

STATEMENT OF ENVIRONMENTAL EFFECTS

**MODIFICATION APPLICATION (No. 17)
(MADE PURSUANT TO S.4.55(1A) OF THE
ENVIRONMENTAL PLANNING & ASSESSMENT ACT)**

**APPLICATION TO MODIFY PROJECT APPROVAL MP06_0228
SHOALHAVEN STARCHES EXPANSION PROJECT**

**RELOCATION OF APPROVED BAGHOUSE FOR STARCH DRYER NO. 5
INSTALLATION OF SERVICE LIFT ADJACENT TO STARCH DRYER NO. 5
ELEVATION OF APPROVED SERVICE CONDUIT ABOVEGROUND TO PACKING PLANT
USE OF WOODCHIPS AS PART FUEL SOURCE IN BOILERS 2 AND 4
SEEK TO MODIFY CONDITION 14J(e) OF PROJECT APPROVAL MP06_0228**

**SHOALHAVEN STARCHES
BOLONG ROAD, BOMADERRY**

**Prepared for
SHOALHAVEN STARCHES PTY LTD
December 2019**

COWMAN STODDART PTY LTD

Statement of Environment Effects

Project	Application to Modify Project Approval MP06_0228, Shoalhaven Starches Expansion Project (Modification Application No. 17)
Address	Bolong Road Bomaderry
Our ref:	19/47
Prepared by	Stephen Richardson
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EXECUTIVE SUMMARY

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for food and industrial markets both locally and internationally.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including starch, gluten, glucose and ethanol.

Project Approval MP06_0228 was granted by the Minister for Planning on the 28th January 2009 for the Shoalhaven Starches Expansion Project. This approval also encapsulated previous approvals for the site into one overall approval for the site (at that time).

The Shoalhaven Starches Expansion Project sought to increase ethanol production at the Bomaderry plant in a staged manner from 126 million litres per year to 300 million litres per year. To accomplish the increase in ethanol production, this project required a series of plant upgrades and increase in throughput of raw materials, principally flour and grain.

Following the Minister's determination Shoalhaven Starches have been implementing and commissioning works in accordance with this Project Approval.

Shoalhaven Starches now propose to undertake the following modifications to the Project Approval MP06_0228:

- To relocate the approved location of the baghouse associated with No. 5 Starch Dryer from the western side of this building to the northern (Bolong Road) elevation of this building.
- To install a service lift adjacent to the western wall of the No. 5 Starch Dryer to enable ongoing access for Shoalhaven Starches personnel to the floors within the building.
- To modify the pipework that has been approved extending from the Shoalhaven Starches factory site located on the southern side of Bolong Road to the approved Packing Plant that is to be constructed on the northern side of Bolong Road. Under the current Project Approval this service pipework was to be provided entirely underground. This Modification Application seeks to elevate a portion of the pipework above ground level within the Packing Plant site on the northern side of Bolong Road.
- To alter the fuel source for Boilers Nos. 2 and 4 from solely coal, to include a blend of woodchips and coal. In this regard it should be noted that woodchips were previously used as a fuel source in Boiler 2 prior to its conversion to solely coal as part of Mod. 13.

- In addition, the modification application also addresses an issue that has arisen following the Noise Validation Report (NVR) prepared by Harwood Acoustics in connection with the approved Flour Mill B prepared pursuant to condition 14J of the Project Approval. The NVR identified that one of the silencers fitted to the exhaust fans situated on top of the Flour Mill B building exceeds the relevant maximum sound pressure level as detailed in condition 14J(e) of the Project Approval. This is a technical non-compliance. The operations on-site do not exceed the site's overall EPL noise limits. The Department of Industry, Planning and the Environment (DIPE) have suggested that condition 14J(e) be modified (as part of this modification application) to alter the design specifications of the silencers. This Modification Application therefore addresses this matter as well.

This Statement of Environmental Effects (SEE) has been prepared in support of this Modification Application. Plans of the Modification Proposal are included in **Annexure 1**.

The Shoalhaven Starches Expansion Project was a 'transitional Part 3A Project' for the purposes of Schedule 6A of the Environmental Planning & Assessment Act. As of the 1st March 2018 the transitional arrangements for former Part 3A projects have been discontinued. The discontinuation of the transitional arrangements for Part 3A projects and concept plans means that modifications are assessed through the State Significant Development (SSD) pathway. As such this Modification Application is made pursuant to Section 4.55(1A) of the Environmental Planning & Assessment Act 1979.

The preparation of this SEE has been undertaken following consultation with the DIPE in which it was determined that formal requirements from the Secretary of the Department were not necessary for this Modification Application.

The SEE is supported by assessments:

- An Air Quality Impact Assessment by GHD (**Annexure 2**). GHD identify a marginal increase in predicted odour impacts, however these increases are not attributable to the proposed modifications associated with this application. Odour criteria will be met at all residential sensitive receptors and GHD consider it highly unlikely that the increase in odour would be detected at sensitive receptors.

GHD also conclude that air quality impacts are predicted to comply with the criteria at all residential sensitive receptors. GHD state that Shoalhaven Starches have implemented reasonable and feasible mitigation measures on site to reduce the potential air quality impacts from the new boiler.

Overall GHD conclude that the proposal should be acceptable from an air quality perspective.

- A Noise Assessment by Harwood Acoustics (**Annexure 3**) makes the following conclusions:
 - There are no significant noise producing items of plant and equipment associated with the service lift or service conduit and the level of noise from the operation of the site will not be increased by these proposed modifications. The proposed new location of the baghouse adjacent to Starch Dryer No. 5 is not significantly different from the approved location. There will be no appreciable change to previously predicted noise levels from the baghouse based on the new location compared with the approved location.
 - In order to resolve the technical noncompliance with condition 14J in relation to one of the silencers fitted to the exhaust fans on the top of Flour Mill B, Harwood Acoustics propose that condition 14(J)(e) be amended. Firstly, it is worth noting that Harwood Acoustics state the difference is not significant and for all fans combined, would not be discernible. Several of the fan / silencer combinations were below the specified level of 65 dBA at 3 metres, according to Harwood Acoustics, meaning that the inclusion of the B4263 silencer at 68 dBA does not increase the overall design goal for all fans combined above the initial 74 dBA equivalent combined level.
- The flooding assessment by WMA Water (**Annexure 4**) concludes that the modification works will not have any significant impacts on flood levels;
- The hazard analysis assessment by Pinnacle Risk Pty Ltd (**Annexure 5**) identifies the proposed works associated with this modification will not alter the findings of their earlier Preliminary Hazard Analyses.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in production rates from the site, nor will it involve any significant changes in level of impacts arising from the approved development.

The SEE concludes that the proposed modifications will have minimal environmental impacts; and the development to which Project Approval MP06_0228 as modified by the Modification Application relates, will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified.

1.0 INTRODUCTION

Project Approval MP06_0228 was granted by the Minister for Planning on the 28th January 2009 for the Shoalhaven Starches Expansion Project. This approval also encapsulated previous approvals for the site into one overall approval for the site (at that time).

The Shoalhaven Starches Expansion Project sought to increase ethanol production at the Bomaderry plant in a staged manner from 126 million litres per year to 300 million litres per year. To accomplish the increase in ethanol production, this project required a series of plant upgrades and increase in throughput of raw materials, principally flour and grain.

Following the Minister's determination Shoalhaven Starches have been implementing and commissioning works in accordance with this approval.

