MIDAL CABLES INTERNATIONAL PTY LTD
TOMAGO, NSW, AUSTRALIA
MODIFICATION ENVIRONMENTAL ASSESSMENT

Modification of Project Approval 10-0039

March 2016 (Rev. 3)

Prepared for:
Midal Cables International Pty Ltd
Tomago, NSW

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Reviewed by: David Latter, WHS & Environment Manager, Midal

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1	19 January 2016	Draft for Internal Review	S. Laney
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CERTIFICATION BY THE AUTHORS

The Environmental Assessment has been prepared under Section 75H of the *Environmental Planning and Assessment Act 1979.*

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	In Respect of:	Midal Cables International Pty Ltd, Tomago Modification Environmental Assessment	
Development Application	Applicant Name:	Midal Cables International Pty Ltd	
	Applicant Address:	P.O. Box 322 Raymond Terrace NSW 2324	
	Land to be developed:	The project is to be carried out on land as shown in the Environmental Assessment	
	Lot and DP	Lot 11 DP 270328 (formerly Lots 5 & 6 DP 270328) Part lot 301, DP 634536 and Part Lot 3232, DP 618103	
Environmental Assessment	An Environmental Assessment is attached		
Certificate	I certify that I have prepared the contents of this Environmental Assessment and to the best of my knowledge: - It is in accordance with the requirements of part 3A; - It contains all available information that is relevant to the Environmental Assessment of the development: and - That the information contained in the Environmental Assessment is neither false nor misleading.		
	Signature:		
	Name:	Graham Taylor	David Latter
	Date:	8/3/16	8/3/16

Table of Contents

APPENDICES

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

AQIA – Air Quality Impact Assessment
EA – Environmental Assessment
EP&A Act – Environmental Planning and Assessment Act, 1979
EPBC – Environment Protection and Biodiversity Conservation
EPL – Environmental Protection Licence
HF – Holding Furnace
HW – Hunter Water
IEA – Independent Environmental Audit
LGA – local government area
Midal – Midal Cables International Pty Ltd
NES – National Environmental Significance
NGER – National Greenhouse Emissions Report
PHA – Preliminary Hazardous Analysis
PSC – Port Stephens Council
PSLEP – Port Stephens Local Environmental Plan
SEPP – State Environmental Planning Policy
TAC – Tomago Aluminium Smelter
TF – Tilting Furnace
tpa – Tonnes per annum
tpHr – Tonnes per hour
WWTP – Waste Water Treatment Plant

REFERENCES

Ref 1 – Midal Cables International Pty Ltd – Tomago Aluminium Rod and Conductor or Manufacturing Facility (GHD, February, 2012)

Ref 2 – Air Quality Impact Assessment (AECOM, March 2014)

EXECUTIVE SUMMARY

This Environmental Assessment (EA) has been prepared by Midal Cables International Pty Ltd (Midal) for proposed modifications to Project Approval 10-0039.

Midal is proposing a modification to 10-0039 relating to overall efficiency improvements and improved environmental performance at the site. The modifications proposed in this EA are:

- An increase in the mass of molten aluminium that can be received and processed by Midal from 50,000 tpa to 60,000 tpa and solid aluminium products that can be dispatched from the site from 50,000 tpa to 60,000 tpa and,
- The replacement of the existing Waste Water Treatment Plant (WWTP) with a septic/pump out system.

Modification approval is being sought under Section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Minister for Planning and Infrastructure is the approval authority for this application under the transitional arrangements of Part 3A of the EP&A Act. Midal has prepared this EA in accordance with the provisions of the former Part 3A of the Act and the Environmental Planning and Assessment Regulation 2000. The EA addresses the Department's requirements relating to this modification.

Project Description

This modification request includes 2 elements

(i) An increase in the mass of molten aluminium that can be received by Midal from the Tomago Aluminium Smelter from 50,000 tpa to 60,000 tpa and an increase in the aluminium product that can be dispatched from the site from 50,000 to 60,000 tpa, and

(ii) The replacement of the existing waste water treatment plant with a septic/pump out system.

Capacity Increase

Midal seeks to increase the mass of molten metal receival and solid metal product dispatched from 50,000 tpa to 60,000 tpa. Increasing the molten metal receival capacity to 60,000 tpa will not require additional equipment to be installed on site or any modification to existing equipment. Midal will utilise existing 'spare' days when metal cannot be received due to the monthly average receival (nominally based on 1/12 of the annual limit of 50,000 tonnes) having been reached.

Wastewater Treatment Plant Replacement

Midal currently operates an Envirocycle waste water treatment plant to treat domestic effluent generated by the Midal workforce. The Envirocycle process consists of primary anaerobic chambers followed by aerobic chambers and an effluent pump out system. The treated effluent is then directed to a subsurface irrigation system for nutrient recovery and effluent disposal. This facility has not operated to EPA requirements and is currently isolated from the subsurface irrigation effluent disposal area.

Midal therefore proposes to either convert the existing Envirocycle plant to an anaerobic septic system with pump out (subject to Port Stephens Council Approval) or alternatively install a new septic system with pump out. Such a system is consistent with those used by the majority of commercial/industrial facilities in the existing Tomago area.

Statutory Planning

The site is located entirely with the Port Stephens Local Government Area and therefore the Port Stephens Local Environmental Plan 2000 (PSLEP 2000) is the relevant local environmental planning instrument. The proposed modification is to be assessed through Section 75W of the EP&A Act 1979.

The Project is consistent with provisions of local, regional and State planning instruments which would otherwise apply to the proposal including:

- Port Stephens LEP 2000
- State Environmental Planning Policy (Major Developments 2015)
- State Environmental Planning Policy (Hazardous and Offensive Development)

Environmental Assessment

A preliminary environmental risk assessment identified Air Quality and Odour and Greenhouse Gas and Climate Change as being medium risks, Traffic and Transport, Hazards and Risks and Noise as being low risk and Groundwater as very low risk.

Air Quality and Odour

The Air Quality Impact Assessment (AQIA) for the original project (AECOM, March 2014) specified the air emissions from the project and the ground level concentrations likely to result from the development.

The AQIA concluded that "... (The) model used to predict the pollutant concentrations for the worst case typical operational scenarios at 10 sensitive receptors... (were) not forecast to exceed the respective EPA impact assessment criteria for any pollutants except SO_2", and that "the maximum predicted incremental impact of SO_2 at the receptors accounts for less than 1% of the EPA 1 hour criteria".

The original AQIA established that there would be no adverse impact on air quality associated with the Midal development.

Midal has now been operating for 18months and has established that mass emission rates (taking into account the proposed 20% upgrade) for the 2 pollutants of concern to the EPA i.e. NO_X and Particulates would be:

- NO_X – 32% of original AQIA levels
- Particulates – 47% of original AQIA levels.

