impacts and implementing mitigation measures;
        - protocols for investigation and implementing mitigation measures for identified exceedances of the surface and/or groundwater impact assessment criteria; and
        - a schedule of improvements to be implemented to the stormwater management and collection system at the site in the event that exceedances of the surface and/or groundwater impact assessment criteria are identified or contaminated water is found to be leaving the site.

23. The Stormwater Management Plan must:
    (a) include final detailed design specifications for the stormwater management and collection system;
    (b) ensure that the stormwater management and collection system is designed and installed generally in accordance with the conceptual design in the EIS/RTS, applicable Australian Standards and industry standard best practice guidelines;
    (c) detail how stormwater runoff from the site would be conveyed;
    (d) detail how (and ensure that) stormwater run off from the site would be restricted to pre-development rates or less;
    (e) ensure that no additional stormwater run off from the site would flow into the adjacent rail corridor;

(f) ensure that stormwater discharged off-site meets the pollutant load reduction targets outlined in Section 7.06 of Council's DCP and the water quality performance indicators outlined in Table 3.3.2 of the ANZECC Guidelines; and
(g) describe the measures that would be implemented to maintain stormwater infrastructure for the life of the development.

NOISE AND VIBRATION

Noise Limits

24. The Applicant shall ensure that the noise generated by the operations on-site does not exceed the limits in Table 1 at any private residential receiver.

Table 1: Noise impact assessment criteria dB(A)

Location	Day	Evening	Night	
	$L_{Aeq(15\ minute)}$	$L_{Aeq(15\ minute)}$	$L_{Aeq(15\ minute)}$	$L_{A1\ (1\ minute)}$
R1 Residence on Blanch Street	39	39	39	54
R3 Residence on Astra Street	42	42	42	54
R4 Residence on Wallsend Road	42	42	42	55
R5 Residence on Wallsend Road	42	42	42	54
R6 Residence on eastern side of Pacific Highway	60	57	54	54
R7 Residence on western side of Pacific Highway	60	57	54	54
R8 St Joseph's Aged Care Complex	43	40	39	54

Notes:
- *To identify a residential receiver location, refer to Appendix C of this consent and Appendix I of the EIS;*
- *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and*
- *To avoid doubt, the responsibility for noise generated by trains off-site in the corridor of the Main Northern Railway Line lies with the owner and/or lessee of that corridor.*

Operating Hours

25. The Applicant shall comply with the operating hours in Table 2 for the site, unless otherwise agreed in writing by the Director-General.

Table 2: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7.00am – 6.00pm
	Saturdays	8.00am – 1.00pm
	Sundays and Public Holidays	Nil
Operations	Monday - Sunday	6.00 am to 10.00 pm
	Public Holidays	Nil

Operating Conditions

26. The Applicant shall:
    (a) implement best management practice, including all reasonable and feasible measures to prevent and minimise noise and vibration during construction and operation of the development (including low frequency noise and traffic noise);
    (b) minimise the noise impacts of the development during adverse meteorological conditions when noise criteria do not apply;
    (c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
    (d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

Noise Management

27. The Applicant shall prepare and implement a Noise and Vibration Management Plan for the development in consultation with the EPA and to the satisfaction of the Director-General. The plan must:
    (a) be prepared and implemented by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operations;
    (c) describe the measures that will be implemented to minimise noise and vibration from the operation of the development and ensure:
        - best management practice is being employed on site;
        - traffic noise is effectively managed;
        - the noise impacts of the development are minimised during any meteorological conditions when the noise criteria in this consent do not apply; and
        - compliance with the relevant conditions of this consent.
    (d) describe the noise management system;
    (e) includes a noise monitoring program that:
        - is capable of evaluating the performance of the development;
        - includes a protocol for determining exceedances of the relevant conditions of this consent and responding to complaints;
        - adequately supports the noise management system;
        - evaluates and reports on the effectiveness of the noise management system; and
        - includes a protocol for the implementation of further mitigation in consultation with the EPA in the event that the development is found not to be complying the conditions of this consent.

Noise Validation

28. Within 2 months of the commencement of operations, the Applicant shall undertake Noise Compliance Monitoring. The Monitoring shall:
    (a) be undertaken by a suitably qualified and experienced expert in consultation with the EPA;
    (b) be submitted as a report to the EPA and the Department within 2 weeks of its completion;
    (c) be undertaken to present worst-case noise operations during a period of combined truck and rail operations as described in Annexure I of the EIS;
    (d) include noise monitoring undertaken at day, evening and night (including shoulder periods), as defined in the EPA's Industrial Noise Policy, over 3 consecutive operating days for a minimum of:
        - 1.5 hours during the day;
        - 30 minutes during the evening; and
        - 1 hour at night.
    (e) compare the noise monitoring results against the noise modelling predictions (including that for shoulder periods) in the EIS;
    (f) identify whether the project is complying with the development noise limits specified in Condition 24 of this Schedule; and
    (g) outline the mitigation measures to be implemented if exceedences of the development noise limits (Condition 24) or the noise modelling predictions in the EIS are identified, to the satisfaction of the Director-General.

AIR QUALITY

Odour

29. The Applicant shall ensure the development does not cause or permit the emission of any offensive odour (as defined by the POEO Act).

Dust Criteria

30. The Proponent shall ensure that dust generated by the development does not exceed the criteria listed in Tables 3 to 5 at any private residential receiver, or on more than 25 percent of any privately owned land surrounding the site.

Table 3: Long term criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Total suspended particulate (TSP) matter	Annual	[a]90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a]30 µg/m^3

Table 4: Short term criterion for particulate matter

Pollutant	Averaging period	[d] Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 5: Long term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total[1] deposited dust level
[c]Deposited dust	Annual	[b]2 g/m^2/month	[a]4 g/m^2/month

Notes for Tables 3 -5:

- *[a]Total impact (i.e. incremental increase in concentrations due to the Development plus background concentrations due to other sources);*
- *[b] Incremental impact (i.e. incremental increase in concentrations due to the Development on its own);*
- *[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method*; *and*
- *[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed to by the Director-General in consultation with the EPA.*

Dust Minimisation

31. The Applicant shall ensure that:
    (a) all vehicles on site do not exceed a speed limit of 20 kilometres per hour;
    (b) all loaded vehicles entering or leaving the site have their loads covered; and
    (c) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.

Operating Conditions

32. The Applicant shall:
    (a) implement best management practice, including all reasonable and feasible dust and odour mitigation measures to prevent and minimise dust emissions from construction and operation of the development;
    (b) prevent and minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events;
    (c) regularly assess air quality monitoring data and relocate, modify, and/or stop operations to ensure compliance with the relevant conditions of this consent; and
    (d) minimise surface disturbance of the site, other than as permitted under this consent.

Greenhouse Gas

33. The Applicant shall implement all reasonable and feasible measures to minimise:
    (a) energy use on site; and
    (b) greenhouse gas emissions produced on-site, to the satisfaction of the Director-General.

Air Quality Management

34. The Applicant shall prepare and implement an Air Quality Management Plan for development in consultation with Council and the EPA. The plan must:
    (a) be prepared and implemented by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operation;
    (c) describe the measures that will be implemented to ensure:
        - best management practice is employed;
        - generation of dust from AN handling and internal vehicles movements on site is minimised as far as reasonably practicable;
        - the air quality impacts (in particular dust and odour) from operations are minimised during adverse meteorological conditions and extraordinary events; and
        - compliance with the relevant conditions of this consent.
    (d) describes the air quality management system; and
    (e) includes an air quality monitoring program that:
        - is capable of evaluating the performance of the development;
        - includes a protocol for determining any exceedances of the relevant conditions of consent and responding to complaints;
        - adequately supports the air quality management system;
        - evaluates and reports on the effectiveness of the air quality management system; and
        - includes a protocol for the implementation of further mitigation in consultation with the EPA and Council in the event that the development is found not to be complying the conditions of this consent.

TRAFFIC

Bicycle Enclosure

35. The Applicant shall provide a secure bicycle enclosure for at least 3 bicycles on site to encourage the use of sustainable transport to and from work.

Rail Traffic

36. The Applicant shall ensure that 1 train (2 movements) in total (with a maximum of 40 carriages at 76 tonnes per carriage) is permitted to ingress and egress from the site in any 24 hour period.

Rail Traffic Management

37. The Applicant shall prepare and implement a Rail Transport Code of Conduct for the development to the satisfaction of the Director-General. This Plan must:
    (a) be prepared in consultation with ARTC by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operation;
    (c) detail operational rail traffic management measures including driver code of conduct, locomotive arrival and departure procedures (e.g. reduced locomotive speed);
    (d) outline measures to minimise rail traffic noise;
    (e) detail procedures to ensure trains do not queue on the public rail or road network; and
    (f) detail measures to minimise rail traffic related conflicts with existing rail operations.

Road Traffic

Operating Conditions

38. The Applicant shall ensure that:
    (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest versions of *AS 2890.1* and *AS 2890.2*;
    (b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with *AUSTROADS – Guide to Road Design*;
    (c) the development does not result in any vehicles queuing on the public road network;
    (d) heavy vehicles and bins associated with the development do not park or stand on local roads or footpaths in the vicinity of the site;
    (e) all vehicles are wholly contained on site before being required to stop;
    (f) all loading and unloading of materials is carried out on site; and
    (g) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Road Traffic Management

39. The Applicant shall prepare and implement a Traffic Management Plan for the development, to the satisfaction of the Director-General. The plan must:
    (a) be prepared in consultation with Council and RMS by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to commencement of operation;
    (c) include a plan showing the designated haulage route/s to be used by heavy vehicles during operation;
    (d) include a heavy vehicle driver code of conduct;
    (e) describe the measures that will be implemented to ensure:
        - the nominated haulage route/s in used;
        - conflicts with other road users are minimised;
        - haulage is minimised or routes altered to avoid impact on the local traffic network;
        - drivers adhere to the code of conduct;
        - compliance with the relevant conditions of this consent; and
    (f) include a program to monitor the effectiveness of these measures.

WASTE

Classification

40. The Applicant shall ensure that any waste generated on the site during construction is classified in accordance with the EPA's *Waste Classification Guidelines* and disposed of to a facility that may lawfully accept the waste.

Asbestos Handling

41. The Applicant shall ensure that any asbestos encountered during construction is handled and disposed of by appropriately qualified and licensed contractors in accordance with the relevant guidelines, the *Work health and Safety Regulation 2011* and in consultation with WorkCover.

Asbestos Management

42. Upon the commencement of construction, the Applicant shall implement the Asbestos Management Plan in Annexure C of the EIS including all recommendations of this plan.

Waste Management

43. The Applicant shall prepare and implement a Waste Management Plan for the development to the satisfaction of the Director-General. This Plan shall:
    (a) be prepared in consultation with the EPA by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) detail the type and quantity of waste to be generated by the construction and operational phases of the development;
    (d) detail the materials to be reused or recycled, either on or off site;
    (e) detail the procedures for handling, storage, collection of recycling and disposal of waste in accordance with the best practice industry standards and guidelines; and
    (f) detail the measures to ensure that waste (particularly liquid waste) is not released into the local environment.

HERITAGE

44. The Applicant shall conduct heritage education inductions for all construction personnel at the site (including procedures for keeping records of inductions) including site identification, protection and conservation of Aboriginal and historic heritage. Inductions must be developed in consultation with suitable representatives of the local Aboriginal community such as registered Aboriginal parties and inductions records must be kept and made available to the Director-General upon request.

45. The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. In the event that an Aboriginal cultural object(s) is uncovered, a suitably qualified and experienced archaeologist, suitable representatives of the local Aboriginal community such as registered Aboriginal parties and the OEH must be contacted to determine the significance of the object(s). In addition, in the event that human remains are uncovered onsite, NSW Police are to be notified. Works shall not resume in the designated area until consent in writing from the NSW Police and/or the OEH has been obtained.

VISUAL IMPACT

Lighting

46. The Applicant shall ensure that the lighting associated with the development:
    (a) complies with the latest version of *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.

Signage

47. The Applicant shall not install any advertising signs on site without the written approval of the Director-General.

ENERGY AND WATER EFFICIENCY

48. The Applicant shall implement all energy and water efficiency measures outlined in the EIS and regularly review opportunities to implement further efficiency measures.

SECURITY

49. The Applicant shall:
    (a) install and maintain a perimeter fence and security gates on the site;
    (b) ensure that all buildings on-site that contain dangerous goods are locked whenever they are unattended;
    (c) ensure that the security gates on-site are locked whenever the site is unattended; and
    (d) ensure that a suitably qualified and experienced person (or persons) is employed to keep the site secure 24 hours, 7 days a week (i.e. a security guard/s).

FIRE MANAGEMENT

50. The Applicant shall:
    (a) implement suitable measures to minimise the risk of fire on-site;
    (b) extinguish any fires on-site promptly; and
    (c) maintain adequate fire-fighting capacity on-site.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

1. The Applicant shall prepare and implement a Construction Environmental Management Plan for the development to the satisfaction of the Director-General. The Plan must:
   (a) be prepared by a suitably qualified and experienced person;
   (b) be approved by the Director-General prior to the commencement of construction;
   (c) identify the statutory approvals that apply to the development;
   (d) consolidate all relevant management plans and monitoring programs required in the conditions of this consent and committed to in the EIS;
   (e) outline all environmental management practices and procedures to be followed during construction and demolition works associated with the development;
   (f) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;
   (g) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
   (h) describe of the roles and responsibilities for all relevant employees involved in construction and demolition works associated with the development; and
   (i) include arrangements for community consultation and complaints handling procedures during construction and demolition.

Operational Environmental Management Plan

2. The Applicant shall prepare and implement an Environmental Management Plan for the development to the satisfaction of the Director-General. This Plan must:
   (a) be prepared by a suitably qualified and experienced person;
   (b) be approved by the Director-General prior to the commencement of operation;
   (c) provide the strategic context for environmental management of the development;
   (d) identify the statutory requirements that apply to the development;
   (e) consolidate all relevant management plans and monitoring programs required in the conditions of this consent and committed to in the EIS;
   (f) outline the arrangements to ensure compliance with conditions of this consent for the life of the development, in particular Conditions 2, 3, 14 and 17 in Schedule 3;
   (g) include a review of current site environmental management practices;
   (h) based on the review required under subsection (g) of this condition, include a schedule of actions with timeframes to be implemented to improve site environmental management practices, in particular measures to improve handling of AN to minimise spillages;
   (i) include final details of how the environmental performance of the development would be managed and monitored;
   (j) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the development;
      - respond to any non-compliance;
      - manage cumulative impacts;
      - respond to emergencies; and
   (k) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.

ENVIRONMENTAL REPORTING & AUDITING

Incident

3. Upon detecting an exceedance of the limits/performance criteria in this consent or the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall immediately (or as soon as practical thereafter) notify the Department and other relevant agencies of the exceedance/incident. Within 7 days of the date of the incident, the Applicant shall provide the Director-General and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Independent Environmental Audit

4. Within one (1) year of the commencement of operations of the development, and every three (3) years thereafter, or as otherwise agreed by the Director-General, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
   (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this consent and any relevant EPL (including any plan or program required under these consents);
   (d) review the adequacy of any plans or programs required under these consents; and, if appropriate;
   (e) recommend measures or actions to improve the environmental performance of the development, and/or any plan or program required under these consents.

   Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.

5. Within 6 weeks of completing any Independent Environmental Audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

APPENDIX A – MANAGEMENT AND MITIGATION MEASURES

Item	Management and/or Mitigation Measure	Implementation C - Construction O - Operation
	General	
A1	Crawfords would implement all practical measures to avoid, or minimise any impacts to the environment that may arise from the operation of the proposal.	C,O
A2	Should the proposal be granted development consent, Crawfords would make a separate application to the NSW EPA for an EPL prior to the operation of the proposal.	C
A3	Crawfords employees and contractors would undergo an updated training/induction program in accordance with the CEMP, OEMP, Safety Management System (SMS) and other training commitments as required by any consent conditions. All personnel involved in site and transportation operations will be made aware of their environmental obligations and the need to comply with conditions of consent.	C,O
A4	Crawfords would continue the appointment of an Environment and Community Management Representative to ensure the implementation of all environmental management measures. The representative would ensure that all measures are being effectively carried out in accordance with the CEMP, OEMP, SMS and all environmental approval and legislative requirements.	C, O
	Hazard and Risk	
B1	The OEMP should incorporate the development of the SMS in accordance with HIPAP No.9 (DoP, 2011b) incorporating the following framework: • management of the SMS; • hazard identification and risk assessment; • standard operating procedures; • process safety information; • contractor management; • pre-commissioning reviews; • equipment integrity; • safe work practices; • management of change; • incident reporting and investigation; • employee selection, training and education; • procurement; • emergency planning (*site emergency plan);* • security; • auditing; • drug and alcohol testing; and • rail work fatigue management.	C,O
B2	An inspection, testing and preventative maintenance program would be developed, implemented and maintained as part of the OEMP/SMS to ensure the reliability and availability of key safety equipment.	I,O
B3	An inspection, testing and preventative maintenance program would be	C,O

	developed, implemented and maintained to ensure that all company owned and contracted mechanical equipment, including fleet vehicles, are maintained in accordance with Australian Standards and the SMS.	
B3	Measures for the storage, handling and transportation of AN would be implemented in accordance with ISO 31000 and AS4326 (2008) to reduce the likelihood of an explosion due to fire, contamination or high energy impact. These measures are to be incorporated into the site SMS.	C,O
B4	All 'route plan and risk assessments' shall be included in the OEMP/SMS. A review of all 'route plan and risk assessments' shall be undertaken every six months.	C,O
B5	The current Site Emergency Plan (SEP) shall be reviewed and developed in accordance with HIPAP No.1 (DoP, 2011a) and incorporated into the CEMP and OEMP.	C,O
B6	The SEP should make provision for the following emergency events; • heat radiation; • fire; • fume emission; • explosion; • flood; • release of contaminants; • major transport incident; • malicious act; • communicated threat; and • any combination of the above factors.	C,O
B7	The following site specific flood mitigation measures shall be incorporated into the SEP. In advance of any flood warning received from the BoM for a 2% or 1% AEP flood event, Crawfords would employ the following measures to minimise the risk of flood waters entering product stores: • advise stakeholders and customers in the 48 hours leading up to a 2% AEP flood event that no additional product will be received or stored on site; • each AN store shall have as a component of the emergency response equipment a supply of 250 micron four metre wide polythene construction membrane sufficient to encase the entire internal perimeter of the stores leaving no gaps and allowing two metre overlap at joins; • in response to a 1% AEP flood event, the AN stacks shall be reconfigured by placing the outer rows of flexible IBCs against store walls. Stacks shall also be reconfigured to remove segregation gaps between stacks and ensure no voids between individual flexible IBCs or bag stacks and walls. Reconfiguration of AN stacks would incorporate the movement of any product stored in containers into the reconfigured warehouses. The doors of any empty containers would be opened allowing them to fill with water thereby eliminating their ability to float should they become submerged. • during the repositioning of the flexible IBCs, the 250 micron polythene membrane shall be placed against the store walls allowing one metre of membrane under the outer row of bags and three metres of membrane in vertical contact with the internal surface of store walls; • supply of pre filled sandbags sufficient to construct 2m x 8m x 1m high internal seepage dam and additional supply of 250 micron four metre wide polythene construction membrane sufficient to line the seepage dam; • in response to a 1% AEP flood event, pedestrian access doors shall be sandbagged and polythene sheeted externally, and internal seepage dams shall be constructed adjacent to each vehicular access door to eliminate flood water ingress; • flooding emergency events shall be reported in accordance with the Site Emergency Plan; and • termination of a flooding emergency will be undertaken in accordance with the Site Emergency Plan.	C,O

B8	The following site specific fire mitigation measures shall be incorporated into the SEP: • check hydrants are available and in working order; • ensure hoses and hose reels are not perished and fittings are tight and in good order; • ensure the access road is in good condition with trees not forming an obstacle during smoky conditions; • ensure perimeter roads are free of obstacles to provide access for fire fighting appliances and personnel; • check roof lines for dislodged roofing materials; • ensure screens on windows and doors are in good condition without breaks or holes in fly screen material and frames are well fitted into sills and window frames; • ensure that where fitted drenching or spray systems are regularly tested before the commencement of the fire season; • ensure combustible materials are located down slope and well away from the buildings; • combustible materials are to be located well away from buildings that store AN. The Hazard Analysis for the site (HSE 2012) prescribes that stores will be kept clear of vegetation and any other combustible materials for a distance of a least 5 m around the external perimeter of the store; and the Hazard Analysis for the site (HSE 2012) prescribes that vehicles powered by internal combustion engines operated within the stores should be diesel-powered, fitted with a battery isolation switch and insulated cover over the battery, and be fitted with a spark arrestor and dry-powder extinguisher. Vehicles should be kept outside the store when not in use, be started outside the store and be garaged at least 10 m from the store.	C,O
B9	The current Site Security Plan shall be reviewed and incorporated into the CEMP and OEMP.	C,O
B10	The following engineering modifications to the storage sheds will be undertaken for flood proofing purposes: • retrofitting precast concrete doors to the two openings at the front of Sheds A and B as a flood emergency response; • application of an impervious sealant to the walls of Sheds A and B that protects against ingress of water in a 1% AEP event level plus 500mm freeboard; • sealing of the concrete floor expansion joints/voids within Sheds A and B with impervious epoxy resin to reduce the potential surface/groundwater product exposure pathway; and • within Shed C, fitting of cast concrete panels between and secured to the building columns, and sealing of joints using the impervious sealant product that is to be used to seal the timber panels of Sheds A and B.	C
B11	Engineering certification of the structural integrity of the sheds under a flood event (2% and 1% AEP) will be undertaken by Crawfords prior to building modification works to ensure proposed flood mitigation measures are adequate. Any relevant recommendations as a result of the engineering assessment will be implemented, as required, to ensure shed structural stability.	C
B12	The Proponent shall put in place measures to ensure that public access to the area on the western side of the Main Northern Rail Corridor affected by the $10x10^{-6}$ Individual Fatality Risk Contour as outlined in the Hazard Analysis is restricted.	O
	Soil and Groundwater	
C1	The CEMP shall include the following controls with regard to the control of sedimentation and contaminants: • works will not take place during heavy rainfall; • undertake stripping of soil, immediately before starting bulk earthworks;	C

	• suitable areas for any temporary stockpiling of excavated soil and debris (on flat ground) will be clearly identified and delineated before the commencement of works;	
	• ensure stockpiles are:	
	• stabilised if they are to be in place for more than 10 days;	
	• protected from run-on water by installing water diversion structures; and	
	• installed with sediment filters immediately downslope to protect other lands and waterways from; and	
	• all erosion, sediment control and runoff diversion measures will be established before any excavation begins. These will be left in place throughout works execution and beyond works completion until all surfaces have been fully restored and stabilised.	
C2	Maintenance and checking of proposed erosion and sedimentation controls would be undertaken on a monthly basis and records kept and provided upon request.	C,O
C3	Sediment would be cleared from behind barriers on a regular basis and all controls would be managed in order to work effectively at all times, that is, sedimentation controls would be less than 50% full at all times.	C,O
C4	Any material transported onto pavement surfaces would be swept and removed at the end of each working day.	C,O
C5	Hardstand material as proposed would be implemented on all trafficable areas to minimise erosion and the tracking of soil and particulates onto pavement surfaces.	C,O
C6	Given PASS were identified on site, further analysis and management of soils at the site may be required if excavation of natural estuarine sediments is to occur. If ASS are encountered during construction, an ASS management plan would be prepared in accordance with the ASS Manual *(ASS Management Advisory Committee 1998).*	C,O
C7	Implementation of groundwater management plan within the construction and operations environmental management plans to manage potential risks associated with potential acid sulphate soils (PASS) and elevated concentrations of ammonia, nitrogen, PAHs and metals as reported in *Targeted Phase II Environmental Site Assessment, Lot 12 Old Maitland Road Sandgate* (ERM, 2012);	C,O
C8	Prior to the commencement of activities on site, the site should be notified under Section 60 of the CLM Act 1999.	C
	Groundwater	
D1	A Groundwater Management Plan (GWMP) will be developed and included within the OEMP to assess the effectivenes of improvements in management of AN on site. This plan will identify appropriate sampling techniques, locations and provide baseline data.	O
D2	A groundwater monitoring programme will form part of the GWMP to assess ammonia and nitrogen concentrations and the measurable effects of improvements in the management of ammonium nitrate on the site. Monitoring parameters would include ammonium, total oxidised nitrogen, pH, and select dissolved elements.	O
	Surface water and waste water	
E1	A surface water management plan (SWMP) would be developed as part of the CEMP and OEMP to manage stormwater runoff. This plan would be developed in accordance with 'The Blue Book' *Managing Urban Stormwater – Soils and Construction Volume 1 and 2* (Landcom, 2004). The plan would outline:	C,O
	• measures to manage soils in line with the Soil and Erosion Management Plan;	
	• provision of permanent on-site water storage to the volume of 320 m^3, and	
	• measures to prevent the movement of contaminated run off.	

	The SWMP will incorporate a surface water monitoring program for monitoring of surface water quality and ecosystem health in the aquatic receiving environments to the east of the site. The program will incorporate bi-annual surface water monitoring at the site to assess ammonia and nitrogen concentrations and the effects of improvement on the management of ammonium nitrate on the site. The surface water monitoring programme will assess as a minimum in-situ water quality measurements (temperature, salinity, dissolved oxygen, turbidity, pH and oxidation-reduction potential) with laboratory analysis reporting on Ammonia, Total Oxidised Nitrogen (nitrite and nitrate), TSS, total phosphorus and chlorophyll-a levels. The program will include baseline water quality sampling from the existing stormwater outlet to confirm typical runoff quality prior to application of proposed stormwater treatment measures and to assist in the development of trigger values/targeted concentrations based on these observed values and review of data for other industrial sites in the local area. Sampling will be undertaken at the three main stormwater outlets /drainage pits near the site boundary and the inlet to Treatment Zone 1 basin. Typical spatio-temporal dimensions would include: - Four sampling events annually at each outlet/drainage pit near the boundary; - Sampling only to occur during rainfall events. Samples to be tested in NATA lab for nitrogen species (NOx, NH4, + NH3, TKN, TN), TP, TSS, heavy metals. Insitu testing for pH, temp, EC, turbidity, DO; - Annual inspection of stormwater management structures to check operational aspects and assess need for any maintenance, and of vegetated basins to specifically check vegetation growth, replant dead specimens, bare patches, identify need to harvest and replant, check measures draining appropriately and media not blocked.	
E2	Fire water management would ensure that, in the event of a fire on site, there is no loss of containment off the site of potentially contaminated water.	O
E3	The OEMP will detail hydrocarbon spill procedures and ensure that servicing of plant, equipment and vehicles is appropriately managed.	O
	Flora and Fauna (Ecology)	
F1	A Flora and Fauna Management Plan (FFMP) would be developed and incorporated as part of the CEMP and OEMP. The FFMP should include: • avoidance of the use of biocides and implementing erosion and sediment controls; • rehabilitation/landscaping works to incorporate native flora species that have the potential to provide foraging resources for native fauna species; • educate site personnel as to the appearance and location of native threatened and pest species. All sightings (location, time, date and description) of native threatened species shall be recorded; and • lighting shall be redirected to reduce unnecessary light spill that may have potential to impact nocturnal fauna.	C,O
	Air Quality	
G1	Regular use of a road sweeper over the sealed surface to remove the build-up of any particulate matter.	C,O
G2	Continued use of the screw auger when transferring AN from flexible IBCs into bulk trucks which limits the amount of emissions generated.	O
G3	Continued use of sealed off areas on site to limit the generation of emissions.	O
G4	The efficiency of all upgraded mobile and fixed equipment be considered during procurement for fuel-powered equipment.	O
G5	Investigate opportunities for low emission transportation of AN (ie utilise transport trucks that use biodiesel as opposed to regular diesel).	O
G6	Investigate opportunities for using increased quantities of biodiesel in on site	O

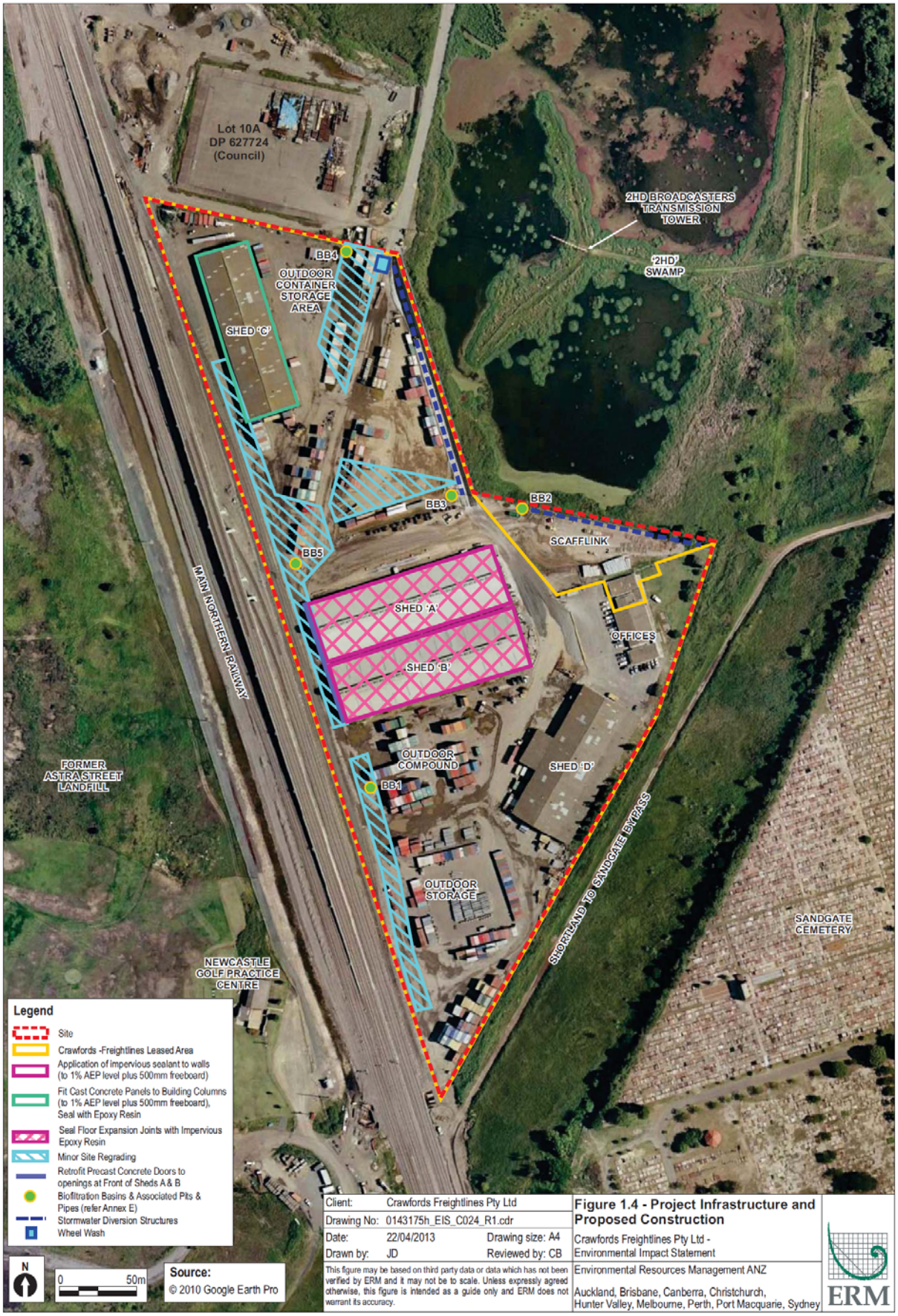
	plant.	
G7	Select vehicle size for purchase based on task ie larger vehicles generally have a lower emissions intensity than smaller vehicles.	O
G8	Site management to ensure that equipment is maintained to retain energy efficiency.	C,O
G9	Site management to check current vehicle fleet and consider the installation of aerodynamic features to reduce fuel consumption.	O
G10	Minimise running of empty trucks where possible ie look at back loading vehicles.	O
G11	Optimise freight loads so that all trucks are full.	O
G12	Reduce packaging and packaging weight to maximise use of productive space and minimise waste ie bulk product in place of flexible IBCs.	O
G13	Incorporation of a driver behaviour education program on fuel and energy efficiency which identifies: • slow acceleration to the average driving speed; • selection of route to optimise driving at speeds that optimise fuel efficiency; • driving at speeds that avoid the need for heavy braking; • leaving adequate distance between vehicles to avoid the need for heavy braking; • using roads at times of least congestion to prevent idling time and stop/start driving; and • minimise idling loses by turning vehicles off when not driving. Cab comfort can be maintained through the use of generators allowing engines to be switched off. •	O
	Greenhouse Gas	
H1	Energy audits will be held when practicable to ensure that the site is using current practice techniques to minimise energy use and is operating at optimum energy levels; and	O
H2	Investigate opportunities for purchasing part or all of electricity consumption from renewable sources.	O
	Noise and Vibration	
I1	In principle noise management measures during construction works include: • application of all feasible and reasonable work practices to meet the noise affected level; and • inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.	C
I2	Good practice construction noise management measures which, subject to actual construction work requirements, may be investigated include: • works should adhere to the standard construction hours of work, with no out of hours works to be undertaken; • ensure site managers periodically check the site and nearby residences and other sensitive land uses for noise problems so that solutions can be quickly applied; • regularly instruct workers and contractors (such as toolbox talks) to use equipment in ways to minimise noise. Site workers are to be made aware of the potential noise impacts and are to be encouraged to take practical and reasonable measures to minimise disturbance; • keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling);	C

	• equipment should be selected to minimise noise emissions, where feasible and reasonable;	
	• equipment and plant should be properly maintained to ensure normal operating performance and minimise noise emissions;	
	• equipment and plant found to produce excessive noise compared to normal industry expectations should be removed from the site or stood down until repairs or modifications can be made;	
	• noise emissions from reversing alarms should be minimised, although use of such alarms should still be satisfactory to achieve occupational health and safety requirements; and	
	• consideration for the placement of possible noise sources should be taken into consideration and clustering of noisy plant items avoided. Static plant, for example generators, concrete mixers etc, will be placed as far as it is practicable from potential noise sensitive areas.	
	A Construction Noise Management Plan will be incorporated into the CEMP to expand on the construction noise management measures above and to address the specific construction works proposed.	
I3	The following noise management measures will be incorporated into the OEMP during the evening and morning shoulder period:	O
	• heavy vehicle drivers to be instructed to quietly enter and exit the site and should be instructed to limit extended periods of vehicle idling time. Where vehicle idling is unavoidable ERM recommends that Crawford's utilise on site structures (eg buildings or shipping containers etc) to obstruct noise sources from the nearest sensitive receptor location, where practical;	
	• the use of mobile plant motion alarms should be limited. Plant and equipment usage on site should be optimised during these periods to maximise forward motion, which will reduce motion alarms that typically sound in reverse. Where this is not achievable, visible alarms (ie flashing lights instead of audible alarms) or installation of "squashed duck" type alarms which are known to be less intrusive than standard alarms; and	
	• the use of large forklifts (ie 36T) should be limited. Where large forklift usage is required, the operators should be instructed to operate the equipment following normal good operational practices.	
	Waste Management	
J1	A Waste Management Plan (WMP) will be prepared for the site as part of the CEMP and OEMP. This would be developed prior to the commencement of construction activities and would include:	C,O
	• identification of requirements for waste avoidance, reduction, reuse and recycling;	
	• procedures for meeting legislative requirements;	
	• where possible, waste suitable for reuse or recycling would be treated in accordance with the NSW Government's Waste Reduction and Purchasing Policy;	
	• procedures for obtaining the required approvals for the management of waste;	
	• stockpile location and management;	
	• clear labelling of stockpiles;	
	• procedures to minimise waste movements around site;	
	• measures to minimise leaching of stockpiles;	
	• procedures for waste AN to be recovered as soon as possible following a spill using clean brooms and shovels. To avoid possible contamination use of clean up equipment would be restricted to AN stores only;	
	• procedures for the removal of spilt AN. Flushing with water would not be permitted;	
	• AN waste contaminated with organic substances shall be treated as Class 1 Explosive, removed from the AN store and managed accordingly;	

	• waste should be seen as hazardous if the content of waste is unknown;	
	• all sampling and classification results for the life of the project to demonstrate compliance with the EPA Waste classification guidelines will be retained;	
	• the site will be maintained and kept free of rubbish and cleaned up at the end of each working day; and	
	• any noxious plant species removed from the site would be bagged and disposed of at a licensed landfill.	
J2	The Asbestos Management Plan (ERM, 2012b) (refer to *Annex C*) which has been prepared for the site and identifies procedures and practices to be implemented for the safe management of asbestos on the site shall be appended to the WMP.	O
J3	A licenced waste management contractor would be used to remove waste from the site for reuse, recycling or disposal.	C,O
	Traffic and Transport	
K1	The current Traffic Management Plan (TMP) will be reviewed and updated as part of the OEMP. The TMP would outline:	O
	• Hours of permitted vehicle activity;	
	• Designated routes for traffic and defined access points to the site;	
	• when practical, maximise loads to reduce truck movements;	
	• if practical, minimise transport movements during the identified peak periods;	
	• designated areas within the site for truck turning movement, parking, loading and unloading to allow heavy vehicles to enter and leave the site in a forward direction;	
	• procedures and/or principles for vehicle speed limits and the safe operation of vehicles; and	
	• guidelines that will ensure drivers obey all road rules.	
	Heritage	
L1	The following measures will be undertaken to reduce potential impacts to indigenous heritage:	C,O
	• all construction personnel working on site would receive training in their responsibilities under the National Parks and Wildlife Act 1974. Records of training undertaken, including names of staff / contractors and date of training will be kept by Crawfords for the duration of the project. Where practicable, training will be developed and implemented in consultation with representatives of the local Aboriginal community;	
	• in the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeological specialist and representative of the local Aboriginal community must be contacted to determine the nature, extent and significance of the object(s). The site is to be registered in AHIMS (managed by OEH) and the management outcome for the site included in the information provided to AHMS. Crawfords will consult with representatives of the local Aboriginal community and the archaeological specialist to develop and implement management strategies for all objects / sites. If impacts are unavoidable, mitigation measures are to be undertaken in accordance with the heritage component of the Construction Management Plan. All sites impacted must have an Aboriginal Site Impact Recording form completed and submitted to the AHIMS registrar within three (3) months of completion of these works;.	

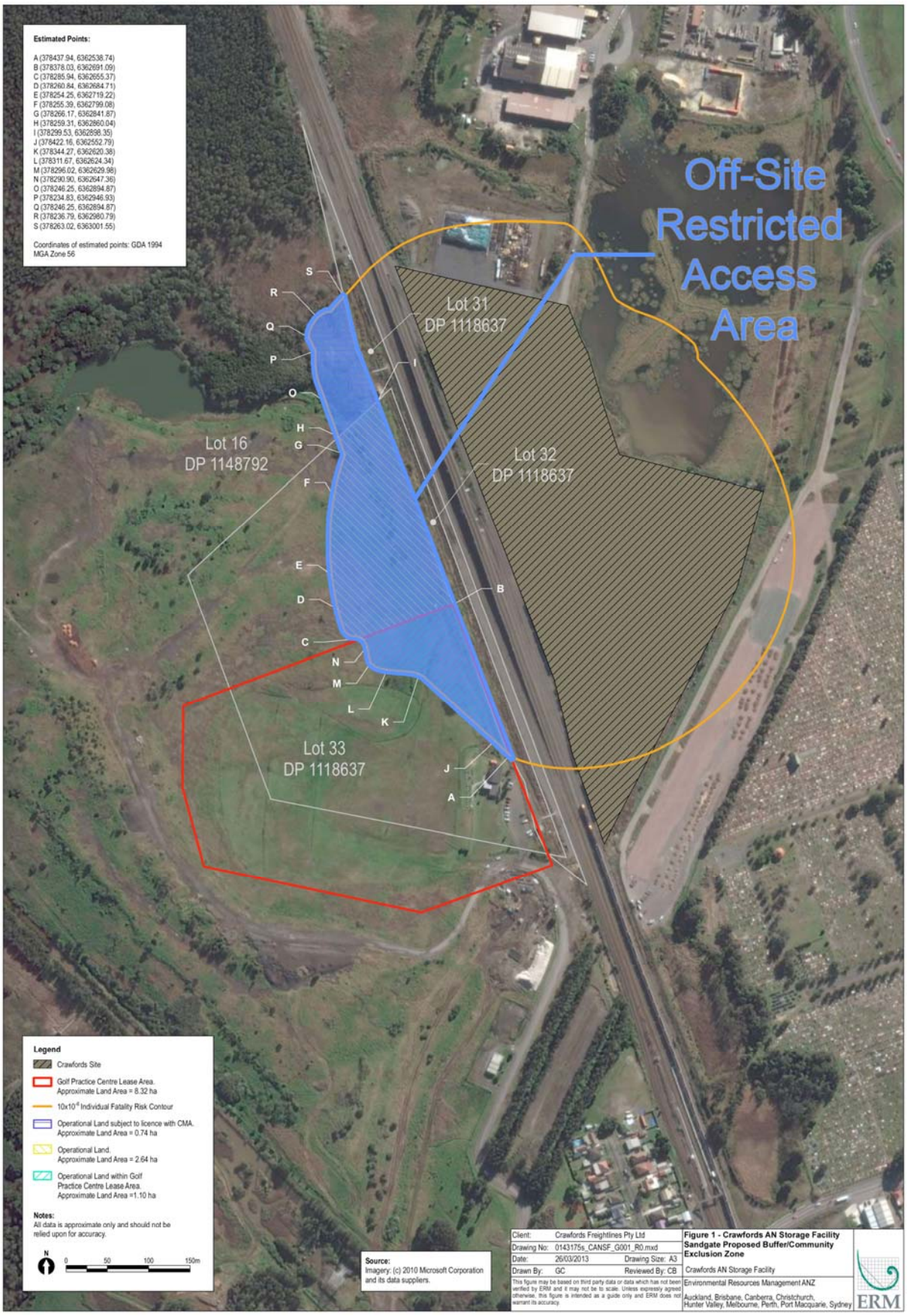
	• in the unlikely event that following surface disturbance human remains are located within the project area, all works in the immediate area are to halt to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be taken until the NSW Police provide written notification. If the skeletal remains are identified as Aboriginal, Crawford's will contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works will continue until OEH provides written notification; and	
	• the Aboriginal cultural heritage management measures identified above are to be detailed in the Construction Environmental Management Plan and Operational Environmental Management Plan, as relevant.	
L2	In the event European heritage items currently unidentified are uncovered as a result of the operations, all works will cease immediately until the item has been inspected by a qualified archaeologist and recommendations relating to the management of the item are made.	C,O
	Visual and Landscape	
M1	Night time operations are directly limited to deliveries of AN to the site only.	C,O
M2	Lighting should avoid the direct line of sight toward residences beyond the site.	C,O
M3	The use of floodlighting is to be minimised.	C,O
M4	Lighting would be focused only onto work areas during operation.	C,O

APPENDIX B – SITE PLAN



APPENDIX C – NOISE RECEIVER LOCATIONS

APPENDIX D – OFF-SITE RESTRICTED ACCESS AREA MAP



Appendix B – Consultation

NSW GOVERNMENT | Planning & Infrastructure

Contact: Andrew Hartcher
Phone: 02 9228 6503
Fax: 02 9228 6466
Email: andrew.hartcher@planning.nsw.gov.au

Our ref: 12/02330

M/s Amanda Antcliff
Environmental Planner
Environmental Resources Management Australia
PO Box 71
Thornton NSW 2322

Dear M/s Antcliff

Crawfords Ammonium Nitrate Storage and Distribution Facility (SSD-5119)
Operational Environmental Management Plan Approval

I refer to the revised Operational Environmental Management Plan (OEMP) dated August 2013 submitted electronically to the Department for approval on 7 August 2013 as required by Condition 2 of Schedule 4 of the consent for the above development (SSD-5119).

The OEMP contains a number of sub-plans that are required by the conditions of consent. These include:

- Flood Risk Management and Response Plan (Condition 21 of Schedule 4);
- Water Management Plan (Condition 23 of Schedule 4);
- Water Management Plan (Condition 23 of Schedule 4);
- Noise and Vibration Management Plan (Condition 27 of Schedule 4);
- Air Quality Management Plan (Condition 34 of Schedule 4); and
- Rail Traffic Transport Code of Conduct (Condition 37 of Schedule 4);
- Traffic Management Plan (Condition 39 of Schedule 4); and
- Waste Management Plan (Condition 43 of Schedule 4).

The Department has reviewed the revised OEMP and its sub-plans and is satisfied that they meet the terms of the relevant conditions of consent. These plans are therefore approved for operational purposes only, subject to you completing those amendments to the OEMP and commitments outlined in Table 1 of your letter to Newcastle City Council dated 2 August 2013.

The Department notes that a Construction Environmental Management Plan (CEMP) needs to be submitted to the Department for the development, prior to the commencement of construction works (i.e. the construction of the proposed stormwater management system). In particular, the CEMP will need to address the requirements of Condition 1 of Schedule 4 and consolidate all relevant management plans, requirements and monitoring programs required in the conditions of this consent and committed to in the EIS.

If you have any questions, please don't hesitate to contact Andrew Hartcher on the above details.

Yours sincerely,

14/8/13.

Chris Ritchie
Manager – Industry
Development Assessment Systems & Approvals
As the Director-General's nominee

Department of Planning and Environment

Our ref: Crawfords Ammonium Nitrate Storage Facility (SSD-5119-PA-6)

Mr Robert Tracey
HSSE and Compliance Manager
Crawfords Freightlines Pty Ltd
Old Maitland Road
SANDGATE NSW 2304

22 March 2023

Subject: Revised Operational Environmental Management Plan - Request for Additional Information

Dear Mr Tracey

I refer to the revised *Operational Environmental Management Plan Crawfords Freightlines Sandgate Site* (undated), submitted to the Department of Planning and Environment (the Department) in accordance with the Planning Secretary's directions dated 15 September 2020 and 18 December 2020 for the development.

The Department has reviewed the revised OEMP in consultation with Safework (refer Safework advice dated 28 February 2023 attached). The Department concurs with the matters raised by Safework and is requesting that you address the matters outlined in **Attachment 1** and Safework's advice to ensure the document meets the requirements of the directions and the development consent.

In particular, the Department and Safework are concerned the OEMP does not sufficiently demonstrate how the development is complying with Schedule 3 condition 3 of the development consent (SSD- 5119) in relation to ammonium nitrate stack separation distances.

You are requested to provide a revised OEMP to the Department by **Friday 21 April 2023**.

Should you wish to discuss any of the matters raised, the Department would be happy to facilitate a joint meeting with Safework at a mutually convenient time.

If you have any questions, please contact me on 9274 6431 or via email at sally.munk@planning.nsw.gov.au.

Yours sincerely,

Sally Munk
Principal Planner
Industry Assessments

Enclosed:
- *Safework Advice*
- *DPE Comments on revised OEMP*

ATTACHMENT 1

DPE Review of Revised OEMP

1. Secretary's Directions

The specific requirements for the revised OEMP set out in the Planning Secretary's directions have not been sufficiently addressed.

Recommendation: Additional detail must be provided in the revised OEMP to address all matters specified in the section 2 of the Planning Secretary's direction dated 18 December 2020. A table must be provided that sets out where each matter (including each sub-clause) has been addressed in the revised OEMP (i.e. a cross-reference table).

2. DPE Comments on OEMP

In addition to the matters raised by the Department below, all matters raised by Safework in its advice dated 28 February 2023 must be addressed in the revised OEMP.

General

- The OEMP needs to state the author and their position title and provide version number and date of the revision

Section 1 Introduction

- Section 1.1 of the OEMP states that DPE has withdrawn its approval to store AN in Shed C. This is not correct. DPE has not withdrawn any consent for use of this shed. The consent required Shed C to be upgraded to prevent ingress of floodwaters. It is understood that Shed C has not yet been made suitable for storage of AN and Safework has restricted use of Shed C for the storage of AN.
- Please check all cross-referencing in Table 1.2 as cross-referencing for the following conditions does not appear to be correct:
    - Schedule 3, conditions 2 and 3
    - Schedule 4, condition 2, clauses (a), (b), (f) and (g)

Section 2 Review of Site Environmental Management Practices

- Cross-reference to IEA outcomes refers to Appendix 1. Please check this cross-reference as it would appear that the summary of non-compliances and recommendations from the IEA is provided in Appendix C.

Section 4 Ammonium Nitrate Management

- The Department is not satisfied that this section of the OEMP demonstrates how Crawfords are seeking to comply with Schedule 3, condition 3 of the development consent (SSD-5119), as required by condition 2(f) of the development consent. Schedule 3, Condition 3, requires compliance with SAFEX separation distances or better to prevent involvement of more than half the storage capacity of each storage building in an explosion. The condition permits Crawfords to deviate from the SAFEX requirements for a short period of time when the storage is at maximum capacity. Section 4.5.2 of the OEMP states that the maximum inventory of AN that either Shed A or Shed B can store while complying with SAFEX separation distances is 4,000 tonnes (t), which the Department understands is therefore the maximum capacity of each shed.

Recommendation: The OEMP currently states that non-compliance with SAFEX may occur for more than 27 days, i.e. an indefinite period of time. The OEMP must clearly define what is the maximum time period Crawfords is not complying with SAFEX separation distances when storing > 4,000 t.

- Section 4.5.2 must clearly state that the primary guidance for the management of AN stack separation distances is SAFEX, as per Schedule 3, condition 3.
- The OEMP indicates that non-compliance with SAFEX stack separation distances may occur for an indefinite period greater than 27 days. It is the Department's preference that the OEMP state a maximum time period to clearly define 'a short period of time' for the purposes of demonstrating operational compliance with the consent.
- The stacking arrangement illustrated in Figure 4.1 indicates that the total volume of AN stored in each shed exceeds the maximum volume limit of 4,500t. The arrangement depicted could lead to an explosion event that involves AN quantities larger than what has been assessed in the approved Quantitative Risk Assessment and as such not consistent with the original Environmental Impact Statement and may present a safety risk.
- The Department notes Crawfords have implemented a new daily AN inventory tracking system within Shed A and Shed B, however, the details of this system have not been provided. Further details on how this system operates should be provided.
- Table 4.3 sets out AN storage performance criteria and Crawfords' response to periods of non-compliance with SAFEX stack separation distance compliance. The responses provided in this table extend to documenting why SAFEX is not being achieved and notification of relevant agencies. The responses do not provide any detail on how Crawfords will aim to rectify the non-compliance. A clear Trigger Action Response Plan (TARP) should be provided that includes specific actions that will be taken to return storage arrangements to SAFEX compliance as quickly as possible.

Section 10 Complaints Management

- Section 10 refers to the Crawfords website. please include a direct link to this website and ensure the complaints telephone line is detailed on the website. The Department has reviewed the website at https://www.crawfordsfreightlines.com.au/ which only appears to have a 'General Enquiries' number, Safe Driving Contact number and office numbers for the four Crawfords locations.

Section 11 Environmental Performance, Monitoring and Auditing

- Section 11.2 states that all environmental results are published on the Crawfords website. The Department has reviewed the above-mentioned website and is unable to locate any environmental monitoring results for the AN storage facility.

Appendix K – Flood Risk Management and Response Plan

- There are existing comments on the PDF from the Applicant which do not appear to have been resolved/addressed.

NSW GOVERNMENT

SafeWork

28 February 2023
Our ref: 2023/003605

Sally Munk
Principal Planner
Industry Assessments
Department of Planning & Environment

Via email: sally.munk@planning.nsw.gov.au

Dear Ms Munk

Crawfords Freightlines Pty Ltd Operational Environmental Management Plan (OEMP)

Thank you for the opportunity to comment on the Operational Environmental Management Plan (OEMP) prepared by Crawfords Freightlines Pty Ltd for its Sandgate facility. SafeWork NSW has focused its comments on Chapter 4 of the OEMP only, dealing with issues associated with ammonium nitrate (AN) storage. SafeWork NSW currently regulates and licenses the Sandgate facility under both Explosives and Major Hazard Facility (MHF) legislation.

Section 4.2.1 of the OEMP states "At present, there are no regulatory documents in NSW specifying for the storage of AN separation distances from protected places and boundaries".

This statement does not provide a complete picture of the current regulatory environment for separation distances at AN storage facilities. It would be wrong to assume that the current lack of a prescriptive requirement in NSW indicates that separation around AN storage facilities is not required or not important.

As the OEMP acknowledges, compliance with Australian Standard 4326 – 2008, *The storage and handling of oxidising agents* is mandatory in NSW through clause 65 of the Explosives Regulation 2013. Section 9.3.2 of the standard states that "The regulatory authority shall be consulted with regard to any separation distances relating to stores for ammonium nitrate". SafeWork NSW applies this requirement at each licensed facility by assessing elements such as the AN storage quantity and configuration, the presence of other hazardous chemicals, the proximity of protected works and vulnerable facilities, and the standards set by published codes in equivalent jurisdictions such as Queensland and Western Australia.

To increase safety, transparency and consistency in AN storage licensing, in October 2022 SafeWork NSW released for public consultation a Discussion Paper proposing to introduce prescriptive separation distances for solid AN storage. SafeWork NSW is currently reviewing submissions and will be undertaking targeted consultation on the issue. The Discussion Paper indicates the importance that SafeWork NSW places on separation as a robust preventative control that protects people and property in the event of an explosion.

Stack separation requirements in NSW

Table 9.3 of AS 4326 requires a stack separation distance of 3 metres between AN stacks stored without pallets, as at the Crawfords facility. The intent of stack separation is to ensure that if a single AN stack explodes, the adjacent stack will not explode simultaneously.

There is broad consensus that the 3 metre requirement in AS 4326 is outdated and ineffective. Multiple industry and regulatory publications require significantly higher stack separation on the understanding that a 3 metre stack separation will not prevent propagation of an explosion between stacks. For more than 10 years, SAFEX and the Western Australian *Code of Practice for Safe Storage of Solid Ammonium Nitrate* have required stack separation based on AN density, usually manifesting as a stack separation of 9 metres for medium density AN. Most recently, in 2022 the Australasian Explosives Industry Safety Group (AEISG) published its *Code of Practice for Storage and Handling of Solid Ammonium Nitrate* and recommended stack separation consistent with SAFEX and Western Australia. No reputable body in Australia still considers 3 metre stack separation to be effective or recommended.

Based on that broad consensus, SafeWork NSW proposed in its Discussion Paper to adopt the same position as the aforementioned codes of practice, i.e. for stack separation to be based on density whereby medium density AN would require 9 metres stack separation. SafeWork NSW continues to apply AS 4326 until a change can be made to the standard, the Regulation or another enforceable instrument.

Section 4.5.2 of the OEMP states "To enable efficient transition from AS4326 to SAFEX stack separation distance compliance, the stacking arrangement presented in Figure 4.1 was developed with "infill stacks" between "primary stacks" that maintain compliance with AS4326 separation distances but once removed, leave the "primary stacks" in compliance with SAFEX separation distances".

Inspectors of the Dangerous Goods & Explosives team within SafeWork NSW do not recall seeing "infill stacks" in place at the Crawfords facility.

SafeWork NSW notes that:

- The full capacity of each store with 8x 500 tonne stacks, 6x 34.8 tonne stacks, 1x 252 tonne stack and 1x 131 tonne stack represents a total of 4591.8 tonnes, which exceeds the SafeWork NSW licence limit of 4500 tonnes in each shed.

- A decision to stop using "infill stacks" would reduce the total storage capacity to 4000 tonnes in each store and achieve SAFEX compliance. SafeWork NSW considers that to be a relatively minor reduction in capacity for a significant increase in safety. Increasing stack separation to 9 metres ensures that the maximum credible explosion at the facility would be only 500 tonnes instead of 4500 tonnes, with a corresponding decrease in risk to the surrounding community.

- Crawfords has previously told SafeWork NSW that it does not have control over which bags of AN are removed as a priority. Crawfords stores different grades of AN and provides storage for multiple customers, and demand is affected by factors such as weather and customer contracts. Section 4.5.2.2 of the OEMP confirms these and other factors. Crawfords' ability to preferentially remove "infill stacks" as a priority to ensure a return to SAFEX stack separation is therefore greatly constrained by factors outside Crawfords' control. Any assurances that non-compliant storage will occur for only "a short period" cannot be guaranteed and the use of "infill stacks" should not be considered to ensure SAFEX compliance.

Section 4.5.2.1 of the OEMP states "The data available was limited to daily combined AN inventory (in tonnes) for Shed A and Shed B and therefore, the assessment of SAFEX separation distance non-compliance was made based on whether the total inventory exceeded 7,814 t (the maximum combined inventory of both Shed A and Shed B while complying with SAFEX separation distances with stacks consisting entirely of 1.2 t bags, refer to Section 4.5.2) on any given day".

SafeWork NSW was previously of the understanding that Crawfords did maintain records of the quantity of AN in each shed, as this is a standard control necessary to ensure compliance with the licence limit in each shed. During preparation of this response SafeWork NSW located a document submitted by Crawfords in 2020 showing separate daily counts of AN stored in Shed A and Shed B. The document confirms that it is normal for Sheds A and B to store different quantities of AN, and that Crawfords records those separate quantities.

SafeWork NSW does not consider the OEMP assumption of equal quantities in each shed to be a valid method of calculating the proportion of time that the facility is not compliant with SAFEX stack separation requirements. In addition to the 2020 document, it is the experience of SafeWork NSW inspectors that Crawfords does not draw equally or uniformly from Sheds A and B. The sheds have held different quantities of AN on most if not all occasions when inspectors have attended the facility. It has not been unusual for one shed to be almost empty and the other shed almost full. At least in part, this is the result of factors described above whereby Crawfords is subject to the requests of its customers in deciding which bags of AN are given priority for removal. A methodology which assumes uniform withdrawal of AN from both sheds does not reflect the reality of how the facility operates and may tend to underestimate the non-compliant period.

Regardless, Table 4.1 of the OEMP indicates that the facility was SAFEX non-compliant "21.8% (382 of 1754 days)" of the time. SafeWork NSW does not believe that more than one year in aggregate over a 4.8 year period can be considered "a short period".

SafeWork NSW also recommends caution interpreting Crawfords' figures because Section 4 of the OEMP alternates between referring to 1.2 t bags and 1.25 t bags. The difference in quantity may be significant over a very large number of bags.

Section 4.5.2.2 of the OEMP states that one constraint contributing to non-compliance with SAFEX separation distances was "SWNSW (MHF) not allowing Shed C to be utilised for AN storage as originally approved".

SafeWork NSW wishes to clarify that the decision referenced by this statement related to an application from Crawfords to expand its AN storage with an additional 4500 tonnes in Shed C, increasing the total quantity of AN stored on site to 13,500 tonnes. As the application intended to exactly replicate the conditions of Sheds A and B in Shed C, it would have extended rather than improved Crawfords' non-compliance with SAFEX stack separation requirements. In fact, the application would have increased the overall risk at the facility because it would have led to more AN stored in stacks separated by only 3 metres.

SafeWork NSW rejects the notion that its refusal of that application was a constraint on Crawfords complying with SAFEX stack separation.

Section 4.5.2.2 of the OEMP states "SafeWork NSW has instructed Crawfords that minimising AN handling should be prioritised over moving bags from “infill stacks” to “primary stacks” to comply with SAFEX as space in “primary stacks” becomes available as the handling risk is considered greater than that of SAFEX separation distance noncompliance".

SafeWork NSW is not aware of any formal instruction or recommendation as described in this section. It is not a correct description of the SafeWork NSW position.

The safest and preferred outcome is that a slightly reduced quantity of AN is stored in each shed such that there are no "infill stacks" and SAFEX separation is ensured without the need to selectively remove or reconfigure bags of AN.

SafeWork NSW intends to pursue increased stack separation distances as described in its Discussion Paper released in October 2022.

Section 4.5.2.3 of the OEMP states "Rather than define or specify a short period of time, Crawfords has developed AN storage performance criteria with two levels of response depending the on the duration of time (in days) that separation distances between stacks does not comply with SAFEX for a given noncompliant event."

SafeWork NSW does not support the proposed responses to a situation in which Crawfords does not comply with SAFEX stack separation after 11 days and after 27 days. The proposed responses, which are to document the factors contributing to the non-compliance and to notify DPE, SafeWork NSW and NCC respectively, will do nothing to improve stack separation at the time of response or in the future. Rather, these measures appear designed to shift responsibility for the non-compliance to DPE, SafeWork NSW and NCC.

The OEMP does not identify a single practical response that would bring an end to a state of non-compliance, even if that state continues past the self-nominated threshold of 27 days. An example of a practical measure to achieve compliance would be removal of the necessary quantity of AN from the site. The absence of any effective control or response measures in the OEMP suggests that Crawfords is comfortable with non-compliance occurring and continuing indefinitely until customer requests lead to inadvertent compliance.

SafeWork NSW believes that a preferable approach would involve implementing measures to *prevent* non-compliance such as a slight reduction in quantity to ensure that SAFEX-compliant stack separation can be achieved in all conditions.

Comment on Consent Condition 3: "The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity."

Section 4 of the OEMP demonstrates that there is considerable ambiguity associated with the phrase "except for a short period of time" in Condition 3. That ambiguity appears to have been interpreted by Crawfords to justify non-compliance with SAFEX stack separation distances at least 21% of the time, and potentially indefinitely. The OEMP suggests that the current situation is likely to continue while a non-specific phrase such as "except for a short period" remains in Condition 3.

SafeWork NSW supports the intent of Condition 3 to implement separation between AN stacks on the order of that required by SAFEX, the Western Australia Code of Practice and the AEISG Code of Practice. These publications can be deemed to represent best practice in AN stack separation

distances and SafeWork NSW is pursuing the same standard of stack separation through its own regulatory processes.

Please contact State Inspector Daniel Massey at daniel.massey@safework.nsw.gov.au or 02 8867 2738 should you wish to discuss this response further.

Yours sincerely

Sally Anderson
Manager, Dangerous Goods & Explosives
SafeWork NSW

1.0 Sandgate AN Facility OEMP – Crawfords Response to Agency Comments

1.1 DPE

OEMP Section	DPE Comments	Crawfords Response
-	The OEMP needs to state the author and their position title and provide version number and date of the revision	Document control table included with author, version number and date of revision on second page of document.
1 Introduction	Section 1.1 of the OEMP states that DPE has withdrawn its approval to store AN in Shed C. This is not correct. DPE has not withdrawn any consent for use of this shed. The consent required Shed C to be upgraded to prevent ingress of floodwaters. It is understood that Shed C has not yet been made suitable for storage of AN and Safework has restricted use of Shed C for the storage of AN.	Text has been updated in Section 1.1 to indicate WorkSafe NSW has withdrawn approval for use of Shed C.
	Please check all cross-referencing in Table 1.2 as cross-referencing for the following conditions does not appear to be correct: • Schedule 3, conditions 2 and 3 • Schedule 4, condition 2, clauses (a), (b), (f) and (g)	Cross referencing has been updated in Table 1.2
2 Review of Site Environmental Mgt Practices	Cross-reference to IEA outcomes refers to Appendix 1. Please check this cross-reference as it would appear that the summary of non-compliances and recommendations from the IEA is provided in Appendix C.	Cross reference has been updated in Section 2.1
4 Ammonium Nitrate Management	The Department is not satisfied that this section of the OEMP demonstrates how Crawfords are seeking to comply with Schedule 3, condition 3 of the development consent (SSD-5119), as required by condition 2(f) of the development consent. Schedule 3, Condition 3, requires compliance with SAFEX separation distances or better to prevent involvement of more than half the storage capacity of each storage building in an explosion. The condition permits Crawfords to deviate from the SAFEX requirements for a short period of time when the storage is at maximum capacity. Section 4.5.2 of the OEMP states that the maximum inventory of AN that either Shed A or Shed B can store while complying with SAFEX separation distances is 4,000 tonnes (t), which the Department understands is therefore the maximum capacity of each shed. **Recommendation: The OEMP currently states that non-compliance with SAFEX may occur for more than 27 days, i.e. an indefinite period of time. The OEMP must clearly define what is the maximum time period Crawfords is not complying with SAFEX separation distances when storing > 4,000 t.**	The maximum time period of non-compliance was 45 days based on the data reviewed as part of the OEMP update which was for total tonnes of ammonium nitrate (AN) stored at the facility. There was only one other event above 27 days with a 39 day duration. Section 4.5.2.3 has been updated and proposes that a short period of time for storage that does not comply with SAFEX be defined as 28 days.
	Section 4.5.2 must clearly state that the primary guidance for the management of AN stack separation distances is SAFEX, as per Schedule 3, condition 3.	The text in Section 4.5.2 has been updated to indicate that the primary guidance for storage of AN is SAFEX.
	The OEMP indicates that non-compliance with SAFEX stack separation distances may occur for an indefinite period greater than 27 days. It is the Department's preference that the OEMP state a maximum time period to clearly define 'a short period of time' for the purposes of demonstrating operational compliance with the consent.	Section 4.5.2.3 has been updated and proposes that a short period of time for storage that does not comply with SAFEX be defined as 28 days.
	The stacking arrangement illustrated in Figure 4.1 indicates that the total volume of AN stored in each shed exceeds the maximum volume limit of 4,500t. The arrangement depicted could lead to an explosion event that involves AN quantities larger than what has been assessed in the approved Quantitative Risk Assessment and as such not consistent with the original Environmental Impact Statement and may present a safety risk.	Figure 4.1 indicates the maximum storage inventory that can be placed in each stack. As noted by DPE, the total quantity stored within each shed would exceed 4,500T if each stack contained the maximum individual stack inventory (e.g. Primary stacks can contain up to 500T when there are no infill stacks) . However, Crawfords manage individual stack inventories so that the total storage inventory in each shed is no greater than 4,500T at any one time. Figure 4.1 has been updated to show the maximum stack inventories when infill stacks are present.
	The Department notes Crawfords have implemented a new daily AN inventory tracking system within Shed A and Shed B, however, the details of this system have not been provided. Further details on how this system operates should be provided.	Section 4.5.2.2 has been updated to include a more detailed description of the AN tracking system.
	Table 4.3 sets out AN storage performance criteria and Crawfords' response to periods of noncompliance with SAFEX stack separation distance compliance. The responses provided in this table extend to documenting why SAFEX is not being achieved and notification of relevant agencies. The responses do not provide any detail on how Crawfords will aim to rectify the noncompliance. A clear Trigger Action Response Plan (TARP) should be provided that includes specific actions that will be taken to return storage arrangements to SAFEX compliance as quickly as possible.	A TARP has been included in Section 4.5.2.3 (refer to Table 4.3)

OEMP Section	DPE Comments	Crawfords Response
10 Complaints Mgt	Section 10 refers to the Crawfords website. Please include a direct link to this website and ensure the complaints telephone line is detailed on the website. The Department has reviewed the website at https://www.crawfordsfreightlines.com.au/ which only appears to have a 'General Enquiries' number, Safe Driving Contact number and office numbers for the four Crawfords locations.	Website has been updated
11 Environmental Performance, Monitoring and Auditing	Section 11.2 states that all environmental results are published on the Crawfords website. The Department has reviewed the above-mentioned website and is unable to locate any environmental monitoring results for the AN storage facility.	Website has been updated
Appendix K – Flood Risk Management and Response Plan	There are existing comments on the PDF from the Applicant which do not appear to have been resolved/addressed.	Comments had been addressed and inadvertently carried over from the Word document.

1.2 SafeWork NSW

OEMP Section	SafeWork NSW Comments	Crawfords Response
4 Ammonium Nitrate Management	**Section 4.2.1 of the OEMP states "At present, there are no regulatory documents in NSW specifying for the storage of AN separation distances from protected places and boundaries".** This statement does not provide a complete picture of the current regulatory environment for separation distances at AN storage facilities. It would be wrong to assume that the current lack of a prescriptive requirement in NSW indicates that separation around AN storage facilities is not required or not important. As the OEMP acknowledges, compliance with Australian Standard 4326 – 2008, The storage and handling of oxidising agents is mandatory in NSW through clause 65 of the Explosives Regulation 2013. Section 9.3.2 of the standard states that "The regulatory authority shall be consulted with regard to any separation distances relating to stores for ammonium nitrate". SafeWork NSW applies this requirement at each licensed facility by assessing elements such as the AN storage quantity and configuration, the presence of other hazardous chemicals, the proximity of protected works and vulnerable facilities, and the standards set by published codes in equivalent jurisdictions such as Queensland and Western Australia. To increase safety, transparency and consistency in AN storage licensing, in October 2022 SafeWork NSW released for public consultation a Discussion Paper proposing to introduce prescriptive separation distances for solid AN storage. SafeWork NSW is currently reviewing submissions and will be undertaking targeted consultation on the issue. The Discussion Paper indicates the importance that SafeWork NSW places on separation as a robust preventative control that protects people and property in the event of an explosion. **Stack separation requirements in NSW** Table 9.3 of AS 4326 requires a stack separation distance of 3 metres between AN stacks stored without pallets, as at the Crawfords facility. The intent of stack separation is to ensure that if a single AN stack explodes, the adjacent stack will not explode simultaneously. There is broad consensus that the 3 metre requirement in AS 4326 is outdated and ineffective. Multiple industry and regulatory publications require significantly higher stack separation on the understanding that a 3 metre stack separation will not prevent propagation of an explosion between stacks. For more than 10 years, SAFEX and the Western Australian Code of Practice for Safe Storage of Solid Ammonium Nitrate have required stack separation based on AN density, usually manifesting as a stack separation of 9 metres for medium density AN. Most recently, in 2022 the Australasian Explosives Industry Safety Group (AEISG) published its Code of Practice for Storage and Handling of Solid Ammonium Nitrate and recommended stack separation consistent with SAFEX and Western Australia. No reputable body in Australia still considers 3 metre stack separation to be effective or recommended. Based on that broad consensus, SafeWork NSW proposed in its Discussion Paper to adopt the same position as the aforementioned codes of practice, i.e. for stack separation to be based on density whereby medium density AN would require 9 metres stack separation. SafeWork NSW continues to apply AS 4326 until a change can be made to the standard, the Regulation or another enforceable instrument.	Noted
	Section 4.5.2 of the OEMP states "To enable efficient transition from AS4326 to SAFEX stack separation distance compliance, the stacking arrangement presented in Figure 4.1 was developed with "infill stacks" between "primary stacks" that maintain compliance with AS4326 separation distances but once removed, leave the "primary stacks" in compliance with SAFEX separation distances". Inspectors of the Dangerous Goods & Explosives team within SafeWork NSW do not recall seeing "infill stacks" in place at the Crawfords facility. SafeWork NSW notes that:	Noted
	• The full capacity of each store with 8x 500 tonne stacks, 6x 34.8 tonne stacks, 1x 252 tonne stack and 1x 131 tonne stack represents a total of 4591.8 tonnes, which exceeds the SafeWork NSW licence limit of 4500 tonnes in each shed.	Originally we had the 500T stacks shown as 488.4T stacks which keeps the total quantity just under 4,500T. Figure 4.1 Figure 4.1 indicates the maximum storage inventory that can be placed in each stack. As noted by DPE, the total quantity stored within each shed would exceed 4,500T if each stack contained the maximum individual stack inventory (e.g. Primary stacks can contain up to 500T when there are no infill stacks) . However, Crawfords manage individual stack inventories so that the total storage inventory in each shed is no greater than 4,500T at any one time. Figure 4.1 has been updated to show the maximum stack inventories when infill stacks are present.

OEMP Section	SafeWork NSW Comments	Crawfords Response
	• A decision to stop using "infill stacks" would reduce the total storage capacity to 4000 tonnes in each store and achieve SAFEX compliance. SafeWork NSW considers that to be a relatively minor reduction in capacity for a significant increase in safety. Increasing stack separation to 9 metres ensures that the maximum credible explosion at the facility would be only 500 tonnes instead of 4500 tonnes, with a corresponding decrease in risk to the surrounding community.	Noted
	• Crawfords has previously told SafeWork NSW that it does not have control over which bags of AN are removed as a priority. Crawfords stores different grades of AN and provides storage for multiple customers, and demand is affected by factors such as weather and customer contracts. Section 4.5.2.2 of the OEMP confirms these and other factors. Crawfords' ability to preferentially remove "infill stacks" as a priority to ensure a return to SAFEX stack separation is therefore greatly constrained by factors outside Crawfords' control. Any assurances that non-compliant storage will occur for only "a short period" cannot be guaranteed and the use of "infill stacks" should not be considered to ensure SAFEX compliance.	Crawfords acknowledge and has indicated in Section 4.5.2.2 of the OEMP that there are constraints with regard to management of AN inventories, however, can confirm that bags within infill stacks are removed and despatched as a priority. The TARP that has now been included in Section 4.5.2.3 (refer to Table 4.3) identifies actions that Crawfords take to transition AN storage from AS3426 to SAFEX.
	Section 4.5.2.1 of the OEMP states "The data available was limited to daily combined AN inventory (in tonnes) for Shed A and Shed B and therefore, the assessment of SAFEX separation distance non-compliance was made based on whether the total inventory exceeded 7,814 t (the maximum combined inventory of both Shed A and Shed B while complying with SAFEX separation distances with stacks consisting entirely of 1.2 t bags, refer to Section 4.5.2) on any given day". SafeWork NSW was previously of the understanding that Crawfords did maintain records of the quantity of AN in each shed, as this is a standard control necessary to ensure compliance with the licence limit in each shed. During preparation of this response SafeWork NSW located a document submitted by Crawfords in 2020 showing separate daily counts of AN stored in Shed A and Shed B. The document confirms that it is normal for Sheds A and B to store different quantities of AN, and that Crawfords records those separate quantities. SafeWork NSW does not consider the OEMP assumption of equal quantities in each shed to be a valid method of calculating the proportion of time that the facility is not compliant with SAFEX stack separation requirements. In addition to the 2020 document, it is the experience of SafeWork NSW inspectors that Crawfords does not draw equally or uniformly from Sheds A and B. The sheds have held different quantities of AN on most if not all occasions when inspectors have attended the facility. It has not been unusual for one shed to be almost empty and the other shed almost full. At least in part, this is the result of factors described above whereby Crawfords is subject to the requests of its customers in deciding which bags of AN are given priority for removal. A methodology which assumes uniform withdrawal of AN from both sheds does not reflect the reality of how the facility operates and may tend to underestimate the non-compliant period.	Crawfords agrees with the view that an assumption of equal inventories in each shed and use of total inventory to assess SAFEX compliance is not ideal. The more detailed monitoring (inventory in each stack ~~in in each~~ on a daily basis) now being undertaken by Crawfords will enable a better analysis of when and how non-compliance is occurring allowing Crawfords to develop additional strategies to achieve SAFEX compliance in a shorter period of time.
	Regardless, Table 4.1 of the OEMP indicates that the facility was SAFEX non-compliant "21.8% (382 of 1754 days)" of the time. SafeWork NSW does not believe that more than one year in aggregate over a 4.8 year period can be considered "a short period".	Noted
	SafeWork NSW also recommends caution interpreting Crawfords' figures because Section 4 of the OEMP alternates between referring to 1.2 t bags and 1.25 t bags. The difference in quantity may be significant over a very large number of bags.	Section 4.5.2 has been updated with a view to clarifying references to bag weights and stack bag numbers.
	Section 4.5.2.2 of the OEMP states that one constraint contributing to non-compliance with SAFEX separation distances was "SWNSW (MHF) not allowing Shed C to be utilised for AN storage as originally approved". SafeWork NSW wishes to clarify that the decision referenced by this statement related to an application from Crawfords to expand its AN storage with an additional 4500 tonnes in Shed C, increasing the total quantity of AN stored on site to 13,500 tonnes. As the application intended to exactly replicate the conditions of Sheds A and B in Shed C, it would have extended rather than improved Crawfords' non-compliance with SAFEX stack separation requirements. In fact, the application would have increased the overall risk at the facility because it would have led to more AN stored in stacks separated by only 3 metres. SafeWork NSW rejects the notion that its refusal of that application was a constraint on Crawfords complying with SAFEX stack separation.	Text relating to the inability to use Shed C as a constraint has been removed.

OEMP Section	SafeWork NSW Comments	Crawfords Response
	Section 4.5.2.2 of the OEMP states "SafeWork NSW has instructed Crawfords that minimising AN handling should be prioritised over moving bags from "infill stacks" to "primary stacks" to comply with SAFEX as space in "primary stacks" becomes available as the handling risk is considered greater than that of SAFEX separation distance noncompliance". SafeWork NSW is not aware of any formal instruction or recommendation as described in this section. It is not a correct description of the SafeWork NSW position. The safest and preferred outcome is that a slightly reduced quantity of AN is stored in each shed such that there are no "infill stacks" and SAFEX separation is ensured without the need to selectively remove or reconfigure bags of AN. SafeWork NSW intends to pursue increased stack separation distances as described in its Discussion Paper released in October 2022.	Text indicating that SafeWork NSW advised minimising handling of AN in preference to complying with SAFEX has been removed. Noted
	Section 4.5.2.3 of the OEMP states "Rather than define or specify a short period of time, Crawfords has developed AN storage performance criteria with two levels of response depending the on the duration of time (in days) that separation distances between stacks does not comply with SAFEX for a given noncompliant event." SafeWork NSW does not support the proposed responses to a situation in which Crawfords does not comply with SAFEX stack separation after 11 days and after 27 days. The proposed responses, which are to document the factors contributing to the non-compliance and to notify DPE, SafeWork NSW and NCC respectively, will do nothing to improve stack separation at the time of response or in the future. Rather, these measures appear designed to shift responsibility for the non-compliance to DPE, SafeWork NSW and NCC.	Section 4.5.2.3 has been updated and proposes that a short period of time for storage that does not comply with SAFEX be defined as 28 days.
	The OEMP does not identify a single practical response that would bring an end to a state of non-compliance, even if that state continues past the self-nominated threshold of 27 days. An example of a practical measure to achieve compliance would be removal of the necessary quantity of AN from the site. The absence of any effective control or response measures in the OEMP suggests that Crawfords is comfortable with non-compliance occurring and continuing indefinitely until customer requests lead to inadvertent compliance.	The TARP that has now been included in Section 4.5.2.3 (refer to Table 4.3) identifies actions that Crawfords take to transition AN storage from AS3426 to SAFEX.
	SafeWork NSW believes that a preferable approach would involve implementing measures to prevent non-compliance such as a slight reduction in quantity to ensure that SAFEX-compliant stack separation can be achieved in all conditions.	Noted
	Comment on Consent Condition 3: "The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity." Section 4 of the OEMP demonstrates that there is considerable ambiguity associated with the phrase "except for a short period of time" in Condition 3. That ambiguity appears to have been interpreted by Crawfords to justify non-compliance with SAFEX stack separation distances at least 21% of the time, and potentially indefinitely. The OEMP suggests that the current situation is likely to continue while a non-specific phrase such as "except for a short period" remains in Condition 3. SafeWork NSW supports the intent of Condition 3 to implement separation between AN stacks on the order of that required by SAFEX, the Western Australia Code of Practice and the AEISG Code of Practice. These publications can be deemed to represent best practice in AN stack separation	Crawfords has not interpreted the condition to justify non-compliance with SAFEX indefinitely. Crawfords has simply, and transparently, acknowledged the recent facility performance with respect to the period of time when non-compliant with SAFEX and implemented a monitoring regime to better understand SAFEX non-compliance and identify any additional measures that can be taken to return to SAFEX compliance in a shorter period of time. Crawfords also note that DPE has specifically requested that Crawfords nominate a number to define a "short period of time" which is certainly subjective.

Department of Planning and Environment

Our ref: Crawfords Ammonium Nitrate Storage Facility (SSD-5119-PA-6)

Mr Mark Grech
HSSE and Compliance Manager
Crawfords Freightlines Pty Ltd
Old Maitland Road
SANDGATE NSW 2304

15 August 2023

Subject: Planning Secretary's Direction - Revised Operational Environmental Management Plan

Dear Mr Grech

I refer to the revised *Operational Environmental Management Plan Crawfords Freightlines Sandgate Site* (Version 3, dated 17 May 2023) (the OEMP), submitted to the Department of Planning and Environment (the Department) in accordance with the Planning Secretary's Directions dated 15 September 2020 and 18 December 2020 and the Department's request for information dated 22 March 2023.

The Department has reviewed the revised OEMP in consultation with Safework (see attached Safework advice dated 6 July 2023). The Department concurs with the matters raised by Safework and is not satisfied the operational procedures outlined in the OEMP demonstrate a genuine intent to maintain SAFEX separation distances for the storage of ammonium nitrate at the site, in accordance with Schedule 3, Condition 3, of the development consent (SSD-5119). The length of time current operational practices result in non-compliance with SAFEX separation distances is not considered to be representative of a 'short period of time'.

The Department recommends Crawford take a preventative approach of not exceeding 4,000 tonnes of ammonium nitrate in each storage shed (Shed A and Shed B) both for safety and for making compliance achievable, reliable, and measurable.

The Planning Secretary (nominee) directs Crawfords to revise the OEMP to include the information outlined in **Attachment 1.**

You are requested to provide a revised OEMP to the Department by **Tuesday 12 September 2023**.

Please note that failure to comply with written directions of the Planning Secretary (or nominee) may be considered to be a breach of Schedule 2 condition 4 of the consent, and the Department may commence an investigation regarding an alleged breach should the directions not be complied with by the specified date.

If you have any questions, please contact Sally Munk on 9274 6431 or via email at sally.munk@planning.nsw.gov.au.

Yours sincerely,

Chris Ritchie
Director, Industry Assessments
As nominee of the Planning Secretary

Enclosed: Safework Advice dated 6 July 2023 and Planning Secretary's Directions

ATTACHMENT 1

Planning Secretary's Directions
Crawfords Ammonium Nitrate Storage Facility (SSD-5119)

Planning Secretary's Directions

1. Maximum Capacity

- Section 4.5.2 of the OEMP states the following in relation to the storage of AN:
  - the 'maximum inventory' of AN that either Shed A or Shed B can store while complying with SAFEX separation distances is 4,000 tonnes (t)
- The definition of the term 'maximum capacity' as used in condition 3 Schedule 3 of the consent has not been clearly defined.

Direction: The OEMP must:

- include a list of definitions that clearly defines the term 'maximum capacity' for the purposes of regulating Condition 3 Schedule 3 of the consent, as follows:
  - maximum capacity: 8,000t of AN in total within Shed A and Shed B, comprised of:
    - 4,000t of AN in Shed A, and
    - 4,000t of AN in Shed B.
- commit to:
  - compliance with SAFEX separation distances in Shed A and Shed B when the AN storage inventory:
    - in Shed A is ≤ 4,000t, and
    - in Shed B is ≤ 4,000t
  - limit the storage or placement of AN on the site to the following volumes, unless the AN storage on the site is at maximum capacity, as defined in the OEMP definitions:
    - 8,000t of AN in total within Shed A and Shed B, comprised of:
      - 4,000 tonnes of AN in Shed A, and
      - 4,000 tonnes of AN in Shed B
  - limit the time the storage or placement of AN exceeds 'maximum capacity' to a 'short period of time', as defined in the OEMP definitions, and as described in the Trigger Action Response Plan (TARP).

2. Short Period of Time

- Table 4.1 of the OEMP states that current operational practices result in non-compliance with SAFEX separation distances for 21.8% of the time. Table 4.2 states that 90% of SAFEX non-compliance events take up to 27 days to return to SAFEX compliance, with the remaining 10% of events taking up to 45 days to return to SAFEX compliance.
- In risk assessment, the general expected variation is about 5-10% to capture the probabilistic nature of the analysis, a variation of 21.8% goes beyond the expected variation in the QRA.
- Table 4.1 confirms the site was non-compliant with SAFEX separation distances for over one entire year (382 days) of the 4.8-year study period. This equates to 80 days per year when an explosion involving more than half the storage capacity of each storage building may occur. This operational risk scenario was not assessed in the Quantitative Risk Assessment (QRA) for the original DA and may present a serious risk to public safety.
- Section 4.5.2.3 of the OEMP proposes that a 'short period of time' be defined as 28 days, however, the OEMP provides no justification for adopting this definition nor does it limit the number of events. Multiple non-compliant periods of 28 days within a year could amount to several months of non-compliance.
- On the basis of the above, the Department and Safework are of the view that:

- any SAFEX non-compliance event must not exceed 7 days
- the cumulative total number of days the site (both Shed A and Shed B combined) is non-compliant with SAFEX separation distances must not exceed 21 days in a 12-month period.

Direction: The OEMP must:

- **include a list of definitions that clearly defines the term 'short period of time' for the purposes of regulating Condition 3 Schedule 3 of the consent, as follows:**
  - **short period of time: a time period of ≤ 7 days**
- **commit to a maximum cumulative limit of 21 days in any 12-month period in which the site may be non-compliant with SAFEX separation distances for the storage of AN in Shed A and Shed B combined.**

3. Trigger Action Response Plan (TARP)

- Table 4.3 provides an Ammonium Nitrate Separation Distance TARP. The TARP only describes actions to be taken when AN stacks in Shed A and Shed B have been non-compliant with SAFEX separation distances for at least 14 days, 21 days and greater than 28 days.
- The TARP does not provide any response that is certain to restore stack separation to SAFEX requirements, as such SAFEX non-compliance may continue indefinitely.
- The TARP does not include any pro-active actions / responses that are initiated to avoid non-compliance with SAFEX separation distances before Shed A or Shed B reach an inventory of 4,000t of AN (the maximum storage inventory at which SAFEX separation distances can be achieved).
- Despite Section 4.5.2 of the OEMP acknowledging that SAFEX separation distances cannot be achieved when the storage inventory exceeds 4,000t, the inventory management practices described in Section 4.5.2 demonstrate it is standard operational practice to use infill stacks of AN to maximise the volume of AN stored in Shed A and Shed B, rather than using such an arrangement as a short-term management response to an unavoidable non-compliance.
- In concurrence with Safework, the Department strongly recommends Crawford take a preventative approach of not exceeding 4000 t of AN in each shed both for safety and for making compliance achievable, predictable, and measurable.

Direction: The OEMP TARP must:

- **use a 'traffic light' system for structuring the TARP which includes a 'green light' for normal operations, 'orange light' for approaching non-compliance, and 'red light' for a non-compliant event**
- **for 'green light' and 'orange light' conditions, include actions that Crawfords will take to maintain SAFEX separation distances, before storage in Shed A or Shed B reaches 4,000t to avoid utilising any infill stacks and the need to manage a non-compliance with SAFEX separation distances**
- **for 'red light' conditions, specify a defined period in which each response action will guarantee to return the site to SAFEX compliance**
- **prioritise an even distribution of AN inventory across both Shed A and Shed B to avoid the volume of AN stored in either shed exceeding 4,000t at any time**
- **ensure the storage inventory of Shed A does not exceed 4,000t if the storage inventory of Shed B is <4,000t**
- **specify who is responsible for each response action.**

Direction: Crawfords must:

- **include a commitment in the OEMP to implement the TARP.**

Note: Example TARPs are provided to assist in revising the TARP:

- Glencore Bulga Open Cut Mine
    - https://www.glencore.com.au/.rest/api/v1/documents/b970fd9b5dce21cb264abfd79f391302/Air%20Quality%20Management%20Trigger%20Action%20Response%20Procedure.pdf
- Port Kembla Coal Terminal
    - https://www.pkct.com.au/content/uploads/2022/05/Pollution-Incident-Response-Management-Plan.pdf

NSW GOVERNMENT

SafeWork

6 July 2023
Our ref: 2023/003605

Sally Munk
Principal Planner
Industry Assessments
Department of Planning & Environment

Via email: sally.munk@planning.nsw.gov.au

Dear Ms Munk

Updated Crawfords Freightlines Pty Ltd Operational Environmental Management Plan

SafeWork NSW has reviewed the updated version of the Operational Environmental Management Plan (OEMP) dated 17 May 2023 for the Sandgate facility operated by Crawfords Freightlines Pty Ltd. Enclosed are comments in response to the ammonium nitrate (AN) management issues described in Chapter 4 of the updated OEMP.

Corrections

It is acknowledged that corrections have been made to the OEMP in relation to SafeWork NSW positions on Shed C, and the movement of bags from infill stacks to primary stacks. It is also noted that the updated "maximum inventory" configuration depicted in Figure 4.1 no longer exceeds the licensed quantity of 4500 tonnes.

Response actions

SafeWork NSW continues to doubt the efficacy of measures proposed to minimise periods of SAFEX non-compliance. Section 4.5.2.2 of the OEMP states that "as far as practicable Crawfords ensure [sic] “infill stacks” are made up of product that will be dispatched preferentially prior to product that has been placed in “primary stacks”."

That approach will be ineffective at resolving most of the constraints identified in the OEMP as currently preventing compliance with SAFEX. For example, selectively allocating particular bags to infill stacks will provide no benefit in event of wet weather reducing demand, customer agreements with other suppliers, bad batches of AN, or customer demands for minimum inventories. Selective allocation to infill stacks is also likely to be constrained by Crawfords' commitment to its customers that different products shall not be mixed. Any deviation from ideal circumstances will therefore lead to a continuation of AN stacks not complying with SAFEX.

Similarly, the Trigger Action Response Plan (TARP) in Table 4.3 consists primarily of measures unlikely to achieve practical safety improvements. For example, it is unlikely that Crawfords' customers will voluntarily remove product they are paying to store at Sandgate, and notifications to DPE after 28 days will not increase stack separation. Relocating bags in infill stacks to primary stacks may improve separation but can only occur where space exists in a primary stack that also holds compatible products. Delaying or redirecting deliveries may prevent worsening the situation but will not address the existing non-compliance.

SafeWork NSW believes these measures will only have limited, and sometimes zero, effectiveness against known features of the Crawfords operating model and an ongoing intent to store 4500 tonnes of AN in each shed. The only measures with any certainty of achieving SAFEX compliance are a commitment to remove excess AN from site after "a short period", or to prevent non-compliance by not storing more than 4000 tonnes of AN in each shed.

Time periods

SafeWork NSW reiterates its previous comments that non-compliance for 21.8% of the time, equal to more than one year in aggregate over the 4.8 year period under study, cannot be considered a short period.

The OEMP provides no reasons why a short period should be defined as 28 days. Under that definition, multiple non-compliant periods within a year could amount to many months. Even at 28 days, the TARP does not provide a response that is certain to restore stack separation to 9 metres and SAFEX non-compliance may therefore continue indefinitely. These conditions are not consistent with the notion of a short period.

SafeWork NSW acknowledges the operational difficulty of promptly and reliably reducing inventory levels when constrained by external factors such as those identified in the OEMP. These circumstances strongly indicate that a preventative approach of not exceeding 4000 tonnes of AN in each shed is preferred both for safety and for making compliance achievable, predictable, and measurable.

If AN storage at Sandgate will continue to exceed 4000 tonnes in each shed, any definition of "a short period" can only be effective when it is tied to response actions that are guaranteed to achieve compliance at the end of that period, such as removing excess AN from site.

Please contact State Inspector Daniel Massey at daniel.massey@safework.nsw.gov.au or 02 8867 2738 should you wish to discuss this response further.

Yours sincerely

Andrew Battye
Manager, Dangerous Goods & Explosives
SafeWork NSW

1.0 Sandgate AN Facility OEMP V3 – Crawfords Response to Agency Comments and Directions 25/10/23

1.1 DPE Comments and Directions

OEMP Section	DPE Comments	Crawfords Response

4.5.2 Inventory and Separation Distance Management	<u>1. Maximum Capacity</u>
	• Section 4.5.2 of the OEMP states the following in relation to the storage of AN:
	  ○ the 'maximum inventory' of AN that either Shed A or Shed B can store while complying with SAFEX separation distances is 4,000 tonnes (t)
	• The definition of the term 'maximum capacity' as used in condition 3 Schedule 3 of the consent has not been clearly defined.
	Direction: The OEMP must:
	  ○ include a list of definitions that clearly defines the term 'maximum capacity' for the purposes of regulating Condition 3 Schedule 3 of the consent, as follows:
	  ➢ maximum capacity: 8,000t of AN in total within Shed A and Shed B, comprised of:
	  — 4,000t of AN in Shed A, and
	  — 4,000t of AN in Shed B.
	  ○ commit to:
	  ➢ compliance with SAFEX separation distances in Shed A and Shed B when the AN storage inventory:
	  — in Shed A is ≤ 4,000t, and
	  — in Shed B is ≤ 4,000t
	  ➢ limit the storage or placement of AN on the site to the following volumes, unless the AN storage on the site is at maximum capacity, as defined in the OEMP definitions:
	  — 8,000t of AN in total within Shed A and Shed B, comprised of:
	  ❖ 4,000 tonnes of AN in Shed A, and
	  ❖ 4,000 tonnes of AN in Shed B
	  ➢ limit the time the storage or placement of AN exceeds 'maximum capacity' to a 'short period of time', as defined in the OEMP definitions, and as described in the Trigger Action Response Plan (TARP).
		A revised storage arrangement was presented to DPE in a meeting with Crawfords and Crawfords consultant on 20 September 2023. The revised storage arrangement provided for a separation distance in accordance with SAFEX that would prevent more than half of the storage capacity of each shed being involved in an explosion and enabled the storage of a maximum quantity of:
		- 4,500 t of AN in Shed A
		- 4,500 t of AN in Shed B
		DPE advised Crawfords in an email from Sally Munk dated 13 October 2023 that after review of the revised storage arrangement in consultation with SafeWork NSW that DPE agreed to the OEMP being updated based on the revised arrangement presented by Crawfords. As such, the revised OEMP (V4) has been updated to reflect the revised arrangement and the maximum AN capacities for Shed A and Shed B indicated in DPE's direction are not considered to apply.
		During normal operations, it is anticipated that a separation distance of 9 m will be maintained between half of the storage capacity of each shed at all times with the exception of an unforeseen event such as shed repairs (e.g. following a storm). In such an exceptional circumstance, Crawfords will limit the stacking of AN where more than half of the storage capacity of each shed is not separated by 9 m to a 'short period of time'.

	<u>2. Short Period of Time</u>
	• Table 4.1 of the OEMP states that current operational practices result in non-compliance with SAFEX separation distances for 21.8% of the time. Table 4.2 states that 90% of SAFEX non-compliance events take up to 27 days to return to SAFEX compliance, with the remaining 10% of events taking up to 45 days to return to SAFEX compliance.
	• In risk assessment, the general expected variation is about 5-10% to capture the probabilistic nature of the analysis, a variation of 21.8% goes beyond the expected variation in the QRA.
	• Table 4.1 confirms the site was non-compliant with SAFEX separation distances for over one entire year (382 days) of the 4.8-year study period. This equates to 80 days per year when an explosion involving more than half the storage capacity of each storage building may occur. This operational risk scenario was not assessed in the Quantitative Risk Assessment (QRA) for the original DA and may present a serious risk to public safety.
	• Section 4.5.2.3 of the OEMP proposes that a 'short period of time' be defined as 28 days, however, the OEMP provides no justification for adopting this definition nor does it limit the number of events. Multiple non-compliant periods of 28 days within a year could amount to several months of noncompliance.
	• On the basis of the above, the Department and Safework are of the view that:
	  ○ any SAFEX non-compliance event must not exceed 7 days
	  ○ the cumulative total number of days the site (both Shed A and Shed B combined) is non-compliant
	  ○ with SAFEX separation distances must not exceed 21 days in a 12-month period.
	Direction: The OEMP must:
	  ○ include a list of definitions that clearly defines the term 'short period of time' for the purposes of regulating Condition 3 Schedule 3 of the consent, as follows:
	  ➢ short period of time: a time period of ≤ 7 days
	  ○ commit to a maximum cumulative limit of 21 days in any 12-month period in which the site may be non-compliant with SAFEX separation distances for the storage of AN in Shed A and Shed B combined.
		Crawfords has adopted the definition of a 'short period of time' being 7 days and committed to a maximum cumulative limit of 21 days in the revised (V4) OEMP.

OEMP Section	DPE Comments	Crawfords Response
	3. Trigger Action Response Plan (TARP) • Table 4.3 provides an Ammonium Nitrate Separation Distance TARP. The TARP only describes actions to be taken when AN stacks in Shed A and Shed B have been non-compliant with SAFEX separation distances for at least 14 days, 21 days and greater than 28 days. • The TARP does not provide any response that is certain to restore stack separation to SAFEX requirements, as such SAFEX non-compliance may continue indefinitely. • The TARP does not include any pro-active actions / responses that are initiated to avoid noncompliance with SAFEX separation distances before Shed A or Shed B reach an inventory of 4,000t of AN (the maximum storage inventory at which SAFEX separation distances can be achieved). • Despite Section 4.5.2 of the OEMP acknowledging that SAFEX separation distances cannot be achieved when the storage inventory exceeds 4,000t, the inventory management practices described in Section 4.5.2 demonstrate it is standard operational practice to use infill stacks of AN to maximise the volume of AN stored in Shed A and Shed B, rather than using such an arrangement as a short-term management response to an unavoidable non-compliance. • In concurrence with Safework, the Department strongly recommends Crawford take a preventative approach of not exceeding 4000 t of AN in each shed both for safety and for making compliance achievable, predictable, and measurable. **Direction: The OEMP TARP must:** ○ use a 'traffic light' system for structuring the TARP which includes a 'green light' for normal operations, 'orange light' for approaching non-compliance, and 'red light' for a non-compliant event ○ for 'green light' and 'orange light' conditions, include actions that Crawfords will take to maintain SAFEX separation distances, before storage in Shed A or Shed B reaches 4,000t to avoid utilising any infill stacks and the need to manage a non-compliance with SAFEX separation distances ○ for 'red light' conditions, specify a defined period in which each response action will guarantee to return the site to SAFEX compliance ○ prioritise an even distribution of AN inventory across both Shed A and Shed B to avoid the volume of AN stored in either shed exceeding 4,000t at any time ensure the storage inventory of Shed A does not exceed 4,000t if the storage inventory of Shed B is <4,000t ○ specify who is responsible for each response action. **Direction: Crawfords must:** ○ include a commitment in the OEMP to implement the TARP.	As indicated in the response above to 1. Maximum Capacity, the 4,000t AN storage limits in Shed A and Shed B are not considered applicable given the acceptance by DPE of the revised AN storage arrangement. While during normal operations it is anticipated that a separation distance of 9 m will be maintained between half of the storage capacity of each shed at all times, there may be exceptional circumstances where alternate AN stacking arrangements are required. Given such an event would be unforeseen and the fact that the maximum inventory that can be stored and comply with Condition 3 of Schedule 3 of the Consent is now 4,500t, the TARP approach directed by DPE whereby actions are taken to limit storage inventory in each shed is not considered practical. Notwithstanding this, Crawfords has updated the TARP in the revised OEMP (V4) to as far as practicable address DPE's direction and to ensure that in the highly unlikely event that Crawfords need to implement a temporary AN stacking arrangement, that transition from AS4326 to SAFEX separation distances occur within a 'short period of time', i.e. 7 days and 21 days cumulative annual. Crawfords has included a commitment to implement the TARP in the revised OEMP (V4).