Under the Project Approval Shoalhaven Starches constructed No. 5 Starch Dryer within the main factory site on the western side of Abernethy's Creek. Under Modification No. 16 to the Project Approval Shoalhaven Starches proposed to replace the secondary cyclones in Starch Dryer 5 with a baghouse. The objectives of this work was to improve dryer efficiency and improve air emissions from this Dryer. The baghouse separates approximately 500 kg per hour of starch (12% moisture content) from the airstream (250,000 m³/minute air flow). This baghouse was to be housed within a proposed extension to be located on the western side of the No. 5 Starch Dryer building. It is now proposed under this Modification Application to relocate this baghouse to the northern (Bolong Road) side of the No. 5 Starches Dryer building.

It is also proposed under this Modification Application to install a service lift adjacent to the western wall of the No. 5 Starch Dryer to enable on-going access for Shoalhaven Starches personnel to the different levels within the building.

It is also proposed to modify the pipework that has been approved extending from the Shoalhaven Starches factory site located on the southern side of Bolong Road to the approved Packing Plant that is to be constructed on the northern side of Bolong Road. Under the current Project Approval this service pipework was to be provided entirely underground. This Modification Application seeks to elevate a section of the pipework above ground level located on the Packing Plant site on the northern side of Bolong Road.

The Modification Application also seeks approval to alter the fuel source for Boilers No. 2 and 4 from currently coal, to include a blend of woodchips and coal. In this regard it should be noted that woodchips were previously used as a fuel source in Boiler 2 prior to its conversion to solely coal as part of Modification No. 13.

In addition, the modification application also addresses an issue that has arisen following the Noise Validation Report (NVR) prepared by Harwood Acoustics in connection with the approved

Flour Mill B prepared pursuant to condition 14J of the Project Approval. The NVR identified that one of the silencers fitted to the exhaust fans situated on top of the Flour Mill B building exceeds the relevant maximum sound pressure level as detailed in condition 14J(e) of the Project Approval. This is a technical non-compliance, and the DPIE have suggested that condition 14J(e) be modified (as part of this modification application) to alter the design specifications of the silencers. This Modification Application therefore addresses this matter as well.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in production rates from the site, nor will it involve any changes in level of impacts arising from the approved development.

The Modification Application is made pursuant to Section 4.55(1A) of the Environmental Planning & Assessment Act. This SEE has been prepared in support of the Modification Application.

The Modification Application is supported by plans included in **Annexure 1**, and the following submissions:

- Air Quality Assessment prepared by GHD Pty Ltd (**Annexure 2**);
- An Acoustical Impact assessment prepared by Harwood Acoustics (**Annexure 3**);
- A submission addressing flood issues prepared by WMA Water (**Annexure 4**);
- A submission addressing the modified proposal having regard to the most recent Preliminary Hazard Analysis undertaken for the proposal (Mod 16) prepared by Pinnacle Risk Management (**Annexure 5**).

It is considered that the components associated with this Modification Application will not have any significant adverse environmental impacts; and as a result of this Modification Application the development to which Project Approval MP06_0228 as modified relates will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified.

2.0 SITE AND SURROUNDS

2.1 LOCAL AND REGIONAL CONTEXT

The Shoalhaven Starches factory complex is situated upon various allotments of land along Bolong Road, Bomaderry, within the Shoalhaven local government area. The factory site is located on the southern side of Bolong Road on the northern bank of the Shoalhaven River with some operations located on the northern side of Bolong Road. The Shoalhaven Starches site (excluding the former Dairy Farmers and former Paper Mill sites) has an area of approximately 12.5 hectares.

The works associated with this modification proposal are situated on the following parcels of land:

- Lot 31 DP 1222627
- Lot 2 DP 538289
- Lot 16 DP 1121337
- Lot 1 DP 838753

Figure 1 is a site locality plan.

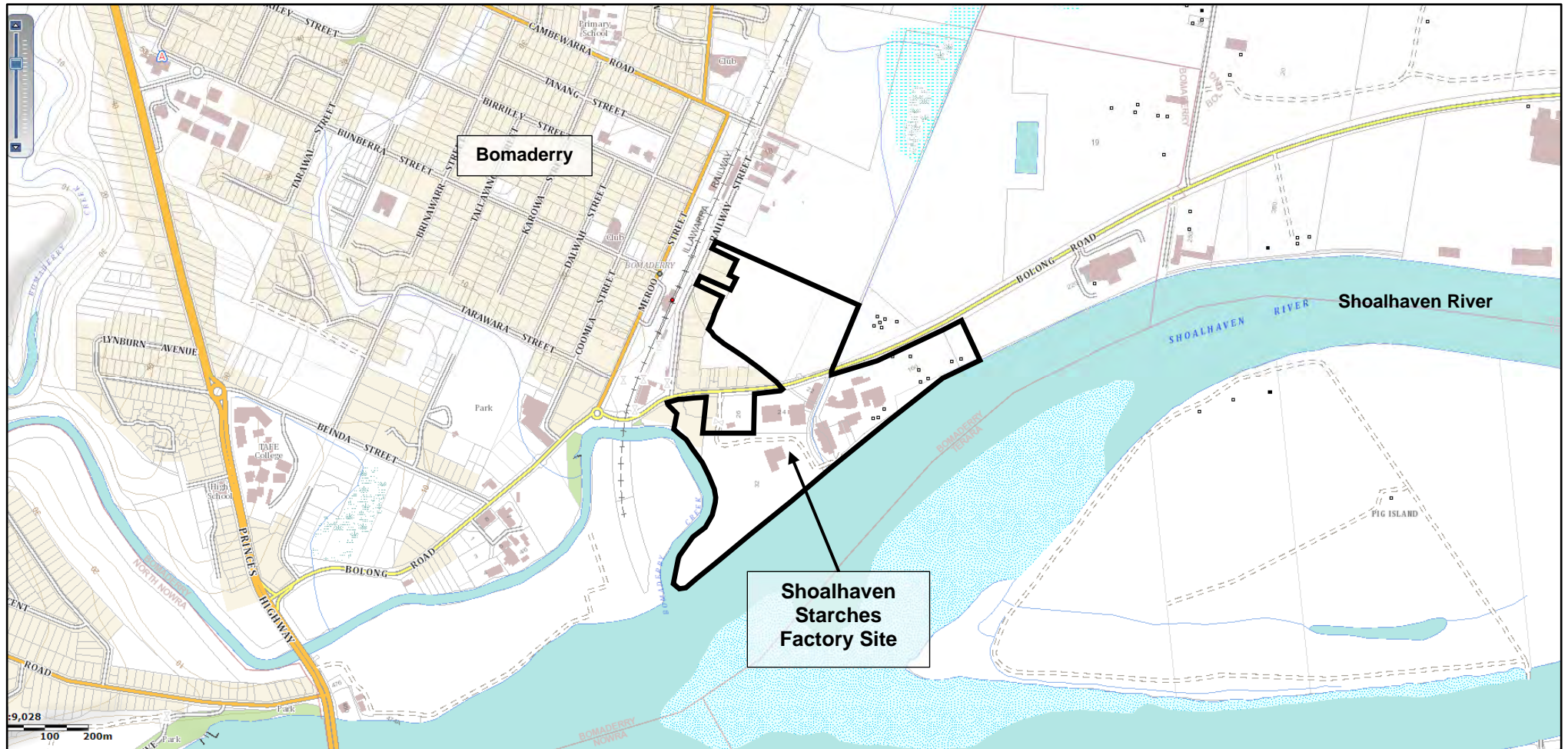


Figure 1: Site Locality Plan.

All of the lots associated with these modifications are zoned IN1 (General Industrial) zone under the provisions of SLEP 2014.