As the original AQIA indicated that there would be no adverse impact from the project, at the assessed emission levels, then operating significantly below levels would have even less impact.

The proposed Midal upgrade will have no adverse impact on the air quality of the local region.

Greenhouse Gases and Climate Change

In the original EA (GHD 2012) annual Greenhouse Gas Emissions for the Midal Project were estimated to be 1,027,000 (tCO_2-e). Midal has no control over scope 3 emissions associate with the production of aluminium.

In its 2014/2015 NGER report actual Greenhouse Gas Emissions for scope 1 and 2 emissions were calculated to be 12,439 (tCO_2-e).

The original EA estimated scope 1 and 2 emissions to be 52,000 (tCO_2-e). Midal's actual emissions were approximately 25% of that indicated in the original EA. With a 20% upgrade in metal production as proposed Midal's greenhouse gas emissions will increase to approximately 29% of that assessed in the original EA. Impacts from the proposed upgrade will be less than anticipated in the original EA.

Other Environmental Aspects

In relation to the other environmental aspects assessed in the EA i.e. Traffic and Transport, Hazards and Risks, Noise and Groundwater, no significant environmental impacts were predicted and where relevant, reasonable and feasible management measures and safeguards have been included to mitigate potential impacts.

Statement of Commitments

A Statement of Commitments has been prepared in respect of the proposed upgrade and WWTP replacement. The majority of Commitments are the same as those proposed for the original development. Midal is committed to the regular update of all plans associated with the operation of its facility consistent with its Statement of Commitment and those other Commitments included with its plan.

Justification and Conclusion

Environmental, economic and social impacts have been assessed during the preparation of this EA. The assessments have demonstrated that the proposed modification will not have an adverse impact on the environment or surrounding community subject to appropriate management and mitigation measurement being implemented as detailed in this EA.

1.0 INTRODUCTION

1.1 Overview

This Environmental Assessment (EA) has been prepared by Midal Cables International Pty Ltd (Midal) for proposed modifications to Project Approval 10-0039

Midal International (Midal) operates an aluminium rod and conductor manufacturing facility on a 2.8ha parcel of land adjacent to the Tomago Aluminium Smelter at Tomago in the Port Stephens local government area (LGA).

An EA (GHD, 2012) (Ref 1) was prepared in 2012 for the construction and operation of the facility which was approved under Part 3A of the Environmental Planning and Assessment Act, 1979 (EP&A Act) on 5 August 2012. Midal is proposing a modification to 10-0039 relating to overall efficiency improvements and improved environmental performance at the site. The modifications proposed in this EA are:

- An increase in the mass of molten aluminium that can be received and processed by Midal from 50,000 tpa to 60,000 tpa and solid aluminium products that can be dispatched from the site from 50,000 tpa to 60,000 tpa, and

- The replacement of the existing Waste Water Treatment Plant (WWTP) with a septic/pump out system.

1.2 Approval Pathway

In accordance with Clause 3 of Schedule 6A of the EP&A Act, Section 75Q of the Act (as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A) continues to apply to transitional Part 3A projects. The proposed modification can therefore be assessed under Section 75W of the EP&A Act, which states that:

2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of the environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

4) The Minister may modify the approval (with or without conditions) or disapprove of the modification

This EA has been prepared to address the potential environmental issues associated with the proposed modifications. Midal have used the Department of Planning's advice of the 9 September 2015 (see Appendix 1) to guide the assessment of the potential impacts resulting from the proposed modifications.

1.3 The Proponent

Midal Cables International is an Australian registered company and forms part of the Midal Group of companies that is based in the kingdom of Bahrain. Midal specialises in manufacturing and supplying aluminium and aluminium alloy rod, wires and conductors, aluminium clad steel, aluminium sections and tubes which are exported to a large number of countries including Australia.

1.4 Site Overview

The facility is located on industrial land within the Tomago Industrial Area approximately 6km from the Port of Newcastle and immediately adjacent to the Tomago Smelter (TAC) (Figure 1, Figure 2, Figure 3 and Figure 4). This land comprises of Lot 11, DP 270328 (formerly lot 5 and 6 in DP 270328) and a corridor of land to the North compromising part of Lot 301 DP 634536 and part of Lot 3232 DP 618103.

It is located within the TAC Buffer Zone which was established as a condition of consent for the Tomago Aluminium smelter. The zone acts as an environmental management zone which aims to reduce land uses that are incompatible with the operations of the smelter.

Land immediately to the west of the site is occupied by a large industrial facility and land immediately to the east is currently vacant but has previously been used for industrial activities. Land to the north has previously been used for sand mining and is part of the TAC buffer zone. A small area of bushland lies immediately to the south and separates the site from industrial development.

The surrounding development comprises a wide range of industrial activities dominated by the Tomago Aluminium Smelter. Other industries in the neighbourhood include: Vana Abrasive Blasting and Protective Coatings, Varley, Hunter Cremations, Redicrete, Compass Pools Australia Pty Ltd, Minmet Operations Pty Ltd, Ross Tyres, SMB Engineering Solutions, Alan E Clode Pty Ltd, AJ Mayr, Wheeler Cranes and McFadyen's Haulage and Excavation.

The nearest residential dwelling is located approximately 230 metres South and Southeast of the facility.

The site is essentially flat and includes a number of buildings and support infrastructure associated with the receival, processing and production of aluminium rod and conductors from molten aluminium,

Midal's facility consists of:

- An approximately 150m long dedicated haul road linking with the Tomago Aluminium Smelter.
- Two building to accommodate the rod and conductor manufacturing processes and storage of finished products.
- Administration facilities
- Several smaller buildings providing maintenance workshop facilities, storage and other ancillary facilities and infrastructure
- Car parking
- Infrastructure for Storm Water drainage, water recovery and reuse and sewage treatment
- Associated ancillary infrastructure including security gates, gas receival etc.

The main elements of the facility are shown in Figure 3.