1.2 SafeWork NSW

OEMP Section	SafeWork NSW Comments	Crawfords Response
	Corrections It is acknowledged that corrections have been made to the OEMP in relation to SafeWork NSW positions on Shed C, and the movement of bags from infill stacks to primary stacks. It is also noted that the updated "maximum inventory" configuration depicted in Figure 4.1 no longer exceeds the licensed quantity of 4500 tonnes.	Noted, however, please note that further updates to the stacking arrangement figures have been made to reflect a revised AN stacking arrangement
	Response actions SafeWork NSW continues to doubt the efficacy of measures proposed to minimise periods of SAFEX non-compliance. Section 4.5.2.2 of the OEMP states that "as far as practicable Crawfords ensure [sic] “infill stacks” are made up of product that will be dispatched preferentially prior to product that has been placed in “primary stacks”." A decision to stop using "infill stacks" would reduce the total storage capacity to 4000 tonnes in each store and achieve SAFEX compliance. SafeWork NSW considers that to be a relatively minor reduction in capacity for a significant increase in safety. Increasing stack separation to 9 metres ensures that the maximum credible explosion at the facility would be only 500 tonnes instead of 4500 tonnes, with a corresponding decrease in risk to the surrounding community. SafeWork NSW believes these measures will only have limited, and sometimes zero, effectiveness against known features of the Crawfords operating model and an ongoing intent to store 4500 tonnes of AN in each shed. The only measures with any certainty of achieving SAFEX compliance are a commitment to remove excess AN from site after "a short period", or to prevent non-compliance by not storing more than 4000 tonnes of AN in each shed.	A revised storage arrangement was presented to DPE in a meeting with Crawfords and Crawfords consultant on 20 September 2023. The revised storage arrangement provided for a separation distance in accordance with SAFEX that would prevent more than half of the storage capacity of each shed being involved in an explosion and enabled the storage of a maximum quantity of: - 4,500 t of AN in Shed A - 4,500 t of AN in Shed B DPE advised Crawfords in an email from Sally Munk dated 13 October 2023 that after review of the revised storage arrangement in consultation with SafeWork NSW that DPE agreed to the OEMP being updated based on the revised arrangement presented by Crawfords. As such, the revised OEMP (V4) has been updated to reflect the revised arrangement and the maximum AN capacities for Shed A and Shed B indicated in DPE’s direction are not considered to apply. During normal operations, it is anticipated that a separation distance of 9 m will be maintained between half of the storage capacity of each shed at all times with the exception of an unforeseen event such as shed repairs (e.g. following a storm). Therefore infill stacking is highly unlikely to occur and if it does, it will occur in exceptional circumstance and Crawfords will limit the stacking of AN where more than half of the storage capacity of each shed is not separated by 9 m to a ‘short period of time’, i.e. 7 days and 21 days cumulative annual.
	Time Periods SafeWork NSW reiterates its previous comments that non-compliance for 21.8% of the time, equal to more than one year in aggregate over the 4.8 year period under study, cannot be considered a short period. The OEMP provides no reasons why a short period should be defined as 28 days. Under that definition, multiple non-compliant periods within a year could amount to many months. Even at 28 days, the TARP does not provide a response that is certain to restore stack separation to 9 metres and SAFEX non-compliance may therefore continue indefinitely. These conditions are not consistent with the notion of a short period. SafeWork NSW acknowledges the operational difficulty of promptly and reliably reducing inventory levels when constrained by external factors such as those identified in the OEMP. These circumstances strongly indicate that a preventative approach of not exceeding 4000 tonnes of AN in each shed is preferred both for safety and for making compliance achievable, predictable, and measurable. If AN storage at Sandgate will continue to exceed 4000 tonnes in each shed, any definition of "a short period" can only be effective when it is tied to response actions that are guaranteed to achieve compliance at the end of that period, such as removing excess AN from site.	Crawfords has adopted the definition of a ‘short period of time’ being 7 days and committed to a maximum cumulative limit of 21 days in the revised (V4) OEMP.

Our ref: SSD-5119-PA-6

Mr Mark Grech
HSSE & Compliance Manager
Crawfords Freightlines Pty Ltd
Old Maitland Rd
SANDGATE NSW 2304

29 November 2023

Subject: Ammonium Nitrate Storage Facility - Crawfords OEMP - Revised October 2023

Dear Mr Grech

Reference is made to the revised Operational Environmental Management Plan (Version 4, dated 25 October 2023) (the revised OEMP) for the Crawfords Ammonium Nitrate Storage Facility (SSD-5119) submitted on 27 October 2023 for approval by the Planning Secretary.

The Department has reviewed the revised OEMP in consultation with Safework and is not satisfied the proposed AN storage arrangement outlined in Section 4.5, and presented in Figure 4.2 of the revised OEMP, reflect the arrangements presented by your consultant, Chris Bonomini from Umwelt, at our meeting on 20 September 2023 (refer attached). The layout presented by Mr Bonomini does not include the use of infill stacks, is consistent with the assessment carried out in the approved Quantitative Risk Assessment (QRA) for the development and was therefore agreed to in principle by the Department via email on 13 October 2023.

Section 4.5.2 of the revised OEMP talks to the use of infill stacks in an unforeseen event such as a storm. This is inconsistent with the requirements of condition 3 Schedule 3 of the development consent which does not permit the reduction in separation distances for this type of situation.

Detailed feedback on the revised OEMP is provided in **Attachment 1** of this letter.

Crawfords is requested to revise the OEMP to reflect the AN storage layout agreed to by the Department in principle on 13 October 2023 and to address the matters outlined in **Attachment 1**. The revised OEMP must be submitted no later than **Wednesday 13 December 2023** .

Should you wish to discuss the matter further, please contact Sally Munk, Principal Planner, on 9274 6431 or via email at sally.munk@planning.nsw.gov.au.

Yours sincerely

Chris Ritchie
Director
Industry Assessments

As nominee of the Planning Secretary

Attachment 1 – Department's Review of the Revised OEMP

Attachment 2 – Presentation by Umwelt – 20 September 2023

ATTACHMENT 1

Department's Review of the Revised OEMP

1. AN Storage Arrangements

- The AN storage arrangement presented in Figure 4.1 of the revised OEMP clearly demonstrates that both Shed A and Shed B can each store up to the maximum approved storage volume of 4,500 tonnes (t) of AN without the need for reducing the separation distances required under Condition 3 Schedule 3 of the development consent 'for a short period of time' (i.e. without the need for infill stacks).

  The arrangement presented in Figure 4.1 is the AN storage layout assessed in the QRA, approved in the development consent and is consistent with the layout presented by Chris Bonomini of Umwelt, on 20 September 2023. During our discussions on 20 September 2023, Crawfords indicated there would be no need to rely on the term 'short period of time' if it were to implement the AN storage layout presented by Umwelt.
- Figure 4.2 and the commentary in Section 4.5.2 illustrate and describe the use of infill stacks in the event an unforeseen situation arises, such as a storm event damaging a shed. Condition 3, Schedule 3, does not permit the reduction of separation distances for this type of situation, which would more likely constitute an 'incident' under Condition 3, Schedule 4, of the development consent.
- Section 4.5.2 describes the proposed separation distance management for medium density AN (MDAN) and high density AN (HDAN). The description of AN storage arrangements does not state the proposed stacking configuration for i.e. 'pyramidal' or 'normal', as described in *AS 4326 – 2008 Storage and Handling of Oxidising Agents* (AS4326). It is suggested these arrangements would be more clearly presented in a table format for the different types of AN and compared to the separation distance requirements of AS4326 to confirm compliance.

Recommendations:

a) The revised OEMP must be amended to describe the operational procedures that enable the layout presented in Figure 4.1 to be maintained at all times and to be reflected in the daily inventory tracking system.
b) The daily inventory tracking system should demonstrate that the inventory of each primary stack does not exceed the maximum quantities specified on Figure 4.1.
c) The description of storage arrangements must clearly describe the stacking configuration for stacks of MDAN and HDAN as either 'pyramidal' or 'normal' to confirm the proposed arrangements meet the separation distances required by AS4326.
d) Any type of unforeseen event that results in a non-compliance with the consent must be reported as an 'incident' under the requirements of Condition 3, Schedule 4, of the development consent.

2. Trigger Action Response Plan (TARP)

The TARP presented in Section 4.5.2.1 and Table 4.1 of the revised OEMP now reflects a 'traffic light system', as previously required by the Planning Secretary's Direction dated 15 August 2023.

However, as Figure 4.1 of the revised OEMP demonstrates the separation distances required under condition 3, Schedule 3, of the development consent can be achieved in Shed A and Shed B, even

when both sheds are at the maximum approved capacities of 4,500 t, the TARP should be amended to describe the actions that Crawfords will take to maintain compliance with those separation distances as part of daily normal operating procedures at all times.

Recommendations:

a) The TARP must:
   i. be edited to remove all references to infill stacks
   ii. be implemented at all times, and structured with actions to manage the AN inventory to maintain separation distances when approaching the maximum storage capacity of each shed (i.e. 4,500 t), not once the limit is reached.
   iii. for 'green light' and 'orange light' conditions:
      a. specify the AN storage inventory to which each condition relates, e.g. Green = 1 – 2,999 t, Orange = 3,000 – 3,999 t.
      b. include actions that Crawfords will take to maintain the consented separation distances, before storage in Shed A or Shed B reach their maximum approved capacities
   iv. for 'red light' conditions:
      a. specify the AN storage inventory to which 'red light' conditions relates, e.g. 4,000 - 4,500 t
      b. include actions that Crawfords will take to maintain the consented separation distances when Shed A and Shed B are approaching maximum approved capacities and when the sheds reach their maximum approved capacities
   v. prioritise an even distribution of AN inventory across both Shed A and Shed B
   vi. specify who is responsible for each response action.

3. Other Matters

In Section 4.5.2:

- terminology such as 'AN is to be stored …' and 'The following storage arrangements are …', should be replaced with 'AN will be stored …' and 'The following storage arrangements will …'.
- remove all commentary regarding the infill stacks as these are no longer required for the configuration presented by Umwelt and reflected in Figure 4.1.

In Section 4.5.2.1:

- remove all commentary regarding an unforeseen situation in which the infill stacks would be used.

ATTACHMENT 2

Presentation by Umwelt – 20 September 2023

Consent Conditions

Schedule 2

7. In any case, the Applicant shall not store more than 13,500 tonnes of AN on the site at any one time, comprising the storage of a maximum of up to:
   - 4,500 tonnes of AN in Shed A;
   - 4,500 tonnes of AN in Shed B;
   - 4,000 tonnes of AN in Shed C; and
   - 500 tonnes of AN in shipping containers in the outdoor compound of Shed C.

Schedule 3

HAZARDS AND RISK

General

2. The Applicant shall ensure that the development complies with the requirements of the latest version of *AS 4326*. Measures to inspect and maintain the site to ensure compliance with the latest version of *AS 4326* must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).

3. The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX *International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate* or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity

SAFEX

Section 7.1. General

Owners and operators of TGAN stores should adhere to the Quantified Risk Assessment (QRA) method mandated by their relevant regulatory authority(ies). Where this mandate is absent, other QRA processes accepted by the industry, for example IMESAFR, should be employed.

Section 8.2. General

Key points:

- For packages and IBCs, individual stacks should be separated by the distance determined by the QRA.
- For packages and IBCs stored on either non-combustible (steel) pallets OR without any pallets, the maximum stack size will be determined by the QRA.

A.1. Separation of TGAN Stacks, Piles and Silos

If these separation requirements are met, the quantity of TGAN considered as a potential explosive source is the quantity in each individual stack or pile. If the separation requirements are not met, the quantity of TGAN in the individual stacks or piles must be summed to give the size of the potential explosive source. This has important consequences in a risk assessment process (see Appendix B)

***Table A.1*: Separation Distances for Various TGAN Types** (Ref 5)

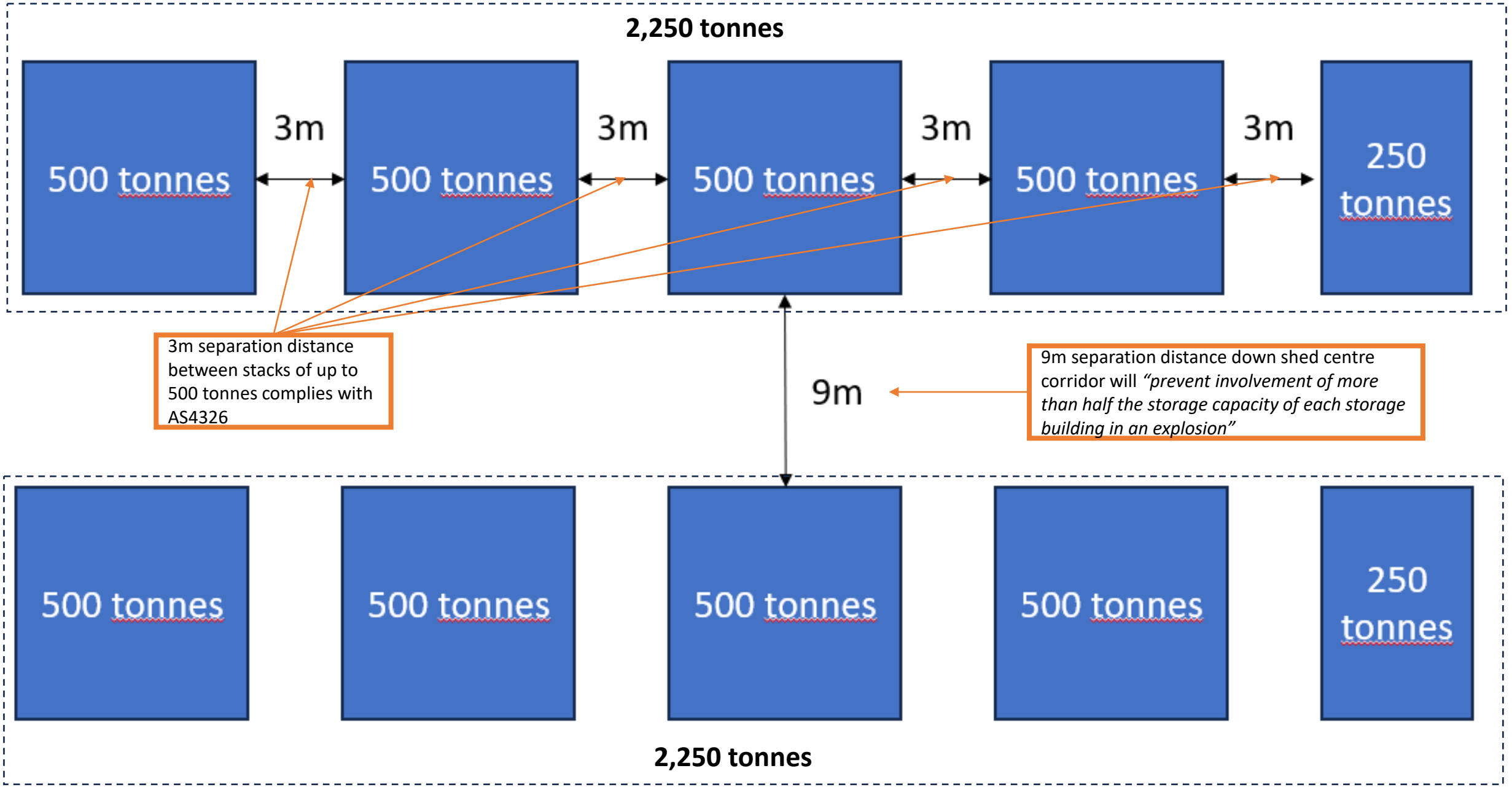
TYPE OF AN	TYPE OF STORAGE	MAX. MASS PER PILE (TE)	SEPARATION BETWEEN PILES (M)	COMMENTS
High density TGAN	Bags, IBCs		[1]	
Medium Density TGAN	Bags, IBCs	As determined by the QRA	[9]	Normal Configuration
Medium Density TGAN	Bags, IBCs		[7]	Pyramidal Configuration
Low density TGAN	Bags, IBCs		[16]	Normal Configuration
	Bags, IBCs		[9]	Pyramidal Configuration
	Bulk	>500	Tbd	
	Bulk	<500	[8]	

[ ] in Table denotes values to be confirmed by data
Tbd = To be determined

Comments

- *The HSE Hazard Analysis (i.e. the QRA) was prepared in accordance with HIPAP 6 and MLRA and risks found to be tolerable with respect to HIPAP 4 criteria. The quantity of AN (50% max shed inventory = 2,250 tonnes) considered in explosion scenario was as directed by DP&I.*
- *Given the QRA was based on a 2,250 tonne explosion event, according to SAFEX, the separation distances should apply to maximum stack size of 2,250 tonnes.*

Conceptual Alternate Shed Layout



1.0 Sandgate AN Facility OEMP V4 – Crawfords Response to Agency Comments 29/11/23

1.1 DPE Comments

OEMP Section	DPE Comments	Crawfords Response
4.5.2 Inventory and Separation Distance Management	<u>1. AN Storage Arrangements</u> • The AN storage arrangement presented in Figure 4.1 of the revised OEMP clearly demonstrates that both Shed A and Shed B can each store up to the maximum approved storage volume of 4,500 tonnes (t) of AN without the need for reducing the separation distances required under Condition 3 Schedule 3 of the development consent 'for a short period of time' (i.e. without the need for infill stacks). The arrangement presented in Figure 4.1 is the AN storage layout assessed in the QRA, approved in the development consent and is consistent with the layout presented by Chris Bonomini of Umwelt, on 20 September 2023. During our discussions on 20 September 2023, Crawfords indicated there would be no need to rely on the term 'short period of time' if it were to implement the AN storage layout presented by Umwelt. • Figure 4.2 and the commentary in Section 4.5.2 illustrate and describe the use of infill stacks in the event an unforeseen situation arises, such as a storm event damaging a shed. Condition 3, Schedule 3, does not permit the reduction of separation distances for this type of situation, which would more likely constitute an 'incident' under Condition 3, Schedule 4, of the development consent. • Section 4.5.2 describes the proposed separation distance management for medium density AN (MDAN) and high density AN (HDAN). The description of AN storage arrangements does not state the proposed stacking configuration for i.e. 'pyramidal' or 'normal', as described in AS 4326 – 2008 Storage and Handling of Oxidising Agents (AS4326). It is suggested these arrangements would be more clearly presented in a table format for the different types of AN and compared to the separation distance requirements of AS4326 to confirm compliance. Recommendations: a) The revised OEMP must be amended to describe the operational procedures that enable the layout presented in Figure 4.1 to be maintained at all times and to be reflected in the daily inventory tracking system.	The OEMP has been updated to present only the stacking arrangement in Figure 4.1 and only describes AN inventory management measures that are intended to maintain this stacking arrangement at all times. We note that Figure 4.1 has been updated to reflect a slightly altered stacking arrangement whereby the 250 tonne stacks located on each side of the shed are now closest to the shed entry points and slightly longer 500 tonne stacks. These minor changes to the stacking arrangement still maintain a distance of 9 m between half of the storage capacity of each shed but enable clearer access at the shed entry points which further reduces the likelihood of a handling incident.
	b) The daily inventory tracking system should demonstrate that the inventory of each primary stack does not exceed the maximum quantities specified on Figure 4.1.	The daily inventory tracking system records the inventory of each stack will demonstrate the maximum quantities specified in Figure 4.1 for each stack is not exceeded.
	c) The description of storage arrangements must clearly describe the stacking configuration for stacks of MDAN and HDAN as either 'pyramidal' or 'normal' to confirm the proposed arrangements meet the separation distances required by AS4326.	The OEMP has been updated to indicate all stacks of AN bags are in a pyramidal configuration.
	d) Any type of unforeseen event that results in a non-compliance with the consent must be reported as an 'incident' under the requirements of Condition 3, Schedule 4, of the development consent.	Table 11.1 includes the performance criteria for AN storage compliance. Should AN inventory monitoring indicate that any of the AN storage compliance criteria are not achieved (including stack separation distances), the identified non-compliance will be reported as an incident as described in Section 12.1.4 of the OEMP.

OEMP Section	DPE Comments	Crawfords Response
	<u>2. Trigger Action Response Plan</u> The TARP presented in Section 4.5.2.1 and Table 4.1 of the revised OEMP now reflects a 'traffic light system', as previously required by the Planning Secretary's Direction dated 15 August 2023. However, as Figure 4.1 of the revised OEMP demonstrates the separation distances required under condition 3, Schedule 3, of the development consent can be achieved in Shed A and Shed B, even when both sheds are at the maximum approved capacities of 4,500 t, the TARP should be amended to describe the actions that Crawfords will take to maintain compliance with those separation distances as part of daily normal operating procedures at all times. Recommendations: a) The TARP must: i. be edited to remove all references to infill stacks ii. be implemented at all times, and structured with actions to manage the AN inventory to maintain separation distances when approaching the maximum storage capacity of each shed (i.e. 4,500 t), not once the limit is reached. iii. for 'green light' and 'orange light' conditions: a. specify the AN storage inventory to which each condition relates, e.g. Green = 1 – 2,999 t, Orange = 3,000 – 3,999 t. b. include actions that Crawfords will take to maintain the consented separation distances, before storage in Shed A or Shed B reach their maximum approved capacities iv. for 'red light' conditions: a. specify the AN storage inventory to which 'red light' conditions relates, e.g. 4,000 - 4,500 t b. include actions that Crawfords will take to maintain the consented separation distances when Shed A and Shed B are approaching maximum approved capacities and when the sheds reach their maximum approved capacities v. prioritise an even distribution of AN inventory across both Shed A and Shed B vi. specify who is responsible for each response action.	The TARP has been updated as requested with the exception of item v. which requires the TARP to "prioritise an even distribution of AN inventory across both Shed A and Shed B". While Crawfords will not manage AN inventories such that extreme imbalances (e.g. 4,500 tonne in Shed A and 200 tonne in Shed B) in shed inventories are realised, Crawfords will not commit to maintaining an even distribution of AN across the sheds for the following reasons: • customer product separation requirements • the increased requirement for labour and equipment to transfer bags of AN from one shed to the other • complication of AN inventory tracking Further to the above, it is considered that increased handling of AN bags will increase the risk of an accident occurring that involves AN. As indicated in Section 4.5.2.1 of the OEMP, Crawfords also prioritise the despatch of the centre stacks in each row to further limit the maximum quantity of AN that could be involved in an explosion to 1,000 tonnes (i.e. two 500 tonne stacks).
	<u>3. Other Matters</u> In Section 4.5.2: • terminology such as 'AN is to be stored …' and 'The following storage arrangements are …', should be replaced with 'AN will be stored …' and 'The following storage arrangements will…'. • remove all commentary regarding the infill stacks as these are no longer required for the configuration presented by Umwelt and reflected in Figure 4.1.	Terminology has been updated in Section 4.5.2 as requested.
	In Section 4.5.2.1: • remove all commentary regarding an unforeseen situation in which the infill stacks would be used.	Commentary regarding unforeseen situation in which infill stacks would be used has been removed.

Appendix C – Independent Environmental Audit Outcomes

Table B.1 IEA Non-compliances

ID	Consent and/or EPL Condition(s)	Description
NC1	Schedule 2, Condition 1, EPL Condition L1.1	Stormwater discharged from site continues to exceed stormwater quality assessment criteria, indicating that the Water Management Plan, including the Stormwater Management Plan, require improvement. No analysis was completed for dissolved oxygen, chlorophyll, filterable reactive phosphate; and oxides of nitrogen which are listed in the Table 3.3.2 of the ANZECC Guidelines. Review the Water Management Plan, including the Stormwater Management Plan, to identify improvements that would contribute to improving water quality so as to comply with water quality assessment criteria. Document identified improvement actions, such as the work underway to improve the stormwater retention ponds, in the Water Management Plan. Include groundwater quality assessment criteria in the Water Management Plan.
NC2	Schedule 2, Condition 2	Condition 2 is considered non-compliant based on the number of non-compliances with the conditions of this consent, including EPL 20295 requirements. Review the findings of this Audit and consider developing a compliance tracking system that can be reviewed on a regular basis to prevent future non-compliances.
NC3	Schedule 2, Condition 4	Crawfords has not complied with the reasonable requirements of the Planning Secretary. Ensure that directions and requests from the Department are complied with in accordance with Condition 4 requirements.
NC4	Schedule 2, Condition 6	No documentation has been provided to confirm written approval from the Department of the Off-Site Restricted Access Area Strategy. Obtain the written approval of the Planning Secretary every 12 months from the date the Department approved the Off-Site Restricted Access Area Strategy and retain the records on file.
NC5	Schedule 2, Condition 12; Condition O2.1	The Safety Management System (SMS) Manual does not include maps showing the risk contours for on-site and off-site risks, which is considered non-compliant. Ensure that the SMS Manual includes maps showing the risk contours for onsite and off-site risks.
NC6	Schedule 3, Condition 8	Hazard Audits have not been conducted at the required frequency of every two years. Establish a process to ensure that Hazard Audits are conducted every two years or at such intervals as the Planning Secretary may agree. Retain records related to the conduct of Hazard Audits including the approval of the Auditor / Audit Team, the submission of the HA report to DPE and Planning Secretary's approval.
NC7	Schedule 3, Condition 9	The Safety Management System (SMS) Manual does not include maps showing the risk contours for on-site and off-site risks, which is considered non-compliant. Ensure that the SMS Manual includes maps showing the risk contours for onsite and off-site risks.
NC8	Schedule 3, Condition 11	Refer to NC1 description.

NC9	Schedule 3, Condition 12	A number of Intermediate Bulk Containers (IBCs) were observed that were not bunded. Pallet bunds are used in the Shed D Workshop to store IBCs of oil and the concrete floor was stained black in places from spills around the pallet bunds that had not been cleaned up properly. Conduct a review of the house keeping practices, monitoring and maintenance of chemical storage within Shed C and D, including the adequacy of bunding in the Workshop. It is also recommended that a review of chemical labelling be undertaken.
NC10	Schedule 3, Condition 17	The Structural Certificates were not sighted within the Flood Risk Management and Response Plan or Site Emergency Plan and the Operational Environmental Management Plan (OEMP). Implement a procedure to ensure the structural certification documents are included as an appendix to the site emergency response plan and OEMP.
NC11	Schedule 3, Condition 21	The Site Emergency Plan did not include a copy of the structural certification and a staff training program to be implemented. Evidence of consultation with Council and the NSW Office of Environment and Heritage (OEH) and approval by the Planning Secretary had not been provided for review by the Auditors for the revised Site Emergency Plan. A review of the current Site Emergency Plan should be undertaken in consultation with Council and the OEH and approved by the Planning Secretary. A procedure should be implemented to ensure the structural certificates are attached to the plan. The Site Emergency Plan should include a flood response staff training program including maintaining records of drills.
NC12	Schedule 2, Condition 1	Refer to NC1 description.
NC13	Schedule 3, Condition 25	The facility has operated outside of the approved operating hours. Ensure that the approved hours of operation are complied with, as shown in Condition 25 or as otherwise agreed in writing by the Planning Secretary.
NC14	Schedule 3, Conditions 30	The results of the 2020 dust monitoring reported continued elevated deposited dust concentrations above the long term criteria throughout 2020 both on and off site. Review the air quality monitoring program to assess whether deposited dust monitoring at additional offsite locations would provide a more accurate determination of whether deposited dust levels at any private residential receiver or 25% of privately owned land surrounding the site are in fact being exceeded. Evaluate current dust mitigation measures as part of the revision of the OEMP.
NC15	Schedule 3, Condition 32; EPL Condition O3.1	Elevated levels of dust were observed during the site visit and elevated concentrations of deposited dust were identified through air quality monitoring. Review and improve dust mitigation measures to minimise dust emissions from operation of the development.
NC16	Schedule 3, Condition 34	Elevated levels of dust observed during the site visit and elevated concentrations identified through air quality monitoring, both of which indicate that the Air Quality Management Plan has not been effective. Review and revise the Air Quality Management Plan to incorporate improved dust mitigation measures.
NC17	Schedule 3, Condition 36	The trains that visit the site may include up to 3 locomotives and 55 wagons, which exceeds the maximum allowed number of carriages. Review train movements to assess compliance with Condition 36. Ensure that Condition 36 requirements are met or alternatively, seek DPE approval to vary Condition 36.

NC18	Schedule 4, Condition 2	The OEMP was not revised following the 2018 IEA or following the direction of the Department in 2020. Review and revise the OEMP to address recommendations of this Audit, as well as any outstanding recommendations from the 2018 IEA and the Department's directions. Submit the revised OEMP to DPE for approval.
NC19	Schedule 4, Condition 3	Exceedances of stormwater and dust criteria have occurred that have not been notified to DPE. In addition to incidents, ensure that an exceedance of a limit / performance criterion in this consent is notified to DPE and other relevant agencies of the exceedance immediately (or as soon as practical thereafter). Submit a written detailed report within 7 days of the exceedance (or incident).
NC20	Schedule 4, Condition 4	IEAs have not been conducted at the required frequency of every three years. Ensure that future IEAs are conducted every 3 years. The next IEA site visit should be conducted by 27/05/24 or as otherwise agreed with DPE.
NC21	Schedule 3, Condition 11	Refer to NC1 description.
NC22	EPL Condition O5.2	Pallet bunds used to store IBCs and are not best practice for the permanent storage of IBCs and drums (e.g. waste oil in the Workshop in Shed D). There was evidence of spills outside pallet bunds. The Quarantine Wastewater aboveground storage tank (AST) bund appeared to be almost half full of water and therefore, may not have sufficient capacity in the event of a leak. Ensure that bunds are inspected and maintained in order that the bunds has sufficient capacity in accordance with Condition O5.2 requirements. Consider installing a properly constructed bund(s) in the Workshop and elsewhere as considered necessary that meets the requirements of Condition O5.2.
NC23	EPL Condition O7.2	Methyl bromide cylinders was observed in the northern container storage area and it cannot be verified that methyl bromide was not in use during the course of the Audit Period. Remove the methyl bromide cylinders from the site. Ensure that methyl bromide is not used for any purpose at the site.
NC24	EPL Condition O7.3	Wood fumigation activities were carried out onsite up until 2020. No recommendation is made as wood fumigation activities have now ceased.
NC25	EPL Condition M4.2	Crawford's Incident and Compliance Action Tracker does not identify sections in the tracker where the time of a complaint, or the method by which the complaint was made could be populated if a compliant were to occur. Review and update the Incident Register & Compliance Action Tracker to include the required details in accordance with Condition M4.2.
NC26	EPL Condition R1.5	The 2018/2019, 2019/2020 and 2020/2021 Annual Returns (ARs) were received by the EPA more than 60 days after the end of each reporting period. Review the process for preparing and submitting Annual Returns to ensure that they are submitted within the 60-day timeframe.
NC27	EPL Condition U1.1	No documentation has been provided to confirm when paving works have been completed or the reports required to be supplied to the EPA of the description of the works completed. If not already completed, reports of the paving works and reports to be submitted to the EPA.

Table B.2 IEA Recommendations

Consent and/or EPL Condition(s)	Description
Schedule 3, Condition 3	It was observed that the painted lines were faded in places. The stock count total number of bags and tonnages is not transferred or recorded in a summary spreadsheet and therefore the quantity of AN onsite cannot be readily determined or tracked without reviewing individual daily stock count worksheets. Refresh the painted lines in Sheds A and B so that the bulka-bags are kept within the required areas. Review the AN stock count system and consider adding a monthly summary worksheet and graph that tallies the total number of bags and tonnages in each Shed. The monthly tally can then be consolidated in an annual or ongoing spreadsheet that tracks the quantities over time.
Schedule 3, Condition 5	The Site Emergency Plan and Pollution Incident Response Management Plan (PIRMP) are not being tested in the field sufficiently and records detailing the nature of the exercise/test, attendance record and required improvements were not available for review. Ensure that records of testing of the Site Emergency Plan and PIRMP, which detail the nature of the exercise/test, attendance record and required improvements, are retained and readily available for review on request. Ensure that other monitoring requirements are being carried out and records retained in accordance with the Site Emergency Plan, PIRMP, OEMP and SMS Manual and Condition 5 requirements.
Schedule 3, Condition 20	Given recent major flooding in NSW, likely due to climate change impacts, a review of flood emergency response equipment is warranted. If it has not already been done, review the flood emergency response equipment as part of the OEMP review.
Schedule 3, Condition 31	During the site visit, the Auditors observed some forklifts that appeared to be driving at a speed potentially higher than the 10 kilometres per hour (km/h) speed limit, however, this could not be verified. Review forklift driving procedures and training to confirm all site personnel understand the speed limit at the site.
Schedule 3, Condition 38	The Traffic Management Map is out of date as it still indicates that the northern end of the site is used for “Timber Parking”, which reportedly ceased in 2020. Attach the current Site Map to the Crawfords Site Induction.
Schedule 3, Condition 39	Collectively, it is considered that the 2013 Traffic Management Plan (TMP), 2013 OEMP and SMS Manual generally meet the requirements of Condition 39 but the Auditors were unable to verify that a program to monitor the effectiveness of the measures is being implemented. Ensure that records are retained to demonstrate that a program to monitor the effectiveness of the TMP measures is being implemented as detailed in the 2013 TMP, 2013 OEMP and SMS Manual.
Schedule 3, Condition 48	Energy and water efficiency are not regularly reviewed. Review and revise the OEMP to include water efficiency measures and a process to regularly review opportunities to implement further energy and water efficiency measures, that is recorded.
EPL Condition L2.2	A number of old transformers were observed stored onsite, which were reportedly not ‘waste’ but in transit to a client. Temporary storage of equipment that could be considered as waste may be potentially non-compliant. Review internal procedures regarding the transfer and temporary storage of equipment onsite to ensure that ‘waste’ materials are not received at site.
EPL Condition O3.2	The site inspection identified the emissions of dust in areas where the surface was unsealed within the yard north of Shed C and south of Shed D. The site operations appear to be undertaking activities generally in accordance with the OEMP however dust is continuing to be emitted. A review of the dust mitigation measures to be undertaken as part of the OEMP review.

EPL Condition M5.2	Telephone numbers for contacting Crawfords are provided on their website and their Facebook page but they are not advertised as a telephone complaints line with the possible exception of a 'Safe Driving Contact' telephone number, which is not directly related to the premises. No signage was observed advertising a telephone complaints line for Crawfords at the entrance to the site. Notify the public of the telephone number that can be used to make a complaint, not necessarily related to safe driving issues. Erect a sign at the site entrance notifying the public of a telephone number for community complaints in relation to site activities or vehicle and mobile plant activities.
-	**Water Monitoring** The Auditors understand that Crawfords environmental consultant provides water monitoring results but does not prepare water monitoring reports. Therefore, it is difficult to assess the validity of the monitoring data for the Audit Period or compare the results with baseline data, previous monitoring rounds or the assessment criteria and trigger levels. No graphs are available to assess contaminant concentrations over time for trends in the data. Analysis of the results and comparison of groundwater and stormwater monitoring results may assist with understanding if there is interaction between groundwater and stormwater in the bio retention basins, which we understand is suspected. Obtain monitoring reports for required water monitoring prepared generally in accordance with the EPA's guidelines.

Appendix D – Safety Management System

Crawfords Freightlines Pty Ltd

Safety Management System Manual

Index

1 Management of the Safety Management System

1.1 Policy

1.2 Scope and Objectives

1.3 Roles and Responsibilities

1.4 Consultation

1.5 Records and Documentation Management

1.6 Key Performance Indicators and Communication

1.6a Injury Frequency Rate

1.6b Safety Performance Indicators

1.6c Safety Meetings

1.6d Internal Communication

1.7 System Reviews and Audits

1.8 SMS Document Control

2. Hazard Identification and Risk Assessment

2.1 Methodology

2.2 Consultation

2.3 Record Keeping

2.4 Associated Documents

2.5 Hazard Reporting

2.6 Human Factors

3 Standard Operating Procedures

3.1 Safe Operating Limits

3.2 SOP Requirements

3.3 Corrective Action Requirements

4 Process Safety Information

4.1 Material Safety Data Sheets

4.2 Defective equipment Reports

4.3 Documentation and updating Information

4.4 Enhancement of Competencies

4.5 Safety Interface Agreements

5 Contractor Management

5.1 Contractor Engagement

5.2 Contractor Site Inductions

5.3 Responsibility for Contractor Management on Site

5.4 Emergency Response Procedures for Contractors

5.5 Evaluation of Contractor Safety Performance

6 Pre-Commissioning Reviews

6.1 Equipment Design and Specification

6.2 Up to date Procedures

6.3 Management of Change Implementation

6.4 Employee Consultation

6.5 Employee Qualifications and Skills

7 Equipment Integrity

7.1 Identification of Plant and Equipment Requiring Testing and Maintenance

7.2 Testing of Safety Critical Equipment

7.3 Arrangements for Planned Maintenance

7.4 Procedures for Undertaking Repairs and Maintenance

7.5 Design Specifications for AN handling Equipment

7.6 Ammonium Nitrate Stores Electrical Services

7.7 Design Specifications for Rail Sidings

7.8 Rail Infrastructure Maintenance Procedures

8 Safe Work Practices

8.1 Work Permit System

8.2 Special Work Procedures

8.3 Hazardous Areas

8.4 Personal Protective Equipment

8.5 Protection from Hazardous Natural Events

9 Management of Change

10 Incident Reporting and Investigation

11 Employee Training and Education

11.1 Induction Training

11.2 Competency Training

11.3 Training Records

11.4 Employee Consultation

11.5 Employee Qualifications

11.6 Rail Worker Medical Standards

12 Procurement

12.1 SSAN Plant and Equipment

12.2 Rail Siding Materials

13 Emergency Planning

14 Security

15 Auditing

15.1 Audit Requirements

15.2 Inspection Requirements

16 Drug and Alcohol Testing Procedure

16.1 Purpose

16.2 Introduction

16.3 Site Standards

16.4 Testing for Alcohol

16.5 Testing for Drugs

16.6 Selection for Testing

16.7 Test Procedures

16.8 Action Following a Positive Test

16.9 Disciplinary Action

16.10 Disputes

16.11 Reporting

16.12 Audit and Review

16.13 Definitions

16.14 Related Documents

17 Fatigue Management

18 Appendices

19 Document Control

20 Document Sign Off

Appendix E – Site Emergency Plan

Appendix F – Off-site Restricted Access Area Strategy

CRAWFORDS
FREIGHTLINES PTY LTD

OFF SITE RESTRICTED ACCESS AREA STRATEGY

Crawfords Freightlines Sandgate Site

Document Control

Version	Date	Amendment Details	Amended By	Next Review Date
V1	6 August 2013	Final Offsite Restricted Access Strategy	Prepared by ERM	-
V2	23 August 2023	Review of Offsite Restricted Access Strategy. Updated background and Facility Overview to reflect current licence Conditions to the storage of Ammonium Nitrate and reformatted document.	Mark Grech	July 2023

1 Introduction

1.1 Background

Crawfords Freightlines Pty Ltd (Crawfords) has operated a storage and distribution facility (the Facility) for ammonium nitrate (AN) at the site since 2009. The development is located in Sandgate, NSW and involves the storage of up to 9000 tonnes (t) of AN in warehouses (Sheds A and B. The Facility is now completely leased by Crawfords with no other companies onsite, consists of an area for storage of shipping containers and aluminium ingots, general mixed freight, a workshop, a wash bay with an integrated water treatment system, a rail siding.

In December 2011, following a site inspection from Newcastle City Council (NCC) (now City of Newcastle) and the NSW Environment Protection Authority (EPA), NCC issued the owners and occupiers of the premises a Notice of Intention to Give an Order. Following this, NCC issued an Order under Section 121B of the EP&A Act on the 2 February 2012. The Terms of the Order were:

1. Within fourteen (14) days of the date of the order, limit storage of Ammonium Nitrate at the premises to not more than 2000 tonnes; and

2. Within twelve (12) months of the date of the order, cease use of the premises as a chemical storage facility, including but not limited to the storage of Ammonium Nitrate.

NCC extended the Order on 18 February 2013, thereby requiring Crawfords to cease use of the premises as a chemical storage facility, including but not limited to the storage of AN on or by 31 August 2013.

The EPA also issued a Notice of Preventative Action to Crawfords on 13 December 2011 (Prevention Notice No. 1503295, which was subsequently varied by Prevention Notice 1503467 on 20 December 2011). The site was required to reduce in the quantity of AN products stored at the premises to not more than 2000 t, which is below the threshold value identified in Schedule 1 of *Protection of the Environment Operations Act 1997* (POEO Act) and thus not requiring an Environment Protection Licence (EPL).

In order to enable continued operations at the site, Crawfords engaged ERM to prepare an environmental impact statement (EIS) to accompany a state significant development application (SSD-5119) seeking approval to store and distribute 13 500 t of AN at the site. Development consent, subject to conditions (the Consent), was granted on 13 June 2013. On 18 July 2013, the EPA issued EPL 20295 and revoked Prevention Notice No 1503295,

On 18 July 2013, the EPA issued EPL 20295 and revoked Prevention Notice No 1503295, as varied by Prevention Notice No. 1503467. Although the Consent allowed for the storage of up to 13,500 t of AN, WorkSafe NSW has withdrawn approval to store AN in, and outside of, Shed C due to its proximity to the neighbouring aged care facility (St Josephs) north of the Facility and the current AN storage limit is 9,000 t.

1.2 Facility Overview

The site is located at Lot 12 DP 625053 Old Maitland Road, Sandgate, New South Wales (NSW) and has an area of 8.77 hectares (ha). The site is situated approximately 10 kilometres (km) to the north-west of Newcastle Central Business District and approximately 6.7 km west-north-west of industrial operations on Kooragang Island, NSW, within the local government area of Newcastle. A site locality plan is presented in Figure 1.1. Access to the site is via Old Maitland Road, off the Pacific Highway. Figure 1.2 shows the site layout. Crawfords lease the entire the site from Sierra Sun Pty Ltd.

Crawfords manages and operates a rail siding at the site adjacent to the Main Northern Railway Line which runs along the western Facility boundary. The siding is used exclusively for trains servicing Crawfords Port Botany container transport operation. Crawfords have exclusive use of the siding. Trains operating to and from and accessing the siding are operating under the direction of Crawfords. Crawfords have engaged '3801 Limited' to operate trains servicing the siding. 3801 Limited hold current accreditation as a train operator on the track network.

The operational boundary for entering the Crawfords siding is M106.8 (202) signal on the up main line located at 171.957 km (from Sydney). The operational boundary for departing the Crawfords siding is SS106.7 (235) signal within the Crawfords siding located at 171.685 km.

The track maintenance boundary is aligned with signal SS106.7 (235) at the operational boundary at 171.685 km.

Crawfords is responsible for the management of maintenance over its managed track beyond this point away from the Australian Rail Track Corporation's (ARTC's) main line. Crawfords is also responsible for inspection of the walkway adjacent to the up main line.

2. SURROUNDING LAND USE

Land uses and activities directly surrounding the site are generally limited to minor industrial and commercial uses, wetland areas and residential areas.

Within the site are industrial premises situated within the same industrial precinct as Crawfords. Further north of the site, in an elevated position on a

hill is St Joseph's Home (residential aged care) and St Joseph's Village (independent living).

Immediately adjacent to the northern boundary is a portion of land owned by Sierra Sun Pty Limited which currently stores stockpiled magnetite, formally identified as Lot 22 in DP 627724. Beyond this parcel of land is the depot of a mining company, Sibelco Australia, approximately 200 m north of the site. Located immediately to the northeast boundary is wetland known as the "2HD Swamp" which is currently occupied by the 2HD transmission tower.

Immediately west of the site is the Main Northern Railway and beyond this Newcastle Golf Practice Centre and the former Council landfill site commonly known as Astra Street Landfill, Shortland. West of the Main Northern Railway are SEPP 14 Hunter Wetlands, which are classified as a Ramsar wetland of international significance.

To the south and southeast is a corridor of land which is currently under construction for the Newcastle Inner City (Shortland to Sandgate) Bypass. Further to the southeast is the Sandgate Cemetery and mixed industrial and residential areas. The nearest residential areas are located along the Pacific Highway approximately 300 m to the northeast of the site.

3. CONDITION 5 IN SCHEDULE 2

Annex A contains a complete copy of the development consent for establishment of an ammonium nitrate storage and distribution facility on the site. In summary, Condition 5 in Schedule 2 requires the preparation of this Off Site Restricted Access Area Strategy (the Strategy) which must be approved by the Director General of the Department of Planning and Infrastructure prior to the commencement of operations on the site. The Strategy must address the following:

- provide details of the works proposed to prohibit public access, particularly in relation to signage and fencing;

- provide evidence that each land owner within the Off Site Restricted Access Area (as depicted in the Figure included within *Annex* A) has been consulted and agrees with the proposed measures; and

- investigate and detail options to purchase or secure land on a long term basis within the Off Site Restricted Access Area in perpetuity.

COMPANY DETAILS

NAME OF COMPANY	Crawfords Freightlines Pty Ltd
TRADING AS	Crawfords Freightlines Pty Ltd
A.C.N.	069 024 899
A.B.N.	22 069 024 899
CURRENT ORGANISATION DETAILS	Peter Crawford – Company Director
REGISTERED ADDRESS	Titan Partners PO Box R415 Royal Exchange NSW 1225
COMPANY TELEPHONE NUMBER	(02) 4967 6977
COMPANY FAX NUMBER	(02) 6967 6852
NAME OF LICENCE HOLDER	Peter Crawford
COMPLIANCE MANAGER	Name: Mark Grech Phone: (02) 4032 7270 After Hours / Mobile: 0427 010 838 Email: mgrech@crawfordsfreightlines.com.au
SECURITY COMPANY	24 Hour Total Security Phone 0490 531 000

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6 August, 2013

Manager - Industry
NSW Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001

Our Reference: *0143175 OFF SITE RESTRICTED AREA STRATEGY FINAL 2.DOCX*

Attention: **Chris Ritchie**

Dear Chris,

RE: SANDGATE OFF SITE RESTRICTED ACCESS AREA STRATEGY

1. BACKGROUND

Development consent was granted to Crawfords Freightlines Pty Ltd (Crawfords) by the delegate of the Minister for Planning and Infrastructure on 13 June 2013 to facilitate the establishment of an ammonium nitrate (AN) storage and distribution facility at Lot 12 DP625053 known as 158 Old Maitland Road at Sandgate (referred to hereafter as the site).

The site is currently owned by Sierra Sun Pty Ltd, with the majority of the site leased to Crawfords for the storage and distribution operation they undertake which is a permitted land-use under the current zoning (IN3 Heavy Industrial (Newcastle City Council (NCC) Local Environmental Plan (LEP) 2011).

Crawfords first occupied the site in December 2008 when they were granted a licence from WorkCover NSW for the storage of 10 000 tonnes (t) of AN on the site. In August 2010, Crawfords obtained the lease for Shed C which was previously held by Toll Resources. At this time Crawfords submitted an application to extend the WorkCover licence, which was granted in September 2010. The extended licence covered the additional storage of AN up to 13 500 t.

Following a site inspection by officers from the Environmental Protection Authority (EPA) and Newcastle City Council (NCC) in December 2011, it became known to Crawfords that they required development consent to operate the AN storage and distribution facility. As Crawfords did not hold such a development

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consent they reduced the quantity of AN stored on site to less than 2000 t (below the level which requires an Environmental Protection Licence (EPL) to be held) and immediately set about the lodgement of a development application to secure development consent for the storage of 13 500 t on AN on the site.

As mentioned above this development consent was granted on 13 June 2013 subject to a number of conditions. Condition 5 in Schedule 2 requires the preparation of an Off Site Restricted Access Area Strategy. This Strategy has been prepared to fulfil the requirements of this condition. The full condition is reproduced in *Annex A*.

The storage and distribution of ammonium nitrate at the site has been occurring for many years with minimal negative impacts to the local community. Increasing the volume of ammonium nitrate stored on site up to 13 500 t will assist in providing a continued reliable supply of ammonium nitrate to the mining operations within the Hunter Region and beyond.

The project can be implemented with minimal adverse socio-economic and environmental impacts as demonstrated throughout this Environmental Impact Statement (EIS) submitted with the development application. While some minor environmental impacts may occur during operations, these can be successfully mitigated to minimise the impacts and ensure the operations can proceed in an environmentally sustainable manner.

2. SURROUNDING LAND USE

Land uses and activities directly surrounding the site are generally limited to minor industrial and commercial uses, wetland areas and residential areas.

Within the site are industrial premises situated within the same industrial precinct as Crawfords. Further north of the site, in an elevated position on a hill is St Joseph's Home (residential aged care) and St Joseph's Village (independent living).

Immediately adjacent to the northern boundary is a portion of land owned by Sierra Sun Pty Limited which currently stores stockpiled magnetite, formally identified as Lot 22 in DP 627724. Beyond this parcel of land is the depot of a mining company, Sibelco Australia, approximately 200 m north of the site. Located immediately to the northeast boundary is wetland known as the "2HD Swamp" which is currently occupied by the 2HD transmission tower.

Immediately west of the site is the Main Northern Railway and beyond this Newcastle Golf Practice Centre and the former Council landfill site commonly known as Astra Street Landfill, Shortland. West of the Main Northern Railway are SEPP 14 Hunter Wetlands, which are classified as a Ramsar wetland of international significance.

To the south and southeast is a corridor of land which is currently under construction for the Newcastle Inner City (Shortland to Sandgate) Bypass. Further to the southeast is the Sandgate Cemetery and mixed industrial and residential areas. The nearest residential areas are located along the Pacific Highway approximately 300 m to the northeast of the site.

3. CONDITION 5 IN SCHEDULE 2

Annex A contains a complete copy of the development consent for establishment of an ammonium nitrate storage and distribution facility on the site. In summary, Condition 5 in Schedule 2 requires the preparation of this Off Site Restricted Access Area Strategy (the Strategy) which must be approved by the Director General of the Department of Planning and Infrastructure prior to the commencement of operations on the site. The Strategy must address the following:

- provide details of the works proposed to prohibit public access, particularly in relation to signage and fencing;
- provide evidence that each land owner within the Off Site Restricted Access Area (as depicted in the Figure included within *Annex A*) has been consulted and agrees with the proposed measures; and
- investigate and detail options to purchase or secure land on a long term basis within the Off Site Restricted Access Area in perpetuity.

The following sections of this Strategy detail how the above key matters have been addressed

4. DETAILS OF FENCING AND SIGNAGE

The Off Site Restricted Access Area is to be fenced within the Golf Practice Range lease area and within the land adjoining the lease area to the north as indicated in the plans contained in *Annex B*. Details of the type of fencing proposed to be erected is also shown in *Annex B*. As the northern most extent of the Restricted

Access Area lies within a wetland, the fencing will be erected on the edge of the wetland as it is not practical nor desirable to place the fence through the wetland.

Signs will be secured to the fencing clearly indicating that the public is prohibited from gaining access to the area fenced off. The size and layout of these signs as well as details specifying the frequency of these signs is set out in *Annex B*.

5. DETAILS OF CONSULTATION AND AGREEMENT

All the land within the Off Site Restricted Access Area is owned by NCC. It comprises part of Lot 33 DP 1118637 and part of Lot 16 DP 1148792 (see Appendix D in *Annex A*). Part of Lot 33 is currently leased by NCC to Mr MacLean who operates the Newcastle Practice Golf Range on part of this land. Mr MacLean has been extensively consulted during the assessment of the development application for this project and has agreed to sign a Deed of Agreement indicating that he has given his approval for that part of the land he leases from NCC which is within the Off Site Restricted Access Area to be fenced and signposted accordingly so that the public are not permitted to enter this area. A copy of the Deed of Agreement is provided in *Annex C*.

NCC has also entered into a Deed of Agreement in relation to the balance of the land within the Off Site Restricted Access Area and confirmed its willingness to ensure that this land is not available for public access (see *Annex D*). It should be noted that as this land forms part of the old Astra Street landfill site that it is currently fenced to prohibit public access and signposted accordingly. This fencing and signposting will remain in place for the duration of the operation of the AN storage and distribution facility on the site.

6. INVESTIGATIONS INTO SECURING THE LAND IN THE LONG TERM

Investigations into securing the land within the Off Site Restricted Access Area in the long term are underway as evidence in the correspondence from NCC reproduced in *Annex D*. It is proposed to undertake a boundary adjustment to create an allotment which includes all the land within the Off Site Restricted Access Area when the current lease with Mr MacLean expires. The allotment would then be transferred from NCC to Crawfords provided all the necessary approvals and agreements are in place.

7. REGULAR REVIEW OF THE STRATEGY

In accordance with Condition 6 Schedule 2 of the development consent in *Annex A* this Strategy must be reviewed (if necessary) and submitted to the Director General for approval every year on the anniversary of the development consent (13 June). It must also be reviewed and submitted to the Director General for approval at any time any arrangement under Condition 5 Schedule 2 of the development consent is changed.

As the agreements included in *Annex C* and *D* are revised/ replaced the Strategy will be amended accordingly.

Should you have any queries please do not hesitate to contact the undersigned on 02 4964 2150.

Yours sincerely,
for Environmental Resources Management Australia Pty Ltd

Steve O'Connor
Technical Director

Annex A

COPY OF DEVELOPMENT CONSENT

The following sections of this Strategy detail how the above key matters have been addressed.

4. DETAILS OF FENCING AND SIGNAGE

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NCC has also entered into a Deed of Agreement in relation to the balance of the land within the Off Site Restricted Access Area and confirmed its willingness to ensure that this land is not available for public access (see *Annex* D). It should be noted that as this land forms part of the old Astra Street landfill site that it is currently fenced to prohibit public access and signposted accordingly. This fencing and signposting will remain in place for the duration of the operation of the AN storage and distribution facility on the site.

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Investigations into securing the land within the Off Site Restricted Access Area in the long term are underway as evidence in the correspondence from NCC reproduced in *Annex* D. It is proposed to undertake a boundary adjustment to create an allotment which includes all the land within the Off Site Restricted Access Area when the current lease with Mr MacLean expires. The allotment would then be transferred from NCC to Crawfords provided all the necessary approvals and agreements are in place.

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As the agreements included in *Annex* C and Dare revised/ replaced the Strategy will be amended accordingly.

Annex A

COPY OF DEVELOPMENT CONSENT

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Infrastructure under delegation executed on 27 February 2013, I approve the development 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 development.

Chris Wilson
Executive Director
Development Assessment Systems and Approvals

Sydney 13 June 2013

SCHEDULE 1

Application Number:	SSD-5119
Applicant:	Crawfords Freightlines Pty Ltd
Approval Authority:	Minister for Planning and Infrastructure
Land:	158 Old Maitland Road, Sandgate (Lot 12 DP 625053)
Development:	Crawfords Ammonium Nitrate Storage and Distribution Facility

TABLE OF CONTENTS

DEFINITIONS 1

ADMINISTRATIVE CONDITIONS 2

Obligation to Minimise Harm to the Environment 2
Terms of Approval 2
Limits of Consent 2
Lapsing on Consent 2
Management Plans/Monitoring Programs 2
Structural Adequacy 3
Protection of Public Infrastructure 3
Operation of Plant and Equipment 3
Staged Submission of Plans or Programs 3
Development Contributions 3

SPECIFIC ENVIRONMENTAL CONDITIONS 4

General 4
Hazards and Risk 4
Soil and Water 5
Noise and Vibration 8
Air Quality 9
Traffic 10
Waste 11
Heritage 12
Visual Impact 12
Energy and Water Efficiency 12
Security 12
Fire Management 13

ENVIRONMENTAL MANAGEMENT REPORTING & AUDITING 14

Environmental Managemet 14
Environmental Reporting and Auditing 14

APPENDIX A: MANAGEMENT AND MITIGATION MEASURES 16
APPENDIX B: SITE PLAN 25
APPENDIX C: NOISE RECEVIER LOCATIONS 26
APPENDIX D: OFF-SITE RESTRICTED ACCESS AREA MAP 27

DEFINITIONS

Applicant	Crawfords Freightlines Pty Ltd
AN	Ammonium Nitrate
ANZECC Guidelines	*Australian and New Zealand Guidelines for Freshwater and Marine Water Quality (Australian Government 2000)*
AS	Australian Standard
BCA	Building Code of Australia
Construction	The demolition of buildings or works, carrying out of works, including bulk earthworks and erection of buildings and other infrastructure covered by this consent
Council	The Council of the City of Newcastle
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DCP	*Newcastle Development Control Plan 2012*
Development	The development as described in the EIS and RTS
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department of Planning and Infrastructure, or his nominee
EIS	The Environmental Impact Statement titled *'Ammonium Nitrate Storage and Distribution Facility'* and accompanying appendices, prepared by Environmental Resources Management Australia and dated December 2012
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
Evening	The period from 6pm to 10pm
Facility	The development as described in the EIS
Flood Proof	Meaning the structural integrity of a structure cannot be compromised by loads caused by flood waters and is unable to inundated by flood water, up to a specified maximum flood event limit
FRNSW	Fire and Rescue NSW
Major Flood Event	Any flood event that is rarer than, and including, a 5% Annual Exceedance Probability flood event
Management and Mitigation Measures	The Applicant's Management and Mitigation Measures (Appendix A)
Minister	Minister for Planning and Infrastructure, or delegate
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OC	Occupational Certificate
Off-Site Restricted Access Area	The Off-Site Restricted Access Area as shown in blue in Appendix D of this consent and referred to in Conditions 5 and 6 of Schedule 2 of this consent.
Operation	The development as described in the EIS for the storage and distribution of more than 2,000 tonnes of ammonium nitrate at the site and associated works and infrastructure.
POEO Act	*Protection of the Environment Operations Act 1997*
Project	Has the same meaning as development (see above)
Reasonable and Feasible	Reasonable relates to the application of judgement 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.
RMS	Roads and Maritime Services
RTS	The Response to Submissions titled *'Ammonium Nitrate Storage and Distribution Facility'* and accompanying appendices, prepared by Environmental Resources Management Australia and dated April 2013
Site	The land referred to in Schedule 1
WorkCover	WorkCover NSW

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Applicant 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 development.

TERMS OF APPROVAL

2. The Applicant shall carry out the development generally in accordance with the:
   (a) EIS;
   (b) RTS;
   (c) Management and Mitigation Measures (see Appendix A);
   (d) Site Plans (Appendix B) and Drawings in the EIS; and
   (e) conditions of this consent.

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 consent shall prevail to the extent of any inconsistency.

4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any audits, reports, plans, programs, strategies, studies or correspondence that are submitted in accordance with this consent; and
   (b) the implementation of any actions or measures contained in these audits, reports, plans, programs, strategies, studies or correspondence submitted by the Applicant.

LIMITS OF CONSENT

5. Prior to the commencement of the Operation, the Applicant must, to the satisfaction of the Director-General, demonstrate that suitable arrangements are in place to prohibit public access to the Off-Site Restricted Access Area as labelled and illustrated in Appendix D of this consent. As part of demonstrating the suitable arrangements for the Off-Site Restricted Access Area are in place, the Applicant must prepare and implement an Off-Site Restricted Access Area Strategy. This Strategy must be approved by the Director-General prior to the commencement of the Operation and shall:
   - provide details of the works proposed to prohibit public access, such as secure fencing and signage;
   - provide evidence that each landowner within the Off-Site Restricted Access Area has been consulted and agrees with the proposed measures, including Council and the lessee of Part Lot 33 DP 1118637 (i.e. the Sandgate Golf Practice Centre or its successors); and
   - investigate and detail options to purchase or secure land on a long-term basis within the Off-Site Restricted Access Area in perpetuity.

6. The Applicant must also obtain the written approval of the Director-General of the Off-Site Restricted Access Area Strategy referred to in Condition 5 above:
   (a) every 12 months from the Director-General's approval of Condition 5 above (i.e. the yearly anniversary); and
   (b) at any time any arrangement established under Condition 5 above changes or is modified.

7. In any case, the Applicant shall not store more than 13,500 tonnes of AN on the site at any one time, comprising the storage of a maximum of up to:
   - 4,500 tonnes of AN in Shed A;
   - 4,500 tonnes of AN in Shed B;
   - 4,000 tonnes of AN in Shed C; and
   - 500 tonnes of AN in shipping containers in the outdoor compound of Shed C.

LAPSING OF CONSENT

8. This consent will lapse five (5) years from the date of consent unless the works associated with the development have physically commenced.

MANAGEMENT PLANS AND MONITORING PROGRAMS

9. With the approval of the Director-General, the Applicant may:
   (a) submit any management plan or monitoring program required by this consent on a progressive basis; and

(b) combine any management plan or program required by this consent with any similar management plan or program that have been approved under previous consents or approvals.

STRUCTURAL ADEQUACY

10. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, on the site are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Applicant 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 development.*

PROTECTION OF PUBLIC INFRASTRUCTURE

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

OPERATION OF PLANT AND EQUIPMENT

12. The Applicant shall ensure that all plant and equipment used for the development is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

STAGED SUBMISSION OF PLANS OR PROGRAMS

13. With the approval of the Director-General, the Applicant may submit any plan or program required under this consent on a progressive basis.

DEVELOPMENT CONTRIBUTIONS

14. Prior to the commencement of operation, the Applicant shall pay to Council a development contribution to a maximum amount of $6,000 determined in accordance with Council's *Section 94A Development Contributions Plan 2009,* updated 22 April 2013, in consultation with Council, and to the satisfaction of the Director-General.

Note: The amount of contribution payable under this condition has been calculated on the basis of the current rate as at the date of consent and is based on the most recent quarterly Consumer Price Index (CPI) release made available by the Australian Bureau of Statistics (ABS). The CPI index rate is expected to rise at regular intervals and therefore the actual contribution payable is indexed and should be recalculated at the CPI rate applicable on the day of payment.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

GENERAL

1. The Applicant shall comply with the requirements of the EPA set out in any EPL issued for the development.

HAZARDS AND RISK

General

2. The Applicant shall ensure that the development complies with the requirements of the latest version of *AS 4326*. Measures to inspect and maintain the site to ensure compliance with the latest version of *AS 4326* must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).

3. The Applicant shall maintain the appropriate ammonium stack separation distance, as recommended by SAFEX *International Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate* or better, to prevent involvement of more than half the storage capacity of each storage building in an explosion, except for a short period of time when the storage is at maximum capacity

Pre-construction

4. 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 Applicant shall prepare and submit for the approval of the Director-General the studies set out under subsections (a) to (c) (the pre-construction studies) of this Condition. 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 Fire and Rescue NSW.
   (a) CONSTRUCTION SAFETY STUDY
   A Construction Safety Study, consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety'*. For projects in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.
   (b) FIRE SAFETY STUDY
   A Fire Safety Study for the proposed project. 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 Fire and Rescue NSW.
   (c) FINAL HAZARD ANALYSIS
   A Final Hazard Analysis of the proposed project, consistent with the Department of Planning's Hazardous *Industry Planning Advisory Paper No. 6, 'Hazard Analysis'*. The FHA shall:
   - address all relevant findings and recommendations from all official investigation report/s (if available) on the accident at West, Texas (USA) in April 2013;
   - re-evaluate and confirm all relevant data and assumptions from the Preliminary Hazard Analysis; and
   - re-evaluate and confirm all control measures proposed for the prevention and mitigation of incidents, particularly those controls relevant to ammonium nitrate.

Pre-commissioning

5. The Applicant shall develop and implement the plans and systems set out under subsections (a) to (c) of this Condition. No later than two months prior to the commencement of commissioning of the proposed project, or within such further period as the Director-General may agree, the Applicant 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) TRANSPORT OF HAZARDOUS MATERIALS
   Arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the proposed development. The routes shall be selected in accordance with the Department of Planning' draft 'Route Selection' guidelines. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.
   (b) EMERGENCY PLAN
   A comprehensive Emergency Plan and detailed emergency procedures for the proposed project. This plan shall include consideration of the safety of all people outside of the project who may be at risk from the project, including the assets and employees of Scafflink or its successors. The plan shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'*.

(c) SAFETY MANAGEMENT SYSTEM

A document setting out a comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. 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

6. PRE-STARTUP COMPLIANCE REPORT

One month prior to the commencement of operation of the project, the Applicant shall submit to the Director-General, a report detailing compliance with Conditions 4 and 5 of this Schedule, including:

(a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
(b) actions taken or proposed, to implement the recommendations and safety-related control measures in the studies/plans/systems; and
(c) responses to each requirement imposed by the Director-General under Condition 10 of this Schedule.

Post-startup

7. POST-STARTUP COMPLIANCE REPORT

Three months after the commencement of operation of the project, the Applicant shall submit to the Director-General, a report verifying that:

(a) the transport routes specified under Condition 5(a) are being followed;
(b) the Emergency Plan required under Condition 5(b) is effectively in place and that at least one emergency exercise has been conducted; and
(c) the Safety Management System required under Condition 5(c) has been fully implemented and that records required by the system are being kept.

Ongoing

8. HAZARD AUDIT

Twelve months after the commencement of operations of the proposed project and every two years thereafter, or at such intervals as the Director-General may agree, the Applicant shall carry out a comprehensive Hazard Audit of the proposed project and within one month of each audit submit a report to the Director-General for approval.

The audits shall be carried out at the Applicant's expense by a qualified person or team, independent of the project, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'* (HIPAP No. 5).

The audit reports shall, in addition to the requirements provided in HIPAP No. 5:

- address all relevant findings and recommendations from all official investigation report/s (if available) on the accident at West, Texas (USA) in April 2013, and make recommendations if necessary; and
- Report on the findings of the audit in relation to compliance with the current version of AS 4326 - the Storage and handling of oxidizing materials and the relevant provisions of the current version of the SAFEX International *Good Practice Guide: Storage of Solid Technical Grade Ammonium Nitrate*,

The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.

On-site Risks

9. The Applicant shall ensure that the Construction Safety Study (see Condition 4(a) of this Schedule), the Final Hazard Analysis (see Condition 4(c) of this Schedule), Safety Management System (see Condition 5(c) of this Schedule) and the Emergency Plan (see Condition 5(b) of this Schedule) for the site include an assessment and evaluation of all hazards that could contribute to both on site and off-site risks to the satisfaction of WorkCover NSW. All maps showing the risk contours for on site and off-site risks shall be included in each of the aforementioned documents.

10. FURTHER REQUIREMENTS
The Applicant 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 4 to 9 of this Schedule inclusive, within such time as the Director-General may agree.

SOIL AND WATER

Surface Water Discharge Limits

11. The Applicant shall ensure that all licensed surface water discharges from the site comply with the discharge limits (volume and quality) set for the development in any EPL or relevant provisions of the POEO Act.

Bunding

12. The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook*.

Erosion and Sediment Control

13. During the construction of the development, the Applicant shall implement suitable erosion and sediment control measures on site, in accordance with the relevant requirements in the latest version of the EPA's *Managing Urban Stormwater: Soils and Construction* guideline.

Contamination Management

14. Prior to operation, the Applicant must, to the satisfaction of the Director-General, seal all AN:
    (a) storage areas on the site with impermeable hardstand concrete; and
    (b) trafficable areas (including internal roads) on the site with impermeable bitumen,

    Other impermeable materials shall be used to seal these areas if approved by the Director-General. Measures to inspect and maintain all sealed areas of the site for the life of the development must be documented in Operational Environmental Management Plan for the development (see Condition 2 in Schedule 4 of this consent).

    Note: The intent of this condition is to minimise the potential for AN contamination of soil and water and dust generation from vehicles.

15. The Applicant shall prepare and implement a Contamination Management Plan for the development to the satisfaction of the Director-General. This Plan must:
    (a) be prepared by a suitably qualified and experienced expert in consultation with the EPA and NOW;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) detail the protocols to be put in place and followed in the event that contaminated soil (including Acid Sulphate Soils) or water is encountered during construction;
    (d) be prepared in accordance with the relevant best practice industry guidelines such as the *NSW State Government's Acid Sulphate Soils Manual* (ASSMAC 1998);
    (e) detail how excavated soil will be tested for contamination, handled and stockpiled;
    (f) detail the measures that will be employed to prevent erosion and sedimentation of contaminated soil and suppress odour; and
    (g) outline how contaminated soil and water will be disposed of off-site at a licensed facility.

Flood Design and Structural Certification

16. The Applicant must ensure that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500mm freeboard depth design flood event and are maintained in this manner for the life of the development.

    Note: Flood levels shall be determined considering the effects of climate change.

17. Prior to the commencement of operation, and annually thereafter, the Applicant must obtain structural certification from a suitably qualified engineer that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500mm freeboard depth design flood event. A copy of these structural certification documents must be included in the Flood Risk Management and Response Plan (see Condition 21 in Schedule 3 of this consent) and Operational Environmental Management Plan (see Condition 2 in Schedule 4 of this consent) for the development.

    Note: Flood levels shall be determined considering the effects of climate change.

Flood Management

18. The Applicant must ensure that any shipping containers that are used to store AN on site are unloaded to the AN storage sheds (A, B or C) as soon as practicable once they arrive on site.

19. The Applicant must ensure that no AN is left inside a shipping container during a major flood event and that all AN is contained within the AN storage sheds (A, B or C) during a major flood event.

20. The Applicant must ensure that all flood emergency response equipment is able to withstand floodwaters up to and including the 1% AEP plus 500mm freeboard depth flood event.

    Note: Flood levels shall be determined considering the effects of climate change.

21. The Applicant must prepare and implement a Flood Risk Management and Response Plan for the development to the satisfaction of the Director-General. The Plan must:
    (a) be prepared by a suitably qualified and experienced expert in consultation with Council and OEH;
    (b) be approved by the Director-General prior to the commencement of operations;
    (c) be prepared in accordance with Council's *Newcastle City-wide Floodplain Risk Management Study and Plan 2012* and the *NSW Floodplain Development Manual*;
    (d) include a copy of the structural certification documents required in relation to flood proofing by Condition 17 of this Schedule;
    (e) identify the procedures that would be implemented to ensure compliance with Conditions 18 to 20 of this Schedule;
    (f) identify the procedures that would be implemented to ensure that employees are given sufficient warning regarding an impending flood event;
    (g) identify the procedures to be followed and contingency actions to be implemented in the event that the site is inundated during a flood event to protect:
        - the integrity of structures on site that are used to store ammonium nitrate to prevent release of ammonium nitrate into floodwaters and the local environment;
        - human safety;
    (h) identify emergency evacuation routes, flood warning alarms, and evacuation procedures; and
    (i) include a staff training program to be implemented to ensure existing and future employees are well trained and drilled in executing the flood emergency response procedures detailed within this plan.

Water Management

22. The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Director-General. This plan must:
    (a) be prepared in consultation with Council, OEH and NOW by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) include final details of water use, management and license requirements for the development;
    (d) include a Stormwater Management Plan that demonstrates how the requirements of Condition 23 of this Schedule have been addressed; and
    (e) include a Surfacewater and Groundwater Monitoring and Mitigation Plan that includes:
        - a methodology to be followed to establish baseline data on surface and groundwater quality and groundwater levels;
        - a program to monitor surface water flows and quality, and ecosystem health immediately downstream of the site;
        - a program to monitor groundwater levels and quality beneath the site and groundwater dependent ecosystems;
        - surface and groundwater impact assessment criteria including trigger levels for investigating adverse impacts and implementing mitigation measures;
        - protocols for investigation and implementing mitigation measures for identified exceedances of the surface and/or groundwater impact assessment criteria; and
        - a schedule of improvements to be implemented to the stormwater management and collection system at the site in the event that exceedances of the surface and/or groundwater impact assessment criteria are identified or contaminated water is found to be leaving the site.

23. The Stormwater Management Plan must:
    (a) include final detailed design specifications for the stormwater management and collection system;
    (b) ensure that the stormwater management and collection system is designed and installed generally in accordance with the conceptual design in the EIS/RTS, applicable Australian Standards and industry standard best practice guidelines;
    (c) detail how stormwater runoff from the site would be conveyed;
    (d) detail how (and ensure that) stormwater run off from the site would be restricted to pre-development rates or less;
    (e) ensure that no additional stormwater run off from the site would flow into the adjacent rail corridor;

(f) ensure that stormwater discharged off-site meets the pollutant load reduction targets outlined in Section 7.06 of Council's DCP and the water quality performance indicators outlined in Table 3.3.2 of the ANZECC Guidelines; and
(g) describe the measures that would be implemented to maintain stormwater infrastructure for the life of the development.

NOISE AND VIBRATION

Noise Limits

24. The Applicant shall ensure that the noise generated by the operations on-site does not exceed the limits in Table 1 at any private residential receiver.

Table 1: Noise impact assessment criteria dB(A)

Location	Day	Evening	Night	
	$L_{Aeq(15\ minute)}$	$L_{Aeq(15\ minute)}$	$L_{Aeq(15\ minute)}$	$L_{A1\ (1\ minute)}$
R1 Residence on Blanch Street	39	39	39	54
R3 Residence on Astra Street	42	42	42	54
R4 Residence on Wallsend Road	42	42	42	55
R5 Residence on Wallsend Road	42	42	42	54
R6 Residence on eastern side of Pacific Highway	60	57	54	54
R7 Residence on western side of Pacific Highway	60	57	54	54
R8 St Joseph's Aged Care Complex	43	40	39	54

Notes:
- *To identify a residential receiver location, refer to Appendix C of this consent and Appendix I of the EIS;*
- *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and*
- *To avoid doubt, the responsibility for noise generated by trains off-site in the corridor of the Main Northern Railway Line lies with the owner and/or lessee of that corridor.*

Operating Hours

25. The Applicant shall comply with the operating hours in Table 2 for the site, unless otherwise agreed in writing by the Director-General.

Table 2: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7.00am – 6.00pm
	Saturdays	8.00am – 1.00pm
	Sundays and Public Holidays	Nil
Operations	Monday - Sunday	6.00 am to 10.00 pm
	Public Holidays	Nil

Operating Conditions

26. The Applicant shall:
    (a) implement best management practice, including all reasonable and feasible measures to prevent and minimise noise and vibration during construction and operation of the development (including low frequency noise and traffic noise);
    (b) minimise the noise impacts of the development during adverse meteorological conditions when noise criteria do not apply;
    (c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
    (d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

Noise Management

27. The Applicant shall prepare and implement a Noise and Vibration Management Plan for the development in consultation with the EPA and to the satisfaction of the Director-General. The plan must:
    (a) be prepared and implemented by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operations;
    (c) describe the measures that will be implemented to minimise noise and vibration from the operation of the development and ensure:
        - best management practice is being employed on site;
        - traffic noise is effectively managed;
        - the noise impacts of the development are minimised during any meteorological conditions when the noise criteria in this consent do not apply; and
        - compliance with the relevant conditions of this consent.
    (d) describe the noise management system;
    (e) includes a noise monitoring program that:
        - is capable of evaluating the performance of the development;
        - includes a protocol for determining exceedances of the relevant conditions of this consent and responding to complaints;
        - adequately supports the noise management system;
        - evaluates and reports on the effectiveness of the noise management system; and
        - includes a protocol for the implementation of further mitigation in consultation with the EPA in the event that the development is found not to be complying the conditions of this consent.

Noise Validation

28. Within 2 months of the commencement of operations, the Applicant shall undertake Noise Compliance Monitoring. The Monitoring shall:
    (a) be undertaken by a suitably qualified and experienced expert in consultation with the EPA;
    (b) be submitted as a report to the EPA and the Department within 2 weeks of its completion;
    (c) be undertaken to present worst-case noise operations during a period of combined truck and rail operations as described in Annexure I of the EIS;
    (d) include noise monitoring undertaken at day, evening and night (including shoulder periods), as defined in the EPA's Industrial Noise Policy, over 3 consecutive operating days for a minimum of:
        - 1.5 hours during the day;
        - 30 minutes during the evening; and
        - 1 hour at night.
    (e) compare the noise monitoring results against the noise modelling predictions (including that for shoulder periods) in the EIS;
    (f) identify whether the project is complying with the development noise limits specified in Condition 24 of this Schedule; and
    (g) outline the mitigation measures to be implemented if exceedences of the development noise limits (Condition 24) or the noise modelling predictions in the EIS are identified, to the satisfaction of the Director-General.

AIR QUALITY

Odour

29. The Applicant shall ensure the development does not cause or permit the emission of any offensive odour (as defined by the POEO Act).

Dust Criteria

30. The Proponent shall ensure that dust generated by the development does not exceed the criteria listed in Tables 3 to 5 at any private residential receiver, or on more than 25 percent of any privately owned land surrounding the site.

Table 3: Long term criteria for particulate matter

Pollutant	Averaging period	[d]Criterion
Total suspended particulate (TSP) matter	Annual	[a]90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a]30 µg/m^3

Table 4: Short term criterion for particulate matter

Pollutant	Averaging period	[d] Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 5: Long term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total[1] deposited dust level
[c]Deposited dust	Annual	[b]2 g/m^2/month	[a]4 g/m^2/month

Notes for Tables 3 -5:

- *[a]Total impact (i.e. incremental increase in concentrations due to the Development plus background concentrations due to other sources);*
- *[b] Incremental impact (i.e. incremental increase in concentrations due to the Development on its own);*
- *[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and*
- *[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed to by the Director-General in consultation with the EPA.*

Dust Minimisation

31. The Applicant shall ensure that:
    (a) all vehicles on site do not exceed a speed limit of 20 kilometres per hour;
    (b) all loaded vehicles entering or leaving the site have their loads covered; and
    (c) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.

Operating Conditions

32. The Applicant shall:
    (a) implement best management practice, including all reasonable and feasible dust and odour mitigation measures to prevent and minimise dust emissions from construction and operation of the development;
    (b) prevent and minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events;
    (c) regularly assess air quality monitoring data and relocate, modify, and/or stop operations to ensure compliance with the relevant conditions of this consent; and
    (d) minimise surface disturbance of the site, other than as permitted under this consent.

Greenhouse Gas

33. The Applicant shall implement all reasonable and feasible measures to minimise:
    (a) energy use on site; and
    (b) greenhouse gas emissions produced on-site, to the satisfaction of the Director-General.

Air Quality Management

34. The Applicant shall prepare and implement an Air Quality Management Plan for development in consultation with Council and the EPA. The plan must:
    (a) be prepared and implemented by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operation;
    (c) describe the measures that will be implemented to ensure:
        - best management practice is employed;
        - generation of dust from AN handling and internal vehicles movements on site is minimised as far as reasonably practicable;
        - the air quality impacts (in particular dust and odour) from operations are minimised during adverse meteorological conditions and extraordinary events; and
        - compliance with the relevant conditions of this consent.
    (d) describes the air quality management system; and
    (e) includes an air quality monitoring program that:
        - is capable of evaluating the performance of the development;
        - includes a protocol for determining any exceedances of the relevant conditions of consent and responding to complaints;
        - adequately supports the air quality management system;
        - evaluates and reports on the effectiveness of the air quality management system; and
        - includes a protocol for the implementation of further mitigation in consultation with the EPA and Council in the event that the development is found not to be complying the conditions of this consent.

TRAFFIC

Bicycle Enclosure

35. The Applicant shall provide a secure bicycle enclosure for at least 3 bicycles on site to encourage the use of sustainable transport to and from work.

Rail Traffic

36. The Applicant shall ensure that 1 train (2 movements) in total (with a maximum of 40 carriages at 76 tonnes per carriage) is permitted to ingress and egress from the site in any 24 hour period.

Rail Traffic Management

37. The Applicant shall prepare and implement a Rail Transport Code of Conduct for the development to the satisfaction of the Director-General. This Plan must:
    (a) be prepared in consultation with ARTC by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of operation;
    (c) detail operational rail traffic management measures including driver code of conduct, locomotive arrival and departure procedures (e.g. reduced locomotive speed);
    (d) outline measures to minimise rail traffic noise;
    (e) detail procedures to ensure trains do not queue on the public rail or road network; and
    (f) detail measures to minimise rail traffic related conflicts with existing rail operations.

Road Traffic

Operating Conditions

38. The Applicant shall ensure that:
    (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest versions of *AS 2890.1* and *AS 2890.2*;
    (b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with *AUSTROADS – Guide to Road Design*;
    (c) the development does not result in any vehicles queuing on the public road network;
    (d) heavy vehicles and bins associated with the development do not park or stand on local roads or footpaths in the vicinity of the site;
    (e) all vehicles are wholly contained on site before being required to stop;
    (f) all loading and unloading of materials is carried out on site; and
    (g) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Road Traffic Management

39. The Applicant shall prepare and implement a Traffic Management Plan for the development, to the satisfaction of the Director-General. The plan must:
    (a) be prepared in consultation with Council and RMS by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to commencement of operation;
    (c) include a plan showing the designated haulage route/s to be used by heavy vehicles during operation;
    (d) include a heavy vehicle driver code of conduct;
    (e) describe the measures that will be implemented to ensure:
        - the nominated haulage route/s in used;
        - conflicts with other road users are minimised;
        - haulage is minimised or routes altered to avoid impact on the local traffic network;
        - drivers adhere to the code of conduct;
        - compliance with the relevant conditions of this consent; and
    (f) include a program to monitor the effectiveness of these measures.

WASTE

Classification

40. The Applicant shall ensure that any waste generated on the site during construction is classified in accordance with the EPA's *Waste Classification Guidelines* and disposed of to a facility that may lawfully accept the waste.

Asbestos Handling

41. The Applicant shall ensure that any asbestos encountered during construction is handled and disposed of by appropriately qualified and licensed contractors in accordance with the relevant guidelines, the *Work health and Safety Regulation 2011* and in consultation with WorkCover.

Asbestos Management

42. Upon the commencement of construction, the Applicant shall implement the Asbestos Management Plan in Annexure C of the EIS including all recommendations of this plan.

Waste Management

43. The Applicant shall prepare and implement a Waste Management Plan for the development to the satisfaction of the Director-General. This Plan shall:
    (a) be prepared in consultation with the EPA by a suitably qualified and experienced expert;
    (b) be approved by the Director-General prior to the commencement of construction;
    (c) detail the type and quantity of waste to be generated by the construction and operational phases of the development;
    (d) detail the materials to be reused or recycled, either on or off site;
    (e) detail the procedures for handling, storage, collection of recycling and disposal of waste in accordance with the best practice industry standards and guidelines; and
    (f) detail the measures to ensure that waste (particularly liquid waste) is not released into the local environment.

HERITAGE

44. The Applicant shall conduct heritage education inductions for all construction personnel at the site (including procedures for keeping records of inductions) including site identification, protection and conservation of Aboriginal and historic heritage. Inductions must be developed in consultation with suitable representatives of the local Aboriginal community such as registered Aboriginal parties and inductions records must be kept and made available to the Director-General upon request.

45. The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. In the event that an Aboriginal cultural object(s) is uncovered, a suitably qualified and experienced archaeologist, suitable representatives of the local Aboriginal community such as registered Aboriginal parties and the OEH must be contacted to determine the significance of the object(s). In addition, in the event that human remains are uncovered onsite, NSW Police are to be notified. Works shall not resume in the designated area until consent in writing from the NSW Police and/or the OEH has been obtained.

VISUAL IMPACT

Lighting

46. The Applicant shall ensure that the lighting associated with the development:
    (a) complies with the latest version of *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.

Signage

47. The Applicant shall not install any advertising signs on site without the written approval of the Director-General.

ENERGY AND WATER EFFICIENCY

48. The Applicant shall implement all energy and water efficiency measures outlined in the EIS and regularly review opportunities to implement further efficiency measures.

SECURITY

49. The Applicant shall:
    (a) install and maintain a perimeter fence and security gates on the site;
    (b) ensure that all buildings on-site that contain dangerous goods are locked whenever they are unattended;
    (c) ensure that the security gates on-site are locked whenever the site is unattended; and
    (d) ensure that a suitably qualified and experienced person (or persons) is employed to keep the site secure 24 hours, 7 days a week (i.e. a security guard/s).

FIRE MANAGEMENT

50. The Applicant shall:
    (a) implement suitable measures to minimise the risk of fire on-site;
    (b) extinguish any fires on-site promptly; and
    (c) maintain adequate fire-fighting capacity on-site.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

1. The Applicant shall prepare and implement a Construction Environmental Management Plan for the development to the satisfaction of the Director-General. The Plan must:
   (a) be prepared by a suitably qualified and experienced person;
   (b) be approved by the Director-General prior to the commencement of construction;
   (c) identify the statutory approvals that apply to the development;
   (d) consolidate all relevant management plans and monitoring programs required in the conditions of this consent and committed to in the EIS;
   (e) outline all environmental management practices and procedures to be followed during construction and demolition works associated with the development;
   (f) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;
   (g) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
   (h) describe of the roles and responsibilities for all relevant employees involved in construction and demolition works associated with the development; and
   (i) include arrangements for community consultation and complaints handling procedures during construction and demolition.

Operational Environmental Management Plan

2. The Applicant shall prepare and implement an Environmental Management Plan for the development to the satisfaction of the Director-General. This Plan must:
   (a) be prepared by a suitably qualified and experienced person;
   (b) be approved by the Director-General prior to the commencement of operation;
   (c) provide the strategic context for environmental management of the development;
   (d) identify the statutory requirements that apply to the development;
   (e) consolidate all relevant management plans and monitoring programs required in the conditions of this consent and committed to in the EIS;
   (f) outline the arrangements to ensure compliance with conditions of this consent for the life of the development, in particular Conditions 2, 3, 14 and 17 in Schedule 3;
   (g) include a review of current site environmental management practices;
   (h) based on the review required under subsection (g) of this condition, include a schedule of actions with timeframes to be implemented to improve site environmental management practices, in particular measures to improve handling of AN to minimise spillages;
   (i) include final details of how the environmental performance of the development would be managed and monitored;
   (j) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the development;
      - respond to any non-compliance;
      - manage cumulative impacts;
      - respond to emergencies; and
   (k) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.

ENVIRONMENTAL REPORTING & AUDITING

Incident

3. Upon detecting an exceedance of the limits/performance criteria in this consent or the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall immediately (or as soon as practical thereafter) notify the Department and other relevant agencies of the exceedance/incident. Within 7 days of the date of the incident, the Applicant shall provide the Director-General and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Independent Environmental Audit

4. Within one (1) year of the commencement of operations of the development, and every three (3) years thereafter, or as otherwise agreed by the Director-General, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
   (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this consent and any relevant EPL (including any plan or program required under these consents);
   (d) review the adequacy of any plans or programs required under these consents; and, if appropriate;
   (e) recommend measures or actions to improve the environmental performance of the development, and/or any plan or program required under these consents.

   Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.

5. Within 6 weeks of completing any Independent Environmental Audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

APPENDIX A – MANAGEMENT AND MITIGATION MEASURES

Item	Management and/or Mitigation Measure	Implementation C - Construction O - Operation
	General	
A1	Crawfords would implement all practical measures to avoid, or minimise any impacts to the environment that may arise from the operation of the proposal.	C,O
A2	Should the proposal be granted development consent, Crawfords would make a separate application to the NSW EPA for an EPL prior to the operation of the proposal.	C
A3	Crawfords employees and contractors would undergo an updated training/induction program in accordance with the CEMP, OEMP, Safety Management System (SMS) and other training commitments as required by any consent conditions. All personnel involved in site and transportation operations will be made aware of their environmental obligations and the need to comply with conditions of consent.	C,O
A4	Crawfords would continue the appointment of an Environment and Community Management Representative to ensure the implementation of all environmental management measures. The representative would ensure that all measures are being effectively carried out in accordance with the CEMP, OEMP, SMS and all environmental approval and legislative requirements.	C, O
	Hazard and Risk	
B1	The OEMP should incorporate the development of the SMS in accordance with HIPAP No.9 (DoP, 2011b) incorporating the following framework: • management of the SMS; • hazard identification and risk assessment; • standard operating procedures; • process safety information; • contractor management; • pre-commissioning reviews; • equipment integrity; • safe work practices; • management of change; • incident reporting and investigation; • employee selection, training and education; • procurement; • emergency planning (*site emergency plan);* • security; • auditing; • drug and alcohol testing; and • rail work fatigue management.	C,O
B2	An inspection, testing and preventative maintenance program would be developed, implemented and maintained as part of the OEMP/SMS to ensure the reliability and availability of key safety equipment.	I,O
B3	An inspection, testing and preventative maintenance program would be	C,O

	developed, implemented and maintained to ensure that all company owned and contracted mechanical equipment, including fleet vehicles, are maintained in accordance with Australian Standards and the SMS.	
B3	Measures for the storage, handling and transportation of AN would be implemented in accordance with ISO 31000 and AS4326 (2008) to reduce the likelihood of an explosion due to fire, contamination or high energy impact. These measures are to be incorporated into the site SMS.	C,O
B4	All 'route plan and risk assessments' shall be included in the OEMP/SMS. A review of all 'route plan and risk assessments' shall be undertaken every six months.	C,O
B5	The current Site Emergency Plan (SEP) shall be reviewed and developed in accordance with HIPAP No.1 (DoP, 2011a) and incorporated into the CEMP and OEMP.	C,O
B6	The SEP should make provision for the following emergency events; • heat radiation; • fire; • fume emission; • explosion; • flood; • release of contaminants; • major transport incident; • malicious act; • communicated threat; and • any combination of the above factors.	C,O
B7	The following site specific flood mitigation measures shall be incorporated into the SEP. In advance of any flood warning received from the BoM for a 2% or 1% AEP flood event, Crawfords would employ the following measures to minimise the risk of flood waters entering product stores: • advise stakeholders and customers in the 48 hours leading up to a 2% AEP flood event that no additional product will be received or stored on site; • each AN store shall have as a component of the emergency response equipment a supply of 250 micron four metre wide polythene construction membrane sufficient to encase the entire internal perimeter of the stores leaving no gaps and allowing two metre overlap at joins; • in response to a 1% AEP flood event, the AN stacks shall be reconfigured by placing the outer rows of flexible IBCs against store walls. Stacks shall also be reconfigured to remove segregation gaps between stacks and ensure no voids between individual flexible IBCs or bag stacks and walls. Reconfiguration of AN stacks would incorporate the movement of any product stored in containers into the reconfigured warehouses. The doors of any empty containers would be opened allowing them to fill with water thereby eliminating their ability to float should they become submerged. • during the repositioning of the flexible IBCs, the 250 micron polythene membrane shall be placed against the store walls allowing one metre of membrane under the outer row of bags and three metres of membrane in vertical contact with the internal surface of store walls; • supply of pre filled sandbags sufficient to construct 2m x 8m x 1m high internal seepage dam and additional supply of 250 micron four metre wide polythene construction membrane sufficient to line the seepage dam; • in response to a 1% AEP flood event, pedestrian access doors shall be sandbagged and polythene sheeted externally, and internal seepage dams shall be constructed adjacent to each vehicular access door to eliminate flood water ingress; • flooding emergency events shall be reported in accordance with the Site Emergency Plan; and • termination of a flooding emergency will be undertaken in accordance with the Site Emergency Plan.	C,O

B8	The following site specific fire mitigation measures shall be incorporated into the SEP: • check hydrants are available and in working order; • ensure hoses and hose reels are not perished and fittings are tight and in good order; • ensure the access road is in good condition with trees not forming an obstacle during smoky conditions; • ensure perimeter roads are free of obstacles to provide access for fire fighting appliances and personnel; • check roof lines for dislodged roofing materials; • ensure screens on windows and doors are in good condition without breaks or holes in fly screen material and frames are well fitted into sills and window frames; • ensure that where fitted drenching or spray systems are regularly tested before the commencement of the fire season; • ensure combustible materials are located down slope and well away from the buildings; • combustible materials are to be located well away from buildings that store AN. The Hazard Analysis for the site (HSE 2012) prescribes that stores will be kept clear of vegetation and any other combustible materials for a distance of a least 5 m around the external perimeter of the store; and the Hazard Analysis for the site (HSE 2012) prescribes that vehicles powered by internal combustion engines operated within the stores should be diesel-powered, fitted with a battery isolation switch and insulated cover over the battery, and be fitted with a spark arrestor and dry-powder extinguisher. Vehicles should be kept outside the store when not in use, be started outside the store and be garaged at least 10 m from the store.	C,O
B9	The current Site Security Plan shall be reviewed and incorporated into the CEMP and OEMP.	C,O
B10	The following engineering modifications to the storage sheds will be undertaken for flood proofing purposes: • retrofitting precast concrete doors to the two openings at the front of Sheds A and B as a flood emergency response; • application of an impervious sealant to the walls of Sheds A and B that protects against ingress of water in a 1% AEP event level plus 500mm freeboard; • sealing of the concrete floor expansion joints/voids within Sheds A and B with impervious epoxy resin to reduce the potential surface/groundwater product exposure pathway; and • within Shed C, fitting of cast concrete panels between and secured to the building columns, and sealing of joints using the impervious sealant product that is to be used to seal the timber panels of Sheds A and B.	C
B11	Engineering certification of the structural integrity of the sheds under a flood event (2% and 1% AEP) will be undertaken by Crawfords prior to building modification works to ensure proposed flood mitigation measures are adequate. Any relevant recommendations as a result of the engineering assessment will be implemented, as required, to ensure shed structural stability.	C
B12	The Proponent shall put in place measures to ensure that public access to the area on the western side of the Main Northern Rail Corridor affected by the $10x10^{-6}$ Individual Fatality Risk Contour as outlined in the Hazard Analysis is restricted.	O
	Soil and Groundwater	
C1	The CEMP shall include the following controls with regard to the control of sedimentation and contaminants: • works will not take place during heavy rainfall; • undertake stripping of soil, immediately before starting bulk earthworks;	C

	• suitable areas for any temporary stockpiling of excavated soil and debris (on flat ground) will be clearly identified and delineated before the commencement of works;	
	• ensure stockpiles are:	
	• stabilised if they are to be in place for more than 10 days;	
	• protected from run-on water by installing water diversion structures; and	
	• installed with sediment filters immediately downslope to protect other lands and waterways from; and	
	• all erosion, sediment control and runoff diversion measures will be established before any excavation begins. These will be left in place throughout works execution and beyond works completion until all surfaces have been fully restored and stabilised.	
C2	Maintenance and checking of proposed erosion and sedimentation controls would be undertaken on a monthly basis and records kept and provided upon request.	C,O
C3	Sediment would be cleared from behind barriers on a regular basis and all controls would be managed in order to work effectively at all times, that is, sedimentation controls would be less than 50% full at all times.	C,O
C4	Any material transported onto pavement surfaces would be swept and removed at the end of each working day.	C,O
C5	Hardstand material as proposed would be implemented on all trafficable areas to minimise erosion and the tracking of soil and particulates onto pavement surfaces.	C,O
C6	Given PASS were identified on site, further analysis and management of soils at the site may be required if excavation of natural estuarine sediments is to occur. If ASS are encountered during construction, an ASS management plan would be prepared in accordance with the ASS Manual *(ASS Management Advisory Committee 1998).*	C,O
C7	Implementation of groundwater management plan within the construction and operations environmental management plans to manage potential risks associated with potential acid sulphate soils (PASS) and elevated concentrations of ammonia, nitrogen, PAHs and metals as reported in *Targeted Phase II Environmental Site Assessment, Lot 12 Old Maitland Road Sandgate* (ERM, 2012);	C,O
C8	Prior to the commencement of activities on site, the site should be notified under Section 60 of the CLM Act 1999.	C
	Groundwater	
D1	A Groundwater Management Plan (GWMP) will be developed and included within the OEMP to assess the effectivenes of improvements in management of AN on site. This plan will identify appropriate sampling techniques, locations and provide baseline data.	O
D2	A groundwater monitoring programme will form part of the GWMP to assess ammonia and nitrogen concentrations and the measurable effects of improvements in the management of ammonium nitrate on the site. Monitoring parameters would include ammonium, total oxidised nitrogen, pH, and select dissolved elements.	O
	Surface water and waste water	
E1	A surface water management plan (SWMP) would be developed as part of the CEMP and OEMP to manage stormwater runoff. This plan would be developed in accordance with 'The Blue Book' *Managing Urban Stormwater – Soils and Construction Volume 1 and 2* (Landcom, 2004). The plan would outline:	C,O
	• measures to manage soils in line with the Soil and Erosion Management Plan;	
	• provision of permanent on-site water storage to the volume of 320 m^3, and	
	• measures to prevent the movement of contaminated run off.	