The town of Bomaderry is located 0.5 km (approx.) to the west of the factory site, and the Nowra urban area is situated 2.0 km to the south west of the site. The “Riverview Road” area of the Nowra Township is situated approximately 1000 metres immediately opposite the factory site across the Shoalhaven River.

The village of Terara is situated approximately 1.5 kilometres to the south east of the site, across the Shoalhaven River. Burruga (Pig) Island is situated between the factory site and the village of Terara and is currently used for dairy cattle grazing.

There are a number of industrial land uses which have developed on the strip of land between Bolong Road and the Shoalhaven River. Industrial activities have included a metal fabrication factory, the Shoalhaven Starches site and the former Dairy Farmers factory and Shoalhaven Paper Mill (now owned by the Manildra Group of Companies). The industrial area is serviced by a privately owned spur railway line that runs from just north of the Nowra-Bomaderry station to the Starches Site.

The state railway terminates at Bomaderry with a separate, privately owned spur line to the factory site. Shoalhaven City Council sewerage treatment works is situated between the railway line and the factory.

The Company also carries out irrigation activities on the Company’s Environmental Farm located over 1000 hectares on the northern side of Bolong Road. This area is cleared grazing land and also contains a wastewater treatment plan, wet weather storage ponds and spray irrigation lines. The wet weather storage ponds on the farm form part of the irrigation management system for the factory. The Environmental Farm stretches over a broad area of the northern floodplain of the Shoalhaven River stretching from Bolong Road in the south towards Jaspers Brush in the north. Apart from the Environmental Farm this broad area is mainly used for grazing (dairy cattle).

The factory site has direct road frontage to Bolong Road to the north. The Shoalhaven River flows along the southern boundary of the factory site.

Figures 2 and 3 are aerial photographs of the locality and the site respectively. **Figures 4, 5 and 6** shows the proposed locations of the various modifications proposed for the Shoalhaven Starches site.