Figure 1 – Local Context of the Site

LEGEND

Site

Figure 2 - Regional Context of the Site

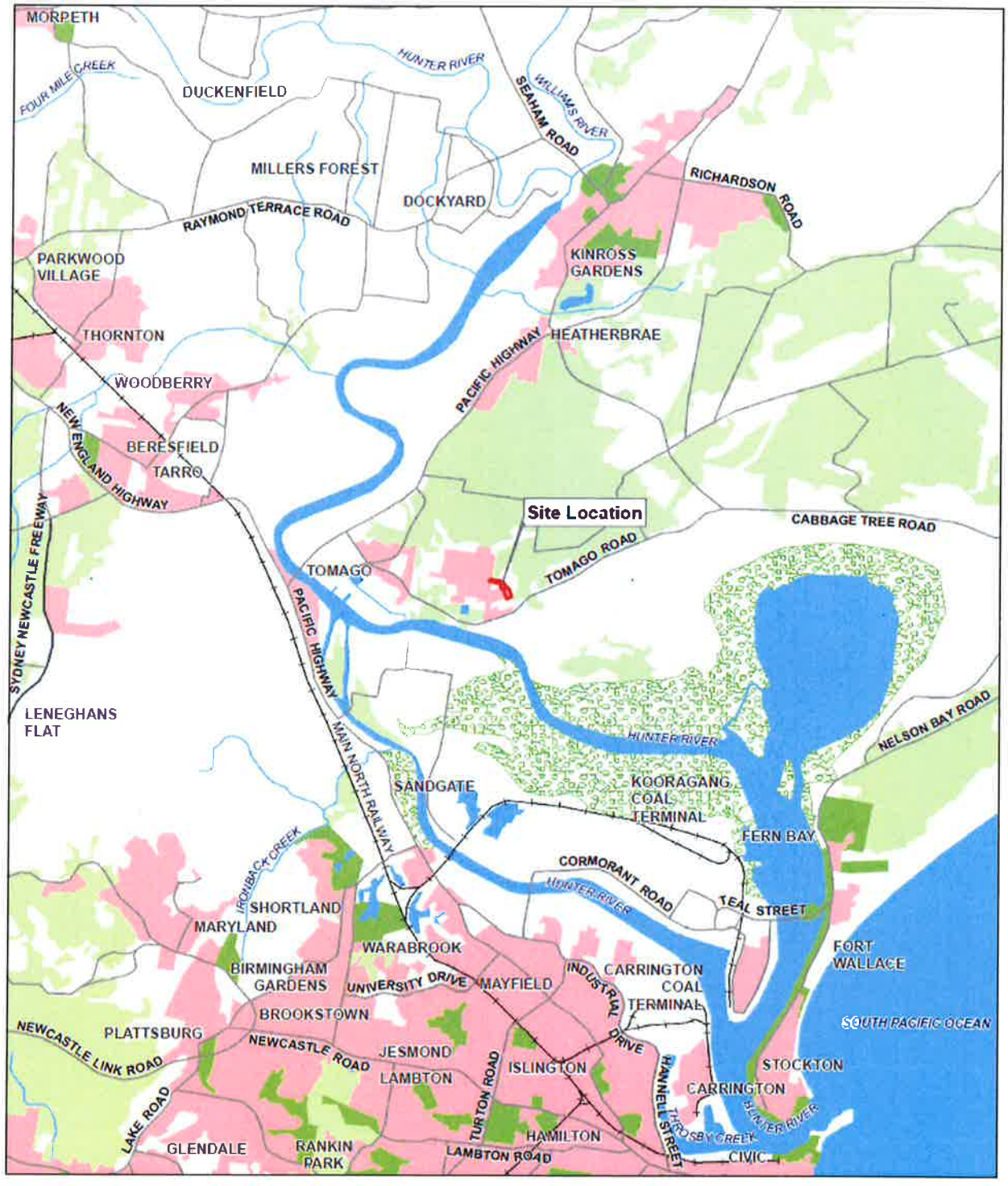

Figure 3 – Midal Facility Layout

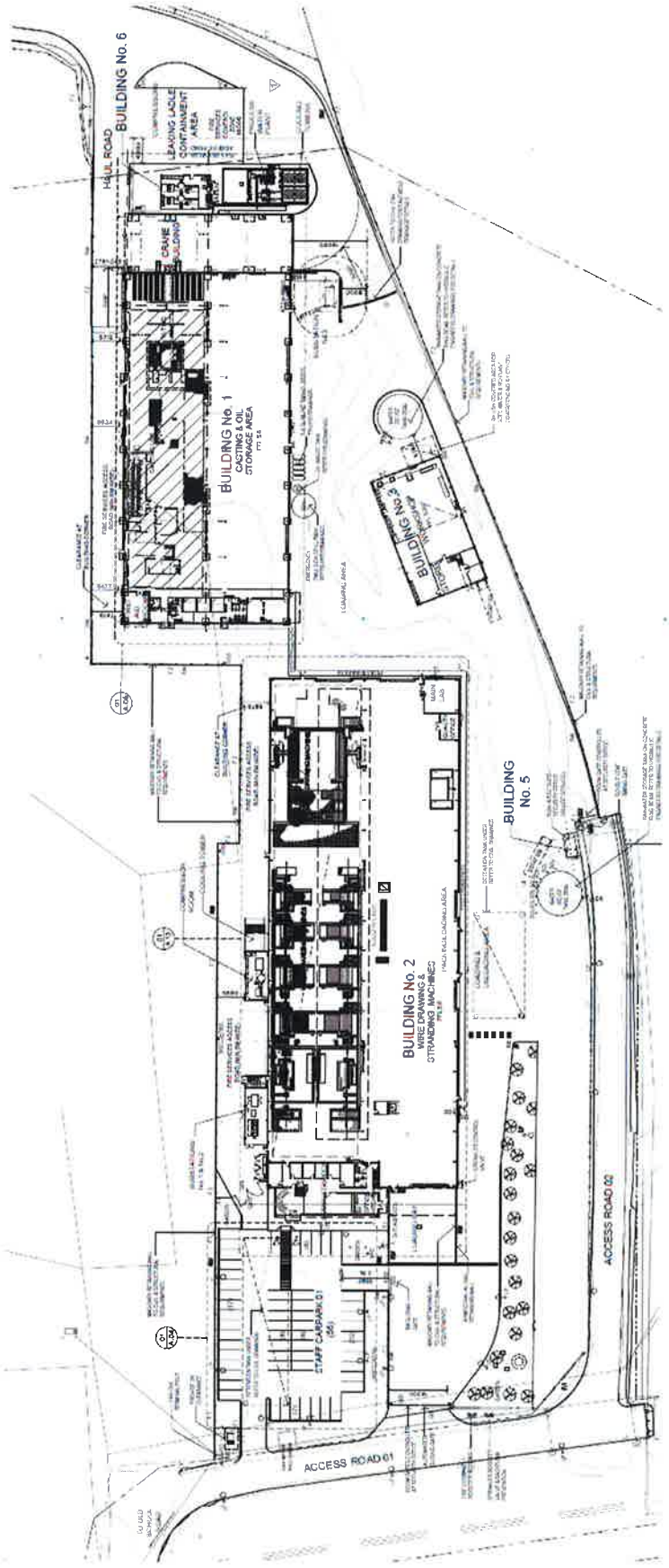

Figure 4 – Aerial of Midal Facility

2.0 PROJECT DESCRIPTION

2.1 Approved Facility

The 2012 approval for the Midal project included receival of up to 50,000 tonnes per annum of molten aluminium to the site from the Tomago Aluminium Smelter and the dispatch of up to 50,000 tonnes per year of aluminium product from the site.

The plant, equipment and buildings located on the site are detailed in the GHD, 2012 EA and in Figure 3 Midal Facility Layout of this EA. Figure 4 provides a recent aerial view of the site.