	The SWMP will incorporate a surface water monitoring program for monitoring of surface water quality and ecosystem health in the aquatic receiving environments to the east of the site. The program will incorporate bi-annual surface water monitoring at the site to assess ammonia and nitrogen concentrations and the effects of improvement on the management of ammonium nitrate on the site. The surface water monitoring programme will assess as a minimum in-situ water quality measurements (temperature, salinity, dissolved oxygen, turbidity, pH and oxidation-reduction potential) with laboratory analysis reporting on Ammonia, Total Oxidised Nitrogen (nitrite and nitrate), TSS, total phosphorus and chlorophyll-a levels. The program will include baseline water quality sampling from the existing stormwater outlet to confirm typical runoff quality prior to application of proposed stormwater treatment measures and to assist in the development of trigger values/targeted concentrations based on these observed values and review of data for other industrial sites in the local area. Sampling will be undertaken at the three main stormwater outlets /drainage pits near the site boundary and the inlet to Treatment Zone 1 basin. Typical spatio-temporal dimensions would include: - Four sampling events annually at each outlet/drainage pit near the boundary; - Sampling only to occur during rainfall events. Samples to be tested in NATA lab for nitrogen species (NOx, NH4, + NH3, TKN, TN), TP, TSS, heavy metals. Insitu testing for pH, temp, EC, turbidity, DO; - Annual inspection of stormwater management structures to check operational aspects and assess need for any maintenance, and of vegetated basins to specifically check vegetation growth, replant dead specimens, bare patches, identify need to harvest and replant, check measures draining appropriately and media not blocked.	
E2	Fire water management would ensure that, in the event of a fire on site, there is no loss of containment off the site of potentially contaminated water.	O
E3	The OEMP will detail hydrocarbon spill procedures and ensure that servicing of plant, equipment and vehicles is appropriately managed.	O
	Flora and Fauna (Ecology)	
F1	A Flora and Fauna Management Plan (FFMP) would be developed and incorporated as part of the CEMP and OEMP. The FFMP should include: • avoidance of the use of biocides and implementing erosion and sediment controls; • rehabilitation/landscaping works to incorporate native flora species that have the potential to provide foraging resources for native fauna species; • educate site personnel as to the appearance and location of native threatened and pest species. All sightings (location, time, date and description) of native threatened species shall be recorded; and • lighting shall be redirected to reduce unnecessary light spill that may have potential to impact nocturnal fauna.	C,O
	Air Quality	
G1	Regular use of a road sweeper over the sealed surface to remove the build-up of any particulate matter.	C,O
G2	Continued use of the screw auger when transferring AN from flexible IBCs into bulk trucks which limits the amount of emissions generated.	O
G3	Continued use of sealed off areas on site to limit the generation of emissions.	O
G4	The efficiency of all upgraded mobile and fixed equipment be considered during procurement for fuel-powered equipment.	O
G5	Investigate opportunities for low emission transportation of AN (ie utilise transport trucks that use biodiesel as opposed to regular diesel).	O
G6	Investigate opportunities for using increased quantities of biodiesel in on site	O

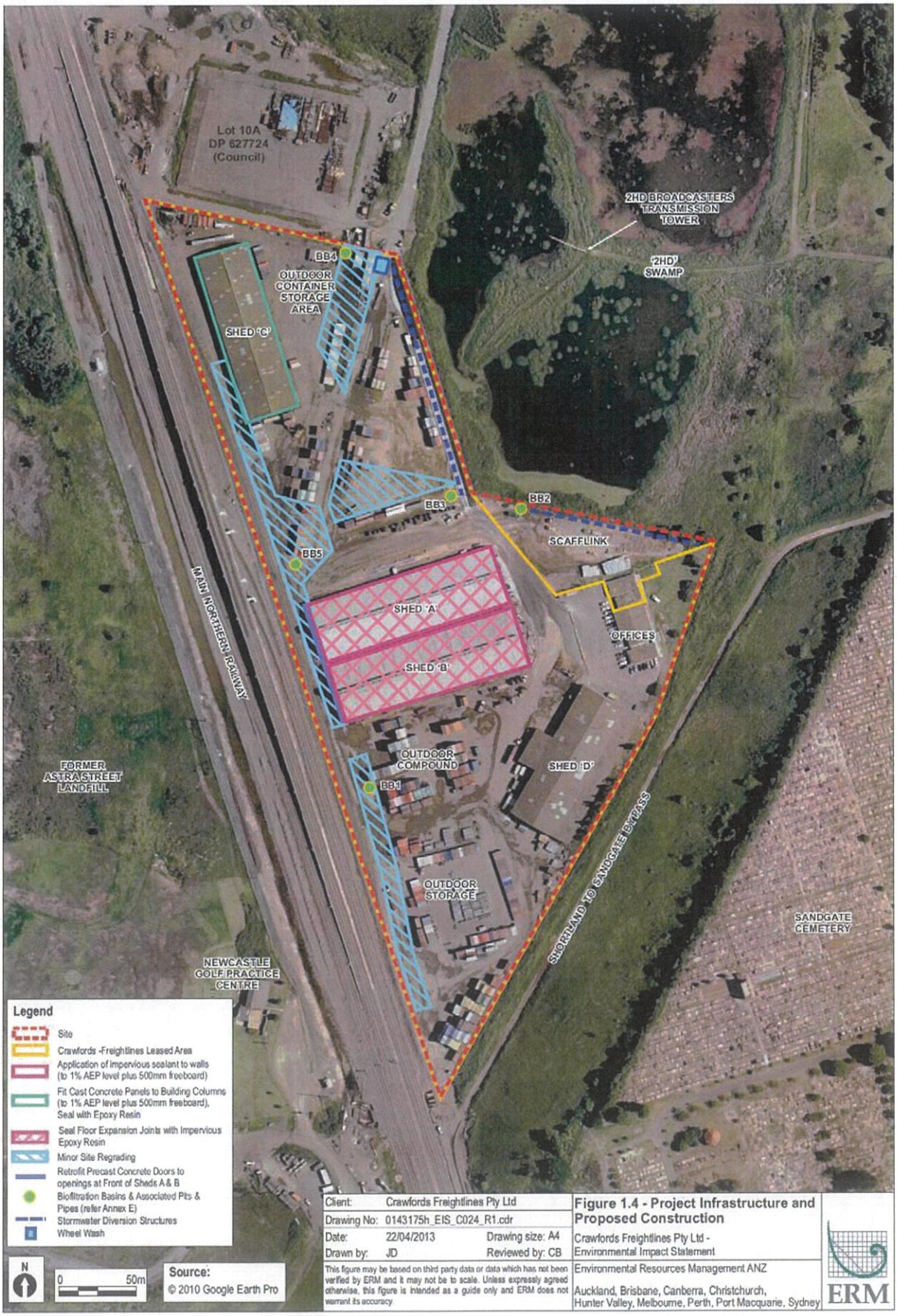
	plant.	
G7	Select vehicle size for purchase based on task ie larger vehicles generally have a lower emissions intensity than smaller vehicles.	O
G8	Site management to ensure that equipment is maintained to retain energy efficiency.	C,O
G9	Site management to check current vehicle fleet and consider the installation of aerodynamic features to reduce fuel consumption.	O
G10	Minimise running of empty trucks where possible ie look at back loading vehicles.	O
G11	Optimise freight loads so that all trucks are full.	O
G12	Reduce packaging and packaging weight to maximise use of productive space and minimise waste ie bulk product in place of flexible IBCs.	O
G13	Incorporation of a driver behaviour education program on fuel and energy efficiency which identifies: • slow acceleration to the average driving speed; • selection of route to optimise driving at speeds that optimise fuel efficiency; • driving at speeds that avoid the need for heavy braking; • leaving adequate distance between vehicles to avoid the need for heavy braking; • using roads at times of least congestion to prevent idling time and stop/start driving; and • minimise idling loses by turning vehicles off when not driving. Cab comfort can be maintained through the use of generators allowing engines to be switched off. •	O
	Greenhouse Gas	
H1	Energy audits will be held when practicable to ensure that the site is using current practice techniques to minimise energy use and is operating at optimum energy levels; and	O
H2	Investigate opportunities for purchasing part or all of electricity consumption from renewable sources.	O
	Noise and Vibration	
I1	In principle noise management measures during construction works include: • application of all feasible and reasonable work practices to meet the noise affected level; and • inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.	C
I2	Good practice construction noise management measures which, subject to actual construction work requirements, may be investigated include: • works should adhere to the standard construction hours of work, with no out of hours works to be undertaken; • ensure site managers periodically check the site and nearby residences and other sensitive land uses for noise problems so that solutions can be quickly applied; • regularly instruct workers and contractors (such as toolbox talks) to use equipment in ways to minimise noise. Site workers are to be made aware of the potential noise impacts and are to be encouraged to take practical and reasonable measures to minimise disturbance; • keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling);	C

	• equipment should be selected to minimise noise emissions, where feasible and reasonable;	
	• equipment and plant should be properly maintained to ensure normal operating performance and minimise noise emissions;	
	• equipment and plant found to produce excessive noise compared to normal industry expectations should be removed from the site or stood down until repairs or modifications can be made;	
	• noise emissions from reversing alarms should be minimised, although use of such alarms should still be satisfactory to achieve occupational health and safety requirements; and	
	• consideration for the placement of possible noise sources should be taken into consideration and clustering of noisy plant items avoided. Static plant, for example generators, concrete mixers etc, will be placed as far as it is practicable from potential noise sensitive areas.	
	A Construction Noise Management Plan will be incorporated into the CEMP to expand on the construction noise management measures above and to address the specific construction works proposed.	
I3	The following noise management measures will be incorporated into the OEMP during the evening and morning shoulder period:	O
	• heavy vehicle drivers to be instructed to quietly enter and exit the site and should be instructed to limit extended periods of vehicle idling time. Where vehicle idling is unavoidable ERM recommends that Crawford's utilise on site structures (eg buildings or shipping containers etc) to obstruct noise sources from the nearest sensitive receptor location, where practical;	
	• the use of mobile plant motion alarms should be limited. Plant and equipment usage on site should be optimised during these periods to maximise forward motion, which will reduce motion alarms that typically sound in reverse. Where this is not achievable, visible alarms (ie flashing lights instead of audible alarms) or installation of "squashed duck" type alarms which are known to be less intrusive than standard alarms; and	
	• the use of large forklifts (ie 36T) should be limited. Where large forklift usage is required, the operators should be instructed to operate the equipment following normal good operational practices.	
	Waste Management	
J1	A Waste Management Plan (WMP) will be prepared for the site as part of the CEMP and OEMP. This would be developed prior to the commencement of construction activities and would include:	C,O
	• identification of requirements for waste avoidance, reduction, reuse and recycling;	
	• procedures for meeting legislative requirements;	
	• where possible, waste suitable for reuse or recycling would be treated in accordance with the NSW Government's Waste Reduction and Purchasing Policy;	
	• procedures for obtaining the required approvals for the management of waste;	
	• stockpile location and management;	
	• clear labelling of stockpiles;	
	• procedures to minimise waste movements around site;	
	• measures to minimise leaching of stockpiles;	
	• procedures for waste AN to be recovered as soon as possible following a spill using clean brooms and shovels. To avoid possible contamination use of clean up equipment would be restricted to AN stores only;	
	• procedures for the removal of spilt AN. Flushing with water would not be permitted;	
	• AN waste contaminated with organic substances shall be treated as Class 1 Explosive, removed from the AN store and managed accordingly;	

	• waste should be seen as hazardous if the content of waste is unknown;	
	• all sampling and classification results for the life of the project to demonstrate compliance with the EPA Waste classification guidelines will be retained;	
	• the site will be maintained and kept free of rubbish and cleaned up at the end of each working day; and	
	• any noxious plant species removed from the site would be bagged and disposed of at a licensed landfill.	
J2	The Asbestos Management Plan (ERM, 2012b) (refer to *Annex C*) which has been prepared for the site and identifies procedures and practices to be implemented for the safe management of asbestos on the site shall be appended to the WMP.	O
J3	A licenced waste management contractor would be used to remove waste from the site for reuse, recycling or disposal.	C,O
	Traffic and Transport	
K1	The current Traffic Management Plan (TMP) will be reviewed and updated as part of the OEMP. The TMP would outline:	O
	• Hours of permitted vehicle activity;	
	• Designated routes for traffic and defined access points to the site;	
	• when practical, maximise loads to reduce truck movements;	
	• if practical, minimise transport movements during the identified peak periods;	
	• designated areas within the site for truck turning movement, parking, loading and unloading to allow heavy vehicles to enter and leave the site in a forward direction;	
	• procedures and/or principles for vehicle speed limits and the safe operation of vehicles; and	
	• guidelines that will ensure drivers obey all road rules.	
	Heritage	
L1	The following measures will be undertaken to reduce potential impacts to indigenous heritage:	C,O
	• all construction personnel working on site would receive training in their responsibilities under the National Parks and Wildlife Act 1974. Records of training undertaken, including names of staff / contractors and date of training will be kept by Crawfords for the duration of the project. Where practicable, training will be developed and implemented in consultation with representatives of the local Aboriginal community;	
	• in the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeological specialist and representative of the local Aboriginal community must be contacted to determine the nature, extent and significance of the object(s). The site is to be registered in AHIMS (managed by OEH) and the management outcome for the site included in the information provided to AHMS. Crawfords will consult with representatives of the local Aboriginal community and the archaeological specialist to develop and implement management strategies for all objects / sites. If impacts are unavoidable, mitigation measures are to be undertaken in accordance with the heritage component of the Construction Management Plan. All sites impacted must have an Aboriginal Site Impact Recording form completed and submitted to the AHIMS registrar within three (3) months of completion of these works;.	

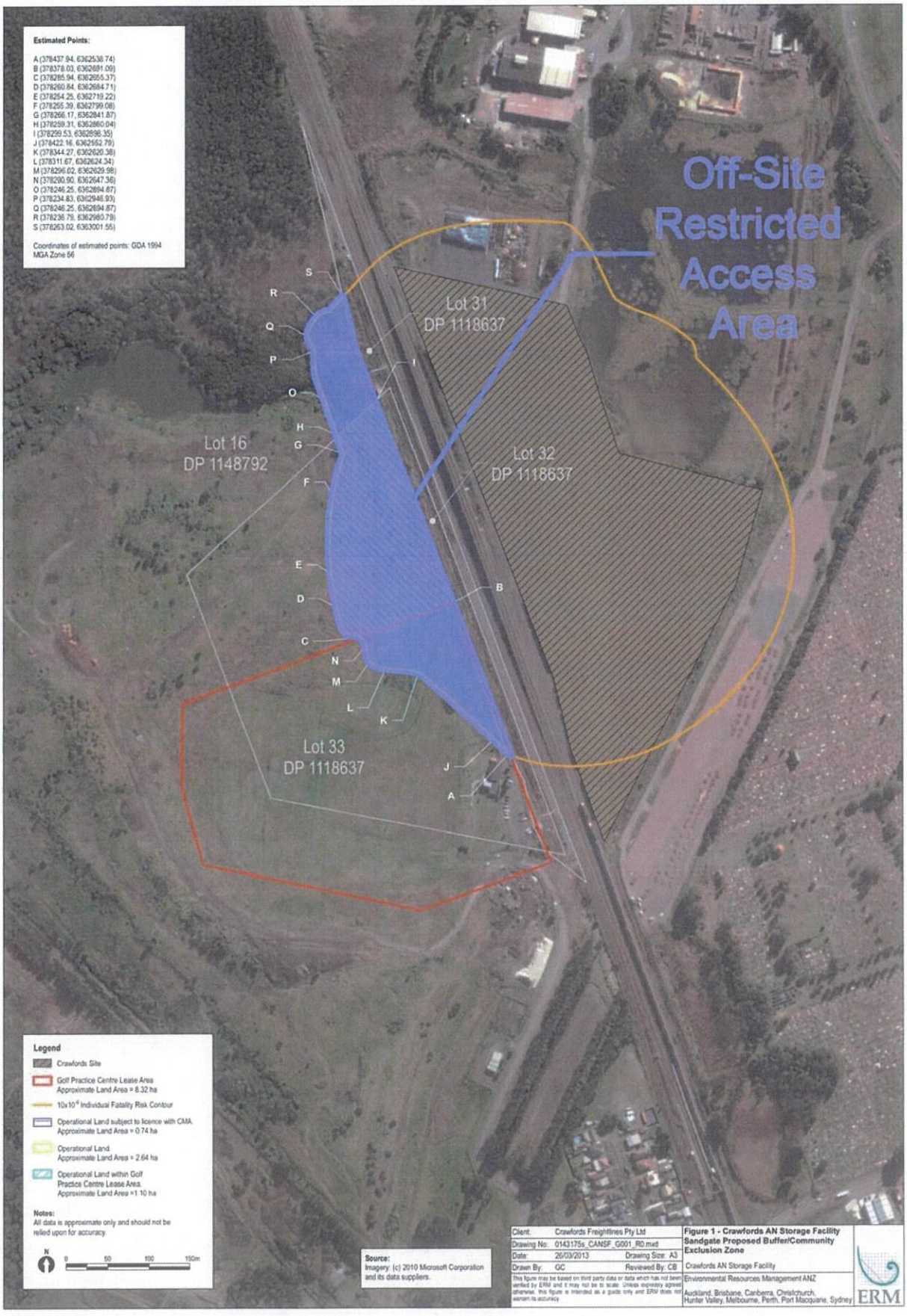
	• in the unlikely event that following surface disturbance human remains are located within the project area, all works in the immediate area are to halt to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be taken until the NSW Police provide written notification. If the skeletal remains are identified as Aboriginal, Crawford's will contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works will continue until OEH provides written notification; and	
	• the Aboriginal cultural heritage management measures identified above are to be detailed in the Construction Environmental Management Plan and Operational Environmental Management Plan, as relevant.	
L2	In the event European heritage items currently unidentified are uncovered as a result of the operations, all works will cease immediately until the item has been inspected by a qualified archaeologist and recommendations relating to the management of the item are made.	C,O
	Visual and Landscape	
M1	Night time operations are directly limited to deliveries of AN to the site only.	C,O
M2	Lighting should avoid the direct line of sight toward residences beyond the site.	C,O
M3	The use of floodlighting is to be minimised.	C,O
M4	Lighting would be focused only onto work areas during operation.	C,O

APPENDIX B – SITE PLAN



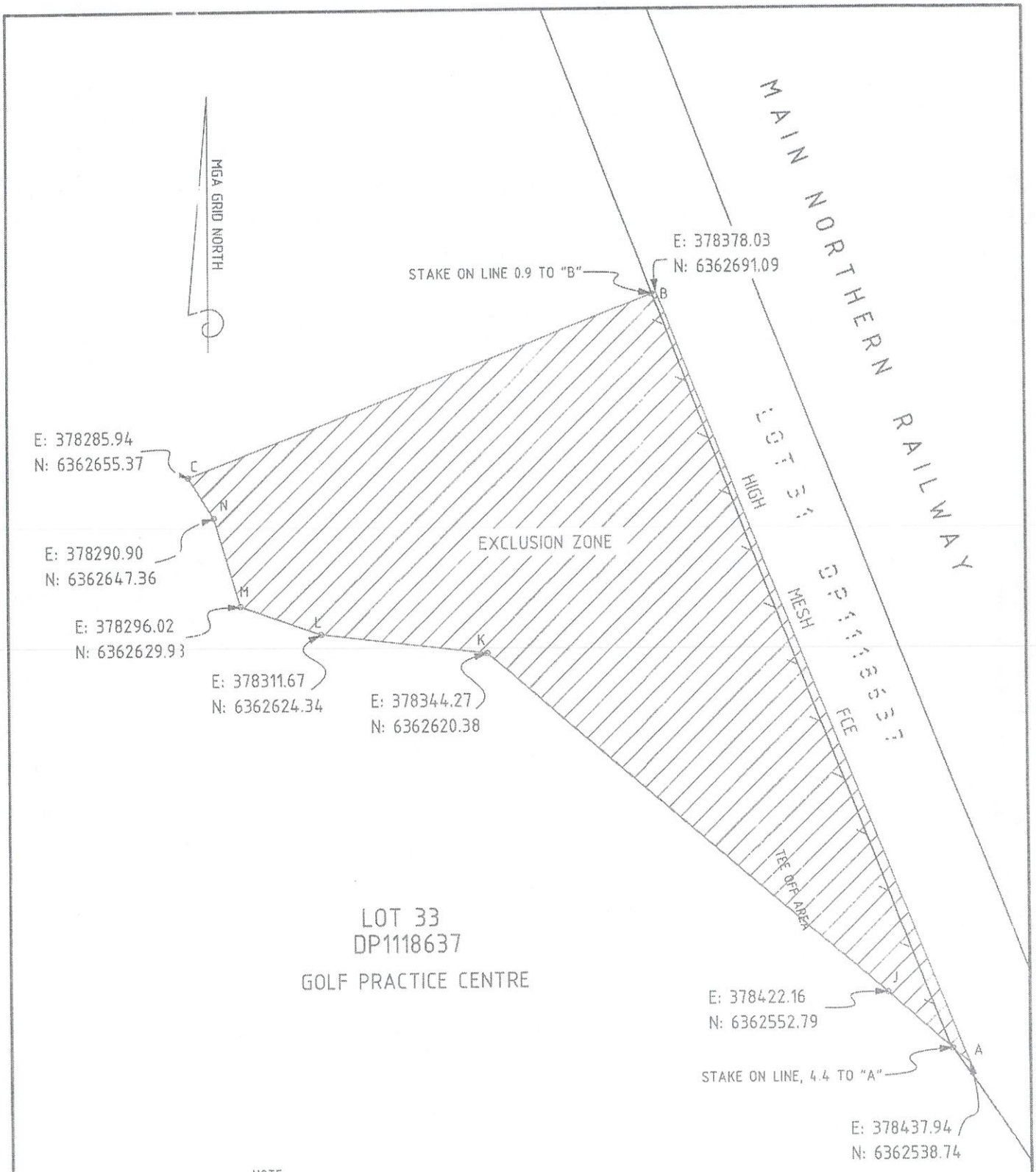
APPENDIX C – NOISE RECEIVER LOCATIONS

APPENDIX D – OFF-SITE RESTRICTED ACCESS AREA MAP



Annex B

DETAILS OF FENCING AND SIGNAGE



NOTE :

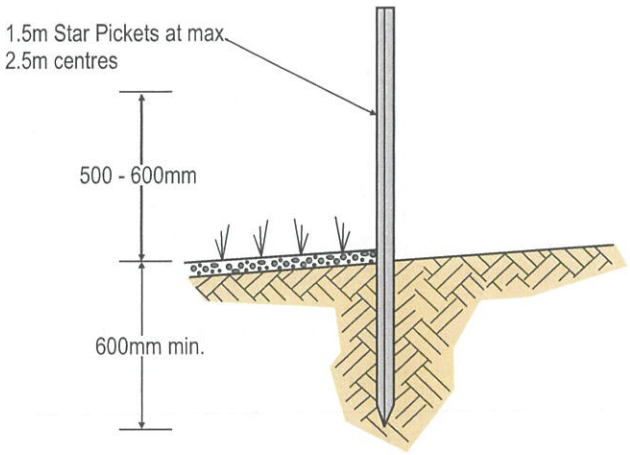
○ DENOTES STAKE PLACED

DATA USED IN SURVEY ORIGINATES FROM ERM
DRAWING NO. 0143175s_CANSF_G001_R0.mxd
DRAWN 26/03/2013

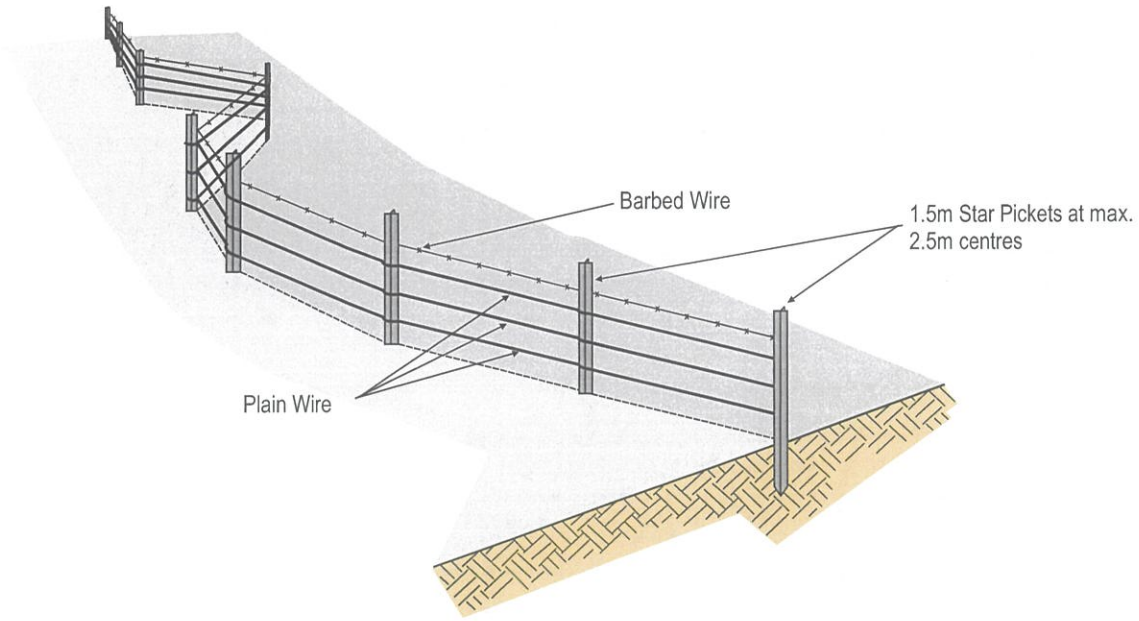
David Cant
SURVEYORS
Unit 3 479 High St PO Box 418 Maitland 2320
Ph (02) 4934 5011 Fax (02) 4934 5022

PLAN SHOWING FATALITY RISK CONTOUR
EXCLUSION ZONE WITHIN LOT 33 DP1118637
Client CRAWFORDS GROUP

Ref. 54 SHORTLAND
Date 6/5/2013
Scale 1:1000 (A4)



SECTION DETAIL



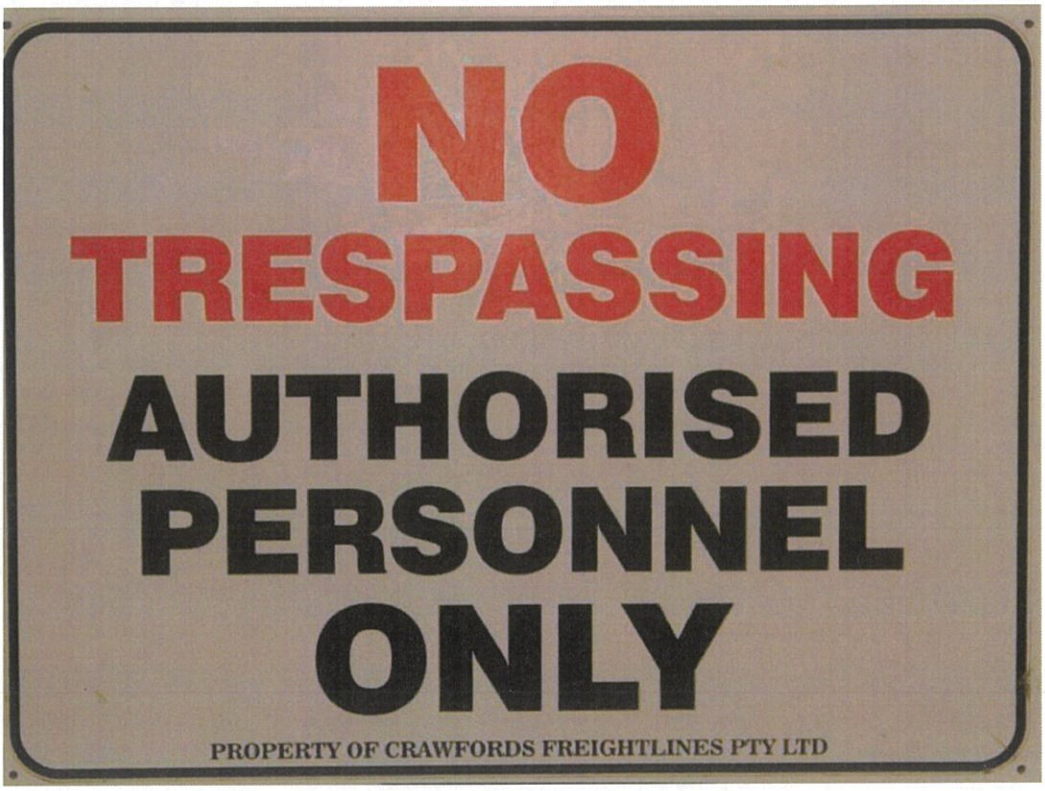
Client:	Crawfords Freightlines Pty Ltd		**Annex B - Fence Details**
Drawing No:	0143175h_ORAAS_AnB_C001_R0.cdr		
Date:	26/06/2013	Drawing size: A4	Crawfords Freightlines Pty Ltd - Off-Site Restricted Access Area Strategy
Drawn by:	JD	Reviewed by: SO'C	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



SIGNAGE DETAIL

Size of Sign - 600mm x 450mm
Spacing of Sign - One every 100m plus one at every access point (gate)

Client:	Crawfords Freightlines Pty Ltd		**Annex B - Signage Details**
Drawing No:	0143175h_ORAAS_AnB_C002_R0.cdr		
Date:	26/06/2013	Drawing size: A4	Crawfords Freightlines Pty Ltd - Off-Site Restricted Access Area Strategy
Drawn by:	JD	Reviewed by: SO'C	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

Annex C

GOLF PRACTICE RANGE DEED OF AGREEMENT

RICHARD MARK MACLEAN

AND

CRAWFORDS FREIGHTLINES PTY LTD

A.C.N. 069 024 899

DEED OF AGREEMENT

Gillis Delaney Lawyers

Level 11, 179 Elizabeth Street Sydney NSW 2000 Australia
DX 179 Sydney
p + 61 (0) 2 9394 1144 f + 61 (0) 2 9394 1100
www.gdlaw.com.au
Ref: GPC:130844

Liability limited by the Solicitors Scheme, approved by the Professional Standards Act 1994

This Deed of Agreement is made on the 31st day of July 2013.

BETWEEN:

RICHARD MARK MACLEAN of 24 Pasadena Crescent, Beresfield, New South Wales 2322 (**"RMM"**).

AND

CRAWFORDS FREIGHTLINES PTY LTD A.C.N. 069 024 899 whose registered office is C/- Price Waterhouse Cooper, Level 6, 26 Honeysuckle Drive, Newcastle, NSW 2300 (**"Crawfords"**).

RECITALS

A. RMM is the lessee under the Lease of the property located at 28 Astra Street, Shortland, NSW being Folio Identifiers 33 and 34/1118647 as shown on the plan annexed in Schedule 1 (**"the Land"**).

B. RMM has agreed to grant Crawfords the exclusive right to use and occupy that part of the Land which is more particularly delineated on the plan annexed in Schedule 2 being the shaded area in that plan as "Exclusion Zone" (**"the Area"**) for the Term for the Permitted Use, subject to the terms and conditions contained in this Deed of Agreement.

C. RMM has also agreed to grant Crawfords a right of first refusal to acquire RMM's interest in the Lease on the terms and conditions contained in this Deed of Agreement.

OPERATIVE PART

1. INTERPRETATION PROVISION

1.1 In this Deed of Agreement unless the contrary intention appears:

"Area" means that part of the Land more particularly delineated on the plan annexed in Schedule 2 together with Crawford's Improvements and Crawford's Property.

"Business Day" means a day which is not a Saturday or a Sunday or a public holiday in Newcastle.

"Commencement Date" means the date of commencement of the Term as determined under clause 2.4.

"Crawford's Improvements" means the Fencing and signage to be erected by Crawfords around the Area in accordance with Clause 7 of this Deed of Agreement.

"Crawford's Property" means all trade fixtures, plant, equipment, services, partitions, alterations, articles and chattels of any kind that are located on, or added to the Area by Crawfords for the purpose of carrying on the Permitted Use but excluding stock in trade and RMM's Improvements.

"Development Consent" means any development which Crawford has or will obtained in connection with the Permitted Use.

"Fencing" includes the erection of any structure, whether resting on the surface of a land or embedded beneath the surface.

"Fee" means the amount payable by Crawford to RMM in consideration of Crawford's exclusive use and occupation of the Area as specified in clause 4.

"Interest Rate" means as at the relevant date the rate of interest per annum being 8%.

"Lease" means the Lease or leases in respect of the Land between Newcastle City Council as Lessor and RMM as Lessee, 7 October 2008 and registered as AE272467A and each of the future registered leases identified.

"Permitted Use" means the use set out in Clause 5 of this Deed of Agreement.

"Relevant Authority: means any federal, state or local government, semi-government, quasi-government, administrative, fiscal or judicial department, or any entity agency, or other body, statutory or otherwise, and any court or tribunal having jurisdiction.

"Remove" means, in relation to Crawford's Improvements, the following works to be carried out by Crawford, at Crawford's expense, to the satisfaction of the RMM, acting reasonably and in accordance with the law:

(a) removal and/or demolition of from the Area; and

(b) the making good of any damage incurred to the Area as a result of removal

"RMM's Improvements" means any improvements erected or constructed in the Area as at the Commencement Date;

"Sunset Date" means 30 September 2013.

"Term" means a period of commencing on the Commencement Date and terminating on the same day as the Lease terminates (including any period of option or holding over under the Lease) or as terminated earlier by operation of Clause 10.

"Work" means any work in, or to the Area and includes, without limitation:

(a) the erection, rebuilding or replacement of any of Crawford's Improvements or other structure;

(b) any alteration or addition made to the Area including the addition of any reclamation, embankment, rubble earth or other filling;

(c) removal or demolition of any of RMM's Improvements, Crawford's Improvements; reclamation, embankment, rubble earth or other filling;

(d) repairing, painting or chemically treating the Area; or

(e) redecoration or refurbishment of RMM's Improvements or Crawford's Improvements.

1.2 In this instrument unless the context otherwise requires:

(a) reference to a person includes any other entity recognised by law and vice versa;

(b) words in the singular number include the plural and vice versa;

(c) words in one gender include every gender;

(d) any reference to a party includes that party's executors, administrators, successors and permitted assigns; and

(e) every term which affects more than one person in the same way affects all of those people together and each of them separately.

2. CONDITION PRECEDENT

2.1 This Deed of Agreement is subject to and conditional on the grant of all Relevant Authority approvals, in such form and on such conditions as Crawfords in its sole discretion may require, to enable;

(a) RMM and Crawfords to enter into this Deed of Agreement, and

(b) The lessor under the Lease to consent, and

(c) Crawfords to use the Area on the same terms as the Permitted Use

(together "**the Conditions Precedent**")

2.2 Both parties must make all reasonable endeavours to satisfy the Conditions Precedent before the Sunset Date.

2.3 RMM must do all things necessary to assist Crawfords in obtaining the Relevant Approvals to the Permitted Use.

2.4 The Commencement Date will be the date on which Crawfords give notice to RMM that the Conditions Precedent have been satisfied.

2.5 If the Conditions Precedent are not satisfied by the Sunset Date, either party may rescind this Deed of Agreement by giving notice to the other party within 21 Business Days of the Sunset Date.

3. GRANT OF EXCLUSIVE RIGHT TO USE AND OCCUPY

3.1 In consideration of the payment of the Fee by Crawford, RMM grants to Crawford and Crawford accepts the exclusive right to use and occupy the Area for the Term for the Permitted use subject to the reservations, covenants, conditions, stipulations and provisos contained in this Deed of Agreement and the Lease.

3.2 Crawford acknowledges that the granting of this Deed of Agreement confers no tenure or rights beyond the expiration or earlier determination of this Deed of Agreement.

3.3 Crawford acknowledges that it has reviewed the Lease and agrees to be bound by the terms and conditions of the Lease insofar as they affect the Area.

3.4 RMM agrees that it will not, while this License is in force, grant a licence, sub-lease or any right or entitlement to or allow any third party to carry out any use anywhere on the Area.

3.5 Crawfords acknowledges that RMM has made no warranty, statement or representation in relation to the condition or repair of the Area, the fitness or suitability of the Area for any purpose or whether any proposed use is permissible. Crawfords relies solely on its own enquiries and investigations.

4. USE AND OCCUPATION FEE

4.1 The Fee payable by Crawford to RMM in consideration of Crawford's exclusive use and occupation of the Area and carrying out of the Permitted Use is $15,000.00 per annum plus GST payable in the manner specified in this Clause 4. This fee will be subject to an annual CPI increase on the first and subsequent anniversaries of signing. For clarification, the increase will be based on ABS 6401.0 Consumer Price Index "weighted average of eight capital cities" for the quarter published immediately prior to executing this contract.

4.2 Crawfords must pay the Fee to RMM in advance in monthly instalments, the first instalment being due on the Commencement Date the subsequent instalments every 1 month thereafter.

4.3 Crawford agrees that it must make all payments to RMM to the bank account or address nominated by the RMM or such other bank account or address as RMM may advise Crawfords from time to time.

4.4 Crawfords must pay, on demand, to RMM interest on any amount payable by it under this Deed of Agreement from the date being ten (10) days after the date on which the amount becomes due for payment, during the period that it remains unpaid, calculated on daily balances.

4.5 The interest rate to be applied to each daily balance pursuant to clause 4.4 of this Deed of Agreement is the Interest Rate.

5. PERMITTED USE

5.1 Crawfords must not use, or permit the use of the Area other than for restricting public access to the Area and all activities associated with or incidental to restricting public access, including, without limitation, the erection of Fencing and signs (**"the Permitted Use"**).

5.2 Crawfords must undertake the Permitted Use throughout the Term in a safe and competent manner and comply with any reasonable requirements as notified by RMM or any Relevant Authority in connection with the Permitted Use from time to time.

5.3 Crawfords must not at any time during the Term do, or omit to do, or permit or cause to be done any act, matter or thing in, on, upon, or in the vicinity of the Area that is in breach of the Development Consent.

6. COMPLIANCE WITH THE LAW, LEASE AND DEVELOPMENT CONSENT

6.1 Crawfords must at all times during the Term observe, perform, fulfil and comply with the requirements of the Law and any Relevant Authority that relate or apply to the Area or the use of or occupation of the Area, including the terms of the Development Consent and the Lease.

6.2 Crawfords must obtain and keep current all licences, permits, consents, approvals and registrations required by law in connection with the carrying on of the Permitted Use or the construction of Crawford's Improvements.

6.3 Crawfords must not do anything or permit anything to be done that may cause any license, permit, consent, approval or registration referred to in Clause 6.2 of this Deed of Agreement to be forfeited, suspended or cancelled.

7. CRAWFORDS' IMPROVEMENTS

7.1 Crawfords must construct at its cost and expense Fencing (where Fencing does not already exist) to restrict public access to the Area and signage warning members of the public that access to the Area is prohibited. Crawfords must also meet the cost of property improvements necessary to enable commencement of the agreement.

7.2 Crawfords acknowledges that it is responsible for obtaining the approval of the local municipal council or any Relevant Authority from whom consent is required in order to construct Crawford's Improvements and must not carry out any Work before it obtains such approval.

7.3 Crawfords is accountable and responsible for the Work and must provide through a sub-contractor or supplier all necessary labour, materials, plant and equipment required for the Work and be responsible for the proper co-ordination of all sub-contractors engaged on the Work.

7.4 Crawfords must take all reasonable steps to minimise noise and disruption to occupiers and residents of adjoining land and the public generally during the Work.

7.5 Crawfords must at all times during the Term:

(a) maintain Crawford's Improvements in the condition in which they were in when constructed, fair wear and tear excepted; and

(b) repair and make good any damage which may be caused to Crawford's Improvements either directly or indirectly as a result of Crawford's carrying out the Permitted Use.

8. RELEASE AND INSURANCES

8.1 Crawfords uses and occupies the Area and permits the use and occupation of the Area at its own risk, and releases RMM to the full extent permitted by Law from any loss, claim, demand, action, suit, proceeding, cost, expense, penalty, payment, damage, liability or deficiency of any kind including any death or injury caused to any person or damage caused to any property that is paid, suffered, incurred or that has arisen out of or in connection with (directly or indirectly) this Deed of Agreement,

including without limitation, Crawfords use and occupation of the Area, the construction of Crawford's Improvements and any use permitted by Crawfords of the Area.

8.2 Crawfords must effect and maintain from the Commencement Date and for the duration of the Term public liability insurance covering Crawfords' use of the Area and the carrying out of the Permitted Use as well as carrying out Crawfords Improvements.

8.3 Crawfords must properly disclose to the insurer full, true, and particular information of all matters and things known or ought to be known to Crawfords and which the non disclosure of which may prejudice or effect the insurance or any payments or benefits under the insurance.

8.4 Crawfords must provide RMM, upon request, a copy of all insurances required to be effected and maintained pursuant to Clause 8 of this Deed of Agreement together with certificates of currency to evidence the existence of same.

9. ACCESS TO AREA

9.1 RMM may on giving Crawfords reasonable notice of no less than 48 hours which Crawfords may not unreasonably request, having regard to the Permitted Use, enter the Area with workmen and others and all necessary materials for the purposes of:

(a) viewing the state of repair and condition of the Area and/or to ascertain whether there has been any breach of Crawfords covenants or obligations under this Deed of Agreement; or

(b) carrying out any of its obligations or exercising any of its powers or authorities under this Deed of Agreement; or

(c) carrying out any of its obligations under any Law, including complying with any request, requirement, notification or order of any Relevant Authority having jurisdiction or authority over or in respect of the Area for which Crawfords is not responsible under this Deed of Agreement.

9.2 Crawfords must provide RMM with access to the Area, and must otherwise cooperate with RMM, for the purpose of Clause 9.1 of this Deed of Agreement, including where it is necessary, providing RMM with access to any adjoining land that is under the control of Crawfords.

9.3 RMM must, in the exercise of any power under 9.1 of this Deed of Agreement, do all things reasonably practicable to minimize inconvenience and disruption to Crawfords, and RMM leave the Area or that part of the Area used in the exercise of the RMM's power, clean and free of rubbish.

10. TERMINATION

10.1 Either party may terminate this Deed of Agreement, without prejudice to that party's right to claim compensation, if the other party has breached a term of the Deed of Agreement and/or fails to remedy a breach of this Deed of Agreement after giving the defaulting party not less than twenty eight (28) days written notice from the date of service of such notice.

10.2 Without limiting clause 10.1, Crawfords may terminate this Deed of Agreement immediately on notice to RMM if the Lease has been terminated.

11. RIGHT OF FIRST REFUSAL

11.1 If Crawfords pays the Fee regularly and is not in breach of this Deed of Agreement, the RMM agrees that it must not sell or agree to sell RMM's intersts in the Lease, whether directly or in connection with the sale of RMM's business unless RMM:

(a) Has first served on Crawfords a written offer which complies with clause 11.2 below; and

(b) Crawfords has not accepted the offer within twenty eight (28) days after service.

11.2 The offer under clause 11.1. above:

(a) must be in writing;

(b) must clearly state RMM offers to sell its interest in the Lease or its business to Crawfords in accordance with this clause;

(c) must confirm that RMM has received an offer from a third party not related, whether directly or indirectly to RMM (**"the Third Party"**) to acquire RMM's interest in the Lease or its business;

(d) must state the purchase price at which RMM's interest in the Lease or RMM's business is offered for sale;

(e) must state or refer to terms for sale which must not be less favourable to Crawfords than the terms for purchase offered by the Third Party;

(f) must provide that Crawfords may accept the offer in its absolute discretion within 28 days after service; and

(g) must not be amended or withdrawn once made.

12. NO PROPERTY INTEREST

12.1 This Deed of Agreement does not confer upon Crawfords any estate or interest in the Area. The legal title of the Area remains vested in Newcastle City Council at all times.

12.2 Nothing in this Deed of Agreement is intended to nor does it confer on Crawfords any right as a lessee under a lease or create the relationship of lessor and lessee or of a partnership, of principal and agent, joint venture or any other ongoing relationship between the parties and any such implication or inference is expressly negatived.

12.3 Crawfords acknowledges that the existing RMM's Improvements on the Area remain the property of RMM, who reserves its rights to reclaim them

13. ASSIGNMENT OF DEED OF AGREEMENT

13.1 RMM may not assign his rights under this Deed of Agreement without the prior written consent of Crawfords.

13.2 Crawfords may assign its interest in this Deed of Agreement at any time on notice to RMM.

14. NOTICES

14.1 A Notice or other communication served in connection with this Deed:

(a) may be given by an authorized officer of the relevant party;

(b) must be in writing; and

(c) must be left at either the registered office or principal place of business of the addressee; or

(d) sent by mail or courier to the address of the principal place of Business addressee; or

(e) sent by facsimile to the facsimile number of the principal place of Business addressee specified in this Deed or as notified from time to time; or

(f) sent by e-mail to the e-mail address of the addressee specified in this Deed or as notified from time to time.

14.2 A Notice or other communication takes effect from the time it is received, unless a later time is specified in it.

14.3 A letter or facsimile is taken to be received:

(a) in the case of a letter left at an address, at the time it is left;

(b) in the case of a posted letter, on the second ordinary business day after posting;

(c) in the case of a facsimile, on the production of a transmission report by the machine from which the facsimile was sent which indicates that the facsimile was sent in its entirety to the facsimile number of the recipient notified; and

(d) in the case of an e-mail, on the production of a report by the machine from which the e-mail was sent which indicates that the e-mail was sent in its entirety to the e-mail address of the recipient notified.

15. DISPUTES

15.1 Any disputes in relation to the Deed of Agreement that cannot be adequately resolved, will be settled, if possible before litigation, in the following manner:

(a) firstly, by liaison between the Parties or any nominated representatives; and

(b) secondly, by entering into mediation with an appropriately qualified mediator to be appointed by Crawfords.

16. GOVERNING LAW

16.1 This Deed of Agreement and the rights and obligations of the parties to it must be construed in accordance with and governed by the laws of the State of New South Wales and the parties submit to the jurisdiction of the Courts of that State.

17. THE WHOLE DEED OF AGREEMENT

17.1 This Deed of Agreement constitutes the whole agreement between the parties.

18. GOODS AND SERVICES TAX

(a) In this Clause 18, the terms "GST", "Input Tax Credit", "Supply" and "Tax Invoice" have the same meanings given to them in A New Tax System (Goods and Services Tax) Act 1999 (Cth).

(b) The Deed of Agreement Fee and any other payments under this Deed of Agreement do not (unless expressly stated otherwise) include GST.

(c) If a Supply made under this Deed of Agreement is subject to GST, the recipient of the Supply must pay to the supplier an additional amount equal to the GST payable in respect of that supply at the prevailing GST rate.

(d) The GST amount is payable at the same time and in the same manner as the consideration for the Supply to which the GST amount relates.

(e) RMM must provide Crawfords with a tax invoice for the GST amount for each payment made by Crawfords under Clause (c) within ten(10) days after the end of the month in which the payment is made, or an invoice issued, in relation to the supply, whichever occurs first, unless the parties agreed otherwise.

(f) If RMM is entitled to be reimbursed or indemnified for any cost, expense or liability by Crawfords the amount payable by Crawfords in respect of such cost, expense or liability will not include any amount in respect of GST for which the RMM entitled to an Input Tax Credit.

19. REMOVAL OF IMPROVEMENTS

19.1 Removal of Improvements at Request of RMM

(a) Upon expiration or earlier determination of this Deed of Agreement, RMM may give notice in writing to Crawfords of the requirement to Remove or partially Remove any or all of Crawfords Improvements from the Area by the date specified in the notice. The notice will continue to have effect, despite expiry of the date specified in the notice, until Crawfords complies with such notice.

(b) Crawfords must use its best endeavours to comply with any notice issued pursuant to Clause 19.1 (a) and take any necessary steps to effect

compliance including, without limitation, obtaining any approvals, consents and/or permits required by any Relevant Authority.

(c) The parties agree that nothing in this clause imposes an obligation on Crawfords to Remove RMM's Improvements.

The parties agree that the date specified in the notice issued pursuant to Clause 19.1(a) of this Deed of Agreement may be a date before or after the expiry or earlier determination of the Deed of Agreement. If the date is after the expiry or earlier determination of the Deed of Agreement, then RMM grants Crawfords further non exclusive rights to carry out Removal works only in accordance with the notice.

19.2 **Failure to Remove Improvements**

If Crawfords does not comply with a notice issued under Clause 19.1(a) of this Deed of Agreement then:

(a) RMM may Remove or partially Remove and dispose of Crawford's Improvements specified in the notice in such manner and on such terms as RMM determines, acting reasonably; and

(b) Crawfords must pay to RMM on demand the costs and expenses incurred by RMM in taking action under Clause 19.2(a).

20. RMM Legal Costs

20.1 Crawfords will pay 50% of RMM's reasonable legal costs to a maximum of $770.00 (including GST) in respect of the negotiations, drawing up and execution of this Deed of Agreement provided that such costs do not relate to RMM's enquiries and dealings about subdivision of the Land referred to in the Lease or Leases. RMM's solicitor will provide Crawfords with a tax invoice in respect of the costs payable by Crawfords.

Executed as a Deed at SANDGATE **this** 31st **day of** JULY **2013**

SIGNED SEALED and **DELIVERED** in my presence by **RICHARD MARK MACLEAN** who is personally known to me:

R. MACLEAN

RICHARD MARK MACLEAN

.....
Signature of Witness

RICHARD C MACLEAN
.....
Print Name of Witness
[BLOCK LETTERS]

EXECUTED by **CRAWFORDS FREIGHTLINES PTY LTD A.C.N. 069 024 899** in accordance with section 127 of the Corporations Act 2001:

.....
Signature of Sole Director/Secretary

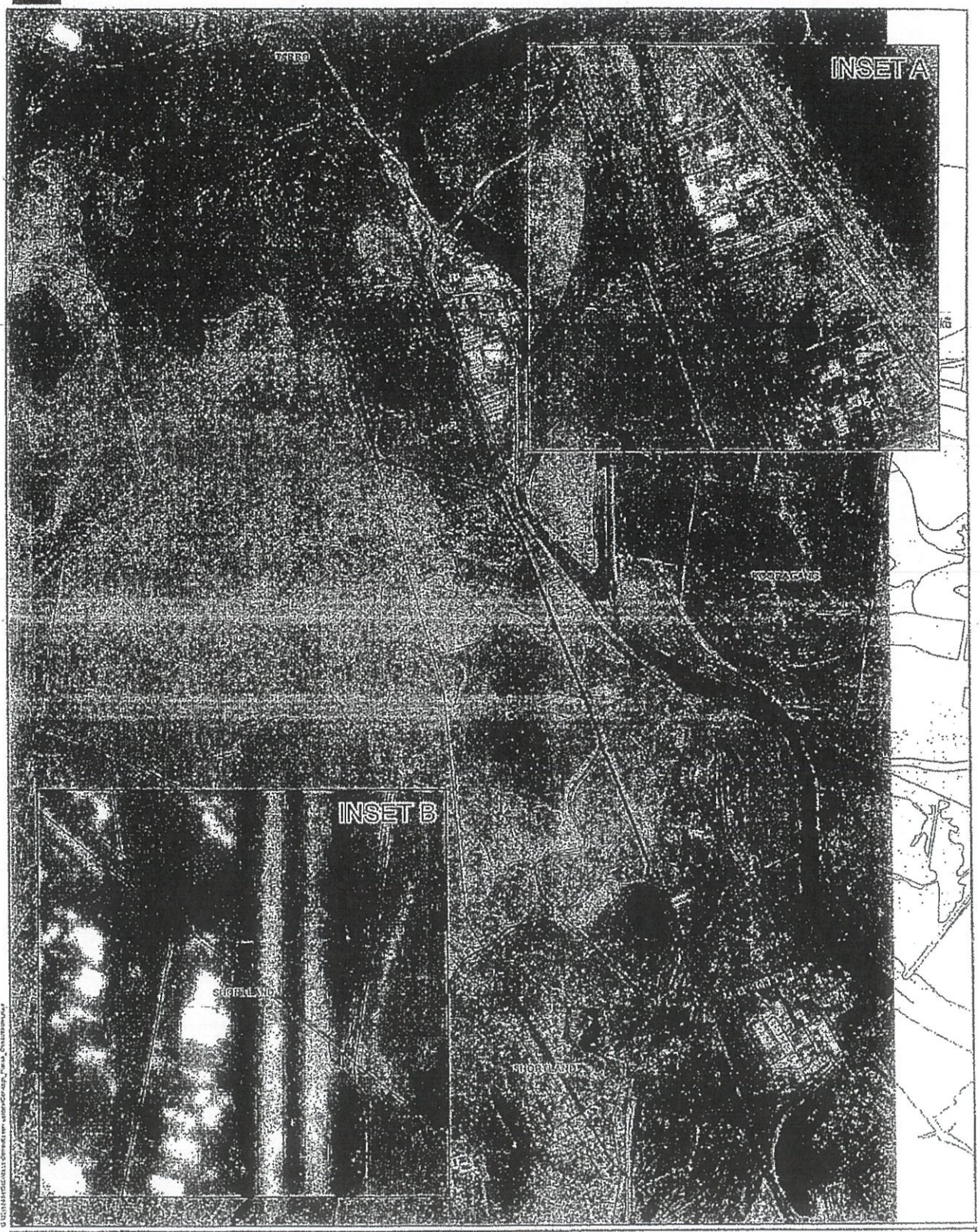
PETER CRAWFORD
.....
PETER CRAWFORD

SCHEDULE 1

Plan of Entire Land Leased

"B"

GHD CLIENTS|PEOPLE|PERFORMANCE



1:25,000
0 125 250 500 750 1,000
Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

GRID N

LEGEND

- Proposed DN600 Above Ground
- Proposed DN600 Below Ground
- Proposed DN200 Below Ground (Hexham)
- Proposed DN600 Below Ground (Shortland)
- Existing Watermains
- SEPP 14 Wetlands
- LEASED AREA - GOLF PRACTICE RANGE

© Spatial Vision courtesy of Hunter Water Corporation on DIPS

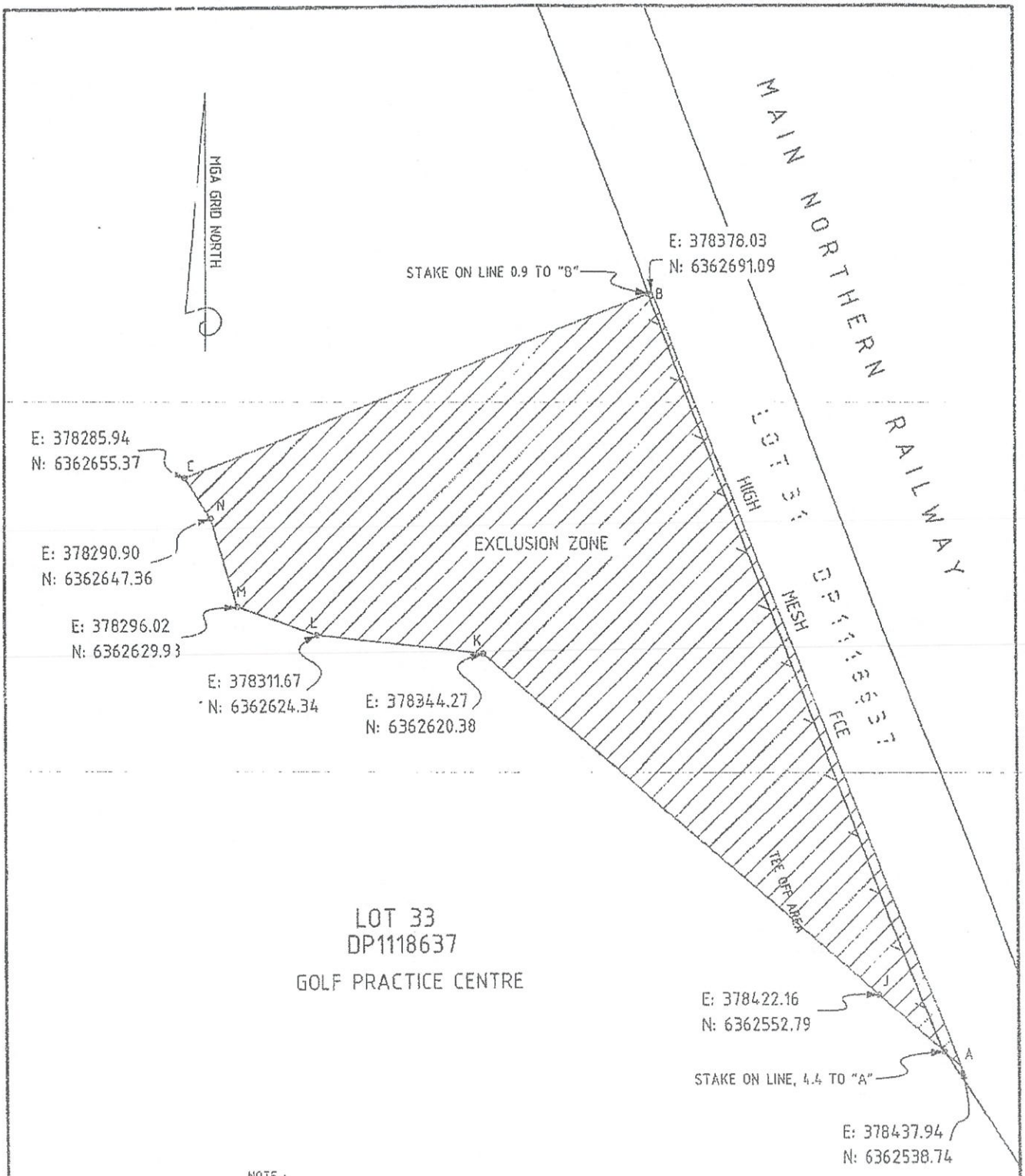
04 JUNE 2007

Concept Design Alignment Plan

Figure 1

SCHEDULE 2

Plan of Area within Leased Land



NOTE :

c DENOTES STAKE PLACED

DATA USED IN SURVEY ORIGINATES FROM ERM
DRAWING NO. 0143175s_CANSF_G001_R0.mxd
DRAWN 26/03/2013

David Cant
SURVEYORS
Unit 3 479 High St PO Box 418 Maitland 2320
Ph (02) 4934 5011 Fax (02) 4934 5022

PLAN SHOWING FATALITY RISK CONTOUR
EXCLUSION ZONE WITHIN LOT 33 DP1118637
Client CRAWFORDS GROUP

Ref. 54 SHORTLAND
Date 6/5/2013
Scale 1:1000 (A4)

Annex D

NCC DEED OF AGREEMENT AND COPY OF CORRESPONDENCE FROM NCC

Deed of Agreement

Council of The City of Newcastle
ABN 25 242 068 129

and

Crawfords Freightlines Pty Limited
ABN 22 069 024 899

Deed of Agreement dated 19 July 2013

Parties

Council of the City of Newcastle ABN 25 242 068 129 of 282 King Street, Newcastle NSW 2300 (Council)

Crawfords Freightlines Pty Ltd ABN 22 069 024 899 of C/- PriceWaterhouseCoopers Level 6, 26 Honeysuckle Drive, Newcastle, NSW 2300, (CFL)

Background

A. CFL is the lessee of the CFL Land.

B. The Minister granted the Consent in respect of the CFL Land.

C. Council is the registered proprietor of the Council Land which comprises a former landfill site, and which is subject to the VMP, the HWC Easement, the CMA Agreement and the Golf Lease.

D. Condition 5 in Schedule 2 to the Consent requires CFL to demonstrate to the satisfaction of the Director General of the Department of Planning and Infrastructure that suitable arrangements are in place to prohibit public access to, inter alia, the Restricted Council Land.

E. CFL has requested Council to enter into this deed in order to assist CFL meet its obligations under Condition 5 in Schedule 2.

Operative Terms

1 Definitions and Interpretation

1.1 Definitions

"CFL Land" means Lot 12 DP 625053.

"CMA Agreement" means the agreement between Council and the Hunter Central Rivers Catchment Management Authority dated 28 June 2007.

"Consent" means approval granted by the Minister in respect of the CFL Land on or about 13 June 2013 and designated Major Project No SSD - 5119.

"Council Land" means Lot 33 DP 1118647 and Lot 16 DP 1149782.

"Council's Representative" means the General Manager of Council or nominee.

"Exclusion Period" means the period of 2 years commencing on the date of this Deed.

"Golf Lease" means the lease of part of the Council Land including part of the Restricted Council Land which commenced 1 January 2013 between Council as Lessor and Richard Mark Maclean as Lessee for the purposes of a golf driving range.

"HWC Easement" means the easement burdening the NCC Land in favour of the Hunter Water Corporation for the Chichester Trunk Gravity Main.

"Interest Rate" means 12% per annum calculated daily.

"Off-Site Restricted Access Area" has the same meaning as designated in the Consent.

"Off–Site Restricted Access Area Strategy" has the same meaning as designated in the Consent.

"Perimeter Fencing" means the fencing for which a specification and location plan is included in the Perimeter Fencing Schedule.

"Perimeter Fencing Schedule" means the schedule to this Deed entitled Perimeter Fencing Schedule.

"Plan" means the plan attached to this Deed.

"Restricted Council Land" means that part of the Council Land shown hatched on the Plan (excluding that part subject to the Golf Lease).

"Signage" means signs which comply with the requirements of the Off – Site Restricted Access Area Strategy.

Sterilization Fee" means the sum of $14,400.00 per annum.

"VMP" means the Voluntary Management Proposal approved by the Environment Protection Authority in respect of the NCC Land from time to time.

"WHS Law" includes the Work Health and Safety Act 2011 and regulations made under that Act.

"Works" means the works CFL is required to undertake under clause 2.

1.2 Unless the contrary intention appears, a reference in this Deed to:

(a) the singular includes the plural and vice versa; and

(b) the word "person" includes an individual, a firm, a body corporate, a partnership, joint venture, an unincorporated body or association, any governmental, semi-governmental, administrative, fiscal, judicial or quasi-judicial body, department, commission, authority, tribunal, agency or entity; and

(c) a particular person includes a reference to the person's executors, administrators, successors, successors in title, substitutes (including persons taking by novation) and assigns.

2 Works to be carried out by CFL

2.1 CFL must, at CFL's sole cost, and in accordance with clause 3, within 2 weeks of the date of this Deed:

(a) erect the Perimeter Fencing around the Restricted Council Land; and

(b) erect the Signage.

2.2 CFL must promptly notify Council when it considers it has complied with clause 2.1.

2.3 Council may, within 14 days of receiving notice from CFL under clause 2.2, inspect the Council Land and notify CFL if it accepts that CFL has complied with clause 2.1 or if it considers CFL has not complied.

2.4 If Council notifies CFL that Council does not consider CFL has complied with clause 2.1 Council must provide details of the non-compliance(s) in the notice under clause 2.3.

2.5 CFL must carry out any work necessary to achieve compliance with clause 2.1 within 2 weeks of Council's notice under clause 2.3, following which clauses 2.2 to 2.5 apply, with the necessary changes.

3 Conditions applying to carrying out of works

3.1 CFL acknowledges that the Council Land is a former waste disposal site, which is contaminated. CFL assumes all the risk associated with carrying out the Works.

3.2 CFL must carry out the Works in a proper and workmanlike manner, using good quality materials, and strictly in accordance with:

(a) the Consent;

(b) the Off – Site Restricted Access Area Strategy;

(c) this Deed;

(d) WH&S law; and

(e) any lawful direction of Council's Representative;

3.3 CFL must take out and maintain all necessary and appropriate insurances in connection with the carrying out of the Works, including

(a) public liability insurance in an amount of cover of not less than $20,000,000 extending full cover to Council, its employees, servants or agents;

(b) workers compensation as required by law;

3.4 CFL must strictly comply with all requirements under WH&S Law in the carrying out of the Works;

3.5 CFL is the principal contractor for the Works for the purposes of WH&S law;

3.6 Council authorises CFL to have management or control of the workplace and to discharge the duties of a principal contractor under the WHS law.

3.7 CFL must:

(a) ensure that any person employed or engaged by CFL to carry out any part of the Works completes a work health and safety induction programme

(b) comply with the requirements of the WHS Law including as the person conducting a business or undertaking in relation to Parts 4.6, 6.3, 6.4 and 6.5 of the WHS Regulation and the duty to consult, cooperate and coordinate activities with all other persons who have a work health and safety duty in relation to the same matter;

(c) promptly notify Council of, and assist Council as requested in relation to, any actual or potential incident of which CFL is aware, that arises from the Works which is notifiable to an authority; and

(d) at all times comply, and must ensure that any contractors (and their employees) engaged by CFL, or any contractor engaged by any of its contractors, in relation to the Works at all times comply, with the WHS law and all relevant codes of practice and compliance codes.

3.8 CFL agrees that the Council does not control or influence health and safety matters in relation to the Works, other than as set out in this Deed

3.9 CFL must only engage a sub-contractor to carry out the Works or any part of the Works

(a) which has appropriate expertise, experience and personnel to carry out the Works in a proper and workmanlike manner; and

(b) with the prior written approval of Council, acting reasonably.

4 No payment for Works

4.1 CFL acknowledges that CFL is solely responsible for the cost of the Works, and payments due to any person who supplies goods or services in connection with the Works.

4.2 CFL will not make any claim for payment against Council in connection with the Works.

4.3 CFL indemnifies Council in respect of:

(a) any claim by a sub-contractor; and

(b) any claim by any person who supplies goods or services in connection with the Works.

5 Maintenance and repair of Perimeter Fencing and Signage

5.1 CFL must maintain, repair and replace the Perimeter Fencing and Signage at CFL's sole cost until the expiry or termination of this deed.

5.2 Clause 3 applies to any works on the Council Land to comply with CFL's obligations under this clause 5.

6 Payment of Sterilization Fee

6.1 CFL must pay the Sterilization Fee to Council by equal monthly instalments of $1,200.00 in advance, without deduction or set off.

6.2 If CFL fails to pay any amount due under this deed on the due date for payment of such amount, then, without limiting Council's other rights, CFL must pay interest on the overdue amount at the Interest Rate.

7 Exclusion Period

7.1 Subject to this deed and provided CFL complies with its obligations under this deed, Council will not grant permission to the public or any member of the public to enter the Restricted Council Land during the Exclusion Period.

7.2 Nothing in clause 7.1 or otherwise in this deed requires Council to take any steps or implement any measures to exclude any person from or to prevent any person from entering on the Restricted Council Land. For avoidance of doubt, Council's exclusive obligation is to permit CFL to erect the Perimeter Fencing and the Signage in accordance with this deed.

7.3 Council has no liability to CFL if a member of the public enters the Restricted Council Land despite the Perimeter Fencing and the Signage.

7.4 This clause does not affect the rights of persons to enter the Restricted Council Land under or in connection with the VMP, the HWC Easement or the CMA Agreement.

8 Removal and make good

8.1 On expiry or termination of this deed, CFL must, at CFL's cost, if required by Council, remove the Works and restore the Council Land to its former state to the reasonable satisfaction of Council.

8.2 Clause 3 applies to any works on the Council Land to comply with CFL's obligations under this clause 8.

9 Certain Third Parties not affected

9.1 Nothing in this deed affects the rights of parties under the VMP, the HWC Easement and the CMA Agreement.

10 Investigations into long term security of the Off-Site Restricted Access Area

10.1 As provided for in the Off–Site Restricted Access Area Strategy, CFL must, at it's cost, investigate the possibility of effecting a boundary adjustment of the 2 lots constituting the Council Land, which boundary adjustment will result in the creation of a discrete lot incorporating the Off-Site Restricted Access Area (or such other area approved by Council).

11 Transfer of the Off-Site Restricted Access Area

11.1 Council may (but is not obliged to) transfer the Off-Site Restricted Access Area to CFL if:

(a) CFL achieves the boundary adjustment referred to in clause 10.1 to the satisfaction of Council, acting reasonably, during the Exclusion Period or such further time period allowed by Council; and

(b) a Council resolution is obtained approving such transfer.

11.2 The consideration for the transfer of the Off-Site Restricted Access Area to CFL shall be as determined by market valuation carried out following the boundary adjustment as referred to in clause 10.1.

11.3 All costs whether for survey, registration, valuation or transfer shall be payable by CFL.

12 Consent of lessee under the Golf Lease

12.1 CFL will have sole responsibility for obtaining the consent of the lessee under the Golf Lease to any proposed boundary adjustment and transfer as referred to in clauses 10 and 11.

13 Consent not otherwise affected

13.1 Nothing in this affects the obligations of CFL under the Consent.

13.2 Council's discretions, powers and functions under legislation are not fettered by this Deed.

14 CFL's insurances

14.1 CFL must maintain in connection with this Deed:

(a) public risk liability insurance extending full cover to Council, its employees, servants or agents and any other persons or property for an amount of not less than $20,000,000.00 arising out of any single event; and

(b) worker compensation insurance as required by law.

14.2 All insurance policies must:

(a) be produced to Council for inspection on demand;

(a) be placed with a reputable and solvent insurer reasonably approved by Council.

15 Indemnities

CFL indemnifies Council against any claims, demands, actions, suits, damages, other expenses, injury or death caused or contributed to by:

(a) CFL's act, omission or negligence in connection with the Works or this deed;

(b) CFL's use of the Council Land;

(c) CFL's breach of this deed;

(d) the presence of any person on the Restricted Council Land, whether authorised by Council or not, where such person may suffer death, injury or other loss or damage in connection with CFL's development on the CFL Land,

except to the extent that it is caused by the negligent act or omission of Council.

16 Assignment or other disposal of interest in the CFL Land

16.1 If CFL assigns or otherwise disposes of it's interest in the whole or any part of the CFL Land, CFL must procure that the purchaser or other assignee or other disponee enter into a similar deed with Council as this Deed, mutatis mutandis.

16.2 In the case of assignment or other disposal of the whole or any part of the CFL Land this Deed continues to bind CFL until such time as an assignee or other disponee enters into a deed under clause 16.1.

17 Termination

17.1 Council may terminate this Deed immediately by notice in writing to CFL on the occurrence of any of the following events:

(a) if CFL is subject to external administration;

(b) if CFL fails to remedy any breach of this Deed within 5 days after being given notice in writing requiring the breach to be remedied by NCC party or if CFL breaches a term of this Deed and that breach is not capable of remedy; or

(c) if the Consent is terminated or lapses for any reason.

18 Consequences of termination

18.1 If Council terminates this deed CFL must not make any claim for compensation, damages or otherwise against Council resulting from the termination of this Deed.

19 Clauses surviving termination

Clauses 8 and 15 will survive the termination of this deed together with any other provisions which by their nature survive termination or expiry of the Deed.

20 GST

(a) All consideration provided for any taxable supply under this Deed is exclusive of GST unless the contrary is clear. The amount of that consideration must be increased by an additional amount equal to the GST on that taxable supply. The party who has to pay the additional amount must pay it at the same time as the consideration in respect of that taxable supply becomes due or, if the supplier has to pay (or allow credit against) the relevant GST before then, the additional amount must be paid at the earlier time.

(b) If an amount of consideration under this Deed is calculated as specific compensation or reimbursement for an expense, loss or liability of a supplier the consideration must be calculated after excluding any amount for which the supplier is entitled to an input tax credit as recipient of the item to which the expense, loss or liability relates.

(c) A party shall not be obliged to make any payment for GST unless it is provided with a tax invoice which complies with the GST Act.

(d) If at any time an adjustment is made or required to be made between a party and the relevant taxing authority on account of any amount paid as GST under this Deed:

(i) a corresponding adjustment must be made;

(ii) adjustment notes must be issued; and

(iii) any payment must be made,

between the parties as may be necessary to give effect to the adjustment.

(e) For the purposes of this clause the following words are defined:

(i) **"GST"** means the tax imposed or assessed by the GST Act and its related legislation and includes any similar or substitute impost introduced in the future.

(ii) **"GST Act"** means the *A New Tax System (Goods and Services Tax) Act 1999.*

(iii) **"input tax credit", "taxable supply"** and **"consideration"** have the meanings given to those terms in the GST Act.

21 Entire Agreement

This Deed constitutes the entire agreement of the parties about its subject matter and supersedes all previous agreements, understandings and negotiations on that subject matter.

22 Counterparts

This Deed may consist of a number of copies, each signed by one or more parties to this Deed. If so, the signed copies are treated as making up the one document.

23 Variation and waiver

A provision of this Deed or a right created under it may not be waived or varied except in writing, signed by the party or parties to be bound.

24 Further steps

Each party agrees to do anything the other asks (eg obtaining consents, signing and providing documents and getting documents completed and signed):

(a) to bind the party and its successors under this Deed; and

(b) to give effect to the intentions of the parties, the objectives of this Deed and the transactions contemplated by the Deed (including negotiating in good faith with respect to any matters requested by any of the parties to this Deed); and

(c) to execute and deliver documents and other instruments; and

(d) to use its best endeavours to make relevant third parties comply with this clause.

Executed as a Deed.

Executed in accordance with section 127 of the *Corporations Act 2001* by **Crawfords Freightlines Pty Limited ABN 22 069 024 899):**

Signature of Sole Director/Secretary

PETER CRAWFORD

Signature of Director

Signed, sealed and delivered by a delegate of Council of The City of Newcastle (ABN 12 569 841 325) in the presence of:

Signature of Witness

TERRI FREEMAN

Name of Witness (print)

110 MAIN RD

Address of Witness (print)

CHFTREIGH NSW 2321

Signature of Delegate

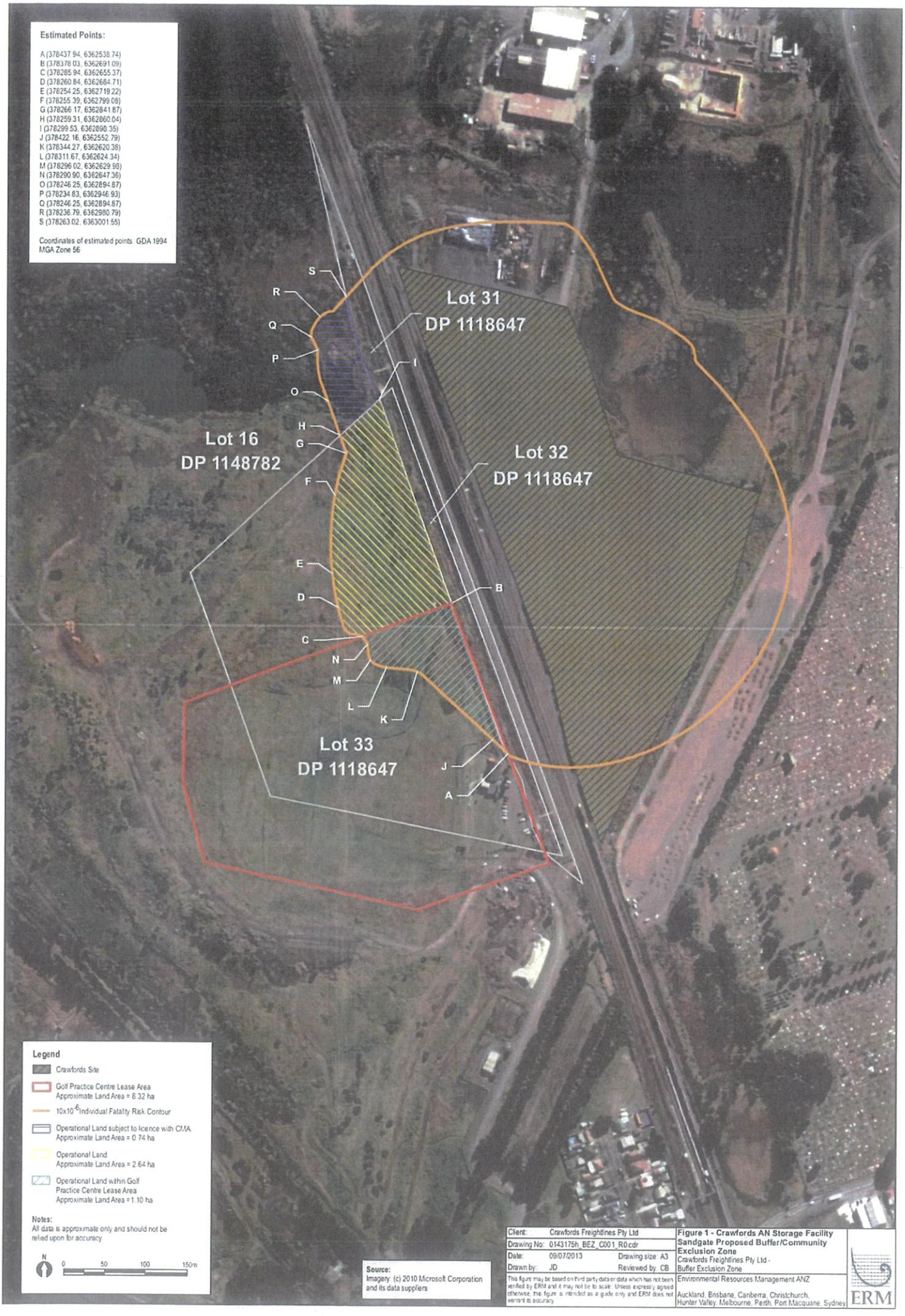
KEN GOULDTHORP

Name of Delegate (print)

GENERAL MANAGER

Title of Delegate (print)

PLAN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D (378260.84, 6362684.71)
E (378254.25, 6362719.22)
F (378255.39, 6362799.08)
G (378266.17, 6362841.87)
H (378259.31, 6362860.04)
I (378299.53, 6362898.35)
J (378422.16, 6362552.79)
K (378344.27, 6362620.38)
L (378311.67, 6362624.34)
M (378296.02, 6362629.98)
N (378290.90, 6362647.36)
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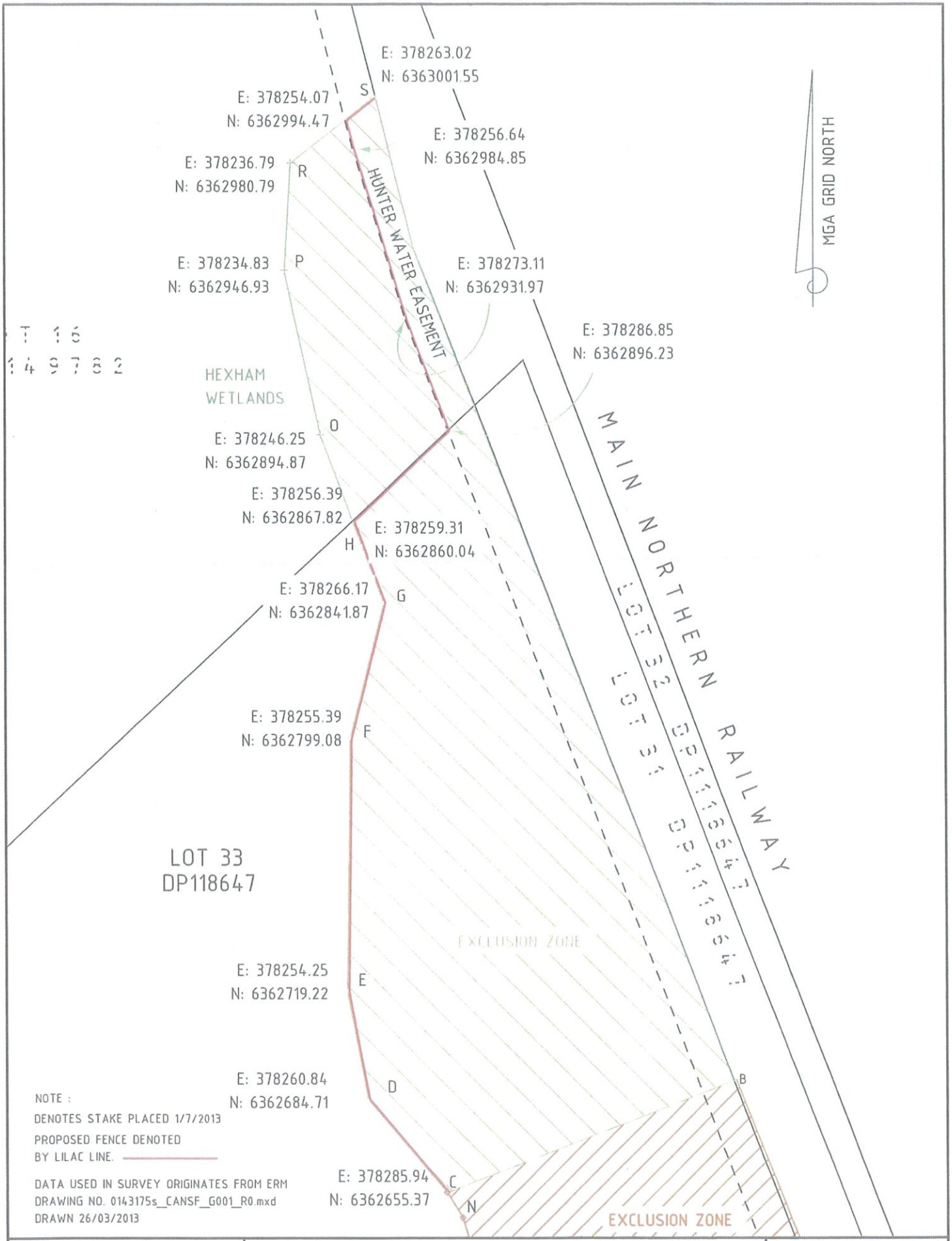
P (378234.83, 6362946.93)
Q (378246.25, 6362894.87)
R (378236.79, 6362980.79)
S (378263.02, 6363001.55)
Coordinates of estimated points: GDA 1994 MGA Zone 56
Lot 31 DP 1118647
Lot 16 DP 1148782
Lot 32 DP 1118647
Lot 33 DP 1118647
Legend
Crawfords Site
Golf Practice Centre Lease Area Approximate Land Area = 8.32 ha
10x10-6 Individual Fatality Risk Contour
Operational Land subject to licence with CMA Approximate Land Area = 0.74 ha
Operational Land Approximate Land Area = 2.64 ha
Operational Land within Golf Practice Centre Lease Area Approximate Land Area = 1.10 ha
Notes:
All data is approximate only and should not be relied upon for accuracy
N
0
50
100
150m
Source:
Imagery: (c) 2010 Microsoft Corporation and its data suppliers
Client: Crawfords Freightlines Pty Ltd
Drawing No: 0143175h_BEZ_C001_R0.cdr
Date: 09/07/2013
Drawing size: A3
Drawn by: JD
Reviewed by: CB
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy
Figure 1 - Crawfords AN Storage Facility Sandgate Proposed Buffer/Community Exclusion Zone
Crawfords Freightlines Pty Ltd - Buffer Exclusion Zone
Environmental Resources Management ANZ
Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney
ERM

PERIMETER FENCING SCHEDULE



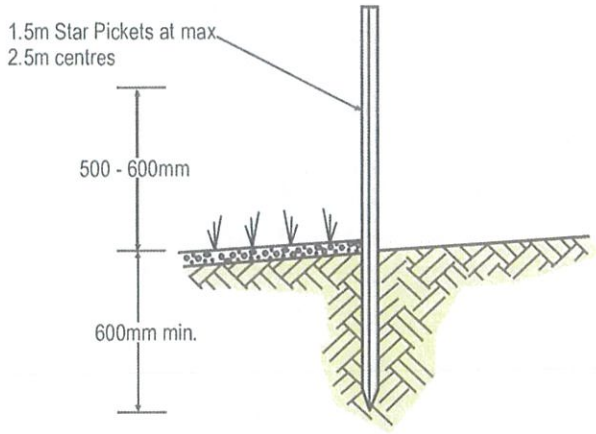
David Cant
SURVEYORS
Unit 3 479 High Street
PO Box 418 Maitland 2320
Ph (02) 4934 5011 Email land@idl.net.au

PLAN SHOWING FATALITY RISK CONTOUR EXCLUSION ZONE WITHIN LOT 33 DP1118647 & LOT 16 DP1149782.

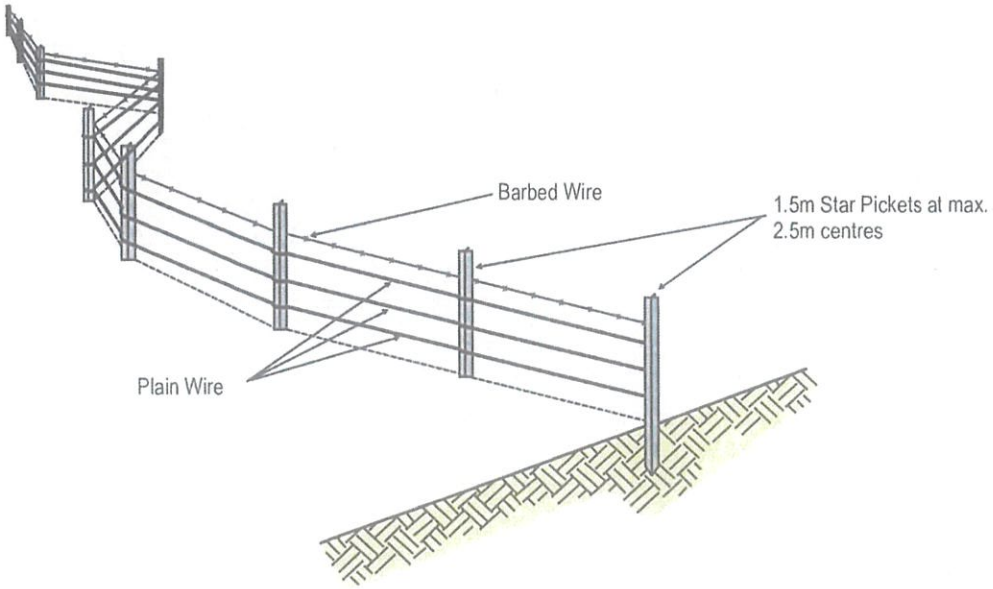
Client CRAWFORDS GROUP

Revision A

Ref.	13-54b Shortland
Date	1/7/2013
Scale	1:1500 (A4)
Datum	-
Contour Interval	-



SECTION DETAIL



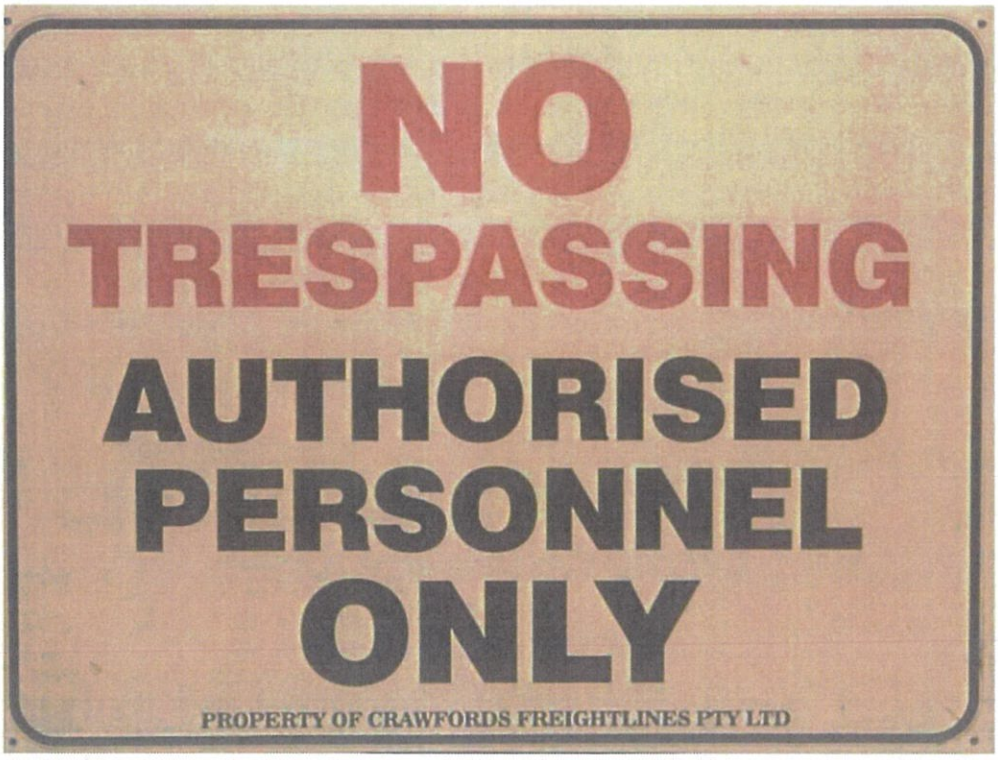
Client:	Crawfords Freightlines Pty Ltd		**Annex B - Fence Details**
Drawing No:	0143175h_ORAAS_AnB_C001_R0.cdr		
Date:	26/06/2013	Drawing size: A4	Crawfords Freightlines Pty Ltd - Off-Site Restricted Access Area Strategy
Drawn by:	JD	Reviewed by: SO'C	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



SIGNAGE DETAIL

Size of Sign - 600mm x 800mm
Spacing of Sign - One every 100m plus one at every access point (gate)

Client:	Crawfords Freightlines Pty Ltd		**Annex B - Signage Details**
Drawing No:	0143175h_ORAAS_AnB_C002_R0.cdr		
Date:	26/06/2013	Drawing size: A4	Crawfords Freightlines Pty Ltd - Off-Site Restricted Access Area Strategy
Drawn by:	JD	Reviewed by: SO'C	
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.			Environmental Resources Management ANZ Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

GMO
Reference: 4249876
Phone: 4974 2627

29 May 2013

The City of Newcastle

PO Box 489, Newcastle
NSW 2300 Australia
Phone 02 4974 2000
Facsimile 02 4974 2222
Email mail@ncc.nsw.gov.au
www.newcastle.nsw.gov.au

Mr Peter Crawford
Crawford Freightlines Pty Ltd
C/- PriceWaterhouseCoopers
Level 6, 26 Honeysuckle Drive
NEWCASTLE NSW 2300

Great Place, Great Lifestyle, *Great Future*

Dear Sir

COUNCIL LAND AT 2 & 28 ASTRA STREET SHORTLAND

I note it is anticipated that, as a condition of the consent you are seeking in relation to development on land at 158 Maitland Road Sandgate, a requirement substantially as follows will be imposed:

The applicant must demonstrate to the satisfaction of the Director General of the Department of Planning and Infrastructure that suitable arrangements are in place to prohibit public access to the Restricted Access Area as shown in the attached figure. As part of demonstrating that suitable arrangements are in place, the applicant must provide evidence that the land owner has been consulted and agrees with the proposed measures and provide details of the measures proposed to prohibit public access, such as fencing and signage.

A copy of the figure referred to above is attached to this letter.

I further note that part of the Restricted Access Area impacts on two (2) portions of Council operational land being Lot 33 DP 1118637 and Lot 16 DP 1148792 and that you have consulted with Council in relation to the abovementioned requirement.

Being land that is, in part, used for Council's operational purposes the public is currently restricted from accessing it (apart from the portion used as a golf driving range). However the following needs to be noted and acknowledged:

1. The land is a former landfill site and is subject to the terms of a Voluntary Management Proposal with the Environment Protection Authority. This entails ongoing groundwater/surface water and gas monitoring and reporting which necessitates attendance on the land including in the Restricted Access Area by various consultants from time to time.
2. Hunter Water Corporation has recently located part of the Chichester Trunk Gravity Main within the Restricted Access Area and a proposed easement has been registered. Hunter water Corporation will have ongoing access rights to the Restricted Access Area.
3. The part of Lot 16 DP 1148792 within the Restricted Access Area is also affected by a Deed of Agreement for Inundation with Hunter-Central Rivers Catchment Management Authority. Although no works are required to be carried out in the affected area the Authority has the right to inundate the land.

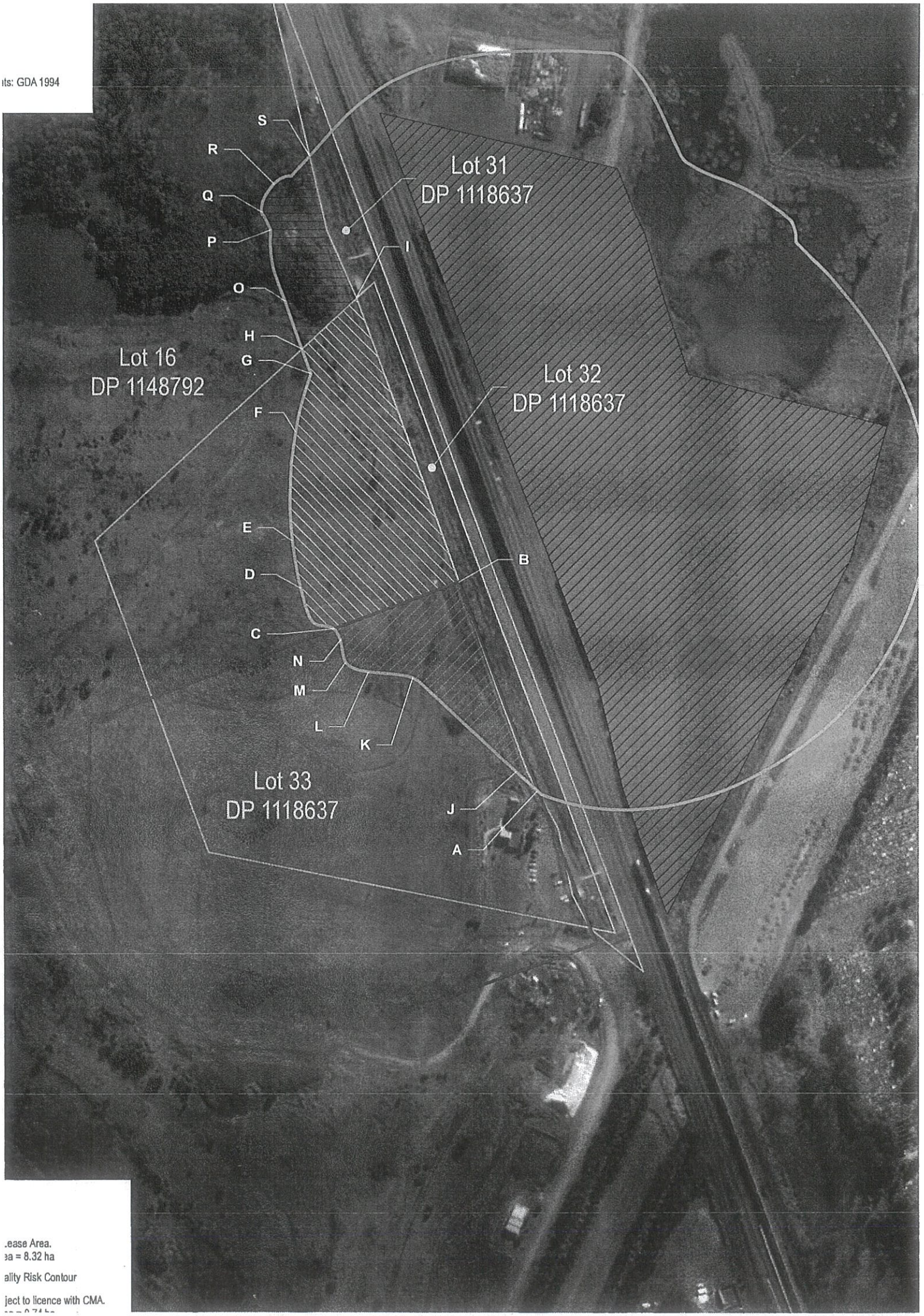
Subject to the above (and noting that these requirements only require infrequent access) Council is prepared to enter into an interim two (2) year agreement upon payment of compensation which will have the affect of excluding the general public from the affected area under Council's control. Any additional fencing and signage over and above that which currently exists on Council's land will be your responsibility.

To secure your long term control over the affected area consideration may be given to the possibility of, by boundary adjustment, creating a separate Lot encompassing the affected area which you may be required to purchase from Council at market value. This could be investigated and transacted within the term of the interim agreement. Any decision to dispose of land will however be subject to a Council resolution. Alternatively a longer term licence/lease tenure may be negotiated.

Please confirm that the above proposal is acceptable to the Director General.

Yours faithfully,

Ken Gouldthorp
GENERAL MANAGER



...ts: GDA 1994

...ease Area.
...ea = 8.32 ha

...ality Risk Contour

...ject to licence with CMA.

Appendix G – Site Security Plan

Appendix H – Transport Code of Conduct and Rail Interface Agreements

CRAWFORDS FREIGHTLINES
RAIL TRANSPORT AND SIDING OPERATIONS

CODE OF CONDUCT

RAIL TRANSPORT AND SIDING OPERATIONS

Document Version	Revision				Revision Notes
	Date	Author		Authorised	
Draft	9 May 13	P McGrath		P McGrath	Draft
1	7 August 13	P McGrath		P McGrath	Sections 8 & 10 formatting as per DP&I advice. Released for distribution

Table of Contents

Section	Subject	Page
1.0	Scope	4
2.0	Definitions	5
3.0	Safety Management System	6
4.0	Regulatory Requirements and Accreditations	6
5.0	Rail Worker Code of Conduct.	6
6.0	Train arrival and Departure	7
7.0	Noise	7
8.0	Network Access	7
9.0	Conflicting Operations	8
10.0	Procedures	8
11.0	References	8
12.0	Appendices	9

Forward

Crawfords Freightlines manages and operates a rail siding at their Sandgate NSW site. The siding is used exclusively for trains servicing Crawfords Freightlines Port Botany container transport operation.

Crawfords Freightlines are classified as a Rail Infrastructure Manager and hold current accreditation as an infrastructure manager in accordance with the Rail Safety National Regulations 2012 Part 2 (8).

Crawfords Freightlines have sole exclusive use of the siding, trains operating to and from and accessing the siding are operating under the direction of Crawfords Freightlines.

Crawfords Freightlines have engaged 3801 Ltd to operate trains servicing the siding. 3801 Ltd hold current accreditation as a train operator on the track network.

Container freight moving to and from the Sandgate site is predominantly finished aluminium and steel products, empty containers for on hire or off hire and approximately 400 tonnes per week of Ammonium Nitrate containerised and packed in IMDG compliant bulka bags.

Scope

1.1.1 This Code of Conduct sets out the conditions and precautions in relation to the operation of rail services to and from the Crawfords Sandgate NSW Rail Siding.

1.1.2 Protect the health, safety and environment of the community and Crawfords Group employees, contractors, and visitors.

1.1.3 Detail measures to manage and reduce noise associated with rail operations

1.1.4 Ensure rail operations are conducted in accordance with the regulatory requirements applicable to the operation

Note: *Where there is a conflict between the recommendations of this code and national or local legislative requirements, the legislative requirements shall always take precedence.*

2.0 Definitions

For the purpose of this Code of Conduct the following definitions shall apply

Access Rights Means the rail operators right to operate trains on the rail network in accordance with the conditions and period of currency stipulated in the Safety Interface Agreement between 3801 Ltd and Australian Rail Track Corporation Limited

Accreditation Means a certificate of accreditation issued to Crawfords Freightlines by the ITSR as an accredited Railway Infrastructure Manager, or a certificate of accreditation issued to 3801 Ltd by the ITSR as an accredited train operator.

ARTC Means: Australian Rail Track Corporation Limited

Interfaces Means:
(i) those interfaces arising from 3801 Ltd rights to access to and the operation of rolling stock on the network
(ii) the operational boundaries to enter or depart Crawfords Freightlines siding
(iii) the interface between 3801 Ltd train operations and Crawfords Freightlines siding operations

Interface Agreement Means Safety Interface Agreements between:
(i) 3801 Ltd and Australian Trail Track Corporation Limited
(ii) Crawfords Freightlines Pty Ltd and Australian Trail Track Corporation Limited

Network Means the system of railways owned, managed, or controlled by Australian Trail Track Corporation Limited to which 3801 Ltd has Access rights

Operations Means the operations of the parties, whether in respect of Rolling Stock or Railway Infrastructure

Parties Means parties to this Code of Conduct, being 3801 Ltd and Crawfords Freightlines Pty Ltd

Personnel Means officers, employees, consultants, agents, representatives, contractors (including subcontractors and their employees and contractors)

RIM Means Crawfords Freightlines as the ITSR accredited Railway Infrastructure Manager of the Sandgate siding

Rail Safety Regulation Means the Rail Safety National Law National Regulation 2012

3.0 Safety Management System

3.1 Rail activities on the site shall be managed in accordance with Crawfords Freightlines Safety Management System.

3.2 In addition to complying with the principles for Safety Management Systems for Hazardous Industry as detailed in HIPAP9, the Crawfords Freightlines Safety Management System shall also be compliant to all aspects of Schedule 1 of the National Rail Safety Regulation (content of a safety management system).

3.3 Activities of personnel acting in the capacity of rail safety workers and all requirements for reporting to the regulator shall be managed to ensure compliance to the National Rail Safety Regulation.

3.4 Activities of locomotive crews and regulator reporting for ARTC network operations shall be managed in accordance with the 3801 Ltd Safety Management System

4.0 Regulatory Requirements and Accreditations

4.1 Activities governed by the Rail Safety National Law National Regulation 2012

- All rail siding operations and reporting
- All track network activities and reporting

4.2 Current Safety Interface Agreements are required for

- ARTC and Crawfords Freightlines specifying operational and maintenance interface boundaries *Appendix1*
- ARTC and 3801 Ltd for access to network *Appendix2*
- 3801 Ltd and Crawfords Freightlines for siding access *Appendix3*
- Siding maintenance provider and Crawfords Freightlines

4.3 Current operator accreditation is required for

- Rail Infrastructure Manager (Crawfords Freightlines)
- Train Operator (3801 Ltd)

5.0 Rail Worker Code of Conduct

Rail workers are classified as train crew and siding crew, including forklift operators servicing trains. The following Code of Conduct is the minimum standard for undertaking any rail activity at the Crawfords Freightlines siding.