Figure 2: Aerial Photograph of Locality



Figure 3: Aerial Photograph of Shoalhaven Starches factory site

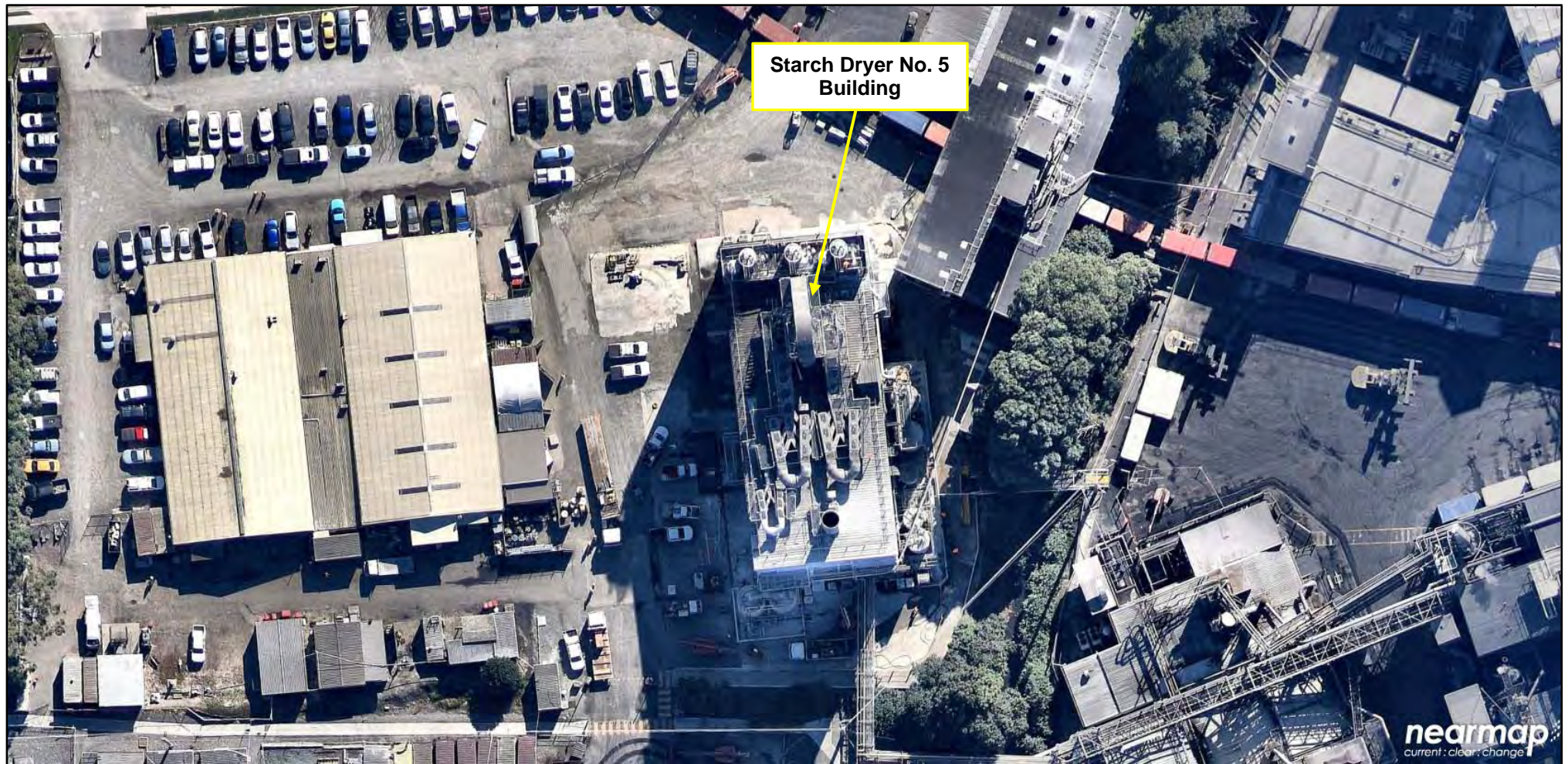


Figure 4: Aerial view of Starch Dryer No. 5



Figure 5: Aerial view of Packing Plant site on northern side of Bolong Road

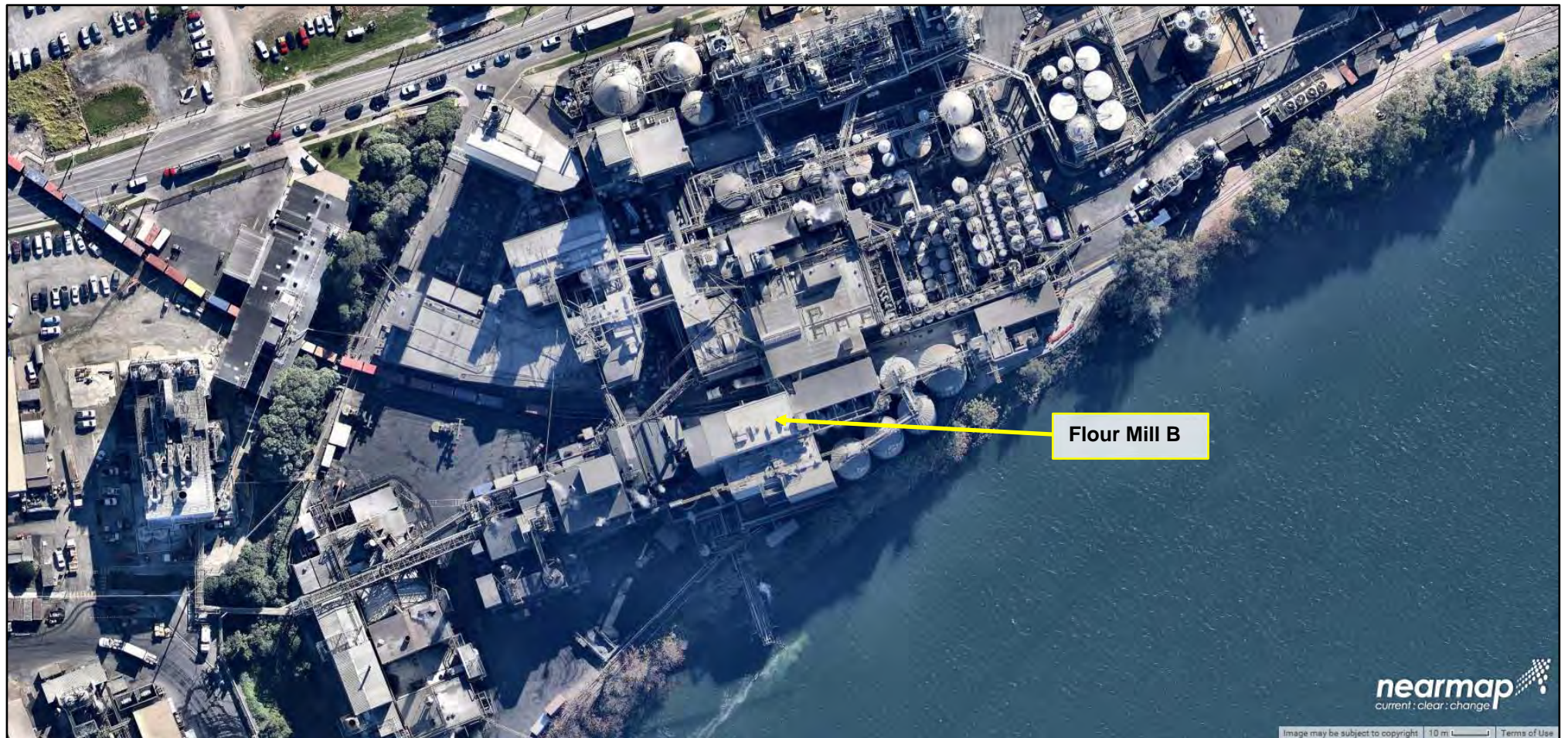


Figure 6: Aerial view of Flour Mill B

3.0 BACKGROUND

3.1 PRODUCTION PROCESSES

The production process at the Shoalhaven Starches plant has developed over a number of decades. Originally the plant was primarily concerned with the production of starch and gluten from flour. However, the Company has pursued a number of technological innovations particularly with respect to reducing the environmental impacts of the Company's operations. As a result, Shoalhaven Starches has been moving towards a "closed" system of production. Essentially this entails the efficient use of end products to ensure wastage is reduced to a minimum.

The first step in the production process is the delivery of flour and grain, by rail, from the Company's flour mills at Manildra, Gunnedah and Narrandera. The trainloads are brought into the plant via the switching yard at Bomaderry.

The Company received approval from the Minister for Planning for the erection of flour mills on site to enable the milling of part of the Company's flour requirements to be processed directly on the site. The remainder of the Company's flour requirements continue to be sourced from the Company's off-site flour mills.

Flour is transferred via storage to the "wet end" of the plant where fresh water is added. The subsequent mixing and separation process produces starch and gluten. The gluten is dried to enable it to be packaged and distributed as a high protein food additive for human consumption. This product is then taken from the site after packaging for both local and export markets.

The starch that is separated from the flour is either dried or remains in liquid form. The dried and liquid starch is sold to the paper and food industries. The starch is used for food, cardboard, paper and other industrial purposes. Liquid starch is used in the ethanol production process.

Starch is also used in the production of syrups on the site. The syrups plant products include glucose and brewer's syrup. These are used for foods, chocolates, confectionery, beer, soft drinks and fruit juice. The syrups plant products can also be used in the ethanol process.

The by-products from the starch, gluten and syrup production processes are combined to feed the fermentation and distillation stage of ethanol production. The outputs are fuel, industrial and beverage grade ethanol. Industrial grade ethanol is used in producing pharmaceuticals, printer's ink and methylated spirits.

Ethanol production results in some liquid and solid by-products, which are processed through the stillage recovery process plant (which was approved as part of PRP No. 7 in 2005). The solids in the stillage are recovered as Dried Distillers Grains Syrup (DDGS), dried and sold as a high protein cattle feed with the remaining water used for irrigation.

The wastewater resulting from the ethanol production is treated in the wastewater treatment plant located on the northern side of Bolong Road and is re-used in the Starch Plant and the surplus is irrigated onto Shoalhaven Starches Environmental Farm to the north of Bolong Road. This farmland is used for fodder crops, pasture and cattle grazing.

Boilers are used to produce steam which is used for a multitude of purposes throughout the factory site wherever product is dried, evaporated or heated.

3.2 RECENT DEVELOPMENT AND APPROVAL HISTORY

3.2.1 Project Approval MP 06_0228

On the 28th January 2009 the then Minister for Planning, issued Project Approval MP 06_0228 for the Shoalhaven Starches Expansion Project.

The primary objective of the Shoalhaven Starches Expansion Project was to increase the Company's ethanol production capacity to meet the expected increase in demand for ethanol primarily, arising from the then NSW Government's mandate to increase ethanol content by volume in petrol in NSW from 2% to 6% from October 2011, by upgrading the existing ethanol plant.

The approval, subject to certain conditions, enabled Shoalhaven Starches to increase ethanol production in a staged manner at its Bomaderry Plant from 126 million litres per year to 300 million litres per year.

To accomplish the increase in ethanol production, the Project Approval enabled Shoalhaven Starches to upgrade plant and increase throughput of raw materials, principally comprising flour and grain.

In addition, as part of the Project Approval, Shoalhaven Starches were required to undertake comprehensive odour reduction measures for both the existing factory site and the works associated with the Expansion Project.

The Project Approval enabled a staged implementation of the expansion project. Under the approval up to 200 million litres of ethanol will be able to be produced at the Bomaderry Plant and eventually increased up to 300 million litres.

The Project Approval also enabled the biological treatment of waste waters from the factory site and the re-use of over half the treated wastewater within the factory processes,

with the remainder irrigated onto the Company's Environmental Farm. The Project Approval also consolidated all previous approvals into the one approval so that there would be essentially one approval for the site.

3.2.2 Approval History Following MP 06_0228

DA 10/1843 – Upgrade Vehicle Entrance (Former Dairy Farmers Factory Site)

Project Approval MP 06_0228 required vehicle access points to the Bomaderry site to be upgraded to the satisfaction of Council and the RMS. The subsequent upgrading works included the construction of a concrete median along the centre of Bolong Road to the east of Abernethy's drain in such a manner that prevented vehicles travelling east along Bolong Road turning right into the central vehicle access point to the Shoalhaven Starches site and prevented vehicles turning right out from this access point and travelling east along Bolong Road.

These works also prevented vehicles turning right out from the BOC Carbon Dioxide Plant located opposite the Shoalhaven Starches site. Shoalhaven Starches therefore sought approval from Shoalhaven City Council to upgrade the former Dairy Farmers site vehicular access and relocate the access to enable vehicles to enter Access Point 2 from the east. These works would also allow vehicles wishing to travel west from BOC Carbon Dioxide Plant to leave this site to first travel east; by allowing vehicles to travel to the former Dairy Farmers Factory Complex and using the upgraded access to turn around before travelling west along Bolong Road.