2.2 Modification Description

As detailed in section 1.1 of this EA this modification request includes 2 elements

(i.) An increase in the mass of molten aluminium that can be received by Midal from the Tomago Aluminium Smelter from 50,000 tpa to 60,000 tpa and an increase in the aluminium product that can be dispatched from the site from 50,000 tpa to 60,000 tpa, and
(ii.) The replacement of the existing waste water treatment plant with a septic/pump out system.

Each modification is described in detail in sections 2.2.1 and 2.2.2

2.2.1 Increase in molten metal receival and metal product dispatched

Midal seeks to increase the mass of molten metal receival and solid metal product dispatched from 50,000 tpa to 60,000 tpa.

Increasing the molten metal receival capacity to 60,000 tpa will not require additional equipment to be installed on site or any modification to existing equipment. Midal will utilise existing 'spare' days when metal cannot be received due to the monthly average receival (nominally based on 1/12 of the annual limit of 50,000t) having been reached.

The Midal facility has a theoretical production capacity of 86,000 tpa based on a metal casting capacity of 10tphr. A realistic production capacity of 70,000 tpa is practical taking into account certain difficulties associated with product specification, equipment breakdown and maintenance requirements.

Midal is seeking to increase the molten metal received from Tomago Aluminium Smelter from 50,000 tpa to 60,000 tpa and be permitted to dispatch 60,000 tpa of metal product from the facility.

Midal is under constant pressure from its owners and customers to reduce costs. Increasing production with the existing fixed price asset will assist in achieving this imperative.

2.2.2 Replacement of the existing Waste Water Treatment Plant

Midal currently operates an Envirocycle waste water treatment plant to treat domestic effluent generated by the Midal workforce. The Envirocycle process consists of primary anaerobic chambers followed by aerobic chambers and an effluent pump out system. The treated effluent is then directed to a subsurface irrigation system for nutrient recovery and effluent disposal.

The Envirocycle plant has never operated to EPL requirements. It was isolated from the irrigation area in September 2014 due to concerns that the poor quality effluent would contaminate the groundwater. The partially treated effluent has subsequently been collected and taken off site for disposal at a Hunter Water (HW) regional waste water treatment and disposal facility.

The Tomago industrial area does not have a reticulated sewer system. Hunter Water has confirmed that they do not have plans to sewer the area in the foreseeable future. A commercial/industrial development proposed for the Tomago Aluminium buffer zone may create an opportunity for Midal to connect to an area pump station however no set timeframe has been established.

Midal therefore proposes to either convert the existing Envirocycle plant to an anaerobic septic system with pump out (subject to Port Stephens Council approval) or alternatively install a new septic system with pump out. Such a system is consistent with those used by the majority of commercial/industrial facilities in the existing Tomago area.

Treated septic effluent from the proposed facility will be collected on a regular basis for disposal at a Hunter Water regional waste water treatment and disposal facility.

2.3 Modification to Project Approval 10-0039

A review of the existing Project Approval was undertaken to examine which conditions would require amendment as a result of the proposed modification

Condition 2 Schedule 2 would require the following modifications. Proposed additions to conditions are shown in **bold.**

2. The proponent shall carry out the project generally in accordance with the:

a) EA;
b) Project site layout plans (see appendix A)
c) Statement of commitments (see appendix B)
d) Modification Application (10-0039 Midal) with supporting documentation titled, Midal Cables International Pty Ltd, Tomago, Modification Environmental Assessment, Modification of project Approval 10-0039, prepared by Midal and Dated 8 March 2016
e) Conditions of this approval.

2.4 Project Benefits

2.4.1 Increase in molten metal received and metal product dispatched

The proposed capacity upgrade to 60,000 tpa will substantially increase the efficiency of the Midal plant both productively and financially. The existing facility has theoretical capacity that is not currently being utilised. Increasing the facility capacity will increase the productivity of the operation without having to upgrade or install additional plant and equipment.

Midal operates within a global market. It is under constant pressure to control and reduce costs to remain competitive and maintain its customer base.

Increasing the efficiency of the facility will also ensure the ongoing employment of existing staff and those of the supporting suppliers and contractors.

Midal receives molten aluminium from the adjacent Tomago Aluminium Smelter. An increase of 10,000 tpa of molten metal from the smelter will reinforce the smelter customer base.

In addition the use of additional molten aluminium by Midal reduces the need elsewhere to remelt solid aluminium with associated environmental impacts and energy consumption.

2.4.2 Replacement of the Existing Waste Water Treatment Plant

Midal originally chose to install an Envirocycle anaerobic/aerobic waste water treatment facility (WWTP) with an associated subsurface irrigation system to process domestic effluent from its facility.

The WWTP failed to meet EPL performance criteria and was isolated from the irrigation area in September 2014. Midal and the treatment plant provider continued to try and improve the performance of the plant however it has become apparent that the plant is not able to treat the domestic effluent from the Midal facility to an acceptable standard.

Since the WWTP was isolated from the irrigation area the partially treated effluent has been collected and trucked to a nearby Hunter Water regional waste treatment plant.

The WWTP continues to operate at a significant cost with the partially treated effluent unable to be disposed of by irrigation and having to be collected and transported away from the site for disposal.

Midal proposes to install a septic tank with pump out to treat and dispose of domestic effluent from its facility. This is similar to the majority of industrial facilities located in the Tomago area. There is no regional sewer system available for Midal to access. Hunter Water have indicated that sewer would not be available for the foreseeable future.

In the interim Midal proposes to install and utilise a septic tank with pump out system.

The benefits associated with such a modification include:-

- Installation of a treatment system with proven performance;
- Elimination of (or at least substantially controlling) the potential for groundwater contamination caused by poorly treated effluent being irrigated;
- Discontinuation of the aerated treatment component of the WWTP which is costly and proven to be ineffective; and
- Reduced running cost for the septic with pump out system when compared with the Envirocycle system.

2.5 Alternatives

2.5.1 Increase in molten metal received and metal product dispatched

The alternatives considered in relation to an increase in the molten metal received and metal product dispatched are:

- Do nothing
- Receive solid aluminium to increase production capacity
- Increase molten metal receival and increase metal product dispatch as per this modification request

Do Nothing

The Do Nothing option would continue to see business as usual exist with no opportunity to increase production to meet customer demand, reduce operational cost per unit of product and secure the future of Midal. Doing nothing would not achieve the benefits Midal is seeking.

Receive Solid Aluminium

The receival of solid aluminium to be remelted would be financially and environmentally unacceptable.

Casting of molten metal to a solid product, transportation to Midal with remelting at Midal would substantially increase the raw material cost to Midal and is not viable for Midal. It fails to confirm one of the fundamentals of Midal attraction to the Tomago Site i.e a supply of molten metal aluminium.