- Rail workers shall ensure they are not impaired by drugs or alcohol
- Rail workers shall ensure they are not affected by fatigue
- Rail workers shall comply to any direction to undergo drug and alcohol testing
- Rail workers affected by prescription or over the counter medication shall report the effect to their supervisor and be subjected to a task suitability assessment
- Rail workers shall comply with the applicable procedures related to the task being undertaken
- No person is permitted to ride on rail freight wagons
- Crawfords employees are not permitted to operate points or signalling equipment

- Crawfords staff are not permitted to interfere with locomotives or rolling stock with the exception of fitting twistlocks to wagons.
- Crawfords staff are not permitted to signal or direct train movements unless an emergency situation exists
- Crawfords staff are not permitted to move beyond the ARTC interface boundary
- Crawfords staff are not permitted to access the siding beyond the rail access perimeter gate unless authorised by Crawfords Compliance Manager.
- Excessive idling of locomotives is not permitted on the siding

6.0 Train Arrival and Departure Times

6.1 Train arrival and departure times shall be managed to ensure movements occur between 0600hrs and 1900hrs Monday to Friday.
6.2 Train access to the network shall be in accordance with approved network pathings
6.3 If it is necessary to request an alternative pathing due to track closure or similar restrictions, the alternative pathing shall ensure arrival and departure within the 0600hrs to 1900hrs window

7.0 Noise

Operations shall be managed to ensure undue noise is not created by loading / unloading or train movements whilst shunting or accessing / departing the site

7.1 Use of warning devices on trains and equipment must be in accordance with regulation or network rule - unnecessary or excessive use is not permitted
7.2 Trains are not permitted to exceed the siding speed limit of 5 kmh
7.3 All shunts must be fully controlled, loose shunting is not permitted at any time on the siding
7.4 Excessive idling of locomotives is not permitted on the siding
7.5 Equipment exhausts must be fitted with the appropriate level of noise suppression
7.6 Forklifts shall be operated in such a manner as to ensure excessive noise is not created when handling containers

8.0 Network Access

Train Access to the network is governed by the approval and allocation of network pathing windows.

3801 Ltd shall be responsible for the network pathing application process, and as such shall ensure all movements on the network are conducted in accordance with the application and approval process.

Ad-hoc paths may be requested where an alternative network access window is required, applications for ad-hoc paths shall be managed in accordance with Crawfords Safety Management System section 9 Management of Change.

9.0 Conflicting Operations

As the siding is managed and operated solely by Crawfords Freightlines, access to the siding is not permitted by train operators other than operators servicing Crawfords Freightlines requirements. Crawfords Freightlines shall manage the siding to ensure:

- The agreed and approved frequency of train movements transiting the site are not exceeded
- The approved frequency of train movements does not cause conflict with siding operations such as track maintenance
- There is a current Safety Interface Agreement between Crawfords Freightlines and the train operator
- Train operators shall make available to Crawfords Freightlines evidence of approved network pathing windows

10.0 Procedures

Procedures governing rail siding operations shall be structured in accordance with Crawfords Safety Management System section 3 Standard Operating Procedures.

Procedures governing train operations shall be structured in accordance with the train operators Safety Management System.

11.0 References

- Rail Safety National Law National Regulation 2012
- Risk Assessment RA003
- Risk Assessment RA004
- Risk Assessment RA005
- Risk Assessment RA006
- Risk Assessment RA007
- Crawfords Freightlines Safety Management System
- Crawfords Freightlines Sandgate Depot Traffic Management Plan
- 3801 Ltd - ARTC Safety Interface Agreement December 2012
- Crawfords Freightlines - 3801 Ltd Safety Interface Agreement July 2012
- Crawfords Freightlines - ARTC Safety Interface Agreement July 2011

12.0 Appendices

INTERFACE AGREEMENT

BETWEEN

AUSTRALIAN RAIL TRACK CORPORATION
DOCUMENT REFERENCE: IA1506

AND CRAWFORDS FREIGHTLINES PTY LIMITED

FOR THE CRAWFORD PRIVATE SIDING AT SANDGATE

VERSION: 1.0

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EXECUTION PAGE

This agreement comes into effect when signed by both parties unless otherwise agreed and may be terminated without cause by either party giving twelve (12) months written notice to the other party.

Signed on behalf of Australian Rail Track Corporation Ltd:

Signed

Sandra Wilson-Ryke
Name

General Manager Risk & Safety
Position

28.7.11
Date

Signed on behalf of Crawfords Freightlines pty limited

Signed

Peter Crawford
Name

Director
Position

8th August 2011
Date

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DOCUMENT CONTROL

ARTC Document Status Record

Status	Date	Prepared	Departmental Sign-Off	
Version 1.0	05/07/2011	Ian Wickham	Risk & Compliance	05/07/2011
			Hunter Valley Corridor	05/07/2011
			Property	05/07/2011

Document Distribution List

Controlled Copy Number	Position	Organisation
Original	General Manager Risk & Safety	ARTC
Original	Director	Crawfords Freightlines

Amendment Register

Page number	Revision number	Date of revision	Amendment details

TABLE OF CONTENTS

Section Page

EXECUTION PAGE 3
DOCUMENT CONTROL 5
ARTC Document Status Record 5
Document Distribution List 5
Amendment Register 5
TABLE OF CONTENTS 6
1 PURPOSE 7
2 REFERENCE 7
3 DEFINITIONS & DESCRIPTIONS 7
4 GENERAL REQUIREMENTS 8
4.1 Functional Areas Involved for Each Organisation (AS4292.1-7.3a) 8
4.2 Definition of Interface (AS4292.1-7.3b) 8
4.2.1 Property Boundary 8
4.2.2 Operational Boundary 8
4.2.3 Track Maintenance Boundary 8
4.3 Issues to be Resolved Across the Interface (AS4292.1-7.3c) and Responsibilities of Each Organisation (AS4292.1-7.3d) 8
4.3.1 Risk Management (AS4292.1-3.1) 8
4.3.2 Management of Movements 9
4.3.3 Management of Infrastructure 9
4.3.4 Emergency Management 10
4.3.5 Personnel Management (AS4292.1-4) 10
4.3.6 Dispute Resolution 11
4.3.7 Change in Ownership 11
4.4 Asset life cycle (AS4292.1-7.3e) 11
4.5 Information Required for Monitoring Safe Operation Across the Interface (AS4292.1-7.3f) 11
4.5.1 Contacts for Each Organisation 11
4.6 Engineering and Operational Compatibility (AS4292.1-7.3g) 11
4.6.1 Standards 11
4.6.2 Standards not Available 11
4.7 Review of this agreement (AS4292.1-7.3h) 12
4.7.1 Changes to the Interface 12
4.8 Access by other parties (AS4292.1-7.3i) 12
5 COMPLIANCE AND AUDITING 12
5.1 Responsibility for Maintaining and Monitoring Compliance 12
5.2 Reporting Instances of Non Compliance 12
5.3 Safety Auditing Compliance 12
5.4 Review of Compliance Requirements 12
5.5 Reciprocal Inspections and Audits 12
5.6 Auditing by Regulator 13
APPENDIX - OPERATING PROCEDURE 14
APPENDIX – MAINTENANCE PROCEDURE 15
APPENDIX - GRAPHICS 16
APPENDIX - CONTACT DETAILS 19

1 PURPOSE

- To define the interface boundary between ARTC and Crawfords Freightlines
- To define the responsibilities of the interfacing parties relating to the interface
- To document the process for the safe operation of rail movements and maintenance across the interface

2 REFERENCE

AS4292 Australian Standard for Railway Safety Management
ARTC NSW Network Rules and Procedures
NSW Rail Safety Act 2008

3 DEFINITIONS & DESCRIPTIONS

ARTC	**Australian Rail Track Corporation Ltd** is a company in which shares are owned by the Commonwealth Government through the Ministers for the Departments of Finance and Administration and Transport and Regional Services. ARTC currently has responsibility for the management of approximately 12,000 route kilometres of standard gauge interstate track in South Australia, Victoria, New South Wales, Queensland and Western Australia.
Crawfords Freightlines	**Crawfords Freightlines pty limited** is a registered Australian Proprietary Company, amongst other operational activities, Crawfords Freightlines operates the Sandgate rail siding servicing the Newcastle/Port Botany rail freight market
Operational Boundary	The last point at which a movement can be held prior to entering another party's area of operational responsibility. This could be a signal, sign or other method of control.
Operational Overlap	The area between opposing operational boundaries. Responsibility for managing movements and activities in this area should be clearly defined.
TMB	**Track Maintenance Boundary** The point either side of which each party is responsible for infrastructure maintenance.

4 General Requirements

4.1 Functional Areas Involved for Each Organisation (AS4292.1-7.3a)

The functional areas involved for each organisation include:

- infrastructure
- signalling & telecommunications
- traffic management

4.2 Definition of Interface (AS4292.1-7.3b)

4.2.1 Property Boundary

The property boundary is located at the Crawfords boundary gate at 171.383km. Crawfords manages the track infrastructure located on ARTC land between the property boundary and the infrastructure boundary.

Refer ARTC Regional Property Manager

4.2.2 Operational Boundary

The Operational Boundary for entering the Crawfords siding is M106.8 (202) signal on the up main line located at 171.957km.

The Operational Boundary for departing the Crawfords siding is SS106.7 (235) signal within the Crawfords siding located at 171.685km.

4.2.3 Track Maintenance Boundary

The track maintenance boundary is aligned with signal SS106.7 (235) at the operational boundary at 171.685 km and is identified by a sign.

See photograph on pag e 16.

4.3 Issues to be Resolved Across the Interface (AS4292.1-7.3c) and Responsibilities of Each Organisation (AS4292.1-7.3d)

4.3.1 Risk Management (AS4292.1-3.1)

A hazard identification process has been conducted by ARTC on generic hazards associated with interface management. The hazards identified form the basis for the subject matter included in this agreement.

4.3.1.1 Method

A hazard identification process has been conducted by ARTC on generic hazards associated with interface management. The hazards identified form the basis for the subject matter included in this agreement

4.3.1.2 Responsibility for risk management

ARTC and Crawfords Freightlines shall be jointly responsible for risk management of the interface.

A risk assessment has been conducted to identify specific hazards associated with rail operations in relation to the interface. Responsibility for specific risks is allocated by agreement and documented. See 4.3.1.3

4.3.1.3 Specific risk controls to be applied across the interface

There were no significant risks identified from the risk assessment referred to above, however additional controls that were approved are listed here.

Risk	Responsibility and Control
No significant risks identified	No additional controls added

4.3.1.4 Risk Management Review

The parties agree to review the risks and risk control measures contained in this agreement to ensure that they continue to provide effective safety controls of the railway operations which may affect the interfaces. This review will be undertaken:

- where changes are proposed to infrastructure or operations affecting the interfaces; and
- at such other times as deemed necessary by the parties or by legislation.

4.3.2 Management of Movements

ARTC is responsible for the management of movements over its managed track at and beyond the operational boundary toward the ARTC main line.

Crawfords Freightlines is responsible for the management of movements over its managed track beyond the operational boundary away from the ARTC main line.

Access to either party's network will be in accordance with each party's respective rules & procedures.

See also appendix on page 14

4.3.3 Management of Infrastructure

4.3.3.1 Maintenance

ARTC is responsible for the management of maintenance of its managed track at and beyond the infrastructure boundary toward the ARTC main line as indicated by the arrow on the boundary sign. This includes the axle counter on the ARTC main line side (eastern side) of signal SS106.7 (235) within the Crawfords siding. ARTC is responsible for the maintenance of the walkway adjacent to the up main line subsequent to Crawfords inspection.

The ARTC is responsible for the maintenance of all signals infrastructure in accordance with ARTC's accreditation up to and inclusive of signal SS106.7 (235) within the Crawfords siding.

Crawfords Freightlines is responsible for the management of maintenance over its managed track beyond the infrastructure boundary away from the ARTC main line. Crawfords is also responsible for the inspection of the walkway adjacent to the up main line.

4.3.3.2 Track work operations

ARTC and Crawfords must notify on all occasions when they are to carry out any maintenance up to the TMB boundary to allow interaction with scheduled train movements.

ARTC, when conducting maintenance on the Crawfords siding must work under the ARTC Network Rules and Procedures.

Crawfords when conducting maintenance on the Crawfords siding from the TMB to the boundary gate located at 171.383km will work under Crawfords maintenance procedures as shown in Appendix-Maintenance Procedure on page 14 and must work to the ARTC Network Rules and Procedures for adjacent line protection.

See Appendix Maintenance Procedure on page 15

4.3.4 Emergency Management

4.3.4.1 Incident management

Each party shall manage incidents wholly within its territory in accordance with that party's incident management plan.

Incidents affecting the track or related infrastructure across the interface shall be managed jointly and cooperatively by the parties.

4.3.4.2 Notification of incidents between organisations

If either ARTC or Crawfords Freightlines become aware of an incident likely to affect infrastructure, operations or safety relating to the interface, they shall ensure that the other organisation is advised as soon as possible.

Refer contact details on page 19

4.3.4.3 Regulatory reporting (AS4292.1-8.1)

The ARTC shall report incidents to the appropriate State Rail Safety Regulator under the terms of its accreditation.

4.3.4.4 Investigation (AS4292.1-8.1.3)

Investigation into incidents shall be based on AS4292.7 and shall be carried out jointly by the affected organisations where appropriate.

4.3.4.5 Preservation of evidence (AS4292.1-8.3)

Unless required by law or to ensure safety, ARTC and Crawfords Freightlines shall not engage in any conduct that is likely to prejudice an investigation into an incident and reserve the right to undertake timely inspection of any track or rolling stock damaged as a result of an incident.

4.3.5 Personnel Management (AS4292.1-4)

4.3.5.1 Competency (AS4292.1-4.2)

ARTC and Crawfords Freightlines shall ensure their respective workers carrying out activities in relation to the interface point are conversant with and comply with the relevant safe working procedures and other policies required by both organisations.

4.3.5.2 Health and fitness (AS4292.1-4.3)

ARTC and Crawfords Freightlines shall ensure their respective workers carrying out activities at and about the interface point are fit for duty and medically assessed as competent to perform the allocated tasks.

4.3.5.3 Drug and alcohol policy (AS4292.1-4.4)

ARTC and Crawfords Freightlines shall ensure their respective workers carrying out activities at and about the interface point are conversant with and comply with the drug and alcohol policies of the respective organisations.

4.3.6 Dispute Resolution

ARTC and Crawfords Freightlines agree that any dispute arising out of the interpretation of this agreement, or as to whether either party has failed to satisfy any of its obligations under this Agreement, will be dealt with as follows:

- firstly, the party claiming that there is a dispute will send to the other party's representative a notice setting out the nature of the dispute;
- secondly, the representatives will try to resolve the dispute by direct negotiation, including by referring the matter to persons who may have authority to intervene and direct some form of resolution;
- thirdly, if there is no resolution or agreement, the dispute will be referred to the respective CEO / Group General Manager for resolution.

Notwithstanding any dispute between the Parties, the Parties will continue to perform their obligations under this Agreement.

4.3.7 Change in Ownership

ARTC and Crawfords Freightlines will notify each other as soon as practicable in the event either of them undergo a change in management. The effect of any change in ownership of either party will be subject to negotiation at the time of notification.

4.4 Asset life cycle (AS4292.1-7.3e)

This agreement covers the following life cycle aspects of the interface:

- operation
- monitoring
- maintenance
- modification

4.5 Information Required for Monitoring Safe Operation Across the Interface (AS4292.1-7.3f)

4.5.1 Contacts for Each Organisation

See appendix on page 19

4.6 Engineering and Operational Compatibility (AS4292.1-7.3g)

4.6.1 Standards

Through consultation, the ARTC and Crawfords Freightlines are committed to ensuring that appropriate safety, operational and engineering standards are applied across the interface.

4.6.2 Standards not Available

Where mutually recognised standards, procedures or agreements are not available, the ARTC and Crawfords Freightlines agree that these will be generated and agreement reached prior to any works being undertaken.

4.7 Review of this agreement (AS4292.1-7.3h)

4.7.1 Changes to the Interface

ARTC and Crawfords Freightlines shall liaise with each other regarding any alteration to infrastructure, procedure or circumstance that might have impact on the safety or access arrangements between the two parties in relation to the interface and this agreement shall be amended accordingly.

Notwithstanding the above, this agreement will be reviewed by the parties at least every 5 years and amended as required.

4.8 Access by other parties (AS4292.1-7.3l)

ARTC and Crawfords Freightlines agree that either party may make use of third parties under contract or otherwise, to deliver any aspect of its operational or infrastructure obligations at or adjacent to the interface. References to ARTC and/or Crawfords Freightlines are deemed to include these parties where appropriate.

ARTC and Crawfords Freightlines shall liaise to ensure that any third party introduced at the interface is fully informed as to the requirements of the locality including any required accreditation, documentation, training, site induction or similar provision.

Each party will ensure its contractors and subcontractors will comply with this agreement when engaged in railway operations to which this agreement relates.

5 Compliance and Auditing

5.1 Responsibility for Maintaining and Monitoring Compliance

ARTC and Crawfords Freightlines agree to be jointly responsible through their respective representatives for maintaining and monitoring compliance with this agreement.

If owing to emergency it is not possible to comply with this document, every effort shall be made by the non-complying party to consult on the best course of action to ensure the safe conduct of activities at the interface.

5.2 Reporting Instances of Non Compliance

Instances of non-compliance shall be brought to the attention of the relevant compliance officers of each party to be dealt with in accordance with their internal procedures.

5.3 Safety Auditing Compliance

The ARTC is required to conduct regular safety audits under the terms of its accreditation.

The Crawfords Freightlines is required to conduct regular safety audits under the terms of its accreditation

5.4 Review of Compliance Requirements

Review of compliance requirements shall be conducted in association with review of the entire document.

5.5 Reciprocal Inspections and Audits

In the event ARTC and Crawfords Freightlines agree that there is an issue adversely affecting safety regarding the interface, ARTC and Crawfords Freightlines will allow relevant reciprocal inspections and audits to be undertaken to facilitate remedial action.

5.6 Auditing by Regulator

ARTC and Crawfords Freightlines shall facilitate any required regulatory audit and provide information for that purpose as requested.

APPENDIX - OPERATING PROCEDURE

Crawfords Freightlines is responsible for providing this operating procedure to operators, maintainers and other parties who might require it for access to the private siding.

Overview

Access to the Crawfords Siding is provided on the northern side of the flyover at 171.752 km via No.190 turnout. This area is controlled by the Lower Hunter Network Controller for Hanbury Junction.

A Shunting Limit Sign is located on the up main line approximately 820 metres (172.781 km) clear of signal M106.8 (202) to allow shunting operations.

A walkway is provided on the up side of the track area adjacent to the up main line.

Warning: 190 Turnout is self normalising

Movements Arriving at Crawfords Siding

Note: Crawfords is to ensure the access gate located at 171.383km is opened for unimpeded access for rail traffic to arrive complete into the Crawfords siding, clear of the ARTC network.

- **Movements Arriving from the Down Main Line**

  Trains will travel via the down main line to signal number M106.7 (237SB) then be signalled (Yellow Shunt Signal) to the Up Main Line. When the train is complete inside signal M106.8 (202) up main the train will be stopped and No. 190 turnout reversed and the shunt signal (202SA) cleared. The train will then set back into the private siding clear of No 190 turnout.

- **Movements Arriving from the Up Main Line**

  Trains will travel via the up main line to signal M106.8 (202), No 190 turnout will be reversed and signal M106.8 (202SA) will be cleared and the train will move clear into the Crawfords siding clear of No 190 turnout.

Movements Departing from Crawfords Siding

Prior to departure the driver will advise the Lower Hunter Network Controller that the train is ready to depart the siding.

- **Movements to the Up Main Line**

  No.190 turnout will be reversed and signal SS106.7 (235S) will be cleared and the train will set back (propel) onto the up main line. When clear of the siding turnout and past signal M106.8 (202) the train will be stopped, the turnout (No 190) will be restored to normal and the main line signal M106.8 (202) cleared and the train will depart on the Up Main Line.

- **Movements to the Up Coal Line**

  No.190 turnout will be reversed and signal SS106.7 (235S) will be cleared and the train will set back onto the up main line. When clear of the siding turnout and past signal M106.8 (202) the train will be stopped, turnout No's 188 and 186 will be reversed and the main line to coal road signal M106.8 (202MB) cleared and the train will depart to the Up Coal Line.

APPENDIX – MAINTENANCE PROCEDURE

Purpose

To provide a safe working procedure for Crawfords employees and contracted employees working on or within 3 metres of the Crawfords Siding from the TMB to the boundary gate allowing access to the Crawfords property.

Procedure

Crawfords or their nominee will determine whether the planned works can be carried out between rail traffic movements, as trains permit (as traffic permits ATP), or the work is of a major nature that requires total track possession.

Crawfords employees and contracted employees when required to work on the Crawfords owned infrastructure located within ARTC property boundary must work in accordance with SP-05-02 Competency / Communication Protocol for Entering Rail Corridor.

1. **Work that can be carried out between train movements (ATP), Minor Maintenance.**

   There will be times when maintenance or inspections can be conducted without requiring the total closure of the railway line.

   Crawfords or their nominee will notify the Network Controller when commencing the works.

   When required to clear for impending rail traffic the Crawfords representative or their nominee shall ensure that all personnel and equipment are clear of the railway line.

   Crawfords or their nominee will notify the Network Controller when the works are completed.
   ATP may be used:
   - To allow vehicles to cross the track, or
   - For work using light, powered hand tools, or
   - For work using light, non-powered hand tools.

2. **Total Track Possession**

   1. Prior to conducting maintenance activities within the Crawfords siding contact the Network Controller, to establish the electronic block.
   2. The Network Controller must ensure that 190 points are in the normal position and apply blocking facilities to prevent access to the siding, and
   3. A qualified worker clips and locks 190 points to prevent entry and advise the Network Controller.
   4. Advise the employees of the safeworking controls that have been implemented.

   Possession Hand Back

   1. The qualified worker to remove the lock and clip from 190 points and advise the Network Controller of the removal and the track is certified fit for traffic.
   2. Network Controller removes the blocking facilities.

APPENDIX - GRAPHICS

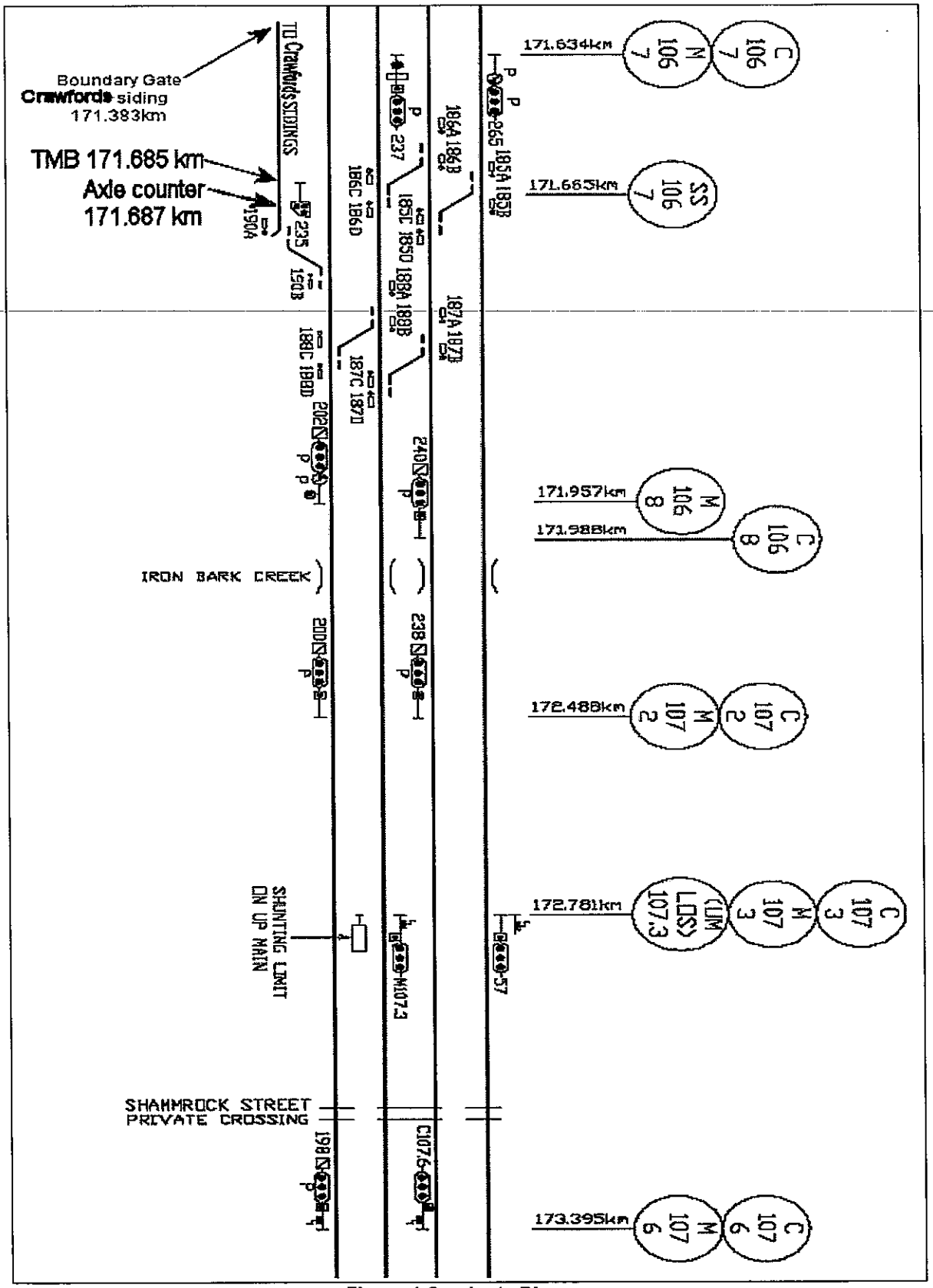


Figure 1 Sandgate Diagram

Figure 2 Operational Boundary to enter Crawfords private siding

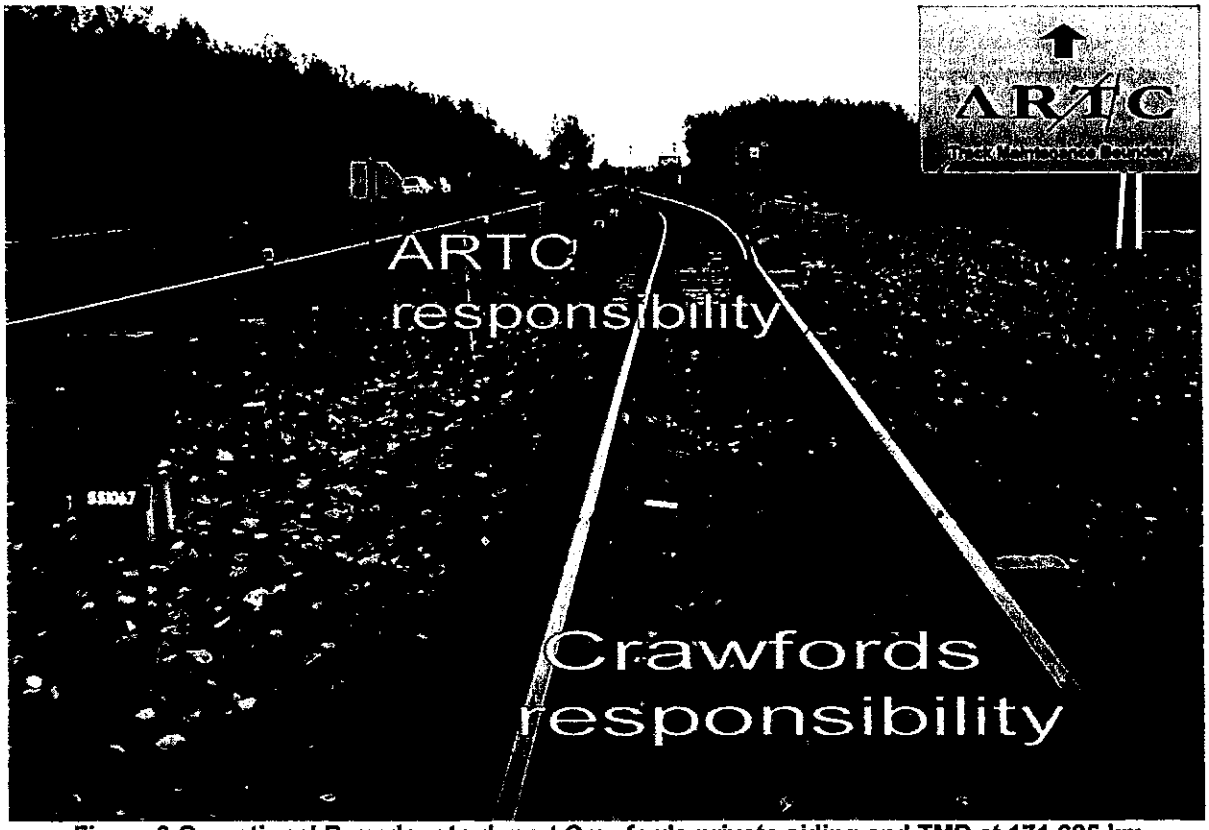


Figure 3 Operational Boundary to depart Crawfords private siding and TMB at 171.685 km

Figure 4 Operational Boundary to depart Crawfords private siding and TMB at 171.685 km (opposite view)

APPENDIX - CONTACT DETAILS

ARTC	Responsibility	Number
Lower Hunter Network Controller	Manages rail traffic paths, rail movements and maintenance operations	(02) 4902 7909
Train Control Broadmeadow Emergency Contact ONLY	Emergency contact	(02) 4902 9410
Train Transit Manager Broadmeadow	Train control supervisor. Manages Train Control Centre.	(02) 4902 9410
Regional Property Manager Broadmeadow	Identifying property boundary	(02) 4941 9610
Safety Interface Officer	Contact for this agreement	(04) 2970 9636
Crawfords Freightlines		
Alexandra Quinnell Crawfords Rail Coordinator	Interface issues Day to Day Operations	0437 733 555
Paul McGrath Crawfords Compliance manager	Overall interface agreement management	0429 873 709
John Matheson Crawfords Terminal Supervisor	Interface issues Day to Day Operations	0401 566 348

Interface Agreement for Identification, Assessment and Management of Safety Risks

between

3801 Limited

and

PHC Rail

15 June 2013

Next review by 15 August 2013

Table of contents

1 Interpretation 1

2 Term of this agreement 1

3 Scope of this agreement 1

4 Identification, assessment and management of risk 1

5 Monitoring and review of risk 1

6 Compliance 1

7 Communications and meetings 1

8 Dispute resolution 2

Amendment History

date	version	section	details of amendment
15 June 13	1.0	All	Initial sign off

Interface agreement

Date: June 2013

Between: **3801 LTD ABN 64 002 951 671**

of PO Box 333 Alexandra NSW 1435

Australian Technology Park, Locomotive Workshop, Suite 2, 2 Locomotive Street, Eveleigh 2015

And: **PHC Rail ABN 49 143 155 319**

of Lot 12 Old Maitland Road Sandgate NSW 2306

Background

The *Rail Safety legislation* in various jurisdictions obliges rail transport operators and roads authorities to identify and assess and manage, so far as is reasonably practicable, risks to safety that may arise from railway operations carried out on rail infrastructure wholly or partly because of the existence of any rail or road crossing that is part of a road.

The parties are obliged under the Rail Safety Act to maintain a register of interface agreements to which they are a party, and any arrangements determined by an appointed person under the respective Rail Safety Act.

This interface agreement has been developed and implemented to manage risks to safety that may arise from 3801 Limited operating trains for PHC Rail on the ARTC and RailCorp Networks.

The parties enter into this agreement in order to comply with their obligations under the respective Rail Safety Act in relation to rail activities covered by this agreement.

It is agreed that:

1 Interpretation

1.1 Definitions

Crown road	means a public road that is declared to be a Crown road for the purposes of the *Roads Act 1993*
IAMA	Institute of Arbitrators and Mediators Australia
Interface agreement	means an agreement in writing about managing risks to safety in relation to a rail or road crossing identified and assessed in accordance with the respective Rail Safety Act.
Private road	means any road that is not a public road or a Crown road
Public road	means: (a) any road that is opened or dedicated as a public road, whether under the *Roads Act 1993* or any other law; and

	(b) any road that is declared to be a public road for the purposes of the *Roads Act 1993*; but does not include a Crown road.
Rail infrastructure manager	has the meaning given in the *Rail Safety Act*.
Rail or road crossing	means: (a) a railway crossing; (b) a bridge carrying a road over a railway; or (c) a bridge carrying a railway over a road
Rail Safety Act	means the Rail Safety Act enacted in the jurisdiction where rail activities the subject of this agreement are taking place.
Rail transport operator	has the meaning given in the respective Rail Safety Act
Railway crossing	means: (a) a level crossing (b) any area where a footpath or shared path crosses a railway or tram tracks at substantially the same level
Road	means a private road or a public road that has as one of its main uses, the driving or riding of motor vehicles, and includes any relevant road related area within the meaning of the *Australian Road Rules*
Roads authority	in relation to a public road has the meaning given in section 7 of the *Roads Act 1993* and in relation to a private road means the owner of the road
Rolling stock	means wagon, locomotive or both
Train Crew	means the driver and second person of the train

1.2 In this agreement, unless the context requires otherwise:

(a) the singular includes the plural and vice versa

(b) words importing any gender include the other genders

(c) all headings, bold typing and italics have been inserted for convenience or reference only and do not define, limit or affect the meaning or interpretation of this agreement

(d) reference to a natural person includes any company, partnership, joint venture, association or corporation of other body corporate or any governmental authority and, in each and every case, includes a reference to a person's executors, administrators, successors, substitutes and assigns

(e) reference to a statute, ordinance, code or other law includes regulations and other statutory instruments under it and consolidations, amendments, re-enactments or replacements of any of them.

2 Term of this agreement

2.1 This agreement commences on **the date of this agreement** and continues until terminated by a party.

2.2 A party may terminate this agreement by giving the other party no less than three months' written notice.

2.3 Subject to clause 2.4, if this agreement is terminated in accordance with clause 2.2, the parties agree to negotiate in good faith to enter into a replacement interface agreement prior to the expiry date of this agreement.

2.4 A replacement interface agreement is not required to be entered into if:

(a) a rail or road crossing is permanently closed

(b) a Crown road is permanently closed

(c) a railway line is permanently closed.

3 Scope of this agreement

3.1 This agreement applies to any commercial agreements that are currently executed between the parties.

3.2 This agreement applies to any rail activities for the purpose of accredited rail operations the subject of this agreement.

3.3 The parties may amend schedule 1 at any time by written agreement.

3.4 The parties will apply a risk management process consistent with *AS 4360 Risk Management* to identify, assess and manage, so far as is reasonably practicable, risks to safety in relation to the rail or road crossings the subject of this agreement.

3.5 Each party will record this agreement in the party's register of interface agreements.

3.6 This agreement does not affect or derogate from the parties' rights and obligations under the *Civil Liability Act 2002* or their functions and powers under any other Act.

4 Identification, assessment and management of risk

4.1 The parties will identify and assess risks to safety, so far as is reasonably practicable, that may arise in relation to accredited rail operations.

4.2 The parties will record in schedule 1:

(a) the identified risks to safety

(b) risk assessments

(c) measures to manage safety risks

(d) the party responsible for implementation and maintenance of the safety risk management measures

(e) the timetable for implementation of safety risk management measures.

4.3 The parties may amend schedule 3 at any time by written agreement.

4.4 Subject to clause 4.5, the party responsible for implementation and maintenance of the safety risk management measures will be responsible for their cost of implementation and maintenance.

4.5 A party may agree to contribute to the funding of the cost of implementation and/or maintenance by another party of safety risk management measures.

4.6 The parties may undertake identification and assessment of safety risks individually or jointly, or may adopt a risk assessment carried out by the other party.

5 Monitoring and review of risk

5.1 Each party will continuously monitor and review the safety risks and measures to manage the safety risks for which it is responsible, including progress against the timetable for implementation of safety risk management measures.

5.2 The parties will consult with each other in relation to the outcome of their monitoring and review activities.

5.3 If, following a party's monitoring and review activities under clause 5, a safety risk is considered to be unacceptable, the parties will work collaboratively and cooperatively to agree measures to manage the safety risk so far as is reasonably practicable and will record any changes in schedule 1

6 Compliance

6.1 Each party will report annually to the other party, or at such other times that the parties may agree, on its progress in implementing agreed safety risk management measures for which it is responsible under this agreement.

6.2 A party may, at its cost, undertake an independent audit of another party's records of compliance with this agreement, upon giving reasonable written notice to the other party. The parties agree to cooperate with each other in the conduct of such audits.

7 Communications and meetings

7.1 The parties will notify each other promptly of any occurrence or incident in connection with safety the subject of this agreement.

7.2 Schedule 3 contains details of the parties' representatives for the purposes of this agreement; together with emergency contact details in the event of any occurrence or incident. The parties will promptly notify the other parties of any changes to schedules 1 and 2.

7.3 The parties will meet annually, or at such other times the parties may agree, to review the provisions of this agreement and the adequacy of safety risk identification, assessment and management concerning this agreement. Agendas and minutes of such meetings will be kept by the party hosting the meeting. Minutes will be circulated to other parties within ten business days of the meeting.

7.4 The costs of holding meetings under clause 7 will be shared equally between the parties.

7.5 Meeting under clause 7 may be held be telephone.

7.6 3801 Limited keeps documents relating to its accredited rail operations under the provisions of its accreditation.

8 Dispute resolution

8.1 Each party will meet the specific requirements as listed in schedule 4.

8.2 Should a dispute arise between the parties in connection with this agreement, a party may issue a written notice of dispute to the other party.

8.3 Within five business days of receipt of a notice of dispute, senior officers of each party will meet to discuss the dispute.

8.4 If the senior officers are unable to resolve the dispute, chief executive officers of the parties will meet within five business days to attempt to resolve the dispute.

8.5 If the conciliation process is unsuccessful, the dispute will be referred to Engineers Australia, for determination. The parties agree any such determination will be binding on them.

8.6 Meetings under clause 8 may be held by telephone.

Executed as an agreement

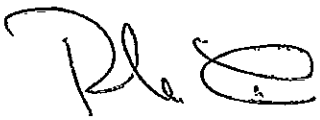
Executed for and on behalf of 3801 Limited.

by: John Glastonbury

.....

Authorised signatory

in the presence of:



Executed for and on behalf of PHC Rail

.....

By: PAUL M-GRATH Authorised signatory

In the presence of: PETER CRAWFORD

.....

TRACK ACCESS AGREEMENT

AGREEMENT dated 20 .

BETWEEN **AUSTRALIAN RAIL TRACK CORPORATION LIMITED** (ABN 75 081 455 754) of Ground Floor, ARTC Building, off Sir Donald Bradman Drive, Passenger Rail Terminal Road, Mile End, South Australia ("**ARTC**")

AND

3801 LIMITED (ABN 64 002 951 671) PO Box 333, Alexandria, New South Wales 1435 ("**Operator**")

RECITALS

A. ARTC is the manager of the Network.

B. ARTC agrees to grant the Operator access to the Network upon the terms and conditions set out in this Agreement.

AGREEMENT

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement unless the context otherwise requires:

"**ACCC**" means the Australian Competition and Consumer Commission;

"**Access Undertaking**" means the access undertaking (if any) together with any amendments thereto from time to time, dealing with the subject matter of this Agreement given or submitted by ARTC and approved by the ACCC under Division 6 of Part IIIA of the *Trade Practices Act 1974 (Commonwealth)*;

"**Accreditation**" means to be an Accredited Operator or an Accredited Owner (as the case may be) as defined under the Rail Safety Acts and "**Accredited**" bears a corresponding meaning;

"**Accredited Operator**" means an operator (including the Operator) who is Accredited or taken to be Accredited under the Rail Safety Acts of each State or Territory in which the Operator runs its Services on the Network (being Accreditation in whatever named capacity may be applicable under the Rail Safety Acts);

"**Accredited Owner**" means an owner (including ARTC) who is Accredited or taken to be Accredited under the Rail Safety Acts of each State or Territory in which the Operator runs its Services on the Network (being Accreditation in whatever named capacity may be applicable under the Rail Safety Acts);

"**ARTC's Environmental Licence**" means ARTC's:

(a) environment protection licence under the Protection of the Environment Operations Act 1997 (NSW) in respect of the Network that is situated in New South Wales; and

(b) environment protection authority licence under the Environment Protection Act 1993 (SA) in respect of the Network that is situated in South Australia;

or such other replacement licences that may be issued from time to time;

"**Associated Facilities**" means all associated track structures, over or under track structures, supports (including supports for equipment or items associated with the use of the Network), tunnels, bridges, Train Control systems, signalling systems, communication systems and associated plant, machinery and equipment from time to time but only to the extent that such assets are related to or connected with the Network but does not include any sidings or yards;

"**Business Day**" means a day in South Australia that is not a Saturday, Sunday or public holiday and on which banks are generally open for business;

"**Charges**" means the charges set out in **Schedule 3** and includes, without limitation, the Indicative Access Charges, except where expressly excluded;

"**Claim**" means all claims, legal actions and demands (including the costs and expenses of defending or settling any action, proceeding, claim or demand);

"**Code of Practice**" means the documents specified in Schedule 6, as amended from time to time by ARTC;

"**Commencement Date**" means 26 October 2008;

"**Communications or TMS Provider**" means a third party responsible for:

(a) building and operating telecommunications infrastructure on and adjacent to ARTC rail corridors and providing a communications platform for ARTC's train management system; and/ or

(b) developing and providing a train management system;

"**Consequential Loss**" includes economic loss, consequential loss, loss of profits, loss of business opportunity, payment of liquidated sums, penalties or damages under any agreement (other than this Agreement) but does not include property damage or losses arising from third party claims in respect of property damage, personal injury, nervous shock or death;

"**Dangerous Goods Code**" means the Australian Code for the Transport of Dangerous Goods by Road and Rail prepared by the National Road Transport Commission (or successor body) from time to time;

"**Director of Public Transport**" means the Director of Public Transport under the Transport Act 1983 (Vic), his successors, permitted substitutes and permitted assigns;

"**Environmental Condition**" means any Environmental Damage or any event, circumstance, condition, operation or activity which it is reasonably foreseeable is likely to result in Environmental Damage and which, in ARTC's reasonable opinion, could result in ARTC or any other person incurring any material liability or being subjected to a direction of any competent authority;

"**Environmental Damage**" means any material injury or damage to persons, living organisms or property or any material pollution or impairment of the environment resulting from the discharge, emission, escape or migration of any substance, energy, noise or vibration;

"**Excess Network Occupancy Charge**" has the meaning described in Clause 4.5(a)(iii) of the Access Undertaking;

"**Expiry Date**" means [ ];

"**Governmental Agency**" means the Commonwealth or relevant State or Territory Government or any Commonwealth or State or Territory governmental, semi-governmental, judicial, municipal, statutory or public entity or authority but excludes such entity or authority in its capacity as an Operator;

"**Incident**" means a breakdown, accident or emergency on the Network which involves the Operator and which causes or may reasonably be expected to pose a danger of causing any one or more of the following:

(a) material damage to or interference with the Network or any Associated Facilities managed by ARTC;

(b) material damage to property;

(c) material personal injury to any person;

(d) an Environmental Condition;

(e) a Category A incident or a Category B incident as defined in the Standards;

(f) an incident which requires notification under the relevant Rail Safety Act to the Administering Authority (as defined in such Act); or

(g) an incident requiring notification under the Dangerous Goods Code;

"**Indicative Access Charges**" means those access charges for Indicative Services specified in Schedule 3;

"**Indicative Services**" means Services with the following characteristics:

(i) maximum axle load of 21 tonnes;

(ii) maximum speed of 110 km/h; and

(iii) length not exceeding:

(A) 1800 metres west of Adelaide and Parkes;

(B) 1500 metres east of Adelaide and Parkes (until capital expenditure is commissioned on the segments Melbourne – Macarthur and Parkes - Cootamundra;

(C) 1800 metres on the segment Melbourne – Macarthur and Parkes – Cootamundra (following commissioning of capital expenditure on the segments Melbourne – Macarthur and Parkes - Cootamundra);

"**Instructions**" means all instructions and directions, issued by ARTC from time to time:

(a) which ensure, facilitate or encourage the proper, efficient, safe and lawful:

(i) use of and access to the Network by all Network users; or

(ii) management of the Network by ARTC;

(b) which ARTC honestly believes upon the exercise of reasonable care are consistent with the Network Management Principles; and

(c) which are given with a view to reasonably minimising the disruption to the Operator taking into account the valid objectives of ARTC (as set out in paragraphs (a) and (b) of this definition of "Instructions") in issuing the instruction or direction,

but does not include instructions and directions:

(d) which derogate from the Train Paths; or

(e) which prevent the Operator from running a Service of the nature of the Services contemplated at the Commencement Date or as agreed between the parties from time to time; or

(f) which are given for the purpose only of achieving ARTC internal commercial objectives unrelated to the valid objectives of ARTC (as set out in paragraphs (a) and (b) of this definition of "Instructions"),

unless the instructions or directions:

(g) are Train Control Directions properly given; or

(h) relate to safety; or

(i) are given to implement or support the Network Management Principles; or

(j) are necessary to prevent or to minimise the effect of a material breach of this Agreement; or

(k) are otherwise authorised by this Agreement,

and a reference to "ARTC" in this definition of "Instructions" includes also a reference to ARTC's agents;

"**Invoice**" means the invoice referred to in **clause 4.4**;

"**Key Performance Indicators**" means the Key Performance Indicators referred to in **clause 2.10** and further described in **Schedule 5;**

"**Network**" means the network of railway lines as delineated or defined in **Schedule 1**;

"**Network Management Principles**" means the principles regulating Train movements on the Network, as set out in **Schedule 4;**

"**Operator**" means the Operator described on page 1 of this Agreement and where applicable includes any Train it operates;

"**Passenger Priority**" means reasonable priority and certainty of access for rail passenger services delivered in accordance with **clause 2.3**;

"**Rail Safety Acts**" means the Acts passed by the Commonwealth and the States and any successor enactments, which relate to rail safety, including without limitation the:

(a) Rail Safety Act 1998 (WA);

(b) Rail Safety Act 1996 (SA);

(c) Rail Safety Act 2006 (VIC); and

(d) Rail Safety Act 2002 (NSW);

"**Remediation**" means the investigation, clean-up, removal, abatement, disposal, dispersal, reduction, destruction, mitigation, control, neutralisation, containment, encapsulation and other treatment of any contamination and any hazard arising from contamination, and includes without limitation the monitoring and remediation of contamination and hazards;

"**RIC**" means the Rail Infrastructure Corporation ABN 21 298 300 693 of Level 3, 237 Wharf Road Newcastle NSW 2300 as renamed, reconstituted, dissolved, replaced or restructured from time to time;

"**Rolling Stock**" means a locomotive, carriage, wagon or other vehicle for use on a railway;

"**Safeworking Rules**" means all policies and notices issued by ARTC for the purpose of ensuring the safe use of the Network;

"**Scheduled Train Paths**" means the entitlements of the Operator to use the Network between the times and between the locations set out in **Schedule 2** as amended or varied permanently under **clause 9** or under **clause 22**;

"**Service**" means a Train run by the Operator using the Network by which the Operator provides railway freight or passenger services;

"**SRA**" means the State Rail Authority of New South Wales ABN 73 997 983 198 of Level 6/18 Lee Street, Chippendale, NSW as renamed, reconstituted, dissolved, replaced or restructured from time to time;

"**Standards**" means the Australian Standard AS4292.1 - Railway Safety Management (General and Interstate Requirements), and any other principles and standards prepared, approved and published by the Standards Association of Australia in relation to rail safety;

"**Term**" means the term of this Agreement as determined in accordance with **clause 3**;

"**Third Party Works**" means any works, Remediation or the provision or maintenance of services undertaken or required to be undertaken on, over or under the Network or any Associated Facilities (including design, construction, testing and commissioning) by or on behalf of:

(a) a Governmental Agency carrying out its statutory functions; or

(b) an owner of land adjoining the Network wanting to install services across the Network to that adjoining land; or

(c) a corporation with statutory powers to enter land or acquire an interest in or right over land (other than a Governmental Agency) wanting to install services across the Network to that adjoining land;

but does not include works by or on behalf of ARTC or its contractors;

"**Train**" means one or more units of Rolling Stock coupled together, at least one of which is a locomotive or other self-propelled unit;

"**Train Control**" means the control of Trains by ARTC or its agents on the Network;

"**Train Control Centre**" means the facility or facilities maintained and operated by ARTC or its agents for the purposes of Train Control;

"**Train Control Directions**" means all Instructions issued by ARTC or its agents relating to management, continuity and safe operation of Train movements on the Network, including Instructions concerning the actual movement, deployment or placement of Trains, but only to the extent such Instructions:

(a) are honestly believed by ARTC to be consistent with the Network Management Principles, and

(b) are made with a view to reasonably minimising the disruption to the Operator taking into account the valid objectives of ARTC in issuing the Instruction,

which will be complied with by the Operator immediately;

"**Train Manifest**" means a notice (in a form specified by ARTC) prepared by the Operator in relation to a Service and containing the following details in relation to that Service:

(a) the number of vehicles in the Train;

(b) the gross mass of the Train;

(c) the length of the Train;

(d) the motive power employed by the Train; and

(e) for each vehicle in the Train in the order in which they will be placed, leading end first, the following information:

(i) vehicle number;

(ii) vehicle classification;

(iii) vehicle type; and

(iv) gross weight of vehicle;

"**Train Paths**" means:

(a) the Scheduled Train Paths;

(b) the Train paths provided to the Operator pursuant to **clause 2.5**; and

(c) all other ad hoc entitlements (including Train paths arising by reason of compliance with Instructions) to access to the Network which are provided by ARTC to the Operator on the terms set out in this Agreement and otherwise on such terms as ARTC may stipulate in accordance with this Agreement or as otherwise agreed between the parties.

1.2 Interpretation

In this Agreement unless the context otherwise requires:

(a) singular words will also have their plural meaning and vice versa;

(b) a reference to one gender includes all genders;

(c) a reference to a person includes companies and associations;

(d) a reference to a party includes a person to whom any right or obligation under this Agreement is transferred;

(e) a reference to the consent of a party means the prior written consent of that party;

(f) headings are for convenient reference only and do not affect the interpretation of this Agreement;

(g) a reference to a clause or a Schedule is a reference to a clause or Schedule of this Agreement;

(h) where any party comprises more than one person then all of those persons together as well as each of them individually will comply with that party's obligations under this Agreement;

(i) notices that are required to be given in writing by the Operator to ARTC, may, if so agreed by ARTC, be provided in electronic form;

(j) a reference to any Act includes all statutes regulations codes by-laws or ordinances and any notice demand order direction requirement or obligation under that Act (and vice versa) and unless otherwise provided in that Act includes all consolidations amendments re-enactments or replacements from time to time of that Act and a reference to "law" includes a reference to any Act and the common law; and

(k) a reference to $ and dollars is to Australian currency.

1.3 Payment Due on Business Day

If any amount becomes payable under this document on a day which is not a Business Day, that amount is payable on the next Business Day.

2. TRACK ACCESS RIGHTS

2.1 Grant to Operator of Train Paths

(a) ARTC grants to the Operator during the Term the use and availability of the Train Paths and the use of the Network for this purpose upon the terms and conditions set out in this Agreement, subject to ARTC's Passenger Priority obligations and **clause 2.3** of this Agreement.

(b) Notwithstanding **clause 2.1(a)**, the availability of a Scheduled Train Path is subject to:

(i) presentation by the Operator to Train Control of a Train which is ready in all things for departure within 15 minutes of the scheduled time for departure of that Train according to the relevant Scheduled Train Path;

(ii) emergencies or genuine and material safety considerations;

(iii) matters outside of the reasonable control of ARTC (except for matters which arise due to ARTC's negligence or breach of its obligations under this Agreement);

(iv) material failure of the Operator's Service;

(v) the Network Management Principles;

(vi) without limiting any other clause of this Agreement, any lawful order, direction or requirement given to ARTC by a Governmental Agency, including without limitation, the Director of Public Transport under section 10 of the Transport Act 1983 (Vic); and

(vii) Third Party Works.

(c) The Operator agrees at all times during the Term not to access or attempt to access the Network in any way other than is authorised by this Agreement.

2.2 Use of a Train Path is not Exclusive

Subject to **clause 2.1(a)**, the Operator's rights to the Train Paths do not give the Operator an exclusive right to any Train Path. Notwithstanding the foregoing, no two Trains (whether the Operator's Trains or the Trains of another user of the Network) will be allotted scheduled arrival or departure times such that there are conflicts in arrival or departure times having regard to the Safeworking Rules.

2.3 Passenger Priority in New South Wales

(a) The Operator acknowledges, and will not do anything to interfere with or breach, ARTC's obligations to at all times, in relation to the Network situated in New South Wales to:

(i) maintain Passenger Priority in carrying out rail operations by undertaking each of the following:

(A) service planning for timetabling to ensure that passenger services receive priority in train path planning;

(B) train programming for daily operations to achieve passenger service priority in daily programming; and

(C) Train Control in accordance with the Network Management Principles;

(ii) preserve existing or future passenger train paths; and

(iii) apply Passenger Priority in undertaking any maintenance to the Network situated in New South Wales.

2.4 Disclaimer

(a) Notwithstanding any other clause of this Agreement, ARTC is not responsible for any loss, additional cost or other damage suffered by the Operator in the event that a Train Path or any part of it is not available or that an Operator's Train will not be delivered on time to its ultimate or intermediate destination if such unavailability or failure to deliver occurred by reason of any of the matters described in **clause 2.1(b)** and without material breach of this Agreement by ARTC.

(b) Nothing in this **clause 2.4** derogates from ARTC's obligations under the Key Performance Indicators.

2.5 Early and Late Services

(a) Notwithstanding **clause 2.1(b)**, ARTC will use its best endeavours to accommodate a Service which is running early or late, is presented at the point of entry to the Network late or is presented at the point of entry to the Network more than 15 minutes early by providing a Train path for that Service at ARTC's first available opportunity (subject to the Network Management Principles).

(b) Both parties will, subject to this Agreement, use their best endeavours to:

(i) ensure that such Services which are running or presented late recover the lost time; and

(ii) ensure that such Services which are presented more than 15 minutes early depart the Network no later than the scheduled time.

(c) Nothing in this **clause 2.5** requires ARTC to provide a Train path where to do so would be inconsistent with the Network Management Principles or ARTC's obligations (consistent with the Network Management Principles) to a user of the Network other than the Operator (where such obligations had first arisen before the first entry of the Train on the Network to which this **clause 2.5** relates).

2.6 Warranty of Accuracy of Information

Each party represents and warrants to the other that all material information provided by the first-mentioned party to the other, whether pursuant to this Agreement or otherwise, in relation to use of the Network is, to the first-mentioned party's knowledge, accurate in all material respects and is not, whether by omission or otherwise, misleading.

2.7 Manner of Control of the Network by ARTC

ARTC agrees at all times during the Term to control the Network in a manner which facilitates:

(a) compliance by the Operator with the relevant Scheduled Train Paths applicable to the Services; and

(b) the use by the Operator of the relevant Scheduled Train Paths applicable to the Services, and in so doing to ensure (subject to the matters in **clause 2.1(b)**) that an Operator's Train which enters the Network on schedule or is early will exit the Network no later than the scheduled time.

2.8 Light Engine Movements

The Operator's rights to Scheduled Train Paths and Train paths under **clause 2.5** exclude, without limitation, any rights to access to the Network for the purpose of the Operator's light engine movements other than through negotiated ad hoc entitlements as referred to in subsection (c) of the definition of "Train Paths".

2.9 Renegotiation of Scheduled Train Paths

(a) The Operator has the rights set out in this **clause 2.9** to the extent that it has been granted Scheduled Train Paths under this Agreement (and not otherwise).

(b) The Operator may not less than 120 days before the expiry of the term of the Scheduled Train Paths give notice in writing to ARTC that the Operator wishes to renew this Agreement in relation to the Scheduled Train Paths, specifying also the desired term of such renewal, and ARTC will enter into negotiations with the Operator in relation to the possibility of such renewal.

(c) If, at the time the Operator has given notice under **clause 2.9(b)**, it:

(i) has paid to ARTC all monies due to it under this Agreement; and

(ii) is not otherwise in breach of this Agreement,

ARTC may consent to the renewal of the Scheduled Train Paths and enter into a new track access agreement with the Operator on terms and conditions (including Charges) determined by **clause 2.9(d)**.

(d) If, at the time **clause 2.9(c)** applies, ARTC has an Access Undertaking in force, the terms and conditions of the new track access agreement (including the Charges) will be determined in accordance with the Access Undertaking.

(e) The Operator does not have any automatic or enforceable rights of renewal or extension of any Scheduled Train Paths under this Agreement.

2.10 Key Performance Indicators

(a) The Key Performance Indicators described in **Schedule 5** are relevant to both parties who will monitor them from the Commencement Date.

(b) The parties will meet regularly for the purpose of discussing actual performance against the Key Performance Indicators.

3. TERM OF AGREEMENT

This Agreement commences on the Commencement Date and, unless terminated earlier under **clause 14**, will continue until 23:59 hours Australian Central Standard Time on the Expiry Date ("**Term**").

4. CHARGES AND PAYMENT

4.1 Flagfall Charges

(a) Subject to 4.1(b), the Operator will pay all flagfall Charges specified in **Schedule 3** in respect of each Train Path in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**), irrespective of whether or not the Operator uses all or any such Train Paths.

(b) The Operator is not required to pay the flagfall Charges specified in **Schedule 3** where ARTC is not able to provide the Train Path or an agreed substitute Train Path except where the failure to provide the Train Path is a result of an Incident, Third Party Works or an emergency.

4.2 Variable Charges

The Operator will pay to ARTC all variable Charges payable for each Train Path calculated by reference to **Schedule 3** in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**).

4.3 Excess Network Occupancy Charges

(a) Subject to 4.3(b) and (c), the Operator will pay all Excess Network Occupancy Charges specified in **Schedule 3** in respect of each Train Path or any part of such Train Paths in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**) irrespective of whether or not the Operator uses all or any such Train Paths.

(b) Excess Network Occupancy Charges will only apply where the Operator seeks to contract a Train Path on the Network, which is in excess of:

(i) a reasonable allowance for section run times for the applicable Train service type as determined by ARTC;

(ii) dwells for crossing and passing other Trains as determined and made available by ARTC for the Train Path; and

(iii) an allowance for the reasonable requirements for operational activities whilst the Train occupies the Network as specified at clause 4.6(c) in the Access Undertaking.

(c) The Operator is not required to pay the Excess Network Occupancy Charges specified in **Schedule 3** where ARTC is not able to provide the Train Path or an agreed substitute Train Path except where the failure to provide the Train Path is a result of an Incident, Third Party Works or an emergency.

4.4 Invoices and Monthly Statement

(a) ARTC will issue the Operator with an invoice relating to each period from Sunday to the next Saturday (both inclusive), itemising the variable Charges payable for each Scheduled Train Path and variable and flagfall charges for each ad hoc entitlement calculated by reference to **Schedule 3** (as amended, if applicable, in accordance with **clause 4.5**).

(b) The Operator will pay to ARTC in full the amount shown in the monthly statement issued by ARTC (such statements specifying the flagfall and variable components of the Charges, together with the Excess Network Occupancy Charges under **clause 4.3**), such payment to be received by ARTC within twenty one (21) days from the date of issue of the statement unless the payment is in dispute.

(c) Where payment is in dispute, the Operator will notify ARTC of any disputed amounts within twenty one (21) days from the date of issue of the statement and the Operator shall pay the undisputed amount within twenty one (21) days from the date of issue of the statement. The disputed amount may be withheld until the dispute is resolved.

(d) Where the dispute is resolved in ARTC's favour, the Operator shall pay the disputed amount to ARTC and also be liable to pay interest from the time that such monies should have been paid. The interest rate will be determined in the same manner as the interest rate is determined under **clause 4.8.**

4.5 Variation of Charges - Consumer Price Index

(a) Subject to **clause 4.5(c)** of this Agreement, ARTC may annually vary the Indicative Access Charges for Indicative Services ("Review Date") by up to an amount determined in accordance with the following formula:

$$\mathbf{AC_t = AC_{t-1} \times (1 + TV_i)}$$

Where

$\mathbf{AC_t}$ is the Indicative Access Charges payable by the Operator following the relevant Review Date.

AC_{t-1} is the Indicative Access Charges payable by the Operator immediately preceding the relevant Review Date.

TV_i is the maximum variation to Indicative Access Charges (measured as a percentage) that may be applied from the Commencement Date and thereafter from each 1 July during the Term ("Determination Date") and is to be determined in accordance with the following formula:

TV_i = is the greater of:

(i) $(((\text{CPI Index}_i / \text{CPI Index}_0) / CV_{i-1}) - 1) \times 100$**;** or

(ii) Zero;

Where,

CPI Index_i is the All Groups Consumer Price Index, Weighted Average of Eight Capital Cities, Index Number for the March quarter preceding the relevant Determination Date.

CPI Index_0 is the All Groups Consumer Price Index, Weighted Average of Eight Capital Cities, Index Number for the March quarter of the year 2007, being 155.6.

CV_{i-1} is the cumulative effect of the variations actually applied by ARTC to the indicative access charges specified in the Access Undertaking from 1 July 2008 to the relevant Determination Date ("i"). That cumulative effect is to be determined in accordance with the following formula:

$$CV_{i-1} = (1 + V_1) \times (1 + V_2) \times \ldots \times (1 + V_{i-1})$$

where

$V_1, V_2 \ldots V_{i-1}$ are the actual % variations which have been applied to the indicative access charges specified in the Access Undertaking from the 1 July 2008 to the relevant Determination Date.

For the purpose of determining TV_i for the sixth Determination Date, CPI Index_0 will be reset to CPI Index_5 and CV_5 will be reset to 1.

(b) ARTC will give the Operator at least sixty (60) days notice of any proposed increase of the Charges under **clause 4.5(a)** and such notice may be given at any time. The Operator may, within the period of sixty (60) days from the date of the notice, make written submissions to ARTC on the proposed increase in Charges. Such written submissions will be considered by ARTC. The increase in Charges proposed by ARTC will become effective and payable on the earlier of:

(i) if no subsequent notification is given by ARTC to the Operator, the date specified in the notice of the proposed increase of the Charges is given under this clause; or

(ii) if a subsequent notice is issued by ARTC to the Operator, such date as specified in that notice, in which case, the Charges will be increased by the amount specified in such notice.

(c) Subject to **clause 4.5(d)**, ARTC will immediately pass on to the Operator any net effect of any imposition of new taxes or charges, increases or decreases in taxes or charges (other than income tax) which is a tax, royalty, rate, duty, levy or impost of general application imposed on ARTC by any government or regulatory authority and which is directly attributable to the provision by ARTC to the Operator of access to the Network.

(d) ARTC will not pass on any such tax or charge which becomes payable as a result of ARTC failing to comply with any applicable law or any applicable provision of this Agreement.

(e) The Operator acknowledges that the Charges payable by them have been calculated without regard to any GST (as defined in **clause 4.11**) that might become payable by ARTC in respect of the supply of or access to the Network in accordance with this Agreement. If at any time GST is payable by ARTC on the supply of access to the Network in accordance with this Agreement, the Charges will be varied in accordance with **clause 4.11**.

(f) The Operator agrees and acknowledges that in the event any charges or premiums are payable to the Transport Accident Commission under section 115 of the Transport Accident Act 1986 (Vic) in relation to the operation of the Operator's Train on Network situated in Victoria, then:

(i) if such charges or premiums in respect of the Operator have been paid by ARTC on behalf of the Operator, the Operator will reimburse ARTC the full amount so paid to the Transport Accident Commission;

(ii) if such charges or premiums in respect of the Operator have not been paid by ARTC but are to be paid by the Operator under an agreement under the said section 115, the Operator will pay such charges or premiums directly to the Transport Accident Commission in accordance with the relevant section 115 Agreement.

4.6 Transport Act 1983 (Vic)

If:

(i) the Operator is or becomes a train operator for the purposes of section 10 of the Transport Act 1983 (VIC); and

(ii) the Director of Public Transport gives a lawful direction to ARTC under section 10 of the Act requiring or approving a timetable change; and

(iii) the effect of the direction by the Director of Public Transport is to interfere with any existing train paths granted by ARTC to other rail operators; and

(iv) in order to minimise or prevent any interference to such existing train paths, ARTC, acting reasonably, chooses to effect improvements or extensions to the Network or Associated Facilities,

the reasonable costs incurred by ARTC in effecting such improvements or extensions will be payable by the Operator.

4.7 Extensions and Additional Capacity

(a) In the event that ARTC, at its cost, adds infrastructure not forming part of the Network ("**Extensions**") and the parties agree to the Operator being granted access to the Extensions as part of the extended Network, ARTC may charge the Operator for access to the Extensions as a term of it agreeing to the additional infrastructure. ARTC may charge the Operator such amount it determines as being reasonable after taking into account:

(i) the costs incurred by it in constructing the Extensions and the recovery of such costs over the time such Extensions can be utilised by all operators;

(ii) the location of the Extensions;

(iii) the number of operators that ARTC estimates will use the Extensions; and

(iv) any other legitimate commercial factors which ARTC might reasonably consider.

(b) In the event that ARTC adds to the capability of the Network to carry additional task by an enhancement or improvement of the infrastructure associated with the Network ("**Additional Capacity**") and the Operator's existing Scheduled Train Path will be varied under **clause 9.2** to include the extended Network, the Operator will not be obliged under **clause 4.7(a)** to pay any

additional fee or charge for access to such extended Network. Nothing in this **clause 4.7(b)** prevents ARTC from negotiating funding arrangements with an operator or operators for the provision of Additional Capacity.

The provisions of **clause 17** dealing with resolution of disputes do not apply to ARTC's determination under this clause.

4.8 Interest

If the Operator defaults in the due payment of any amount due to ARTC under this Agreement (including all amounts in an Invoice), the Operator will pay interest on that amount, or the outstanding balance, until it is paid in full. The interest rate will be 2 percentage points above the:

(a) bench mark lending rate charged by the National Australia Bank or its successors ("NAB"), as published in the Australian Financial Review newspaper, at the time of such default; or

(b) if the lending rate specified in **clause 4.8(a)** does not exist at the time of such default, then the base business overdraft lending rate at that time on overdrafts of $100,000.00 or more as determined in writing by or on behalf of the senior manager of the South Australian head office of the NAB, currently known as the General Manager Business and Premium, at his discretion.

That interest will accrue and be recoverable from day to day.

4.9 Obligation to Grant Security

(a) Subject to **clause 4.9(b)**, the Operator will deliver to ARTC and keep current at all times during the Term, security for the Operator's obligations under this Agreement in the form of an unconditional and irrevocable bank guarantee, letter of credit, performance or insurance bond ("**Security**") issued by a bank holding an Australian banking licence or such other reputable person or institution accepted by ARTC in the amount of the average of 4 weeks Charges and containing such other terms and conditions acceptable to ARTC.

(b) The Security referred to in **clause 4.9(a)** will be provided by the Operator within seven (7) days of the Operator receiving a notice from ARTC requesting the same. ARTC may only serve such a notice on the Operator under this **clause 4.9(b)** if the Operator has defaulted in the payment of any monies owed by it to ARTC under this Agreement and has not remedied that default before the expiry of seven (7) days.

(c) The request for the Security by ARTC is in addition to and without derogation from any other rights ARTC may exercise against the Operator by reason of the breach of the Agreement. Subject to **clause 4.9(d)**, the continuance of the Security (or any replacement thereof under **clause 4.9(b)**) is a condition of the performance by ARTC of its obligations under this Agreement. The decision of ARTC to issue a notice under **clause 4. 9(b)** is not subject to **clause 17**.

(d) If, after Security has been provided in accordance with this clause, the Operator has not been in default in the payment of monies owed by it to ARTC under this Agreement for a continuous period of three (3) months, ARTC will, on request of the Operator, notify it that the Security is no longer required and forthwith release the Security to the Operator. This **clause 4.9(d)** does not preclude ARTC from issuing a further notice under **clause 4.9(b)** if the circumstances described in that clause apply.

(e) The amount of the Security will be reviewed every 12 months from the Commencement Date. The results of the review are not subject to **clause 17**.

(f) Subject to **clause 4.9(d)** the term of the Security will be for the same or a greater period than the Term under **clause 3**. The term of the Security will be extended to at least match any extension of the Term.

(g) Upon expiry of the Agreement, ARTC will release the Security to the Operator provided that at such time the Operator is not in default in the payment of any monies owed by it to ARTC under

this Agreement, in which case, the Security will be returned to the Operator less any money (disputed or undisputed) owing by the Operator to ARTC.

4.10 Exercise of Security

(a) The Security will be held by ARTC as security for the performance of the obligations of the Operator under this Agreement and may be called upon by ARTC in any circumstances in which ARTC suffers any loss as a result of default by the Operator under this Agreement.

(b) If ARTC exercises or draws on the Security, the Operator will promptly provide a replacement bank guarantee or letter of credit for the amount drawn or exercised by ARTC against the Security and otherwise on the same terms as the Security.

4.11 Goods and Services Tax

(a) **Definitions**

In this clause:

"**ANTS GST Act**" means the A New Tax System (Goods and Services Tax) Act 1999;

"**Consideration**" has the same meaning as in the GST Legislation but does not include the GST amount payable;

"**GST Legislation**" means the ANTS GST Act and associated legislation and regulations;

"**Input Tax Credit**" has the meaning given by Section 9-5 of the ANTS GST Act;

"**Tax Invoice**" means an invoice as prescribed in the GST Legislation;

"**Taxable Supply**" is a Taxable Supply as defined in the ANTS GST Act.

(b) **GST Payable**

ARTC and the Operator acknowledge and agree and/or warrant (as the case may be) that if GST has application to any Taxable Supply made under this Agreement by either ARTC or the Operator ("**supplier**") to either ARTC or the Operator ("**recipient**") as the case may be that the supplier may, in addition to the Consideration but subject to providing a Tax Invoice to the recipient, recover from the recipient (and the recipient will pay or reimburse the supplier) an additional amount on account of GST, such additional amount to be calculated in accordance with GST Legislation and will be paid by the recipient on the same terms and conditions as stated in this Agreement.

(c) **Reimbursement**

If either party is entitled under this Agreement to be reimbursed or indemnified by the other party for a cost or expense incurred in connection with this Agreement, the reimbursement or indemnity payment will not include any GST component of the cost or expense for which an Input Tax Credit may be claimed by the party entitled to be reimbursed or indemnified.

4.12 Costs

The Operator agrees as between the parties, to pay, if payable, any legal costs of execution (including without limitation any associated stamp duty, fees, fines and penalties thereon) in all relevant jurisdictions on this Agreement and any document contemplated or allowed by this Agreement, excluding any of ARTC's internal costs relating to the execution of this Agreement.

5. CONTROL AND MANAGEMENT OF ACCESS TO THE NETWORK

5.1 ARTC to Control

As between the parties, control of the Network and management of access to the Network, remains at all times with ARTC.

5.2 Warranty of Entitlement to Grant Access

ARTC warrants that it is entitled to grant to the Operator all of the Operator's rights of access to the Network described in this Agreement (but in the case of that part of the Network owned or managed by another person, subject to the terms by which that other person permits the Operator access to such part of the Network or by which that other person permits ARTC to allow the Operator to have access to such part of the Network).

5.3 Network Access Provider's Obligations

ARTC agrees at all times during the Term:

(a) to undertake the function of Train Control over the Network;

(b) to comply with the Network Management Principles;

(c) to safely and efficiently operate the Network so that any permitted use of the Network by the Operator is facilitated promptly and effectively and in accordance with this Agreement;

(d) to have Associated Facilities in place to enable ARTC to grant to the Operator the Scheduled Train Paths on the terms of this Agreement;

(e) to receive, record and collate information from the Operator and other users of the Network for the purposes of generating the Invoices referred to in **clause 4.4** and more effectively exercising the functions referred to in **clauses 5.3(a)** and **(b)**;

(f) to maintain and operate the Train Control Centre and a communication system for the purpose of communication with the Operator and other users of the Network, and to facilitate the Operator's access to that communication system;

(g) to use its best endeavours to provide the Operator with details, as soon as reasonably practicable of all operating incidents (including an Incident) which has affected or could potentially affect the ability of any Train to retain its Train Path, or else affect its security or safety or the security and safety of the freight or passengers; and

(h) to comply with all applicable Acts of the Commonwealth and State Parliaments, subordinate legislation, municipal by-laws and other laws in any way applicable to ARTC's management, control and ownership of the Network.

5.4 Rolling Stock

The Operator agrees as at the Commencement Date and at all material times during the Term to maintain each Train operated by the Operator on the Network in a condition which is fit for use on the Network having regard to the terms of this Agreement.

5.5 Operator's Obligations

The Operator agrees at all times during the Term:

(a) to use its best endeavours to ensure that its use of the Network complies with the Train Paths applicable to each Service;

(b) to comply with the Code of Practice;

(c) to conduct itself in accordance with Instructions issued;

(d) that if it becomes aware that material non-compliance by a Service with the applicable Scheduled Train Path (or such other Train path which may be agreed) has occurred or is a reasonable possibility, to notify the Train Control Centre immediately;

(e) to ensure that its use of the Network is carried out in such a way as to minimise obstruction of the Network and so that use of the Network by any other user authorised by ARTC is not prevented or delayed (other than through use of the Network in accordance with this Agreement or through proper compliance with an Instruction validly given);

(f) to comply with all applicable Acts of the Commonwealth and State Parliaments, subordinate legislation, municipal by-laws and other laws in any way applicable to operation of the Services or its use of the Network;

(g) not to materially change, alter, repair, deface or otherwise affect any part of the Network, Associated Facilities, ARTC's property or property of third parties provided that the obligation of the Operator in this clause extends only to such matters to the extent that they were caused or contributed to by the Operator and train operations it conducts and does not include normal wear and tear where the Operator is accessing the Network in accordance with the terms of this Agreement;

(h) not to materially damage the Network, Associated Facilities, ARTC's property or property of third parties. For the purposes of this clause "damage" does not include normal wear and tear where the Operator is accessing the Network in accordance with the terms of this Agreement;

(i) to provide and maintain communications equipment which is compatible with the equipment used in the Train Control Centre and to use such equipment to communicate with the Train Control Centre;

(j) where ARTC proposes to change communications equipment in the Train Control Centre:

(i) the Operator agrees to share information and cooperate with ARTC and any Communications or TMS Provider to the extent that may be required to ensure that the parties' obligations in **clauses 5.3** and **5.5** are achieved;

(ii) if such proposal will result in the Operator having to replace or upgrade its communications equipment, ARTC will consult with the Operator and the Operator will, after such consultation and after reasonable notice from ARTC to the Operator, reasonably replace or upgrade the communications equipment to be compatible with the equipment used in the Train Control Centre.

(k) subject to **clause 18**, to provide to ARTC such information related to the operation of the Services (excluding commercial information) as ARTC reasonably requires to enable it to properly perform its functions and discharge its obligations to the Operator and other operators;

(l) to provide to ARTC a Train Manifest in a format acceptable to ARTC for each Service not less than 15 minutes prior to that Service commencing use of the Network and to provide notice in a form specified by ARTC of any detail of the Train Manifest which changes during the course of the operation of the Service over the Network;

(m) to inform ARTC as soon as reasonably practicable of any cancellation or intended cancellation by the Operator of any Service;

(n) to ensure that any item of freight or material, including but not limited to minerals, bulk goods or commodity (in whatever form), being hauled on or in a Train operated by the Operator does not fall, leak, spill, escape or become deposited on or adjacent to the Network.

5.6 Conduct of ARTC

(a) In formulating its Indicative Access Charges, ARTC will not differentiate between operators in circumstances where:

(i) the characteristics of the Indicative Services are alike; and

(ii) the operators are operating within the same end market.

In determining whether the characteristics of two Indicative Services are alike ARTC may have regard to matters including but without limitation location, duration and quality of the Train Path, nature of Train consist, characteristics of the Indicative Service, longevity of access, arrival and departure times of the day and week.

(b) Without limiting **clause 5.6(a)**, if:

(i) ARTC sells a train path for an Indicative Service to a third party ("**Third Party Train Path**"); and

(ii) the Operator considers, acting reasonably, that the Third Party Train Path is a like train path when compared to a Train Path for an Indicative Service purchased by it under this Agreement ("**Like Train Path**"); and

(iii) the Operator has evidence to suggest that the Third Party Train Path has been sold by ARTC for a price less than that charged by ARTC to the Operator for the Like Train Path,

then the Operator may make a written submission to ARTC claiming that the Indicative Access Charges payable by it under this Agreement for the Like Train Path should be reduced to that charged by ARTC for the Third Party Train Path, such submission detailing at least the following:

(iv) the Indicative Access Charges payable by it for the Like Train Path;

(v) why the Like Train Path and the Third Party Train Path are to be considered Like Train Paths in the context of **clause 5.6(a)**;

(vi) the Indicative Access Charges that the Operator asserts ARTC is charging the third party for the Third Party Train Path.

(c) ARTC will, within 30 days of receipt of a written submission under **clause 5.6(b)**, notify the Operator whether:

(i) it agrees with the submission and that the Operator's Indicative Access Charges have been reduced accordingly; or

(ii) it disagrees with the submission and the reasons why.

(d) In the event that the Operator does not agree with ARTC's decision under **clause 5.6(c)(ii)** and the reasons for it, the Operator may give ARTC a notice under **clause 17** whereupon the dispute will be resolved in accordance with **clause 17**.

5.7 Removal of Rolling Stock from Network

(a) If ARTC reasonably considers that a Train operated by the Operator is obstructing the Network, the Operator will upon being notified in writing or by electronic mail of that obstruction arrange for the Train operated by the Operator to be moved by or at the time specified in such notice off or to another part or parts of the Network nominated by ARTC.

(b) Subject to **clause 5.7(c)**, if the Operator does not so remove or move the Train operated by the Operator under **clause 5.7(a)**, the Operator consents to ARTC arranging for the Train operated by the Operator to be removed from or moved to another part or parts of the Network, at the cost and expense of the Operator in all things.

(c) Notwithstanding any other provision of this Agreement, the Operator will release and indemnify ARTC or its servant, agent, employee, contractor or volunteer for all and any injury, loss and

damage arising from or related to the removal or movement arranged by ARTC under **clause 5.7(b)**, including without limitation where such injury, loss and damage is caused by the negligence of ARTC or its servant, agent, employee, contractor or volunteer.

6. REPAIRS AND MAINTENANCE OF THE NETWORK

6.1 ARTC to Repair and Maintain the Network

Subject to **clauses 6.2, 9.3** and **9.4** ARTC agrees at all times during the Term to maintain the Network (but only in so far as the Network is relevant to the Operator's Scheduled Train Paths) in a condition which is fit for use by the Operator to provide rail transport services.

6.2 Operating Restrictions

When required by the condition of the Network or any part of the Network, ARTC may (to the extent of such requirement only) give notice of speed and weight restrictions and the Operator will comply with such a notice.

7. ACCREDITATION

7.1 Accreditation Warranty

(a) Each party warrants that during the Term each such party has and will maintain Accreditation to the extent required by law, including, in the case of the Operator, all accreditation required by law in relation to Rolling Stock used by the Operator on the Network.

(b) The parties will notify each other of any notice received from any government authority affecting Accreditation.

(c) The Operator will not run Rolling Stock on the Network in breach of **clause 7.1(a)**.

(d) Where a third party audit of equipment or maintenance practices is requested by the Accrediting Authority with respect to the maintenance of the Operator's Accreditation, the Operator will provide a copy of that audit to ARTC at the same time such audit report is given to the Accrediting Authority.

(e) If a party loses part or all of its Accreditation or has part or all of its Accreditation suspended, that party will use its best endeavours to regain or have restored its full Accreditation as soon as is reasonably practicable.

7.2 Evidence of Accreditation

Each party will on or before the Commencement Date (and in the case of Accreditation which is obtained for the first time after the Commencement Date, then as soon as practicable such Accreditation is obtained) provide to the other party evidence of its Accreditation. A copy of all documents evidencing renewal or amendment of Accreditation will be provided by a party to the other party on the written request of the other party.

7.3 Termination of this Agreement by Reason of Suspension or Cancellation of Accreditation

If either party's Accreditation is:

(a) suspended for a continuous period of longer than 6 months; or

(b) cancelled for a continuous period of longer than 1 month,

the other party has the rights of termination set out in **clause 14.3**. This clause does not derogate from the parties' rights under **clause 14** in respect of termination of this Agreement.

8. COMPLIANCE

8.1 Issue of Instructions by ARTC

(a) ARTC may issue Instructions to the Operator.

(b) Instructions may include, but are not limited to, instructions or directions:

(i) to cease use of a Scheduled Train Path by the Service and for the Service to proceed over such path on the Network as ARTC nominates;

(ii) to continue use by the Service of the Network subject to such variation of the applicable Scheduled Train Path or the Service or the composition or quality of Trains as ARTC nominates;

(iii) to cause the Service to proceed to a point on the Network and stand there until ARTC issues a further instruction or direction in relation to the Service; or

(iv) without limiting the generality of **clauses 8.1(b)(i)** to **(iii)**, if the Service operates outside of its Scheduled Train Path, to delay or redirect the Service to allow access to the Network by another operator of a Train (including, if relevant, ARTC) whose service would, but for the delay or redirection of the Operator's Service, be delayed or further delayed.

(c) ARTC will:

(i) in giving any Instruction have due regard to minimising the disruption to the Operator's Services; and

(ii) other than in an emergency, consult with the Operator in giving an Instruction concerning the use of an Operator's locomotive and its crew for the purpose of assisting in the clearing of a Network blockage.

(d) If an Instruction which varies the Operator's Train Paths is intended by ARTC to be permanent, such permanent effect of the Instruction will not take effect until the procedure in **clause 9.2** for permanent variation of a Train Path has been satisfied. Until the **clause 9.2** procedure has been satisfied such Instruction will nevertheless have a temporary effect.

(e) As soon as is reasonably practicable and in any event before an Instruction becomes effective, ARTC will give to the Operator a written copy of the Instruction if such Instruction is ordinarily advised in writing by ARTC to operators.

8.2 Compliance by the Operator with Instructions and Train Control Directions

(a) Subject to **clause 8.2(c)**, the Operator will comply with all Instructions and will promptly advise all relevant Train crew of any changes to or the making or giving of Instructions.

(b) If an Instruction is a Train Control Direction, it will be complied with immediately.

(c) Unless the Train Control Centre gives an Instruction that is a Train Control Direction, the Operator need only comply with an Instruction if it was given a reasonable time before the required time for compliance.

(d) The Operator will comply with all Instructions in such a way as to reasonably minimise disruption to any other person's use of the Network.

(e) Subject to **clause 15**, ARTC is not responsible for any delay suffered or cost incurred by the Operator in complying with a lawful Instruction of ARTC, and the Operator releases ARTC from any Claim arising from such compliance.

(f) Subject to **clause 15**, the Operator is not responsible for any delay suffered or cost incurred by ARTC in the Operator complying with a lawful Instruction of ARTC, and ARTC releases the Operator from any such Claim arising from such compliance.

8.3 Compliance

The Operator will at its own cost during the Term:

(a) comply with all laws which affect or relate to the use of Train Paths;

(b) comply with all notices, orders and directions lawfully issued or given by or agreements with a Governmental Agency which affect or relate to the use of Train Paths; and

(c) obtain, maintain and comply with all approvals, licences or permits which from time to time may be necessary or appropriate for the use by the Operator of Train Paths.

9. VARIATION OR CANCELLATION OF TRAIN PATHS

9.1 Examples of Temporary Variations of Train Paths by the giving of Instructions by ARTC

(a) For the avoidance of doubt, and without limiting the generality of **clause 8.1(a)**, the Operator's Train Paths may be temporarily varied by the giving of Instructions:

(i) for the purpose of preventing any actual or potential:

(A) breach of the Safeworking Rules or of **clause 12** by the Operator or of similar safety requirements by other operators on the Network;

(B) material damage to the Network, ARTC's property or any Associated Facilities;

(C) injury to any person or damage to any property;

(D) delay to the progress of Trains on the Network (but only insofar as any trains operated by a third party have priority over the Operator's trains having regard to the Network Management Principles);

(E) terrorism and security matters; or

(ii) for the purpose of preventing, or in response to, any actual or threatened breach by the Operator of any of its material obligations under this Agreement.

(b) The Instructions referred to in **clause 9.1(a)** may comprise, but need not be confined to, Instructions in one or more of the following terms:

(i) to cease use of a Train Path by the Service and for the Service to proceed over such path on the Network as ARTC nominates;

(ii) to continue use by the Service of the Network subject to such variation of the applicable Train Path or the Service or the composition or quality of Trains as ARTC nominates;

(iii) to cause the Service to proceed to a point on the Network and stand there until ARTC issues a further Instruction in relation to the Service; or

(iv) if the Service operates outside of its Train Paths, to delay or redirect the Service to allow access to the Network by another operator of a Train whose service would, but for the delay or redirection of the Operator's Service, be delayed or further delayed.

9.2 Permanent Variations to Scheduled Train Paths

(a) This **clause 9.2** sets out the procedure to be followed by the parties if it is intended that a Scheduled Train Path is to be permanently varied.

(b) A Scheduled Train Path may be varied for the remainder of the Term (or for such other duration as may be agreed) if:

(i) one party to this Agreement ("**Requesting Party**") sends a notice to the other party ("**Notified Party**") stating:

(A) that the Requesting Party wishes to vary the use by the Operator of a Scheduled Train Path;

(B) the length of time such variation will be in force; and

(C) the reason or reasons for the proposal by the Requesting Party; and

(ii) subject to the qualifications set out in **clause 9.2(b)(iii), 9.3, 9.4, 9.5, 9.6** and **19.2**, the Notified Party consents to the Requesting Party's proposed variation, such consent to be withheld only upon reasonable grounds.

(iii) For the purpose of **clause 9.2(b)(ii)** the Operator cannot withhold consent in the case of variations required:

(A) by reason of ARTC's obligations relating to safety of the Network;

(B) for the purpose of Passenger Priority; and

(C) for the purpose of maximising the use and the reliability of the Network.

(c) Subject to **clauses 9.3, 9.4, 9.5, 9.6** and **19.2**, the Requesting Party will give not less than 30 days notice of a variation request under **clause 9.2(b)(i)**.

(d) The Notified Party's response as to whether it consents or not under **clause 9.2(b)(ii)** to the Requesting Party's notice given under **clause 9.2(b)(i)** will be given to the Requesting Party within 28 days of such notice being received by the Notified Party or within such shorter time if reasonably practicable. If the Notified Party's response is to refuse consent, the Notified Party will within such time also provide full reasons in writing to the Requesting Party.

9.3 Repairs, Maintenance and Upgrading of the Network

(a) Notwithstanding any other provisions to the contrary in this **clause 9**, but subject only to **clauses 9.3(b), 9.3(c) and 9.4** ARTC may, without notice to the Operator, perform repairs, maintenance or upgrading of the Network, carry out any new work on the Network, or take possession of any part of the Network, at any time.

(b) If repairs, maintenance or upgrading of the Network, the carrying out any new work on the Network, or taking possession of the Network, are reasonably likely to materially affect the Scheduled Train Paths, ARTC will, prior to commencement of the works:

(i) take all reasonable steps to minimise any disruption to the Scheduled Train Paths;

(ii) notify the Operator of the works as soon as reasonably practicable; and

(iii) use its best endeavours to provide an alternative Train Path,

but need not obtain the Operator's consent to such repairs, maintenance or upgrading, or possession of the Network.

(c) Possession of the Network means closure of the relevant part of the Network to all traffic for the purpose of effecting repairs, maintenance or upgrading. ARTC will consult with the Operator a reasonable time before taking possession of the Network (except in the case of an emergency) with a view to efficient possession planning and with a view to minimising disruption to Services and ARTC may at its discretion waive the flagfall charge applicable to any Services affected by this clause.

9.4 Third Party Works

(a) The Operator acknowledges that:

(i) third parties (some of whom have statutory rights) may wish to carry out or require to be carried out Third Party Works on the Network during the Term; and

(ii) Notwithstanding any other provision of this Agreement, ARTC reserves the right to permit third parties to carry out Third Party Works.

(b) Notwithstanding any other provision of this Agreement, the Operator agrees that ARTC has no liability to the Operator nor will the Operator make a claim against ARTC for any costs, expenses, losses or damages incurred by the Operator in relation to or as a consequence of Third Party Works.

9.5 Removal of Train Path for Under-utilisation

(a) ARTC has the right, by notice in writing to the Operator, to delete any Scheduled Train Path from **Schedule 2** (upon which deletion **Schedule 2** is deemed to be amended accordingly) if the Service using that Scheduled Train Path is not operated 7 or more times (whether consecutively or not) out of any 12 such Services which are consecutively scheduled. Such notice may only be given within 14 days after the seventh occasion of not operating.

(b) Other than if the parties agree to substitute an alternative Train Path a Service has not been operated within the meaning of **clause 9.5(a)** if the Operator has failed:

(i) to present a Train at the scheduled entry point onto the Network; or

(ii) to operate the relevant Train so that it completes its full journey,

in conformance with the locations and days set out in the Scheduled Train Paths applicable to such Service. For the avoidance of doubt, clause 9.5 does not apply to a late train service.

9.6 Review of Scheduled Train Paths

(a) Scheduled Train Paths will be subject to a review in accordance with this **clause 9.6**.

(b) ARTC may at its discretion by written notice given to the Operator cause a Scheduled Train Path to be reviewed in a bona fide manner by the parties by comparing the stated departure and arrival times for the Scheduled Train Path with the performance during the preceding continuous 3 month period of the actual Trains using or purporting to use that reviewable entitlement ("**3-month history**").

(c) If on such comparison of the Scheduled Train Path with the 3-month history the departure or arrival times for a Train using or purporting to use the Scheduled Train Path differ in material respects, the parties will negotiate in good faith to amend the Scheduled Train Path so that the Scheduled Train Path reflects, as closely as is reasonably practicable, the 3-month history.

(d) Nothing in this **clause 9.6** compels ARTC to offer a Train path to the Operator under **clause 9.6(c)** if:

(i) such Train path is unavailable by reason of contractual obligations owed by ARTC to any person (including the Operator);

(ii) to do so would materially adversely impact on ARTC's ability or opportunity to efficiently and safely manage the Network; or

(iii) the Operator does not agree to pay all fees and Charges applicable to such offered Train path.

(e) Nothing in this **clause 9.6** compels the Operator to accept a Train path offered by ARTC under **clause 9.6(c)** if contractual obligations owed by the Operator to any person (including ARTC) would prevent it from doing so.

9.7 Cost of Variation

Subject to **clause 15**, any losses, additional costs (excluding Charges) or other damage suffered by a party in complying with a variation under **clauses 9, 19.2** and **22** will be borne between the parties to this Agreement in such proportion as the parties agree (based on negotiations carried on in good faith), or in the absence of such agreement, and subject to a party's obligation under **clause 15** to indemnify the other in the circumstances set out in that clause, by the party which incurs such losses, additional costs or other damages.

9.8 Effect of Variations to Train Paths on Schedule 2

(a) A temporary variation pursuant to **clauses 8.1, 9.1, 9.2, 9.3** or **9.4** of the Scheduled Train Paths has the effect of suspending all contrary or inconsistent Scheduled Train Paths in **Schedule 2** for the duration of such temporary variation.

(b) Only permanent variations pursuant to **clauses 8.1, 9.2**, **9.4, 9.5**, **9.6, 19.2** or **22** of the Operator's Scheduled Train Paths will be, and are hereby, deemed to be an amendment to **Schedule 2**.

9.9 Cancellation of Scheduled Train Paths

(a) The Operator may, upon 24 hours prior written notice to ARTC, cancel in any 12 month period with the first 12 month period commencing on the Commencement Date, such number of Services per Scheduled Train Path as specified in **Schedule 2** with no liability to ARTC to pay for the Charges in respect of the Services so cancelled. For the purpose of this clause, each one way journey is deemed to be a separate Service.

(b) The Operator may cancel certain Scheduled Train Paths at will by serving a written notice on ARTC to that effect in accordance with this clause.

(c) For a Scheduled Train Path of up to 5 years duration, the period of notice required is one (1) year or the balance of the term of the Scheduled Train Path, whichever is the lesser.

(d) For a Scheduled Train Path of 10 years duration, the period of notice required is two (2) years or the balance of the term of the Scheduled Train Path, whichever is the lesser.

(e) For Scheduled Train Paths of between 5 and 10 years duration, the period of notice will be, subject to **clause 9.9(g)**, a pro-rata period of notice determined by the following formula:

$$N = 365 + 365 \frac{(A-5)}{\frac{5}{7}}$$

where:

N = is the period of notice in weeks

A = is the term of the Scheduled Train Path in years

or the balance of the term of the Scheduled Train Path, whichever is the lesser.

(f) During the notice period under this clause, the Operator will still be obliged to pay the flagfall and network occupancy charge components of the Charges whether or not the Operator operates a Service. Nothing in this clause prevents the Operator from operating a Service during the notice period and paying ARTC the full Charges payable under this Agreement in respect of that Service.

(g) Where the Operator has given notice under **clause 9.9(e)** and continues to operate Services during the notice period as calculated under **clause 9.9(e)**, the notice period required will be reduced in accordance with the following formula:

$N_2 = N_1 – 2 (U)$

where:

N_2 = The amended period of notice in weeks
N_1 = The period of notice calculated under **clause 9.9(e)**
U = the number of weeks of the notice period calculated under **clause 9.9(e)** during which the Scheduled Train Path will be utilised.

Where N_2 equates to zero or a negative figure, no notice is required.

(h) A notice given by the Operator in accordance with this clause will be, and is hereby deemed to be, an amendment to **Schedule 2** upon the expiry of the notice period.

(i) If:

(i) a Scheduled Train Path is cancelled by an Operator; and

(ii) by virtue of this clause, the Operator is required to pay ARTC the flagfall and network occupancy charge components of the Charges during the relevant notice period ("**Cancellation Charge**"); and

(iii) ARTC is able to sell a Scheduled Train Path to another operator (which is a Like Train Path when compared to the Scheduled Train Path cancelled by the Operator) within three (3) months of the date of cancellation;

ARTC will refund the Cancellation Charge to the Operator. Whether the cancelled and new Scheduled Train Paths are alike is to be determined by ARTC having regard to the criteria referred to in **clause 5.6(a)**.

10. INSPECTION AND AUDIT BY NETWORK ACCESS PROVIDER

10.1 Audit Obligation

Subject to **clause 10.2**, ARTC may at any time by Instruction from ARTC to the Operator require a particular Service of the Operator which is using the Network to undergo an audit for the purpose of assessing:

(a) the Operator's compliance with the terms and conditions of this Agreement, including whether the Train Manifest provided by the Operator under **clause 5.5(l)** is correct;

(b) whether any one or more of the individual wagons used by the Operator in the provision of a Service is loaded in excess of its rated carrying capacity; or

(c) whether any one or more of the individual wagons used by the Operator in the provision of the Service is loaded in an unsafe or potentially unsafe manner.

10.2 Limitations on Audit

ARTC will:

(a) subject to **clause 10.2(b)**, carry out not more than such number of audits under **clause 10.1** as are reasonably necessary in all the circumstances; and

(b) use its best endeavours in the conduct of such audit to minimise the disruption to the Operator's Service.

10.3 Instructions

In conducting an audit under **clause 10.1**, ARTC may give an Instruction to the Operator, including an Instruction to divert or delay a Service or make any part of a train engaged in providing a Service available for inspection or weighing.

10.4 Audit by Operator

(a) Subject to **clause 10.4(b)**, the Operator may at any time, at its cost and risk, audit any of the railway track and lines comprising the Network for the purpose of monitoring ARTC's compliance with **clause 6.1**.

(b) The Operator's audit under **clause 10.4(a)** will:

(i) be subject to the ability of ARTC to issue an Instruction to the Operator at any time during the audit to ensure the proper, efficient, safe and lawful use of and access to the Network by the Operator and other operators;

(ii) be conducted in such a manner so that it does not cause any disruption to any service of any other operator granted access to the Network by ARTC or the provision of services by ARTC to such operators.

11. EMERGENCIES AND INCIDENTS

11.1 Plans for Dealing with Incidents

(a) In consultation with the Operator, ARTC will formulate and periodically review and update plans which are consistent with ARTC's Accreditation requirements.

(b) The Operator will formulate a plan for dealing with Incidents and provide it to ARTC. The Operator's plan will be consistent with any plan prepared by ARTC under **clause 11.1(a)** and is subject to the approval of ARTC, such approval not to be unreasonably withheld.

11.2 Compliance with Plans and Directions and with Rail Safety Acts

The Operator and ARTC will follow any plan of the type referred to in **clause 11.1** and will comply with their respective obligations under the Rail Safety Acts.

11.3 Notification of Incidents

The Operator and ARTC each agree to notify the other party to this Agreement of any Incident as soon as possible after it comes to their attention.

11.4 Investigation of Incidents

(a) Incidents will be investigated as required by law.

(b) Each party will co-operate with an investigation under this clause and make available records and personnel relevant to the incident.

(c) The parties will consult with each other to determine any action to be taken as a result of any investigation.

11.5 Operator's Report

Without limiting **clause 11.3**, if an Incident occurs which involves the Operator and in relation to which ARTC has given written notice to the Operator that a report is required, the Operator will promptly prepare and submit to ARTC a written report which will include the following (to the extent relevant to the Incident and reasonably possible for the Operator to ascertain):

(a) the time and location of the Incident;

(b) available details of all loss or damage to the Train operated by the Operator and to the Network and Associated Facilities;

(c) the factors which may have contributed to the cause of the loss or damage to the Train operated by the Operator and to the Network and Associated Facilities (the parties acknowledging that such statement will not be binding on the Operator and will not be taken to be an admission by the Operator for any purpose, including insurance and indemnification purposes (notwithstanding the terms of any insurance policy to the contrary));

(d) names of the Operator's staff including volunteers in any way involved in the Incident either as principals or as witnesses;

(e) an analysis in printed format of speed recorder charts for the Train operated by the Operator;

(f) such other information which is required to be disclosed in a report to the Administering Authority under the relevant Rail Safety Act;

(g) such other information which is required to be disclosed in a report under the Dangerous Goods Code.

11.6 No Disposal of Equipment

Subject to any contrary requirement at law or a pre-existing contract to which the Operator or ARTC is a party, the Operator and ARTC will not engage in conduct which would prejudice an investigation into an Incident, including the disposal of any equipment involved in such Incident (but only to the extent that such non-disposal is necessary to such investigation).