RA 11/1002 Interim Packing Plant

Following Project Approval MP 06_0228 Shoalhaven Starches also obtained a separate development approval to use an existing factory building located at 22 Bolong Road (Lot 21 DP 100265) as an Interim Packing Plant from Shoalhaven City Council (RA 11/1002 dated 26th October 2011). This Interim Packing Plant operates in conjunction with the Company's existing Packing Plant which is located within the existing factory site.

DA 11/1855 – Widening of Driveway

A further development application (DA 11/1855) was submitted to Shoalhaven City Council on the 4th August 2011 seeking approval to widen the driveways serving 22 Bolong Road Bomaderry (ie. the site of the Interim Packing Plant) to accommodate semi-trailers. This development application was approved by Shoalhaven City Council on the 24th August 2011.

DA 13/1713 – Demolition of Dimethyl Ether Plant

On the 5th July 2013 Shoalhaven Starches submitted a development application to Shoalhaven City Council seeking the demolition of a Dimethyl Ether Plant on the site. This development application was approved by Shoalhaven City Council on the 15th July 2013.

DA 14/2161 – Additional Two (2) Grain Silos

On the 19th September 2014 Shoalhaven Starches submitted a development application to Shoalhaven City Council seeking development consent to erect two additional grain silos on the factory site within the vicinity of the existing Flour Mill, to provide security of raw material storage and supply when there are closures of the Illawarra rail line serving the Shoalhaven Starches site. Shoalhaven City Council approved this development application on the 27th April 2017.

DA 16/1827 – Demolition of Existing Air Compressor Shed

On the 7th July 2016 Shoalhaven Starches submitted a development application to Shoalhaven City Council seeking the demolition of an existing air compressor shed on the site. This development application was approved by Shoalhaven City Council on the 29th July 2016.

Other Approvals

There have been other approvals that have been issued by Shoalhaven City Council that are associated with the Shoalhaven Starches operations, but which do not directly relate to the operations of Shoalhaven Starches including:

- DA 11/1936 – Algae Demonstration Plant for evaluation of algae production and processing for alternative fuel and CO₂ sequestration. Proponent - Algae Tec Pty Ltd at 220 Bolong Road (former Dairy Farmers factory site).
- DA 14/1327 – Alterations to existing building (former Dairy Farmers Factory Building) and re-use as a meat processing plant. Proponent – Candal Investments Pty Ltd at 220 Bolong Road (former Dairy Farmers factory site).
- DA 15/1892 – Installation of Liquid Oxygen Vessel (6,000L). Proponent – Argyle Prestige Meats Ltd at 220 Bolong Road (former Dairy Farmers factory site).

Recent Modification Applications

Project Approval MP 06_0228 has also been the subject of the following recent modifications applications (**Table 1**):

Table 1
Summary of Recent Modification Applications (2015 – 2017)

Modification	Summary of Modifications
Modification 11	<ul style="list-style-type: none"> Reducing the number of approved DDGS Dryers from six to four. A minor modification to the footprint of the four DDG dryers. Relocation of the cooling towers in the DDG Plant. A Mill Feed Silo and structure to feed DDG dryers. Expanded use of the existing coal and woodchip storage area within the SS Environmental farm. The addition of two biofilters to cope with the increased number of DDG Dryers. A forklift maintenance building adjacent to the relocated DDG dryers, along with a container preparation area adjacent to the relocated DDG Dryers.
Modification 12	Modifications to the existing Ethanol Distillery Plant to: increase the proportion of ‘beverage’ grade ethanol that is able to be produced on the site. This modification will enable increased flexibility in terms of the range of types of ethanol produced at the site (ie. between fuel, industrial and beverage grade ethanol) to meet market demands; and modify the type and location of the Water Balance Recovery Evaporator that has been previously approved under Mod. 2 adjacent to the Ethanol Plant.
Modification 13	<ul style="list-style-type: none"> Modification of boilers 2 and 4, with the conversion of boiler 4 from gas fired to coal fired. Installation of an additional baghouse on boiler 6.
Modification 14	Modifications to the former paper mill site.
Modification 15	Construction of the SupaGas CO2 plant at the former Dairy Farmer factory site.
Modification 16	<ul style="list-style-type: none"> Installation of a third flour mill C within the existing flour mill B building. Undertaking modifications to flour mills A and B. The construction of a new industrial building adjoining the Starch Dryer No. 5 building containing: <ul style="list-style-type: none"> The new product dryer; Plant and equipment associated with the processing of specialised speciality products. Addition to Starch Dryer No 5 building to house a bag house for this dryer <ul style="list-style-type: none"> Conversion of two existing gluten dryers (1 and 2) to starch dryers. Additional sifter for the interim packing plant. Construction of a coal-fired co-generation plant to the south of the existing boiler house complex. The co-generation plant will house a new boiler (No. 8). Construction of lime silos: The lime injection system will consist of two storage silos and associated equipment for injecting powdered lime into each of the coal fired boilers. Relocation of the existing boiler no. 7 to the northern side of the overall boiler house complex. Construction of an indoor electrical substation on the northern side of Bolong Road. Construction of an additional rail intake pit for the unloading of rail wagons. Extension of the existing electrical substation located within the main factory area.

4.0 PROPOSED MODIFICATION TO PROJECT APPROVAL MP06_0228

The Modification Application involves the following aspects.

4.1 RELOCATION OF BAGHOUSE FOR STARCH DRYER NO. 5

Under the Project Approval, Shoalhaven Starches constructed Starch Dryer No. 5 within the main factory site on the western side of Abernethy's Creek. Under Modification No. 16 to the Project Approval Shoalhaven Starches proposed to replace the secondary cyclones in Starch Dryer 5 with a baghouse. The objectives of this work was to improve dryer efficiency and improve air emissions from this dryer. The baghouse will separate approximately 500 kg per hour of starch (12% moisture content) from the airstream (250,000 m³/minute air flow).

This bag house was to be housed within a proposed extension to be located on the western side of the No. 5 Starch Dryer building. It is now proposed under this Modification Application to relocate this baghouse to the northern (Bolong Road) side of the No. 5 Starches Dryer building. (It should be noted that under Modification No. 16 it was originally proposed to locate the baghouse to the northern side of Starch Dryer No. 5, as now currently proposed, but it was relocated during the assessment process for Mod. 16.)

The proposed modified baghouse will sit between the constructed Starch Dryer No. 5 building and Bolong Road. The baghouse building will be set back 32.3 metres from the Bolong Road frontage of the site. The baghouse will also be set back 27.87 metres from Abernethy's Creek which is situated to the east of the development site.

The approved location of the Starches Dryer No. 5 Baghouse under Mod. 16 was immediately to the west of the dryer and sat above the Dryer Building. As a result, the approved baghouse structure comprised a height above natural ground level of 36 m.

The modification proposal seeks to relocate the Starch Dryer No. 5 Baghouse to the north side of this building. The relocated baghouse will have a height above ground level of 30.0 metres, and will therefore sit lower on the site compared to the approved baghouse.

The installation of the baghouse requires construction crews to erect steelwork and make connections of ductwork with the new dryer baghouse. The location of the baghouse as approved to the west of Starch Dryer No. 5 building however is situated within the explosion zone (**Figure 7**) for the dryer. Shoalhaven Starches are not able to have a working crews within the explosion zone while the starch dryer is running.

Figure 7 is a plan detailing the explosion exclusion zone around the Starch Dryer building.