Remelting of solid aluminium will require additional energy and would increase greenhouse gas emissions. Maintaining molten metal at the required temperature prior to casting is more energy efficient and greenhouse friendly.

Increase Molten Metal Receival

This is Midal's preferred option. Midal has deliberately located close to the Tomago Aluminium smelter. Midal has contracts to receive 50,000 tpa of molten metal and is seeking to increase this to 60,000 tpa. The molten metal is received directly from the smelter by private road. Midal maintains the molten metal temperature prior to casting utilising natural gas as the energy source.

Tomago smelter benefits from the sale of the proposed additional 10,000 tpa to a major customer during a period when metal supply to the world market is high and price is low enhancing its long term viability.

Midal benefits by increasing production on a fixed capital basis, reducing production costs and securing its long term viability.

2.5.2 Replacement of the existing Waste Water Treatment Plant

The alternatives considered in relation to the replacement of the existing Waste Water Treatment Plant with a septic tank/pump out system are:

- Do nothing
- Replace the existing plant with another type of aerated treatment plant
- Connect to a HW sewer system
- Install the septic tank/pump out system to replace the existing waste water treatment plant.

Do Nothing

The Do Nothing option sustains the existing poorly performing WWTP with its associated high operational and maintenance costs without producing an effluent that meets EPL requirements. The "treated "effluent cannot be disposed of by irrigation and needs to be recovered and transported to another treatment plant for ultimate treatment and disposal. The Do Nothing option costs Midal time and financial resources for no real benefit. The Do Nothing option is not acceptable to Midal.

Install another aerated treatment plant

This option is possible however Midal recognises that it is a more capable rod, wire & cable manufacturer than a WWTP operator. The cost to select, construct, install, commission and operate another WWTP would be substantial. Midal anticipates that an area sewer system may become available within the near future resulting in such a plant becoming redundant.

Should the replacement aerated treatment plant also not be able to meet stringent EPL limits on a continuous basis there is a risk of soil and groundwater contamination occurring associated with subsurface effluent irrigation.

Midal does not contemplate another aerated waste water treatment system being consistent with the need to be globally efficient and would prefer to install a cost and environmentally effective system that will in the short term meet its needs, whilst awaiting the availability of a sewer connection for the site.

Connect to Sewer

This would be a preferred option for Midal if a sewer system was available. Discussion with Hunter Water indicated that it was unlikely that they would construct a sewer main for the area. Westrac to the east of Midal (approx. 3km) have their own pump station however the cost of connecting from the Midal Site would be considerable. The pump station was also designed to meet the needs of the Westrac facility therefore extra capacity is probably not available.

Another development is being planned in the Tomago Aluminium buffer zone. Midal would be interested in discussing its needs with the developer should the development progress.

In the interim Midal proposes to progress with its septic tank – pump out modification whilst awaiting other possible opportunities.

Install a Septic Tank – Pump out System

This is Midal's preferred option. As previously detailed in this report the existing Envirocycle WWTP has failed to treat domestic effluent from the Midal facility to EPL requirements. Since September 2014 the partially treated effluent has not been directed to the onsite irrigation area and instead collected and taken offsite to a Hunter Water regional treatment plant for further treatment and disposal.

Midal proposes to utilise septic tank treatment followed by storage and effluent pump out. The effluent will then be taken to a regional waste water treatment plant for further treatment and disposal.

The Envirocycle plant consists of 2 anaerobic chambers followed by an aeration chamber and an aerobic storage chamber. Subject to discussion with PSC it may be an option to convert the aeration chamber to a third anaerobic chamber and allow the septic effluent to be collected in the final chamber for pump out. If this was not appropriate a standard septic system with pump out will be needed.

The ongoing operation of the existing WWTP is costly and is not meeting performance requirements. Midal is still required to take the partially treated effluent off-site for disposal. It cannot dispose of effluent to its purpose built irrigation area due to the poor quality of the effluent.

Midal considers that the installation of a septic systems with pump out and off-site disposal of effluent is its preferred option at this time.

2.6 Proposed Construction Activities

2.6.1 Capacity Upgrade

As previously detailed an increase in molten metal received and product metal dispatched does not require any modification to existing plant and equipment and can occur immediately based on approvals required and contract agreement with the Tomago Aluminium Smelter.

2.6.2 WWTP Modification/Replacement

The proposed modification/replacement of the WWTP is currently being reviewed in consultation with PSC. A preliminary drawing of the modification proposal can be found in Appendix 5. The project once finalised will not result in significant construction activity. Should modification of the existing plant be approved by PSC no construction activity is contemplated. Should a new facility be required it is anticipated that a standard design system will be installed by a specialist contractor near to the existing WWTP site. All services are available at the site. Installation will be done during daylight hours.

3.0 STATUTORY PLANNING

3.1 Environmental Planning and Assessment Act 1979 (EPA&A Act)

The approved project was declared to be a major project and approval was granted under Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) in 2012.

On 1 October 2011, Part 3A of the EP&A Act was repealed. At the same time, savings and transitional arrangements were put in place for projects that are classified as 'transitional Part 3A projects'. A transitional Part 3A project is defined in clause2 of schedule 6A of the EP&A Act, which includes projects which were approved prior to the repeal of Part 3A of the EP&A Act. For these types of projects, Part 3A of the EP&A Act (as in force immediately before the repeal of that Part and as modified under Schedule 6A after the repeal) continues to apply.

This project is defined as a transitional Part 3A project as it was approved prior to the repeal of Part 3A of the EP&A Act. As such, any modification to the approval is to be considered under section 75W of the EP&A Act.

Under section 75W of the EP&A Act, a proponent may request that the Minister modify the Project Approval if the project, as modified, would be consistent with the project as approved.

As the proposed modifications would be consistent with the existing approval, the Proponent requests that the Minister modify the 2012 Project Approval as outlined in this assessment.

Section 75W (3) of the EP&A Act also states that the Director-General may notify the proponent of environmental assessment requirements.

3.2 Permissibility of the Project

3.2.1 Port Stephens Local Environmental Plan 2000

The site is located entirely within the Port Stephens Local Government Area (LGA), and therefore the Port Stephens Local Environmental Plan 2000 (PSLEP 2000) is the relevant local environmental planning instrument. As indicated in Section 3.1, as the original project was subject to approval under Part 3A of the EP&A Act, it is at the Minister's discretion whether the provisions of the Port Stephens Local Environment Plan (LEP) 2000 are to be taken into account.

Subject to Clause 5 of SEPP Major Development, any inconsistencies between SEPP Major Development and another environmental planning instrument, SEPP Major Development prevails.