11.7 Interim Responsibility for Recovery Costs

Until fault can be properly determined or agreed in relation to an Incident, ARTC will be responsible for recovery costs in relation to the Network and Associated Facilities and the Operator will be responsible for recovery costs in relation to all above-rail matters (including the Train operated by the Operator).

12. SAFETY STANDARDS

12.1 Compliance by the Parties

The parties will, in relation to their respective responsibilities and rights under this Agreement:

(a) comply with all applicable safety standards and laws dealing with safety;

(b) comply with the Safeworking Rules;

(c) comply with the Dangerous Goods Code;

(d) comply with the Standards (including any codes of practice developed under the Standards) to the extent not inconsistent with **clauses 12.1(a)(b)** and **(c)**;

(e) in addition to the Operator's Accreditation or the Owner's Accreditation (as the case may be), obtain and maintain such additional accreditation, licences and approvals, and maintain such additional standards, which are required by law;

(f) except to the extent that such obligations are binding by virtue of the Accreditation requirements referred to in **clause 7**, to ensure that their respective employees, agents and subcontractors engaged by the parties in or in connection with the Services are competent and appropriately qualified and obtain and maintain any applicable or appropriate Accreditation and training, and to provide to the other party evidence of any such matters upon reasonable request; and

(g) except to the extent that such obligations are binding by virtue of the Accreditation requirements referred to in **clause 7**, to ensure that their respective employees and subcontractors of the parties engaged in or in connection with the use by the Operator of the Network submit to drug and alcohol tests or to such other tests as ARTC or the Operator is in the practice of requiring of its own employees or subcontractors.

12.2 Notification of Breach

As soon as ARTC becomes aware of a breach by the Operator of any Safeworking Rules which occurs during or as a result of the use by the Operator of the Network ("**Breach**") it will give written notice to the Operator setting out:

(a) the time, place and a general description of the Breach;

(b) what, in ARTC's opinion, caused the Breach and which person or persons were responsible for the Breach;

(c) the consequences, if any, of the Breach for operation of the Services or the use by other users of the Network;

(d) any proposed modification of its procedures which ARTC intends to make; and

(e) any Instruction requiring modification to the Operator's procedures which ARTC considers that the Operator must make.

12.3 Provision of Safeworking Rules

ARTC will provide a copy of the Safeworking Rules to the Operator on the Operator's request, and will thereafter forward to the Operator a copy of all amendments to the Safeworking Rules.

13. ENVIRONMENTAL REQUIREMENTS; DANGEROUS GOODS

13.1 Compliance with Environmental Requirements

Each party will comply with all environmental laws and with their respective environmental policies (insofar as they comply with the law), including all applicable laws and lawful policies dealing with dangerous goods.

13.2 Environmental Management Plans

After ARTC has given to the Operator a copy of its plan for dealing with environmental effects of operating Trains on the Network, the Operator will within a reasonable time prepare its own plan for dealing with environmental effects of its operations on the Network, the plan to be consistent with ARTC's plan, and give a copy of its plan to ARTC.

13.3 Notification of Carriage of Certain Materials

Other than in the case of Trains which are wholly passenger Trains, the Operator will include in all Train Manifests such detail in relation to the identification of dangerous goods as is required by the Dangerous Goods Code and as is otherwise reasonably required by ARTC (on terms not inconsistent with the Dangerous Goods Code).

13.4 Notification of Incident involving Dangerous Goods

Other than in the case of Trains which are wholly passenger Trains, the Operator will provide to ARTC details, at the earliest practicable time after the Operator becomes aware, of all incidents (including non-compliance with relevant codes, regulations, bylaws or other statutory provisions, whether or not an Incident) involving dangerous goods including but not limited to any spillage, leakage or container or package damage associated with the movement of any Train on the Network.

13.5 Notification of Environmental Condition

Where:

(a) ARTC becomes aware that, as a result of the activities of the Operator, an Environmental Condition exists or has occurred and ARTC reasonably considers that action or intervention is required to prevent, mitigate or remedy that Environmental Condition; or

(b) ARTC is given a direction by a competent authority that some action or intervention is required to prevent, mitigate or remedy an Environmental Condition resulting from the activities of the Operator;

then ARTC may inform the Operator of the relevant requirements and, where practicable, any steps which ARTC reasonably considers will be necessary to prevent, mitigate or remedy the situation, and the Operator will immediately, or as soon as reasonably practicable after receiving such notice, implement such requirements, Remediation and steps and any other necessary action so that the Environmental Condition is no longer present or the Environmental Damage is rectified.

13.6 ARTC's Environmental Licence

The Operator will implement and comply with the conditions of ARTC's Environmental Licence ("Licence Conditions") to the extent that:

(a) ARTC has notified the Operator of the Licence Conditions; and

(b) the Licence Conditions apply to the Operator's operations and Trains operated by the Operator on the Network situated in South Australia and New South Wales.

13.7 Operator Compliance

The Operator agrees that in order to facilitate such implementation and compliance the Operator will, without limiting the Operator's obligations under **clause 13.6**:

(a) ensure that any Trains operated by the Operator comply with the Licence Conditions;

(b) not operate any Trains on the Network situated or which operate in New South Wales until Environment Protection Authority ("**EPA**") approval has been obtained; and

(c) comply with the terms of any applicable EPA approval.

13.8 Environmental Manual

The Operator will implement and comply with the environmental management system manual developed by ARTC, as amended from time to time, ("the Manual"), and will also maintain, implement and comply with the Operator's own environmental management plan (which will not be inconsistent with the Manual).

14. TERMINATION

14.1 Termination for Breach

(a) If a party ("**defaulting party**") defaults in the performance of any of its material obligations under this Agreement, the other party ("**aggrieved party**") may give notice in writing ("**Rectification Notice**") to the defaulting party requiring the defaulting party to:

(i) rectify the default within a reasonable time; and

(ii) respond in writing to the aggrieved party, within 48 hours of the receipt of the Rectification Notice:

(A) indicating to the aggrieved party the steps to be taken to rectify the default within such reasonable time and a reasonable timetable for the completion of such steps; and

(B) confirming that the performance of the steps has commenced ("**Rectification Response**").

(b) If the defaulting party:

(i) does not rectify the default within a reasonable time;

(ii) does not provide a Rectification Response within the time specified in **clause 14.1(a)(ii)**;

(iii) does not provide a satisfactory Rectification Response meeting the requirements of **clause 14.1(a)(ii)(A)** and **(B)**; or

(iv) does not comply with the timetable set out in the Rectification Response subject to **clause 14.1(a)**,

the aggrieved party may at any time thereafter suspend such rights of the defaulting party under this Agreement as are necessary to prevent a continuation of the default by giving not less than:

(A) 7 days written notice in relation to a default relating to safety; or

(B) 14 days written notice in relation to defaults other than relating to safety.

(c) If the defaulting party does not within a reasonable time after the suspension of this Agreement under **clause 14.1(b)** rectify the default, this Agreement may be terminated by giving not less than the period of notice described in **clauses 14.1(b)(A)** and **(B)**.

(d) Notwithstanding that ARTC may be the defaulting party, nothing in **clause 14.1(b)** derogates from or affects ARTC's rights and powers to manage the Network and any of its other rights or powers under this Agreement or any other agreement with any other person, including any track access agreement with any other operator.

14.2 Immediate Termination

A party has the right to immediately terminate this Agreement by notice in writing to the other party upon the occurrence of any of the following events:

(a) the other party assigns or attempts to assign this Agreement in breach of **clause 19**;

(b) if any execution is levied against the assets of the other party which are necessary or material for the conduct of the Operator's business of running the Services or if any such assets of the other party are taken or sold by an encumbrancer or if the other party ceases to carry on business, stops payment or fails to maintain normal and continuous operation of its business for a period of in excess of 14 continuous days except for reasons wholly beyond its control;

(c) if the other party:

(i) goes into liquidation otherwise than for the purpose of reconstruction or a meeting was called for the purpose of considering liquidation;

(ii) has a receiver or a receiver and manager appointed over any of its property;

(iii) proposes or enters into any scheme of arrangement or a composition with its creditor; or

(iv) has an official manager, receiver, inspector, administrator or controller appointed pursuant to the provisions of the Corporations Act 2001 (Cwlth).

14.3 Termination of this Agreement by Reason of Suspension or Cancellation of Accreditation

If either party's Accreditation is suspended for a continuous period of six months or cancelled for a continuous period of one month the other party may terminate this Agreement by notice in writing to the party which has had its Accreditation so suspended or cancelled.

14.4 Suspension

(a) Without in any way limiting the rights of a party under **clause 14.1, 14.2** or **14.3**, a party who is entitled to terminate this Agreement under any of those clauses may elect instead to suspend the obligations of both parties under this Agreement (subject to **clause 14.4(b)**) until such time as the cause giving rise to the right to terminate is remedied.

(b) An election referred to in **clause 14.4(a)** is revocable at any time by the party who made it and has no effect upon obligations, debts or liabilities which have accrued before the election to suspend this Agreement.

14.5 Effect of Termination or Suspension

(a) Upon termination or suspension of this Agreement all rights of the Operator to use the Network (to the extent of the termination or suspension) will cease immediately.

(b) Termination or suspension of this Agreement under any circumstances will not abrogate, impair, release or extinguish any debt, obligation or liability of one party to the other which may have accrued under this Agreement including without limitation any such debt, obligation or liability which was the cause of termination or suspension or arose out of such cause.

(c) Upon termination or suspension of this Agreement under any circumstances all covenants and agreements of ARTC and the Operator which by their terms or reasonable implication are to be performed in whole or in part after the termination or suspension of this Agreement will survive such termination or suspension.

15. INDEMNITIES/LOSS OR DAMAGE ARISING FROM AN INCIDENT

15.1 General

(a) The purpose of this **clause 15** is to establish a regime in which the liability of ARTC and the Operator to each other for loss or damage arising out of an Incident is clearly defined, and is determined only by reference to this **clause 15**.

(b) ARTC and the Operator release each other from all Claims resulting from an Incident, including where the Incident is caused or contributed to by the negligence of one or both parties, except Claims that each party to this Agreement may make against the other pursuant to this **clause 15**.

(c) The provisions of this clause should be interpreted to give effect to the intention that where ARTC and/or the Operator are in breach of this Agreement, and any such breach is the cause or a contributing factor to loss or damage arising from an Incident;

(i) any party in breach should bear responsibility for such loss or damage to the extent of such cause or contribution, and;

(ii) where the acts or omissions of a party other than ARTC or the Operator (as defined in this clause) has caused or contributed to such loss or damage, neither ARTC or the Operator will be responsible to the other for loss or damage to the extent that the loss or damage is caused by or contributed to by the acts or omissions of that other party.

15.2 Definitions

In this **clause 15**:

(a) '**Claim Period**' means each and every twelve month period during the Term of this Agreement, such that the first Claim Period commences on the Commencement Date and expires at midnight on the day before the first anniversary of the Commencement Date, the second Claim Period commences on the first anniversary of the Commencement Date and expires at midnight on the day before the second anniversary of the Commencement Date, and so on;

(b) '**loss or damage**' includes:

(i) loss or damage to property belonging to a party to this Agreement;

(ii) any liability to a third party arising from the negligence or breach of statutory duty of ARTC or the Operator to such third party (as the case may be) but excluding any liability of ARTC or the Operator to a third party arising under an agreement with that party (whether by way of indemnity or otherwise) or arising from a breach of an agreement with that third party;

(iii) the costs of recovery of any property damaged or affected by the relevant Incident, and

(iv) legal expenses on a full indemnity basis;

(c) '**Prohibited Claim**' means, subject to **clause 15.5(b)**, a Claim arising from an Incident where the total value of the loss or damage suffered by a party to this Agreement is less than $50,000.00;

(d) A reference to ARTC or the Operator includes a reference to any servant, agent, employee, contractor, supplier to, or volunteer of or associated with, or a related entity (as defined in the *Corporations Act* 2001) of ARTC or the Operator;

(e) A reference to a "breach" includes a breach arising from the acts or omissions of a servant, agent, employee, contractor, supplier to, or volunteer of or associated with or a related entity (as defined in the *Corporations Act* 2001) of, ARTC or the Operator.

15.3 Indemnity

Where ARTC and/or the Operator suffer loss or damage as a result of an Incident, and:

(a) if:

(i) there is a breach of this Agreement by ARTC or the Operator; and

(ii) the breach is the sole cause of the Incident,

then the party in breach will:

(iii) be responsible for its own loss or damage arising from the Incident; and

(iv) completely and effectually indemnify the other party in respect of loss or damage suffered by the other party as a result of the Incident;

(b) if:

(i) there is a breach or are breaches of this Agreement by ARTC or the Operator;

(ii) there is no breach of this Agreement by the other party; and

(iii) the breach or breaches contributed to the Incident but was or were not the sole cause of the Incident:

then,

(iv) the party in breach is to be responsible for its own loss or damage arising from the Incident;

(v) the party in breach is to indemnify the other party (that is, the party not in breach) in respect of the loss or damage suffered by the other party as a result of the Incident to the extent that the breach or breaches contributed to the Incident;

(vi) the other party (that is, the party not in breach) is to be responsible for its own loss or damage arising from the Incident to the extent that the breach or breaches did not contribute to the Incident;

(c) if:

(i) there has been a breach of the Agreement by ARTC and the Operator; and

(ii) breaches by both parties contribute to the Incident,

then each of ARTC and the Operator will:

(iii) indemnify the other party in respect of the loss or damage suffered by the other party as a result of the Incident to the extent that the breach or breaches of that party contributed to the Incident;

(iv) be responsible for their own loss or damage arising from the Incident to the extent that the loss or damage was not contributed to by the breach or breaches of the other party;

(d) if there has been a breach or breaches of the Agreement by both ARTC and the Operator, but the breach or breaches of one of them has not or have not caused or contributed to the Incident, then (whether or not there is any other person or party who has caused or contributed to the Incident) the party whose breach has caused or contributed to the Incident will bear their own loss and damage and indemnify the other party in respect of the loss or damage suffered by that other party as a result of that Incident to the extent that the breach or breaches contributed to the Incident.

15.4 No Claim for Consequential Loss

Notwithstanding:

(a) how an Incident is caused;

(b) that ARTC and/or the Operator is in breach of any duty of care or in breach of this Agreement;

(c) any other rights that ARTC and/or the Operator may have under this Agreement;

(d) that ARTC and/or the Operator may be liable to the other for other loss or damage other than Consequential Loss,

ARTC and the Operator will not make a Claim against the other, and hereby release the other from any Claim, in respect of any Consequential Loss they suffer arising out of any Incident. For the avoidance of doubt, it is agreed that Consequential Loss does not include any liability of ARTC or the Operator to a third party.

15.5 Prohibited Claim

(a) Subject to sub-paragraph (b) hereof, ARTC and the Operator agree that they will not make a Claim against the other if the Claim is a Prohibited Claim.

(b) Where, in any Claim Period, the total value of all Prohibited Claims exceeds $250,000.00, then no further Claims arising from Incidents that occur during that Claim Period will be Prohibited Claims.

15.6 No Other Limitations

Nothing in this **clause 15** is intended to remove, limit, restrict, or otherwise prejudice the right of ARTC or the Operator to recover loss or damage or a contribution from a third party.

15.7 Obligation to Mitigate/ Betterment

(a) Each party to this Agreement will take reasonable steps to mitigate that party's losses, damages, liabilities, costs and expenses, and a party's entitlement to recover losses, damages, liabilities, costs and expenses will be determined on the basis that the party should have observed the obligation to mitigate.

(b) Where a party restores or repairs a damaged asset and that repair or restoration results in improved functionality of an asset, such improved functionality will not be regarded as a betterment and no reduction or adjustment of the costs of repair or restoration will be made on that account.

15.8 Obligation to Pay

(a) In this sub-clause, a party liable to indemnify the other is called the "Responsible Party" and a party who is entitled to be indemnified is called an "Indemnified Party".

(b) An Indemnified Party will, as soon as practicable after an incident, give written notice to the Responsible Party of any claim to indemnity including:

(i) the date of the incident;

(ii) brief details of the loss or damage suffered or which might be suffered; and

(iii) a brief description of the grounds upon which indemnity is claimed.

(c) An Indemnified Party may deliver notices requesting reimbursement of costs or expenses incurred, or payment of other loss and damage, on an ongoing basis, as and when such costs and expenses are incurred or such other loss and damage is identified and quantified.

(d) The Responsible Party will

(i) reimburse the indemnified party all costs or expenses incurred by the Indemnified Party in repairing or reinstating plant, equipment or other assets, and

(ii) pay any other loss or damage which is the subject of the indemnity,

within fourteen days (14) of being requested in writing by the Indemnified Party to do so.

(e) Where a Responsible Party has not complied with sub-clause (d) above, the Responsible Party will also be liable to pay interest to the Indemnified Party from the time that such monies should have been paid as requested, until that amount or any outstanding balance is paid in full. The interest rate will be determined in the same manner as the interest rate is determined under **clause 4.8** hereof.

(f) The making of any progress or part payment by a Responsible Party to the Indemnified Party will not relieve the Responsible Party of its obligation to indemnify the Indemnified Party for all loss or damage arising out of the same incident to the full extent to which it is liable to do so under this **clause 15,** unless the Indemnified Party has given the Responsible Party a release in writing to that effect.

(g) The making of any payment by a party under this **clause 15.8** may be made without prejudice to any rights of that party to contest its liability to indemnify.

15.9 Defence of Claims

(a) The parties will render to each other all reasonable assistance in the defence of any Claim made against the other party by a third party arising out of any Incident.

(b) To the extent that a party ('**Responsible Party**') is obliged to fully indemnify the other party ('**Indemnified Party**') against a Claim by a third party against the Indemnified Party, the Responsible Party;

(i) may, subject only to the terms of any applicable insurance which the Indemnified Party may have, at its own expense, defend and settle any action or proceedings in the name of the Indemnified Party and execute such documents in the action or proceedings as the Responsible Party sees fit.

(ii) will indemnify the Indemnified Party in respect of all costs, expenses and losses that the Indemnified Party may incur or have incurred on account of the action or proceedings.

16. INSURANCE

16.1 Operator's Insurance Policies

(a) The Operator will during the Term take out and maintain a liability insurance policy which provides an indemnity in respect of:

(i) loss of, loss of use of, and destruction or damage to, real or personal property;

(ii) injury to, or disease or death of, persons;

(iii) the Operator's liability to ARTC under **clause 15** to the extent coverable by insurance.

(b) The liability insurance policy referred to in **clause 16.1(a)** will:

(i) be with an insurer approved by ARTC (and ARTC will not unreasonably withhold such approval);

(ii) have a limit of liability of not less than $250,000,000 (or such other amount as ARTC may reasonably require and notify to the Operator from time to time) for any one occurrence;

(iii) contain provisions that are standard industry terms for railway operators.

(c) The Operator will deliver to ARTC when reasonably requested by ARTC copies of such parts of the liability insurance policy referred to in **clause 16.1(a)** and the Certificates of Currency in relation to such policy, subject to the details of such policy being kept confidential by ARTC (other than for the purpose of seeking indemnification thereunder).

(d) The liability limit referred to in **clause 16.1(b)(ii)** may at ARTC's absolute discretion be reduced to such other amount as ARTC expressly authorises in writing from time to time.

(e) The Operator acknowledges and agrees that:

(i) it is the Operator's responsibility to assess and consider the risks and scope of insurance required for the Operator's business;

(ii) nothing in this clause will exempt the Operator from any liability that is not covered by the liability insurance policy referred to in **clause 16.1(a)**; and

(iii) nothing in this clause will impose liability on ARTC, including where ARTC approves a reduction in the liability limit referred to in **clause 16.1(b)(ii)**.

16.2 ARTC's Insurance Policies

(a) ARTC will during the Term take out and maintain a liability insurance policy which provides an indemnity in respect of:

(i) loss of, loss of use of, and destruction or damage to, real or personal property;

(ii) injury to, or disease or death of, persons;

(iii) ARTC's liability to the Operator under **clause 15** to the extent coverable by insurance.

(b) The liability insurance policy referred to in **clause 16.2(a)** will have a limit of liability of not less than $250,000,000 for any one occurrence.

(c) ARTC will:

(i) deliver to the Operator when reasonably requested by the Operator copies of such parts of the liability insurance policy referred to in **clause 16.2(a)** and the Certificates of Currency in relation to such policy, subject to the details of such policy being kept confidential by the Operator (other than for the purpose of seeking indemnification thereunder);

(ii) publish annually the amounts paid by it by way of premiums for the insurance referred to in **clause 16.2(a)**.

(d) In the event that there is a substantial reduction in the amounts paid by way of premiums as disclosed under **clause 16.2(c)(ii)**, ARTC will, in consultation with all operators granted access to the Network, apply any such savings towards repairs, maintenance or upgrading of the Network or as otherwise agreed between the parties.

17. RESOLUTION OF DISPUTES

17.1 Procedure to Settle Disputes

(a) If there is a dispute between the parties relating to or arising out of this Agreement ("**Dispute**") then, unless otherwise expressly agreed to the contrary by both parties, such Dispute will be resolved in accordance with this **clause 17**. Either party may give to the other party to the Dispute notice in writing ("**Dispute Notice**") specifying the Dispute and requiring it to be dealt with under this **clause 17**. The parties will use reasonable endeavours acting in good faith to settle the Dispute as soon as practicable.

(b) The procedure that is to be followed to settle a Dispute arising under this Agreement is as follows:

(i) first, negotiation of the Dispute under **clause 17.2**; and

(ii) second, mediation of the Dispute under **clause 17.3**.

17.2 Negotiation

If there is a Dispute between the parties relating to or arising out of this Agreement, then within seven (7) days after the date of the Dispute Notice, senior representatives from each party will meet and use reasonable endeavours acting in good faith to resolve the Dispute by joint discussions.

17.3 Mediation

(a) If the Dispute is not resolved under **clause 17.2** within twenty one (21) days after the date of the Dispute Notice then the Dispute will be referred to the chief executive officers of both parties who will attempt to resolve the Dispute, including by informal mediation.

(b) If the Dispute is not resolved within fourteen (14) days after being referred to the chief executive officers under **clause 17.3(a)**, the Dispute will be referred to formal mediation in South Australia to be mediated by a single mediator appointed by agreement of the parties or if they fail to agree within fourteen (14) days, a mediator appointed by the President of the Law Society of South Australia acting on the request of either party.

(c) Unless the parties otherwise agree:

(i) the mediation will be conducted by a mediator under the "Guidelines for Legal Practitioners Acting as Mediators" of the Law Society of South Australia (whether or not the mediator is a legal practitioner);

(ii) the parties may appoint a person, including a legally qualified person to represent it or assist it in the mediations;

(iii) each party will bear their own costs relating to the preparation for and attendance at the mediation; and

(iv) the costs of the mediator will be borne equally by the parties.

(d) Nothing in this **clause 17.3** prohibits a party from seeking and obtaining appropriate injunctive relief.

(e) Subject to **clauses 17.3(d) and (f)**, pending completion of the procedure set out in this **clause 17**, a Dispute will not be the subject of legal proceedings between the parties. If legal proceedings are initiated or continued in breach of this **clause 17.3(e)**, a party to the Dispute is entitled to apply for and be granted an order of the court adjourning those proceedings pending completion of the procedure set out in this **clause 17**.

(f) This **clause 17** does not prejudice the right of a party:

(i) to require the continuing observance and performance of this Agreement by all parties;

(ii) to institute proceedings to enforce payment due under this Agreement where the requirement for payment is not in dispute;

(iii) to terminate the Agreement where the basis for doing so is not in dispute.

17.4 Termination of mediation

If the Dispute is not resolved within one (1) month of the appointment of the mediator (if any) under **clause 17.3(b)**, either party may by notice in writing to the other terminate the mediation proceedings.

18. CONFIDENTIALITY

18.1 Acknowledgment of Confidentiality

Each party acknowledges, subject to **clause 18.2**, that all information provided by one party ("**Provider**") to the other ("**Receiver**") under this Agreement that relates directly to:

(a) the Operator's future markets;

(b) the Operator's future market and business strategies; and

(c) the strategies of ARTC's or the Operator's customers;

("**Confidential Information**") is secret and confidential and that the Receiver of Confidential Information will treat that Confidential Information as secret and confidential and the property solely of the Provider and not use that Confidential Information for any purpose other than the provisions of this Agreement allow.

18.2 Exclusions from "Confidential Information"

For the purposes of this **clause 18** "Confidential Information" does not include information which is:

(a) in the public domain at the time of disclosure other than through the fault of the Receiver or of anyone to whom the Receiver has disclosed it;

(b) obtained lawfully from a third party without restriction on use or disclosure;

(c) required to be made public by operation of law (subject to the Receiver claiming any immunity, privilege or restriction on or from disclosure that it can reasonably claim), including without limitation information required by any stock exchange, rail safety or economic regulator;

(d) necessary for the provision of advice by the Receiver's legal advisers, financiers, accountants or other consultants (provided they are under a legal obligation not to disclose the Confidential Information to any third party).

19. ASSIGNMENT OR NOVATION

19.1 By ARTC

(a) Other than to a successor of ARTC or to any body established by any person in relation to the management of the Network or any relevant or material part of it, ARTC may not assign or novate this Agreement, its interest in the subject matter of this Agreement or any right under this Agreement without the prior written consent of the Operator which consent will not be unreasonably withheld.

(b) Nothing in **clause 19.1(a)** prevents ARTC from entering into any sub-contracting or agency agreements or arrangements in relation to any of its functions.

19.2 By the Operator

(a) Subject to the following provisions of this **clause 19.2**, the Operator may not license, assign or novate this Agreement, its interest in the subject matter of this Agreement or any right under this Agreement (in this **clause 19.2**, "**assign**"):

(i) without the prior written consent of ARTC, which consent is not to be unreasonably withheld; and

(ii) unless on or before such assignment the assignee enters into a track access or other agreement with ARTC on such terms not inconsistent with this Agreement as ARTC may reasonably determine.

(b) The Operator may without obtaining consent under **clause 19.2(a)(i)** assign this Agreement, its interest in this Agreement or any right under this Agreement to a related body corporate if on or before such assignment the related body corporate enters into a track access or other agreement with ARTC on such terms not inconsistent with this Agreement as ARTC may reasonably determine.

(c) Subject to the Operator complying with the following provisions of this **clause 19.2(c)**, the Operator may, sell, trade, or sub-licence ("**Trade**") any Scheduled Train Paths (but not this entire Agreement) to a person who proposes to operate a Train using such Scheduled Train Paths ("**Proposed Operator**"):

(i) All of the terms of proposed Trade of Scheduled Train Paths will be recorded in a written agreement ("**Trade Agreement**"), and will include at least the following terms:

(A) the Proposed Operator will agree to be bound by all of the terms of this Agreement as if it were named as the Operator therein and will provide to ARTC evidence of its Accreditation under **clause 7** of this Agreement;

(B) the Proposed Operator will comply with all Instructions of ARTC as if the Proposed Operator was the Operator named in this Agreement;

(C) the Proposed Operator indemnifies the Operator in respect of all of the Operator's obligations and responsibilities under the Agreement;

(D) the Proposed Operator will take out insurance on commercial terms sufficient to cover such indemnity;

(E) the Operator appoints ARTC its attorney for the purposes of enforcing the Trade Agreement should ARTC in its absolute discretion determine that it wishes to take this action;

(F) all recoveries by the Operator under the Trade Agreement which are in connection with any matter, act or thing in respect of which ARTC has suffered loss is to be held on trust for ARTC and is to be applied first in satisfaction of ARTC's loss in the manner which ARTC in its absolute discretion determines;

(G) the Proposed Operator may not in turn Trade or otherwise assign any Scheduled Train Paths which have been Traded by the Operator to the Proposed Operator;

(H) the Proposed Operator acknowledges and agrees that ARTC is not liable in any respect whatsoever under the Trade Agreement or at common law or equity by reason of engaging in the process referred to in this **clause 19.2** or in vetting the Proposed Operator or in permitting Trading of Scheduled Train Paths, and the Proposed Operator releases and indemnifies ARTC in respect of such liability;

(I) any other terms which ARTC may in its absolute discretion require.

(ii) The Trade Agreement cannot commence operation without ARTC being provided a copy of the Trade Agreement and evidence of the Proposed Operator's accreditation as referred to in **clause 19.2(c)(i)(A)**.

(iii) The Operator agrees with ARTC as a term of this Agreement those matters referred to in **clauses 19.2(c)(i)(E)** and **(F)**.

(iv) The entering into a Trade Agreement by the Operator will not abrogate, impair, release or extinguish any debt, obligation or liability of the Operator to ARTC under this Agreement which may have accrued before entering into such Trade Agreement or which may accrue thereafter.

(v) The Operator indemnifies ARTC against all loss or damage suffered by ARTC caused by any acts and omissions of the Proposed Operator or of any third party arising out of or in connection with the Proposed Operator's use of the Network, whether or not caused by the Proposed Operator's negligence or default.

(vi) The Operator acknowledges and agrees that ARTC is not liable to the Operator and to third parties in any respect whatsoever under this Agreement or under the Trade Agreement or at common law or equity by reason of engaging in the process referred to in this **clause 19.2 (c)** or in vetting the Proposed Operator or in permitting Trading of Scheduled Train Paths, and the Operator releases and indemnifies ARTC in respect of such liability.

19.3 The effect of Assignment

Assignment of this Agreement will not abrogate, impair, release or extinguish any debt, obligation or liability of one party to the other which may have accrued under this Agreement prior to the date of such an assignment.

20. FORCE MAJEURE

20.1 Suspension of Obligations

The obligations of a party are suspended during the time and to the extent that a party is prevented from or delayed in complying with its obligations for reasons of Force Majeure.

20.2 Obligations of a Party

If a party is unable to perform its obligations due to Force Majeure it will:

(a) as soon as possible after being affected, give to the other party full particulars of the Force Majeure and the manner in which its performance is thereby prevented or delayed; and

(b) promptly and diligently take all reasonable and appropriate action to enable it to perform the obligations prevented or delayed by Force Majeure, except that the other party is not obliged to settle a strike, lockout or other industrial dispute.

20.3 "Force Majeure"

In this **clause 20** "**Force Majeure**" means a circumstance beyond the reasonable control of a party which occurs without the negligence of that party and includes inevitable accident, storm, flood, fire, earthquake, explosion, peril of navigation, hostility, war (declared or undeclared), insurrection, sabotage, terrorism and security matters, nuclear ionisation, executive or administrative order or act of either general or particular application of any government prohibition or restriction by domestic or foreign laws, regulations or policies (other than laws specifically for that purpose passed by the Commonwealth), quarantine or customs restrictions, strike, lockout or industrial dispute, break-down or damage to or confiscation of property but does not include breakdown or delay of any Trains or Rolling Stock operated by the Operator.

21. GOVERNING LAW

21.1 Law of the Agreement

The law of this Agreement is the law of South Australia.

21.2 Jurisdiction

The parties to this Agreement agree that the Courts of South Australia will have exclusive jurisdiction to hear and determine all disputes which may arise out of this Agreement.

21.3 Commencement

The parties agree that if either party commences or maintains any claim or proceeding relating to this Agreement in any place in the world this clause may be pleaded by the other party as an absolute bar to such claim or proceeding if they are commenced anywhere other than in the State of South Australia.

22. VARIATION

22.1 Variation to be in Writing

The variation or waiver of a provision of this Agreement, or a party's consent to a departure from a provision by another party, will be ineffective unless in writing, signed by the parties.

22.2 Change of Circumstances

The parties agree that if circumstances relevant to this Agreement materially change, the parties will meet in good faith and consider the future arrangements between the parties under this Agreement.

23. SEVERABILITY

If any provision of this Agreement is voidable, illegal, or unenforceable, or if the Agreement would, if a particular provision were not omitted be void, voidable, illegal or unenforceable, that provision will (without in any way affecting the validity, legality and enforceability of the remainder of the Agreement) be severed from the Agreement and the Agreement will be read and construed and take effect for all purposes as if that provision were not contained in this Agreement.

24. NOTICES

24.1 Notice

A notice or other communication required or permitted to be given by a party to another will be in writing and:

(a) delivered personally;

(b) sent to an address in Australia by security post or certified mail, postage prepaid; or

(c) sent by facsimile transmission, to the facsimile number described below.

24.2 Deemed Notice

A notice or other communication is deemed given if:

(a) personally delivered, upon delivery;

(b) mailed to an address in Australia, on actual delivery to the addressee, as evidenced by Australia Post documentation;

(c) sent by facsimile (and is other than a notice of termination or suspension of this entire Agreement), on the next Business Day after being sent if following transmission the sender receives a transmission confirmation report or if the sender's machine is not so equipped to issue a transmission confirmation report then upon the sender receiving acknowledgment of receipt.

24.3 Addresses for Service

Each party's address for service is:

(a) in the case of ARTC:

Name:	Australian Rail Track Corporation Limited
Address:	Ground Floor ARTC Building off Sir Donald Bradman Drive Passenger Rail Terminal Road MILE END SA 5031
Attention:	Chief Executive Officer
Facsimile:	(08) 8217 4578

(b) and in the case of the Operator:

Name:	3801 Limited
Address:	PO Box 333 ALEXANDRIA NSW 1435
Attention:	Chairman
Facsimile:	(02) 9698 4553

24.4 Change of Address

A party may change its address for service by giving written notice of that change to the other party.

24.5 Twenty-four hour contact details

Each party will provide to the other party, and maintain as current, the name and full details of one or more persons who, together, are available at any time on any day for emergency contact by the other party.

25. RISK AND COST OF PERFORMING OBLIGATIONS

Subject to this Agreement:

25.1 whenever the Operator is obliged or required hereunder to do or effect any act, matter or thing then the doing of such act, matter or thing will, unless this Agreement otherwise provides, be at the sole risk and expense of the Operator;

25.2 whenever ARTC is obliged or required hereunder to do or effect any act, matter or thing then the doing of such act, matter or thing will unless this Agreement otherwise provides, be at the sole risk and expense of ARTC.

26. NO PARTNERSHIP OR AGENCY

Nothing in this Agreement will constitute or be deemed to constitute a partnership between the parties or be deemed to constitute the Operator as agent of ARTC for any purpose whatever and the Operator has no authority or power to bind ARTC or to contract in its name or to create a liability against it in any way or for any purpose.

27. OTHER AGREEMENTS

This document comprises the whole Agreement between the parties relating to use of the Network, and to the extent to which it is inconsistent with any existing agreement between the parties, will prevail over those existing agreements.

28. COUNTERPARTS

This Agreement may be signed in any number of separate counterparts, which taken together are deemed to comprise the one instrument. The parties agree that copies provided to the other party by facsimile transmission evidence signing by the party sending such facsimile.

EXECUTED as an Agreement.

SIGNED for and on behalf of **AUSTRALIAN RAIL TRACK CORPORATION LIMITED** by authority of its Directors in accordance with section 127 of the Corporations Act 2001:))))

Signed	Signed
Full Name (Print)	Full Name (Print)
Director	Director/ Secretary

SIGNED for and on behalf of **3801 LIMITED** by authority of its Directors in accordance with section 127 of the Corporations Act 2001:))))

Signed	Signed
Full Name (Print)	Full Name (Print)
Director	Director/ Secretary

SCHEDULE 1

Network
(Clause 1.1)

South Australia, part Western Australia (Kalgoorlie to WA/SA border) and part New South Wales (SA/NSW border to Broken Hill)

1. **Tarcoola – Asia Pacific Interface Point**

   Mainline from the 504.5 kms mark to the 510.85 kms mark.

2. **Kalgoorlie to Crystal Brook**

   Mainline from the eastern end of Kalgoorlie at 1780.600 kms to Crystal Brook including all tracks, turnouts and signals forming the Crystal Brook and Coonamia triangle.

3. **Port Augusta to Whyalla**

   Mainline from the point of connection with the Kalgoorlie to Port Augusta line to the main line facing points located at 166.590 kms at the northern entrance to the Whyalla yard.

4. **Crystal Brook to Broken Hill**

   Mainline from the eastern end of the Crystal Brook triangle to the western end of Broken Hill at 391.990 kms.

5. **Crystal Brook to Dry Creek**

   Mainline from the southern end of the Crystal Brook triangle to the southern apex of the Dry Creek triangle.

6. **Adelaide Metropolitan Area**

   6.1 Mainline from Dry Creek including all tracks, points and signals forming the Dry Creek triangle to Port Adelaide Junction (signal 1155).

   6.2 Mainline from Glanville (signal 1456) to Pelican Point/Outer Harbour.

   6.3 Mainline from Gillman Junction to a point approximately 100 metres before the Eastern Parade level crossing at Port Adelaide flat.

7. **Dry Creek to the South Australian/Victorian border**

   Mainline from the southern apex of Dry Creek Triangle to the Victorian border at 313.209 kms.

8. **Crossing Loops**

   All crossing loops within each corridor described above**.**

9. **Authority Points**

   All other rail track connecting with those running lines within each corridor described above between the mainline and the last signal, derail or other point of authority on that rail track protecting access to the running line.

Victorian Lease

Part 1 – Mainline South Australia to Melbourne*

Location	Boundary
SA/VIC Border	Marked distance 463.610 km
Mainline including crossing loops, dual gauge, turnouts, and diamond	Last long timber at turnouts to sidings and diamond crossings
Dimboola	Last long timber to Yaapeet branch line
Murtoa	Last long timber to Hopetoun branch line
Maroona	Last long timber to Portland branch line
Gheringhap	Last long timber at Divergence of dual gauge at Butcher Road 81.600 km
North Geelong "C"	Last long timber at divergence of dual gauge
Newport	Last long timber at divergence of dual gauge
Brooklyn	Last long timber at divergence of dual gauge
Sims Street Junction	Ref "Part 3 – Melbourne Boundaries"

Part 2 – Mainline New South Wales to Melbourne*

Location	Boundary
Albury**	Marked distance 304.163 km
Mainline including crossing loops, cripple roads, dual gauge, turnouts, and diamond	Last long timber at turnouts to sidings (other than cripple roads) and diamond crossings
Somerton	Last long timber in turnout to No. 3
McIntyre	Last long timber in turnout No. 2
Sims Street Junction	Ref "Part 3 – Melbourne Boundaries"

*****To the extent that such railway lines are owned by ARTC or leased by Victorian Rail Track to ARTC.

** To the extent that such railway lines are leased by RIC and SRA to ARTC.

Part 3 – Melbourne* Boundaries

South Dynon Junction to Spencer Street	
Location	**Boundary**
Spencer Street signal	SST184
Reversing Loop Junction	Last long timber in the mixed gauge
Contrans Siding	Dwarf Signal 204
South Dynon Terminal (east end)	Dwarf Signals 214 & 210
South Dynon Terminal (west end)	Dwarf Signals 126, 228, 230 & 232

Sims Street Junction to North Dynon	
Location	**Boundary**
North Dynon Intermodal Terminal	Dwarf Signals 92 & 94
North Dynon Agents Area	Dwarf Signal 90

South Dynon Junction to Appleton Dock	
Location	**Boundary**
Operations Terminal (west end)	Dwarf Signal 142
Operations Terminal (east end)	Dwarf Signal 236 Note: track on crossover between MOT No. 3 track and MOT no. 2 track, beyond the last long timber and turnout No. 235, does not form part of the ARTC Network. Dwarf Signal 238, although beyond the ARTC boundary, forms part of the ARTC Network.
Appleton Dock	Footscray Road Level Crossing

Other Areas	
Location	**Boundary**
Track to NRC Wagon maintenance Centre	Dwarf Signal 154
Locomotive Provisioning Centre (west end)	Dwarf Signal 130
Locomotive Provisioning Centre (east end)	Dwarf Signal 128 Note: track between the last long timber turnout No. 127D and the last long timber on turnout No. 123U, does not form part of the ARTC Network.
Sims Street Triangle	Sims Street Junction Weighbridge Junction South Dynon Junction

*****To the extent that such railway lines are owned by ARTC or leased by Victorian Rail Track to ARTC.

New South Wales Lease

Mainline, crossing loops, dual gauge and turnouts as summarised below:

1. 648.000 km Albury[1] to 57.965 km Macarthur[2]

2. Newcastle (Islington Junction)[2] 163.920 km on the Down Relief/Down Islington Loop/Up Islington Loop (Woodville Junction to Islington Junction) and 164.045 km on the Up and Down Mains (Islington to Hamilton) to 875.980 km Queensland Border (Border Loop Tunnel)[3*]

3. 428.300 km northern apex and 428.900 km southern apex of the Cootamundra West Triangle to 1126.640 km Broken Hill[4]

4. 144.500 km northern end of north fork and 145.000 km southern end of south fork at Moss Vale Junction to 91.080 km Unanderra[2]

*Excludes the following Newcastle Coal Lines :

ARTC Sector	
915	Islington Junction – Scholey Street Junction
917	Scholey Street Junction – Waratah (via Coal)
925	Waratah – Hanbury Junction (via Coal)
926	Hanbury Junction – Sandgate (via Coal)
927	Hanbury Junction – Kooragang East Junction
931	Kooragang East Junction – Sandgate
936	Sandgate – Thornton (via Coal)
937	Thornton – Maitland (via Coal)
944	Telarah – Farley

[1] To the extent where the railway line joins that part of the Network leased by Victorian Rail Track to ARTC.

[2] To the extent where the railway line joins the rail network owned by RailCorp.

[3] To the extent where the railway line joins the rail network owned by Queensland Rail.

[4] To the extent where the railway line joins the rail network owned by ARTC.

SCHEDULE 2
Scheduled Train Paths

(Clause 1.1)
Refer to the following _____ (__) pages, as amended from time to time.

SCHEDULE TRAIN PATH ENTITLEMENTS

OPERATOR

SCHEDULE TRAIN PATH ENTITLEMENTS

			ORIGIN		DESTINATION		ENTRY	EXIT				
Flagfall	**Train No**	**Days**	**Location**	**Day**	**Depart Time**	**Location**	**Day**	**Arrival Time**	**Location**	**Event**	**Day**	**Path term**

SCHEDULE 3
Charges
(Clause 1.1)

CHARGES

The Charges are subject to variation in accordance with clause 4 of this Agreement.

SCHEDULE 4
Network Management Principles
(Clause 1.1)

The schedule applies in the circumstances where Train Paths are interrupted due to matters outside ARTC's control and there is a need to resolve competing interests of users of the Network.

Train Decision Factors

The following definitions apply in this Schedule 4 except where expressly limited.

"Commuter Peak Services" means RailCorp's commuter rail passenger services arriving at Sydney Central Station or Newcastle Station between 0600 and 0900 hours and departing Sydney Central Station or Newcastle Station between 1600 and 1800 hours and continuing until they reach their destination point.

"Express Freight Services" means those freight services capable of maintaining sectional running times that are, or are determined by the appropriate Train Controller, to operate at faster sectional times than local Frequent-Stopping Services.

"Frequent-Stopping Services" means those rail passenger services that stop at most or all stations along their Train Path.

"Healthy Train" means a Train that, having regard to the daily train plan applicable on the day:

(a) presents to the Network on time, is configured to operate to its schedule and operates in a way that it remains able to maintain its schedule; or

(b) is running late only due to causes within the Network, but only where the root cause is outside the Operator's control; or

(c) is running on time, regardless of previous delays.

"Limited-Stop Services" means those rail passenger services that stop at a few selected stations along their Train Path.

"**Long-distance Passenger Services"** means those rail passenger services operating to or from points outside the metropolitan rail area, excluding RailCorp's CityRail services.

"Non-Revenue Positioning Movements" means movements of Trains required for reasons other than revenue services.

"Special Event" means a major community, cultural, sporting or similar event within the Sydney metropolitan rail area, which is identified as such by a relevant NSW agency, and which may require:

(a) a special timetable for the operation of RailCorp rail passenger services before, during and after the event; and

(b) significant operational priority for RailCorp rail passenger services; and

(c) consequential adjustments to other rail operators' services;

"Train" means a single unit of rolling stock or 2 or more units of rolling stock including a locomotive or other self propelled unit coupled together to operate on the Track as a single unit.

"Train Control" means the control and regulation of all rail operations (including Train Movements, movements of rolling stock and track maintenance vehicles) to ensure the safe, efficient and proper operation of the Network.

"Train Movement" means a particular trip by a Train on a Train Path.

"Train Path" means the series of network segments over a particular time interval through which a Train can travel and may include stopping points and intervals and fuelling stations and other set down or changeover points.

TRAIN DECISION FACTORS:

1. **Where Trains are on-time**, they will be managed as specified in the daily train plan.

2. **Where one or more Trains are late or unhealthy**, they will be managed as specified in the matrices below subject to a rail operator's preferences for its own services.

The 2 tables are used in conjunction with each other. Table 1 will enable a person undertaking Train Control (**"Train Controller"**) to define the relative priority of two conflicting Trains. Table 2 will specify the type of decision available to a Train Controller in delivering Train Control directions to resolve the potential conflict.

Table 1 – Train Priority Matrix

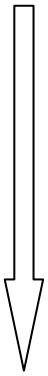
Decreasing order of priority	**Type of train service in ARTC Network**
From Highest	Long-distance Passenger Services
	Commuter Peak Services and rail passenger services likely to affect Commuter Peak Services or Special Event services
	Limited -Stop Services that are not Commuter Peak Services or Special Event Services
	Freight services likely to affect Commuter Peak Services or Special Event services
	Express Freight Services
	Frequent-Stopping Services that are not Commuter Peak Services
	Non-express Freight Services
To Lowest	Non-Revenue Positioning Movements

Table 2 – Decision Matrix

Trains of Equal Health	Both Healthy One on Time & One Late	Both Late
Equal Priority Trains	Rule 1 + 2	Rule 3
Unequal Priority Trains		Rule 6 + 3
Higher Priority Train is On Time + Lower Priority is Late	Rule 5 + 2	
Higher Priority Train is Late + Lower Priority Train is On Time	Rule 4 +2	

Trains of Unequal Health	Rule 7 + 2

Rule 1:

(a) A Healthy Train should be managed such that it will exit on time.

(b) If a Healthy Train is running late, it should be given equal preference to other Healthy Trains and advanced wherever possible to regain lost time. Any delay to other Healthy Trains as a result of such advancement must be kept to a minimum as defined in Rule 2.

Rule 2: The following delay limits apply to the full journey of a Healthy Train being held back:

(a) the delay to the individual rail passenger service held back does not exceed 5 minutes;

(b) there is a plan in place to recover lost time so that the downstream effect on the service held back and on individual subsequent rail passenger services also does not exceed 5 minutes;

(c) the delay to a freight service held back does not exceed 15 minutes; or

(d) there is a plan in place to recover lost time so that the downstream effect on the healthy freight service held back and on individual subsequent healthy freight services also does not exceed 15 minutes. Any plan for the recovery of time by freight services must be capable of being achieved prior to their entry into the Sydney metropolitan rail area.

Rule 3: Give preference to the Train whose Train performance indicates it will lose least or no more time and even make up time and hold the gain; and consider downstream effect to minimise overall delay.

Rule 4: A lower priority Train gets preference. A higher priority Train can be given preference subject to the delay to the lower priority Train being kept to a minimum as defined in Rule 2.

Rule 5: A higher priority Train should be given preference over a lower priority Train. A lower priority Train may be given preference over a higher priority Train provided the delay to that Train is kept to a minimum as defined in Rule 2.

Rule 6: A high priority Train has preference, subject to Rule 3.

Rule 7: A Healthy Train should be given preference over an unhealthy Train. An unhealthy Train may be given preference over a Healthy Train provided the delay to that Train is kept to a minimum as defined in Rule 2.

SCHEDULE 5
Key Performance Indicators
(Clauses 1.1 & 2.10)

KEY PERFORMANCE INDICATORS
Reliability

Measured by:

Indicator	**Measure**	**Level of Detail**
Exit Performance of Healthy Trains*	% on time exit (within agreed tolerance) from ARTC network of healthy services	By operator By service (MP5, AP4 etc)
Non-deterioration of Unhealthy Trains*	% non-deterioration (within agreed tolerance) of unhealthy services while on ARTC network	
Train Health*	% of total services which are operated in a healthy manner	

* "Healthy Train" means a Train that, having regard to the daily train plan applicable on the day:

(a) presents to the Network within agreed tolerance, is configured to operate to its schedule and operates in a way that it remains able to maintain its schedule; or
(b) is running late only due to causes within the Network, but only where the root cause is outside the rail operator's control; or
(c) is running on time within agreed tolerance, regardless of previous delays.

Measurement should exclude performance affected by a force majeure event.
Measurement would be on a monthly basis.

Speed Restriction Impact - Theoretical Benchmark

Measure the movement over time of the impact of prevailing speed restrictions on train running (measured in minutes):

- Model/estimate the extent of the impact of temporary speed restrictions in existence as at an agreed point in time.
  - Impact estimates for a typical train over current track under typical environmental conditions
- Periodically model/estimate the impact of prevailing temporary speed restrictions on typical train running.
- Measure the variation in the impact of prevailing temporary restrictions over time compared to initial measurements.
- Typical train and track should be specific to operator, flagfall type and route.
- Measurement and modelling costs should be borne jointly.
- Modelling/estimation would be on a monthly or quarterly basis depending on cost.

Availability

Measure:

- % of agreed paths varied for the purpose of track owner possession
  - Exclude force majeure events
  - Reporting would be at total operator level and on a monthly basis.

Safety

Measure:

- No. of reportable occurrences specific to an operator and categorised as per current regulatory requirement.
  - Major/Minor
  - By type of incident (rollingstock defect, safeworking breach etc)
- Reporting should focus at the operator and relevant corridor level, and be carried out on a monthly basis.
- Reporting will be carried out by network manager (to operator) and by operator (to network manager).

Train/Rollingstock Quality

Identify those aspects of train and rollingstock "quality" which can be reasonably and should be measured (eg. wheel condition, axle loading, wagon ride quality, train length/power).
Identification of aspects suitable for measurement and reporting may evolve over time.

Measure:

- Incidence of failure by aspect of train quality.
  - Measurement would be made by various available detection devices (eg wheel impact detector, bearing detector etc)
  - Reporting would be at a total operator level and on a monthly basis.
  - Measurement should be jointly funded.

Track Quality

Measure:

- Track Quality Index (summation of weighted measures (standard deviations x 3) related to track condition parameters) for a corridor /segment of track.
  - Calculated over 100m sections, using 0.5m raw data from measuring car equipment.
  - Relevant TQI component measures include:
    - Vertical alignment (20m inertial top (average of left and right rails))
    - Horizontal alignment (versine over a 10m chord (average over left and right rail))
    - Twist (relative height of two rails measured over 2.0m)
    - Gauge variation (distance between tracks)
- Other track surface condition measures:
  - Impact Loading (weld dips)
  - Roughness (corrugations)
- Standards of measurement and definitions would be consistent with those currently employed and available to ARTC (AK car)
- Reporting would be on the basis of corridors/segments relevant to the operator and carried out on a quarterly basis (TQI) and up to annually (other measures).

SCHEDULE 6
Code of Practice
(Clauses 1.1 & 5.5)

WA, SA, part VIC and part NSW (Kalgoorlie to Dimboola and Crystal Brook to Broken Hill)

Network Rules

1. Volume 1 General Requirements and Interface Management - ARTC's Code of Practice for the Defined Interstate Rail Network;

2. Volume 2 Glossary - ARTC's Code of Practice for the Defined Interstate Rail Network;

3. Volume 3 Parts 1 and 2 Operations and Safeworking - ARTC's Code of Practice for the Defined Interstate Rail Network;

4. ARTC Addendum to the Code of Practice for the Defined Interstate Rail Network;

Interface Requirements

5. Network Interface Co-ordination Plan [TA02]

VIC (Dimboola to Albury)

Network Rules

6. ARTC Code of Practice for Victorian Mainline Operations [TA20]

Interface Requirements

7. Network Interface Co-ordination Plan [TA02]

NSW (Excluding Cockburn to Broken Hill)

Network Rules

8. ARTC Network Rules;

9. ARTC Network Procedures;

Interface Requirements

10. ARTC Train Operating Conditions Manual

Copies of all of these documents are available on ARTC's website www.artc.com.au

AUSTRALIAN RAIL TRACK CORPORATION LIMITED
ABN 75 081 455 754

and

3801 LIMITED
ABN 64 002 951 671

TRACK ACCESS AGREEMENT

for Indicative Services

CONTENTS

1.	**DEFINITIONS AND INTERPRETATION**	**1**
2.	**TRACK ACCESS RIGHTS**	**6**
3.	**TERM OF AGREEMENT**	**9**
4.	**CHARGES AND PAYMENT**	**9**
5.	**CONTROL AND MANAGEMENT OF ACCESS TO THE NETWORK**	**14**
6.	**REPAIRS AND MAINTENANCE OF THE NETWORK**	**18**
7.	**ACCREDITATION**	**18**
8.	**COMPLIANCE**	**19**
9.	**VARIATION OR CANCELLATION OF TRAIN PATHS**	**20**
10.	**INSPECTION AND AUDIT BY NETWORK ACCESS PROVIDER**	**24**
11.	**EMERGENCIES AND INCIDENTS**	**25**
12.	**SAFETY STANDARDS**	**27**
13.	**ENVIRONMENTAL REQUIREMENTS; DANGEROUS GOODS**	**28**
14.	**TERMINATION**	**29**
15.	**INDEMNITIES/LOSS OR DAMAGE ARISING FROM AN INCIDENT**	**31**
16.	**INSURANCE**	**34**
17.	**RESOLUTION OF DISPUTES**	**36**
18.	**CONFIDENTIALITY**	**37**
19.	**ASSIGNMENT OR NOVATION**	**37**
20.	**FORCE MAJEURE**	**38**
21.	**GOVERNING LAW**	**40**
22.	**VARIATION**	**40**
23.	**SEVERABILITY**	**40**
24.	**NOTICES**	**41**
25.	**RISK AND COST OF PERFORMING OBLIGATIONS**	**42**
26.	**NO PARTNERSHIP OR AGENCY**	**42**
27.	**OTHER AGREEMENTS**	**42**
28.	**COUNTERPARTS**	**42**

Schedule 1 (Network) 44
Schedule 2 (Scheduled Train Paths) 48
Schedule 3 (Charges) 49
Schedule 4 (Network Management Principles) 50
Schedule 5 (Key Performance Indicators) 53
Schedule 6 (Code of Practice) 55

AUSTRALIAN RAIL TRACK CORPORATION LIMITED
ABN 75 081 455 754

and

3801 LTD
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TRACK ACCESS AGREEMENT

CONTENTS

1.	DEFINITIONS AND INTERPRETATION	1
2.	TRACK ACCESS RIGHTS	7
3.	TERM OF AGREEMENT	9
4.	CHARGES AND PAYMENT	9
5.	CONTROL AND MANAGEMENT OF ACCESS TO THE NETWORK	15
6.	REPAIRS AND MAINTENANCE OF THE NETWORK	18
7.	ACCREDITATION	18
8.	COMPLIANCE	19
9.	VARIATION OR CANCELLATION OF TRAIN PATHS	20
10.	INSPECTION AND AUDIT BY NETWORK ACCESS PROVIDER	24
11.	EMERGENCIES AND INCIDENTS	25
12.	SAFETY STANDARDS	26
13.	ENVIRONMENTAL REQUIREMENTS; DANGEROUS GOODS	27
14.	TERMINATION	29
15.	INDEMNITIES/LOSS OR DAMAGE ARISING FROM AN INCIDENT	30
16.	INSURANCE	34
17.	RESOLUTION OF DISPUTES	35
18.	CONFIDENTIALITY	36
19.	ASSIGNMENT OR NOVATION	36
20.	FORCE MAJEURE	37
21.	GOVERNING LAW	39
22.	VARIATION	40
23.	SEVERABILITY	40
24.	NOTICES	40
25.	RISK AND COST OF PERFORMING OBLIGATIONS	41
26.	NO PARTNERSHIP OR AGENCY	41
27.	OTHER AGREEMENTS	41
28.	COUNTERPARTS	41

Schedule 1 (Network) 44
Schedule 2 (Scheduled Train Paths) 48
Schedule 3 (Charges) 49
Schedule 4 (Network Management Principles) 50
Schedule 5 (Key Performance Indicators) 53
Schedule 6 (Code of Practice) 55
Schedule 7 (NSW Rail Network: Supplementary Terms) 56

TRACK ACCESS AGREEMENT

AGREEMENT dated 20 .

BETWEEN AUSTRALIAN RAIL TRACK CORPORATION LIMITED (ABN 75 081 455 754) of Ground Floor, ARTC Building, off Sir Donald Bradman Drive, Passenger Rail Terminal Road, Mile End, South Australia ("**ARTC**")

AND _____

3801 LTD (ABN 64 002 951 671) of Australian Technology Park Locomotive Workshop, Suite 2, 2 Locomotive Street, Eveleigh, New South Wales ("**Operator**")

RECITALS

A. ARTC is the manager of the Network.

B. ARTC agrees to grant the Operator access to the Network upon the terms and conditions set out in this Agreement.

AGREEMENT

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement unless the context otherwise requires:

"**ACCC**" means the Australian Competition and Consumer Commission;

"**Access Undertaking**" means the access undertaking (if any) together with any amendments thereto from time to time, dealing with the subject matter of this Agreement given or submitted by ARTC and approved by the ACCC under Division 6 of Part IIIA of the *Trade Practices Act 1974 (Commonwealth)*;

"**Accreditation**" means to be an Accredited Operator or an Accredited Owner (as the case may be) as defined under the Rail Safety Acts and "**Accredited**" bears a corresponding meaning;

"**Accredited Operator**" means an operator (including the Operator) who is Accredited or taken to be Accredited under the Rail Safety Acts of each State or Territory in which the Operator runs its Services on the Network (being Accreditation in whatever named capacity may be applicable under the Rail Safety Acts);

"**Accredited Owner**" means an owner (including ARTC) who is Accredited or taken to be Accredited under the Rail Safety Acts of each State or Territory in which the Operator runs its Services on the Network (being Accreditation in whatever named capacity may be applicable under the Rail Safety Acts);

"**ARTC's Environmental Licence**" means ARTC's:

(a) environment protection licence under the Protection of the Environment Operations Act 1997 (NSW) in respect of the Network that is situated in New South Wales; and

(b) environment protection authority licence under the Environment Protection Act 1993 (SA) in respect of the Network that is situated in South Australia;

or such other replacement licences that may be issued from time to time;

"**Associated Facilities**" means all associated track structures, over or under track structures, supports (including supports for equipment or items associated with the use of the Network), tunnels, bridges, Train Control systems, signalling systems, communication systems and associated plant, machinery and

equipment from time to time but only to the extent that such assets are related to or connected with the Network but does not include any sidings or yards;

"**Business Day**" means a day in South Australia that is not a Saturday, Sunday or public holiday and on which banks are generally open for business;

"**Charges**" means the charges set out in **Schedule 3** and includes, without limitation, the Indicative Access Charges, except where expressly excluded;

"**Claim**" means all claims, legal actions and demands (including the costs and expenses of defending or settling any action, proceeding, claim or demand);

"**Code of Practice**" means the documents specified in Schedule 6, as amended from time to time by ARTC;

"**Commencement Date**" means 2 December 2008;

"**Communications or TMS Provider**" means a third party responsible for:

(a) building and operating telecommunications infrastructure on and adjacent to ARTC rail corridors and providing a communications platform for ARTC's train management system; and/or

(b) developing and providing a train management system;

"**Consequential Loss**" includes economic loss, consequential loss, loss of profits, loss of business opportunity, payment of liquidated sums, penalties or damages under any agreement (other than this Agreement) but does not include property damage or losses arising from third party claims in respect of property damage, personal injury, nervous shock or death;

"**Dangerous Goods Code**" means the Australian Code for the Transport of Dangerous Goods by Road and Rail prepared by the National Road Transport Commission (or successor body) from time to time;

"**Director of Public Transport**" means the Director of Public Transport under the Transport Act 1983 (Vic), his successors, permitted substitutes and permitted assigns;

"**Environmental Condition**" means any Environmental Damage or any event, circumstance, condition, operation or activity which it is reasonably foreseeable is likely to result in Environmental Damage and which, in ARTC's reasonable opinion, could result in ARTC or any other person incurring any material liability or being subjected to a direction of any competent authority;

"**Environmental Damage**" means any material injury or damage to persons, living organisms or property or any material pollution or impairment of the environment resulting from the discharge, emission, escape or migration of any substance, energy, noise or vibration;

"**Excess Network Occupancy Charge**" has the meaning described in Clause 4.5(a)(iii) of the Access Undertaking;

"**Expiry Date**" means 1 December 2013;

"**Governmental Agency**" means the Commonwealth or relevant State or Territory Government or any Commonwealth or State or Territory governmental, semi-governmental, judicial, municipal, statutory or public entity or authority but excludes such entity or authority in its capacity as an Operator;

"**Incident**" means a breakdown, accident or emergency on the Network which involves the Operator and which causes or may reasonably be expected to pose a danger of causing any one or more of the following:

(a) material damage to or interference with the Network or any Associated Facilities managed by ARTC;

(b) material damage to property:

(c) material personal injury to any person:

(d) an Environmental Condition:

(e) a Category A incident or a Category B incident as defined in the Standards:

(f) an incident which requires notification under the relevant Rail Safety Act to the Administering Authority (as defined in such Act); or

(g) an incident requiring notification under the Dangerous Goods Code:

"**Indicative Access Charges**" means those access charges for Indicative Services specified in Schedule 3:

"**Indicative Services**" means Services with the following characteristics:

(i) maximum axle load of 21 tonnes:

(ii) maximum speed of 110 km h: and

(iii) length not exceeding:

(A) 1800 metres west of Adelaide and Parkes:

(B) 1500 metres east of Adelaide and Parkes (until capital expenditure is commissioned on the segments Melbourne – Macarthur and Parkes - Cootamundra:

(C) 1800 metres on the segment Melbourne – Macarthur and Parkes – Cootamundra (following commissioning of capital expenditure on the segments Melbourne – Macarthur and Parkes - Cootamundra):

"**Instructions**" means all instructions and directions, issued by ARTC from time to time:

(a) which ensure, facilitate or encourage the proper, efficient, safe and lawful:

(i) use of and access to the Network by all Network users; or

(ii) management of the Network by ARTC:

(b) which ARTC honestly believes upon the exercise of reasonable care are consistent with the Network Management Principles: and

(c) which are given with a view to reasonably minimising the disruption to the Operator taking into account the valid objectives of ARTC (as set out in paragraphs (a) and (b) of this definition of "Instructions") in issuing the instruction or direction,

but does not include instructions and directions:

(d) which derogate from the Train Paths: or

(e) which prevent the Operator from running a Service of the nature of the Services contemplated at the Commencement Date or as agreed between the parties from time to time: or

(f) which are given for the purpose only of achieving ARTC internal commercial objectives unrelated to the valid objectives of ARTC (as set out in paragraphs (a) and (b) of this definition of "Instructions").

unless the instructions or directions:

(g) are Train Control Directions properly given; or

(h) relate to safety; or

(i) are given to implement or support the Network Management Principles; or

(j) are necessary to prevent or to minimise the effect of a material breach of this Agreement; or

(k) are otherwise authorised by this Agreement.

and a reference to "ARTC" in this definition of "Instructions" includes also a reference to ARTC's agents;

"**Invoice**" means the invoice referred to in **clause 4.4**;

"**Key Performance Indicators**" means the Key Performance Indicators referred to in **clause 2.10** and further described in **Schedule 5**;

"**Network**" means the network of railway lines as delineated or defined in **Schedule 1**;

"**Network Management Principles**" means the principles regulating Train movements on the Network, as set out in **Schedule 4**;

"**Non-Indicative Access Charges**" means those access charges for Services specified in Schedule 3 that are not Indicative Services;

"**Operator**" means the Operator described on page 1 of this Agreement and where applicable includes any Train it operates;

"**Passenger Priority**" means reasonable priority and certainty of access for rail passenger services delivered in accordance with **clause 2.3**;

"**Rail Safety Acts**" means the Acts passed by the Commonwealth and the States and any successor enactments, which relate to rail safety, including without limitation the:

(a) Rail Safety Act 1998 (WA);

(b) Rail Safety Act 1996 (SA);

(c) Rail Safety Act 2006 (VIC); and

(d) Rail Safety Act 2002 (NSW);

"**Remediation**" means the investigation, clean-up, removal, abatement, disposal, dispersal, reduction, destruction, mitigation, control, neutralisation, containment, encapsulation and other treatment of any contamination and any hazard arising from contamination, and includes without limitation the monitoring and remediation of contamination and hazards;

"**RIC**" means the Rail Infrastructure Corporation ABN 21 298 300 693 of Level 3, 237 Wharf Road Newcastle NSW 2300 as renamed, reconstituted, dissolved, replaced or restructured from time to time;

"**Rolling Stock**" means a locomotive, carriage, wagon or other vehicle for use on a railway;

"**Safeworking Rules**" means all policies and notices issued by ARTC for the purpose of ensuring the safe use of the Network;

"**Scheduled Train Paths**" means the entitlements of the Operator to use the Network between the times and between the locations set out in **Schedule 2** as amended or varied permanently under **clause 9** or under **clause 22**;

"**Service**" means a Train run by the Operator using the Network by which the Operator provides railway freight or passenger services;

"**SRA**" means the State Rail Authority of New South Wales ABN 73 997 983 198 of Level 6/18 Lee Street, Chippendale, NSW as renamed, reconstituted, dissolved, replaced or restructured from time to time;

"**Standards**" means the Australian Standard AS4292.1 - Railway Safety Management (General and Interstate Requirements), and any other principles and standards prepared, approved and published by the Standards Association of Australia in relation to rail safety;

"**Term**" means the term of this Agreement as determined in accordance with **clause 3**;

"**Third Party Works**" means any works, Remediation or the provision or maintenance of services undertaken or required to be undertaken on, over or under the Network or any Associated Facilities (including design, construction, testing and commissioning) by or on behalf of:

(a) a Governmental Agency carrying out its statutory functions; or

(b) an owner of land adjoining the Network wanting to install services across the Network to that adjoining land; or

(c) a corporation with statutory powers to enter land or acquire an interest in or right over land (other than a Governmental Agency) wanting to install services across the Network to that adjoining land;

but does not include works by or on behalf of ARTC or its contractors;

"**Train**" means one or more units of Rolling Stock coupled together, at least one of which is a locomotive or other self-propelled unit;

"**Train Control**" means the control of Trains by ARTC or its agents on the Network;

"**Train Control Centre**" means the facility or facilities maintained and operated by ARTC or its agents for the purposes of Train Control;

"**Train Control Directions**" means all Instructions issued by ARTC or its agents relating to management, continuity and safe operation of Train movements on the Network, including Instructions concerning the actual movement, deployment or placement of Trains, but only to the extent such Instructions:

(a) are honestly believed by ARTC to be consistent with the Network Management Principles, and

(b) are made with a view to reasonably minimising the disruption to the Operator taking into account the valid objectives of ARTC in issuing the Instruction,

which will be complied with by the Operator immediately;

"**Train Manifest**" means a notice (in a form specified by ARTC) prepared by the Operator in relation to a Service and containing the following details in relation to that Service:

(a) the number of vehicles in the Train;

(b) the gross mass of the Train;

(c) the length of the Train;

(d) the motive power employed by the Train; and

(e) for each vehicle in the Train in the order in which they will be placed, leading end first, the following information:

(i) vehicle number:

(ii) vehicle classification:

(iii) vehicle type: and

(iv) gross weight of vehicle;

"**Train Paths**" means:

(a) the Scheduled Train Paths:

(b) the Train paths provided to the Operator pursuant to **clause 2.5**: and

(c) all other ad hoc entitlements (including Train paths arising by reason of compliance with Instructions) to access to the Network which are provided by ARTC to the Operator on the terms set out in this Agreement and otherwise on such terms as ARTC may stipulate in accordance with this Agreement or as otherwise agreed between the parties.

1.2 Interpretation

In this Agreement unless the context otherwise requires:

(a) singular words will also have their plural meaning and vice versa;

(b) a reference to one gender includes all genders:

(c) a reference to a person includes companies and associations:

(d) a reference to a party includes a person to whom any right or obligation under this Agreement is transferred;

(e) a reference to the consent of a party means the prior written consent of that party;

(f) headings are for convenient reference only and do not affect the interpretation of this Agreement;

(g) a reference to a clause or a Schedule is a reference to a clause or Schedule of this Agreement:

(h) where any party comprises more than one person then all of those persons together as well as each of them individually will comply with that party's obligations under this Agreement:

(i) notices that are required to be given in writing by the Operator to ARTC, may, if so agreed by ARTC, be provided in electronic form:

(j) a reference to any Act includes all statutes regulations codes by-laws or ordinances and any notice demand order direction requirement or obligation under that Act (and vice versa) and unless otherwise provided in that Act includes all consolidations amendments re-enactments or replacements from time to time of that Act and a reference to "law" includes a reference to any Act and the common law: and

(k) a reference to $ and dollars is to Australian currency.

1.3 Payment Due on Business Day

If any amount becomes payable under this document on a day which is not a Business Day, that amount is payable on the next Business Day.

2. TRACK ACCESS RIGHTS

2.1 Grant to Operator of Train Paths

(a) ARTC grants to the Operator during the Term the use and availability of the Train Paths and the use of the Network for this purpose upon the terms and conditions set out in this Agreement, subject to ARTC's Passenger Priority obligations and **clause 2.3** of this Agreement.

(b) Notwithstanding **clause 2.1(a)**, the availability of a Scheduled Train Path is subject to:

(i) presentation by the Operator to Train Control of a Train which is ready in all things for departure within 15 minutes of the scheduled time for departure of that Train according to the relevant Scheduled Train Path;

(ii) emergencies or genuine and material safety considerations;

(iii) matters outside of the reasonable control of ARTC (except for matters which arise due to ARTC's negligence or breach of its obligations under this Agreement);

(iv) material failure of the Operator's Service;

(v) the Network Management Principles;

(vi) without limiting any other clause of this Agreement, any lawful order, direction or requirement given to ARTC by a Governmental Agency, including without limitation, the Director of Public Transport under section 10 of the Transport Act 1983 (Vic); and

(vii) Third Party Works.

(c) The Operator agrees at all times during the Term not to access or attempt to access the Network in any way other than is authorised by this Agreement.

2.2 Use of a Train Path is not Exclusive

Subject to **clause 2.1(a)**, the Operator's rights to the Train Paths do not give the Operator an exclusive right to any Train Path. Notwithstanding the foregoing, no two Trains (whether the Operator's Trains or the Trains of another user of the Network) will be allotted scheduled arrival or departure times such that there are conflicts in arrival or departure times having regard to the Safeworking Rules.

2.3 Passenger Priority in New South Wales

(a) The Operator acknowledges, and will not do anything to interfere with or breach, ARTC's obligations to at all times, in relation to the Network situated in New South Wales to:

(i) maintain Passenger Priority in carrying out rail operations by undertaking each of the following:

(A) service planning for timetabling to ensure that passenger services receive priority in train path planning;

(B) train programming for daily operations to achieve passenger service priority in daily programming; and

(C) Train Control in accordance with the Network Management Principles;

(ii) preserve existing or future passenger train paths; and

(iii) apply Passenger Priority in undertaking any maintenance to the Network situated in New South Wales.

2.4 Disclaimer

(a) Notwithstanding any other clause of this Agreement, ARTC is not responsible for any loss, additional cost or other damage suffered by the Operator in the event that a Train Path or any part of it is not available or that an Operator's Train will not be delivered on time to its ultimate or intermediate destination if such unavailability or failure to deliver occurred by reason of any of the matters described in **clause 2.1(b)** and without material breach of this Agreement by ARTC.

(b) Nothing in this **clause 2.4** derogates from ARTC's obligations under the Key Performance Indicators.

2.5 Early and Late Services

(a) Notwithstanding **clause 2.1(b)**, ARTC will use its best endeavours to accommodate a Service which is running early or late, is presented at the point of entry to the Network late or is presented at the point of entry to the Network more than 15 minutes early by providing a Train path for that Service at ARTC's first available opportunity (subject to the Network Management Principles).

(b) Both parties will, subject to this Agreement, use their best endeavours to:

(i) ensure that such Services which are running or presented late recover the lost time; and

(ii) ensure that such Services which are presented more than 15 minutes early depart the Network no later than the scheduled time.

(c) Nothing in this **clause 2.5** requires ARTC to provide a Train path where to do so would be inconsistent with the Network Management Principles or ARTC's obligations (consistent with the Network Management Principles) to a user of the Network other than the Operator (where such obligations had first arisen before the first entry of the Train on the Network to which this **clause 2.5** relates).

2.6 Warranty of Accuracy of Information

Each party represents and warrants to the other that all material information provided by the first-mentioned party to the other, whether pursuant to this Agreement or otherwise, in relation to use of the Network is, to the first-mentioned party's knowledge, accurate in all material respects and is not, whether by omission or otherwise, misleading.

2.7 Manner of Control of the Network by ARTC

ARTC agrees at all times during the Term to control the Network in a manner which facilitates:

(a) compliance by the Operator with the relevant Scheduled Train Paths applicable to the Services; and

(b) the use by the Operator of the relevant Scheduled Train Paths applicable to the Services, and in so doing to ensure (subject to the matters in **clause 2.1(b)**) that an Operator's Train which enters the Network on schedule or is early will exit the Network no later than the scheduled time.

2.8 Light Engine Movements

The Operator's rights to Scheduled Train Paths and Train paths under **clause 2.5** exclude, without limitation, any rights to access to the Network for the purpose of the Operator's light engine movements other than through negotiated ad hoc entitlements as referred to in subsection (c) of the definition of "Train Paths".

2.9 Renegotiation of Scheduled Train Paths

(a) The Operator has the rights set out in this **clause 2.9** to the extent that it has been granted Scheduled Train Paths under this Agreement (and not otherwise).

(b) The Operator may not less than 120 days before the expiry of the term of the Scheduled Train Paths give notice in writing to ARTC that the Operator wishes to renew this Agreement in relation to the Scheduled Train Paths, specifying also the desired term of such renewal, and ARTC will enter into negotiations with the Operator in relation to the possibility of such renewal.

(c) If, at the time the Operator has given notice under **clause 2.9(b)**, it:

(i) has paid to ARTC all monies due to it under this Agreement; and

(ii) is not otherwise in breach of this Agreement,

ARTC may consent to the renewal of the Scheduled Train Paths and enter into a new track access agreement with the Operator on terms and conditions (including Charges) determined by **clause 2.9(d)**.

(d) If, at the time **clause 2.9(c)** applies, ARTC has an Access Undertaking in force, the terms and conditions of the new track access agreement (including the Charges) will be determined in accordance with the Access Undertaking.

(e) The Operator does not have any automatic or enforceable rights of renewal or extension of any Scheduled Train Paths under this Agreement.

2.10 Key Performance Indicators

(a) The Key Performance Indicators described in **Schedule 5** are relevant to both parties who will monitor them from the Commencement Date.

(b) The parties will meet regularly for the purpose of discussing actual performance against the Key Performance Indicators.

2.11 NSW Network - Supplementary Terms (Schedule 7)

The parties agree to comply with **Schedule 7**.

3. TERM OF AGREEMENT

This Agreement commences on the Commencement Date and, unless terminated earlier under **clause 14**, will continue until 23:59 hours Australian Central Standard Time on the Expiry Date ("**Term**").

4. CHARGES AND PAYMENT

4.1 Flagfall Charges

(a) Subject to 4.1(b), the Operator will pay all flagfall Charges specified in **Schedule 3** in respect of each Train Path in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**), irrespective of whether or not the Operator uses all or any such Train Paths.

(b) The Operator is not required to pay the flagfall Charges specified in **Schedule 3** where ARTC is not able to provide the Train Path or an agreed substitute Train Path except where the failure to provide the Train Path is a result of an Incident, Third Party Works or an emergency.

4.2 Variable Charges

The Operator will pay to ARTC all variable Charges payable for each Train Path calculated by reference to **Schedule 3** in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**).

4.3 Excess Network Occupancy Charges

(a) Subject to 4.3(b) and (c), the Operator will pay all Excess Network Occupancy Charges specified in **Schedule 3** in respect of each Train Path or any part of such Train Paths in accordance with **clause 4.4(b)** (as amended, if applicable, in accordance with **clause 4.5**) irrespective of whether or not the Operator uses all or any such Train Paths.

(b) Excess Network Occupancy Charges will only apply where the Operator seeks to contract a Train Path on the Network, which is in excess of:

(i) a reasonable allowance for section run times for the applicable Train service type as determined by ARTC;

(ii) dwells for crossing and passing other Trains as determined and made available by ARTC for the Train Path; and

(iii) an allowance for the reasonable requirements for operational activities whilst the Train occupies the Network as specified at clause 4.6(c) in the Access Undertaking.

(c) The Operator is not required to pay the Excess Network Occupancy Charges specified in **Schedule 3** where ARTC is not able to provide the Train Path or an agreed substitute Train Path except where the failure to provide the Train Path is a result of an Incident, Third Party Works or an emergency.

4.4 Invoices and Monthly Statement

(a) ARTC will issue the Operator with an invoice relating to each period from Sunday to the next Saturday (both inclusive), itemising the variable Charges payable for each Scheduled Train Path and variable and flagfall charges for each ad hoc entitlement calculated by reference to **Schedule 3** (as amended, if applicable, in accordance with **clause 4.5**).

(b) The Operator will pay to ARTC in full the amount shown in the monthly statement issued by ARTC (such statements specifying the flagfall and variable components of the Charges, together with the Excess Network Occupancy Charges under **clause 4.3**), such payment to be received by ARTC within twenty one (21) days from the date of issue of the statement unless the payment is in dispute.

(c) Where payment is in dispute, the Operator will notify ARTC of any disputed amounts within twenty one (21) days from the date of issue of the statement and the Operator shall pay the undisputed amount within twenty one (21) days from the date of issue of the statement. The disputed amount may be withheld until the dispute is resolved.

(d) Where the dispute is resolved in ARTC's favour, the Operator shall pay the disputed amount to ARTC and also be liable to pay interest from the time that such monies should have been paid. The interest rate will be determined in the same manner as the interest rate is determined under **clause 4.8.**

4.5 Variation of Charges - Consumer Price Index

(a) Subject to **clause 4.5(d)** of this Agreement, ARTC may annually vary the Indicative Access Charges for Indicative Services ("**Review Date**") by up to an amount determined in accordance with the following formula:

$$AC_t = AC_{t-1} \times (1 + TV_i)$$

Where

AC_i is the Indicative Access Charges payable by the Operator following the relevant Review Date.

AC_{i-1} is the Indicative Access Charges payable by the Operator immediately preceding the relevant Review Date.

TV_i is the maximum variation to Indicative Access Charges (measured as a percentage) that may be applied from the Commencement Date and thereafter from each 1 July during the Term ("Determination Date") and is to be determined in accordance with the following formula:

TV_i = is the greater of:

(i) $(((\text{CPI Index}_i / \text{CPI Index}_0) / CV_{i-1}) - 1) \times 100$; or

(ii) Zero;

Where,

CPI Index$_i$ is the All Groups Consumer Price Index, Weighted Average of Eight Capital Cities, Index Number for the March quarter preceding the relevant Determination Date.

CPI Index$_0$ is the All Groups Consumer Price Index, Weighted Average of Eight Capital Cities, Index Number for the March quarter of the year 2007, being 155.6.

CV_{i-1} is the cumulative effect of the variations actually applied by ARTC to the indicative access charges specified in the Access Undertaking from 1 July 2008 to the relevant Determination Date ("i"). That cumulative effect is to be determined in accordance with the following formula:

$$CV_{i-1} = (1 + V_1) \times (1 + V_2) \times \ldots \times (1 + V_{i-1})$$

where

$V_1, V_2 \ldots V_{i-1}$ are the actual % variations which have been applied to the indicative access charges specified in the Access Undertaking from the 1 July 2008 to the relevant Determination Date.

For the purpose of determining TV_i for the sixth Determination Date, CPI Index$_0$ will be reset to CPI Index$_5$ and CV_5 will be reset to 1.

(b) Unless otherwise specified in **Schedule 3**, ARTC may, subject to the Access Undertaking, vary Non-Indicative Access Charges in accordance with **clause 4.5(c)**.

(c) ARTC will give the Operator at least sixty (60) days notice of any proposed increase of the Charges under **clauses 4.5(a) and (b)** and such notice may be given at any time. The Operator may, within the period of sixty (60) days from the date of the notice, make written submissions to ARTC on the proposed increase in Charges. Such written submissions will be considered by ARTC. The increase in Charges proposed by ARTC will become effective and payable on the earlier of:

(i) if no subsequent notification is given by ARTC to the Operator, the date specified in the notice of the proposed increase of the Charges is given under this clause; or

(ii) if a subsequent notice is issued by ARTC to the Operator, such date as specified in that notice, in which case, the Charges will be increased by the amount specified in such notice.

(d) Subject to **clause 4.5(e)**, ARTC will immediately pass on to the Operator any net effect of any imposition of new taxes or charges, increases or decreases in taxes or charges (other than income

tax) which is a tax, royalty, rate, duty, levy or impost of general application imposed on ARTC by any government or regulatory authority and which is directly attributable to the provision by ARTC to the Operator of access to the Network.

(e) ARTC will not pass on any such tax or charge which becomes payable as a result of ARTC failing to comply with any applicable law or any applicable provision of this Agreement.

(f) The Operator acknowledges that the Charges payable by them have been calculated without regard to any GST (as defined in **clause 4.11**) that might become payable by ARTC in respect of the supply of or access to the Network in accordance with this Agreement. If at any time GST is payable by ARTC on the supply of access to the Network in accordance with this Agreement, the Charges will be varied in accordance with **clause 4.11**.

(g) The Operator agrees and acknowledges that in the event any charges or premiums are payable to the Transport Accident Commission under section 115 of the Transport Accident Act 1986 (Vic) in relation to the operation of the Operator's Train on Network situated in Victoria, then:

(i) if such charges or premiums in respect of the Operator have been paid by ARTC on behalf of the Operator, the Operator will reimburse ARTC the full amount so paid to the Transport Accident Commission;

(ii) if such charges or premiums in respect of the Operator have not been paid by ARTC but are to be paid by the Operator under an agreement under the said section 115, the Operator will pay such charges or premiums directly to the Transport Accident Commission in accordance with the relevant section 115 Agreement.

4.6 Transport Act 1983 (Vic)

If:

(i) the Operator is or becomes a train operator for the purposes of section 10 of the Transport Act 1983 (VIC); and

(ii) the Director of Public Transport gives a lawful direction to ARTC under section 10 of the Act requiring or approving a timetable change; and

(iii) the effect of the direction by the Director of Public Transport is to interfere with any existing train paths granted by ARTC to other rail operators; and

(iv) in order to minimise or prevent any interference to such existing train paths, ARTC, acting reasonably, chooses to effect improvements or extensions to the Network or Associated Facilities,

the reasonable costs incurred by ARTC in effecting such improvements or extensions will be payable by the Operator.

4.7 Extensions and Additional Capacity

(a) In the event that ARTC, at its cost, adds infrastructure not forming part of the Network ("**Extensions**") and the parties agree to the Operator being granted access to the Extensions as part of the extended Network, ARTC may charge the Operator for access to the Extensions as a term of it agreeing to the additional infrastructure. ARTC may charge the Operator such amount it determines as being reasonable after taking into account:

(i) the costs incurred by it in constructing the Extensions and the recovery of such costs over the time such Extensions can be utilised by all operators;

(ii) the location of the Extensions;

(iii) the number of operators that ARTC estimates will use the Extensions; and

(iv) any other legitimate commercial factors which ARTC might reasonably consider.

(b) In the event that ARTC adds to the capability of the Network to carry additional task by an enhancement or improvement of the infrastructure associated with the Network ("**Additional Capacity**") and the Operator's existing Scheduled Train Path will be varied under **clause 9.2** to include the extended Network, the Operator will not be obliged under **clause 4.7(a)** to pay any additional fee or charge for access to such extended Network. Nothing in this **clause 4.7(b)** prevents ARTC from negotiating funding arrangements with an operator or operators for the provision of Additional Capacity.

The provisions of **clause 17** dealing with resolution of disputes do not apply to ARTC's determination under this clause.

4.8 Interest

If the Operator defaults in the due payment of any amount due to ARTC under this Agreement (including all amounts in an Invoice), the Operator will pay interest on that amount, or the outstanding balance, until it is paid in full. The interest rate will be 2 percentage points above the:

(a) bench mark lending rate charged by the National Australia Bank or its successors ("NAB"), as published in the Australian Financial Review newspaper, at the time of such default; or

(b) if the lending rate specified in **clause 4.8(a)** does not exist at the time of such default, then the base business overdraft lending rate at that time on overdrafts of $100,000.00 or more as determined in writing by or on behalf of the senior manager of the South Australian head office of the NAB, currently known as the General Manager Business and Premium, at his discretion.

That interest will accrue and be recoverable from day to day.

4.9 Obligation to Grant Security

(a) Subject to **clause 4.9(b)**, the Operator will deliver to ARTC and keep current at all times during the Term, security for the Operator's obligations under this Agreement in the form of an unconditional and irrevocable bank guarantee, letter of credit, performance or insurance bond ("**Security**") issued by a bank holding an Australian banking licence or such other reputable person or institution accepted by ARTC in the amount of the average of 4 weeks Charges and containing such other terms and conditions acceptable to ARTC.

(b) The Security referred to in **clause 4.9(a)** will be provided by the Operator within seven (7) days of the Operator receiving a notice from ARTC requesting the same. ARTC may only serve such a notice on the Operator under this **clause 4.9(b)** if the Operator has defaulted in the payment of any monies owed by it to ARTC under this Agreement and has not remedied that default before the expiry of seven (7) days.

(c) The request for the Security by ARTC is in addition to and without derogation from any other rights ARTC may exercise against the Operator by reason of the breach of the Agreement. Subject to **clause 4.9(d)**, the continuance of the Security (or any replacement thereof under **clause 4.9(b)**) is a condition of the performance by ARTC of its obligations under this Agreement. The decision of ARTC to issue a notice under **clause 4. 9(b)** is not subject to **clause 17**.

(d) If, after Security has been provided in accordance with this clause, the Operator has not been in default in the payment of monies owed by it to ARTC under this Agreement for a continuous period of three (3) months, ARTC will, on request of the Operator, notify it that the Security is no longer required and forthwith release the Security to the Operator. This **clause 4.9(d)** does not preclude ARTC from issuing a further notice under **clause 4.9(b)** if the circumstances described in that clause apply.

(e) The amount of the Security will be reviewed every 12 months from the Commencement Date. The results of the review are not subject to **clause 17**.

(f) Subject to **clause 4.9(d)** the term of the Security will be for the same or a greater period than the Term under **clause 3**. The term of the Security will be extended to at least match any extension of the Term.

(g) Upon expiry of the Agreement, ARTC will release the Security to the Operator provided that at such time the Operator is not in default in the payment of any monies owed by it to ARTC under this Agreement, in which case, the Security will be returned to the Operator less any money (disputed or undisputed) owing by the Operator to ARTC.

4.10 Exercise of Security

(a) The Security will be held by ARTC as security for the performance of the obligations of the Operator under this Agreement and may be called upon by ARTC in any circumstances in which ARTC suffers any loss as a result of default by the Operator under this Agreement.

(b) If ARTC exercises or draws on the Security, the Operator will promptly provide a replacement bank guarantee or letter of credit for the amount drawn or exercised by ARTC against the Security and otherwise on the same terms as the Security.

4.11 Goods and Services Tax

(a) **Definitions**

In this clause:

"**ANTS GST Act**" means the A New Tax System (Goods and Services Tax) Act 1999;

"**Consideration**" has the same meaning as in the GST Legislation but does not include the GST amount payable;

"**GST Legislation**" means the ANTS GST Act and associated legislation and regulations;

"**Input Tax Credit**" has the meaning given by Section 9-5 of the ANTS GST Act;

"**Tax Invoice**" means an invoice as prescribed in the GST Legislation;

"**Taxable Supply**" is a Taxable Supply as defined in the ANTS GST Act.

(b) **GST Payable**

ARTC and the Operator acknowledge and agree and or warrant (as the case may be) that if GST has application to any Taxable Supply made under this Agreement by either ARTC or the Operator ("**supplier**") to either ARTC or the Operator ("**recipient**") as the case may be that the supplier may, in addition to the Consideration but subject to providing a Tax Invoice to the recipient, recover from the recipient (and the recipient will pay or reimburse the supplier) an additional amount on account of GST, such additional amount to be calculated in accordance with GST Legislation and will be paid by the recipient on the same terms and conditions as stated in this Agreement.

(c) **Reimbursement**

If either party is entitled under this Agreement to be reimbursed or indemnified by the other party for a cost or expense incurred in connection with this Agreement, the reimbursement or indemnity payment will not include any GST component of the cost or expense for which an Input Tax Credit may be claimed by the party entitled to be reimbursed or indemnified.

4.12 Costs

The Operator agrees as between the parties, to pay, if payable, any legal costs of execution (including without limitation any associated stamp duty, fees, fines and penalties thereon) in all relevant jurisdictions on this Agreement and any document contemplated or allowed by this Agreement, excluding any of ARTC's internal costs relating to the execution of this Agreement.

5. CONTROL AND MANAGEMENT OF ACCESS TO THE NETWORK

5.1 ARTC to Control

As between the parties, control of the Network and management of access to the Network, remains at all times with ARTC.

5.2 Warranty of Entitlement to Grant Access

ARTC warrants that it is entitled to grant to the Operator all of the Operator's rights of access to the Network described in this Agreement (but in the case of that part of the Network owned or managed by another person, subject to the terms by which that other person permits the Operator access to such part of the Network or by which that other person permits ARTC to allow the Operator to have access to such part of the Network).

5.3 Network Access Provider's Obligations

ARTC agrees at all times during the Term:

(a) to undertake the function of Train Control over the Network;

(b) to comply with the Network Management Principles;

(c) to safely and efficiently operate the Network so that any permitted use of the Network by the Operator is facilitated promptly and effectively and in accordance with this Agreement;

(d) to have Associated Facilities in place to enable ARTC to grant to the Operator the Scheduled Train Paths on the terms of this Agreement;

(e) to receive, record and collate information from the Operator and other users of the Network for the purposes of generating the Invoices referred to in **clause 4.4** and more effectively exercising the functions referred to in **clauses 5.3(a)** and **(b)**;

(f) to maintain and operate the Train Control Centre and a communication system for the purpose of communication with the Operator and other users of the Network, and to facilitate the Operator's access to that communication system;

(g) to use its best endeavours to provide the Operator with details, as soon as reasonably practicable of all operating incidents (including an Incident) which has affected or could potentially affect the ability of any Train to retain its Train Path, or else affect its security or safety or the security and safety of the freight or passengers; and

(h) to comply with all applicable Acts of the Commonwealth and State Parliaments, subordinate legislation, municipal by-laws and other laws in any way applicable to ARTC's management, control and ownership of the Network.

5.4 Rolling Stock

The Operator agrees as at the Commencement Date and at all material times during the Term to maintain each Train operated by the Operator on the Network in a condition which is fit for use on the Network having regard to the terms of this Agreement.

5.5 Operator's Obligations

The Operator agrees at all times during the Term:

(a) to use its best endeavours to ensure that its use of the Network complies with the Train Paths applicable to each Service;

(b) to comply with the Code of Practice;

(c) to conduct itself in accordance with Instructions issued;

(d) that if it becomes aware that material non-compliance by a Service with the applicable Scheduled Train Path (or such other Train path which may be agreed) has occurred or is a reasonable possibility, to notify the Train Control Centre immediately;

(e) to ensure that its use of the Network is carried out in such a way as to minimise obstruction of the Network and so that use of the Network by any other user authorised by ARTC is not prevented or delayed (other than through use of the Network in accordance with this Agreement or through proper compliance with an Instruction validly given);

(f) to comply with all applicable Acts of the Commonwealth and State Parliaments, subordinate legislation, municipal by-laws and other laws in any way applicable to operation of the Services or its use of the Network;

(g) not to materially change, alter, repair, deface or otherwise affect any part of the Network, Associated Facilities, ARTC's property or property of third parties provided that the obligation of the Operator in this clause extends only to such matters to the extent that they were caused or contributed to by the Operator and train operations it conducts and does not include normal wear and tear where the Operator is accessing the Network in accordance with the terms of this Agreement;

(h) not to materially damage the Network, Associated Facilities, ARTC's property or property of third parties. For the purposes of this clause "damage" does not include normal wear and tear where the Operator is accessing the Network in accordance with the terms of this Agreement;

(i) to provide and maintain communications equipment which is compatible with the equipment used in the Train Control Centre and to use such equipment to communicate with the Train Control Centre;

(j) where ARTC proposes to change communications equipment in the Train Control Centre:

(i) the Operator agrees to share information and cooperate with ARTC and any Communications or TMS Provider to the extent that may be required to ensure that the parties' obligations in **clauses 5.3** and **5.5** are achieved;

(ii) if such proposal will result in the Operator having to replace or upgrade its communications equipment, ARTC will consult with the Operator and the Operator will, after such consultation and after reasonable notice from ARTC to the Operator, reasonably replace or upgrade the communications equipment to be compatible with the equipment used in the Train Control Centre.

(k) subject to **clause 18**, to provide to ARTC such information related to the operation of the Services (excluding commercial information) as ARTC reasonably requires to enable it to properly perform its functions and discharge its obligations to the Operator and other operators;

(l) to provide to ARTC a Train Manifest in a format acceptable to ARTC for each Service not less than 15 minutes prior to that Service commencing use of the Network and to provide notice in a form specified by ARTC of any detail of the Train Manifest which changes during the course of the operation of the Service over the Network;

(m) to inform ARTC as soon as reasonably practicable of any cancellation or intended cancellation by the Operator of any Service;

(n) to ensure that any item of freight or material, including but not limited to minerals, bulk goods or commodity (in whatever form), being hauled on or in a Train operated by the Operator does not fall, leak, spill, escape or become deposited on or adjacent to the Network.

5.6 Conduct of ARTC

(a) In formulating its Indicative Access Charges, ARTC will not differentiate between operators in circumstances where:

(i) the characteristics of the Indicative Services are alike; and

(ii) the operators are operating within the same end market.

In determining whether the characteristics of two Indicative Services are alike ARTC may have regard to matters including but without limitation location, duration and quality of the Train Path, nature of Train consist, characteristics of the Indicative Service, longevity of access, arrival and departure times of the day and week.

(b) Without limiting **clause 5.6(a)**, if:

(i) ARTC sells a train path for an Indicative Service to a third party ("**Third Party Train Path**"); and

(ii) the Operator considers, acting reasonably, that the Third Party Train Path is a like train path when compared to a Train Path for an Indicative Service purchased by it under this Agreement ("**Like Train Path**"); and

(iii) the Operator has evidence to suggest that the Third Party Train Path has been sold by ARTC for a price less than that charged by ARTC to the Operator for the Like Train Path,

then the Operator may make a written submission to ARTC claiming that the Indicative Access Charges payable by it under this Agreement for the Like Train Path should be reduced to that charged by ARTC for the Third Party Train Path, such submission detailing at least the following:

(iv) the Indicative Access Charges payable by it for the Like Train Path;

(v) why the Like Train Path and the Third Party Train Path are to be considered Like Train Paths in the context of **clause 5.6(a)**;

(vi) the Indicative Access Charges that the Operator asserts ARTC is charging the third party for the Third Party Train Path.

(c) ARTC will, within 30 days of receipt of a written submission under **clause 5.6(b)**, notify the Operator whether:

(i) it agrees with the submission and that the Operator's Indicative Access Charges have been reduced accordingly; or

(ii) it disagrees with the submission and the reasons why.

(d) In the event that the Operator does not agree with ARTC's decision under **clause 5.6(c)(ii)** and the reasons for it, the Operator may give ARTC a notice under **clause 17** whereupon the dispute will be resolved in accordance with **clause 17**.

5.7 Removal of Rolling Stock from Network

(a) If ARTC reasonably considers that a Train operated by the Operator is obstructing the Network, the Operator will upon being notified in writing or by electronic mail of that obstruction arrange for the Train operated by the Operator to be moved by or at the time specified in such notice off or to another part or parts of the Network nominated by ARTC.

(b) Subject to **clause 5.7(c)**, if the Operator does not so remove or move the Train operated by the Operator under **clause 5.7(a)**, the Operator consents to ARTC arranging for the Train operated by the Operator to be removed from or moved to another part or parts of the Network, at the cost and expense of the Operator in all things.

(c) Notwithstanding any other provision of this Agreement, the Operator will release and indemnify ARTC or its servant, agent, employee, contractor or volunteer for all and any injury, loss and damage arising from or related to the removal or movement arranged by ARTC under **clause 5.7(b)**, including without limitation where such injury, loss and damage is caused by the negligence of ARTC or its servant, agent, employee, contractor or volunteer.

6. REPAIRS AND MAINTENANCE OF THE NETWORK

6.1 ARTC to Repair and Maintain the Network

Subject to **clauses 6.2, 9.3** and **9.4** ARTC agrees at all times during the Term to maintain the Network (but only in so far as the Network is relevant to the Operator's Scheduled Train Paths) in a condition which is fit for use by the Operator to provide rail transport services.

6.2 Operating Restrictions

When required by the condition of the Network or any part of the Network, ARTC may (to the extent of such requirement only) give notice of speed and weight restrictions and the Operator will comply with such a notice.

7. ACCREDITATION

7.1 Accreditation Warranty

(a) Each party warrants that during the Term each such party has and will maintain Accreditation to the extent required by law, including, in the case of the Operator, all accreditation required by law in relation to Rolling Stock used by the Operator on the Network.

(b) The parties will notify each other of any notice received from any government authority affecting Accreditation.

(c) The Operator will not run Rolling Stock on the Network in breach of **clause 7.1(a)**.

(d) Where a third party audit of equipment or maintenance practices is requested by the Accrediting Authority with respect to the maintenance of the Operator's Accreditation, the Operator will provide a copy of that audit to ARTC at the same time such audit report is given to the Accrediting Authority.

(e) If a party loses part or all of its Accreditation or has part or all of its Accreditation suspended, that party will use its best endeavours to regain or have restored its full Accreditation as soon as is reasonably practicable.

7.2 Evidence of Accreditation

Each party will on or before the Commencement Date (and in the case of Accreditation which is obtained for the first time after the Commencement Date, then as soon as practicable such Accreditation is obtained) provide to the other party evidence of its Accreditation. A copy of all documents evidencing renewal or amendment of Accreditation will be provided by a party to the other party on the written request of the other party.

7.3 Termination of this Agreement by Reason of Suspension or Cancellation of Accreditation

If either party's Accreditation is:

(a) suspended for a continuous period of longer than 6 months; or

(b) cancelled for a continuous period of longer than 1 month,

the other party has the rights of termination set out in **clause 14.3**. This clause does not derogate from the parties' rights under **clause 14** in respect of termination of this Agreement.