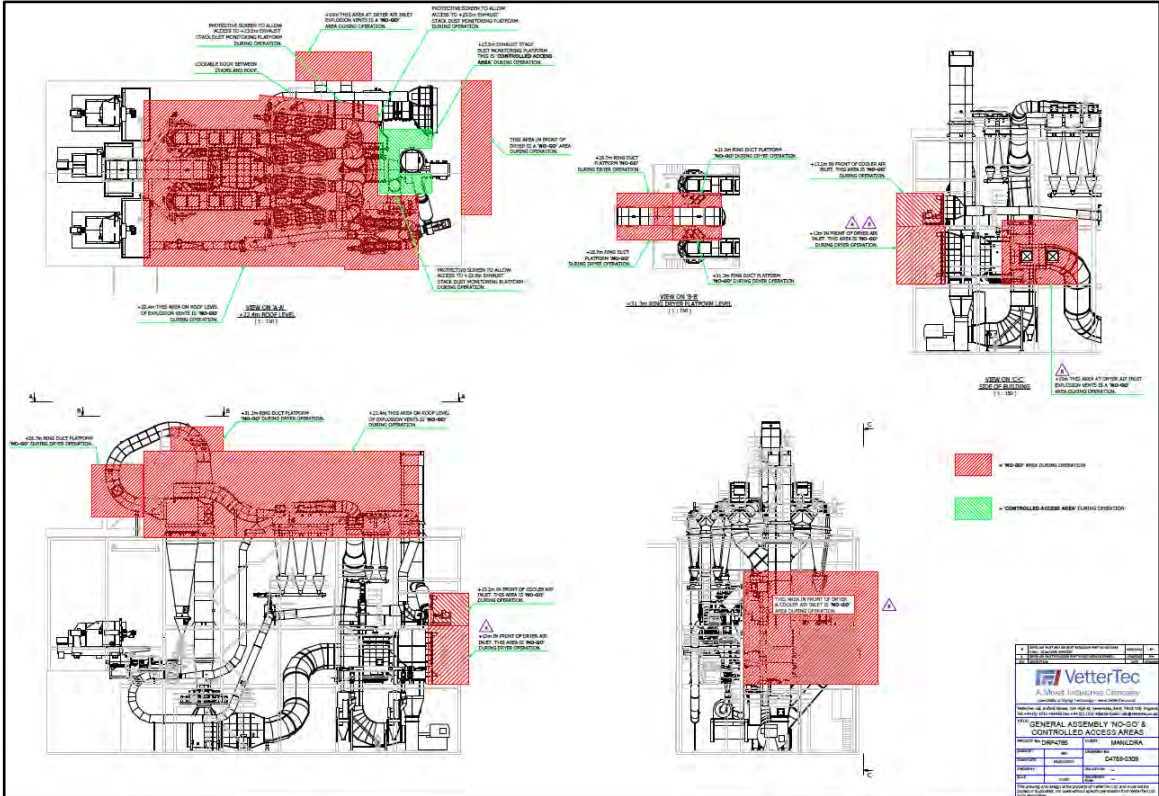


Figure 7: “No Go Areas” Starch Dryer No. 5

Shoalhaven Starches anticipate a period of 4-5 months will be required to install the baghouse adjacent to Starch Dryer No. 5. Shoalhaven Starches are unable to shut the starch dryer down for this duration to satisfy the criteria of '*not having people work within the explosion zone while the dryer is running*'.

The north face of the Starch Dryer No. 5 building is however outside the explosion zone and its associated exclusion area – so the relocation of the baghouse and its associated ductwork to the north of this building is not subject to these constraints.

The approved Specialty Products and Gluten Dryer buildings which will be constructed to the west of the Starch Dryer No. 5 building under Mod. 16 will not be subject to this exclusion as these buildings are approved in locations that are situated further away from the Starch Dryer No. 5 building when compared to the baghouse.

4.2 INSTALLATION OF SERVICE LIFT ADJACENT TO STARCH DRYER No. 5

It is also proposed to install a service lift adjacent to the western wall of the No. 5 Starch Dryer to enable ongoing access for Shoalhaven Starches personnel to the floors within the building.

This service lift will comprise a simple lift well that will extend up the external wall of the western side of the Starch Dryer No. 5 building to a height of 24.4 m, which will be 2 metres above the height of the existing Starch Dryer No. 5 building, although below plant located upon the top of this building which rise up to 34.385 m.

4.3 ELEVATING SERVICE CONDUIT EXTENDING FROM FACTORY SITE ON SOUTHERN SIDE OF BOLONG ROAD TO APPROVED PACKING PLANT ON NORTHERN SIDE OF BOLONG ROAD ABOVE GROUND

It is also proposed to modify the pipework that has been approved extending from the Shoalhaven Starches factory site located on the southern side of Bolong Road to the approved Packing Plant that is to be constructed on the northern side of Bolong Road.

Under the current Project Approval this service pipework was to be provided entirely underground.

This Modification Application seeks to elevate a section of the pipework above ground level between Bolong Road and the approved Packing Plant.

Under the Project Approval product is to be transferred by underground pipes extending from the Shoalhaven Starches factory site located on the southern side of Bolong Road under Bolong Road to the Packing Plant to be constructed on the north side of Bolong Road.

This modification proposal still seeks to extend pipework underground from the existing factory site on the southern side of Bolong Road under Bolong Road. It is proposed however to lift the service conduit pipes to just above ground level for a distance of 26 m, before raising the height of the service conduits along a cable stayed pipe bridge within proximity of the approved rail siding and container storage area with a height above ground level of 14.5 metres and which will extend for a distance of almost 52 metres to the approved Packing Plant building.

The principal justification for elevating the service conduit is based upon geotechnical advice provided by Dr Kourosh Kianfar, Principal Engineer – Geotechnics from SMEC as follows:

The proposed alignment for the conduit runs within the soft soil zone where high compressible soils with varying thicknesses exist resulting considerable post-construction total and differential settlements.

Also, the proposed conduit runs across various zones such as rail track, internal roads, container storage etc. which each of them have different design criteria for post-construction settlement (when designing soft soil improvement), which makes it more difficult to control and/or have an accurate estimation of post-construction differential settlements.

Adding to the above, presence of shallow groundwater table makes it even more difficult to ascertain controlling post-construction differential settlements which will affect functionality of the proposed conduit and its elements.

Therefore, it is recommended to consider an overhead pipe (transfer line) instead of an underground conduit.

4.4 USE OF WOODCHIPS AS FUEL SOURCE IN BOILERS 2 AND 4

Steam is used at the Shoalhaven Starches factory for a multitude of purposes wherever product or water is required to be heated. Steam is currently generated at Shoalhaven Starches by four coal-fired boilers (numbers 2, 4, 5 and 6), and three gas fired boilers (numbers 1, 3, and 7). The combustion gases from these boilers are discharged via six stacks. Boilers 5 and 6 having a common stack. Exhaust from boilers 2 and 4 are treated in multi-cyclones and baghouses, and from boilers 5 and 6 exhaust is treated in a baghouse prior to discharge to atmosphere. All boilers operate 24 hours, seven days per week.

Boiler No. 4 was originally a coal-fired boiler however was converted in 2012 to gas fired. Boiler No. 2 was converted to woodchip in 2014. Both of these boilers were converted back to coal-fired following the approval of Mod. 13.

This Modification Application seeks approval to alter the fuel source for Boilers No. 2 and 4 from their current fuel source of coal, to enable a blend of woodchips and coal. As outlined above woodchips were previously used as a fuel source in Boiler 2 prior to its conversion to solely coal as part of Mod. 13.

It is proposed to blend woodchips with coal in Boilers 2 and 4 on the following basis:

- Boiler 2 is planned to operate on 25% woodchips and 75% coal.
- Boiler 4 is planned to operate on 16% woodchips and 84% coal.