Permissibility

The site is zoned 4 (a) Industrial – General under the PSLEP 2000. The objectives of this zone are:

a) *To enable the development of a wide range of industrial, service and storage activities and a limited range of business and retail activities*

b) *To allow industrial development only after comprehensive hazard analysis and risk assessment provide adequate safeguards designed to protect the surrounding environment and ecological balance.*

c) *To regulate industries in proximity to urban localities and to ensure that adequate buffers are provided in the vicinity of adjacent zones, so that activities near the boundary of an adjacent zone will not have a significant detrimental effect on the amenity of that zone, and*

d) *To enable the most efficient and effective industrial development of waterfront industrial land by encouraging associated waterfront land uses sympathetic to the environment and ecology of the waterfront lands.*

e) *To allow commercial, retail, residential, or other development only where it is associated with, ancillary to, or supportive of, industrial development.*

f) To limit development for the purpose of bulky goods salesrooms or showrooms.

g) To encourage a high standard of design and amenity in industrial areas.

The project is consistent with the objectives of the PSLEP 2000.

Permissibility of development on land zoned 4 (a) Industrial – General is outlined in clause 23 of the PSLEP. Item 4 indicates that development 'permissible with consent' is any development not listed in Item 3 or 5. Item 3 applies to exempt development while Item 5 applies to 'prohibited development'

The project does not meet the definition of 'exempt development' in Item 3 or 'prohibited development' in Item 5 and is therefore permissible with Council consent. Section 2.2.2 reflects that SEPP Major Development prevails over the PSLEP and the consent authority is the Minister. As such, Council's consent is not required for the proposed modification.

3.2.2 State Environmental Planning Policy (Major Development) 2015

The Major Development SEPP was used to identify developments that were considered to be Major Developments under the EP&A Act before the EP&A Act was amended to remove this definition. However, the approved Facility and any subsequent modifications continue to be assessed and determined under Part 3A transition provisions. The proposed development thus retains its ability to seek modification as a Major Development as originally approved under the Major Development SEPP.

The proposed modification would be in keeping with the characteristics of the site and surrounding land with its current usage as an industrial area.

3.2.3 State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)

SEPP 33 was designed to ensure that sufficient information is provided to consent authorities to determine whether a development is hazardous or offensive. Conditions can then be imposed on the development to reduce or minimise adverse impacts. Any development application for a potentially hazardous development must be supported by a Preliminary Hazard Analysis (PHA).

As the proposed modifications are not introducing any new materials or processes to the site, and will be undertaken in a manner which includes appropriate safety systems, it does not constitute an additional hazardous or offensive development that would require further consideration under SEPP 33.

3.3 Commonwealth Matters

3.3.1 Environment Protection and Biodiversity Conservation Act 1999

In addition to State-based approvals, actions that may significantly affect matters of National Environmental Significance (NES) require assessment and/or approval from the Commonwealth under the *Environment Protection and Biodiversity Conservation* (EPBC) *Act1999*. The EPBC Act lists eight matters of NES that must be addressed when assessing the environmental impacts of a proposal.

A review of the potential for the proposed modification to impact on NES matter was undertaken. Due to the proposed modifications being undertaken wholly within the boundaries of the existing approved project. It is considered highly unlikely that any NES matters would be impacted by the proposed modification. No referral to the Commonwealth Department of Environment is considered necessary.

3.4 Other Approvals Required

The Midal facility currently operates under Midal's existing Environmental Protection Licence (EPL) No. 20254.

The proposed modification seeks to increase annual molten metal receival and product dispatch from 50,000tpa to 60,000tpa. It would also seek to replace the existing WWTP with a septic pump out system. Midal will consult with the EPA as EPL modifications would be required.

3.5 Compliance with Existing Approval

Project approval (10-0039) for the Midal facility was issued on the 5 August 2012. Midal has worked diligently to comply with the word and intent of each approval condition. As required by Condition 4.4 of the DA an Independent Environmental Audit (IEA) was required to be undertaken every 3 years from the date of the approval. The IEA was completed in October 2015. A copy of the audit findings together with the actions undertaken or propose to be undertaken can be found in Appendix 2.

The independent audit established overall compliance was achieved. Out of a total of 239 conditions, 44 non-conformances (11 duplicate findings) and 11 improvement opportunities (1 duplicate finding) were identified.

4.0 CONSULTATION

4.1 Department of Planning and Environment

Prior to the preparation of this EA Midal communicated with the Department of Planning and Environment outlining the proposed increase in molten metal receival and processed at the Midal facility. The department confirmed that the proposal would be assessed as a modification to the existing Project Approval (10-0039). The Department advised that Midal should prepare an Environmental Assessment in support of the proposal and that the EA should include but not be limited to certain operational and environmental issues. The issues to be discussed and where they are addressed in the EA are detailed in Table 1.

Table 1 - Planning and Environment Requirements

Requirement	Addressed in the EA
• A discussion of the existing development and operations including a current aerial photo of the site	Section 1.4
• Site layout plan to identify the key components of the site layout	Figure 3
• A description of the site including a map of the site and surrounding land nearest residents, watercourses, other industry	Section 1.4
• A table detailing compliance with existing conditions of the approval.	Section 3.5
• A discussion of the proposed modifications including need and justification	Sections 2.1 -2.6
• Note any conditions of the approval that Midal seeks to have modified.	Sections 2.3
• Traffic – will there be any increase in traffic? How does this compare to existing and approved traffic movements?	Section 6.5
• Air quality – A project specific and cumulative air quality assessment is required, prepared in accordance with current EPA guidelines. What are the existing concentration and load limits for key pollution i.e. SO_2, NO_2, PMIO and CO? How will they increase? Consult with the EPA if necessary in preparing the EA.	Section 6.1
• Noise – Will there be a noise increase? What is the existing noise monitoring and are there any noise issues related to current operations.	Section 6.2

• Hazard and Risk – a preliminary risk screening in accordance with SEPP33 with a clear indication of class, quantity, package size and location of all dangerous goods and hazardous materials on site. • The assessment should identify the hazards arising out of the modifications and the existing site as well as any external hazards (i.e. natural hazards) to determine the potential for off-site impacts and estimate the combined risks from the existing site and modification (overall site)	Section 6.4
• Any other impacts should be assessed.	Section 5.0 for full discussion

4.2 Port Stephens Council (PSC)

Discussions were held between Midal representative and PSC late December 2015 regarding the proposed charges to the WWTP. They advised that:-

(i.) PSC are OK in principle with the changeover to a pump out system.

(ii.) PSC will require submission of a Section 68 application with an accompanying design

(iii.) PSC will review the concept design prior to finalisation (a preliminary drawing of the modification proposal being presented appears in Appendix 5)

Midal is proceeding with preparation of all the information requested.

4.3 EPA

Discussion were held with the EPA in November 2015 concerning the proposed modifications. The EPA advised that:-

(i.) Capacity upgrade – The only issue of concern was air emissions and that Midal should establish an understanding and control emissions to meet EPL requirements. A detailed study of all concentrations and pollutant mass emissions was undertaken resulting in an EPL variation being submitted to remove the requirement to oxygen correct all emission results. A copy of the supporting document submitted with the EPL variation is included in the EA as Appendix 3.