8. COMPLIANCE

8.1 Issue of Instructions by ARTC

(a) ARTC may issue Instructions to the Operator.

(b) Instructions may include, but are not limited to, instructions or directions:

(i) to cease use of a Scheduled Train Path by the Service and for the Service to proceed over such path on the Network as ARTC nominates;

(ii) to continue use by the Service of the Network subject to such variation of the applicable Scheduled Train Path or the Service or the composition or quality of Trains as ARTC nominates;

(iii) to cause the Service to proceed to a point on the Network and stand there until ARTC issues a further instruction or direction in relation to the Service; or

(iv) without limiting the generality of **clauses 8.1(b)(i)** to **(iii)**, if the Service operates outside of its Scheduled Train Path, to delay or redirect the Service to allow access to the Network by another operator of a Train (including, if relevant, ARTC) whose service would, but for the delay or redirection of the Operator's Service, be delayed or further delayed.

(c) ARTC will:

(i) in giving any Instruction have due regard to minimising the disruption to the Operator's Services; and

(ii) other than in an emergency, consult with the Operator in giving an Instruction concerning the use of an Operator's locomotive and its crew for the purpose of assisting in the clearing of a Network blockage.

(d) If an Instruction which varies the Operator's Train Paths is intended by ARTC to be permanent, such permanent effect of the Instruction will not take effect until the procedure in **clause 9.2** for permanent variation of a Train Path has been satisfied. Until the **clause 9.2** procedure has been satisfied such Instruction will nevertheless have a temporary effect.

(e) As soon as is reasonably practicable and in any event before an Instruction becomes effective, ARTC will give to the Operator a written copy of the Instruction if such Instruction is ordinarily advised in writing by ARTC to operators.

8.2 Compliance by the Operator with Instructions and Train Control Directions

(a) Subject to **clause 8.2(c)**, the Operator will comply with all Instructions and will promptly advise all relevant Train crew of any changes to or the making or giving of Instructions.

(b) If an Instruction is a Train Control Direction, it will be complied with immediately.

(c) Unless the Train Control Centre gives an Instruction that is a Train Control Direction, the Operator need only comply with an Instruction if it was given a reasonable time before the required time for compliance.

(d) The Operator will comply with all Instructions in such a way as to reasonably minimise disruption to any other person's use of the Network.

(e) Subject to **clause 15**, ARTC is not responsible for any delay suffered or cost incurred by the Operator in complying with a lawful Instruction of ARTC, and the Operator releases ARTC from any Claim arising from such compliance.

(f) Subject to **clause 15**, the Operator is not responsible for any delay suffered or cost incurred by ARTC in the Operator complying with a lawful Instruction of ARTC, and ARTC releases the Operator from any such Claim arising from such compliance.

8.3 Compliance

The Operator will at its own cost during the Term:

(a) comply with all laws which affect or relate to the use of Train Paths;

(b) comply with all notices, orders and directions lawfully issued or given by or agreements with a Governmental Agency which affect or relate to the use of Train Paths; and

(c) obtain, maintain and comply with all approvals, licences or permits which from time to time may be necessary or appropriate for the use by the Operator of Train Paths.

9. VARIATION OR CANCELLATION OF TRAIN PATHS

9.1 Examples of Temporary Variations of Train Paths by the giving of Instructions by ARTC

(a) For the avoidance of doubt, and without limiting the generality of **clause 8.1(a)**, the Operator's Train Paths may be temporarily varied by the giving of Instructions:

(i) for the purpose of preventing any actual or potential:

(A) breach of the Safeworking Rules or of **clause 12** by the Operator or of similar safety requirements by other operators on the Network;

(B) material damage to the Network, ARTC's property or any Associated Facilities;

(C) injury to any person or damage to any property;

(D) delay to the progress of Trains on the Network (but only insofar as any trains operated by a third party have priority over the Operator's trains having regard to the Network Management Principles);

(E) terrorism and security matters; or

(ii) for the purpose of preventing, or in response to, any actual or threatened breach by the Operator of any of its material obligations under this Agreement.

(b) The Instructions referred to in **clause 9.1(a)** may comprise, but need not be confined to, Instructions in one or more of the following terms:

(i) to cease use of a Train Path by the Service and for the Service to proceed over such path on the Network as ARTC nominates;

(ii) to continue use by the Service of the Network subject to such variation of the applicable Train Path or the Service or the composition or quality of Trains as ARTC nominates;

(iii) to cause the Service to proceed to a point on the Network and stand there until ARTC issues a further Instruction in relation to the Service; or

(iv) if the Service operates outside of its Train Paths, to delay or redirect the Service to allow access to the Network by another operator of a Train whose service would, but for the delay or redirection of the Operator's Service, be delayed or further delayed.

9.2 Permanent Variations to Scheduled Train Paths

(a) This **clause 9.2** sets out the procedure to be followed by the parties if it is intended that a Scheduled Train Path is to be permanently varied.

(b) A Scheduled Train Path may be varied for the remainder of the Term (or for such other duration as may be agreed) if:

(i) one party to this Agreement ("**Requesting Party**") sends a notice to the other party ("**Notified Party**") stating:

(A) that the Requesting Party wishes to vary the use by the Operator of a Scheduled Train Path;

(B) the length of time such variation will be in force; and

(C) the reason or reasons for the proposal by the Requesting Party; and

(ii) subject to the qualifications set out in **clause 9.2(b)(iii), 9.3, 9.4, 9.5, 9.6** and **19.2**, the Notified Party consents to the Requesting Party's proposed variation, such consent to be withheld only upon reasonable grounds.

(iii) For the purpose of **clause 9.2(b)(ii)** the Operator cannot withhold consent in the case of variations required:

(A) by reason of ARTC's obligations relating to safety of the Network;

(B) for the purpose of Passenger Priority; and

(C) for the purpose of maximising the use and the reliability of the Network.

(c) Subject to **clauses 9.3, 9.4, 9.5, 9.6** and **19.2**, the Requesting Party will give not less than 30 days notice of a variation request under **clause 9.2(b)(i)**.

(d) The Notified Party's response as to whether it consents or not under **clause 9.2(b)(ii)** to the Requesting Party's notice given under **clause 9.2(b)(i)** will be given to the Requesting Party within 28 days of such notice being received by the Notified Party or within such shorter time if reasonably practicable. If the Notified Party's response is to refuse consent, the Notified Party will within such time also provide full reasons in writing to the Requesting Party.

9.3 Repairs, Maintenance and Upgrading of the Network

(a) Notwithstanding any other provisions to the contrary in this **clause 9**, but subject only to **clauses 9.3(b), 9.3(c) and 9.4** ARTC may, without notice to the Operator, perform repairs, maintenance or upgrading of the Network, carry out any new work on the Network, or take possession of any part of the Network, at any time.

(b) If repairs, maintenance or upgrading of the Network, the carrying out any new work on the Network, or taking possession of the Network, are reasonably likely to materially affect the Scheduled Train Paths, ARTC will, prior to commencement of the works:

(i) take all reasonable steps to minimise any disruption to the Scheduled Train Paths;

(ii) notify the Operator of the works as soon as reasonably practicable; and

(iii) use its best endeavours to provide an alternative Train Path,

but need not obtain the Operator's consent to such repairs, maintenance or upgrading, or possession of the Network.

(c) Possession of the Network means closure of the relevant part of the Network to all traffic for the purpose of effecting repairs, maintenance or upgrading. ARTC will consult with the Operator a reasonable time before taking possession of the Network (except in the case of an emergency) with a view to efficient possession planning and with a view to minimising disruption to Services and ARTC may at its discretion waive the flagfall charge applicable to any Services affected by this clause.

9.4 Third Party Works

(a) The Operator acknowledges that:

(i) third parties (some of whom have statutory rights) may wish to carry out or require to be carried out Third Party Works on the Network during the Term; and

(ii) Notwithstanding any other provision of this Agreement, ARTC reserves the right to permit third parties to carry out Third Party Works.

(b) Notwithstanding any other provision of this Agreement, the Operator agrees that ARTC has no liability to the Operator nor will the Operator make a claim against ARTC for any costs, expenses, losses or damages incurred by the Operator in relation to or as a consequence of Third Party Works.

9.5 Removal of Train Path for Under-utilisation

(a) ARTC has the right, by notice in writing to the Operator, to delete any Scheduled Train Path from **Schedule 2** (upon which deletion **Schedule 2** is deemed to be amended accordingly) if the Service using that Scheduled Train Path is not operated 7 or more times (whether consecutively or not) out of any 12 such Services which are consecutively scheduled. Such notice may only be given within 14 days after the seventh occasion of not operating.

(b) Other than if the parties agree to substitute an alternative Train Path a Service has not been operated within the meaning of **clause 9.5(a)** if the Operator has failed:

(i) to present a Train at the scheduled entry point onto the Network; or

(ii) to operate the relevant Train so that it completes its full journey,

in conformance with the locations and days set out in the Scheduled Train Paths applicable to such Service. For the avoidance of doubt, clause 9.5 does not apply to a late train service.

9.6 Review of Scheduled Train Paths

(a) Scheduled Train Paths will be subject to a review in accordance with this **clause 9.6**.

(b) ARTC may at its discretion by written notice given to the Operator cause a Scheduled Train Path to be reviewed in a bona fide manner by the parties by comparing the stated departure and arrival times for the Scheduled Train Path with the performance during the preceding continuous

3 month period of the actual Trains using or purporting to use that reviewable entitlement ("**3-month history**").

(c) If on such comparison of the Scheduled Train Path with the 3-month history the departure or arrival times for a Train using or purporting to use the Scheduled Train Path differ in material respects, the parties will negotiate in good faith to amend the Scheduled Train Path so that the Scheduled Train Path reflects, as closely as is reasonably practicable, the 3-month history.

(d) Nothing in this **clause 9.6** compels ARTC to offer a Train path to the Operator under **clause 9.6(e)** if:

(i) such Train path is unavailable by reason of contractual obligations owed by ARTC to any person (including the Operator);

(ii) to do so would materially adversely impact on ARTC's ability or opportunity to efficiently and safely manage the Network; or

(iii) the Operator does not agree to pay all fees and Charges applicable to such offered Train path.

(e) Nothing in this **clause 9.6** compels the Operator to accept a Train path offered by ARTC under **clause 9.6(c)** if contractual obligations owed by the Operator to any person (including ARTC) would prevent it from doing so.

9.7 Cost of Variation

Subject to **clause 15**, any losses, additional costs (excluding Charges) or other damage suffered by a party in complying with a variation under **clauses 9, 19.2** and **22** will be borne between the parties to this Agreement in such proportion as the parties agree (based on negotiations carried on in good faith), or in the absence of such agreement, and subject to a party's obligation under **clause 15** to indemnify the other in the circumstances set out in that clause, by the party which incurs such losses, additional costs or other damages.

9.8 Effect of Variations to Train Paths on Schedule 2

(a) A temporary variation pursuant to **clauses 8.1, 9.1, 9.2, 9.3** or **9.4** of the Scheduled Train Paths has the effect of suspending all contrary or inconsistent Scheduled Train Paths in **Schedule 2** for the duration of such temporary variation.

(b) Only permanent variations pursuant to **clauses 8.1, 9.2, 9.4, 9.5, 9.6, 19.2** or **22** of the Operator's Scheduled Train Paths will be, and are hereby, deemed to be an amendment to **Schedule 2**.

9.9 Cancellation of Scheduled Train Paths

(a) The Operator may, upon 24 hours prior written notice to ARTC, cancel in any 12 month period with the first 12 month period commencing on the Commencement Date, such number of Services per Scheduled Train Path as specified in **Schedule 2** with no liability to ARTC to pay for the Charges in respect of the Services so cancelled. For the purpose of this clause, each one way journey is deemed to be a separate Service.

(b) The Operator may cancel certain Scheduled Train Paths at will by serving a written notice on ARTC to that effect in accordance with this clause.

(c) For a Scheduled Train Path of up to 5 years duration, the period of notice required is one (1) year or the balance of the term of the Scheduled Train Path, whichever is the lesser

(d) For a Scheduled Train Path of 10 years duration, the period of notice required is two (2) years or the balance of the term of the Scheduled Train Path, whichever is the lesser.

(e) For Scheduled Train Paths of between 5 and 10 years duration, the period of notice will be, subject to **clause 9.9(g)**, a pro-rata period of notice determined by the following formula:

$$N = 365 - 365 \frac{(A-5)}{7}$$

where:

N = is the period of notice in weeks
A = is the term of the Scheduled Train Path in years

or the balance of the term of the Scheduled Train Path, whichever is the lesser.

(f) During the notice period under this clause, the Operator will still be obliged to pay the flagfall and network occupancy charge components of the Charges whether or not the Operator operates a Service. Nothing in this clause prevents the Operator from operating a Service during the notice period and paying ARTC the full Charges payable under this Agreement in respect of that Service.

(g) Where the Operator has given notice under **clause 9.9(e)** and continues to operate Services during the notice period as calculated under **clause 9.9(e)**, the notice period required will be reduced in accordance with the following formula:

$$N_2 = N_1 - 2(U)$$

where:

N_2 = The amended period of notice in weeks
N_1 = The period of notice calculated under **clause 9.9(e)**
U = the number of weeks of the notice period calculated under **clause 9.9(e)** during which the Scheduled Train Path will be utilised.

Where N_2 equates to zero or a negative figure, no notice is required.

(h) A notice given by the Operator in accordance with this clause will be, and is hereby deemed to be, an amendment to **Schedule 2** upon the expiry of the notice period.

(i) If:

(i) a Scheduled Train Path is cancelled by an Operator; and

(ii) by virtue of this clause, the Operator is required to pay ARTC the flagfall and network occupancy charge components of the Charges during the relevant notice period ("**Cancellation Charge**"); and

(iii) ARTC is able to sell a Scheduled Train Path to another operator (which is a Like Train Path when compared to the Scheduled Train Path cancelled by the Operator) within three (3) months of the date of cancellation;

ARTC will refund the Cancellation Charge to the Operator. Whether the cancelled and new Scheduled Train Paths are alike is to be determined by ARTC having regard to the criteria referred to in **clause 5.6(a)**.

10. INSPECTION AND AUDIT BY NETWORK ACCESS PROVIDER

10.1 Audit Obligation

Subject to **clause 10.2**, ARTC may at any time by Instruction from ARTC to the Operator require a particular Service of the Operator which is using the Network to undergo an audit for the purpose of assessing:

(a) the Operator's compliance with the terms and conditions of this Agreement, including whether the Train Manifest provided by the Operator under **clause 5.5(l)** is correct;

(b) whether any one or more of the individual wagons used by the Operator in the provision of a Service is loaded in excess of its rated carrying capacity; or

(c) whether any one or more of the individual wagons used by the Operator in the provision of the Service is loaded in an unsafe or potentially unsafe manner.

10.2 Limitations on Audit

ARTC will:

(a) subject to **clause 10.2(b)**, carry out not more than such number of audits under **clause 10.1** as are reasonably necessary in all the circumstances; and

(b) use its best endeavours in the conduct of such audit to minimise the disruption to the Operator's Service.

10.3 Instructions

In conducting an audit under **clause 10.1**, ARTC may give an Instruction to the Operator, including an Instruction to divert or delay a Service or make any part of a train engaged in providing a Service available for inspection or weighing.

10.4 Audit by Operator

(a) Subject to **clause 10.4(b)**, the Operator may at any time, at its cost and risk, audit any of the railway track and lines comprising the Network for the purpose of monitoring ARTC's compliance with **clause 6.1**.

(b) The Operator's audit under **clause 10.4(a)** will:

(i) be subject to the ability of ARTC to issue an Instruction to the Operator at any time during the audit to ensure the proper, efficient, safe and lawful use of and access to the Network by the Operator and other operators;

(ii) be conducted in such a manner so that it does not cause any disruption to any service of any other operator granted access to the Network by ARTC or the provision of services by ARTC to such operators.

11. EMERGENCIES AND INCIDENTS

11.1 Plans for Dealing with Incidents

(a) In consultation with the Operator, ARTC will formulate and periodically review and update plans which are consistent with ARTC's Accreditation requirements.

(b) The Operator will formulate a plan for dealing with Incidents and provide it to ARTC. The Operator's plan will be consistent with any plan prepared by ARTC under **clause 11.1(a)** and is subject to the approval of ARTC, such approval not to be unreasonably withheld.

11.2 Compliance with Plans and Directions and with Rail Safety Acts

The Operator and ARTC will follow any plan of the type referred to in **clause 11.1** and will comply with their respective obligations under the Rail Safety Acts.

11.3 Notification of Incidents

The Operator and ARTC each agree to notify the other party to this Agreement of any Incident as soon as possible after it comes to their attention.

11.4 Investigation of Incidents

(a) Incidents will be investigated as required by law.

(b) Each party will co-operate with an investigation under this clause and make available records and personnel relevant to the incident.

(c) The parties will consult with each other to determine any action to be taken as a result of any investigation.

11.5 Operator's Report

Without limiting clause 11.3, if an Incident occurs which involves the Operator and in relation to which ARTC has given written notice to the Operator that a report is required, the Operator will promptly prepare and submit to ARTC a written report which will include the following (to the extent relevant to the Incident and reasonably possible for the Operator to ascertain):

(a) the time and location of the Incident;

(b) available details of all loss or damage to the Train operated by the Operator and to the Network and Associated Facilities;

(c) the factors which may have contributed to the cause of the loss or damage to the Train operated by the Operator and to the Network and Associated Facilities (the parties acknowledging that such statement will not be binding on the Operator and will not be taken to be an admission by the Operator for any purpose, including insurance and indemnification purposes (notwithstanding the terms of any insurance policy to the contrary));

(d) names of the Operator's staff including volunteers in any way involved in the Incident either as principals or as witnesses;

(e) an analysis in printed format of speed recorder charts for the Train operated by the Operator;

(f) such other information which is required to be disclosed in a report to the Administering Authority under the relevant Rail Safety Act;

(g) such other information which is required to be disclosed in a report under the Dangerous Goods Code.

11.6 No Disposal of Equipment

Subject to any contrary requirement at law or a pre-existing contract to which the Operator or ARTC is a party, the Operator and ARTC will not engage in conduct which would prejudice an investigation into an Incident, including the disposal of any equipment involved in such Incident (but only to the extent that such non-disposal is necessary to such investigation).

11.7 Interim Responsibility for Recovery Costs

Until fault can be properly determined or agreed in relation to an Incident, ARTC will be responsible for recovery costs in relation to the Network and Associated Facilities and the Operator will be responsible for recovery costs in relation to all above-rail matters (including the Train operated by the Operator).

12. SAFETY STANDARDS

12.1 Compliance by the Parties

The parties will, in relation to their respective responsibilities and rights under this Agreement:

(a) comply with all applicable safety standards and laws dealing with safety;

(b) comply with the Safeworking Rules;

(c) comply with the Dangerous Goods Code:

(d) comply with the Standards (including any codes of practice developed under the Standards) to the extent not inconsistent with **clauses 12.1(a)(b)** and **(c)**:

(e) in addition to the Operator's Accreditation or the Owner's Accreditation (as the case may be), obtain and maintain such additional accreditation, licences and approvals, and maintain such additional standards, which are required by law;

(f) except to the extent that such obligations are binding by virtue of the Accreditation requirements referred to in **clause 7**, to ensure that their respective employees, agents and subcontractors engaged by the parties in or in connection with the Services are competent and appropriately qualified and obtain and maintain any applicable or appropriate Accreditation and training, and to provide to the other party evidence of any such matters upon reasonable request; and

(g) except to the extent that such obligations are binding by virtue of the Accreditation requirements referred to in **clause 7**, to ensure that their respective employees and subcontractors of the parties engaged in or in connection with the use by the Operator of the Network submit to drug and alcohol tests or to such other tests as ARTC or the Operator is in the practice of requiring of its own employees or subcontractors.

12.2 Notification of Breach

As soon as ARTC becomes aware of a breach by the Operator of any Safeworking Rules which occurs during or as a result of the use by the Operator of the Network ("**Breach**") it will give written notice to the Operator setting out:

(a) the time, place and a general description of the Breach;

(b) what, in ARTC's opinion, caused the Breach and which person or persons were responsible for the Breach;

(c) the consequences, if any, of the Breach for operation of the Services or the use by other users of the Network;

(d) any proposed modification of its procedures which ARTC intends to make; and

(e) any Instruction requiring modification to the Operator's procedures which ARTC considers that the Operator must make.

12.3 Provision of Safeworking Rules

ARTC will provide a copy of the Safeworking Rules to the Operator on the Operator's request, and will thereafter forward to the Operator a copy of all amendments to the Safeworking Rules.

13. ENVIRONMENTAL REQUIREMENTS; DANGEROUS GOODS

13.1 Compliance with Environmental Requirements

Each party will comply with all environmental laws and with their respective environmental policies (insofar as they comply with the law), including all applicable laws and lawful policies dealing with dangerous goods.

13.2 Environmental Management Plans

After ARTC has given to the Operator a copy of its plan for dealing with environmental effects of operating Trains on the Network, the Operator will within a reasonable time prepare its own plan for dealing with environmental effects of its operations on the Network, the plan to be consistent with ARTC's plan, and give a copy of its plan to ARTC.

13.3 Notification of Carriage of Certain Materials

Other than in the case of Trains which are wholly passenger Trains, the Operator will include in all Train Manifests such detail in relation to the identification of dangerous goods as is required by the Dangerous Goods Code and as is otherwise reasonably required by ARTC (on terms not inconsistent with the Dangerous Goods Code).

13.4 Notification of Incident involving Dangerous Goods

Other than in the case of Trains which are wholly passenger Trains, the Operator will provide to ARTC details, at the earliest practicable time after the Operator becomes aware, of all incidents (including non-compliance with relevant codes, regulations, bylaws or other statutory provisions, whether or not an Incident) involving dangerous goods including but not limited to any spillage, leakage or container or package damage associated with the movement of any Train on the Network.

13.5 Notification of Environmental Condition

Where:

(a) ARTC becomes aware that, as a result of the activities of the Operator, an Environmental Condition exists or has occurred and ARTC reasonably considers that action or intervention is required to prevent, mitigate or remedy that Environmental Condition; or

(b) ARTC is given a direction by a competent authority that some action or intervention is required to prevent, mitigate or remedy an Environmental Condition resulting from the activities of the Operator;

then ARTC may inform the Operator of the relevant requirements and, where practicable, any steps which ARTC reasonably considers will be necessary to prevent, mitigate or remedy the situation, and the Operator will immediately, or as soon as reasonably practicable after receiving such notice, implement such requirements, Remediation and steps and any other necessary action so that the Environmental Condition is no longer present or the Environmental Damage is rectified.

13.6 ARTC's Environmental Licence

The Operator will implement and comply with the conditions of ARTC's Environmental Licence ("**Licence Conditions**") to the extent that:

(a) ARTC has notified the Operator of the Licence Conditions; and

(b) the Licence Conditions apply to the Operator's operations and Trains operated by the Operator on the Network situated in South Australia and New South Wales.

13.7 Operator Compliance

The Operator agrees that in order to facilitate such implementation and compliance the Operator will, without limiting the Operator's obligations under **clause 13.6**:

(a) ensure that any Trains operated by the Operator comply with the Licence Conditions;

(b) not operate any Trains on the Network situated or which operate in New South Wales until Environment Protection Authority ("**EPA**") approval has been obtained; and

(c) comply with the terms of any applicable EPA approval.

13.8 Environmental Manual

The Operator will implement and comply with the environmental management system manual developed by ARTC, as amended from time to time, ("the Manual"), and will also maintain, implement and comply with the Operator's own environmental management plan (which will not be inconsistent with the Manual).

14. TERMINATION

14.1 Termination for Breach

(a) If a party ("**defaulting party**") defaults in the performance of any of its material obligations under this Agreement, the other party ("**aggrieved party**") may give notice in writing ("**Rectification Notice**") to the defaulting party requiring the defaulting party to:

(i) rectify the default within a reasonable time; and

(ii) respond in writing to the aggrieved party, within 48 hours of the receipt of the Rectification Notice:

(A) indicating to the aggrieved party the steps to be taken to rectify the default within such reasonable time and a reasonable timetable for the completion of such steps; and

(B) confirming that the performance of the steps has commenced ("**Rectification Response**").

(b) If the defaulting party:

(i) does not rectify the default within a reasonable time;

(ii) does not provide a Rectification Response within the time specified in **clause 14.1(a)(ii)**;

(iii) does not provide a satisfactory Rectification Response meeting the requirements of **clause 14.1(a)(ii)(A)** and **(B)**; or

(iv) does not comply with the timetable set out in the Rectification Response subject to **clause 14.1(a)**.

the aggrieved party may at any time thereafter suspend such rights of the defaulting party under this Agreement as are necessary to prevent a continuation of the default by giving not less than:

(A) 7 days written notice in relation to a default relating to safety; or

(B) 14 days written notice in relation to defaults other than relating to safety.

(c) If the defaulting party does not within a reasonable time after the suspension of this Agreement under **clause 14.1(b)** rectify the default, this Agreement may be terminated by giving not less than the period of notice described in **clauses 14.1(b)(A)** and **(B)**.

(d) Notwithstanding that ARTC may be the defaulting party, nothing in **clause 14.1(b)** derogates from or affects ARTC's rights and powers to manage the Network and any of its other rights or powers under this Agreement or any other agreement with any other person, including any track access agreement with any other operator.

14.2 Immediate Termination

A party has the right to immediately terminate this Agreement by notice in writing to the other party upon the occurrence of any of the following events:

(a) the other party assigns or attempts to assign this Agreement in breach of **clause 19**;

(b) if any execution is levied against the assets of the other party which are necessary or material for the conduct of the Operator's business of running the Services or if any such assets of the other party are taken or sold by an encumbrancer or if the other party ceases to carry on business, stops payment or fails to maintain normal and continuous operation of its business for a period of in excess of 14 continuous days except for reasons wholly beyond its control;

(c) if the other party:

(i) goes into liquidation otherwise than for the purpose of reconstruction or a meeting was called for the purpose of considering liquidation:

(ii) has a receiver or a receiver and manager appointed over any of its property:

(iii) proposes or enters into any scheme of arrangement or a composition with its creditor: or

(iv) has an official manager, receiver, inspector, administrator or controller appointed pursuant to the provisions of the Corporations Act 2001 (Cwlth).

14.3 Termination of this Agreement by Reason of Suspension or Cancellation of Accreditation

If either party's Accreditation is suspended for a continuous period of six months or cancelled for a continuous period of one month the other party may terminate this Agreement by notice in writing to the party which has had its Accreditation so suspended or cancelled.

14.4 Suspension

(a) Without in any way limiting the rights of a party under **clause 14.1, 14.2** or **14.3**, a party who is entitled to terminate this Agreement under any of those clauses may elect instead to suspend the obligations of both parties under this Agreement (subject to **clause 14.4(b)**) until such time as the cause giving rise to the right to terminate is remedied.

(b) An election referred to in **clause 14.4(a)** is revocable at any time by the party who made it and has no effect upon obligations, debts or liabilities which have accrued before the election to suspend this Agreement.

14.5 Effect of Termination or Suspension

(a) Upon termination or suspension of this Agreement all rights of the Operator to use the Network (to the extent of the termination or suspension) will cease immediately.

(b) Termination or suspension of this Agreement under any circumstances will not abrogate, impair, release or extinguish any debt, obligation or liability of one party to the other which may have accrued under this Agreement including without limitation any such debt, obligation or liability which was the cause of termination or suspension or arose out of such cause.

(c) Upon termination or suspension of this Agreement under any circumstances all covenants and agreements of ARTC and the Operator which by their terms or reasonable implication are to be performed in whole or in part after the termination or suspension of this Agreement will survive such termination or suspension.

15. INDEMNITIES/LOSS OR DAMAGE ARISING FROM AN INCIDENT

15.1 General

(a) The purpose of this **clause 15** is to establish a regime in which the liability of ARTC and the Operator to each other for loss or damage arising out of an Incident is clearly defined, and is determined only by reference to this **clause 15**.

(b) ARTC and the Operator release each other from all Claims resulting from an Incident, including where the Incident is caused or contributed to by the negligence of one or both parties, except Claims that each party to this Agreement may make against the other pursuant to this **clause 15**.

(c) The provisions of this clause should be interpreted to give effect to the intention that where ARTC and or the Operator are in breach of this Agreement, and any such breach is the cause or a contributing factor to loss or damage arising from an Incident:

(i) any party in breach should bear responsibility for such loss or damage to the extent of such cause or contribution, and;

(ii) where the acts or omissions of a party other than ARTC or the Operator (as defined in this clause) has caused or contributed to such loss or damage, neither ARTC or the Operator will be responsible to the other for loss or damage to the extent that the loss or damage is caused by or contributed to by the acts or omissions of that other party.

15.2 Definitions

In this **clause 15**:

(a) **'Claim Period'** means each and every twelve month period during the Term of this Agreement, such that the first Claim Period commences on the Commencement Date and expires at midnight on the day before the first anniversary of the Commencement Date, the second Claim Period commences on the first anniversary of the Commencement Date and expires at midnight on the day before the second anniversary of the Commencement Date, and so on;

(b) **'loss or damage'** includes:

(i) loss or damage to property belonging to a party to this Agreement;

(ii) any liability to a third party arising from the negligence or breach of statutory duty of ARTC or the Operator to such third party (as the case may be) but excluding any liability of ARTC or the Operator to a third party arising under an agreement with that party (whether by way of indemnity or otherwise) or arising from a breach of an agreement with that third party;

(iii) the costs of recovery of any property damaged or affected by the relevant Incident, and

(iv) legal expenses on a full indemnity basis;

(c) **'Prohibited Claim'** means, subject to **clause 15.5(b)**, a Claim arising from an Incident where the total value of the loss or damage suffered by a party to this Agreement is less than $50,000.00;

(d) A reference to ARTC or the Operator includes a reference to any servant, agent, employee, contractor, supplier to, or volunteer of or associated with, or a related entity (as defined in the *Corporations Act* 2001) of ARTC or the Operator;

(e) A reference to a "breach" includes a breach arising from the acts or omissions of a servant, agent, employee, contractor, supplier to, or volunteer of or associated with or a related entity (as defined in the *Corporations Act* 2001) of, ARTC or the Operator.

15.3 Indemnity

Where ARTC and or the Operator suffer loss or damage as a result of an Incident, and:

(a) if:

(i) there is a breach of this Agreement by ARTC or the Operator; and

(ii) the breach is the sole cause of the Incident,

then the party in breach will:

(iii) be responsible for its own loss or damage arising from the Incident; and

(iv) completely and effectually indemnify the other party in respect of loss or damage suffered by the other party as a result of the Incident;

(b) if:

(i) there is a breach or are breaches of this Agreement by ARTC or the Operator;

(ii) there is no breach of this Agreement by the other party; and

(iii) the breach or breaches contributed to the Incident but was or were not the sole cause of the Incident;

then,

(iv) the party in breach is to be responsible for its own loss or damage arising from the Incident;

(v) the party in breach is to indemnify the other party (that is, the party not in breach) in respect of the loss or damage suffered by the other party as a result of the Incident to the extent that the breach or breaches contributed to the Incident;

(vi) the other party (that is, the party not in breach) is to be responsible for its own loss or damage arising from the Incident to the extent that the breach or breaches did not contribute to the Incident;

(c) if:

(i) there has been a breach of the Agreement by ARTC and the Operator; and

(ii) breaches by both parties contribute to the Incident,

then each of ARTC and the Operator will:

(iii) indemnify the other party in respect of the loss or damage suffered by the other party as a result of the Incident to the extent that the breach or breaches of that party contributed to the Incident;

(iv) be responsible for their own loss or damage arising from the Incident to the extent that the loss or damage was not contributed to by the breach or breaches of the other party;

(d) if there has been a breach or breaches of the Agreement by both ARTC and the Operator, but the breach or breaches of one of them has not or have not caused or contributed to the Incident, then (whether or not there is any other person or party who has caused or contributed to the Incident) the party whose breach has caused or contributed to the Incident will bear their own loss and damage and indemnify the other party in respect of the loss or damage suffered by that other party as a result of that Incident to the extent that the breach or breaches contributed to the Incident.

15.4 No Claim for Consequential Loss

Notwithstanding:

(a) how an Incident is caused;

(b) that ARTC and or the Operator is in breach of any duty of care or in breach of this Agreement;

(c) any other rights that ARTC and or the Operator may have under this Agreement;

(d) that ARTC and or the Operator may be liable to the other for other loss or damage other than Consequential Loss.

ARTC and the Operator will not make a Claim against the other, and hereby release the other from any Claim, in respect of any Consequential Loss they suffer arising out of any Incident. For the avoidance of

doubt, it is agreed that Consequential Loss does not include any liability of ARTC or the Operator to a third party.

15.5 Prohibited Claim

(a) Subject to sub-paragraph (b) hereof, ARTC and the Operator agree that they will not make a Claim against the other if the Claim is a Prohibited Claim.

(b) Where, in any Claim Period, the total value of all Prohibited Claims exceeds $250,000.00, then no further Claims arising from Incidents that occur during that Claim Period will be Prohibited Claims.

15.6 No Other Limitations

Nothing in this **clause 15** is intended to remove, limit, restrict, or otherwise prejudice the right of ARTC or the Operator to recover loss or damage or a contribution from a third party.

15.7 Obligation to Mitigate/ Betterment

(a) Each party to this Agreement will take reasonable steps to mitigate that party's losses, damages, liabilities, costs and expenses, and a party's entitlement to recover losses, damages, liabilities, costs and expenses will be determined on the basis that the party should have observed the obligation to mitigate.

(b) Where a party restores or repairs a damaged asset and that repair or restoration results in improved functionality of an asset, such improved functionality will not be regarded as a betterment and no reduction or adjustment of the costs of repair or restoration will be made on that account.

15.8 Obligation to Pay

(a) In this sub-clause, a party liable to indemnify the other is called the "Responsible Party" and a party who is entitled to be indemnified is called an "Indemnified Party".

(b) An Indemnified Party will, as soon as practicable after an incident, give written notice to the Responsible Party of any claim to indemnity including:

(i) the date of the incident;

(ii) brief details of the loss or damage suffered or which might be suffered; and

(iii) a brief description of the grounds upon which indemnity is claimed.

(c) An Indemnified Party may deliver notices requesting reimbursement of costs or expenses incurred, or payment of other loss and damage, on an ongoing basis, as and when such costs and expenses are incurred or such other loss and damage is identified and quantified.

(d) The Responsible Party will:

(i) reimburse the indemnified party all costs or expenses incurred by the Indemnified Party in repairing or reinstating plant, equipment or other assets, and

(ii) pay any other loss or damage which is the subject of the indemnity,

within fourteen days (14) of being requested in writing by the Indemnified Party to do so.

(e) Where a Responsible Party has not complied with sub-clause (d) above, the Responsible Party will also be liable to pay interest to the Indemnified Party from the time that such monies should have been paid as requested, until that amount or any outstanding balance is paid in full. The interest rate will be determined in the same manner as the interest rate is determined under **clause 4.8** hereof.

(f) The making of any progress or part payment by a Responsible Party to the Indemnified Party will not relieve the Responsible Party of its obligation to indemnify the Indemnified Party for all loss or damage arising out of the same incident to the full extent to which it is liable to do so under this **clause 15**, unless the Indemnified Party has given the Responsible Party a release in writing to that effect.

(g) The making of any payment by a party under this **clause 15.8** may be made without prejudice to any rights of that party to contest its liability to indemnify.

15.9 Defence of Claims

(a) The parties will render to each other all reasonable assistance in the defence of any Claim made against the other party by a third party arising out of any Incident.

(b) To the extent that a party (**'Responsible Party'**) is obliged to fully indemnify the other party (**'Indemnified Party'**) against a Claim by a third party against the Indemnified Party, the Responsible Party:

(i) may, subject only to the terms of any applicable insurance which the Indemnified Party may have, at its own expense, defend and settle any action or proceedings in the name of the Indemnified Party and execute such documents in the action or proceedings as the Responsible Party sees fit.

(ii) will indemnify the Indemnified Party in respect of all costs, expenses and losses that the Indemnified Party may incur or have incurred on account of the action or proceedings.

16. INSURANCE

16.1 Operator's Insurance Policies

(a) The Operator will during the Term take out and maintain a liability insurance policy which provides an indemnity in respect of:

(i) loss of, loss of use of, and destruction or damage to, real or personal property;

(ii) injury to, or disease or death of, persons;

(iii) the Operator's liability to ARTC under **clause 15** to the extent coverable by insurance.

(b) The liability insurance policy referred to in **clause 16.1(a)** will:

(i) be with an insurer approved by ARTC (and ARTC will not unreasonably withhold such approval);

(ii) have a limit of liability of not less than $250,000,000 (or such other amount as ARTC may reasonably require and notify to the Operator from time to time) for any one occurrence;

(iii) contain provisions that are standard industry terms for railway operators.

(c) The Operator will deliver to ARTC when reasonably requested by ARTC copies of such parts of the liability insurance policy referred to in **clause 16.1(a)** and the Certificates of Currency in relation to such policy, subject to the details of such policy being kept confidential by ARTC (other than for the purpose of seeking indemnification thereunder).

(d) The liability limit referred to in **clause 16.1(b)(ii)** may at ARTC's absolute discretion be reduced to such other amount as ARTC expressly authorises in writing from time to time.

(e) The Operator acknowledges and agrees that:

(i) it is the Operator's responsibility to assess and consider the risks and scope of insurance required for the Operator's business;

(ii) nothing in this clause will exempt the Operator from any liability that is not covered by the liability insurance policy referred to in **clause 16.1(a)**; and

(iii) nothing in this clause will impose liability on ARTC, including where ARTC approves a reduction in the liability limit referred to in **clause 16.1(b)(ii)**.

16.2 ARTC's Insurance Policies

(a) ARTC will during the Term take out and maintain a liability insurance policy which provides an indemnity in respect of:

(i) loss of, loss of use of, and destruction or damage to, real or personal property;

(ii) injury to, or disease or death of, persons;

(iii) ARTC's liability to the Operator under **clause 15** to the extent coverable by insurance.

(b) The liability insurance policy referred to in **clause 16.2(a)** will have a limit of liability of not less than $250,000,000 for any one occurrence.

(c) ARTC will:

(i) deliver to the Operator when reasonably requested by the Operator copies of such parts of the liability insurance policy referred to in **clause 16.2(a)** and the Certificates of Currency in relation to such policy, subject to the details of such policy being kept confidential by the Operator (other than for the purpose of seeking indemnification thereunder);

(ii) publish annually the amounts paid by it by way of premiums for the insurance referred to in **clause 16.2(a)**.

(d) In the event that there is a substantial reduction in the amounts paid by way of premiums as disclosed under **clause 16.2(c)(ii)**, ARTC will, in consultation with all operators granted access to the Network, apply any such savings towards repairs, maintenance or upgrading of the Network or as otherwise agreed between the parties.

17. RESOLUTION OF DISPUTES

17.1 Procedure to Settle Disputes

(a) If there is a dispute between the parties relating to or arising out of this Agreement ("**Dispute**") then, unless otherwise expressly agreed to the contrary by both parties, such Dispute will be resolved in accordance with this **clause 17**. Either party may give to the other party to the Dispute notice in writing ("**Dispute Notice**") specifying the Dispute and requiring it to be dealt with under this **clause 17**. The parties will use reasonable endeavours acting in good faith to settle the Dispute as soon as practicable.

(b) The procedure that is to be followed to settle a Dispute arising under this Agreement is as follows:

(i) first, negotiation of the Dispute under **clause 17.2**; and

(ii) second, mediation of the Dispute under **clause 17.3**.

17.2 Negotiation

If there is a Dispute between the parties relating to or arising out of this Agreement, then within seven (7) days after the date of the Dispute Notice, senior representatives from each party will meet and use reasonable endeavours acting in good faith to resolve the Dispute by joint discussions.

17.3 Mediation

(a) If the Dispute is not resolved under **clause 17.2** within twenty one (21) days after the date of the Dispute Notice then the Dispute will be referred to the chief executive officers of both parties who will attempt to resolve the Dispute, including by informal mediation.

(b) If the Dispute is not resolved within fourteen (14) days after being referred to the chief executive officers under **clause 17.3(a)**, the Dispute will be referred to formal mediation in South Australia to be mediated by a single mediator appointed by agreement of the parties or if they fail to agree within fourteen (14) days, a mediator appointed by the President of the Law Society of South Australia acting on the request of either party.

(c) Unless the parties otherwise agree:

(i) the mediation will be conducted by a mediator under the "Guidelines for Legal Practitioners Acting as Mediators" of the Law Society of South Australia (whether or not the mediator is a legal practitioner);

(ii) the parties may appoint a person, including a legally qualified person to represent it or assist it in the mediations;

(iii) each party will bear their own costs relating to the preparation for and attendance at the mediation; and

(iv) the costs of the mediator will be borne equally by the parties.

(d) Nothing in this **clause 17.3** prohibits a party from seeking and obtaining appropriate injunctive relief.

(e) Subject to **clauses 17.3(d) and (f)**, pending completion of the procedure set out in this **clause 17**, a Dispute will not be the subject of legal proceedings between the parties. If legal proceedings are initiated or continued in breach of this **clause 17.3(e)**, a party to the Dispute is entitled to apply for and be granted an order of the court adjourning those proceedings pending completion of the procedure set out in this **clause 17**.

(f) This **clause 17** does not prejudice the right of a party:

(i) to require the continuing observance and performance of this Agreement by all parties;

(ii) to institute proceedings to enforce payment due under this Agreement where the requirement for payment is not in dispute;

(iii) to terminate the Agreement where the basis for doing so is not in dispute.

17.4 Termination of mediation

If the Dispute is not resolved within one (1) month of the appointment of the mediator (if any) under **clause 17.3(b)**, either party may by notice in writing to the other terminate the mediation proceedings.

18. CONFIDENTIALITY

18.1 Acknowledgment of Confidentiality

Each party acknowledges, subject to **clause 18.2**, that all information provided by one party ("**Provider**") to the other ("**Receiver**") under this Agreement that relates directly to:

(a) the Operator's future markets;

(b) the Operator's future market and business strategies; and

(c) the strategies of ARTC's or the Operator's customers;

("**Confidential Information**") is secret and confidential and that the Receiver of Confidential Information will treat that Confidential Information as secret and confidential and the property solely of the Provider and not use that Confidential Information for any purpose other than the provisions of this Agreement allow.

18.2 Exclusions from "Confidential Information"

For the purposes of this **clause 18** "Confidential Information" does not include information which is:

(a) in the public domain at the time of disclosure other than through the fault of the Receiver or of anyone to whom the Receiver has disclosed it;

(b) obtained lawfully from a third party without restriction on use or disclosure;

(c) required to be made public by operation of law (subject to the Receiver claiming any immunity, privilege or restriction on or from disclosure that it can reasonably claim), including without limitation information required by any stock exchange, rail safety or economic regulator;

(d) necessary for the provision of advice by the Receiver's legal advisers, financiers, accountants or other consultants (provided they are under a legal obligation not to disclose the Confidential Information to any third party).

19. ASSIGNMENT OR NOVATION

19.1 By ARTC

(a) Other than to a successor of ARTC or to any body established by any person in relation to the management of the Network or any relevant or material part of it, ARTC may not assign or novate this Agreement, its interest in the subject matter of this Agreement or any right under this Agreement without the prior written consent of the Operator which consent will not be unreasonably withheld.

(b) Nothing in **clause 19.1(a)** prevents ARTC from entering into any sub-contracting or agency agreements or arrangements in relation to any of its functions.

19.2 By the Operator

(a) Subject to the following provisions of this **clause 19.2**, the Operator may not license, assign or novate this Agreement, its interest in the subject matter of this Agreement or any right under this Agreement (in this **clause 19.2**, "**assign**"):

(i) without the prior written consent of ARTC, which consent is not to be unreasonably withheld; and

(ii) unless on or before such assignment the assignee enters into a track access or other agreement with ARTC on such terms not inconsistent with this Agreement as ARTC may reasonably determine.

(b) The Operator may without obtaining consent under **clause 19.2(a)(i)** assign this Agreement, its interest in this Agreement or any right under this Agreement to a related body corporate if on or before such assignment the related body corporate enters into a track access or other agreement with ARTC on such terms not inconsistent with this Agreement as ARTC may reasonably determine.

(c) Subject to the Operator complying with the following provisions of this **clause 19.2(c)**, the Operator may, sell, trade, or sub-licence ("**Trade**") any Scheduled Train Paths (but not this entire Agreement) to a person who proposes to operate a Train using such Scheduled Train Paths ("**Proposed Operator**"):

(i) All of the terms of proposed Trade of Scheduled Train Paths will be recorded in a written agreement ("**Trade Agreement**"), and will include at least the following terms:

(A) the Proposed Operator will agree to be bound by all of the terms of this Agreement as if it were named as the Operator therein and will provide to ARTC evidence of its Accreditation under **clause 7** of this Agreement;

(B) the Proposed Operator will comply with all Instructions of ARTC as if the Proposed Operator was the Operator named in this Agreement;

(C) the Proposed Operator indemnifies the Operator in respect of all of the Operator's obligations and responsibilities under the Agreement;

(D) the Proposed Operator will take out insurance on commercial terms sufficient to cover such indemnity;

(E) the Operator appoints ARTC its attorney for the purposes of enforcing the Trade Agreement should ARTC in its absolute discretion determine that it wishes to take this action;

(F) all recoveries by the Operator under the Trade Agreement which are in connection with any matter, act or thing in respect of which ARTC has suffered loss is to be held on trust for ARTC and is to be applied first in satisfaction of ARTC's loss in the manner which ARTC in its absolute discretion determines;

(G) the Proposed Operator may not in turn Trade or otherwise assign any Scheduled Train Paths which have been Traded by the Operator to the Proposed Operator;

(H) the Proposed Operator acknowledges and agrees that ARTC is not liable in any respect whatsoever under the Trade Agreement or at common law or equity by reason of engaging in the process referred to in this **clause 19.2** or in vetting the Proposed Operator or in permitting Trading of Scheduled Train Paths, and the Proposed Operator releases and indemnifies ARTC in respect of such liability;

(I) any other terms which ARTC may in its absolute discretion require.

(ii) The Trade Agreement cannot commence operation without ARTC being provided a copy of the Trade Agreement and evidence of the Proposed Operator's accreditation as referred to in **clause 19.2(c)(i)(A)**.

(iii) The Operator agrees with ARTC as a term of this Agreement those matters referred to in **clauses 19.2(c)(i)(E)** and **(F)**.

(iv) The entering into a Trade Agreement by the Operator will not abrogate, impair, release or extinguish any debt, obligation or liability of the Operator to ARTC under this Agreement which may have accrued before entering into such Trade Agreement or which may accrue thereafter.

(v) The Operator indemnifies ARTC against all loss or damage suffered by ARTC caused by any acts and omissions of the Proposed Operator or of any third party

arising out of or in connection with the Proposed Operator's use of the Network, whether or not caused by the Proposed Operator's negligence or default.

(vi) The Operator acknowledges and agrees that ARTC is not liable to the Operator and to third parties in any respect whatsoever under this Agreement or under the Trade Agreement or at common law or equity by reason of engaging in the process referred to in this **clause 19.2 (c)** or in vetting the Proposed Operator or in permitting Trading of Scheduled Train Paths, and the Operator releases and indemnifies ARTC in respect of such liability.

19.3 The effect of Assignment

Assignment of this Agreement will not abrogate, impair, release or extinguish any debt, obligation or liability of one party to the other which may have accrued under this Agreement prior to the date of such an assignment.

20. FORCE MAJEURE

20.1 Suspension of Obligations

The obligations of a party are suspended during the time and to the extent that a party is prevented from or delayed in complying with its obligations for reasons of Force Majeure.

20.2 Obligations of a Party

If a party is unable to perform its obligations due to Force Majeure it will:

(a) as soon as possible after being affected, give to the other party full particulars of the Force Majeure and the manner in which its performance is thereby prevented or delayed; and

(b) promptly and diligently take all reasonable and appropriate action to enable it to perform the obligations prevented or delayed by Force Majeure, except that the other party is not obliged to settle a strike, lockout or other industrial dispute.

20.3 "Force Majeure"

In this **clause 20** "**Force Majeure**" means a circumstance beyond the reasonable control of a party which occurs without the negligence of that party and includes inevitable accident, storm, flood, fire, earthquake, explosion, peril of navigation, hostility, war (declared or undeclared), insurrection, sabotage, terrorism and security matters, nuclear ionisation, executive or administrative order or act of either general or particular application of any government prohibition or restriction by domestic or foreign laws, regulations or policies (other than laws specifically for that purpose passed by the Commonwealth), quarantine or customs restrictions, strike, lockout or industrial dispute, break-down or damage to or confiscation of property but does not include breakdown or delay of any Trains or Rolling Stock operated by the Operator.

21. GOVERNING LAW

21.1 Law of the Agreement

The law of this Agreement is the law of South Australia.

21.2 Jurisdiction

The parties to this Agreement agree that the Courts of South Australia will have exclusive jurisdiction to hear and determine all disputes which may arise out of this Agreement.

21.3 Commencement

The parties agree that if either party commences or maintains any claim or proceeding relating to this Agreement in any place in the world this clause may be pleaded by the other party as an absolute bar to such claim or proceeding if they are commenced anywhere other than in the State of South Australia.

22. VARIATION

22.1 Variation to be in Writing

The variation or waiver of a provision of this Agreement, or a party's consent to a departure from a provision by another party, will be ineffective unless in writing, signed by the parties.

22.2 Change of Circumstances

The parties agree that if circumstances relevant to this Agreement materially change, the parties will meet in good faith and consider the future arrangements between the parties under this Agreement.

23. SEVERABILITY

If any provision of this Agreement is voidable, illegal, or unenforceable, or if the Agreement would, if a particular provision were not omitted be void, voidable, illegal or unenforceable, that provision will (without in any way affecting the validity, legality and enforceability of the remainder of the Agreement) be severed from the Agreement and the Agreement will be read and construed and take effect for all purposes as if that provision were not contained in this Agreement.

24. NOTICES

24.1 Notice

A notice or other communication required or permitted to be given by a party to another will be in writing and:

(a) delivered personally;

(b) sent to an address in Australia by security post or certified mail, postage prepaid; or

(c) sent by facsimile transmission, to the facsimile number described below.

24.2 Deemed Notice

A notice or other communication is deemed given if:

(a) personally delivered, upon delivery;

(b) mailed to an address in Australia, on actual delivery to the addressee, as evidenced by Australia Post documentation;

(c) sent by facsimile (and is other than a notice of termination or suspension of this entire Agreement), on the next Business Day after being sent if following transmission the sender receives a transmission confirmation report or if the sender's machine is not so equipped to issue a transmission confirmation report then upon the sender receiving acknowledgment of receipt.

24.3 Addresses for Service

Each party's address for service is:

(a) in the case of ARTC:

Name: Australian Rail Track Corporation Limited
Address: Ground Floor
ARTC Building
off Sir Donald Bradman Drive

Passenger Rail Terminal Road
MILE END SA 5031
Attention: Chief Executive Officer
Facsimile: (08) 8217 4578

(b) and in the case of the Operator:

Name: 3801 Ltd
Address: Australian Technology Park Locomotive Workshop
Suite 2, 2 Locomotive Street
EVELEIGH NSW 2015
Attention: Chairman
Facsimile: 02-9698 4553

24.4 Change of Address

A party may change its address for service by giving written notice of that change to the other party.

24.5 Twenty-four hour contact details

Each party will provide to the other party, and maintain as current, the name and full details of one or more persons who, together, are available at any time on any day for emergency contact by the other party.

25. RISK AND COST OF PERFORMING OBLIGATIONS

Subject to this Agreement:

25.1 whenever the Operator is obliged or required hereunder to do or effect any act, matter or thing then the doing of such act, matter or thing will, unless this Agreement otherwise provides, be at the sole risk and expense of the Operator;

25.2 whenever ARTC is obliged or required hereunder to do or effect any act, matter or thing then the doing of such act, matter or thing will unless this Agreement otherwise provides, be at the sole risk and expense of ARTC.

26. NO PARTNERSHIP OR AGENCY

Nothing in this Agreement will constitute or be deemed to constitute a partnership between the parties or be deemed to constitute the Operator as agent of ARTC for any purpose whatever and the Operator has no authority or power to bind ARTC or to contract in its name or to create a liability against it in any way or for any purpose.

27. OTHER AGREEMENTS

This document comprises the whole Agreement between the parties relating to use of the Network, and to the extent to which it is inconsistent with any existing agreement between the parties, will prevail over those existing agreements.

28. COUNTERPARTS

This Agreement may be signed in any number of separate counterparts, which taken together are deemed to comprise the one instrument. The parties agree that copies provided to the other party by facsimile transmission evidence signing by the party sending such facsimile.

EXECUTED as an Agreement.

SIGNED for and on behalf of **AUSTRALIAN RAIL TRACK CORPORATION LIMITED** by authority of its Directors in accordance with section 127 of the Corporations Act 2001:

Signed

DAVID MARCHANT.

Full Name (Print)

Director

Signed

GEOFF ATKINSON

Full Name (Print)

Director/ Secretary

SIGNED for and on behalf of **3801 LTD** by authority of its Directors in accordance with section 127 of the Corporations Act 2001:

Signed

Spencer Charles Ross

Full Name (Print)

Director

Common Seal

Signed

John Reginald Glastonbury

Full Name (Print)

Director

Director/ Secretary

25th November 2008.

SCHEDULE 1

Network
(Clause 1.1)

South Australia, part Western Australia (Kalgoorlie to WA/SA border) and part New South Wales (SA/NSW border to Broken Hill)

1. **Tarcoola – Asia Pacific Interface Point**

   Mainline from the 504.5 kms mark to the 510.85 kms mark.

2. **Kalgoorlie to Crystal Brook**

   Mainline from the eastern end of Kalgoorlie at 1780.600 kms to Crystal Brook including all tracks, turnouts and signals forming the Crystal Brook and Coonamia triangle.

3. **Port Augusta to Whyalla**

   Mainline from the point of connection with the Kalgoorlie to Port Augusta line to the main line facing points located at 166.590 kms at the northern entrance to the Whyalla yard.

4. **Crystal Brook to Broken Hill**

   Mainline from the eastern end of the Crystal Brook triangle to the western end of Broken Hill at 391.990 kms.

5. **Crystal Brook to Dry Creek**

   Mainline from the southern end of the Crystal Brook triangle to the southern apex of the Dry Creek triangle.

6. **Adelaide Metropolitan Area**

   6.1 Mainline from Dry Creek including all tracks, points and signals forming the Dry Creek triangle to Port Adelaide Junction (signal 1155).

   6.2 Mainline from Glanville (signal 1456) to Pelican Point Outer Harbour.

   6.3 Mainline from Gillman Junction to a point approximately 100 metres before the Eastern Parade level crossing at Port Adelaide flat.

7. **Dry Creek to the South Australian/Victorian border**

   Mainline from the southern apex of Dry Creek Triangle to the Victorian border at 313.209 kms.

8. **Crossing Loops**

   All crossing loops within each corridor described above.

9. **Authority Points**

   All other rail track connecting with those running lines within each corridor described above between the mainline and the last signal, derail or other point of authority on that rail track protecting access to the running line.

Victorian Lease

Part 1 – Mainline South Australia to Melbourne*

Location	Boundary
SA VIC Border	Marked distance 463.610 km
Mainline including crossing loops, dual gauge, turnouts, and diamond	Last long timber at turnouts to sidings and diamond crossings
Dimboola	Last long timber to Yaapeet branch line
Murtoa	Last long timber to Hopetoun branch line
Maroona	Last long timber to Portland branch line
Gheringhap	Last long timber at Divergence of dual gauge at Butcher Road 81.600 km
North Geelong "C"	Last long timber at divergence of dual gauge
Newport	Last long timber at divergence of dual gauge
Brooklyn	Last long timber at divergence of dual gauge
Sims Street Junction	Ref "Part 3 – Melbourne Boundaries"

Part 2 – Mainline New South Wales to Melbourne*

Location	Boundary
Albury**	Marked distance 304.163 km
Mainline including crossing loops, cripple roads, dual gauge, turnouts, and diamond	Last long timber at turnouts to sidings (other than cripple roads) and diamond crossings
Somerton	Last long timber in turnout to No. 3
McIntyre	Last long timber in turnout No. 2
Sims Street Junction	Ref "Part 3 – Melbourne Boundaries"

*To the extent that such railway lines are owned by ARTC or leased by Victorian Rail Track to ARTC.

** To the extent that such railway lines are leased by RIC and SRA to ARTC.

Part 3 – Melbourne* Boundaries

South Dynon Junction to Spencer Street **Location**	**Boundary**
Spencer Street signal	SST184
Reversing Loop Junction	Last long timber in the mixed gauge
Contrans Siding	Dwarf Signal 204
South Dynon Terminal (east end)	Dwarf Signals 214 & 210
South Dynon Terminal (west end)	Dwarf Signals 126, 228, 230 & 232

Sims Street Junction to North Dynon **Location**	**Boundary**
North Dynon Intermodal Terminal	Dwarf Signals 92 & 94
North Dynon Agents Area	Dwarf Signal 90

South Dynon Junction to Appleton Dock **Location**	**Boundary**
Operations Terminal (west end)	Dwarf Signal 142
Operations Terminal (east end)	Dwarf Signal 236 Note: track on crossover between MOT No. 3 track and MOT no. 2 track, beyond the last long timber and turnout No. 235, does not form part of the ARTC Network. Dwarf Signal 238, although beyond the ARTC boundary, forms part of the ARTC Network.
Appleton Dock	Footscray Road Level Crossing

Other Areas **Location**	**Boundary**
Track to NRC Wagon maintenance Centre	Dwarf Signal 154
Locomotive Provisioning Centre (west end) Locomotive Provisioning Centre (east end)	Dwarf Signal 130 Dwarf Signal 128 Note: track between the last long timber turnout No. 127D and the last long timber on turnout No. 123U, does not form part of the ARTC Network.
Sims Street Triangle	Sims Street Junction Weighbridge Junction South Dynon Junction

*To the extent that such railway lines are owned by ARTC or leased by Victorian Rail Track to ARTC.

New South Wales Lease

Mainline, crossing loops, dual gauge and turnouts as summarised below:

1. 648.000 km Albury[1] to 57.965 km Macarthur[2]

2. Newcastle (Islington Junction)[2] 163.920 km on the Down Relief Down Islington Loop Up Islington Loop (Woodville Junction to Islington Junction) and 164.045 km on the Up and Down Mains (Islington to Hamilton) to 875.980 km Queensland Border (Border Loop Tunnel)[3] and to 416.025 km The Gap (via Werris Creek)

3. 428.300 km northern apex and 428.900 km southern apex of the Cootamundra West Triangle to 1126.640 km Broken Hill[4] and to 416.025 km The Gap

4. 144.500 km northern end of north fork and 145.000 km southern end of south fork at Moss Vale Junction to 91.080 km Unanderra[2]

5. Muswellbrook to Merrygoen (via Ulan)

[1] To the extent where the railway line joins that part of the Network leased by Victorian Rail Track to ARTC.

[2] To the extent where the railway line joins the rail network owned by RailCorp.

[3] To the extent where the railway line joins the rail network owned by Queensland Rail.

[4] To the extent where the railway line joins the rail network owned by ARTC.

3801 Ltd - Schedule 2

Scheduled Train Paths

	Entry into Network			Exit from Network								
Train #	Location	Day	Time	Location	Day	Time	Flagfall	Path Term	Path Start Date	Path End Date	ENOC Event	Free Cancellation Per Year
CL21	Unanderra	Sun, Wed, Thu	1108	Moss Vale	Sun, Wed, Thu	1345	Passenger		02/12/2008			
CL22	Moss Vale	Sunday	1515	Unanderra	Sunday	1700	Passenger		02/12/2008			
CL22	Moss Vale	Wed, Thu	1440	Unanderra	Wed, Thu	1640	Passenger		02/12/2008			

ARTC PRICING SCHEDULE
Applicable Rates - Effective from 1 July 2008

TRACK ACCESS PRICES	EAST - WEST										NORTH - SOUTH					HUNTER VALLEY & INLAND			
	PARKES JCT - BROKEN HILL	BROKEN HILL - CRYSTAL BROOK	ADELAIDE - PARKESTON	TARCOOLA - APT INTERFACE	PT AUGUSTA - WHYALLA	ADELAIDE - PELICAN PT	ADELAIDE - MELBOURNE	APPELTON DOCK JCT - FOOTSCRAY RD	FOOTSCRAY RD - APPELTON DOCK / SWANSTON DOCK	BORDER LOOP - ISLINGTON	TOTTENHAM - ALBURY	ALBURY - MACARTHUR	COOTAMUNDRA - PARKES JCT	MOSSVALE - UNANDERRA	MAITLAND - MUSWELLBROOK	MUSWELLBROOK - MERRYGOEN	MUSWELLBROOK - WERRIS CREEK	PARKES - WERRIS CREEK
All Freight	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
VARIABLE PRICE PER '000 GTK	3.439	3.439	2.637	4.940	4.448	3.884	2.950			3.074	2.417	2.417	3.384	3.886	3.275	2.889	3.275	2.152
FLAGFALL PRICE per TRAIN KM																		
Passenger	1.477	1.477	3.616	4.438			2.226											
Express Freight	0.966	0.966	3.422				1.789				1.019	1.019	1.019					
Regular Freight	1.028	1.028	3.410		2.294		2.077	41.795	17.902	1.674	1.622	1.622	1.340	0.989	4.583	4.689	3.994	0.521
Super Freight	0.949	0.949	3.400	4.120	2.294	2.441	1.830	41.795	17.902	0.891	0.962	0.962	0.917		0.417	0.451	0.417	0.094
Standard Freight	0.485	0.485	2.425		1.657	2.032	1.740	41.795	17.902	0.788	0.595	0.595	0.405	0.498	0.417	0.406	0.417	0.080
Heavy Freight																		
VARIABLE PRICE PER '000 GTK											4.689	4.689		6.252				
FLAGFALL PRICE per TRAIN KM																		
Heavy Freight											1.622	1.622		0.989				
Express Passenger																		
VARIABLE PRICE PER '000 GTK	3.392									3.033		2.385		3.231	3.231		3.231	2.123
FLAGFALL PRICE per TRAIN KM																		
Express Passenger	1.715									1.811	1.935	1.935		1.746	1.710		1.725	1.728

FLAGFALL APPLICATION

FLAGFALL	TRAIN TYPE AND DESCRIPTION	TRAINS
Express Passenger	Max train speed above 115kph /Max Axle Loading up to 19T	XPT, Intra Urban Passenger, Intra State Passenger
Passenger	Max train speed 115kph /Max Axle Loading up to 19T	Long Distance Passenger
Express Freight	Max train speed 115kph /Max Axle Loading up to 20T	Bi Modal
Regular Freight	Max train speed 80kph / Max Axle Loading up to 23T / Length to corridor standard max	Scheduled Services including Steel, Ore, Cement, Concentrates
Heavy Freight	Max train speed 80kph / Max Axle Loading up to 25T / Length to corridor standard max	Limestone
Super Freight	Max train speed 110kph / Max Axle Loading up to 21T / Length up to corridor standard max	Intermodal, Land Bridging
Standard Freight	Max train speed 80kph / Max Axle Loading up to 23T / Length to corridor standard max	Non Scheduled services including Grain, Minerals

** *Rates apply to ARTC business customers only*

** *10% GST will be added to the total invoice charged based on above charges*

** *Some rounding may occur on the final invoice*

SCHEDULE 4
Network Management Principles
(Clause 1.1)

The schedule applies in the circumstances where Train Paths are interrupted due to matters outside ARTC's control and there is a need to resolve competing interests of users of the Network.

Train Decision Factors

The following definitions apply in this Schedule 4 except where expressly limited.

"Commuter Peak Services" means RailCorp's commuter rail passenger services arriving at Sydney Central Station or Newcastle Station between 0600 and 0900 hours and departing Sydney Central Station or Newcastle Station between 1600 and 1800 hours and continuing until they reach their destination point.

"Express Freight Services" means those freight services capable of maintaining sectional running times that are, or are determined by the appropriate Train Controller, to operate at faster sectional times than local Frequent-Stopping Services.

"Frequent-Stopping Services" means those rail passenger services that stop at most or all stations along their Train Path.

"Healthy Train" means a Train that, having regard to the daily train plan applicable on the day:

(a) presents to the Network on time, is configured to operate to its schedule and operates in a way that it remains able to maintain its schedule; or

(b) is running late only due to causes within the Network, but only where the root cause is outside the Operator's control; or

(c) is running on time, regardless of previous delays.

"Limited-Stop Services" means those rail passenger services that stop at a few selected stations along their Train Path.

"Long-distance Passenger Services" means those rail passenger services operating to or from points outside the metropolitan rail area, excluding RailCorp's CityRail services.

"Non-Revenue Positioning Movements" means movements of Trains required for reasons other than revenue services.

"Special Event" means a major community, cultural, sporting or similar event within the Sydney metropolitan rail area, which is identified as such by a relevant NSW agency, and which may require:

(a) a special timetable for the operation of RailCorp rail passenger services before, during and after the event; and

(b) significant operational priority for RailCorp rail passenger services; and

(c) consequential adjustments to other rail operators' services;

"Train" means a single unit of rolling stock or 2 or more units of rolling stock including a locomotive or other self propelled unit coupled together to operate on the Track as a single unit.

"Train Control" means the control and regulation of all rail operations (including Train Movements, movements of rolling stock and track maintenance vehicles) to ensure the safe, efficient and proper operation of the Network.

"Train Movement" means a particular trip by a Train on a Train Path.

"Train Path" means the series of network segments over a particular time interval through which a Train can travel and may include stopping points and intervals and fuelling stations and other set down or changeover points.

TRAIN DECISION FACTORS:

1. **Where Trains are on-time**, they will be managed as specified in the daily train plan.

2. **Where one or more Trains are late or unhealthy**, they will be managed as specified in the matrices below subject to a rail operator's preferences for its own services.

The 2 tables are used in conjunction with each other. Table 1 will enable a person undertaking Train Control (**"Train Controller"**) to define the relative priority of two conflicting Trains. Table 2 will specify the type of decision available to a Train Controller in delivering Train Control directions to resolve the potential conflict.

Table 1 – Train Priority Matrix

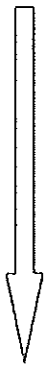
Decreasing order of priority	**Type of train service in ARTC Network**
From Highest	Long-distance Passenger Services
	Commuter Peak Services and rail passenger services likely to affect Commuter Peak Services or Special Event services
	Limited -Stop Services that are not Commuter Peak Services or Special Event Services
	Freight services likely to affect Commuter Peak Services or Special Event services
	Express Freight Services
	Frequent-Stopping Services that are not Commuter Peak Services
	Non-express Freight Services
To Lowest	Non-Revenue Positioning Movements

Table 2 – Decision Matrix

Trains of Equal Health	Both Healthy One on Time & One Late	Both Late
Equal Priority Trains	Rule 1 – 2	Rule 3
Unequal Priority Trains		Rule 6 – 3
Higher Priority Train is On Time – Lower Priority is Late	Rule 5 – 2	
Higher Priority Train is Late – Lower Priority Train is On Time	Rule 4 –2	

Trains of Unequal Health	Rule 7 – 2

Rule 1:

(a) A Healthy Train should be managed such that it will exit on time.

(b) If a Healthy Train is running late, it should be given equal preference to other Healthy Trains and advanced wherever possible to regain lost time. Any delay to other Healthy Trains as a result of such advancement must be kept to a minimum as defined in Rule 2.

Rule 2: The following delay limits apply to the full journey of a Healthy Train being held back:

(a) the delay to the individual rail passenger service held back does not exceed 5 minutes;

(b) there is a plan in place to recover lost time so that the downstream effect on the service held back and on individual subsequent rail passenger services also does not exceed 5 minutes;

(c) the delay to a freight service held back does not exceed 15 minutes; or

(d) there is a plan in place to recover lost time so that the downstream effect on the healthy freight service held back and on individual subsequent healthy freight services also does not exceed 15 minutes. Any plan for the recovery of time by freight services must be capable of being achieved prior to their entry into the Sydney metropolitan rail area.

Rule 3: Give preference to the Train whose Train performance indicates it will lose least or no more time and even make up time and hold the gain; and consider downstream effect to minimise overall delay.

Rule 4: A lower priority Train gets preference. A higher priority Train can be given preference subject to the delay to the lower priority Train being kept to a minimum as defined in Rule 2.

Rule 5: A higher priority Train should be given preference over a lower priority Train. A lower priority Train may be given preference over a higher priority Train provided the delay to that Train is kept to a minimum as defined in Rule 2.

Rule 6: A high priority Train has preference, subject to Rule 3.

Rule 7: A Healthy Train should be given preference over an unhealthy Train. An unhealthy Train may be given preference over a Healthy Train provided the delay to that Train is kept to a minimum as defined in Rule 2.

SCHEDULE 5
Key Performance Indicators
(Clauses 1.1 & 2.10)

KEY PERFORMANCE INDICATORS
Reliability

Measured by:

Indicator	Measure	Level of Detail
Exit Performance of Healthy Trains*	% on time exit (within agreed tolerance) from ARTC network of healthy services	By operator By service (MP5, AP4 etc)
Non-deterioration of Unhealthy Trains*	% non-deterioration (within agreed tolerance) of unhealthy services while on ARTC network	
Train Health*	% of total services which are operated in a healthy manner	

* "Healthy Train" means a Train that, having regard to the daily train plan applicable on the day:

(a) presents to the Network within agreed tolerance, is configured to operate to its schedule and operates in a way that it remains able to maintain its schedule; or
(b) is running late only due to causes within the Network, but only where the root cause is outside the rail operator's control; or
(c) is running on time within agreed tolerance, regardless of previous delays.

Measurement should exclude performance affected by a force majeure event.
Measurement would be on a monthly basis.

Speed Restriction Impact - Theoretical Benchmark

Measure the movement over time of the impact of prevailing speed restrictions on train running (measured in minutes):

- Model/estimate the extent of the impact of temporary speed restrictions in existence as at an agreed point in time.
  - Impact estimates for a typical train over current track under typical environmental conditions
- Periodically model/estimate the impact of prevailing temporary speed restrictions on typical train running.
- Measure the variation in the impact of prevailing temporary restrictions over time compared to initial measurements.
- Typical train and track should be specific to operator, flagfall type and route.
- Measurement and modelling costs should be borne jointly.
- Modelling estimation would be on a monthly or quarterly basis depending on cost.

Availability

Measure:

- % of agreed paths varied for the purpose of track owner possession
  - Exclude force majeure events
  - Reporting would be at total operator level and on a monthly basis.

Safety

Measure:

- No. of reportable occurrences specific to an operator and categorised as per current regulatory requirement.
  - Major Minor
  - By type of incident (rollingstock defect, safeworking breach etc)
- Reporting should focus at the operator and relevant corridor level, and be carried out on a monthly basis.
- Reporting will be carried out by network manager (to operator) and by operator (to network manager).

Train/Rollingstock Quality

Identify those aspects of train and rollingstock "quality" which can be reasonably and should be measured (eg. wheel condition, axle loading, wagon ride quality, train length power).
Identification of aspects suitable for measurement and reporting may evolve over time.

Measure:

- Incidence of failure by aspect of train quality.
  - Measurement would be made by various available detection devices (eg wheel impact detector, bearing detector etc)
  - Reporting would be at a total operator level and on a monthly basis.
  - Measurement should be jointly funded.

Track Quality

Measure:

- Track Quality Index (summation of weighted measures (standard deviations x 3) related to track condition parameters) for a corridor segment of track.
  - Calculated over 100m sections, using 0.5m raw data from measuring car equipment.
  - Relevant TQI component measures include:
    - Vertical alignment (20m inertial top (average of left and right rails))
    - Horizontal alignment (versine over a 10m chord (average over left and right rail))
    - Twist (relative height of two rails measured over 2.0m)
    - Gauge variation (distance between tracks)
- Other track surface condition measures:
  - Impact Loading (weld dips)
  - Roughness (corrugations)
- Standards of measurement and definitions would be consistent with those currently employed and available to ARTC (AK car)
- Reporting would be on the basis of corridors segments relevant to the operator and carried out on a quarterly basis (TQI) and up to annually (other measures).

SCHEDULE 6
Code of Practice
(Clauses 1.1 & 5.5)

WA, S.A, part VIC and part NSW (Kalgoorlie to Dimboola and Crystal Brook to Broken Hill)

Network Rules

1. Volume 1 General Requirements and Interface Management - ARTC's Code of Practice for the Defined Interstate Rail Network:

2. Volume 2 Glossary - ARTC's Code of Practice for the Defined Interstate Rail Network:

3. Volume 3 Parts 1 and 2 Operations and Safeworking - ARTC's Code of Practice for the Defined Interstate Rail Network:

4. ARTC Addendum to the Code of Practice for the Defined Interstate Rail Network:

Interface Requirements

5. Network Interface Co-ordination Plan [TA02]

VIC (Dimboola to Albury)

Network Rules

6. ARTC Code of Practice for Victorian Mainline Operations [TA20]

Interface Requirements

7. Network Interface Co-ordination Plan [TA02]

NSW (Excluding Cockburn to Broken Hill)

Network Rules

8. ARTC Network Rules:

9. ARTC Network Procedures:

Interface Requirements

10. ARTC Train Operating Conditions Manual

Copies of all of these documents are available on ARTC's website www.artc.com.au

SCHEDULE 7
NSW Rail Network: Supplementary Terms

1 DEFINITIONS AND INTERPRETATION

The parties agree for the purposes of this Schedule:

(a) "**IPART**" means the Independent Pricing and Regulatory Tribunal;

(b) "**NSW Rail Access Undertaking**" means the access undertaking, given by Rail Infrastructure Corporation and Rail Corporation New South Wales pursuant to Schedule 6AA of the Transport Administration Act 1988 (NSW) as amended from time to time;

(c) "**NSW Rail Network**" has the meaning given in the Transport Administration Act 1988 (NSW);

(d) "**Werris Creek and Hunter Valley Section**" means that part of the NSW Rail Network between Parkes and The Gap, The Gap and Maitland, Merrygoen and Muswellbrook and Newcastle Terminals.

2 BACKGROUND

(a) The Network in Schedule 1 includes the Werris Creek and Hunter Valley Section. Schedules 2 and 3 include Train Paths and charges respectively for the Werris Creek and Hunter Valley Section.

(b) The Werris Creek and Hunter Valley Section is regulated under the NSW Rail Access Undertaking administered by IPART. The remainder of the Network is regulated under the Access Undertaking administered by the ACCC.

(c) The terms in the body of this Agreement apply to the Werris Creek and Hunter Valley Section as supplemented by the terms in this Schedule. The supplementary terms are required in order to ensure compliance with the NSW Rail Access Undertaking.

3 TERM

3.1 Change in status of the Werris Creek and Hunter Valley Section

(a) If any part of the Werris Creek and Hunter Valley Section becomes regulated under the Access Undertaking or is no longer regulated under any undertaking, then this Schedule has no effect in respect of those parts of the Werris Creek and Hunter Valley Section from the date the NSW Rail Access Undertaking ceases to apply to those parts.

(b) If any part of the Werris Creek and Hunter Valley Section becomes regulated under an undertaking other than the NSW Rail Access Undertaking or the Access Undertaking, then either party may give notice to the other requesting amendments to this Agreement in respect of those parts of the Werris Creek and Hunter Valley Section which are regulated by a new undertaking to the extent necessary or desirable to reflect the terms of the new undertaking. The parties must negotiate the amendments in good faith.

(c) If the parties are unable to agree changes within 6 months of a notice under paragraph (b), then either party may, on further notice, terminate the operation of this Agreement in relation to the relevant parts of the Werris Creek and Hunter Valley Section in which case, subject to clause 14.5(b) and (c), the relevant parts of Schedules 1, 2 and 3 and this Schedule cease to have effect.

3.2 Renewal

For the purposes of clause 2.9(d), if the Operator specifies Scheduled Train Paths relating to the Werris Creek and Hunter Valley Section, the terms and conditions of the new track agreement applicable to those Scheduled Train

Paths will be determined in accordance with the access undertaking or access undertakings (if any) applicable to those parts of the Werris Creek and Hunter Valley Section on which the Scheduled Train Paths will operate.

4 NO HINDERING ACCESS

Neither the Operator nor ARTC will engage in conduct aimed at hindering the rights of any other person to enter onto the NSW Rail Network to operate or move rolling stock.

5 DISCLOSURE

The Operator agrees that nothing in this Agreement prevents ARTC from:

(a) creating, maintaining and disclosing information packages; and

(b) providing information to IPART, any relevant regulatory agency or the New South Wales Minister with responsibility for transport,

in accordance with the NSW Rail Access Undertaking.

6 ARBITRATION

(a) If a Dispute concerns in whole or in part a Train Path on the Werris Creek and Hunter Valley Section and the Dispute is not resolved under clause 17.2 or clause 17.3, then following termination of the mediation proceedings under clause 17.4, either party may give notice to the other party requiring that part of the Dispute relating to the Werris Creek and Hunter Valley Section to be determined by arbitration under this clause 6 of Schedule 7.

(b) If a notice is given under paragraph (a), the following will apply:

(i) The arbitrator will be IPART or an alternative arbitrator appointed by IPART in accordance with Section 24B of the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW).

(ii) Part 4A of *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) will apply to govern the arbitration.

(iii) The determination of the arbitrator will be final and binding subject to any rights of review by a court of law.

(iv) If the substance of the Dispute also applies to other parts of the Network, then the parties will negotiate in good faith to agree a process for resolving the entire Dispute in an expeditious manner, for example, having the arbitration extended to the entire Dispute.

7 PRICE VARIATIONS

If ARTC exercises its right under clause 4.5(b) in relation to Services using the Werris Creek and Hunter Valley Section, then the reference to "Access Undertaking" in that clause will be taken to be a reference to the relevant undertaking applying to those Services (if any).

Appendix I – Traffic Management Plan

BETTER TRANSPORT FUTURES
MARK WAUGH

Ammonium Nitrate Storage and Distribution Facility Sandgate, NSW

ERM Australia Pty Ltd

Traffic Management Plan

June 2013

Mark Waugh Pty Ltd

ABN 67 106 169 180

Document History and Status

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Author:	Sean Morgan
Company:	Better Transport Futures
Name of Project:	Crawfords Freightlines
Name of Document:	Traffic Management Plan
Document Version:	Version 2 - Final
Project Number:	P0924A

The RTA has been renamed the Roads and Maritime Authority (RMS); however, documents prepared by this organisation prior to this change retain the RTA as author. Reference to the RTA should be ready as being the RMS for the purpose of this assessment.

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Contents

Document History and Status i

1 Introduction 1

1.1 Development Consent 2

2 Existing Road Network 3

2.1 Traffic Volumes 4

2.2 Restricted Access Vehicle Routes 5

3 Unloading Activities 7

3.1 Methodology 7

3.2 Timing 7

3.3 Working Hours 7

4 Delivery Activities 9

4.1 Methodology 9

4.2 Working Hours 9

5 Traffic Control Plan 12

5.1 General 12

5.2 Hours of Permitted Vehicle Activity 12

5.3 Access 12

5.4 Designated Haulage Routes 12

5.5 Cyclists and Pedestrians 13

5.6 General Traffic Control Considerations 13

5.7 Traffic Impact 14

Appendix A. On Site Traffic Management Plan 15

Appendix B. Route Plan and Risk Assessment 16

1 Introduction

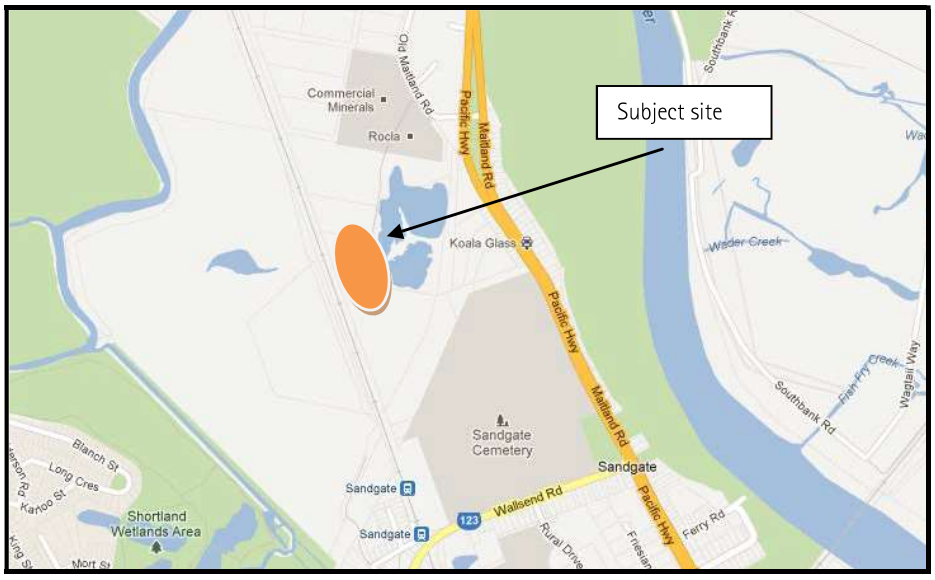
Better Transport Futures was commissioned ERM Australia Pty Ltd to prepare a Traffic Management Plan (TMP) to manage traffic associated with the operation of an ammonium nitrate storage and distribution facility, operated by Crawfords Freightlines (Crawfords) at Sandgate, NSW. Final conditions of consent, issued on 13 June 2013, have been provided for the subject site to be developed with a capacity of 13,500 tonnes. Currently, Crawfords is managing operating conditions with a capacity of just 2,000 tonnes.

The subject site is located in proximity to the intersection of the Pacific Highway and Old Maitland Road at Sandgate, NSW. Access to the site is provided from a private service road off Old Maitland Road.

The site is owned by Sierra Sun Pty Ltd. Crawfords Freightlines lease the majority of the site, with a smaller portion, to the north of the administration buildings, leased by Scafflink Australia Pty Ltd (Scafflink). Crawfords lease the administration building and Sheds A, B, C and part of Shed D as well as the outdoor storage compounds adjacent to Sheds B and C. Crawfords sub-lease a dedicated section adjacent to Shed D to the Australian Quarantine Inspection Service (AQIS).

Crawfords Freightlines provides a service to their Client's for the storage and distribution of ammonium nitrate. The layout of the existing development is shown in Appendix A.

Due to the volume of large vehicles having to access the site and the potential impact on the road network, a TMP is required to control vehicle movements. Large vehicle movements are associated with the stocking of product which arrives by vessel into the port of Newcastle monthly (on average) and is offloaded and transported over a 24-36 hour period to the Sandgate facility. Deliveries of product to end users (primarily mines) are transported by truck as required to a variety of locations throughout the Hunter Valley and beyond.



Source: Google maps

Figure 1-1 Subject Site

1.1 Development Consent

The conditions of consent as they relate to road traffic are outlined in Schedule 3, conditions 5a, 38 and 39. Section 5a (transportation of hazardous materials) has been considered in the route risk assessments carried out by Crawfords and included in Appendix B. Section 38 and 39 of the Development Consent issued by the Minister for Planning and Infrastructure (application SSD-5119) is reproduced below:

Road Traffic

Operating Conditions

38. The Applicant shall ensure that:

(a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest versions of *AS 2890.1* and *AS 2890.2*;

(b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with *AUSTROADS – Guide to Road Design*;

(c) the development does not result in any vehicles queuing on the public road network;

(d) heavy vehicles and bins associated with the development do not park or stand on local roads or footpaths in the vicinity of the site;

(e) all vehicles are wholly contained on site before being required to stop;

(f) all loading and unloading of materials is carried out on site; and

(g) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Road Traffic Management

39. The Applicant shall prepare and implement a Traffic Management Plan for the development, to the satisfaction of the Director-General. The plan must:

(a) be prepared in consultation with Council and RMS by a suitably qualified and experienced expert;

(b) be approved by the Director-General prior to commencement of operation;

(c) include a plan showing the designated haulage route/s to be used by heavy vehicles during operation;

(d) include a heavy vehicle driver code of conduct;

(e) describe the measures that will be implemented to ensure:

- the nominated haulage route/s in used;
- conflicts with other road users are minimised;
- haulage is minimised or routes altered to avoid impact on the local traffic network;
- drivers adhere to the code of conduct;
- compliance with the relevant conditions of this consent; and

(f) include a program to monitor the effectiveness of these measures.

2 Existing Road Network

Pacific Highway

The major road through the locality is the Pacific Highway, which forms part of the State Highway network. Newcastle City Council is the road authority for any new works on or along the Pacific Highway in this location. However, as the Pacific Highway is classified as a State Road any new works along it requires concurrence from the RMS.

The Pacific Highway is a dual carriageway providing two lanes in each direction. A median of approximately 7m separates northbound and southbound traffic; however, at the intersection with Old Maitland Road the median widens to 50m.

The overall alignment of the road is good with relatively straight alignment offering good forward visibility. The speed limit on the Pacific Highway in Sandgate is 80km/hour.

In the vicinity of the subject site kerbs and gutters are provided at the locations where residential and retail developments are located adjacent the Pacific Highway and are absent elsewhere. Footpaths are not located on the Pacific Highway but grassed verges are provided to the frontages of residential and retail developments.

Shoulders of approximately 3m width are provided on both sides of the Pacific Highway. The shoulder on the western side of the road contains markings designating it as an on street bicycle path.

In the vicinity of the subject site street lighting is provided on both sides of the Pacific Highway.

Old Maitland Road

Old Maitland Road is a local cul-de-sac with a single travel lane in each direction. To the north of the service road, that provides access to the subject site, parking lanes are provided on both sides of Old Maitland Road.

Footpaths, street lighting, kerbs and gutters are provided intermittently along short sections of Old Maitland Road. A small number of residential developments and aged care facilities are provided on Old Maitland Road.

Old Maitland Road connects with the Pacific Highway via a signalised intersection.

The posted speed limit on Old Maitland Road is 50km/hour. Old Maitland Road is an approved B-double route.

The service road providing access to the subject site intersects Old Maitland Road at a priority controlled intersection.

Intersection of Old Maitland Road and the Pacific Highway

Old Maitland Road intersects the Pacific Highway at a signalised intersection that was upgraded in December 2005. Southbound vehicles on the Pacific Highway are not included in the phasing and are not subject to any delay at this location. Vehicles exiting onto the Pacific Highway from Old Maitland Road are only permitted to turn left in a northerly direction. A signalised U-turn facility is provided approximately 160 metres north of Old Maitland Road on the Pacific Highway, allowing vehicles to turn south. A 125 metre storage lane is provided at the U-turn facility.

Vehicles accessing the site from the north are only permitted to drive straight through into Old Maitland Road from the Pacific Highway, there are no turn movements permitted.

There are no pedestrian crossing facilities provided at this intersection.

The intersection of Old Maitland Road and the Pacific Highway is displayed below in Figure 2-1.

The traffic signals operate by providing maximum green time for the high through movements on the Pacific Highway. Sensors detect when a vehicle is waiting to turn in or out of Old Maitland Road. The signals allowing for the turn wait 60 seconds before changing their operation. If no vehicles are detected the signals will continue to provide a green phase for the major through movements on the Pacific Highway. This results in a phase time of 3 to 4 minutes at times with the through movements getting 2 – 3 minutes of continual green time.

The green time for the turning movements is very low, in the order of 20 seconds, reflective of the relatively low traffic demands in and out of the side road whilst ensuring minimum delays for through traffic.

The signalised U-turn to the north of the intersection acts in a similar manner and the signals are only triggered when a vehicle arrives to undertake a U-turn manoeuvre.

Figure 2-1 Intersection of the Pacific Highway and Old Maitland Road

2.1 Traffic Volumes

Data received from the RMS, based on counts undertaken on the Pacific Highway in 2011, indicate AADT of 55,480 vehicles, with 28,120 northbound vehicles and 27,360 southbound vehicles. This represents an increase in traffic flows of 1.5% per annum over previous periods.

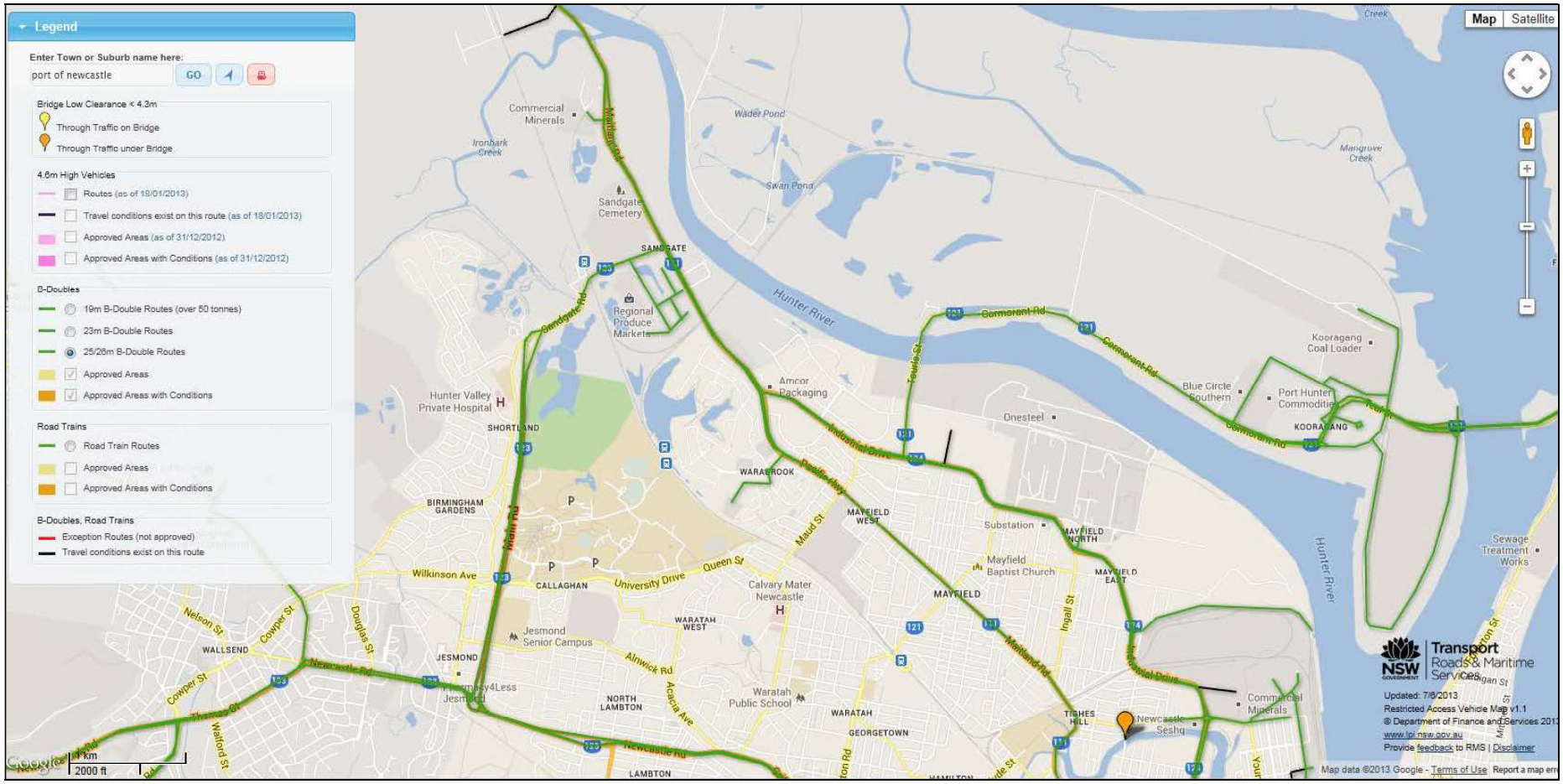
Determining the peak hours was undertaken based on traffic survey data collected in June 2012. The network morning and evening peak hours were calculated to occur at the following times:

- 7:45am – 8:45am – AM Peak Period; and
- 4:45pm – 5:45pm – PM Peak Period.

Typically peak hour flows represent 10% of the daily flows. Based upon the survey data collected daily flows on Old Maitland Road are in the order of 400 – 500 vehicles per day based on the average of the AM and PM peak hour flows.

2.2 Restricted Access Vehicle Routes

Figure 2-2 shows the RAV route for B-Doubles between the Port of Newcastle and the site at Sandgate (solid green line).



Source: RMS 2013

Figure 2-2 RAV Route for B-Doubles between Port of Newcastle and Sandgate

Figure 2-3 shows the RAV route for B-Doubles between Sandgate and the broader regional road network (green solid lines).

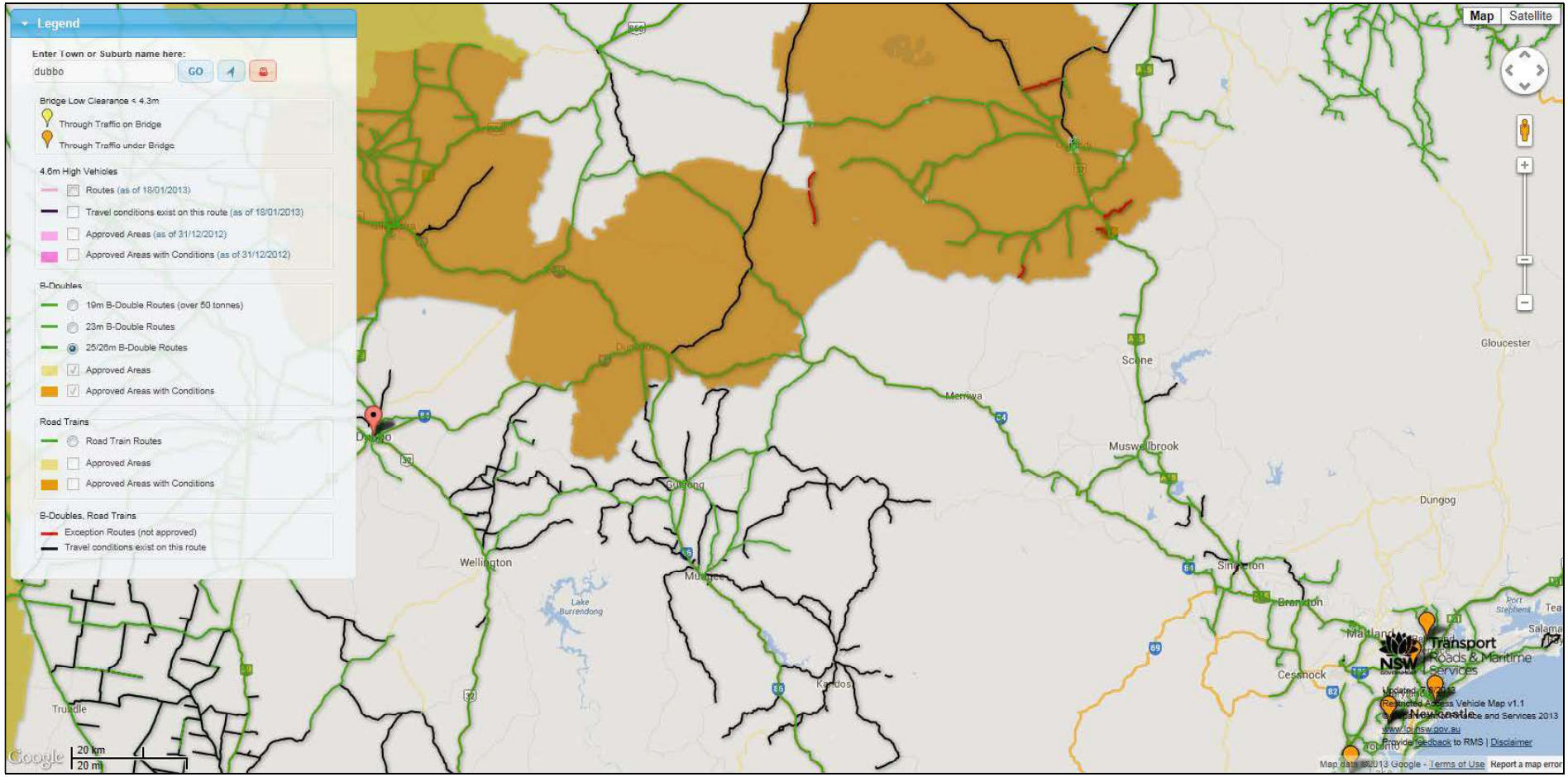


Figure 2-3 RAV Route for B-Doubles between Sandgate and the Broader Regional Road Network

3 Unloading Activities

3.1 Methodology

Advice from the client indicates that on average shipments of product arrive into the Port of Newcastle monthly. Transportation is then undertaken by truck from Kooragang number 2 and 3 Berth to the facility at Sandgate as efficiently as possible and takes between 24 and 36 hours. This intense period involves approximately 100 inbound and 100 outbound truck movements.

The vehicle route nominated is shown in ***Figure 3-1***. This route has been compared with the RMS RVA map and is consistent with this. The nominated route is approved as a 25/26m B-Double Route and is therefore appropriate for the transportation of product to the facility. The RVA map includes Old Maitland Road.

The Route Plan and Risk Assessment for this activity is included in Appendix B (SMP001).

3.2 Timing

Unloading and transportation of shipments occur monthly (on average) for a period of 24-36 hours. During this period an average of 3 – 4 trucks arrive and leave the site each hour with frequency determined by timing and off loading capacity at the berth.

3.3 Working Hours

This activity runs constantly over 24 hours a day for the period required to unload the ship and transport product to the site.