Shoalhaven Starches are seeking to be able to use woodchip to replace coal as part of the fuel source for these two boilers as they have identified an available resource of woodchip material (equivalent to 7,000 tonnes per annum) that will be less costly than using an equivalent volume of coal to produce the similar amount of energy. The use of woodchips will displace 4,400 tonnes per annum of coal.

This modification proposal will not require any alterations or works to the boilers in question. The existing boilers will be able to accommodate the use of woodchips as part of the overall fuel source in their current configuration.

The use of woodchips as part of the fuel source for these two boilers will increase slightly the overall volumes of fuel used at the site, by 1.7 trucks per week. In this regard the

volumes of woodchips used will replace a lesser quantity of coal that would otherwise be used. As a result, there will be a slight increase to the volumes of material at the site or that are required to be delivered by truck to the site by 1.7 trucks per week. However, the use of woodchip as a fuel source will result in a reduction in ash that will be produced from combustion in the boilers which will result in a reduction in trucks removing ash from the site by 1 truck per week, resulting in an overall increase of less than 1 (0.7) truck per week.

In this regard it should be noted that the EPA have issued a renewed resource recovery order and resource recovery exemption for biomass (sawmilling and forestry residue) used as boiler fuel at the site. This is further discussed in Section 6.1.4 of this SEE.

4.5 MODIFICATION TO CONDITION 14J(E) – AMENDMENT TO DESIGN SPECIFICATION FOR SILENCERS TO EXHAUST FANS FOR FLOUR MILL B

The modification application also addresses an issue that has arisen following the Noise Validation Report (NVR) prepared by Harwood Acoustics in connection with the approved Flour Mill B prepared pursuant to condition 14J of the Project Approval.

Shoalhaven Starches recently completed construction of Flour Mill B which was approved under modified approval MP06_0228 Mod. 10. Following construction of Flour Mill B Harwood Acoustics carried out a noise validation assessment (NVR) as required under Condition 14J of the modified Project Approval.

The level of noise emission from the operation of Flour Mill B, including all associated items of plant and equipment were found to meet the design noise goals and consequently acceptable noise limits.

Each of the requirements of Condition 14 J were also met, with the exception of a specific Condition 14J(e) relating to the noise emission from acoustically silenced ventilation fans. This specific condition was not met for one particular fan / silencer combination (B4263). This did not impact the overall level of noise from the Flour Mill B or the site, however it is considered that the Mill is technically non-compliant with the wording of the specific condition. It is therefore proposed to have the wording of the condition amended to better reflect the existing situation.

This is a technical non-compliance, and following consultation, DPIE have suggested that condition 14J(e) be modified (as part of this modification application) to alter the design specifications of the silencers. The modification of condition 14J(e) is therefore also addressed as part of this Modification Application.

The works associated with this Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification

proposal will not result in any significant increases in production rates from the site, nor will it involve any changes in level of impacts arising from the approved development.

Plans of the proposed works associated with this Modification Application are included within **Annexure 1** to this SEE.

5.0 SECTION 4.55(1A) OF THE EP&A ACT

This application is made pursuant to section 4.55(1A) of the Environmental Planning & Assessment (EP&A) Act.

Section 4.55(1A) of the EP&A Act reads:

4.55 Modification of consents—generally

(1A) **Modifications involving minimal environmental impact.** *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—*

- (a) it is satisfied that the proposed modification is of minimal environmental impact, and*
- (b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and*
- (c) it has notified the application in accordance with—*
 - (i) the regulations, if the regulations so require, or*
 - (ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and*
- (d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.*

Subsections (1), (2) and (5) do not apply to such a modification.

Fundamentally an application made pursuant to Section 4.55(1A) must demonstrate that: the proposed modification will have minimal environmental impact; and the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified.

Such an assessment would typically need to appreciate both the qualitative and quantitative aspects of the development being compared in its proper context as described by Bignold J at paragraphs 54 to 56 in *Moto Projects (No.2) Pty Ltd v North Sydney C* [1999] NSWLEC 280.

This judgment includes the following comments:

54. *The relevant satisfaction required by s 96(2)(a) to be found to exist in order that the modification power be available involves an ultimate finding of fact based upon the primary facts found. I must be satisfied that the modified development is substantially the same as the originally approved development.*

55. *The requisite factual finding obviously requires a comparison between the development, as currently approved, and the development as proposed to be modified. The result of the comparison must be a finding that the modified development is “essentially or materially” the same as the (currently) approved development.*
56. *The comparative task does not merely involve a comparison of the physical features or components of the development as currently approved and modified where that comparative exercise is undertaken in some type of sterile vacuum. Rather, the comparison involves an appreciation, qualitative, as well as quantitative, of the developments being compared in their proper contexts (including the circumstances in which the development consent was granted).*

The *Modifying an Approved Project* draft guidelines produced as part of the *Draft Environmental Impact Assessment Guidance Series* by the NSW Department of Planning and Environment in June 2017, provides some guidance when assessing modifications of State Significant development:

For SSD, a proponent must demonstrate that the change, if carried out, would result in a development that would be substantially the same development as the original development. In order to draw this conclusion, a proponent must have regard to the following considerations, which have been established through decisions of the NSWLEC:

- *“Substantially” means “essentially or materially” or “having the same essence.”*
- *A development can still be substantially the same even if the development as modified involves land that was not the subject of the original consent (provided that the consent authority is satisfied that the proposal is substantially the same).*
- *If the development as modified, involves an “additional and distinct land use”, it is not substantially the same development.*
- *Notwithstanding the above, development as modified would not necessarily be substantially the same solely because it was for precisely the same use as that for which consent was originally granted.*
- *To determine whether something is “substantially the same” requires a comparative task between the whole development as originally approved and the development as proposed to be modified. In order for the proposal to be “substantially the same”, the comparative task must:*
 - *result in a finding that the modified development is “essentially or materially” the same*
 - *appreciate the qualitative and quantitative differences in their proper context*
 - *in addition to the physical difference, consider the environmental impacts of proposed Modification Applications to approved developments.*

“Substantially” means “essentially or materially” or “having the same essence.”

Comments:

It is considered the modification proposal is substantially the same as that approved and is development that could be considered *“materially the same as that previously approved”*. Furthermore, it is considered that the modifications proposed are of the same ‘essence’ as the approved development given that:

- the proposal maintains the current land use approved at the site and does not seek to alter the over-riding character of development;
- the proposed built form is substantially the same as that already approved, in that development is to consist of industrial buildings, plant and equipment located within the general confines of the Shoalhaven Starches Factory site;
- The proposed modifications do not represent an expansion of the of Shoalhaven Starches’ footprint and the majority of the modifications will be located within the main factory site; and
- The proposed buildings maintain the same form as that approved with due consideration given in the Modification Application to relevant issues pertaining to air quality, noise and flood impacts.
- The proposal does not seek to increase overall production from the site nor will it involve the generation of any additional environmental impacts.

A development can still be substantially the same even if the development as modified involves land that was not the subject of the original consent (provided that the consent authority is satisfied that the proposal is substantially the same).

Comment

The proposal does not involve land that was not the subject of the approval which was in place at the time that the Shoalhaven Starches Expansion Project site transitioned from the Transitional Part 3A provisions to being assessed as State Significant Development

If the development as modified, involves an “additional and distinct land use”, it is not substantially the same development.

Comment

The proposal does not involve an *“additional and distinct land use”*. None of the proposed modifications represent an additional and distinct land use. Whilst this modification proposal involves a number of individual components these modifications all relate to existing approved development on the site.