(ii.) WWTP replacement – The EPA was understanding of the need to modify waste water treatment at Midal. They did not anticipate that they would be involved and that PSC would need to be consulted. They did suggest that sufficient emergency effluent volume should be provided to ensure pump out delays can be accommodated.

The EPA were not concerned about transportation.

5.0 PRIORITISATION OF ISSUES

A risk analysis was completed to rank potential environmental risks associated with the proposed modification.

5.1 Risk Assessment Method

The environmental risk assessment was carried out in accordance with AS/NZS ISO 31000:2009, Risk Management – Principles and Guidelines. This involves:

- Evaluating likelihood of occurrence
- Evaluating consequences
- Assigning a risk rating.

The purpose of the risk assessment was to identify the key issues for further assessment as part of the environmental assessment process, associated with the proposed modification.

5.1.1 Evaluating Likelihood

The likelihood of an impact occurring can be described in terms of probability. Overlaying this is the need to recognise the uncertainty that may be associated with the possible impacts, particularly during the initial risk assessment process. Where there is scientific uncertainty, a cautious approach would assign a higher level of risk.

Each identifiable impact can be assigned a likelihood between remote and almost certain. In simplifying the possible impacts for the purpose of a risk assessment an element of subjectivity is introduced. The purpose of the risk assessment is not necessary to agree on the probability of any particular impact, but to facilitate an understanding of the relative probability of different impacts.

Table 2 summarises the possible likelihood categories used in risk assessment.

Table 2 - Likelihood and Probability of Risk Occurrence

Likelihood	Description	Probability
Almost Certain	Expected to occur	>85%
Likely	Probably will occur	50-85%
Possible	May Occur	21-49%
Unlikely	Not expected to occur in most circumstances	1-20%
Remote	May occur in exceptional circumstances	<1%

5.1.2 Evaluating Consequences

Evaluating the consequences of an impact requires a degree of subjective assessment as the likely consequences of an impact may consist of several elements.

The elements that have been considered in this risk assessment are described in Table 3.

Table 3 - Consequences of Occurrence

Consequence		Catastrophic	Major	Moderate	Minor	Minimal
Magnitude	Spatial	Whole of region	The site and surrounding areas	The Whole Site	A part of the site	A small isolated area.
	Intensity	Lethal/extreme for individuals or communities	Lethal impacts on some species	Acute/moderate impact on growth, recruitment or survival rates.	Acute impacts on some species	Chronic/low level behavioural, lifespan or condition effect
Temporal	Duration	Permanent	Long term effect (multiple generations)	Medium Term	Short term impact (single generation)	Single incident transient event

Consequence		Catastrophic	Major	Moderate	Minor	Minimal
	Timing (periodic events)	Permanent interruption of ecosystem cycle	Regularly interrupts life cycle	Regularly interrupts one life cycle	Occasional interruption of feeding or breeding	Occurs outside of breeding times
Ecological	Values	Wilderness or nationally threatened species	Conservation area or listed species	Native flora and fauna	Parkland	Previously disturbed areas.
	Sensitivity	Would not recover	Significant change to ecosystem function	Moderate change to ecosystem function	Would recover with some changes	Would recover completely
Social	Number of people	Loss of life	Large number of people directly impacted	Several people directly impacted, or many indirectly	Some people directly impacted, or many indirectly	Some people indirectly affected
	Heritage considerations	Major degree of impact on place(s) or object(s) with an exceptional level of significance	Major degree of impact on significant place(s) or object(s) with a high level of significance	Substantial degree of impact on significant place(s) or object(s)	Impact on place(s) or object(s) with limited levels of significance , or, minor impact to significant place(s) or object(s)	Impact on place(s) or object(s) assessed below significance threshold
Economic	General	Several million dollars in lost revenue in remediation costs	A million dollars in lost revenue or remediation costs	Half a million dollars in lost revenue or remediation costs	Several thousands of dollars on lost revenue or remediation costs	Minimal Losses.
	Financial/ business Costs	$10,000,000	<$10,000,000	<$1,000,000	<$100,000	No loss

5.1.3 Risk Assessment Matrix

Based on the assessment of likelihood and consequence (as described above), foreseeable impacts can be assigned a risk rating. Table 4 summarises the risk assessment.

Table 4 - Risk Assessment Matrix

	Consequences				
Likelihood	Catastrophic	Major	Moderate	Minor	Minimal
Almost Certain	Significant	Significant	Very High	High	Medium
Likely	Significant	Very High	High	Medium	Low
Possible	Very High	High	Medium	Low	Very Low
Unlikely	High	Medium	Low	Very Low	Negligible
Remote	Medium	Low	Very Low	Negligible	Negligible

5.2 Potential Impacts

Table 5 shows the results of the environmental risk assessment for the proposed modification. This, combined with the Director-General's requirements (which identified key issues for consideration) was used to determine the key issues for the modification. These issues have been assessed in the EA.

- Air quality and odour
- Traffic and transport
- Groundwater
- Hazards and risks
- Noise
- Greenhouse gas and climate change

Table 5 - Environmental Risk Assessment

Issue	Potential Impacts	Likelihood	Consequence	Assessed Risk Level	Comment/Response
Air Quality and Odour	• Release of gases from the additional metal receival, heating and processing • Dust emission during installation of septic tank • Odours from septic tank	Likely	Minor	Medium	Dispersion of air pollutants would occur as from the existing operation. The additional metal processing would increase the frequency of emissions but not the magnitude. No odours are currently experienced or complained about by the community. Transient odours may occur when pumping out the proposed septic tank. Dust Management practices would need to be implemented during the septic tank installation. Air quality and odour were identified in the Director-General's requirements as a key issue and are considered in the EA.
Noise	• Noise from operations exceed noise limits and impact on sensitive receivers • Noise from additional transportation of product	Possible	Minor	Low	Existing operations have been proven to comply with noise limits. The impact of additional product transportation on noise levels will need to be evaluated. Noise was identified by the Director-General as a key issue and will be considered in this EA.
Traffic and Transport	• An increase in the heavy and light transport to the site associated with increased production leading to traffic impacts on local road networks,	Possible	Minor	Low	The proposed modification would result in a 20% increase in trucks moving the finished product. These would be a minimal impact on local road networks. The Director-General identified transport as a key issue to be addressed in the EA.

Issue	Potential Impacts	Likelihood	Consequence	Assessed Risk Level	Comment/Response
Hazards and Risks	• Storing, processing and transporting of Hazardous goods pose a risk to people, property and the environment	Unlikely	Moderate	Low	Hazard analysis and audits have been prepared and undertaken at the existing facility. A further review will be undertaken to address the proposed modifications and increase in production. The Director-General identified this as a key issue to be addressed in the EA.
Greenhouse Gas and Climate Change	• Emissions from processing additional molten aluminium, energy use during heating of molten metal contributing to global warming	Likely	Minor	Medium	Energy efficiency measures have been and will be incorporated into the increased molten metal processing.
Groundwater	• Groundwater contamination from septic tank	Unlikely	Minor	Very Low	Septic Tank will be designed and installed in accordance with PSC requirements. Regular pump out will minimise volume of septic effluent held. Groundwater flows towards Hunter River. Monitoring will detect any leakage.