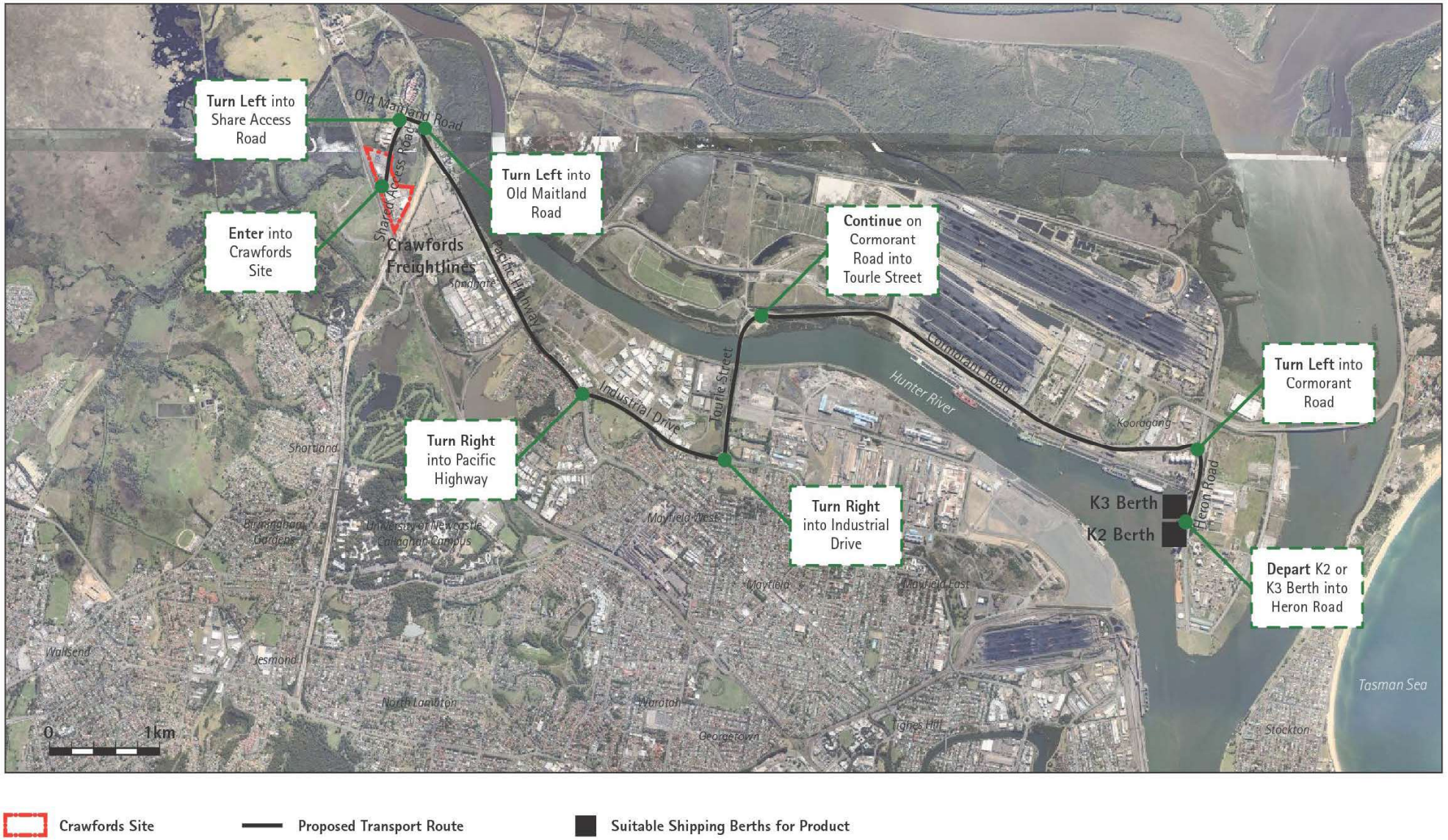


Figure 3-1 Nominated Vehicle Route

4 Delivery Activities

4.1 Methodology

Deliveries are made to various mines throughout the Hunter and western regions using single semi-trailers and B-Doubles.

The various vehicle routes nominated are shown in ***Figure 4-1*** (Hunter Valley Routes) and ***Figure 4-2*** for those further afield. These routes have been compared with the RMS RVA map and are consistent with these. The nominated routes are approved as a 25/26m B-Double Route and are therefore appropriate for the transportation of product from the facility to the end users.

The Route Plan and Risk Assessment for deliveries are included in Appendix B.

4.2 Working Hours

The facility employs 65 staff as follows:

- 30 drivers;
- 15 office staff; and
- 20 yard staff.

Normal delivery times for drivers are between 7:00am and 7:00pm Monday to Friday, with the occasional need for weekend deliveries.

Staff on site work two shifts, 6am – 2pm (31 staff) and 2pm-10pm (4 staff).

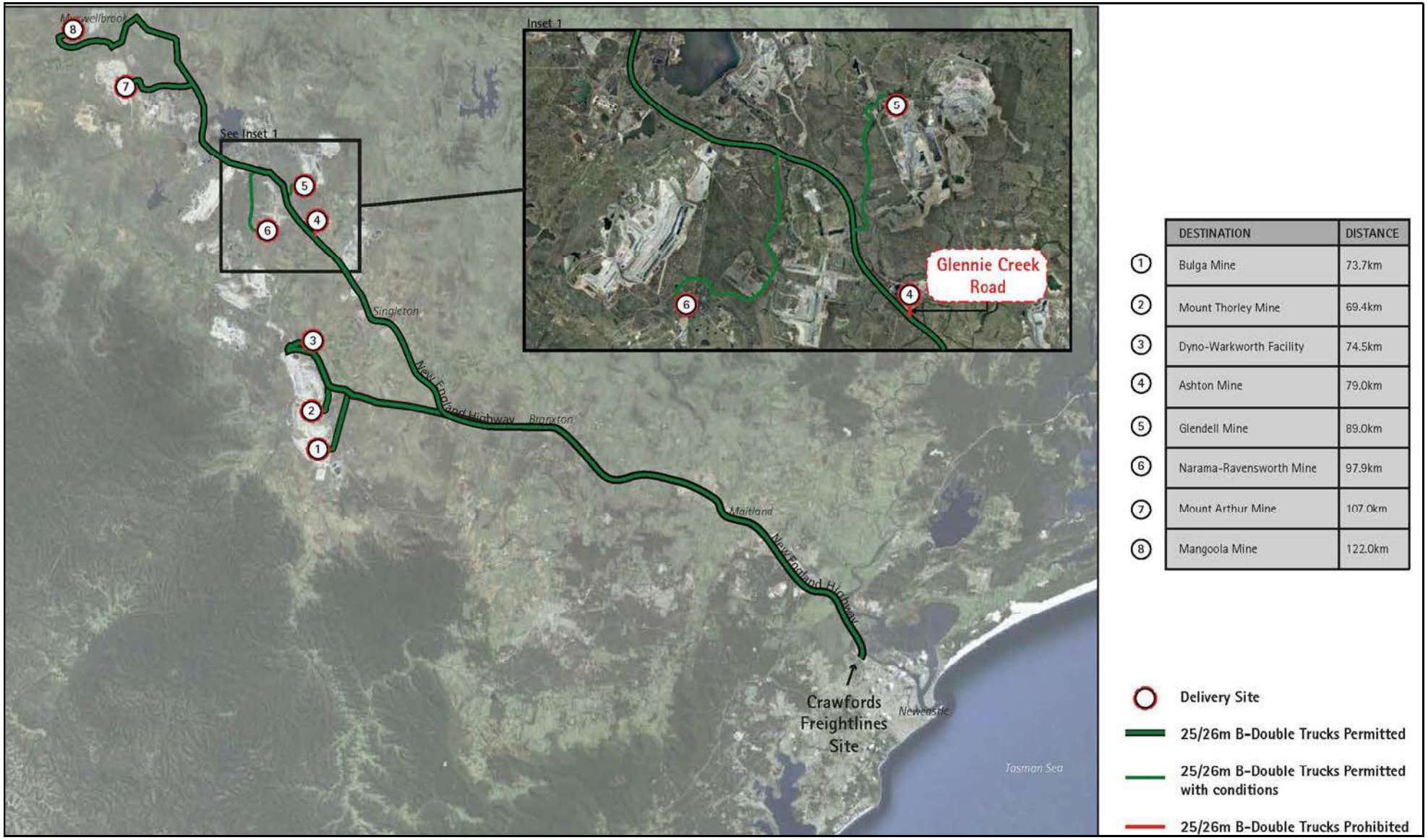


Figure 4-1 Nominated Hunter Valley Routes

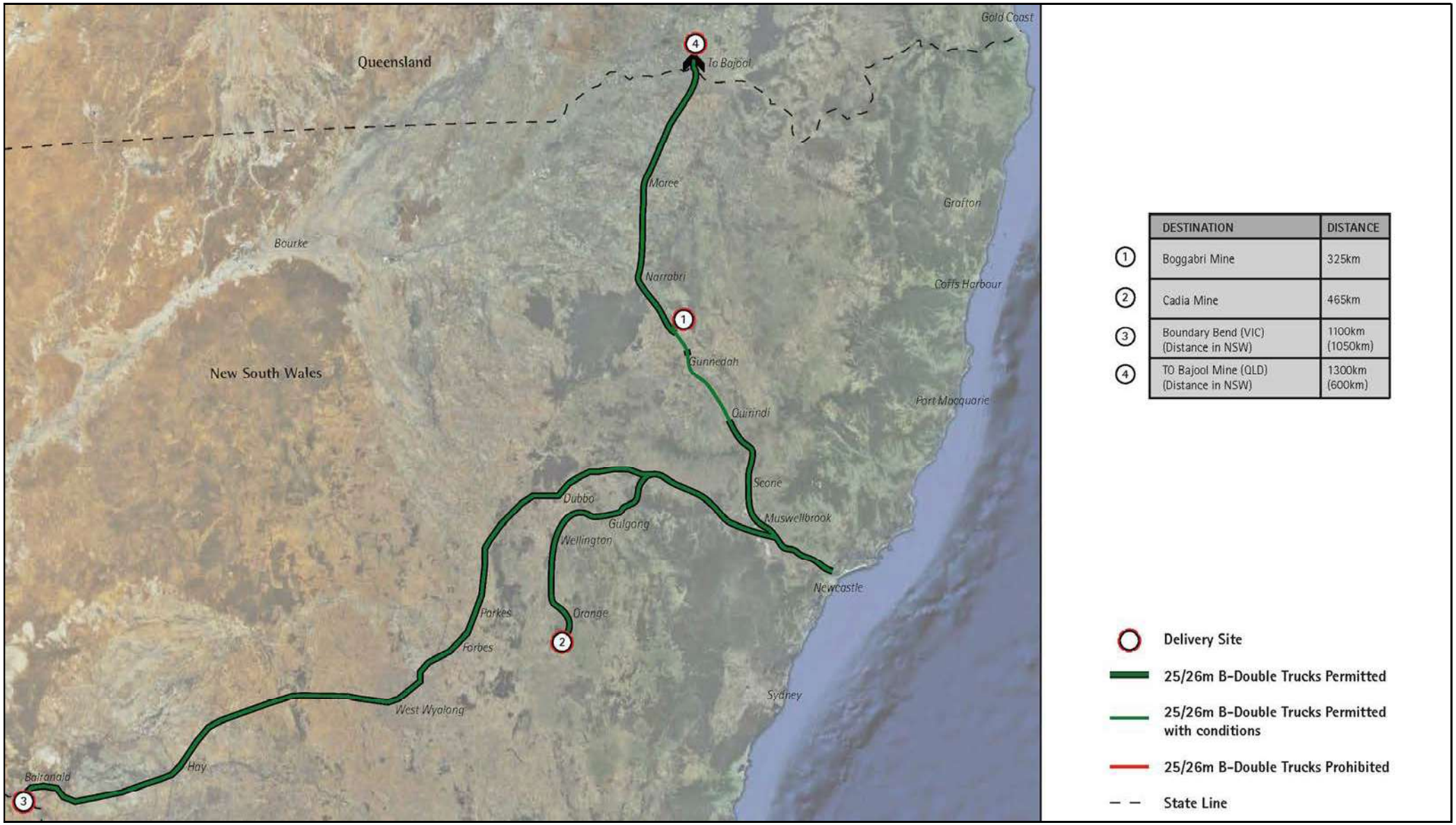


Figure 4-2 Nominated Interstate and Regional Routes

5 Traffic Control Plan

5.1 General

This TCP has been prepared to meet the requirements of the RTA Traffic Control at Work Sites Manual 2010 Edition. The plan covers:

- the designated haulage routes to be used by heavy vehicles during operations;
- a heavy vehicle driver code of conduct (Refer to the Annex B of the Operational Environmental Management Plan (OEMP));
- implementation measures to ensure:
    - the nominated haulage routes are used;
    - conflicts with other road users are minimised;
    - haulage is minimised or routes altered to avoid impact on the local traffic network;
    - drivers adhere to the code of conduct
    - compliance with the relevant conditions of this consent
- a monitoring program

At all times the Roads and Traffic Authority's Traffic Control at Work Sites guidelines must be adhered to. Please refer to these guidelines for any traffic control matters not specifically covered in this report.

Consideration has been given by Crawfords to the Hazardous Industry Planning Advisory Paper No. 11 Route Selection in the selection of routes and the preparation of risk assessments. It is noted that routes are consistent with the RMS RAV routes.

5.2 Hours of Permitted Vehicle Activity

Unloading and Transporting of Inbound Product – 24 hours per day during shipment unloading.

Delivery of Product to End Users – as required.
The primary hours of operation for freight deliveries are 7am – 7pm Monday to Friday with some deliveries out of these times should circumstances require.

5.3 Access

Access to the site is provided from a service road adjoining Old Maitland Road. This service road provides a single lane of travel in each direction and serves a number of other industrial developments. The speed along this road has a posted speed limit of 40km/hr with traffic calming measures (speed humps) further restricting travel to 20km/hr.

Speed approaching the site gatehouse is 20km/hr as is traffic on the site. The gatehouse provides a registration for visitors and contractor drivers requiring parking of vehicles and signing in and out.

There is currently sufficient capacity to accommodate the light and heavy vehicle trips generated by Crawfords Freightlines and other nearby industrial developments and no queues form on the service road during periods of peak activity. There is queuing space of approximately 200 metres within the service road between the gatehouse and the edge of the subject site.

Parking is available adjacent to the gatehouse for drivers and visitors needing to register their arrival.

5.4 Designated Haulage Routes

5.4.1 Inbound Product - Existing traffic conditions

- Route from Cormorant Road, Tourle Street, Pacific Highway, Old Maitland Road
- Varies between 60km/hr and 80km/hr Speed limit;
- Peak AM and PM traffic approximately 2000 vehicles northbound adjacent to site;
- Work Site located off Old Maitland Road;
- No restrictions to access to adjacent properties are to be created by the works.

5.4.2 Outbound Product - Existing traffic conditions

- Majority of routes follow the highway network west towards Muswellbrook
- Varies between 60km/hr and 100km/hr Speed limit;
- Peak AM and PM traffic varies however all traffic is consistent with the capacity of the road network;
- Site located off Old Maitland Road, delivery sites vary;
- No restrictions to access to adjacent properties are to be created by the works.

5.5 Cyclists and Pedestrians

There are no designated footpaths or cycleways along the New England Highway or Old Maitland Road in the vicinity of the site access.

Pedestrian and cycle facilities vary along the outbound delivery routes.

As all vehicles are travelling along arterial and sub-arterial roads, many being designated B-double routes; there will be no impact for pedestrians or cyclists other than the impacts of normal traffic.

5.6 General Traffic Control Considerations

The factors that have been considered in preparing this TCP and appropriate responses are outlined below in Table 5-1:

Table 5-1 Response to Consent Conditions

Condition of Consent	Reviewed	Response
Internal roads, driveways and parking associated with the development are constructed and maintained in accordance with AD2890.1 and AS2890.2	✓	Internal road widths, driveways etc. exceed or meet standards.
Swept path of the longest vehicle entering and exiting the site as well as manoeuvring through the site is in accordance with Austroads Guide to Road Design	✓	Suitable swept path space for internal truck movements. The width of internal roadways are in excess of standards and provide adequate space for heavy vehicles to manoeuvre and have been observed on site. No further swept path analysis is required.
Vehicle queuing on the public road network	✓	All parking associated with heavy vehicles will be contained within the site in nominated holding areas. All light vehicles will park within the site.
Heavy vehicles and bins do not park or stand on local roads or footpaths in the vicinity of the site	✓	All parking and bins are located within the site boundary.
All vehicles are wholly contained on site before being required to stop	✓	All vehicles exit the public road network (Old Maitland Road) and travel 500m along a private service road before being required to stop. No other businesses are located within the last 200m of this service road. No delivery vehicles will be permitted to stand on the road network including Old Maitland Road or the private service road.
All loading and unloading of materials is carried out on site	✓	All loading/delivery will be completed within the sites. Suitable holding areas, designated loading zones and car parking areas are identified (Refer Site Plan Appendix A).
Proposed turning areas in the car park are kept clear of any obstacles at all times	✓	The car park meets these requirements
Include a plan showing the designated haulage routes	✓	Refer Appendix B All deliveries of inbound product will approach the site from the south-east along the Pacific Highway, turn left into Old Maitland Road and left into the private service road to access the site. The exit movements will involve exiting Old Maitland Road by turning left onto the Pacific Highway and undertaking a U-turn in the

Condition of Consent	Reviewed	Response
		signalised u-turn facility north of the Old Maitland Road intersection. The route then returns in reverse. Traffic movements in and out of Old Maitland Road are left in and left out only per the existing situation.
The speed zone along Old Maitland Road and the service road.	✓	Are appropriate for the proposed operation (50 km/h).
Include a drivers' code of conduct including obeying of road rules, following speed limits and safe operation of vehicles.	✓	Retained at gate house - Refer Annex B of the OEMP
Measures to ensure nominated haulage route is used	✓	Refer Route and Risk Assessment Documentation
Measures to ensure conflicts with other road users are minimised	✓	Refer Driver Code of Conduct Refer Annex B of the OEMP
Avoid impacts on the local traffic network	✓	All routes are classified as B-Double routes under the Restricted Access Vehicle Routes except 200m length of Glennie Creek Road into Ashton Mine.
Drivers adhere to the Code of Conduct	✓	Refer Code of Conduct in Annex B of the OEMP
Measure to ensure compliance with the relevant conditions of consent	✓	Safety Management System Manual in Annex B of the OEMP
Program to monitor the effectiveness of these measures	✓	
Pedestrian and cyclist considerations.	✓	Refer 5.5 above
Hours of permitted vehicle activity	✓	Refer 5.2 above
Maximise loads to reduce truck movements	✓	Loads will be maximised to ensure efficiency of truck movement.
Timing of works including if practical minimising movement during the peak periods.	✓	Transportation of imported material is determined by docking procedures. Efficient movement of material is considered desirable at all times. Inbound material is transported through the evening reducing impacts on road network during the peak daytime periods.
Safety of road users and site personnel.	✓	Refer Code of Conduct (Annex B of the OEMP)

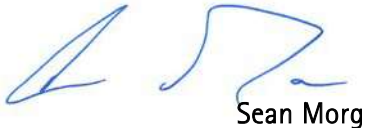
5.7 Traffic Impact

Due to the nature of the importation of product, the frequency of delivery trucks will be relatively high. Over the typical 24-36 hour working period there would be in the order of 100 trucks entering and exiting the site per day (i.e. 3-4 trucks per hour). As the route is an arterial road it has the capacity to deal with these additional vehicles for the short period that this intense usage occurs. Some traffic along this route may experience minor delays due to this additional traffic and movements in and out.

Pedestrian movements are low and will be able to use existing facilities. The proposed route does not impact on pedestrians.

The impact on cyclists using the sealed shoulders associated with the route from Kooragang Island to Sandgate will be consistent with what riders along a main arterial route would expect.

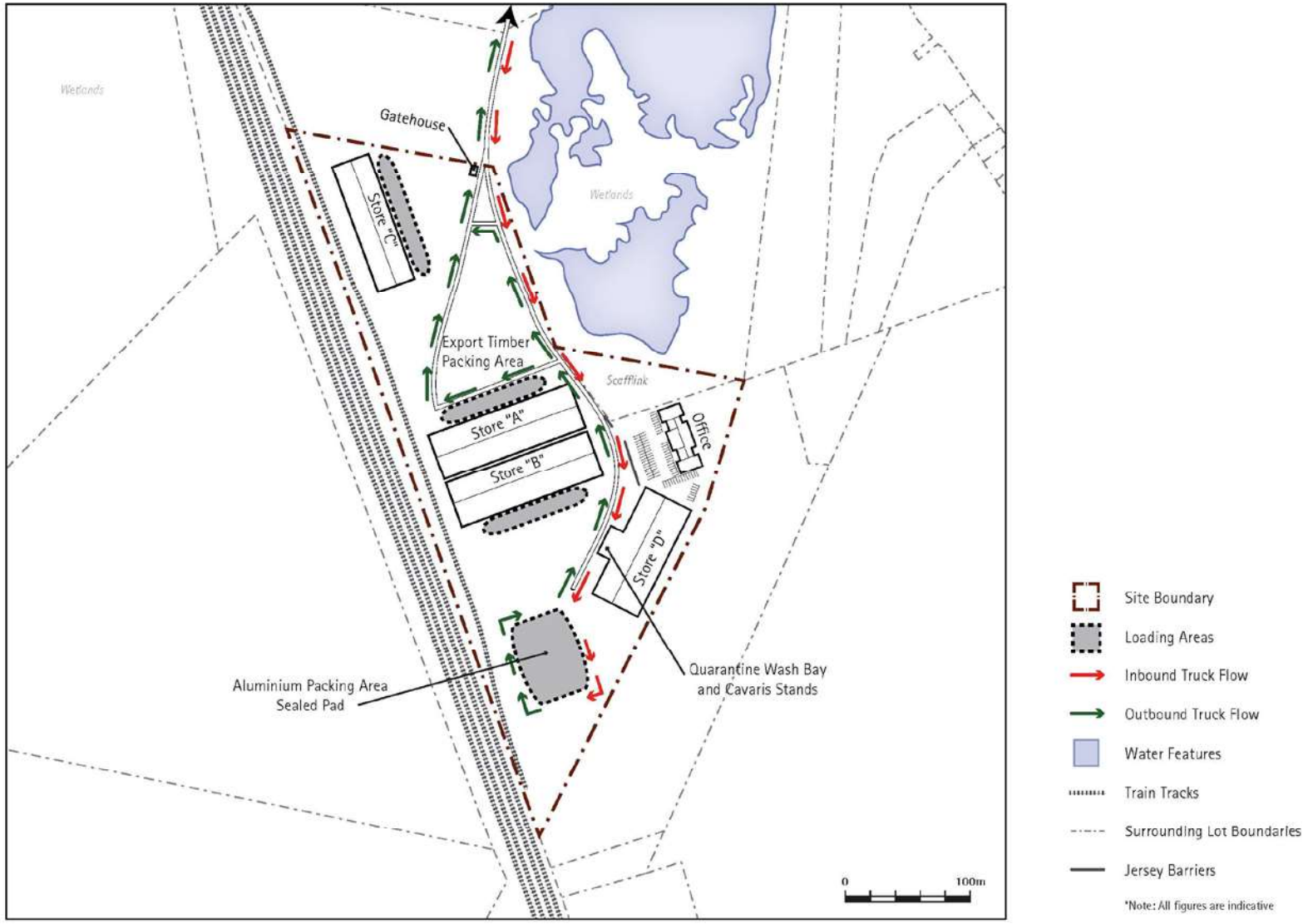
This Traffic Control Plan has been prepared and reviewed by suitable qualified professionals in accordance with the RTA Traffic Control at Work Sites Manual 2010 edition.



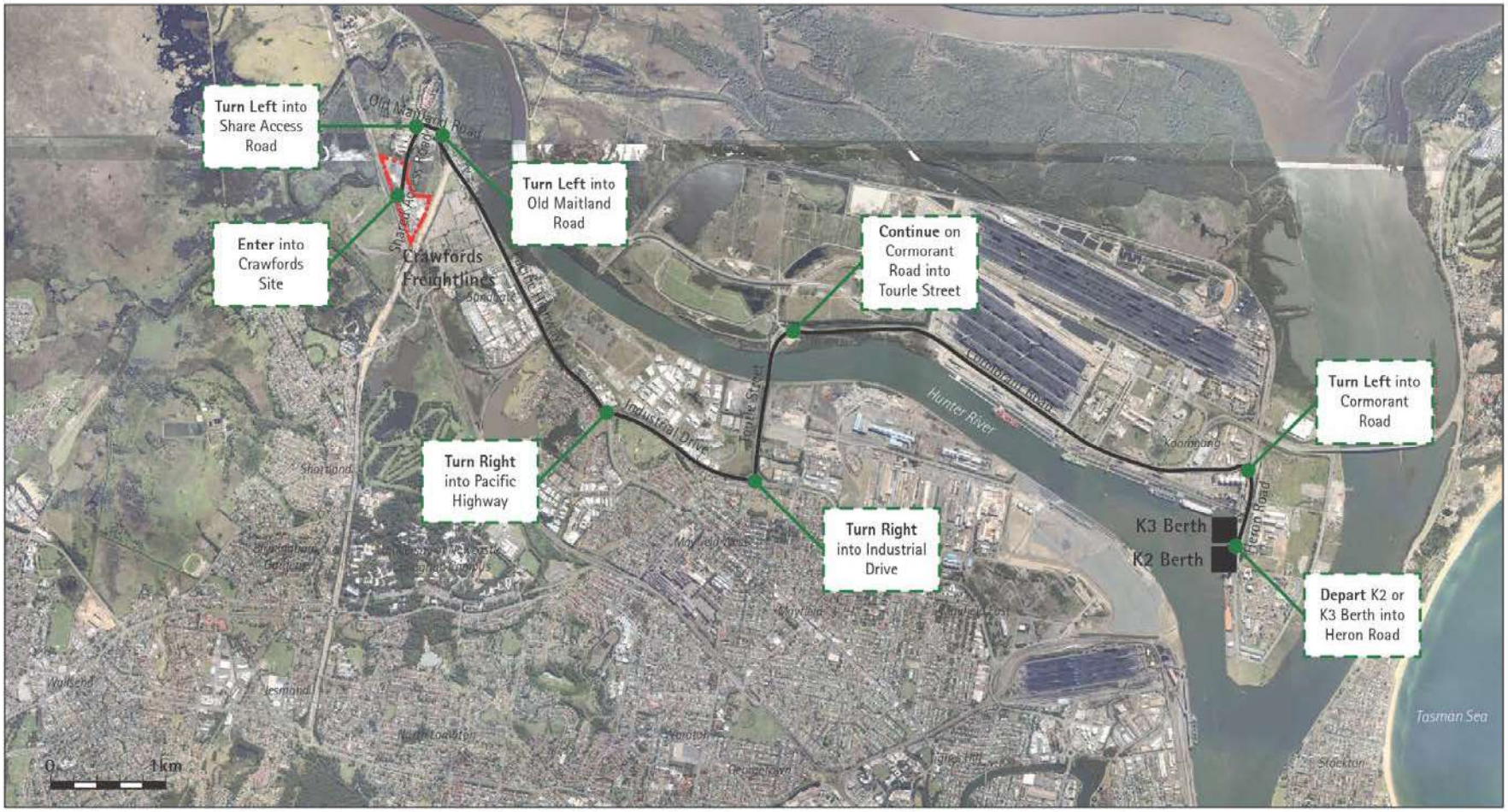
Sean Morgan
Manager – Traffic Engineering

14th June 2013

Appendix A. On Site Traffic Management Plan



Appendix B. Route Plan and Risk Assessment



Route Plan and Risk Assessment 23 Nov 12

From: Kooragang 2 and 3 Berths

To: Crawfords Sandgate

Reference: SMP 001

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart terminal	K2 or K3 Berth	Port access and egress rules
Turn left	Heron Rd	Approaching traffic, other port users
Drive to Cormorant Rd	Heron Rd	Traffic entering road from other industries
Turn left	Intersection Heron Rd and Cormorant Rd	T intersection approaching traffic
Drive to Tourle St	Cormorant Rd	Caution at roundabout ,traffic entering road from other industries
Drive to Industrial Dv	Tourle St	Caution at intersection
Drive to Pacific Hwy	Industrial Dv	General and peak hour traffic
Turn right	Intersection of Pacific Hwy and Industrial Dv	Caution at intersection
Drive to intersection Old Maitland Rd and Pacific Hwy	Pacific Hwy	General and peak hour traffic, traffic entering/merging from Wallsend Rd

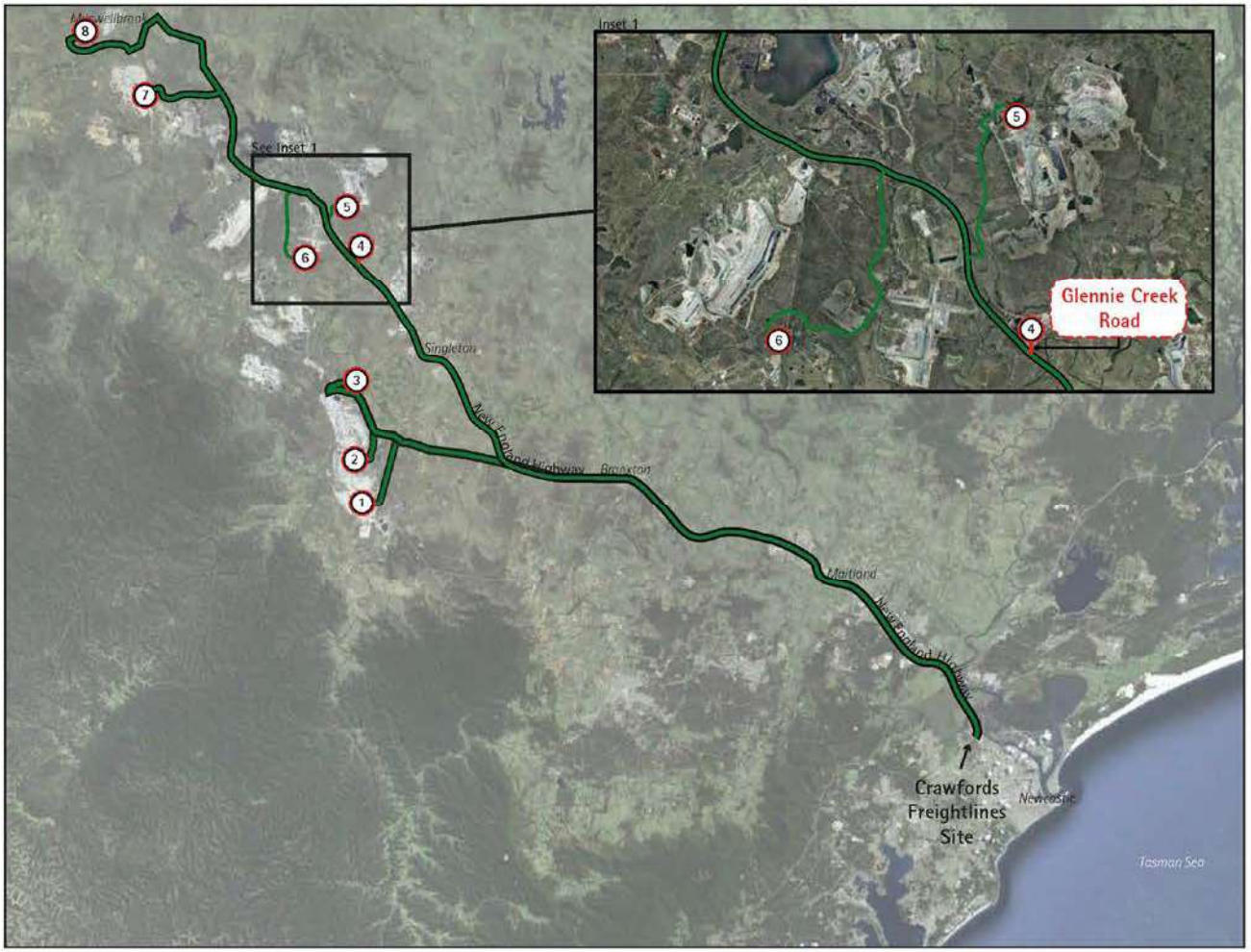
Route Plan and Risk Assessment 23 Nov 12

Turn left	Intersection Old Maitland Rd and Pacific Hwy	Traffic lights, speed entering intersection
Turn left	Intersection Old Maitland Rd and shared access road	Traffic originating St Josephs and Mullane. No excessive vehicle noise, limit engine compression braking
Enter Crawfords site	Shared access road	Shared access road, aware of speed limit, activity at Sibelco, Crawfords site traffic rules, minimise use of air horns. Follow directions of gatekeeper.

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity

Route Plan and Risk Assessment 23 Nov 12

Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Bush fires – usually seasonal	Minimise noise
Rail crossings		
Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		



	DESTINATION	DISTANCE
1	Bulga Mine	73.7km
2	Mount Thorley Mine	69.4km
3	Dyno-Warkworth Facility	74.5km
4	Ashton Mine	79.0km
5	Glendell Mine	89.0km
6	Narama-Ravensworth Mine	97.9km
7	Mount Arthur Mine	107.0km
8	Mangoola Mine	122.0km

Delivery Site

25/26m B-Double Trucks Permitted

25/26m B-Double Trucks Permitted with conditions

25/26m B-Double Trucks Prohibited

Crawfords Freightlines TMP P0924A

June 2013

Hunter Valley Routes

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Bulga Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users limit noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Golden Highway intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton	Highway and local traffic conditions, school zones
Turn left	Intersection of Mitchell Line of Road/Golden Highway and New England Highway, Belford	Speed at intersection
Turn left	Intersection Mitchell Line and Putty Road	Approaching traffic from right
Turn left	Intersection Putty Road and Broke Rd	Speed at intersection
Continue to Bulga Coal Mine	Broke Rd	Mine traffic, observe site entry and security requirements

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Mt Thorley Warkworth Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Golden Highway intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton	Highway and local traffic conditions, school zones
Turn left	Intersection of Mitchell Line of Road/Golden Highway and New England Highway, Belford	Speed at intersection
Turn left	Intersection Mitchell Line and Putty Road	Approaching traffic from right
Turn left	Intersection Putty Road and Mt Thorley Rd	Entering industrial area
Continue on Mt Thorley Rd	Mt Thorley industrial area	Local traffic entering from side streets
Enter Mt Thorley Warkworth Mine	Mt Thorley Rd	Site access and security requirements

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Dyno Nobel Plant Warkworth

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Golden Highway intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton	Highway and local traffic conditions, school zones
Turn left	Intersection of Mitchell Line of Road/Golden Highway and New England Highway, Belford	Speed at intersection
Turn left	Intersection Mitchell Line and Putty Road	Approaching traffic from right
Turn right	Golden Highway, Mt Thorley	Drive to conditions, mine traffic
Turn right	Intersection Long Point Rd and Golden Highway	Approaching traffic
Turn right	Intersection Long Point Rd and Dyno Nobel Access Rd	Approaching traffic
Enter Dyno Nobel facility	Access Road	Site security and traffic requirements

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 25 Jan 13

From: Crawfords Freightlines Sandgate

To: Ashton Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users limit noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Glennies Creek Rd	New England Highway via Lochinvar, Greta, Branxton, Singleton	Aware of local and highway traffic conditions
Turn right	Intersection Glennies Creek Rd and New England Highway	On coming traffic
Enter Ashton Mine	Off Glennies Creek Rd	Site access and security requirements

Route Plan and Risk Assessment 25 Jan 13

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 25 Jan 13

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Glendell Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Hebden Rd intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton, Singleton	Highway and local traffic conditions, school zones
Turn right	Hebden Rd/New England Highway intersection	Speed approaching intersection, drive to conditions
Drive to Glendell mine	Hebden Rd	Drive to conditions, mine traffic, observe site security and traffic requirements

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Ravensworth / Narama Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Lemington Rd intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton, Singleton	Highway and local traffic conditions, school zones
Turn left	Lemington Road, Ravensworth	Speed approaching corner
Drive to Ravensworth/ Narama Mine	Lemington Road	Mine traffic, drive to conditions
Enter mine site	Off Lemington Road	Mine security, traffic requirements

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Mt Arthur

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Intersection of Thomas Mitchell Drive and New England Highway	Lochinvar, Greta, Branxton, Singleton	Aware of local and highway traffic conditions
Turn left onto Thomas Mitchell Drive	Intersection of New England Highway	Speed approaching intersection
Follow signs to Mt Arthur	Thomas Mitchell Drive	Traffic entering from side roads
Turn left onto mine access road	Intersection of Thomas Mitchell Drive and mine access road	Mine traffic entering road
Drive to roundabout	Mine access road	Mine traffic entering road
Take second exit	Mine access road roundabout	Traffic entering roundabout
Turn right, enter reload area	Opposite Orica Bayswater plant	Traffic entering and exiting Orica plant

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Mangoola Coal Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

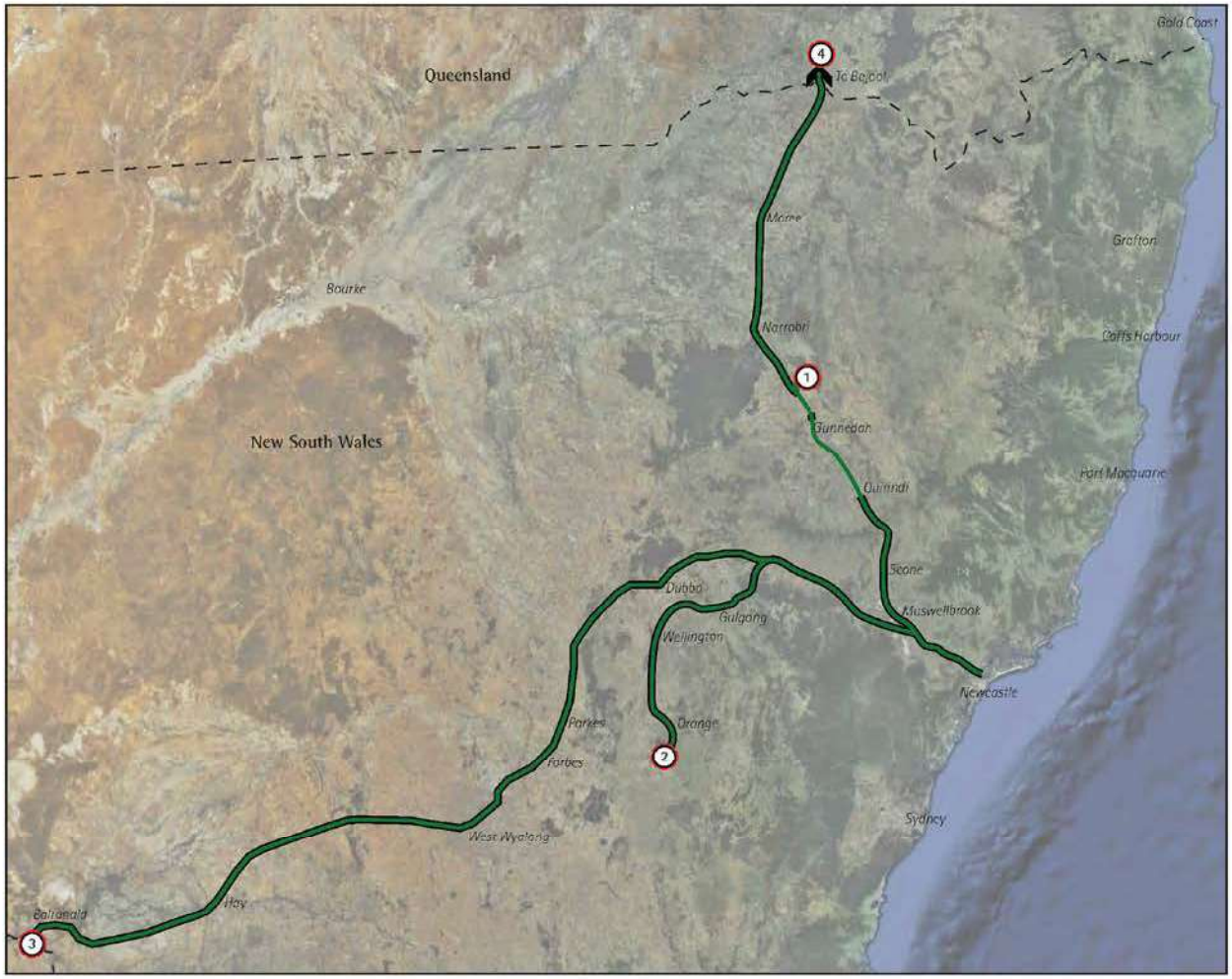
Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users minimise noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Muswellbrook	New England Highway-Branxton, Singleton	Local and highway traffic, school zones
Turn left	Intersection New England Highway and Sydney St	Local traffic conditions, traffic lights
Turn right	Bengalla Rd/Denman Rd intersection	Speed approaching corner, oncoming traffic
Travel 17kms	Bengalla Rd	Mine traffic entering road
Enter mine site	Mine entry	Observe site security and traffic management rules

Route Plan and Risk Assessment 23 Nov 10

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	

Route Plan and Risk Assessment 23 Nov 10

Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		



	DESTINATION	DISTANCE
1	Boggabri Mine	325km
2	Cadia Mine	465km
3	Boundary Bend (VIC) (Distance in NSW)	1100km (1050km)
4	TO Bajool Mine (QLD) (Distance in NSW)	1300km (600km)

- Delivery Site
- 25/26m B-Double Trucks Permitted
- 25/26m B-Double Trucks Permitted with conditions
- 25/26m B-Double Trucks Prohibited
- State Line

Crawfords Freightlines TMP P0924A

N

June 2013

Regional and Interstate Routes

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Boggabri Coal Mine

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users, limit noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Willow Tree	Singleton, Muswellbrook, Scone, Murrurundi New England Highway	Aware of local and highway traffic conditions
Turn left	Intersection of New England Highway and Kamilaroi Highway	Speed approaching intersection
Drive to Gunnedah	Kamilaroi Highway	Drive to conditions
Enter Gunnedah - Turn Right Turn left onto	Boundary Road	Drive to conditions, local traffic
Bloomfield St	Boundary Road / Bloomfield St intersection	Drive to conditions, local traffic
Turn left	Warrabungle St	Drive to conditions, local traffic
Turn right onto Kamilaroi Highway	Warrabungle St / Kamilaroi Highway Intersection	"T" intersection approaching traffic
Drive approximately 1.7kms -turn right past saleyards	Kamilaroi Highway / Blue Vale Road intersection	Right turn on main road approaching traffic
Drive 17kms on Blue Vale Rd	Blue Vale Rd	Aware of coal haulage trucks on road
Left turn	Enter Whitehaven mine Blue Vale Rd	Aware of coal haulage trucks on road
Follow haul road	Whitehaven mine	Mine traffic
Turn left	Intersection of Haul Rd and Manilla Rd	"T" intersection
Drive 6 kms	Haul Rd	Drive to conditions

Route Plan and Risk Assessment 23 Nov 10

Left turn	"T" intersection Manilla Rd	Mine traffic in area
Right turn	Mine Rd	
Turn left	Dripping Rock Rd	
Turn right	Maules Creek Rd	
Turn right enter Boggabri Mine	Maules Creek Rd	Mine site entry requirements

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base

Route Plan and Risk Assessment 23 Nov 10

Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	
Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 23 Nov 10

From: Crawfords Freightlines Sandgate

To: Cadia

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users limit noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Golden Highway intersection	New England Highway - Maitland, Lochinvar, Greta, Branxton	Highway and local traffic conditions, school zones
Turn left	Intersection of Mitchell Line of Road/Golden Highway and New England Highway, Belford	Speed at intersection
Turn left	Intersection Mitchell Line and Putty Road	Approaching traffic from right
Turn right	Intersection Golden Highway and Putty Rd, Mt Thorley	Drive to conditions, mine traffic
Drive to Ulan Rd and Golden Highway intersection	Jerrys Plains, Denman, Sandy Hollow-Golden Highway	Drive to conditions
Turn left	Ulan Rd and Golden Highway intersection	Speed approaching intersection
Turn left	Goolma Rd Gulgong	Drive to conditions
Drive to Wellington	Goolma Rd	Drive to conditions, road narrows in sections
Drive to Orange	Mitchell Highway	Drive to conditions
Turn right Peisley St	Orange	Main thoroughfares drive to conditions
Drive to Forest Rd, Cadia Rd intersection	Bloomfield	Drive to conditions
Turn right	Cadia Rd intersection	Drive to conditions

Route Plan and Risk Assessment 23 Nov 10

Drive to Cadia Mine site Enter Cadia Mine	Cadia Rd Cadia Rd and mine access road intersection	Drive to conditions Site access and security requirements

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base

Route Plan and Risk Assessment 23 Nov 10

Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	
Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 2 July 11

From: Crawfords Freightlines Sandgate

To: Boundary Bend

Reference: Ammonium Nitrates SSAN - Class 5.1

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Depot	Old Maitland Rd Sandgate	Shared facility, aware of other facility users limit noise
Turn left	Intersection New England Highway and Old Maitland Rd	Traffic lights at intersection
Drive to Hexham	New England Highway	High incidence of traffic accidents area, caution during peak hour traffic
Drive to Intersection of Golden Highway & New England Highway	Lochinvar, Greta, Branxton	Aware of local and highway traffic conditions
Turn left onto Golden Highway	Intersection of Golden Highway & New England Highway	Speed approaching intersection
Drive to Dubbo	Golden Highway-Denman, Merriwa, Dunedoo,	Aware of local and highway traffic conditions
Drive to Parkes	Newell Highway-Tomingley, Peak Hill	Aware of local and highway traffic conditions
Drive to West Wyalong	Newell Highway-Forbes, Caragabal	Aware of local and highway traffic conditions
Drive to Hay	Mid Western Highway-Weethalla, Goolgowi	Aware of local and highway traffic conditions
Drive to Balranald	Sturt Highway	Aware of local and highway traffic conditions
Turn Left onto Mallee Highway	Intersection of Sturt Highway and Mallee Highway - Balranald	Approaching traffic at intersection
Turn right onto Murray Valley Highway	Intersection of Mallee Highway and Murray Valley Highway	“T” intersection approaching traffic

Route Plan and Risk Assessment 2 July 11

Drive approximately 45kms to Boundary Bend	Murray Valley Highway	Numerous intersecting roads left and right

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity
Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	Maintain security of vehicle during rest stops

Route Plan and Risk Assessment 2 July 11

		Park in accordance with ADG7 requirements in built up areas
Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Route Plan and Risk Assessment 25 Jan 13

From: Sandgate NSW

To: Downer EDI Blasting Services Government Magazine Bajool

Reference: Ammonium Nitrate SSAN - Class5.1 - UN1942

Main Roads or Streets in Sequence

Drivers Action	Location	Additional Comment / Risks
Depart Sandgate	Crawfords Depot	Private access road
Drive to Singleton	New England Highway	Observe and drive to conditions, local traffic conditions in township
Drive to Muswellbrook	New England Highway	Observe and drive to conditions, local traffic conditions in township
Turn left	Intersection Kamilaroi Hwy and New England Hwy	Speed approaching corner
Drive to Willow Tree	Kamilaroi Hwy	Observe and drive to conditions, local traffic conditions in township
Drive to Gunnedah, Narrabri	Kamilaroi Hwy	Local and highway traffic conditions
Enter Newell Highway	Narrabri	Observe and drive to conditions, local traffic conditions in township
Travel to Moree, Boggabilla	Newell Hwy	Local and highway traffic conditions
Travel to Goondiwindi, enter Leichardt Hwy	Intersection Newell and Leichardt Hwy	Local and highway traffic conditions
Travel to Moonie, The Gums, Condamine	Leichardt Hwy	Local and highway traffic conditions
Travel to Wandoan, Taroom, Theodore, Banana	Leichardt Hwy	Local and highway traffic conditions

Route Plan and Risk Assessment 25 Jan 13

Turn right	Intersection and Leichardt Hwy and Capricorn Hwy	"T" intersection, speed on approach
Turn right, enter Bruce Hwy	Roundabout, Rockhampton	Caution at roundabout
Drive to intersection private road and Bruce Hwy, turn right	Bruce Hwy	Approaching traffic
Enter Government Magazine	Government Magazine entry road	Observe site entry and security requirements

Physical Conditions	Changing Conditions	Other Issues
Restricted View – especially at intersections and 'blind corners'	Oncoming traffic – known passing areas	Speed – yours and other traffic on the road
Roundabouts – size, location, condition, alternative route to avoid these	Other heavy vehicle movement – coal trucks, cane trucks, logging trucks, road trains	Fatigue Management
Cross Walks and Pedestrian islands	Congestion	First time travel on the route
Intersections and concealed roadways	Road works – scheduled and unscheduled	Emergency Response Procedure in place
Bridges – esp. if small or one way	Detours – scheduled and unscheduled	Safety Management Plan in place
Roadway shoulders / known pull over areas	Weather – rain, high wind areas, ice (known black ice areas)	Media reports – cultural events, sporting events, protest action, political activity

Route Plan and Risk Assessment 25 Jan 13

Concealed crest, sharp curves, poor camber	Known flood areas	Maintain communication with base
Over / Underpass clearance	Livestock / farm areas	Ensure Security seal and load integrity checked prior to departure from consignor or rest stop
Rail crossings	Bush fires – usually seasonal	
Floodways, culverts, water courses	Transport Vehicle fire	
Overtaking lanes. Caution required when changing lanes		
Designated rest areas & Road house locations. Must be designated and approved		
Recreational areas & Industrial areas. Required additional precautions when transiting		
Locations of Protected Works A & B type areas. Required additional precautions when transiting		

Appendix J – Water Resources Management Plan

Appendix K – Flood Risk Management and Response Plan

Flood Risk Management and Response Plan

Crawfords Freightlines Sandgate Site

TABLE OF CONTENTS

1 Introduction 3

1.1 Background 3

1.2 Development Consent 7

1.3 Commitments 8

2 Strategic Setting 10

2.1 Newcastle City-Wide Floodplain Risk Management Study and Plan 10

2.2 NSW Floodplain Development Manual 10

3 Background 11

3.1 Flood Modelling 11

3.2 Local Catchment Flooding 12

4 Flood Risk Management Response Plan 14

4.1 Purpose and Scope 14

4.2 SSD-5119 Requirements 14

4.3 Levels of Emergency 14

4.4 Definition of Flood Types 15

4.4.1 Minor Floods 15

4.4.2 Major Floods 15

4.5 Concept of Operations 15

4.6 Flood Notification and Assessment 16

4.7 Equipment 18

4.8 Roles and Responsibilities 19

4.8.1 Minor Floods 19

4.8.2 Major Floods 19

4.9 Evacuation 21

4.10 Returning to Site 21

5 Flooding Education and Awareness 23

Appendix A – Structural Certification 24

1 Introduction

This Flood Risk Management and Response Plan (FRMRP) establishes the organisational roles, responsibilities and actions for response by Crawfords personnel when responding to the occurrence of an impending flood event at the site.

The FRMRP has been developed based upon information provided in BMT WBM (2012) AN Storage and Distribution Facility, Sandgate, NSW – Stormwater, Flooding and Receiving Water Quality Assessments Flood Report; and in consultation with Newcastle City Council (NCC), Office of Environment and Heritage (OEH) and DP&I. Statutory Context

1.1 Background

Crawfords Freightlines Pty Ltd (Crawfords) has operated a storage and distribution facility (the Facility) for ammonium nitrate (AN) at the site since 2009. The development is located in Sandgate, NSW and involves the storage of up to 9000 tonnes (t) of AN in warehouses (Sheds A and B) (refer to Figure 1.1). The Facility is now completely leased by Crawfords with no other companies onsite, consists of an area for storage of shipping containers and aluminium ingots, general mixed freight, a workshop, a wash bay with an integrated water treatment system, a rail siding (refer to Figure 1.2).

In December 2011, following a site inspection from Newcastle City Council (NCC) (now City of Newcastle) and the NSW Environment Protection Authority (EPA), NCC issued the owners and occupiers of the premises a Notice of Intention to Give an Order. Following this, NCC issued an Order under Section 121B of the EP&A Act on the 2 February 2012. The Terms of the Order were:

1. Within fourteen (14) days of the date of the order, limit storage of Ammonium Nitrate at the premises to not more than 2000 tonnes; and

2. Within twelve (12) months of the date of the order, cease use of the premises as a chemical storage facility, including but not limited to the storage of Ammonium Nitrate.

NCC extended the Order on 18 February 2013, thereby requiring Crawfords to cease use of the premises as a chemical storage facility, including but not limited to the storage of AN on or by 31 August 2013.

The EPA also issued a Notice of Preventative Action to Crawfords on 13 December 2011 (Prevention Notice No. 1503295, which was subsequently varied by Prevention Notice 1503467 on 20 December 2011). The site was required to reduce in the quantity of AN products stored at the premises to not more than 2000 t, which is below the threshold value identified in Schedule 1 of Protection of the Environment Operations Act 1997 (POEO Act) and thus not requiring an Environment Protection Licence (EPL).

In order to enable continued operations at the site, Crawfords engaged ERM to prepare an environmental impact statement (EIS) to accompany a state significant development application (SSD-5119) seeking approval to store and distribute 13 500 t of AN at the site. Development consent, subject to conditions (the Consent), was granted on 13 June 2013. On 18 July 2013, the EPA issued EPL 20295 and revoked Prevention Notice No 1503295, as varied by Prevention Notice No. 1503467. Although the Consent allowed for the storage of up to 13,500 t of AN, the Department of Planning and Environment has withdrawn approval to store AN in, and outside of, Shed C due to its proximity to the neighbouring aged care facility (St Josephs) north of the Facility and the current AN storage limit is 9,000 t.

FIGURE 1.1

Locality Plan

Image Source: Nearmap (15 Jan 2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

Legend

- Roads
- Railway
- Lot Boundary
- Project Site

FIGURE 2.1

Site Layout Plan

Image Source: Nearmap (15 Jan 2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

1.2 Development Consent

Table 1.1 presents the conditions of the Consent that are relevant to this FRMRP.

Table 1.1 Relevant Consent Conditions

Condition	Requirement	Section(s) Addressed
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS		
SOIL AND WATER		
Flood Design and Structural Certification		
16	The Applicant must ensure that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500 mm freeboard depth design flood event and are maintained in this manner for the life of the development. *Note: Flood levels shall be determined considering the effects of climate change.*	Section 4.2 & Appendix A
17	Prior to the commencement of operation, and annually thereafter, the Applicant must obtain structural certification from a suitably qualified engineer that all structures on site (excluding shipping containers) that are used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500 mm freeboard depth design flood event. A copy of these structural certification documents must be included in the Flood Risk Management and Response Plan (see Condition 21 in Schedule 3 of this consent) and Operational Environmental Management Plan (see Condition 2 in Schedule 4 of this consent) for the development. *Note: Flood levels shall be determined considering the effects of climate change.*	Section 4.2 & Appendix A
Flood Management		
18	The Applicant must ensure that any shipping containers that are used to store AN on site are unloaded to the AN storage sheds (A, B or C) as soon as practicable once they arrive on site.	Refer to OEMP
19	The Applicant must ensure that no AN is left inside a shipping container during a major flood event and that all AN is contained within the AN storage sheds (A, B or C) during a major flood event.	Section 4.8.2
20	The Applicant must ensure that all flood emergency response equipment is able to withstand floodwaters up to and including the 1% AEP plus 500 mm freeboard depth flood event. *Note: Flood levels shall be determined considering the effects of climate change.*	Section 4.7 and Section 4.8.2
21	**Condition 21** The Applicant must prepare and implement a Flood Risk Management and Response Plan for the development to the satisfaction of the Director-General. The Plan must:	
	(a) be prepared by a suitably qualified and experienced expert in consultation with Council and OEH;	Refer to OEMP
	(b) be approved by the Director-General prior to the commencement of operations;	
	(c) be prepared in accordance with Council's Newcastle City-wide Floodplain Risk Management Study and Plan 2012 and the NSW Floodplain Development Manual;	Section 2.1

	(d) include a copy of the structural certification documents required in relation to flood proofing by Condition 17 of this Schedule;	Appendix A
	(e) identify the procedures that would be implemented to ensure compliance with Conditions 18 to 20 of this Schedule;	Section 4 and Site Emergency Plan within OEMP
	(f) identify the procedures that would be implemented to ensure that employees are given sufficient warning regarding an impending flood event;	
	(g) identify the procedures to be followed and contingency actions to be implemented in the event that the site is inundated during a flood event to protect: • the integrity of structures on site that are used to store ammonium nitrate to prevent release of ammonium nitrate into floodwaters and the local environment; • human safety;	
	(h) identify emergency evacuation routes, flood warning alarms, and evacuation procedures; and	Refer to OEMP
	(i) include a staff training program to be implemented to ensure existing and future employees are well trained and drilled in executing the flood emergency response procedures detailed within this plan.	Section 5

1.3 Commitments

Table 1.2 presents the management and mitigation measures relevant to this FRMRP committed to as part of the Facility EIS.

Table 1.2 Management and Mitigation Measures

Item	Management and/or Mitigation Measure	Addressed in Section(s)
Hazard and Risk		
B7	The following site specific flood mitigation measures shall be incorporated into the SEP. In advance of any flood warning received from the BoM for a 2% or 1% AEP flood event, Crawfords would employ the following measures to minimise the risk of flood waters entering product stores: • Advise stakeholders and customers in the 48 hours leading up to a 2% AEP flood event that no additional product will be received or stored on site. • Eeach AN store shall have as a component of the emergency response equipment a supply of 250 micron four metre wide polythene construction membrane sufficient to encase the entire internal perimeter of the stores leaving no gaps and allowing two metre overlap at joins.	Section 4 and Site Emergency Plan within OEMP

	• In response to a 1% AEP flood event, the AN stacks shall be reconfigured by placing the outer rows of flexible IBCs against store walls. Stacks shall also be reconfigured to remove segregation gaps between stacks and ensure no voids between individual flexible IBCs or bag stacks and walls. Reconfiguration of AN stacks would incorporate the movement of any product stored in containers into the reconfigured warehouses. The doors of any empty containers would be opened allowing them to fill with water thereby eliminating their ability to float should they become submerged. • During the repositioning of the flexible IBCs, the 250 micron polythene membrane shall be placed against the store walls allowing one metre of membrane under the outer row of bags and three metres of membrane in vertical contact with the internal surface of store walls. • Supply of pre-filled sandbags sufficient to construct 2 m x 8 m x 1 m high internal seepage dam and additional supply of 250 micron four metre wide polythene construction membrane sufficient to line the seepage dam. • In response to a 1% AEP flood event, pedestrian access doors shall be sandbagged and polythene sheeted externally, and internal seepage dams shall be constructed adjacent to each vehicular access door to eliminate flood water ingress. • Flooding emergency events shall be reported in accordance with the Site Emergency Plan. • Termination of a flooding emergency will be undertaken in accordance with the Site Emergency Plan.	

2 STRATEGIC SETTING

2.1 Newcastle City-Wide Floodplain Risk Management Study and Plan

The City of Newcastle has prepared a Newcastle City-wide Floodplain Risk Management Study and Plan (the Plan). The Plan was adopted by the NCC on 26 June 2012. The site is located within a flood prone area of the Hunter River Flood Plain as mapped in the Plan.

The purpose of the Plan is to set out short and long term actions to manage the risks of flooding in the Newcastle local government area (LGA), including from river, flash flooding and ocean flooding from storm surge and the potential impacts of projected sea level rise. Specifically, the Plan includes a 'First 5 Years' package of actions, including educational initiatives, flood prediction and warnings, consideration of planning controls, governance initiative, property works and continuation of effective existing initiatives.

The FRMRP has been prepared in accordance with the Plan.

2.2 NSW Floodplain Development Manual

The NSW Floodplain Development Manual was gazetted on 6 May 2005 and specifically relates to the development of flood liable land. It incorporates the NSW Flood Prone Land Policy, which aims to reduce the impact of flooding on individual owners and occupiers of flood prone property and to reduce private and public losses resulting from floods. The policy also recognises the benefits of use, occupation and development of flood prone land. It guides Councils in the development and implementation off detailed local floodplain risk management plans to produce robust and effective floodplain management outcomes.

The FRMRP has been prepared with due consideration to the NSW Floodplain Development Manual.

3 BACKGROUND

The site comprises 8.77 ha of previously developed industrial land. The existing surfaces broadly include roof areas, unsealed road/storage areas, sealed roads/storage areas and grassed landscaping areas. The existing drainage for the site involves guttering and downpipes connected to underground pipe drainage and an underground piped system on the western boundary of the site discharging stormwater underneath the Main Northern Railway. The site discharges stormwater directly to adjacent lands, including the adjacent wetlands to the north-east and west and the SEPP 14 listed Hexham Swamp.

The existing site topography is relatively level with typical surface gradients being less than 1%. In the past, the site has been extensively filled to elevate the building slabs and adjacent trafficable areas above the surrounding floodplain and wetlands.

3.1 Flood Modelling

BMT WBM (2012) confirmed the site is at risk from Hunter River flooding as listed in the Plan. Events modelled include the depths for the: 20 year (5%), 50 year (2%) and 100 Year (1%) Annual Exceedance Probability (AEP) events and the Probable Maximum Flood (PMF). Flood depths and flood level contours across the site for the 5%, 2% and 1% AEP and PMF flood events are detailed in Table 2.1.

Table 2.1 Modelled Flood Elevations and Depths

AEP	Flood Elevation mAHD	Flood Depth Range within the site (m)
5%	1.0	0
2%	2.0	0.1–0.4
1%	3.5	1.0–1.8
PMF	7.6	5.1–5.9

Source: BMT WBM (2012)
AHD: Australian Height Datum.

In summary, the results of the flood modelling for the site were:

- During the 5% AEP design flood event ground levels are typically higher than 5% AEP flood levels in the Hunter River.
- During a 2% AEP event, the Ironbark Creek floodgates, along with some low sections of the New England Highway at Hexham, would be overtopped allowing inundation of the Hexham Swamp floodplain, including the site, located on the fringe of this floodplain. Flooding would be limited to less than approximately 0.4 m on the site and would essentially involve backwater inundation from Ironbark Creek. If local rainfall coincided with this flood event, there may be potential for a small conveyance of floodwaters through the site.

- During a 1% AEP event, the site would be inundated primarily from backwater inundation, with Hunter River floodwaters routed through the adjacent Hexham Swamp, as an overbank flow path. The site would still be regarded as Flood Fringe (as per City of Newcastle Flood Mapping) for the 1% AEP event, but with flood depths of 1.0 to 1.8 m. There may be a small through-flow across the site associated with local rainfall and drainage of Hexham Swamp post-flood peak, although flood velocities are expected to be very low.
- The PMF event in the Hunter River is approximated by use of a standard multiplier to the 1% AEP flood conditions. The PMF event results in very deep floodwaters at the site. At the peak of the PMF event, there is also a possibility of overtopping of the New England Highway adjacent to the Sandgate Cemetery back into the Hunter River however, the overtopping rate would be very small compared to conveyance through the main flow path to Ironbark Creek and further north. As per the Council mapping, the site would still be considered Flood Fringe in the PMF event.
- The release of AN from the site under flood conditions has the potential to produce ammonia concentrations in the local area in excess of the relevant toxicity trigger value (TTV) stated in Table 3.4.1 of ANZECC (2000) guidelines. Building upgrades to the storage sheds to seal out water (as detailed in the CEMP), together with efficient and effective site emergency response plans, detailed below, were implemented to limit the amount of AN released from the storage sheds in the event of a flood.

The release of AN from the site under flood conditions has the potential to produce ammonia concentrations in the local area in excess of the relevant toxicity default trigger values indicated in Table 3.4.1 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Conservation Council (ANZECC), 2000) (ANZECC 2000). Building upgrades to the storage sheds to seal out water, together with efficient and effective site emergency response plans, detailed below, were implemented to limit the amount of AN released from the storage sheds in the event of a flood.

3.2 Local Catchment Flooding

The local catchment of the site is essentially restricted to the site boundaries, with multiple discharge points from the site. There is little, if any, external runoff entering the site. Rainfall-runoff on the site is directed to the north-east into the 2HD ponds (and associated downstream drainage channel), and to the west, where it drains via a series of pits adjacent to the rail siding and then into a newly constructed open channel on the eastern side of the rail-line, before discharging into a natural channel to the north of the site. Overflow from the pits would result in local ponding and then overtopping of the railway siding into the new formal drainage channel on the eastern side of the rail lines.

Given the small local catchment, flooding due to local rainfall would be minor, and generally less than 50 to 100 mm. It is apparent that the design conditions for flooding on the site would be driven by backwater flooding from the Hunter River.

The development does not involve any additional construction of buildings or significant site regrading that would affect the local flood behaviour. Management of local flooding issues could be achieved through good site maintenance, including preservation of inflow capacity of the pits along the western boundary and maintaining sufficient grade on ground surfaces to prevent localised ponding.

4 FLOOD RISK MANAGEMENT RESPONSE PLAN

4.1 Purpose and Scope

The purpose of the FRMRP is to establish the organisational roles and responsibility for emergency response personnel in responding to any impending flood event and to enable a means that the site workforce is made aware of flooding risks, procedures and responses in the event of a flood through implementation of an education and awareness framework.

The FRMRP forms part of the broader Operational Environmental Management Plan (OEMP) for the Facility and should be read in conjunction with the OEMP.

The intent of this FRMRP is to ensure personnel safety, minimising environmental harm, protection of property/equipment damage and efficiently restore operations when flood has abated to a level where safe return is possible.

4.2 SSD-5119 Requirements

Conditions 16 and 17, Schedule 3 of SSD-5119 require the development to ensure that structures on site (excluding shipping containers) used to store AN are flood proof up to the 1% Annual Exceedance Probability plus 500 mm freeboard depth design flood event and are maintained for the life of the development.

A structural engineer has provided certification to Crawfords of Storage Sheds A, B and C to withstand the 1% AEP design flood event plus 500 mm freeboard depth (refer to Appendix A), as required by Condition 17 of Schedule 3, SSD-5119. The certificate confirms the structural integrity of Sheds A, B and C as unlikely to be compromised by loads and will also not be inundated by flood water up to 1% AEP plus 500 mm freeboard depth design flood event.

4.3 Levels of Emergency

The Emergency Plan identifies the following emergency levels (refer to OEMP):

- Local: an emergency where the impacts on people, property and the environment are expected to be confined to a specific location within the site, and no escalation is expected. Can be controlled by Crawfords response team.
- Site: an emergency where the impacts on people, property and the environment are expected to spread to other sections of the site. Cannot be controlled by Crawfords response team. May impact other site users. Emergency services should be required and evacuation may be required.
- External: an emergency where the impacts on people, property and the environment are expected to impact both the entire site and beyond the site boundaries. Emergency services will be required.

Response will include site evacuation, operations cease, alternative business continuity plan to be activated.

4.4 Definition of Flood Types

Classification of a flood event as minor or major requires assessment based on sound judgement of the magnitude of the flood, the potential risk and the capacity to respond.

4.4.1 Minor Floods

Minor floods events are those, which occur as a result of sudden large precipitation, or accidental blockage of drainage systems which create a localised overflow with minor impact to property and/or environment. Operations would be able to continue and there is no threat to safety or business continuity. Minor flood events are readily managed by operations and would typically be categorised as a local emergency under the Crawfords Emergency Plan.

4.4.2 Major Floods

Major flood events are those that severely threaten people, property and/or environment and that necessitate a coordinated, multi-group response to manage the operations. A major flood may be a single, localised event or several occurrences throughout a plant site or sector of area and would typically be categorised as a site or external emergency under the Crawfords Emergency Plan.

For this site, a major flood event is defined as flooding events forecast at levels equivalent to or in excess of the 1% AEP magnitude that may impact the AN stores and the site in general.

Such flooding is likely to result from backwater inundation from the Hunter River and may result in site evacuation and the ceasing of operations. Due to the nature of this type of flooding and location of the site within the catchment, these events are likely to provide advance warning of potential flooding and be reasonably predictable in terms of timing and levels of the flood peak, thus providing sufficient time for the response team to effectively implement appropriate FRMRP actions.

4.5 Concept of Operations

In responding to a flood event, actions and decisions will be based on prioritising protection to the following:

- human life;
- minimising environmental harm;
- communications & utilities;
- property; and
- maintenance of site fire protection.

For minor flood risks, the Emergency Controller (EC) (or Deputy Emergency Controller (DEC) (site emergency personnel are identified in the Emergency Plan, refer to Site Emergency Plan in OEMP) will adopt prevention and response plans and procedures. They will continue to assist and assess the situations of minor flood events until circumstances deteriorate to the point where the FRT determines that an escalation from a minor to a major flood is warranted, based on:

- site observations;
- Bureau of Meteorology (BOM) flood warning information and/or announcements; and
- emergency response organisations (i.e. State Emergency Services) recommendations from the field.

For major flood risks, all sections of the site and personnel will work together under the guidance of the EC and emergency services outlined in this management plan and the Emergency Plan (refer to OEMP). This FRMRP acknowledges that floods may affect many different sections and/or buildings and seeks to ensure coordinated strategies, planning and response are undertaken to ensure safety to employees/staff, contractors and visitors, protection of the environment and business operational continuity.

When reports predict major flooding, the EC will notify all employees (i.e. site management, administration office, operational personnel) to begin advance preparation for flood response.

The EC is responsible for:

- reviewing the FRMRP and related procedures/documents after each flood event, or no less than on an annual basis;
- undertaking periodic drills around the effectiveness and understanding of roles and responsibilities of the FRMRP;
- assessing the potential and severity of flood events;
- notifying personnel who are threatened by potential flood events or are needed for response operations;
- monitoring and guidance in flood response operations;
- determining which areas will require the activation of the plan;
- providing flood directives to relevant personnel by outlining their responsibilities and task;
- notifying relevant personnel of requirement for evacuation;
- notifying relevant personnel of when return to site is safe; and
- providing guidance and assistance in clean-up and resumption of operations.

4.6 Flood Notification and Assessment

The assessment and response to flood events are divided into two sets of procedures, which reflect minor and major flood events. Personnel are on call 24 hours per day, seven days a week to respond to emergency events, in accordance with the Emergency Plan (refer to OEMP).

Procedures to Respond to Minor Flood Risks

Initial report:

- all minor flood events are monitored by the EC and reported to appropriate Senior Management. The effectiveness of the FRMRP is to be reviewed after each event and if any deficiencies are identified a review of FRMRP is to be undertaken.

Incident assessment:

- Monitor flood warning information issued by the Bureau of Meteorology (BOM) and emergency response organisations (i.e. State Emergency Services), noting that the NSW State Flood Sub Plan (2008) requires a six hour notice period for minor / moderate flood events (flood classification levels of between 2.5–3.4 m) at Raymond Terrace (provided by BOM) (which is equivalent to flood events up to a 2% AEP at the site).
- The FRT will assess the situation on-site to determine the severity of a flood event and communicate to Senior Management the level of response required. If Senior Management team members are not available, the EC will have authority to implement appropriate action in response to potential severity of flooding.

Response action:

- the EC will coordinate minor floor activities and periodically inform Senior Management on the status of the flood event; and
- if in the opinion of EC, the flood event warrants escalated site level response Senior Management will authorise additional personnel to assist.

Response escalation:

Decision to escalate from minor to major flood response efforts will be made by the EC with appropriate communication to Senior Management and all onsite personnel / contractors / visitors. Procedures to Respond to Major Flood Risks

Preparation:

- monitor flood warning information issued by the BOM and emergency response organisations (i.e. SES) noting that the NSW State Flood Sub Plan (2008) requires BOM to provide:
- a six hour notice period for minor / moderate flood events (flood classification levels of between 2.5–3.4 m) at Raymond Terrace;
- an 18 hour notice period for major flood events (flood classification levels of 3.5 m or greater) at Raymond Terrace;
- 2% AEP event level forecasts should be regularly monitored by the EC in consultation with local Emergency Services, where there is potential for an escalation of the 2% AEP a 1% AEP response shall be mobilised; and

- the EC monitoring of potential flood situations will be undertaken in cooperation with Senior Management and site personnel.

Notification:

- Should the site or surrounding areas be required to evacuate as a result of predictions of a major river flood event, the EC with Senior Management (if possible), will have the authority to implement FRMRP actions. Flood emergency mobilisation and response measures will take approximately four hours to implement across the site.
- The EC will notify site employees by appropriate announcements any requirement for evacuating the site.

Response decision:

- the EC will coordinate all FRMRP actions, issue flood status updates to the Administration Office and operational personnel/contractors/visitors.

Response escalation:

- pending media reports from the “Bureau of Meteorology” and/or emergency service providers on weather conditions and rising river warning alerts, the EC will advise the Senior Management and all on-site personnel/contractors/visitors when a site evacuation is to be effected and commence Site Emergency Shutdown Procedures.

Response action:

- once the EC has put into effect the Site Emergency Shutdown Procedures, all subsequent directives come from the EC in consultation with Senior Management; and
- flood emergency mobilisation and response measures will take approximately four hours to implement.

4.7 Equipment

Each AN store shall have as a component of the Emergency Response Equipment:

- a supply of 250 micron four metres wide polythene construction membrane sufficient to encase the entire internal perimeter of the store leaving no gaps and allowing two metres overlap at joins;
- one diesel powered sump pump;
- a supply of pre-filled sandbags sufficient to construct a 2 m x 8 m x 1 m high internal seepage dam; and
- a supply of 250 micron four metres wide polythene construction membrane sufficient to line the 2 m x 8 m x 1 m high seepage dam.

Additionally, the following equipment is also available on site for use during emergency response:

- a four person emergency response crew boat;
- up to 12 forklifts; and
- one 6 t capacity front end loader.

Prior to the commencement of additional storage of AN at the site, an inventory of materials and their location will be prepared and included in the Emergency Plan.

4.8 Roles and Responsibilities

4.8.1 Minor Floods

Response:

The EC in consultation with Senior Management will coordinate response to minor floods.

Roles of Different Groups:

- the EC will coordinate majority of the timings and procedures for both minor and major flood responses;
- the EC working with appropriate on-site personnel, will be responsible for coordinating;
- preparation for possible escalated flood conditions by filling sand bags;
- arrangements for 'spotters' to monitor various areas of the site for possible flood water breaches; and
- arrange for employees, to monitor various site operations and commence the relocation of critical/valuable equipment to highest location possible.

An EC member will responsible for:

- coordinating changes to on-site traffic flow (due to rising water) or imminent closure of the site areas due to flood conditions;
- communicating potential /partial site closure to any short-term scheduled deliveries/site services from companies/contractors; and
- communicating and facilitating any other directives as given by Senior Management etc.

4.8.2 Major Floods

The EC/DEC have knowledge and capacity to become involved in communicating and facilitating all FRMRP actions including:

- obtain initial incident briefing from field assessment personnel;
- assess the situation and establish preliminary action strategy;
- conduct initial briefing;
- brief all on-site staff and senior management;
- delegate duties;
- locate and acquire emergency response equipment for flood fighting operations.

Storage Buildings:

- Advise stakeholders in the 48 hours leading up to a 2% AEP flood event that no additional AN will be received into the stores.
- Under normal storage conditions AN stacks are configured within a store to allow a 1.2 m air gap between the outer side of the stack and the inside of the store walls.
- In a flood response the stacks shall be reconfigured by placing the outer rows of bulka bags against the store walls. Stacks shall also be reconfigured to remove segregation gaps between stacks and ensure no voids between individual bulka bags or bag stacks and walls (refer to Response Stack Diagram detailed in Appendix E of the Emergency Plan (refer to OEMP). Reconfiguration of AN stacks would incorporate the movement of any product stored in containers into the reconfigured Sheds.
- Whilst the outer rows of bulka bags are being repositioned the 250 micron polythene membrane shall be placed against the store walls allowing one metre of membrane under the outer row of bags and three metres of membrane in vertical contact with the internal surface of the store walls;
- Pedestrian access and vehicular access doors shall be sandbagged and polythene sheeted externally to eliminate flood water ingress.
- An internal seepage dam shall be constructed immediately adjacent to each vehicular access door using prefilled sandbags. The seepage dam shall be 8 m in length x 2 m deep x 1 m high, lined with 250 micron polythene sheeting. Each seepage dam will be located immediately behind the main entrance in each Shed in the event of any leakage from the proposed sandbagging.
- Diesel powered sump pumps shall be positioned on top of the concrete slab to be placed in the entrance opening so that it is outside the Shed and above flood level and operated to pump pooled water out of the seepage dams to external yard areas, thereby preventing water pooling in the bag storage area.

Container Storage Areas:

- Shipping containers used to store AN on site are to be unloaded to the AN storage Sheds A, B or C as soon as practicable following receipt on site.
- Ensure doors on all empty containers stored at ground level are opened and remain open from notification of a 1% AEP forecast to cancellation of the warning.
- Containers stacked above one container high will not be affected by a 1% AEP plus 500 mm freeboard.
- Containers loaded with AN must be ‘destuffed’ into an approved SSAN store prior to the anticipated 1% AEP flood event. No AN is to be left inside a shipping container during a major flood event. All AN is to be contained within the AN storage Sheds (A, B or C) during a major flood event.
- Assess the flood situation and provide periodic updates to on site personnel.
- Determine staffing requirements for site traffic and movement of critical/valuable equipment to higher areas.

- Liaising with Emergency Response Services on flood status and initiating evacuation of all on site personnel if required and timing of safe return.
- Ensure that a summary is complete and provided to the Senior Management for review of effectiveness of all personnel and action undertaken under the FRMRP.

4.9 Evacuation

The decision to evacuate given by the EC is based on a combination of factors including:

- reports from Bureau of Meteorology regarding weather and flood alerts;
- report from the Emergency Services (i.e. SES), Roads and Traffic Authority in regards to road closures / flood affected roads; and
- on site conditions regarding rising flood waters.

When directed by the EC, ALL employees, staff, contractors and visitors, with the exception of EC delegated personnel required for flood fighting response actions, will leave site. The initial evacuation assembling area is at the front gate. The EC/DEC will determine the need for secondary evacuation to, the designated exit gate onto Old Maitland Road to St Joseph's Home, and will direct all persons on site. Signage will be erected at the entry gate to the site, identifying the evacuation route and assembly area to be followed in all cases of site evacuation.

All third parties and visitors will be evacuated from site and signed off the visitor register.

Where possible, any personnel not deemed necessary on site for flood preparation may be directed to evacuate earlier at the EC's direction.

The EC will complete one last site inspection ensuring all personnel have evacuated the site and that all possible equipment, chemicals and materials have been secured and/or moved to higher areas, where possible. They will then close and lock all buildings and offices and activate the site security alarms.

When exiting the site, the EC will be the last to leave and ensure the gates are closed.

4.10 Returning to Site

The EC will remain in communications and will arrange a day and time to visit the site to inspect the safety status of buildings and equipment before advising Senior Management the site is safe for the return of personnel.

The EC will inspect the site for hazards and duly record and risk assess each one, including keeping photographs.

After initial inspections and recordings of the site and the Administration Building, Senior Management will be contacted informed of the site condition and safety so an informed decision can be made for the return of the remainder of employees.

Should the site be safe for staff to return, they will be notified by the EC.

IMPORTANT: Where there is any doubt in relating to structural stability of any building on site, no person is permitted to enter that/any building until it has been inspected by a duly qualified structural engineer and a certificate stating same has been issued.

Any equipment used during a flood event is to be inspected and / or replaced as soon as possible after the flood event to ensure a full quantity of material is available on site for any future flood event, in accordance with the equipment inventory within the Emergency Plan.

5 FLOODING EDUCATION AND AWARENESS

Flooding education and awareness will be integrated within the site's induction program. Records of attendance will be maintained. Regular refresher training for the FRMRP will be undertaken for all staff every two years.

Site inductions will include the basic parameters of the FRMRP so that in the event of a flood, visitors and contractors are aware of the emergency response framework and procedures that would be implemented by the EC

APPENDIX A – STRUCTURAL CERTIFICATION

Certification of Structural Design

PROCIM PTY LTD ABN 074 189 718
Industrial Design
19 BOYD BLVD. MEDOWIE NSW 2318
Phone 02 49817482 Fax 02 49 817483
E-mail PROCIM@msn.com.au

no:CRFR-634AB1 date 06.08.13 ref: buildings "A"&"B"on lot 12 DP 625053 at Sandgate NSW.

To: Crawfords Freightlines Pty. Ltd.
***Old** Maitland Road, Sandgate NSW 2322*
Attention: Mr. Paul McGrath Compliance Mngr

We, PROCIM-Industrial design, are responsible for checking the design of all structural aspects related to buildings "A"&"B" on your property at lot12 DP 625053 at Sandgate ***NSW 2304.*** All our structural design verification work has been based on relevant requirements of Building Code of Australia for buildings Class 7(building for storage of goods), local Council Subdivision Code's engineering considerations, and relevant Australian Standards.

1.1. Main objectives of our design check:
- 1.1.1. Safeguard people and other properties from injury or damages caused by structural failure
- 1.1.2. Adequacy for purpose.

1.2. The two buildings "A"&"B" as per drawing B795DET and all related "as built"drawings have been structurally analyzed and results provided to you by our FEA report OS632. Report proves that buildings model shall withstand the following loads, their combinations and other actions determined as follows:
- 1.2.1. Dead and live loads and their combinations to AS-1170.1
- 1.2.2. Wind loads and worst case combination to AS-1170.2 and extra loading for heavy rain and hail selectively to AS-1170.3.
- 1.2.3. Extra load on building structure from installation/repairs work or accidental load on static roof of max. 150 Kg.
- 1.2.4. Mechanical stress caused by differential thermal effects on different sides of the building onto common structural members.
- 1.2.5. Flooding caused loads by water levels up to and including a 1% Annual Exceedence Probability (AEP) plus 500 mm free board as consideration for effects of climate change.

1.2.6. Seismic events caused loads to AS-1170

1.2.7. Mechanical stress caused by tolerances of dimensions, shape and location of the members of steel and concrete structure.

1.2.8. Exposure to corrosive pollutants inside and outside.

1.3. Structural member materials, sizing and construction solutions in our design verification has been found compliant to BC of Australia and relevant Australian standards as follows:

1.3.1. Steel structures: for structural analysis, deflections, member, connections and fasteners design to AS-4100

1.3.2. Reinforced concrete footings, tie beams, slabs and concrete block masonry compliant with AS-3600 and AS-3700.

1.3.3. Fasteners type, size and corrosion protection to AS-2465/grade8.

1.3.4. Purlins, girts and accessories to AS-4600(AS-1538)

1.3.5. Check of structure fire resistance, to BC Australia section C.

1.3.6. Access by people with disabilities to AS 1428.1

1.4. Other data used in our design.

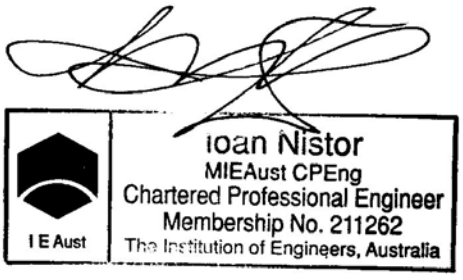
1.4.1. The client information about the existing building site (by drawings and site visits) and about the changed specification of stored materials.

1.5. Conclusion

Structural design is adequate for purpose and to withstand design loads and specific actions as described above.

IOAN NISTOR

For PROCIM Industrial Design



19 BOYD BLVD or PO BOX 132 – MEDOWIE NSW 2318
PH 02 49817482 MOB 0419436005 A/H 02 49828602
Fax 02 49817483 Email PROCIM@msn.com

Certification of Structural Design

PROCIM PTY LTD ABN 074 189 718
Industrial Design
19 BOYD BLVD. MEDOWIE NSW 2318
Phone 02 49817482 Fax 02 49 817483
E-mail PROCIM@msn.com.au

no:CRFR-634C1 date 06.08.13 ref: buildings "C"on lot 12 DP 625053 at Sandgate NSW.

To: Crawfords Freightlines Pty. Ltd.
***Old** Maitland Road, Sandgate NSW 2322*
Attention: Mr. Paul McGrath Compliance Mngr

We, PROCIM-Industrial design, are responsible for checking the design of all structural aspects related to building "C" on your property at lot12 DP 625053 at Sandgate ***NSW 2304.*** All our structural design verification work has been based on relevant requirements of Building Code of Australia for buildings Class 7(building for storage of goods), local Council Subdivision Code's engineering considerations, and relevant Australian Standards.

1.1. Main objectives of our design check:
- 1.1.1. Safeguard people and other properties from injury or damages caused by structural failure
- 1.1.2. Adequacy for purpose.

1.2. The building "C" as per drawing B795DET and all related "as built"drawings have been structurally analyzed and results provided to you by our FEA report OS634C. Report proves that buildings model withstands the following loads, their combinations and other actions determined as follows:
- 1.2.1. Dead and live loads and their combinations to AS-1170.1
- 1.2.2. Wind loads and worst case combination to AS-1170.2 and extra loading for heavy rain and hail selectively to AS-1170.3.
- 1.2.3. Extra load on building structure from installation/repairs work or accidental load on static roof of max. 150 Kg.
- 1.2.4. Mechanical stress caused by differential thermal effects on different sides of the building onto common structural members.
- 1.2.5. Flooding caused loads by water levels up to and including a 1% Annual Exceedence Probability plus 500 mm free board as consideration for effects of climate change. g a 1% Annual Exceedence Probability (AEP) plus 500 mm free board as

consideration for effects of climate change.

1.2.6. Seismic events caused loads to AS-1170

1.2.7. Mechanical stress caused by tolerances of dimensions, shape and location of the members of steel and concrete structure.

1.2.8. Exposure to corrosive pollutants inside and outside.

1.3. Structural member materials, sizing and construction solutions in our design verification has been found compliant to BC of Australia and relevant Australian standards as follows:

1.3.1. Steel structures: for structural analysis, deflections, member, connections and fasteners design to AS-4100

1.3.2. Reinforced concrete footings, tie beams, slabs and concrete block masonry compliant with AS-3600 and AS-3700.

1.3.3. Fasteners type, size and corrosion protection to AS-2465/grade8.

1.3.4. Purlins, girts and accessories to AS-4600(AS-1538)

1.3.5. Check of structure fire resistance, to BC Australia section C.

1.3.6. Access by people with disabilities to AS 1428.1

1.4. Other data used in our design.

1.4.1. The client information about the existing building site (by drawings and site visits) and about the changed specification of stored materials.

1.5. Conclusion

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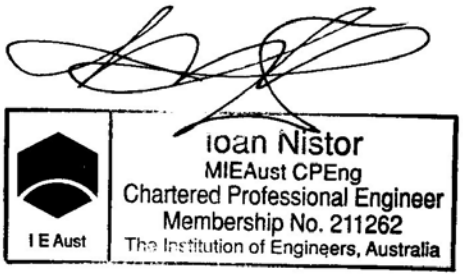
IOAN NISTOR

For PROCIM Industrial Design



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Fax 02 49817483 Email PROCIM@msn.com

7 August 2013

Crawford Group
Old Maitland Road
SANDGATE NSW 2304

Attention: Paul McGrath

Bluey Technologies Pty Ltd
ABN 36 115 613 646

PO Box 898, Hamilton
QLD 4007 Australia
Tel: + 61 7 3161 7743
Fax: + 61 7 3161 7918

Ref: Tekflex Application Crawfords Sandgate

Dear Paul,

Following our site visit and inspection of Shed A at your Sandgate yard on 5th August 2013, we confirm that our product BluGeo Tekflex has been applied in accordance with the requirements of the following documentation:

- Bluey Technical Data Sheet BG-10-00-000 R01/2012
- BluGeo Tekflex Method Statement
- Recommendations of our letter dated 26 March 2013

In consideration of the above, we confirm that the product will achieve the properties outlined in our technical data sheet for BluGeo Tekflex and all test reports including those of the CSIRO Investigation Report ET/IR 415R – Study of the Gas Permeability of Tekflex Used as Sealant in Underground Coal Mines.

Following this recent inspection, it is now our opinion that the timber-clad walls of Shed A, applied with Tekflex, at your Sandgate yard will demonstrate sufficiently low permeability to prevent significant water ingress during a 2m flood event.

If you have any further queries please do not hesitate to contact the undersigned.

Yours sincerely,

Daniel Bosco
General Manager

Australia & Asia-Pacific
bluey@bluey.com.au
www.bluey.com.au

MINERAL RESOURCES

NSW DEPARTMENT OF MINERAL RESOURCES
Mine Safety Laboratory
Cnr Joseph Street & Weeroona Road
(P.O. Box 76), Lidcombe NSW 1825 Australia
Ph (02) 9646 1644 Fax (02) 9646 3224

Fosroc Chemfix
P.O. Box 554
NOWRA NSW 2541

for further information
contact Peter Irwin

2000/020

21 January 2000

Attn : ROB HAWKER
Product Manager

Tekflex Hydraulic Cement

Report 2000/020 *details the testing of the above material which is proposed for use in NSW underground coal mines.*

The ***material COMPLIED*** *with the requirements for* ***Electrical Resistance, Fire Resistance and Flame Propagation.***.

The Oxygen Index *of the material was also determined.*

The ***Material Safety Data Sheets (MSDS) Issue Date 22 November 1999, COMPLIED*** *with the requirements for* ***assessment.***

An invoice for testing charges is enclosed.

Yours faithfully,

for *G.Fawcett*
Manager
MINE SAFETY LABORATORY

MINERAL RESOURCES

DEPARTMENT of MINERAL RESOURCES

MINE SAFETY LABORATORY

MATERIAL TESTING : Hydraulic Cement

Tekflex

Fosroc Chemfix

Tests :

Electrical Resistance
Fire Resistance
Flame Propagation
Determination of Flammability by Oxygen Index

Assessment :

Material Safety Data Sheets (MSDS)

LABORATORY -Test Report No. 2000/021
P.O. Box 76 Lidcombe NSW 2141

This document may not be reproduced except in full.

Department of Mineral Resources : Mine Safety Laboratory

Material Testing : Test Report No. 2000/020
Testing Officer : P.J. Irwin Technical Officer

Item(s)	*Brand(s)*	*Supplier*	*Test*
Hydraulic Cement	*Tekflex*	*Fosroc Chemfix*	*1. Electrical Resistance by NCB 245 : 1985 Appendix 5* *2. Fire Resistance based on Mine Safety Method C 98/1070* *3. Flame Propagation Mine Safety Method D 98/1070* *4. Determination of Flammabilty by Oxygen Index AS/NZS 2122.2:1999* *5. Material Safety Data Sheets (MSDS) Assessment*

DESCRIPTION

Sheets and strips of pliable khaki-coloured hydraulic cement. Texflex is a mixture of cementitious grey powder, inorganic fillers, and a milky white polymer latex liquid.

TEST METHOD

ELECTRICAL RESISTANCE

*The **Electrical Resistance** of **2 sheets (300 mm x 300 mm)** of cured **TEKFLEX** was determined in accordance with **NCB 245 : 1985 Appendix 5,** using a **Megohmmeter** with a nominal open voltage of **500 V d.c.** and a resistance range from **50K to 50 T ohms.***

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FIRE RESISTANCE

*The **Fire Resistance** of the material was determined using a **modification** of **Mine Safety Method C 98/1070**. The flame from a standard LPG Burner , which had been adjusted to melt a length of copper wire(diameter 0.7 mms) in 4 to 5 secs, was applied to various sites on a **300 mm x 300 mm sheet of cured Tekflex** . A series of increasing flame application times was employed.*

FLAME PROPAGATION

*The Flame Propagation of the material was determined in accordance with **Mine Safety Method D 98/1070** The L.P.G. gas burner flame, adjusted as above, was applied, for a period of 20 seconds, to **strips (150 mm x 20 mm x 2 mm)** of **cured TEKFLEX** held vertically.*

DETERMINATION OF FLAMMABILITY BY OXYGEN INDEX.

*The **Oxygen Index** test was conducted on **150 mm x 20 mm x 2 mm strips** of **cured TEKFLEX** in accordance with **AS/NZS 2122.2:1999**.*

*From **Page 2** of the method , the following definition applies :*

"Oxygen Index " : The minimum concentration of oxygen by percentage volume in a mixture of oxygen and nitrogen introduced at 23 ^{O} C, that will just support combustion of a material under specified test conditions".

MATERIAL SAFETY DATA SHEETS (MSDS) ASSESSMENT

*The occupational hazards associated with the use and/or storage of **TEKFLEX** in an underground mining situation, have been examined by perusal of the **supplied Material Safety Data Sheets (MSDS) Issue Date 22 November 1999** as well as any accompanying relevant information.*

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TEST RESULTS AND REQUIREMENTS

ELECTRICAL RESISTANCE

Date tested :	*17.1.2000*	
Test conditions :	*22 ^{O} C & 61 % R.H.*	
Electrical Resistance units :	*Megohms(M = 10^{6})*	
Electrical Resistance (Rs)	***As Supplied***	***Conditioned***
Upper Surface : dark khaki		
Test Piece No.		
1	*12M*	*10M*
2	*10M*	*5M*
Mean Surface Resistance	***11M***	***8M***
	11 Megohms	***8 Megohms***
Lower Surface : light khaki		
Test Piece No.		
1	*20M*	*10M*
2	*10M*	*5M*
Mean Surface Resistance	***15M***	***8M***
	15 Megohms	***8 Megohms***

REQUIREMENTS

The Electrical Resistance on ***upper and lower surfaces of the material*** *shall not be greater than* ***300 Megohms (300 x 10^{6} ohms)***

STATUS

Tekflex COMPLIED *with the requirements for* ***Electrical Resistance.***

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2. FIRE RESISTANCE

Sheet of cured Tekflex

Tekflex *Date Tested : 17.1.2000*	*Exposure Time of Burner Flame* *(sec)*	*Persistence of Flame* *(sec)*	*Persistence of Glow* *(sec)*	*Persistence of Smoke* *(sec)*
Test site No. 1	*20*	*0*	*0*	*0*
t	*60*	*0*	*0*	*0*
Test site No. 2	*20*	*0*	*0*	*0*
	60	*0*	*0*	*0*
Test site No. 3	*20*	*0*	*0*	*0*
	60	*0*	*0*	*0*
Test site No. 4	*20*	*0*	*0*	*0*
	60	*0*	*0*	*0*
Test site No.5	*20*	*0*	*0*	*0*
	60	*0*	*0*	*0*
Test site.No. 6	*20*	*0*	*0*	*0*
	60	*0*	*0*	*0*

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REQUIREMENTS

When tested in accordance with ***Mine Safety Method C 98/1070,*** *the material shall fail if any of the following occur :*

(a) After an exposure time of 20 seconds, the mean persistence time of the flame or glow is greater than ***10 seconds.***

(b) (a) After an exposure time of 60 seconds, the mean persistence time of the flame or glow is greater than ***30 seconds.***

STATUS

TEKFLEX COMPLIED *with the requirements for* ***Fire Resistance.***

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3 FLAME PROPAGATION strips of TEKFLEX

Date tested : *17.1.200*	*Exposure of Flame (sec)*	*Persistence of Flame (sec)*	*Material Consumed/ Melted / charred by flame (%)*
Test Piece No. 1	*10*	*0*	*<5*
	20	*0*	*<5*
Test Piece No. 2	*10*	*0*	*<5*
	20	*0*	*<5*
Test Piece No.3	*10*	*0*	*<5*
	20	*0*	*<5*
Test Piece No.4	*10*	*0*	*<5*
	20	*0*	*<5*
Test Piece No.5	*10*	*0*	*<5*
	20	*0*	*<5*
Test Piece No.6	*10*	*0*	*<5*
	20	*0*	*<5*

After 20 seconds exposure time :

Mean persistence time of flame (sec) :0

Mean % material consumed/melted/charred : < 5

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REQUIREMENTS

The material shall ***fail*** *the test if* ***any*** *of the following* ***occur:***

(a) After an exposure time of 20 seconds, the mean persistence time of the flame or glow is greater than ***10 seconds.***
(b) After an exposure time of 20 seconds, the material has been ***completely consumed.***

STATUS

TEKFLEX COMPLIED *with the requirements for* ***Flame Propagation***

4. DETERMINATION OF FLAMMABILITY BY OXYGEN INDEX

Date of Test : 18.1.2000	***Tekflex strips***
Oxygen Index	***31.4***

The ***Oxygen Index*** *will serve as a bench mark for continuing quality assurance of the product with respect to flammability.*

When the material is tested in accordance with A/NZS 2122.2:1999, the result shall be within ±3 points of that originally obtained at the time of approval.

Reference : ***AS 1333-1994 GRADE S Section 6.8 (b) (iv)****.*

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5. MATERIAL SAFETY DATA SHEETS (MSDS) ASSESSMENT

PRINCIPLES

The Material Safety Data Sheets (MSDS) are examined to determine the sufficiency of the information supplied to enable persons in coal mines to safely handle and use the materials submitted.

The Manager, Mine Safety Unit, has discretion to refuse the application for testing as a result of his assessment of any imformation (or lack thereof).

REQUIREMENTS

1. The MSDS are a compulsory and integral component of the testing regimen and must be readily available to the Mine Safety Laboratory, most preferably at the initial submission of the sample(s) for testing.

2. The applicant is required to supply MSDS for each separate chemical submitted. The MSDS must be in a form acceptable to the Department and the applicant may be required to provide further information and/or samples on request.

3. At the discretion of the Manager, Mine Safety Laboratory, the application for testing may be refused if the material is regarded as presenting a significant health hazard or if sufficient information is not available.

4. The preferred format for MSDS is as in Worksafe Australia "Guidance Note for Completion of a Material Safety Data Sheet", current edition. However, other formats may be acceptable, provided that all the required information is included.

STATUS

The supplied ***Material Safety Data Sheets (MSDS) Issue Date 22 November 1999 COMPLIED*** *with the requirements for* ***assessment*** *.*

TESTING OFFICER : P. J.IRWIN : Technical Officer

Date : 21-1-2000

Authorised by : C. Ellis

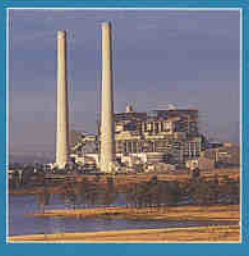
Issue Date: 9/02/2000

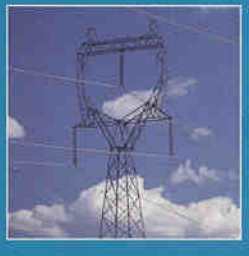
CSIRO

ENERGY TECHNOLOGY

INVESTIGATION REPORT ET/IR 415R

STUDY OF THE GAS PERMEABILITY OF TEKFLEX USED AS SEALANT IN UNDERGROUND COAL MINES





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INVESTIGATION REPORT ET/IR 415R

STUDY OF THE GAS PERMEABILITY OF TEKFLEX USED AS SEALANT IN UNDERGROUND COAL MINES

by

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PREPARED FOR
FOSROC MINING AUSTRALIA PTY LTD

August 2001

SUMMARY

Measurement of permeability to gases was undertaken on a new plastic based product called Tekflex. Fosroc Mining Australia Pty Ltd produces Tekflex and its intended use is as a sealant in underground coal mines. The purpose of the sealant is to prevent the ingress of gases (mainly CH_4, CO_2 and CO) and water into mine working areas. Currently 'Shotcrete' is used to seal and partially support the mine roadways.

Three gases, namely methane (CH_4), carbon dioxide (CO_2) and carbon monoxide (CO) were used to measure the permeability of Tekflex. These gases were forced, under a pressure difference, to permeate a thin disc (2.5 mm thickness) of Tekflex. Pressure difference was maintained at the two ends of the disc during the duration of each measurement (up to 2.5 days each). Pressure differences ranging from 1 to 7 atm were applied to force the gas through Tekflex. All three gases showed the same general pattern of permeation though displaying a different magnitude of permeability. While CO_2 and CH_4 gases showed similar permeation behaviour, CO showed a higher permeability of 2.4 times larger than the permeability for CO_2 and CH_4.

For all three gases the permeability estimated from measurement was lower at a pressure difference of 1 atm and then increased twofold and remained constant for pressure differences of 3, 5, and 7 atm. Permeability at these latter differential pressures was ~ 3.56×10^{-9} darcy for CO_2 and CH_4, and 8.64×10^{-9} darcy for CO. The reason for increase in permeability at a pressure difference of ~2 atm is essentially unknown at the time of writing and further research would be required to explore this issue. For purposes of calculating gas ingress through the membrane due to pressure differences, a conservative approach would be to use the larger values of permeability. It must be noted that these values of permeability are valid only if the Tekflex is sprayed uniformly over the structure and no gaps are present in the layer.