5.3 Final Assessment

The final prioritisation of issues identified for the proposed modification is:

Medium

- Air quality
- Greenhouse gas and climate change

Low

- Traffic and Transport
- Hazards and Risks
- Noise

Very Low

- Groundwater

6.0 ENVIRONMENTAL ASSESSMENT

6.1 Air Quality and Odour

6.1.1 Existing Condition

Midal obtained Project Approval for the Tomago facility on the 5th August 2012. Schedule 3, Air Quality Conditions 1-6 detailed the Specific Environmental Condition relating to air emissions and controls. The Requirements were as follows;

i. Midal shall not emit offensive odours
ii. Midal shall implement "best practice air quality management during construction and operation and minimise any visible air pollution".
iii. Comply with EPL
iv. Minimise the release of greenhouse gas emissions
v. Prepare and implement an Energy Efficiency Plan
vi. Prepare and implement an Air Quality Management Plan

During the period since commencement of operation of the plant (July 2014), no odours have been detected emanating from the facility. In addition no complaints have been received concerning odours from the facility or in fact about any aspect of facility operation.

Midal has implemented "best practice" Air Quality Management. Of particular focus has been the use of natural gas to heat the two holding furnaces and two tilting furnaces minimising air emissions.

Midal operates under EPL 20254. A number of modifications have been made to Midal's EPL relating to the oxygen correction required to be used when reporting air emission concentrations. The oxygen concentration correction limit has been modified from 3% to 17%. Midal is currently seeking to remove oxygen correction altogether from this reporting requirement on the basis that the oxygen levels being measured relate to the volume of cooling air being drawn into the stacks prior to the monitoring point and is not related to the combustion efficiency of the burners. The furnaces are not boilers and do not emit visible emissions associated with poor combustion practice.

Air Quality Impact Assessment was identified by the Department as a key issue that should be addresses in their EA to support the modification application.

The Air Quality Impact Assessment(AQIA)(AECOM, March, 2014) (Ref 2) specified the air emissions from the original development and the maximum ground level concentrations likely to result from the development, Midal has been operating for 18 months and is required to monitor emission concentrations and report mass emissions of the various pollutants. As detailed above Midal is still seeking to modify the oxygen correction requirement in its reporting however the mass emission rate of the various pollutants can be compared as the mass emitted is independent of oxygen correction.

It should also be noted that the EPA have removed SO_2 and CO from Midal's EPL as they consider that the impacts from the pollution is negligible.

The comparison of the original AQIA mass emissions used and the actual performance to date is detailed in Table 6 and Table 7. Also included is the likely increase in mass emissions associated with a 20% increase in receival and production, based on the average performance over the 5 tests.

Table 6 demonstrates that the particulate mass emission rates used in the original AQIA to support the development were in general very conservative, when compared with actual emission rates determined by emission testing.

In Table 7 all actual NOx mass mission rate fall below the original AQIA estimates. In addition all the emission rates for the proposed upgrade also fall below the AQIA estimates.

The Summary and Conclusion from the original AQIA is reproduced below:

"6.0 Summary and Conclusion

An AQIA was undertaken for the Midal aluminium rod and conductor manufacturing operations at Tomago, NSW. The Midal facility is located adjacent to the TAC smelter.

The main source of emissions at the facility is the primary production process, where molten aluminium obtained from the TAC smelter is maintained in a molten state in natural gas-fired holding furnaces and tilting Furnaces prior to manufacturing. Dispersion modelling was undertaken for VOCs (as benzene), NOx, CO, PM_{10}, and SO_2 emissions from four rooftop exhaust stacks associated with the holding and tilting furnaces within the facility building.

*Background concentrations for NOx, PM_{10} and SO_2 from Beresfield were used in the assessment, which were taken from the previously conducted 2012 Air Quality Assessment*1. All background concentrations used were below the respective pollutant EPA impact Assessment Criteria, with the exception of the maximum SO_2 1 hour concentration.*

The CALPUFF model was used to predict the pollutant concentrations for the worst case typical operational scenario at 10 sensitive receptor locations around the facility, with predicted impacts from the stack emissions not forecast to exceed the respective EPA impact assessment criteria for any pollutants except SO2. The maximum 1 hour SO2 concentration was predicted to exceed the criterion due to the elevated background concentration of this pollutant. It should be noted that the maximum predicted incremental impact of SO2 at the modelled receptors accounts for less than 1% of the EPA 1 hour criterion. On this basis, predicted impacts of the facility operations on the maximum SO2 1 hour concentration are not considered to be significant.

Due to low predicted incremental concentrations associated with the operation of the Midal Facility, no mitigation measure were recommended".

The original AQIA established that there would be no adverse impact on air quality associated with the Midal development. The actual impact from the facility, when emission rates in general are less than those used in the original AQIA would be substantially less

Table 6 - *1 Mass Emission of Particulates (mg/sec)

	Original AQIA *2 Estimate	Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015	Ave	After upgrade to 60,000 tpa
Holding Furnace No. 1	39	10.3	15.4	8.2	1.8	6.5	8.4	10.1
Holding Furnace No. 2	39	7.1	7.4	6.3	15.6	6.8	8.6	10.4
Tilting Furnace No. 1	11	3.1	2.6	15.3	10.2	20.6	10.4	12.4
Tilting Furnace No. 2	11	4.9	21.4	8.6	9.7	17.6	12.4	14.9

***1** Calculated on (mass of particulate collected ÷ volume of emission sampled) x discharge volume all at 0°C, dry gas, 1 atmosphere. [(mg ÷m3) x m3/sec = mg/second].
***2** Air Quality Impact Assessment – Midal Cables – Tomago Facility Modelling – AECOM, March 2014 (Ref 2)

Table 7 - *1 Mass of Emission NOx as NO_2 Equivalent (mg/sec)

	Original AQIA *2 Estimate	Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015	Ave	After upgrade to 60,000 tpa
Holding Furnace No1	230	100	176	7.2	34	31	70	84
Holding Furnace No2	230	70	42	51	4.8	8.8	35	42
Tilting Furnace No1	70	27	20	27	22	32	26	31
Tilting Furnace No2	70	52	38	32	28	5.1	31	37

***1** Calculated from NOx as NO_2 equiv. calc X discharge volume 0°C, dry gas, 1 atmosphere
***2** Air Quality Impact Assessment – Midal Cables – Tomago Facility Modelling AECOM, March 2014. (Ref 2)