TABLE OF CONTENTS

Summary i

1 Introduction 1

2 Definition of permeability 1

3 Measurement procedure 2

3.1 Measured data 2

4 Permeation properties of Tekflex as sealant over underground ventilation structures 5

5 Comparison of permeability of Tekflex and 'shotcrete' as sealant in underground mines 5

6 Conclusion 6

7 References 7

Appendix 8

A1. Tekflex permeability to CH_4 8

A2. Tekflex permeability to CO_2 10

A3. Tekflex permeability to CO 12

LIST OF TABLES

Table 1 - Viscosity values used in calculation of the permeability 3
Table 2 - Permeability of Tekflex product 3
Table 3 - Permeability of Tekflex disc to gases at lows and higher pressure differences 4
Table 4 - Permeation flowrate of gases through Tekflex sprayed structure 5
Table A1 - Common conditions used for all measurements 8
Table A2 - CH_4 permeability measurement, Δp = 1 atm 8
Table A3 - CH_4 permeability measurement, Δp = 3 atm 9
Table A4 - CH_4 permeability measurement, Δp = 5 atm 9
Table A5 - CH_4 permeability measurement, Δp = 7 atm 9
Table A6 - CO_2 permeability measurement, Δp = 1 atm 10
Table A7 - CO_2 permeability measurement, Δp = 3 atm 11
Table A8 - CO_2 permeability measurement, Δp = 5 atm 11
Table A9 - CO_2 permeability measurement, Δp = 7 atm 11
Table A10 - CO permeability measurement, Δp = 1 atm 12
Table A11 - CO permeability measurement, Δp = 3 atm 13
Table A12 - CO permeability measurement, Δp = 5 atm 13
Table A13 - CO permeability measurement, Δp = 7 atm 13

LIST OF FIGURES

Figure 1 - Permeability of Tekflex against pressure difference 4
Figure A1 - Permeability to CH_4 as a function of differential pressure 10
Figure A2 - Permeability to CO_2 as a function of differential pressure 12
Figure A3 - Permeability to CO as a function of differential pressure 14

1 INTRODUCTION

A study of the of permeability of Tekflex to gases was undertaken on behalf of Fosroc Mining Australia. Tekflex is a new plastic product, which is sprayed over coal mine structures in order to provide a seal to gases and water.

Measurements were carried out to study the behaviour of Tekflex to the three main gases of interest often encountered in underground coal mines namely CH_4, CO_2 and CO. The permeability to water was not measured. The permeability of Tekflex was compared to 'Shotcrete', which is currently used to seal mine roadways.

2 DEFINITION OF PERMEABILITY

The theory of flow through porous media is based on the classical experiment of Darcy in the year 1856 whose experiment showed that the velocity of water through a packed column of sand was proportional to the water head (Scheidegger, 1957). The generalised Darcy's law states that the flux of a liquid through a porous medium is proportional to the gradient of liquid pressure with the coefficient of proportionality being equal to medium permeability.

Darcy's law for a porous medium traversed by a gas can be written as:

$$Q = S \frac{p}{p_0} \frac{k}{\eta} \frac{dp}{dx} \qquad (1)$$

Q is the volume flowrate of gas (at reference pressure) traversing the porous material, S is the cross sectional area of the medium perpendicular to the direction of the flow, p is the gas pressure, p_0 is the reference pressure (= 1 atm), k is the permeability, η is the dynamic viscosity, dp is the pressure difference at the two ends of the medium and dx is the thickness of the medium in the direction of the flow.

The dimension of the permeability is a length squared, which in the metric system is expressed as m^2. However in the oil and gas industry, as well as in seam gas methane research, darcy is often used as the unit of permeability. If the permeability k, is expressed in darcy, then the units of the other parameters are as follows:

Q: flowrate cm^3/s
S: area section, cm^2
μ: dynamic viscosity, cp (centipoise)

p: pressure, atm
p_0 : reference pressure = 1.0 atm
dx: thickness of medium, cm

Note that
1 darcy = 9.87×10^{-13} m^2

In hydrology and civil engineering work, the main fluid is water and the permeability for a medium including soil and construction materials (concrete and others) is expressed in terms of the velocity of percolating water per unit of hydraulic head. The permeability unit used there is 'm/s' and can be converted to darcy and m^2 using the following conversion factors:

1 m/s (for water) = 1.03×10^{-3} m^2
1 m/s = 1.03×10^7 darcy.

3 MEASUREMENT PROCEDURE

The permeability of Tekflex was measured at the CSIRO seam gas laboratory at North Ryde. The permeability to three gases, i.e, CH_4, CO_2 and CO was determined by measuring the rate of gas flow through a thin disc prepared from a Tekflex sample at various pressure gradients. Fosroc Mining Australia Pty Ltd had provided a large sample of Tekflex, and appropriate discs were prepared from this sample. The prepared discs were 2.5 mm thick with a diameter of 8.5 mm. The Tekflex discs were sealed to form a partition in a tube, one side being exposed to the target gas, the other to N_2. On the N_2 side, there was a ballast chamber of 12.5 cm^3 volume where the accumulation of the studied gas in the chamber was measured as a function of time. Gas composition was measured by using gas chromatography techniques. For each gas, 4 sets of measurements were taken corresponding to pressure differences of 1, 3, 5 and 7 atm. In order to obtain these pressure differences, pressure of the studied gas was increased whereas the pressure of N_2 was kept at 1 atm (gauge pressure). For each gas and each pressure difference the test was carried out for 2 to 2.5 days. This allowed the gas to penetrate through the thickness of the disk.

3.1 Measured data

In total 12 sets of tests were undertaken. Each test consisted of up to 4 measurements. In total some 45 measurements of gas flowrate through Tekflex were undertaken. For each test an average permeability was calculated. All measurements were undertaken

at the laboratory temperature of 23°C. The dynamic viscosities of the three gases used in the determination of the permeability were as listed in Table 1.

Table 1 - Viscosity values used in calculation of the permeability

Gas	Dynamic viscosity (centipoise)
CH_4	0.0109
CO_2	0.0146
CO	0.0175

In Table 2, the estimated average permeability for each gas and for each differential pressure is presented. Each permeability value is the arithmetic average of 3 or four individual permeability calculations.

Table 2 - Permeability of Tekflex product

Gas / Differential pressure (atm)	CH_4 Permeability (darcy)	CO_2 Permeability (darcy)	CO Permeability (darcy)
1	1.60×10^{-9}	1.53×10^{-9}	3.67×10^{-9}
3	3.72×10^{-9}	3.54×10^{-9}	8.62×10^{-9}
5	3.55×10^{-9}	3.42×10^{-9}	8.54×10^{-9}
7	3.68×10^{-9}	3.47×10^{-9}	8.75×10^{-8}

As can be seen from Table 2, the estimated permeability is lower at a pressure difference of 1 atm compared to the higher pressure differences. At higher pressure differences the permeability is more than twofold higher and is almost constant for all three successive pressure differences. In Figure 1, these data for the 2.5 mm thick disc of Tekflex are presented graphically.

A summary of the results of the measurements, taking into account the permeability change at a differential pressure of ~2 atm is given in Table 3. The reason for the change of permeability at pressure difference of ~2 atm is not known at the time of writing this report. It is safer to use the higher values of permeability for future calculation.

Table 3 - Permeability of Tekflex disc to gases at lows and higher pressure differences

Gas	Average Permeability (darcy) $\Delta P < 2$ atm	Average Permeability (darcy) $\Delta P > 2$ atm
CH_4	1.60×10^{-9}	3.65×10^{-9}
CO_2	1.53×10^{-9}	3.48×10^{-9}
CO	3.67×10^{-9}	8.64×10^{-9}

The detailed measurements and calculations are given in the Appendix.

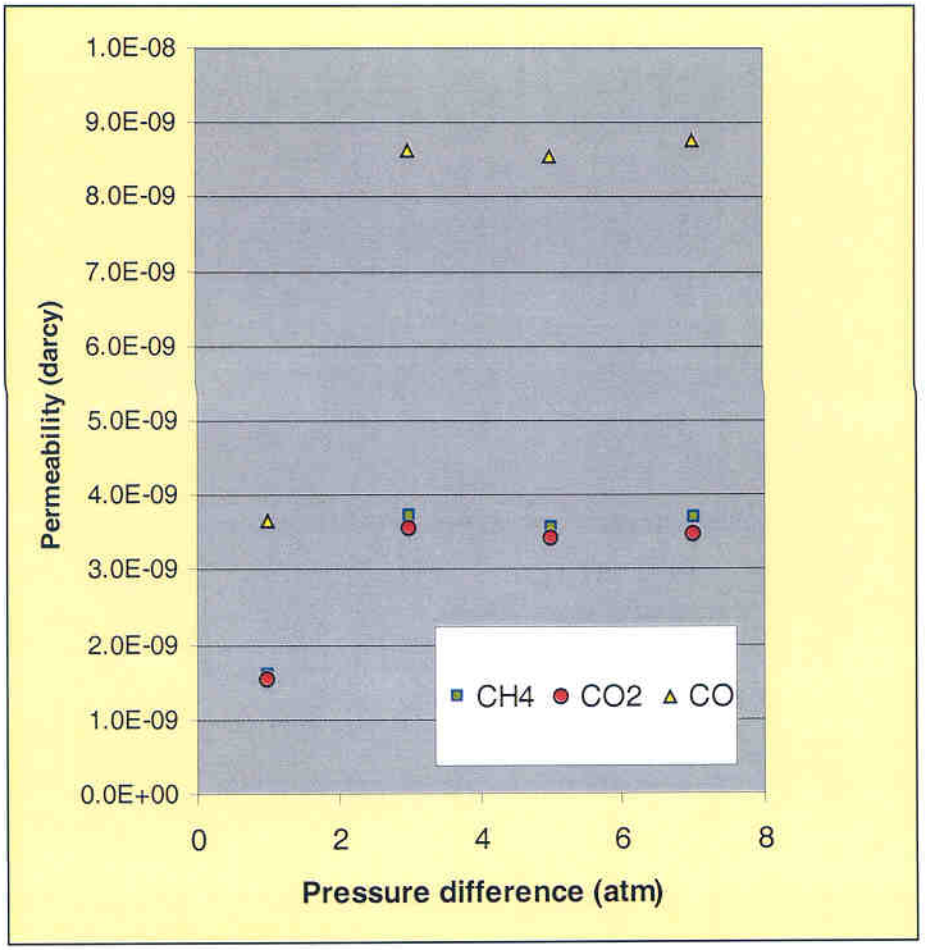

Figure 1 - Permeability of Tekflex against pressure difference

4 PERMEATION PROPERTIES OF TEKFLEX AS SEALANT OVER UNDERGROUND VENTILATION STRUCTURES

Tekflex may be used on ventilation structures for repair and upgrade work. The permeability of Tekflex can be expressed in terms of the flowrate of gas crossing a given surface area of the ventilation structure.

As an example, assume that a layer of Tekflex of 5 mm, or 10 mm thickness is sprayed over a structure. If there is a pressure built up of gas behind the structure, say 0.5 atm (or 7 psi) and the pressure in the working area is at atmospheric pressure, then there is a differential pressure of 0.5 atm causing the flow of gas across the sprayed Tekflex layer. The flowrates of the three studied gases through a 15 m^2 area can be calculated by using Eq. 1. The results are presented in Table 4. For these calculations we used the higher values of permeability, which were measured at higher differential pressures of 3, 5 and 7 atm. The values of permeability used for each gas were as follows:

CH_4, $k = 3.65 \times 10^{-9}$ darcy
CO_2, $k = 3.48 \times 10^{-9}$ darcy
CO, $k = 8.64 \times 10^{-9}$ darcy

Table 4 - Permeation flowrate of gases through Tekflex sprayed structure

GAS/ Tekflex thickness (mm)	CH_4 (μL/s)	CO_2 (μL/s)	CO (μL/s)
5	75.3	53.6	111.1
10	37.7	26.8	55.5

5 COMPARISON OF PERMEABILITY OF TEKFLEX AND 'SHOTCRETE' AS SEALANT IN UNDERGROUND MINES

'Shotcrete' is often used to seal roadway walls and roof from the influx of water and increase the confinement pressure over the wall and enhance the mechanical strength of the roof and wall. No studies specific to 'Shotcrete' flow properties to gases, were found in the literature. Permeability studies on concrete had been however

undertaken by various researchers in this field. Khatri et al. (1997) reported values of concrete permeability to water of the order of 1.0×10^{-12} m/s (1.03×10^{-5} darcy).

We do not have any measurement of 'Shotcrete' permeability, however as 'Shotcrete' is also concrete we have assumed that the permeability to water/gas is not going to differ too much from normal cast concrete. However, if the 'Shotcreting' is done very poorly, and lots of gaps are incorporated into the in-place concrete, then the permeability is obviously going to be higher. Schrader and Kaden (1987; quoted by Austin and Robins, 1995), for dry process sprayed concrete, quote the permeability to water of 3×10^{-10} m/s (3×10^{-3} darcy) for moderately low strength and 3×10^{-13} m/s (3×10^{-6} darcy) for very high strength concrete. Opsahl and Buhre (1985; quoted by Austin and Robins, 1995) consider concrete to be watertight if the permeability to water was below 10^{-12} m/s (10^{-5} darcy).

As can be seen from Table 2, the permeability of Tekflex to three gases and at various differential pressures ranges from 1.53×10^{-9} to 8.75×10^{-9} darcy. If we assume that the permeability to gas is higher than to water then the permeability of Tekflex is significantly lower than the permeability of watertight concrete (10^{-5} darcy permeability to water).

6 CONCLUSION

The permeability of a 2.5 mm thick disc of Tekflex to the three gases was measured for several pressure differences of 1 to 7 atm.

The permeability of CO_2 and CH_4 were similar for all pressures. For the same differential pressures however, the permeability of CO was ~2.4 times larger.

At differential pressures of 1 atm, permeability values measured were in the order of 1.55×10^{-9} darcy for CO_2 and CH_4 gases and 3.67×10^{-9} darcy for CO gas. At higher pressure differences the permeability values were however more than twofold higher but remained constant in the order of 3.57×10^{-9} darcy for CO_2 and CH_4 gases and 8.75×10^{-9} darcy for CO gas.

The reason for increase in permeability at a pressure difference of ~2 atm is essentially unknown at the time of writing and further research would be required to explore this issue. For purposes of calculating gas ingress through the membrane due

to pressure differences, a conservative approach would be to use the larger values of permeability.

The permeability of concrete and 'Shotcrete' to water as reported in the literature were significantly higher (~10^{-5} Darcy) than the values of permeability to gases measured for Tekflex. It must be noted that the values of permeability measured for Tekflex are valid only if the Tekflex is sprayed uniformly over the structure and no gaps are present in the layer.

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Scheidegger, A., E., [1957]. *The physics of flow through porous media*, University of Toronto Press, Canada, 205 p.

APPENDIX

A total of 45 measurements were undertaken on Tekflex using three gases. For all measurements the conditions presented in Table A1 were kept constant.

Table A1 - Common conditions used for all measurements

Experiment details	
Texflex sample thickness (L) =	0.25 cm
Diameter (D) =	0.85 cm
Diameter exposed (D) =	0.80 cm
Section area = (S)	0.567 cm^2
Section area exposed = (S)	0.502 cm^2
N_2 Chamber volume (V) =	12.5 cm^3
N_2 Chamber pressure (gauge) =	1 atm

For each test the main measurement undertaken was the concentration of permeated gas in the N_2 chamber. The volume of gas reported in the tables of next sections is given at pressure of N_2 chamber during the measurement.

A1. TEKFLEX PERMEABILITY TO CH_4

Measurements were carried out while the N_2 chamber was kept at ~1 atm gauge pressure (14 psi). Methane chamber pressures were 2, 4, 6 and 8 atm. The differential pressures (Δp) were therefore 1, 3, 5 and 7 atm.

In Tables A2, A3, A4 and A5 the measured data and calculated permeabilities for each measurements are reported.

Table A2 - CH_4 permeability measurement, Δp = 1 atm

Time elapsed	Cumulated CH_4 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0.000	0.00000	
4	0.050	0.00625	1.884E-09
24	0.250	0.03125	1.510E-09
51	0.500	0.06250	1.403E-09

Table A3 - CH_4 permeability measurement, Δp = 3 atm

Time elapsed	Cumulated CH_4 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.200	0.02500	3.592E-09
5	0.500	0.06250	3.607E-09
24	2.500	0.31250	3.862E-09
48	4.900	0.61250	3.807E-09

Table A4 - CH_4 permeability measurement, Δp = 5 atm

Time elapsed	Cumulated CH_4 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.500	0.06250	4.201E-09
5	1.100	0.13750	3.394E-09
24	4.700	0.58750	3.323E-09
48	8.900	1.11250	3.285E-09

Table A5 - CH_4 permeability measurement, Δp = 7 atm

Time elapsed	Cumulated CH_4 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.800	0.10000	3.939E-09
6	2.200	0.27500	3.514E-09
24	8.300	1.03750	3.616E-09
48	15.600	1.95000	3.653E-09

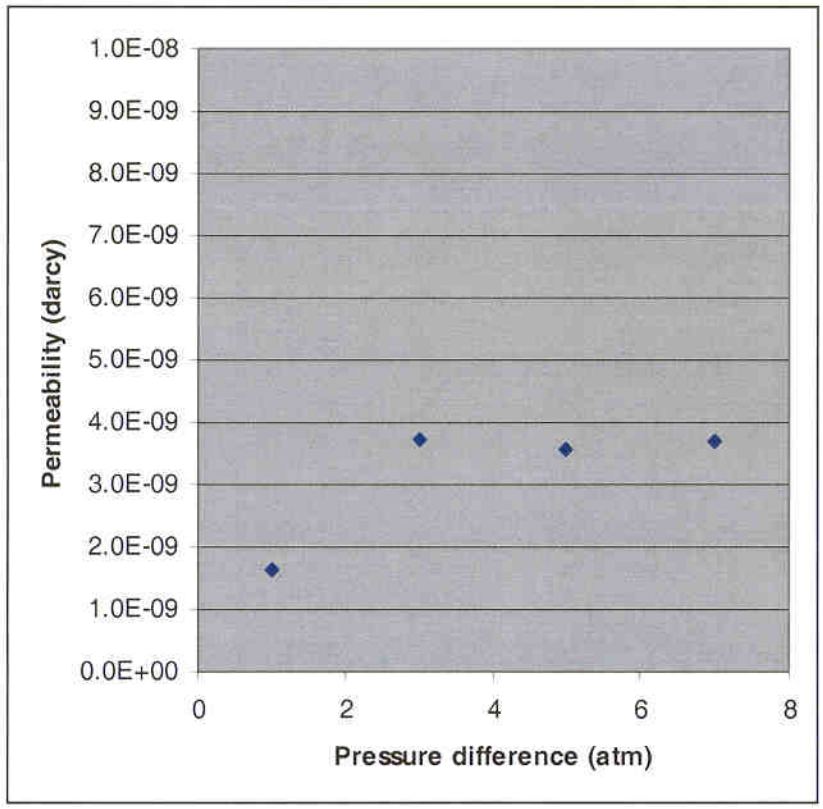

Figure A1 - Permeability to CH_4 as a function of differential pressure

A2. TEKFLEX PERMEABILITY TO CO_2

Similar measurements to CH_4 were carried undertaken using CO_2 gas. The N_2 chamber was kept at ~1 atm gauge pressure while CO_2 chamber pressures were varied from 2 to 8 atm (gauge). The differential pressures (Δp) were 1, 3, 5 and 7 atm.

In Tables A6, A7, A8 and A9 the measured data are presented.

Table A6 - CO_2 permeability measurement, Δp = 1 atm

Time elapsed	Cumulated CO_2 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
4	0.035	0.00438	1.766E-09
24	0.180	0.02250	1.465E-09
51	0.360	0.04500	1.351E-09

Table A7 - CO_2 permeability measurement, Δp = 3 atm

Time elapsed	Cumulated CO_2 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.140	0.01750	3.367E-09
5	0.360	0.04500	3.538E-09
24	1.800	0.22500	3.702E-09
48	3.500	0.43750	3.552E-09

Table A8 - CO_2 permeability measurement, Δp = 5 atm

Time elapsed	Cumulated CO_2 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.360	0.04500	4.047E-09
5	0.780	0.09750	3.170E-09
24	3.500	0.43750	3.323E-09
48	6.600	0.82500	3.154E-09

Table A9 - CO_2 permeability measurement, Δp = 7 atm

Time elapsed	Cumulated CO_2 % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.570	0.07125	3.752E-09
6	1.600	0.20000	3.438E-09
24	5.900	0.73750	3.333E-09
48	11.200	1.40000	3.354E-09

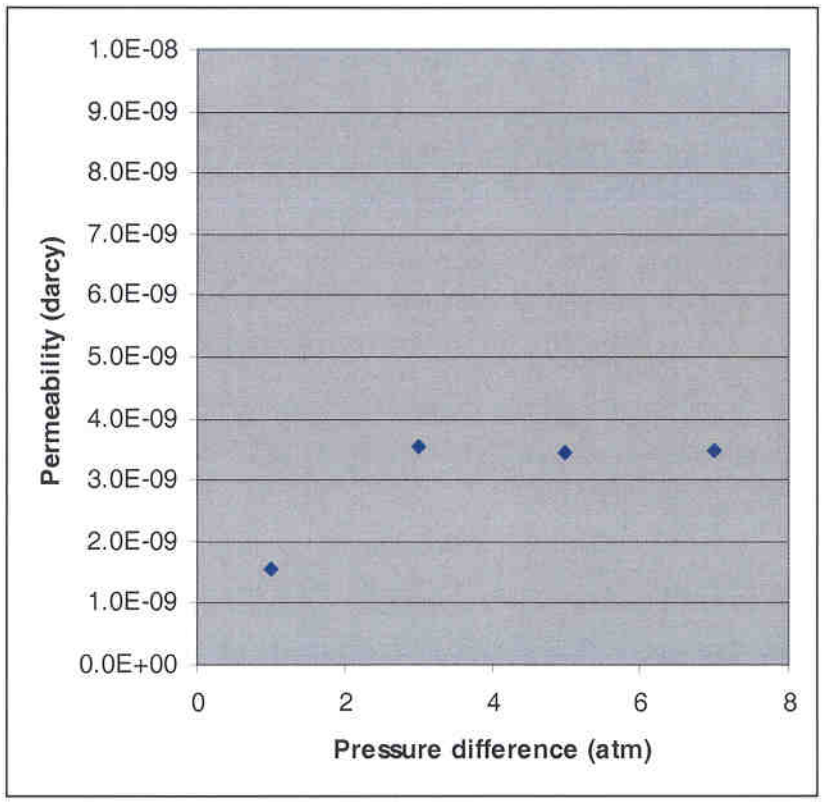

Figure A2 - Permeability to CO_2 as a function of differential pressure

A3. TEKFLEX PERMEABILITY TO CO

Similar measurements to CH_4 and CO_2 were carried undertaken using CO gas. The differential pressures (Δp) were 1, 3, 5 and 7 atm (gauge pressure).

In Tables A10, A11, A12 and A13 the measured data are presented.

Table A10 - CO permeability measurement, Δp = 1 atm

Time elapsed	Cumulated CO % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
4	0.07	0.00875	4.235E-09
24	0.36	0.04500	3.517E-09
51	0.72	0.09000	3.251E-09

Table A11 – CO permeability measurement, Δp = 3 atm

Time elapsed	Cumulated CO % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.28	0.03500	8.079E-09
5	0.72	0.09000	8.514E-09
24	3.60	0.45000	9.017E-09
48	7.00	0.87500	8.880E-09

Table A12 – CO permeability measurement, Δp = 5 atm

Time elapsed	Cumulated CO % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	0.72	0.09000	9.730E-09
5	1.60	0.20000	8.040E-09
24	7.00	0.87500	8.177E-09
48	13.20	1.65000	8.218E-09

Table A13 – CO permeability measurement, Δp = 7 atm

Time elapsed	Cumulated CO % in N_2 chamber	Volume permeated at N_2 chamber pressure	Permeability
(h)	%	cm^3	darcy
0	0	0	
2	1.10	0.13750	8.717E-09
6	3.20	0.40000	8.555E-09
24	11.80	1.47500	8.481E-09
48	22.40	2.80000	9.258E-09

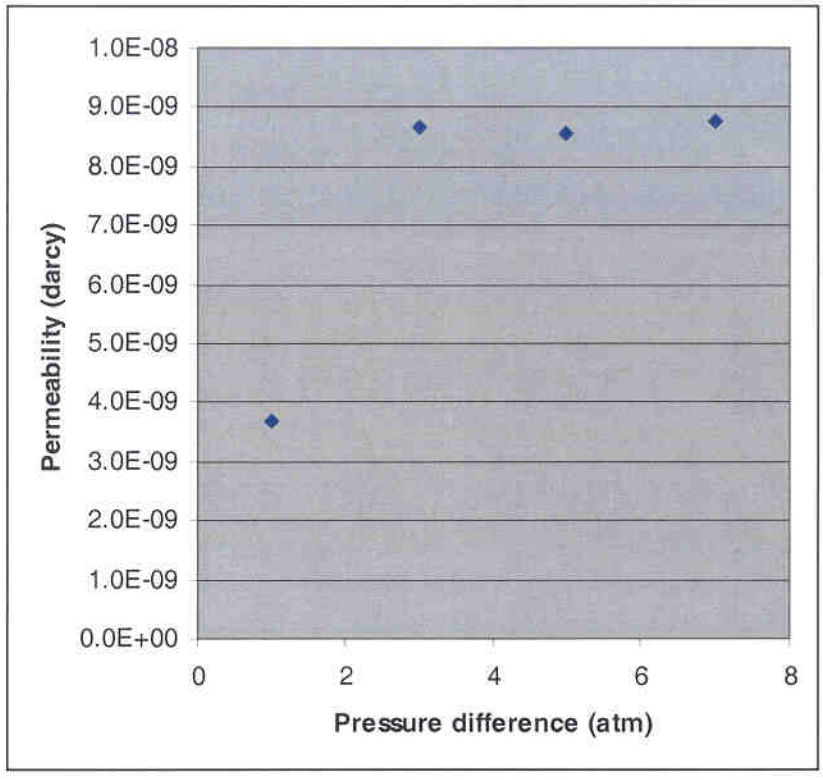

Figure A3 – Permeability to CO as a function of differential pressure

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Appendix L – Air Quality and Greenhouse Gas Management Plan

Appendix M – Noise and Vibration Management Plan

Noise and Vibration Management Plan

Crawfords Freightlines Sandgate Site

Document Control

Version	Date	Amendment Details	Amended By	Next Review Date
V1	August 2013	First issue as part of facility Operational Environmental Management Plan	ERM	-
V2	February 2023	Prepared as a standalone plan during the update to the Operational Environment Management Plan and reviewed following 2022 Independent Environmental Audit	Chris Bonomini (Umwelt)	February 2026
V3	October 2023	Revision to address DPE and SafeWork NSW comments on V2	Tim Procter (Umwelt)	February 2026

TABLE OF CONTENTS

1 Introduction 5

1.1 Background 5

1.2 Facility Overview 5

1.3 Purpose and Scope 9

1.4 Statutory Context 9

1.4.1 Legislation, Policies and Guidelines 9

1.4.2 ERM's Noise and Vibration Impact Assessment (2012) 9

1.4.3 Development Consent 10

1.4.4 EIS Recommendations / Commitments 13

1.4.5 Environment Protection Licence 14

1.5 Roles and Responsibilities 18

1.6 Consultation 18

2 Receivers, Noise Limits And Operational hours 19

2.1 Noise Sensitive Receivers 19

2.2 Noise Limits 19

2.3 Hours of Operation 22

3 Noise Management System 22

3.1 Overview Strategy 22

3.2 Mitigation and Management Measures 23

3.2.1 Specific Noise Measures 23

3.2.2 General Noise and Vibration Measures 23

3.3 Noise Monitoring Program 24

3.3.1 Noise Validation 24

3.3.2 Noise Compliance Monitoring 25

3.3.3 Additional Noise Compliance Monitoring 26

3.4 Determining Compliance 26

3.5 Additional Measures 26

3.6 Reporting 27

3.6.1 Validation Monitoring 27

3.6.2 EPL Annual Return 27
3.7 Managing Complaints 28
4 References 29
Appendix A – Agency Consultation 30
Appendix B – Noise Validation Monitoring 31

1 Introduction

1.1 Background

Crawfords Freightlines Pty Ltd (Crawfords) has operated a storage and distribution facility (the Facility) for ammonium nitrate (AN) at the site since 2009. The development is located in Sandgate, NSW and involves the storage of up to 9000 tonnes (t) of AN in warehouses (Sheds A and B) (refer to **Figure 1.1**). The Facility is now completely leased by Crawfords with no other companies onsite, and also consists of areas for storage of shipping containers and aluminium ingots, general mixed freight, a workshop, a wash bay with an integrated water treatment system, a rail siding (refer to **Figure 1.2**).

An environmental impact statement (EIS) was prepared to accompany a state significant development application (SSD-5119) seeking approval to store and distribute 13,500 t of AN at the Facility in Sheds A, B and C. Development consent, subject to conditions (the Consent), was granted on 13 June 2013. On 18 July 2013, the EPA issued EPL 20295. Although the Consent allowed for the storage of up to 13,500 t of AN, the SafeWork NSW has withdrawn approval to store AN in, and outside of, Shed C due to its proximity to the neighbouring aged care facility (St Josephs) north of the Facility and the current AN storage limit is 9,000 t.

1.2 Facility Overview

The site is located at Lot 12 DP 625053 Old Maitland Road, Sandgate, New South Wales (NSW) and has an area of 8.77 hectares (ha). The site is situated approximately 10 kilometres (km) to the north-west of Newcastle Central Business District and approximately 6.7 km west-north-west of industrial operations on Kooragang Island, NSW, within the local government area of Newcastle. A site locality plan is presented in **Figure 1.1**. Access to the site is via Old Maitland Road, off the Pacific Highway. **Figure 1.2** shows the site layout.

Crawfords manages and operates a rail siding at the site adjacent to the Main Northern Railway Line which runs along the western Facility boundary. The siding is used exclusively for trains servicing Crawfords Port Botany container transport operation. Crawfords have exclusive use of the siding. Trains operating to and from and accessing the siding are operating under the direction of Crawfords. Crawfords have engaged '3801 Limited' to operate trains servicing the siding. 3801 Limited hold current accreditation as a train operator on the track network.

The operational boundary for entering the Crawfords siding is M106.8 (202) signal on the up main line located at 171.957 km (from Sydney). The operational boundary for departing the Crawfords siding is SS106.7 (235) signal within the Crawfords siding located at 171.685 km.

The track maintenance boundary is aligned with signal SS106.7 (235) at the operational boundary at 171.685 km.

Crawfords is responsible for the management of maintenance over its managed track beyond this point away from the Australian Rail Track Corporation's (ARTC's) main line. Crawfords is also responsible for inspection of the walkway adjacent to the up main line.

FIGURE 1.1

Locality Plan

Image Source: Nearmap (15 Jan 2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

FIGURE 2.1

Site Layout Plan

Image Source: Nearmap (15 Jan 2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

1.3 Purpose and Scope

This Noise and Vibration Management Plan (NVMP) has been prepared to address the requirements of applicable legislation and approval conditions of the development. The purpose of the NVMP is to present the project-specific operational noise control mitigation, management measures and monitoring program that will be implemented at the site during operations. The purpose of these mitigation measures and monitoring program are to minimise noise disturbance of surrounding residents from operations at the site.

The NVMP forms part of the broader Operational Environmental Management Plan (OEMP) for the Facility and should be read in conjunction with the OEMP.

1.4 Statutory Context

The NVMP has been prepared in accordance with the following legislation and guidelines. ERM's Noise and Vibration Impact Assessment – *Crawfords Freightlines Ammonium Nitrate Storage Facility – Lot 12 Old Maitland Road, Sandgate (NSW)*, dated July 2012 (ERM, 2012c), has also been referred to.

1.4.1 Legislation, Policies and Guidelines

The NVMP has been prepared with consideration of the following legislation and guidelines:

- Protection of the Environment Operation Act 1997 (POEO Act)
- Industrial Noise Policy (INP) (NSW, EPA, 2000)
- Noise Policy for Industry (NPfI) (NSW EPA, 2017)
- Australian Standard AS 1055:2018 Acoustics—Description and measurement of environmental noise (AS 1055:2018)
- Assessing Vibration – A Technical Guideline (the Vibration Guideline) (DEC, 2006).

1.4.2 ERM's Noise and Vibration Impact Assessment (2012)

ERM's Noise and Vibration Impact Assessment (ERM, 2012c) assessed operational noise and vibration at the identified nearest surrounding sensitive receivers. Specifically, the assessment considered potential acoustic impacts generated by uses at storage Shed A, Shed B, Shed C, Shed D and the outdoor compound.

The findings of the operational site noise impact assessment indicated that:

- Unmitigated site noise levels were predicted to be at or below the daytime (7.00 am to 6.00 pm) noise criteria at all sensitive receiver locations.
- During the evening (6.00 pm to 10.00 pm) and morning shoulder (6.00 am to 7.00 am) periods, predictions determined that noise mitigation was required to achieve the noise criteria at Receiver R8.
- Following the implementation of the recommended mitigation measures, the assessment showed that negligible impacts (less than 1 dB(A) exceedance) were predicted during evening and morning shoulder period at Receiver R8.

- The potential risk of road traffic noise or any vibration impacts is limited and the magnitude of any impacts was determined to be insignificant. Additional road traffic noise or any vibration control mitigation and/or management measures (or monitoring) to those already implemented on site following normal good operational practices, were not recommended.
- Site operations were not determined to generate perceptible levels of vibration at any receivers. However, Crawford's will continue to manage site vibration following good operational practices. In the unlikely event that vibration generating sources are introduced to the site these will be mitigated to achieve site vibration levels at or below the noise criteria, if necessary.

1.4.3 Development Consent

Table 1.1 presents the conditions of the Consent that are relevant to this Noise and Vibration Management Plan.

Table 1.1 Relevant OEMP Development Consent Conditions (SSD 5119)

<table>
<tr><th>Condition</th><th>Requirement</th><th>Section(s) Addressed</th></tr>
<tr><td colspan="3">SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITION</td></tr>
<tr><td colspan="3">NOISE AND VIBRATION</td></tr>
<tr><td colspan="3">Noise Limits</td></tr>
<tr><td>24</td><td>The Applicant shall ensure that the noise generated by the operations on-site does not exceed the limits in Table 1 at any private residential receiver.

Table 1: Noise impact assessment criteria dB(A)
<table>
<tr><th rowspan="2">Location</th><th>Day</th><th>Evening</th><th colspan="2">Night</th></tr>
<tr><th>$L_{Aeq(15\ minute)}$</th><th>$L_{Aeq(15\ minute)}$</th><th>$L_{Aeq(15\ minute)}$</th><th>$L_{A1\ (1\ minute)}$</th></tr>
<tr><td>R1
Residence on Blanch Street</td><td>39</td><td>39</td><td>39</td><td>54</td></tr>
<tr><td>R3
Residence on Astra Street</td><td>42</td><td>42</td><td>42</td><td>54</td></tr>
<tr><td>R4
Residence on Wallsend Road</td><td>42</td><td>42</td><td>42</td><td>55</td></tr>
<tr><td>R5
Residence on Wallsend Road</td><td>42</td><td>42</td><td>42</td><td>54</td></tr>
<tr><td>R6
Residence on eastern side of Pacific Highway</td><td>60</td><td>57</td><td>54</td><td>54</td></tr>
<tr><td>R7
Residence on western side of Pacific Highway</td><td>60</td><td>57</td><td>54</td><td>54</td></tr>
<tr><td>R8
St Joseph's Aged Care Complex</td><td>43</td><td>40</td><td>39</td><td>54</td></tr>
</table>
Notes:
• To identify a residential receiver location, refer to Appendix C of this consent and Appendix I of the EIS;
• Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and
• To avoid doubt, the responsibility for noise generated by trains off-site in the corridor of the Main Northern Railway Line lies with the owner and/or lessee of that corridor.</td><td>Section 2.2 and Section 3</td></tr>
</table>

<table>
<tr><th>Condition</th><th>Requirement</th><th>Section(s) Addressed</th></tr>
<tr><td colspan="3">SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITION</td></tr>
<tr><td colspan="3">NOISE AND VIBRATION</td></tr>
<tr><td colspan="3">Operating Hours</td></tr>
<tr><td>25</td><td>The Applicant shall comply with the operating hours in Table 2 for the site, unless otherwise agreed in writing by the Director-General.
Table 2: Operating Hours
<table>
<tr><th>Activity</th><th>Day</th><th>Hours</th></tr>
<tr><td>Construction</td><td>Monday - Friday</td><td>7.00am – 6.00pm</td></tr>
<tr><td></td><td>Saturdays</td><td>8.00am – 1.00pm</td></tr>
<tr><td></td><td>Sundays and Public Holidays</td><td>Nil</td></tr>
<tr><td>Operations</td><td>Monday - Sunday</td><td>6.00 am to 10.00 pm</td></tr>
<tr><td></td><td>Public Holidays</td><td>Nil</td></tr>
</table></td><td>Section 2.3</td></tr>
<tr><td colspan="3">Operating Conditions</td></tr>
<tr><td rowspan="4">26</td><td>The Applicant shall:
(a) implement best management practice, including all reasonable and feasible measures to prevent and minimise noise and vibration during construction and operation of the development (including low frequency noise and traffic noise);</td><td>Section 3.1</td></tr>
<tr><td>(b) minimise the noise impacts of the development during adverse meteorological conditions when noise criteria do not apply;</td><td>Section 3.1 and Section 3.2.1</td></tr>
<tr><td>(c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and</td><td>Section 3.1</td></tr>
<tr><td>(d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.</td><td>Section 3.1 and Section 3.3</td></tr>
<tr><td colspan="3">Noise Management</td></tr>
<tr><td rowspan="3">27</td><td>The Applicant shall prepare and implement a Noise and Vibration Management Plan for the development in consultation with the EPA and to the satisfaction of the Director-General. The plan must:
(a) be prepared and implemented by a suitably qualified and experienced expert;</td><td></td></tr>
<tr><td>(b) be approved by the Director-General prior to the commencement of operations;</td><td>Refer to OEMP and Appendix A</td></tr>
<tr><td>(c) describe the measures that will be implemented to minimise noise and vibration from the operation of the development and ensure:
▪ best management practice is being employed on site;
▪ traffic noise is effectively managed;</td><td>Section 3</td></tr>
</table>

Condition	Requirement	Section(s) Addressed
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITION		
NOISE AND VIBRATION		
	▪ the noise impacts of the development are minimised during any meteorological conditions when the noise criteria in this consent do not apply; and ▪ compliance with the relevant conditions of this consent.	
	(d) describe the noise management system;	**Section 3**
	(e) includes a noise monitoring program that: ▪ is capable of evaluating the performance of the development; ▪ includes a protocol for determining exceedances of the relevant conditions of this consent and responding to complaints; ▪ adequately supports the noise management system; ▪ evaluates and reports on the effectiveness of the noise management system; and ▪ includes a protocol for the implementation of further mitigation in consultation with the EPA in the event that the development is found not to be complying the conditions of this consent.	**Section 3.3**
Noise Validation		
28	Within 2 months of the commencement of operations, the Applicant shall undertake Noise Compliance Monitoring. (a) be undertaken by a suitably qualified and experienced expert in consultation with the EPA;	Noise validation monitoring completed. Summary of findings included within **Section 3.3.1** and report within **Appendix B**.
	(b) be submitted as a report to the EPA and the Department within 2 weeks of its completion;	
	(c) be undertaken to present worst-case noise operations during a period of combined truck and rail operations as described in Annexure I of the EIS;	
	(d) include noise monitoring undertaken at day, evening and night (including shoulder periods), as defined in the EPA's Industrial Noise Policy, over 3 consecutive operating days for a minimum of: ▪ 1.5 hours during the day; ▪ 30 minutes during the evening; and ▪ 1 hour at night.	
	(e) compare the noise monitoring results against the noise modelling predictions (including that for shoulder periods) in the EIS;	

Condition	Requirement	Section(s) Addressed
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITION		
NOISE AND VIBRATION		
	(f) identify whether the project is complying with the development noise limits specified in Condition 24 of this Schedule; and	
	(g) outline the mitigation measures to be implemented if exceedences of the development noise limits (Condition 24) or the noise modelling predictions in the EIS are identified, to the satisfaction of the Director-General.	

1.4.4 EIS Recommendations / Commitments

Table 1.2 presents the management and mitigation measures relevant to this NVMP, recommended as part of the EIS (ERM, 2012c).

Table 1.2 Recommended Management and Mitigation Measures

Item	Management and/or Mitigation Measure	Section(s) Addressed
Operational Noise – Evening and morning shoulder period		
1	Heavy vehicle drivers should be instructed to quietly enter and exit the site and should be instructed to limit extended periods of vehicle idling time. Where vehicle idling is unavoidable ERM recommends that Crawford's utilise on site structures (e.g. buildings or shipping containers etc) to obstruct noise sources from the nearest sensitive receptor location, where practical.	**Section 3.2.1**
2	The use of mobile plant motion alarms should be limited. Plant and equipment usage on site should be optimised during these periods to maximise forward motion, which will reduce motion alarms that typically sound in reverse. Where this is not achievable ERM recommends that Crawfords investigate visible alarms (i.e. flashing lights instead of audible alarms) or installs "squashed duck" type alarms which are known to be less intrusive than standard alarms fitted to most plant and equipment, although use of such alarms should still be satisfactory to achieve occupational health and safety requirements.	**Section 3.2.1**
3	The use of large forklifts (i.e. 36T) should be limited. Furthermore, where large forklift usage is required, the operators should be instructed to quietly operate the equipment following normal good operational practices.	**Section 3.2.1**
4	Continue to manage potential high noise level generating events, which cause potential sleep disturbance, to occur after the morning shoulder period (i.e. after 7am) to assist in minimising the risk of potential noise impacts.	**Section 3.2.1**

Item	Management and/or Mitigation Measure	Section(s) Addressed
Operational Noise Monitoring		
4	Within three months of the recommencement of operations, operator attended noise measurements be undertaken by a qualified and suitable experienced acoustician to verify actual site noise level contributions at a representative number of the closest and/or potentially most affected noise sensitive receptors in near proximity to the site. These measurements should be undertaken during rail and truck combined operations, where practical and completed with due regard to and in accordance with the requirements specified in AS 1055 and the INP.	Noise validation monitoring completed. Summary of findings included within **Section 3.3.1** and report within **Appendix B.**
5	The results of these measurements should be compared to the applicable daytime, evening and morning shoulder period PSNL presented in this report to determine INP compliance.	
6	The findings of this INP compliance assessment should be used to verify the effect of noise management measures implemented on site and to identify any additional measures that should be considered by Crawfords to assist in reducing operational noise levels and the risk of potential impacts for sensitive receptors located in the vicinity of the site.	
7	Where measured operational noise levels are determined to comply with the INP criteria, no further actions are required to those already taken to reduce noise at the time of the operator attended noise measurements.	

1.4.5 Environment Protection Licence

The Facility operates under Environmental Protection Licence (EPL) 20295 issued under the Protection of the Environment Operations Act 1997 (NSW Government). EPL 20295 includes the following conditions relating to noise:

L3 Noise Limits

L3.1 Where a noise limit has not been prescribed, all operations and activities occurring on the premises must be conducted in a manner that will not cause offensive noise.

L3.2 Noise generated at the premises must not exceed the noise limits presented in the table below. The noise limits in the table below represent the noise contribution from the premises. The locations referred to in the table are identified as shown in Figure 5.21 of the "Ammonium Nitrate Storage and Distribution Facility EIS for Crawfords Freightlines" prepared by ERM dated December 2012.

Noise Limits dB(A)

Location	Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)	Night LA1 (1 minute)
R1 - Residence at 49 Blanch Street, Shortland	39	39	39	54
R3 - Residence at 24 Astra Street, Shortland	42	42	42	54
R4 - Residence on Wallsend Road, Sandgate	42	42	42	54
R5 - Residence on Wallsend Road, Sandgate	42	42	42	54
R6 - Residence on eastern side of Pacific Highway, Sandgate	60	57	54	54
R7 - Residence on western side of Pacific Highway, Sandgate	60	57	54	54
R8 - St Joseph's Aged Care Facility, Sandgate	43	40	39	54

Note: For the purpose of the condition above:

a) Day is defined as the period from 7:00 am to 6:00 pm Monday to Saturday and 8:00 am to 6:00 pm Sunday and Public Holidays.

b) Evening is defined as the period 6:00 pm to 10:00 pm.

c) Night is defined as the period from 10:00 pm to 7:00 am Monday to Saturday and 10:00 pm to 8:00 am Sunday and Public Holidays.

L3.3 The noise limits set out in the Noise Limits table above apply under all meteorological conditions except for the following:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or

b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or

c) Stability category G temperature inversion conditions.

For the purposes of this condition:

d) Data recorded by a representative meteorological station must be used to determine meteorological conditions; and

e) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L3.4 Noise from the premises is to be measured or computed at the most noise-affected point at the receptors listed in the Noise Limits table above.

a) with the Leq(15 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located:

i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or

ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable

iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located:

i) at the most affected point at a location where there is no dwelling at the location; or

ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.

For the purpose of noise measurement required for this condition, the LAeq noise level must be measured or computed for the required period (i.e. 15 minutes or full day, evening or night) using "FAST" response on the sound level meter.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternate means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).

Note: A non-compliance of the Noise Limits table will still occur where noise generated from the premises in excess of the appropriate limit is measured:

i) at a location other than an area prescribed in part (a) and part (b); and/or

ii) at a point other than the most affected point at a location.

L3.5 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

L3.6 Definitions:

- NSW Industrial Noise Policy – the document entitled "New South Wales Industrial Noise Policy" published by the Environment Protection Authority in January 2000.
- Noise – sound pressure levels for the purposes of condition L3.1 to L3.5.

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance – Licence Conditions,
4. a Statement of Compliance – Load based Fee,
5. a Statement of Compliance – Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance – Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance – Environmental Management Systems and Practices.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies. M4.2 The record must include details of the following:

a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must 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.

M5.2 The licensee 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.

M5.3 The preceding two conditions do not apply until 1 month the date of the issue of this licence.

1.5 Roles and Responsibilities

Environmental management at the Facility is the responsibility of all employees with the Health, Safety, Security, Environment (HSSE) & Compliance Manager having overall responsibility for environmental management of the operations. Roles and responsibilities for implementation of this NVMP for key personnel at the Facility are outlined in **Table 1.3**.

Table 1.3 Noise Sensitive Residential Receiver Locations

Role	Responsibility
Director	Provide sufficient resources to enable full implementation of this plan
HSSE & Compliance Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of noise management measures and strategies in accordance with this plan. • Coordinate the review of this plan. • Ensure all noise management measures and monitoring are undertaken in accordance with the requirements of this plan. • Be aware of the environmental legislative requirements associated with the Facility and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.
HSSE Officer/Coordinator	• Coordinate the noise management measures and monitoring described in this plan. • Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). • Coordinate noise management measures and reporting as required by legislation. • Initiate investigations of complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Prepare a report to government agencies following non-compliances.
Site Manager	• Monitor and manage noise emission from the Facility and liaise with any approved contractors (as relevant) to minimise noise emissions and disturbance.
Employees and Contractors	• Comply with all requirements in this plan. • Report all potential environmental incidents to the HSSE Officer immediately. • Operate in a manner that minimises the risk of noise complaints and noise emission to themselves, fellow workers or the surrounding environment.

1.6 Consultation

This NVMP has been submitted to the EPA. Records of consultation are provided in **Appendix A**.

2 RECEIVERS, NOISE LIMITS AND OPERATIONAL HOURS

2.1 Noise Sensitive Receivers

ERM's Noise and Vibration Impact Assessment (ERM, 2012c) presented the project-specific noise sensitive residential receiver locations for operational assessments. These locations are described in **Table 2.1** and shown in **Figure 2.1**. Noise emissions from the site will be managed and assessed at these locations during operations, where relevant.

Table 2.1 Noise Sensitive Residential Receiver Locations

ID	Description	GPS Coordinates (56h)		Direction from site	Distance from site (m)	Elevation (m)
		Easting	Northing			
R1	Residence on Blanch Street	377728	6362297	Southwest	907	2.4
R2	Newcastle Golf Practice Centre	378565	6362177	Southwest	213	4.6
R3	Residence on Astra Street	378807	6362092	South	574	5.8
R4	Residence on Wallsend Road	379159	6362222	South	726	7.7
R5	Residence on Wallsend Road	378906	6362965	Southeast	842	10.3
R6	Residence on eastern side of Pacific Highway	378970	6363002	East	523	12.2
R7	Residence on western side of Pacific Highway	378622	6363491	East	448	13.5
R8	St Joseph's Aged Care Complex	378411	6362560	North	431	4.5
R9	Industrial receptor located within the same industrial area and south of Old Maitland Road	378498	6363182	North	749	5.5

2.2 Noise Limits

The project specific noise limits as presented in Condition 24 of SSD-5119 and Condition L3 of EPL 20295 and are reproduced in **Table 2.2**. Residential receiver locations where noise limits apply are shown in **Figure 2.1**.

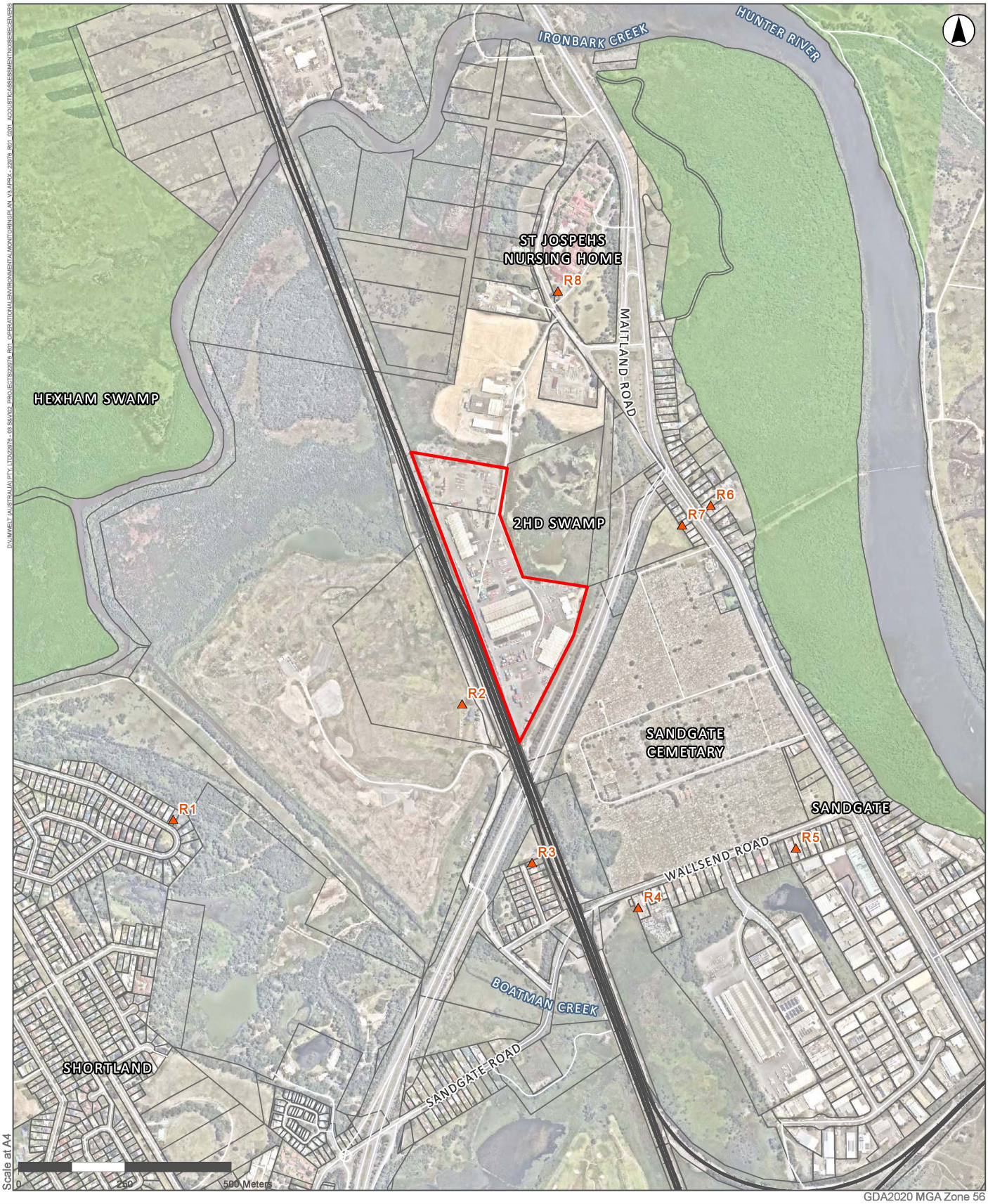
Crawfords will ensure that the noise generated by the operations on site do not exceed the limits at any private residential receiver.

Table 2.2 Noise Limits

Description	Day	Evening	Night	
	LAeq(15 Minute)	LAeq(15 Minute)	LAeq(15 Minute)	LA1(1 Minute)
R1 Residence on Blanch Street	39	39	39	54
R3 Residence on Astra Street	42	42	42	54
R4 Residence on Wallsend Road	42	42	42	55
R5 Residence on Wallsend Road	42	42	42	54
R6 Residence on eastern side of Pacific Highway	60	57	54	54
R7 Residence on western side of Pacific Highway	60	57	54	54
R8 St Joseph's Aged Care Complex	43	40	39	54

Notes

1. to identify a residential receiver location, refer to Figure 2.1 of this NVMP, Appendix C of consent SSD-5119 this consent and/or Annexure I of the EIS;
2. noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and
3. to avoid doubt, the responsibility for noise generated by trains off-site in the corridor of the Main Northern Railway line lies with the owner and/or lessee of that corridor.



Legend

- Noise Sensitive Receiver and Monitoring Location
- Railway
- Lot Boundary
- Project Site
- NPWS Reserve

FIGURE 2.1

Noise Monitoring Locations

Image Source: Nearmap (15 Jan 2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

2.3 Hours of Operation

In accordance with Condition 25 of SSD-5119, operations will be restricted to the approved operating hours detailed in **Table 2.3**. No out of hours works will be undertaken unless otherwise agreed in writing by the EPA.

Table 2.3 Hours of Operation

Activity	Day	Hours
Operations	Monday–Sunday	6:00 am–10:00 pm
	Public Holidays	Nil

3 NOISE MANAGEMENT SYSTEM

This section presents the overview strategy, the noise mitigation and management measures and the noise monitoring program developed to meet the requirements of Condition 26, Condition 27 and Condition 28 Schedule 3 of SSD-5119.

3.1 Overview Strategy

In accordance with Condition 26 Schedule 3 of SSD-5119, Crawfords will:

- Implement best management practice, including all reasonable and feasible measures to prevent and minimise noise and vibration during operation of the development (including low frequency noise and traffic noise).
- Minimise the noise impacts of the development during adverse meteorological conditions when noise criteria do not apply.
- Maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired.
- Regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

3.2 Mitigation and Management Measures

3.2.1 Specific Noise Measures

The following noise mitigation and management measures will be adopted during the evening and morning shoulder period operations:

- Instruct heavy vehicle drivers to quietly enter and exit the site and to limit extended periods of vehicle idling time. Where vehicle idling is unavoidable during these periods Crawfords will, if deemed appropriate, utilise on site structures to shield heavy vehicles from the nearest sensitive receptor location, where practical.
- Limit the use of mobile plant motion alarms. Plant and equipment usage on site will be optimised during these periods to maximise forward movement, which will reduce motion alarms that typically sound in reverse. Where this is not achievable Crawfords will:
  - Investigate visible alarms (i.e. flashing lights instead of audible alarms) or install broadband type alarms which are known to be less intrusive than standard tonal beeper alarms.
  - Investigate “smart” alarms which limit the acoustic range to the immediate danger area.
  - Use of such alarms will still be satisfactory to achieve occupational health and safety requirements.
- Limit the use of large forklifts (i.e. 36T). The use of large forklifts will be limited during these periods to moving full containers only. Where large forklift usage is required, the operators will be instructed to quietly operate the equipment following normal good operational practices.
- Continue to manage potential high noise level generating events, which cause potential sleep disturbance, to occur after the morning shoulder period (i.e. after 7:00 am) to assist in minimising the risk of potential noise impacts.
- Noise enhancing conditions are often associated with cooler early morning periods. Therefore, from May through to September noise generating activities during the morning shoulder period will be minimised, or, where possible, delayed until the day period.

3.2.2 General Noise and Vibration Measures

The following general noise management measures will be implemented on site:

- Schedule the use high noise level generating equipment to occur during the least sensitive times of day, where possible. Based on noise logging data presented in ERM 2012c this is between 7:00 am and 9:00 am and then between 4:00 pm and 6:00 pm on weekdays where ambient noise levels are at their highest, and most likely to mask site noise contributions.
- Utilise on site structures (e.g. buildings or shipping containers etc) to obstruct high noise level generating equipment from the nearest sensitive receptor location, where practical. Furthermore, work tasks will be designed to maximise the distance from the critical noise source to the receiver, where possible.

- Ensure that all permanent staff will be aware and cognisant of the project- specific noise limits and the need to employ “quiet” operational practices wherever possible. Non-permanent staff (e.g. sub-contractors on site for limited periods) will be advised of the project-specific noise limits on a case by case base, for example during their visitor induction, and actions taken to reduce noise levels associate with their work, if necessary.
- Ensure that any existing equipment is maintained to be in good working order and ensure defective plant is not used operationally until fully repaired. Noise emission levels of any new plant will be considered during procurement to ensure the quietest equipment is used on site, where feasible and reasonable.
- Consider the use of enclosures and silencing exhausts (muffler design and barrier systems) for any high noise level generating plant and equipment.
- Perceptible levels of vibration (and any vibration impacts) are unlikely to be generated at the closest and/or potentially most affected receiver locations in the vicinity of the site. Therefore, the potential risk of vibration impacts is limited, and the magnitude of any impacts will be insignificant. Nevertheless, existing equipment will be maintained to be in good working order. Also, any new equipment that generates vibration which is perceptible by Crawford’s staff onsite, will be investigated to check if the vibration is perceptible off site. If required, the services of a suitably qualified and experienced acoustician will be obtained.

3.3 Noise Monitoring Program

3.3.1 Noise Validation

Noise validation monitoring was undertaken by Environmental Resources Management Australia Pty Ltd (ERM) on behalf of Crawfords in May 2015. The monitoring was undertaken to address Condition 28 Schedule 3 of SSD-5119 and EIS recommendations and commitments. The noise validation monitoring report is included in Appendix B.

The findings of the noise validation monitoring, presented within Section D of the report, are reiterated below:

- Site noise events and associated emissions were inaudible for the majority of the time. Site emissions were audible and barely detectable during 14 of the 23 measurements. The duration of observed noise events varied between 5 and 40 seconds (total duration for each applicable measurement) and typically associated with the infrequent use of motion alarms and metal-on-metal contact from activities on site. Whilst audible these site noise events did not dominate the acoustics environment at any of the identified sensitive receptors (R1, and R3 to R8), where extraneous noise emissions (mostly road traffic noise) prevailed as the most significant noise in the area.
- Meteorological conditions included temperatures between approximately 10^{o}C and 20^{o}C, average wind speeds of between 0.5 m/s and 4 m/s (generally from a westerly or north-westerly direction) and cloud coverage of 0/8 octas (clear skies).

- The results, presented in Table 4 of Appendix B, identify that worst-case noise emissions associated with site operations comply with the applicable $L_{Aeq,15\ minute}$ noise limits contained in EPL 20295 and SSD-5119, at all assessed receptor locations.
- The results, presented in Table 5 of Appendix B, identify that worst-case noise emissions associated with site operations comply with the applicable $L_{A1,1\ minute}$ noise limits contained in EPL 20295 and SSD-5119, at all assessed receptor locations.
  A comparison of the measured noise levels to the predicted values presented in the impact assessment indicates that actual site noise level contributions are lower than those predicted. The impact considered both calm and adverse weather conditions. Allowing for a potential increase (< 1dB) in noise levels associated with prevailing noise enhancing winds and temperature inversions site noise level contributions may increase to be closer to the predicted values but would still be expected to remain below the applicable ELP 20295 and SSD-5119 noise limits.

3.3.2 Noise Compliance Monitoring

Annual compliance noise monitoring is to be undertaken to address Condition 26 (d) and Condition 27 (e) Schedule 3 of SSD-5119. Crawfords will engage a suitably qualified and experienced acoustician to undertake one round of noise monitoring per year to determine compliance and assist in ensuring that the noise generated by the operations on-site does not exceed the limits.

Noise compliance monitoring will be completed at a representative number of the closest and/or potentially most affected residential receivers in proximity to the site. The locations are to be confirmed by the engaged acoustician but at a minimum should include three (3) receiver locations with one of them being Receiver R8.

Monitoring will be undertaken during the day (7:00 am to 6:00 pm), evening (6:00 pm to 10:00 pm) and night (10:00 pm to 7:00 am), including morning shoulder (5:00 am to 7:00 am) assessment periods, at each location for a minimum of:

- 30 minutes during the day and evening
- 15 minutes at night.

Note in accordance with Condition L3.4 of the EPL, where it is demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternate means of determining compliance. Chapter 11 of the INP details that where existing noise levels are high, it may difficult to separate out the source noise level and quantify site noise, as existing noise levels are higher than noise levels from the source. When this happens, it may not be feasible to measure compliance at the specified location, and other methods will be needed. In these cases, measurements may be taken closer to the source and then calculated back to the specified location.

3.3.3 Additional Noise Compliance Monitoring

The importance of monitoring noise as a tool for managing site emissions and minimising complaints (as well as investigating complaints) is recognised by Crawfords. Following noise validation, additional noise monitoring will be undertaken if:

- Changes to site operations are made that would potentially increase noise levels (or increase impacts to residential receivers) to those measured during validation; or
    - In this situation, a suitably qualified and experienced acoustician will be engaged to determine the risk of potential noise increase, prior to the purchase / rental / adoption of the equipment / alternative operations.
- Noise complaints are received, and noise monitoring will assist to investigate the complaint.

The noise monitoring methodology will be determined by a suitably qualified and experienced acoustician and with due regard to the monitoring requirements described above, where relevant.

Note in accordance with Condition L3.4 of the EPL, where it is demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternate means of determining compliance. Chapter 11 of the INP details that where existing noise levels are high, it may difficult to separate out the source noise level and quantify site noise, as existing noise levels are higher than noise levels from the source. When this happens, it may not be feasible to measure compliance at the specified location, and other methods will be needed. In these cases, measurements may be taken closer to the source and then calculated back to the specified location.

3.4 Determining Compliance

Exceedances will be determined by comparing the measured site noise level contribution to the noise limits presented in **Table 2.2** of this NVMP. Where site noise levels are below the noise limits the site will be determined to comply. Where the site noise levels are above the noise limits an exceedance will be identified.

Crawfords maintain ultimate control of the site's noise emissions, however, it is the responsibility of the qualified and suitably experienced acoustician to determine compliance and to inform Crawfords immediately. Any actions which result are the responsibility of the Site Manager or in their absence from site, a nominated authority.

3.5 Additional Measures

The findings of the validation / compliance monitoring described above will be used to verify the effect of noise management measures implemented on site and to identify any additional measures that will be considered by Crawfords to reduce operational noise levels to compliant levels, and the risk of potential impacts for sensitive receptors located in the vicinity of the site.

Where measured operational noise levels are determined to comply with the noise limits (i.e. no exceedances are identified), no further mitigation will be implemented to that already provided to reduce noise at the time of the operator attended noise measurements.

Where measured operational noise levels are not determined to comply with the noise limits (i.e. an exceedances is identified), further mitigation will be implemented and additional noise monitoring undertaken to quantify the effect of the additional measures, and to identify compliance.

In addition to the above, the Site Manager will periodically check the site and nearby residences and other sensitive land uses (refer **Table 2.1**), where access is possible, for noise problems so that solutions can be quickly applied.

In the highly unlikely event that that facility experiences on-going issues complying with the noise limits, Crawford's will consider and implement further noise mitigation and management measures in consultation with the EPA and DPE.

3.6 Reporting

3.6.1 Validation Monitoring

The findings of the validation noise monitoring described above will be submitted as a report to the EPA and the Department within two weeks of its completion. The report will be prepared by the acoustics expert engaged to undertake the monitoring works.

The report will also summarise any additional (to those already provided to reduce noise at the time of noise monitoring) noise control mitigation and/or management measures implemented on site, if any.

The report will present the findings and recommendations of any additional noise monitoring undertaken following implementation of additional noise control mitigation and/or management measures.

3.6.2 EPL Annual Return

Under condition R1 of EPL 20295 (refer to Section 1.4.5), Crawfords are required to submit an Annual Return to the EPA at the end of each reporting period. The annual reporting period for EPL 20295 is 18 July to 17 July. At the end of each reporting period, the EPA will provide Crawfords with a notification indicating that the Annual Return is due.

The Annual Return is required to include the following information in relation to noise:

- The number of complaints in relation to noise received by Crawfords during the reporting period.
- Results of any additional noise monitoring (validation, compliance or otherwise) undertaken over the reporting period.

3.7 Managing Complaints

During operational hours, Crawfords operate 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. So that the public is notified, the complaints telephone line is detailed on the front gate of the site and can be located on Crawfords website.

Noise complaints arising from operations will be treated sensitively and in a manner that recognises the potential for site operations to cause environmental impacts.

Noise complaints will be immediately investigated to determine likely causes, including noise generated by the Facility and from off-site sources outside of Crawfords control. Should the generation of noise associated with the complaint be found to be associated Facility operations, Crawfords will act swiftly to:

- mitigate any ongoing excessive noise generation (e.g. relocate or cease the noise generating activity)
- identify any ongoing additional noise mitigation measures to minimise the potential of similar noise levels to occur in the future
- provide prompt feedback to the complainant as to the cause of the excessive noise as far as can be practically determined and what is being done to mitigate noise generation.

Should the generation of excessive noise associated with the complaint be found to be associated with activities off-site that are not within Crawfords control, Crawfords will:

- where possible, notify the party responsible for the noise generating activity, of the issue and request mitigation measures be implemented
- notify the complainant that the excessive noise emission is considered to be outside of Crawfords operation control and provide any details of the suspected cause of the excessive noise that is/was the subject of the complaint.

Recording of noise complaints will be undertaken in accordance with condition M4 of EPL 21295 (refer to **Section 1.4.4**).

4 REFERENCES

Ammonium Nitrate Storage and Distribution Facility Environmental Impact Statement—Final, ERM, 2012.

Ammonium Nitrate Storage and Distribution Facility Noise and Vibration Impact Assessment, ERM, 2012.

Protection of the Environment Operation Act 1997.

Industrial Noise Policy, NSW Environment Protection Authority, 2000.

Noise Policy for Industry, NSW Environment Protection Authority, 2017).

Australian Standard AS 1055:2018 Acoustics—Description and measurement of environmental noise.

Assessing Vibration – A Technical Guideline, Department of Environment and Conservation, 2006.

APPENDIX A – AGENCY CONSULTATION

APPENDIX B – NOISE VALIDATION MONITORING

ENVIRONMENTAL RESOURCES MANAGEMENT AUSTRALIA PTY LTD

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Noise Validation Monitoring (Technical Report)

Project Number:	0286425	**Date:**	29 May 2015
Project Name:	Crawfords Freightlines - Ammonium Nitrate Storage Facility	**Subject:**	Crawfords Noise Validation Monitoring
Prepared by:	Nathan Lynch	**Reference:**	0286425RP01_F01 - Crawfords Noise Validation Monitoring.docx
Authorised for Release:	Steve O'Connor		

1. OVERVIEW

This document has been prepared by Environmental Resources Management Australia Pty Ltd (ERM) on behalf of Crawfords Freightlines Pty Ltd (Crawfords) to assess environmental noise (via monitoring) associated with the ammonium nitrate storage facility located at Lot 12 Old Maitland Road, Sandgate in New South Wales (NSW).

This noise validation monitoring has been undertaken to validate the predicted noise levels presented in the *Crawfords Freightlines - Ammonium Nitrate Storage Facility - Lot 12 Old Maitland Road, Sandgate (NSW) - Noise and Vibration Impact Assessment* prepared by ERM and dated July 2012 (the impact assessment). The impact assessment recommended, amongst other things, that operator attended noise measurements be undertaken by a qualified and suitable experienced acoustician to verify actual site noise level contributions at a representative number of the closest and/or potentially most affected noise sensitive receptors in near proximity to the site.

Furthermore this noise validation monitoring was completed to address the noise conditions presented in the NSW Government – Department of Planning and Infrastructure (DoPI) - *Development Consent - SSD-5119 Final Consent* (SSD-5119), dated 13 June 2013; and the NSW Government – EPA – *Environment Protection Licence 20295 and Revocation of Prevention Notice* (EPL 20295), dated 18 July 2013 as far as practical.

2. SITE DESCRIPTION

The site is located on Old Maitland Road, Sandgate (NSW) approximately 9.8 kilometres (km) north-west of the Newcastle Central Business District and 6.7 km west-north-west of industrial operations on Kooragang Island. The depot is situated within a small light industrial area.

The site is bound by the main Northern Railway (Newcastle-Maitland (Hunter) railway line) to the west and south, where rail container deliveries are made; the Newcastle Inner City Bypass (Shortland to Sandgate); Sandgate Cemetery and the Pacific Highway to the east and Old Maitland Road to the north; the Hunter River is situated approximately 820 metres (m) to the east between Sandgate and Kooragang Island.

ERM notes that at the time the impact assessment was undertaken the Newcastle Inner City Bypass (Shortland to Sandgate) was under construction. During the validation monitoring construction of the bypass was complete and operational. Extraneous noise events (not associated with the site) attributable to the bypass, and other road traffic noise sources, were the dominant noise of the area.

a. SURROUNDING LAND USES

Land uses and activities directly surrounding the site are generally limited to minor industrial and commercial uses, and residential areas. To the west of the Northern Railway line (beyond the Hunter Wetlands area) is a residential area with receptors located on Blanch Street. The rears of these properties are approximately 800 metres from the site.

Directly adjacent and west of the site is the Newcastle Golf Range and Practice Centre; to the south of the site is a residential area with receptors located on Astra Street. Sandgate Cemetery and mixed industrial and residential areas are located to the south east of the site. Further to the east is the Pacific Highway which has a strip of residential receptors and a commercial development directly fronting the highway.

These land uses are exposed to significant existing road traffic noise from the highway. To the north of the site are other industrial premises situated within the same industrial area as the Crawfords site and the St Joseph's Home (residential aged care) and St Joseph's Village (independent living), which are on the northern side of Old Maitland Road.

Site Layout and Locality

The Crawfords ammonium nitrate storage facility, surrounding land uses and other items relevant to this noise validation assessment are visually represented in *Figure 1* and *Figure 2*. *Figure 3* presents all potentially sensitive receptors considered in the impact assessment. In accordance with EPL 20295 and SSD-5119 noise validation monitoring was only completed at sensitive receptors R1, and R3 to R8.

Legend

- Site Boundary
- Cadastre

N

0 100 200 300m

Source:
- nearmap imagery date 8 May 2015
- DCDB 2015

Client:	Crawfords Freightlines	
Drawing No:	0286425s_NVM_G001_R0.mxd	
Date:	29/05/2015	Drawing Size: A4
Drawn By:	GC	Reviewed By: NL

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure 1 - Locality Map

Noise Validation Monitoring
Old Maitland Road, Sandgate, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

Legend

- Site Boundary
- Cadastre

Source:
- nearmap imagery date 8 May 2015
- DCDB 2015

N

0 25 50 75m

Client:	Crawfords Freightlines		
Drawing No:	0286425s_NVM_G002_R0.mxd		
Date:	29/05/2015	Drawing Size: A4	
Drawn By:	GC	Reviewed By: NL	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure 2 - Site Layout Plan

Noise Validation Monitoring
Old Maitland Road, Sandgate, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

Legend

- Site Boundary
- Cadastre
- Noise Validation Monitoring (Receptor) Locations

N

0 100 200 300m

Source:
- nearmap imagery date 8 May 2015
- DCDB 2015

Client:	Crawfords Freightlines		
Drawing No:	0286425s_NVM_G003_R0.mxd		
Date:	29/05/2015	Drawing Size: A4	
Drawn By:	GC	Reviewed By: NL	

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure 3 - Acoustic Assessment Map

Noise Validation Monitoring
Old Maitland Road, Sandgate, NSW

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney

ERM

3. VALIDATION MONITORING METHODOLOGY

The methodology adopted to measure site noise level contributions for the purposes of this noise validation monitoring assessment are outlined below:

- Noise validation monitoring was completed with due regard to the documents, policy, standards and guidelines listed in the reference section of this report.
- Noise validation monitoring occurred during the daytime (7am to 6pm), evening (6pm to 10pm) and night time (10pm to 7am) assessment periods over two consecutive days. Night time monitoring occurred directly before and during the morning shoulder (5am to 7am) assessment period where combined rail and truck operations were expected (and then observed) to occur.
- ERM visited the site on Thursday, 7 May and Friday, 8 May 2015 and completed short-term (15 minute) operator attended noise compliance and validation measurements at sensitive receptors R1, and R3 to R8. These locations are shown in Figure 3 and described in Section 3a.
- A total of 23 operator 15 minute attended noise measurements were completed. A total of 2.25 hours of data was captured during the daytime, 1.75 hours during the evening and 1.75 hours during the night time.
- Prior to the monitoring ERM completed a site walkover to confirm that the site was operating under normal conditions during the two day monitoring period and to identify that the key noise generating plant, equipment and machinery listed in the impact assessment were in use.
- The site was operating normally and the key noise emitting sources were observed to include forklifts, light vehicles, motion alarms, train transfer and loading activity (morning shoulder period only), heavy vehicles/trucks and the infrequent use of a mobile conveyor. Other equipment was in use however the contribution to the overall noise from the site was considered insignificant.
- All measurements were conducted by trained ERM personnel; with due regard to, and in accordance with, the relevant standards for environmental noise monitoring listed in the reference section of this report. The measurement instrumentation used to complete the assessment complied with the requirements of AS 61672.1 and AS/IEC 60942 with current NATA calibration certificates, with certification at intervals not exceeding two years at the time of use.
- The equipment used for this assessment included one Brüel & Kjær 2250 Investigator (Type 1) Sound Analyser and one Brüel & Kjær 4231 (Type 1) Sound Level Calibrator.
- Instrument calibration was checked prior to monitoring and again at the conclusion with no difference noted between the two measurements. All data handling and analysis has been completed by a member of the Australian Acoustical Society.
- All noise level values presented in this document are expressed in dB(A) re: 2×10^{-5} Pa.

a. POTENTIALLY SENSITIVE RECEPTORS

The potentially sensitive receptors where noise validation monitoring was completed are presented in *Table 1* and identified in *Figure 3*.

Table 1 – Noise Validation Monitoring (Receptor) Locations

ID	Description	MGA (Zone 56) Coordinates		Direction and Distance from Site Centre	
		Easting	Northing	Compass point	~Distance, m
R1	Residential receptor located on Blanch Street	377728	6362297	South-west	910
R3	Residential receptor located on Astra Street	378565	6362177	South	575
R4	Residential receptor located on Wallsend Road	378807	6362092	South	725
R5	Residential receptor located on Wallsend Road	379159	6362222	South-east	840
R6	Residential receptor located on the eastern side of the Pacific Highway	378970	6363002	East	525
R7	Residential receptor located on the western side of the Pacific Highway	378906	6362965	East	450
R8	St Joseph's aged care and independent living	378622	6363491	North	700

b. NOISE LIMITS

The noise limits that apply at each of the potentially sensitive receptors where noise validation monitoring was completed are presented in *Table 2*.

Table 2 – Noise Limits (R1, and R3 to R8)

ID	Daytime	Evening	Night time	
	$L_{Aeq, 15minute}$	$L_{Aeq, 15minute}$	$L_{Aeq, 15minute}$	$L_{A1, 1minute}$
R1	39	39	39	54
R3	42	42	42	54
R4	42	42	42	54
R5	42	42	42	54
R6	60	57	54	54
R7	60	57	54	54
R8	43	40	39	54

1. Daytime: 7am to 6pm - Monday to Saturday or 8am to 6pm on Sundays and Public Holidays;
2. Evening: 6pm to 10pm; and
3. Night time: all remaining periods.

c. EPL 20295 AND SSD-5119 NOISE CONDITIONS

EPL 20295 and SSD-5119 are broadly similar regarding their requirements for noise monitoring however SSD-5119 specifies that monitoring should be completed over three consecutive operating days. This requirement is not specified in EPL 20295. ERM has undertaken the noise validation monitoring to meet the requirements of EPL 20295 and SSD-5119 as far as practical however monitoring occurred over two consecutive days. This is considered adequate for the site as:

- Daily works are regular and repeatable in nature and noise monitoring was planned to coincide with worst-case combined truck and rail operations;
- The overall noise environment of the area is dominated by road traffic noise not associated with the site that masks site noise events so that they are generally inaudible at nearby receptors; and
- Compliance with EPL 20295 can be achieved adopting this marginally reduced scope method, as the three consecutive day's requirement is not part of the EPL.

d. DETERMINING COMPLIANCE

Site noise level contributions have been determined in the absence of any influential extraneous noise emission sources not associated with the site.

Due to the influence of extraneous noise emissions (not associated with the site) site noise emissions could not be directly measured during all measurements. For the majority of the time the site was inaudible (masked by extraneous emissions) and was not detectable with a sound level meter. On other occasions, site noise emissions were infrequently audible despite the influence of extraneous emissions. To determine site noise level contributions and to demonstrate compliance, site noise values have been calculated based on operator noise event observations (level and duration) made during each measurement and review of audio files.

To account for the inaudible content, ERM has logarithmically added an estimated site background noise level contribution to any observed $L_{Aeq,\ 15minute}$ and $L_{A1,\ 1\ minute}$ site contributions. The inaudible content was estimated by deducting 20 dB from the measured overall L_{A90} value for each measurement.

These additional steps were undertaken to ensure that site noise emissions are conservatively and comprehensively assessed for compliance despite being inaudible for the majority of the time. Where site noise level contributions remained inaudible for the duration of the measurement the site contribution was estimated by again deducting 20 dB from the measured overall L_{A90}.

In all cases the reported values for inaudible or infrequently audible site noise emissions considered all applicable INP modifying (penalty) factors e.g. for tonality or low frequency content. To determine compliance, the site noise level contributions ($L_{Aeq,\ 15minute}$ and $L_{A1,\ 1\ minute}$) are compared to the noise limits previously presented in *Table 2*.

4. RESULTANT NOISE LEVELS

This section presents the measured overall (site plus all other emissions in the area) noise levels for the noise validation monitoring conducted in Thursday, 7 May and Friday, 8 May 2015 and a comparison of site noise emissions to the applicable $L_{Aeq,\ 15\ minute}$ and $L_{A1,\ 1\ minute}$ noise limits.

a. OVERALL NOISE LEVELS

The measured overall ambient and background noise levels are presented in *Table 3* including all relevant statistical and acoustical parameters i.e. L_{max}, L_{min}, L_{eq}, L_1, L_{10} and L_{90}.

Table 3 – Measured Overall Noise Levels – 7 May and 8 May 2015

Receiver ID	Assessment Period	Date	Start Time (24 Hour)	Measured Overall Noise Levels					
				L_{max}	L_{min}	L_{eq}	L_1	L_{10}	L_{90}
8	Daytime	07/05/15	10:30	80	50	58	66	60	53
6			11:00	93	57	76	85	79	63
5			11:21	91	51	71	81	75	56
4			11:43	87	49	71	81	74	58
3			12:06	76	47	65	73	70	52
1			12:32	72	41	49	57	51	44
7			12:59	81	52	62	68	64	56
7	Evening		18:02	74	51	61	67	64	56
8			18:21	75	48	58	67	64	51
6			18:44	87	54	72	83	77	60
5			19:05	83	45	68	78	72	50
4			19:24	95	46	69	80	71	51
3			19:45	74	40	60	70	64	48
1			20:09	64	33	42	52	41	35
5	Night time	08/05/15	04:35	87	49	67	78	71	52
4			04:53	84	49	66	77	69	52
7			05:13	82	52	68	78	73	57
8			05:36	78	49	60	72	63	52
6			05:55	89	55	75	85	79	61
3			06:17	81	49	65	73	70	53
1			06:39	69	41	52	62	55	44
3	Daytime		07:25	84	49	63	71	68	52
8			07:46	80	51	62	74	63	54

1. Daytime: 7am to 6pm - Monday to Saturday or 8am to 6pm on Sundays and Public Holidays;
2. Evening: 6pm to 10pm; and
3. Night time: all remaining periods.

b. COMPARISON TO $L_{AEQ, 15\ MINUTE}$ LIMITS

A comparison of resultant site noise level contributions to the applicable $L_{Aeq, 15\ minute}$ noise limits is presented in *Table 4*. These site noise level contributions have been determined from each measurement as previously described in *Section 3*, in the absence of any influential extraneous noise emission sources not associated with the site.

Table 4 – Comparison to $L_{Aeq,\ 15\ minute}$ Noise Limits

Receiver ID	Assessment Period	Start Time (24 Hour)	Noise Compliance Assessment ($L_{Aeq,\ 15\ minute}$)		
			Noise Limit	Site Noise Level Contribution	Comply with Limit?
8	Daytime	10:30	43	≤33	Yes
6		11:00	60	≤43	Yes
5		11:21	42	≤36	Yes
4		11:43	42	≤38	Yes
3		12:06	42	≤32	Yes
1		12:32	39	<30	Yes
7		12:59	60	≤38	Yes
7	Evening	18:02	57	≤38	Yes
8		18:21	40	≤34	Yes
6		18:44	57	≤40	Yes
5		19:05	42	≤30	Yes
4		19:24	42	≤31	Yes
3		19:45	42	<30	Yes
1		20:09	39	<30	Yes
5	Night time	04:35	42	≤34	Yes
4		04:53	42	≤32	Yes
7		05:13	54	≤37	Yes
8		05:36	39	≤32	Yes
6		05:55	54	≤41	Yes
3		06:17	42	≤35	Yes
1		06:39	39	<30	Yes
3	Daytime	07:25	42	≤34	Yes
8		07:46	43	≤36	Yes

1. Daytime: 7am to 6pm - Monday to Saturday or 8am to 6pm on Sundays and Public Holidays;
2. Evening: 6pm to 10pm; and
3. Night time: all remaining periods.

c. COMPARISON TO $L_{A1,\ 1\ minute}$ NOISE LIMITS

A comparison of resultant site noise level contributions (for each night time measurement) to the applicable $L_{A1,\ 1\ minute}$ noise limits is presented in *Table 5*. These site noise level contributions have been determined from each measurement as previously described in *Section 3*, in the absence of any influential extraneous noise emission sources not associated with the site.

Table 5 – Comparison to LA1, 1 minute Noise Limits

Receiver ID	Assessment Period	Start Time (24 Hour)	Noise Compliance Assessment ($L_{A1, 1\ minute}$)		
			Noise Limit	Site Noise Level Contribution	Comply with Limit?
5	Night time	04:35	54	≤41	Yes
4		04:53	54	≤35	Yes
7		05:13	54	≤38	Yes
8		05:36	54	≤38	Yes
6		05:55	54	≤42	Yes
3		06:17	54	≤41	Yes
1		06:39	54	<30	Yes

1. Daytime: 7am to 6pm - Monday to Saturday or 8am to 6pm on Sundays and Public Holidays;
2. Evening: 6pm to 10pm; and
3. Night time: all remaining periods.

d. DISCUSSION

The findings of the noise validation monitoring are summarised below:

- Site noise events and associated emissions were inaudible for the majority of the time. Site emissions were audible and barely detectable during 14 of the 23 measurements. The duration of observed noise events varied between 5 and 40 seconds (total duration for each applicable measurement) and typically associated with the infrequent use of motion alarms and metal-on-metal contact from activities on site. Whilst audible these site noise events did not dominate the acoustics environment at any of the identified sensitive receptors (R1, and R3 to R8), where extraneous noise emissions (mostly road traffic noise) prevailed as the most significant noise in the area;

- Meteorological conditions included temperatures between approximately 10° and 20°C, average wind speeds of between 0.5m/s and 4 m/s (generally from a westerly or north-westerly direction) and cloud coverage of 0/8 octas (clear skies).

- The results presented in *Table 4* identify that worst-case noise emissions associated with site operations comply with the applicable $L_{Aeq,\ 15\ minute}$ noise limits contained in EPL 20295 and SSD-5119, at all assessed receptor locations;

- The results presented in *Table 5* identify that worst-case noise emissions associated with site operations comply with the applicable $L_{A1,\ 1\ minute}$ noise limits contained in EPL 20295 and SSD-5119, at all assessed receptor locations; and

- A comparison of the measured noise levels to the predicted values presented in the impact assessment indicates that actual site noise level contributions are lower than those predicted. The impact considered both calm and adverse weather conditions. Allowing for a potential increase (<1 dB) in noise levels associated with prevailing noise enhancing winds and temperature inversions site noise level contributions may increase to be closer to the predicted values but would still be expected to remain below the applicable EPL 20295 and SSD-5119 noise limits.

5. RECOMMENDATIONS

As stated in the impact assessment, where measured noise levels are determined to comply with criteria, no further actions are required to those already taken to reduce noise at the time of the monitoring. Furthermore, site noise levels were measured to comply with the noise limits presented in EPL 20295 and SSD-5119.

ERM makes no additional recommendations for noise mitigation, management measures or monitoring options but notes that Crawfords continues to manage noise generated by site plant, equipment and machinery, and operates within the noise conditions of their approval.

6. CONTACTS

ERM trust this noise validation monitoring and assessment meets Crawford's requirements. Any questions or queries regarding the findings presented in this document please do not hesitate to contact Nathan Lynch on (02) 8584 8888 or via email at nathan.lynch@erm.com.

For Environmental Resources Management Australia Pty Ltd

Nathan Lynch
Project Manager

Steve O'Connor
Technical Director

REFERENCES

Crawfords Freightlines - Ammonium Nitrate Storage Facility - Lot 12 Old Maitland Road, Sandgate (NSW) - Noise and Vibration Impact Assessment (0143175RP01_Final), dated July 2012

NSW Government – Department of Planning and Infrastructure (DoPI) - **Development Consent - SSD-5119 Final Consent** (SSD-5119), dated 13 June 2013

Ammonium Nitrate Storage Facility – Operational Environmental Management Plan (0143175_OEMP), dated 7 August 2013. Specifically, the Noise and Vibration Management Plan (NVMP) presented in Section 5.3 of the overall OEMP

NSW Government – EPA – **Environment Protection Licence 20295 and Revocation of Prevention Notice** (EPL 20295), dated 18 July 2013

NSW Government – DoPI document titled: **Crawfords Ammonium Nitrate Storage and Distribution Facility (SSD-5119) - Extension of Time for Noise Validation** (reference: 12/0230), dated 1 August 2013

NSW Environment Protection Authority – **NSW Environmental Noise Management – Industrial Noise Policy** (INP), January 2000 and relevant application notes

Standards Australia AS1055–1997™ (AS1055) – **Description and Measurement of Environmental Noise**, Parts 1, 2 and 3

Standards Australia AS IEC 61672.1–2004™ (AS61672) – **Electro Acoustics - Sound Level Meters Specifications Monitoring**

Standards Australia AS/IEC 60942:2004/IEC 60942:2003 (IEC60942) – Australian Standard™ – **Electroacoustics – Sound Calibrators**

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Appendix N – Waste Management Plan

Appendix O – Environmental Inspection Checklist

CRAWFORDS FREIGHTLINES

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspector Details	
Person Completing Checklist:	
Role of Person:	
Time of Inspection:	
Date of Inspection:	
Site Activities	
Inspection Location	
Current Site Activities:	
Contractors/ Subcontractors on site:	
Weather Conditions	
Current Weather Conditions:	
Weather Conditions during the Past 24hrs:	
Approximate 24hr Rainfall:	

Site Conditions

Air Quality and Dust

	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Works will be undertaken in a manner that minimises dust emissions associated with site activities, including wind-blown and traffic-generated dust;			
Water sprays and/or water carts will be used as required for roads and other exposed surfaces to control dust generation;			
Regular use of a road sweeper over the sealed surface to remove the build-up of any particulate matter;			
Are there any nuisance odours that could potentially impact neighbouring sites;			
Speed limits of 20 kilometres per hour to ensure dust generation from vehicle movements are minimised;			
Ensure that wheels and undercarriage of loaded vehicles are clean prior to the vehicle(s) exiting the site onto public roadways. Tailgates, under-rigs and towing apparatus of trucks will be checked to ensure they are free of loose material, prior to trucks leaving the site.			

The access gate will have a wheel wash and will be swept to remove deposited material;			
Plant will not be kept running when not in use for more than 15 minutes;			
Plant, vehicles and machinery will be maintained to minimise exhaust emissions. Records of maintenance will be kept for all plant, vehicles and machinery used on the site;			
Any dirt tracked onto public roads resulting from vehicles exiting the site will be removed by brooms or a street sweeper;			
Temporary soil stockpiles or exposed areas created during any minor works will be dampened, to minimise dust generation; and			
Where prevailing conditions are likely to generate high dust impacts,: • Review dust generating activities for the day and order work to cease (or to not to commence) if it is determined that activities are likely generate excessive dust; and/or • Direct that dust control such as water sprays be used for dust generating activities, if appropriate.			
Waste Storage and Disposal			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Reduce packaging and packaging weight to maximise use of productive space and minimise waste;			
The site will be maintained to be litter free to ensure safe access and egress to and from the site and establish and maintain an orderly workplace environment;			
All wastes will be segregated by classification and waste type;			
All wastes generated on site will be kept in a dedicated, clearly labelled Waste Storage Area (WSA);			
An authorised waste removal contractor will remove all waste required for off site disposal from the central WSA;			
Waste will be secured to prevent air-borne pollution;			
Putrescible wastes will be stored in a manner not to attract birds or other wildlife;			
Liquid wastes would be storage in a bunded area away from stormwater control devices.			
Waste collections will be organised prior to the			

receptacles becoming environmental hazards;			
Stockpiles will be clearing labelled to identify their composition;			
The stockpiling of AN outside of the designated storage areas is strictly prohibited; and			
AN spills will be immediately recovered from the ground using dedicated brooms and shovels.			
Vegetation and Bushfire Risk			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Potential fire causing activities will be ceased during designated "Total Fire Ban" days;			
There will be no fires on site;			
Site vegetation will be regularly maintained; and			
Is fire fighting equipment available and in working order?			
Excessive Noise and Vibration			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Hours of Operation are between 6.00 am – 10.00 pm. No works are to occur on public holidays;			
Are heavy vehicle drivers quietly entering and exiting the site and limiting extended periods of vehicle idling time;			
Is there excessive use of reverse alarms;			
Limit the use of forklifts (36T) and operate in a quiet manner; and			
Have affected persons been notified in writing prior to any loud works or vibrating activities.			
Water Management			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
No water will be discharged directly into waterways;			
Permanent on-site water storage to the volume of 320m³ will be maintained;			
Flushing an area with water in the event of a spill is strictly prohibited; and			
The site will abide by all water restrictions implemented by City of Newcastle.			
Stormwater Management and Drainage			
	Meets Requirement		

Satisfies Required Checklists	Yes	No	NA
Erosion and Sediment Control			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Erosion and sedimentation controls are maintained and effective;			
Sediment will be cleared from behind barriers on a regular basis and all controls would be managed in order to work effectively at all times, that is, sedimentation controls will be less than 50% full at all times; and			
Any material transported onto pavement surfaces will be swept and removed at the end of each working day.			
Contingency Planning Measures			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Each AN store shall have as a component of the Emergency Response Equipment: • a supply of 250 micron 4 m wide polythene construction membrane sufficient to encase the entire internal perimeter of the store leaving no gaps and allowing 2 m overlap at joins; • one diesel powered sump pump; • a supply of pre filled sandbags sufficient to construct a 2 m x 8 m x1 m high internal seepage dam; • a supply of 250 micron 4 m wide polythene construction membrane sufficient to line the 2 m x 8 m x1 m high seepage dam; • a four person emergency response crew boat; • two 38 t capacity forklifts; and • one 6 t capacity front end loader.			
The sealant inside the storage sheds will be maintained;			
WSAs used for storage of hazardous or restricted waste must be lined and capable of containing any potential spills. For chemical based wastes attach a copy of the Material Safety Data Sheet (MSDS) and ensure storage and handling procedures are done in accordance with the MSDS; and			
AN spills will be immediately recovered from the ground using dedicated brooms and shovels. These brooms and shovels will be used for AN only.			
Site House Keeping			
	Meets Requirement		
Requirement	**Yes**	**Yes**	**Yes**

Under normal storage conditions AN stacks are configured within a store to allow a 1.2 m air gap between the outer side of the stack and the inside of the store walls;			
Shipping containers used to store AN onsite are to be unloaded to the AN storage sheds A, B or C as soon as practicable following receipt on site;			
The site will be maintained in a clean and tidy manner that does not detract from the surrounding visual amenity;			
The use of flood lighting is to be minimised.			
The maintenance of a perimeter fence and security gates on site. Security gates are locked whenever the site is unattended;			
Dangerous goods will be locked whenever they are unattended; and			
Suitably qualified security guards will secure the site 24hrs a day, 7 days a week.			
Transport Movements			
	Meets Requirement		
Requirement	**Yes**	**No**	**NA**
Vehicle and machinery movements will be restricted to designated areas;			
All trafficable areas will be constructed to carry required loads; and			
All trafficable areas will be maintained in a safe manner.			

Changes in Operational Scope

Has there been any changes in the operational scope that may impact the environment

◯ No ◯ Yes

Corrective Environmental Actions

Have any near misses, non-conformances or other inconsistency with the operating conditions been identified? If yes, describe corrective actions below.

◯ No ◯ Yes

Issue	Action Required	Due Date	Responsibility	Completion Date

Additional Comments

Declaration	
I declare that I undertook the weekly environmental site inspection on the date listed above and that all information contained in this checklist is true to the conditions experienced.	
Signature of Inspector:	
Date:	

Appendix P – Ammonium Nitrate Storage Audit Checklist

Crawfords Freightlines Monthly SSAN Storage Audit Date.....

Ammonium Nitrate Segregation shall comply with AS4326 - 9.3 & 9.4	C	NC	Comments
Every Ammonium Nitrate store shall have a clear area of 5m around it. Such an area shall be cleared of vegetation or combustible material and any equipment not necessary for the operation of the store.			
Standing trees shall be cleared for at least 15m or a distance equivalent to 1.5 times the height of the trees, whichever is the greater			
Separated from explosives in accordance with AS2187.1			
Stacks of Ammonium Nitrate shall be separated from outer walls of the building by an air gap of at least 1.2m			
A maximum stack height of 3m is recommended in the standard			
Stack sizes and separation distances comply with AS4326 Table 9.3. Maximum capacity of an individual store does not exceed 4,500t (stored without pallets).			
CPAN or other SSAN derivatives requiring segregation shall only be stored in a nominated area separate from mainstream Ammonium Nitrate.			
Ammonium Nitrite and other sensitisers shall be kept in stores separated from Ammonium Nitrate stores by a minimum distance of 10m.			
Diesel fuel tanks shall be located at least 30m from Ammonium Nitrate stores and bunded to contain 100% of the capacity of the tank.			

Other classes of Dangerous Goods shall segregated from Ammonium Nitrate stores in accordance with table AS 4326 table 4.2			
Stores shall be surrounded by a security fence, being (i) 2.45m high (ii) Galvanised or plastic coated, selvedges twisted and barbed (iii) Capped with 3 rows of barbed wire (iv) Located at least 3m from the Ammonium Nitrate store			
Smoking and naked lights are not permitted within an Ammonium Nitrate store or within 10m of the boundary of an Ammonium Nitrate store.			
Organic materials such as sawdust are not permitted for use in cleaning floors Unused timber pallets, dunnage, and packing materials shall be removed from the store immediately following their use.			
Pallets, ropes, and tarpaulins shall not become impregnated with Ammonium Nitrate.			
Where there is a risk of corrosion from Ammonium Nitrate all electrical wiring and equipment shall be IP65 rated in accordance with AS60529. Exposed brass and copper materials are subject to deposition of potentially hazardous Tetra Amine Copper Nitrate (TACN) as a result of the reaction of Ammonium Nitrate and copper alloys.			
No Smoking - No Naked Lights signs shall be erected on external walls and perimeter fences.			

Fire Protection of Ammonium Nitrate stores shall be in accordance with AS4326-2008 section 12. Plant and equipment fitted with fire extinguishers - within test date compliant			
Design of plant and equipment complies with AS4326 9.3.3.			
Internal combustion engines shall be diesel powered only.			
Equipment and vehicles shall be free of any fuel, oil or hydraulic fluids leaks.			
Equipment and vehicles shall be started outside the store			
Equipment and vehicles shall be parked at least 10m from any Ammonium Nitrate store when not in use			
Equipment and vehicles shall be attended and must have unhindered egress from the Ammonium Nitrate store at all times			
Waste Ammonium Nitrate shall be recovered as soon as possible following a spill, recovered waste shall be placed in a correctly labelled uncontaminated receptacle.			
Waste contaminated with organic substances shall be treated as Class1 Explosive, removed from the Ammonium Nitrate store and managed accordingly.			
Floors shall be kept free of organic substances such as paper, fabric materials, fuels and oils, coal, timber, sawdust, leaves and grass.			
Site manifest accessible and current			
Signage complies with AS4326			

Key register maintained			
Visitor and contractor access controls in place			
License to store current			
Procedures / SMP in place			
Environmental	**C**	**NC**	**Comments**
Spills contained - no ingress to soil or water table			
Spills reported and contained			
EMP in place			
Sighting of Stores	**C**	**NC**	**Comments**
Vulnerable facilities and Protected Works identified			
Segregation of incompatible materials			
Possible impact of emergencies at neighbouring facilities			
Distances to protected works observed			
General	**C**	**NC**	**Comments**
Hydrants available and within test			
Hoses, branch pipes and stortz fittings available, in good condition and checked			
Site access road in good condition trees-do not form obstacles during smoky conditions			
Site free of obstacles which may hinder access to emergency services personnel			
No dislodged roofing materials			
Doors and windows in good condition and well fitted into frames			
Combustible materials located down slope and at least 30m from AN stores			
Confirm AN Stores, operations and site comply with conditions of consent			

Name of Auditor.....