Notwithstanding the above, development as modified would not necessarily be substantially the same solely because it was for precisely the same use as that for which consent was originally granted.

Comment

This Modification Application only seeks to modify elements that have already been approved and will not change the scale or use of these aspects.

To determine whether something is “substantially the same” requires a comparative task between the whole development as originally approved and the development as proposed to be modified. In order for the proposal to be “substantially the same”, the comparative task must:

- ***result in a finding that the modified development is “essentially or materially” the same***
- ***appreciate the qualitative and quantitative differences in their proper context***
- ***in addition to the physical difference, consider the environmental impacts of proposed Modification Applications to approved developments.***

Comment

Quantitatively, the proposal does not represent any increases in production in the terms of processing of flour and starch / gluten or ethanol production.

The qualitative elements of the proposal demonstrate that the environmental and amenity impacts of the modification proposal are limited and justifies this proposal being considered as a modification.

This proposal will not expand the overall footprint of the approved Shoalhaven Starches factory. All of the proposed modifications are located within the main Shoalhaven factory site or the approved Packing Plant located on the northern side of Bolong Road. The proposed development will have a limited additional visual impact. The bulk, character and scale of the structures associated with this modification application will not be dissimilar to that of other industrial type development associated with the existing factory site. Furthermore, the proposed works will be sited within proximity of similar structures of a similar nature. The works will be sited in the midst of the existing factory complex and will be viewed within this context.

The SEE is supported by the following expert assessments:

- An Air Quality Assessment by GHD which concludes that whilst there will be a marginal increase in predicted odour impacts, such increases are not attributable to the proposed modifications; and the odour criteria will be met at all residential receptors and GHD indicate that it will be highly unlikely that the increase in odour would be detected at sensitive receptors.

- A Noise assessment by Harwood Acoustics makes the following conclusions:
 - There are no significant noise producing items of plant and equipment associated with the service lift or service conduit and the level of noise from the operation of the site will not be increased by these proposed modifications. The proposed new location of the baghouse adjacent to Starch Dryer No. 5 is not significantly different from the approved location. There will be no appreciable change to previously predicted noise levels from the baghouse based on the new location compared with the approved location.
 - In order to resolve the technical noncompliance with condition 14J in relation to one of the silencers fitted to the exhaust fans on the top of Flour Mill B, it is proposed to have the specific condition reworded. Firstly, it is worth noting that Harwood Acoustics state the difference is not significant and for all fans combined, would not be discernible. Several of the fan / silencer combinations were below the specified level of 65 dBA at 3 metres, meaning that the inclusion of the B4263 silencer at 68 dBA does not increase the overall design goal for all fans combined above the initial 74 dBA equivalent combined level.
- A Flooding Assessment by WMA Water concludes that the modification works will not have any significant impacts on flood levels;
- A Hazard Analysis Assessment by Pinnacle Risk Pty Ltd identifies the proposed works associated with this modification will not alter the findings of their earlier Preliminary Hazard Analyses.

None of the proposed modifications represent an additional and distinct land use as all proposed modifications facilitate and improve the existing approved production processes.

The proposal will not comprise any qualitative or quantitative changes in production from the site.

The modified proposal represents a scale of development that will be commensurate with the bulk, scale and character of the approved development.

As is evident from the expert consultant assessments that support the Modification Application the Modified proposal will not result in any significant qualitative or quantitative environmental impacts when compared to the approved development.

It is our view that the development is substantially the same as approved Project. As such the modification proposal is considered consistent with provisions of Section 4.55(1A) of the Act in this instance.

Given the above circumstances it is our view that the modification proposal; will have not result in any significant adverse environmental impact when compared to the original approved development; and the development as modified by this modification application will be substantially the same development as the development for which consent was originally granted having regard to both the qualitative and quantitative elements of that development.

6.0 SECTION 4.15(1)(A) – ENVIRONMENTAL PLANNING PROVISIONS

In determining an application made pursuant to Section 4.55 of the EP&A Act the consent authority must take into consideration such of the matters referred to in Section 4.15(1) as are of relevance to the development the subject of the application.

6.1 ENVIRONMENTAL PLANNING INSTRUMENTS

6.1.1 State Environmental Planning Policies

Table 2 details State Environmental Planning Policies (SEPP) that apply to the land and whether they are applicable to the proposal.

Table 2
State Environmental Planning Policies that Apply to the Subject Site

<i>State Environmental Planning Policy</i>	<i>Applicable Yes/No</i>
State Environmental Planning Policy (Affordable Rental Housing) 2009 (pub. 2009-07-31)	No
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (pub. 2004-06-25)	No
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (pub. 2008-12-12)	No
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (pub. 2004-03-31)	No
State Environmental Planning Policy (Infrastructure) 2007 (pub. 2007-12-21)	Yes
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (pub. 2007-02-16)	No
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007 (pub. 2007-09-28)	No
State Environmental Planning Policy No 1-Development Standards (pub. 1980-10-17)	No
State Environmental Planning Policy No 21-Caravan Parks (pub. 1992-04-24)	No
State Environmental Planning Policy No 30-Intensive Agriculture (pub. 1989-12-08)	No
State Environmental Planning Policy No 33-Hazardous and Offensive Development (pub. 1992-03-13)	Yes
State Environmental Planning Policy No 36-Manufactured Home Estates (pub. 1993-07-16)	No
State Environmental Planning Policy No 50-Canal Estate Development (pub. 1997-11-10)	No
State Environmental Planning Policy No 55-Remediation of Land (pub. 1998-08-28)	No

Table 2 (continued)

State Environmental Planning Policy	Applicable Yes/No
State Environmental Planning Policy No 62-Sustainable Aquaculture (pub. 2000-08-25)	No
State Environmental Planning Policy No 64-Advertising and Signage (pub. 2001-03-16)	No
State Environmental Planning Policy No 65-Design Quality of Residential Apartment Development (pub. 2002-07-26)	No
State Environmental Planning Policy No 70-Affordable Housing (Revised Schemes) (pub. 2002-05-01)	No
State Environmental Planning Policy (Primary Production and Rural Development) 2019	No
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017: Subject Land (pub. 2017-08-25)	No
State Environmental Planning Policy (Coastal Management) 2018	Yes

SEPP – Infrastructure

This SEPP aims to facilitate the effective delivery of infrastructure across the state and that appropriate agencies are made aware of and are given an opportunity to make representations in respect of certain development, including traffic generating developments. Division 17 relates to Road and Traffic infrastructure while Schedule 3 of the SEPP outlines traffic generating development which requires referral to Roads and Maritime Services (RMS). The proposal does not trigger the criteria in this Schedule that would warrant the development application being referred to the RMS, and therefore the provisions of this SEPP would not apply to this proposal.

Schedule 3 includes the following criteria that may have relevance to this proposal:

Development purpose	Column 1: Size or capacity – site with access to any road	Column 2 Size or capacity—site with access to classified road or to road that connects to classified road (if access within 90m of connection, measured along alignment of connecting road)
Car parks	200 or more car parking spaces	50 or more car parking spaces
Industry	20,000m ² in site area or (if the site area is less than the gross floor area) gross floor area	5,000 m ² in site area or (if the site area is less than the gross floor area) gross floor area
Any other purpose	200 or more motor vehicles per hour	50 or more motor vehicles per hour

The modification proposal does not specifically trigger the above criteria. Under these circumstances the RMS is not required to be notified of this proposal.

SEPP No.33 – Hazardous and Offensive Development

The objectives of SEPP No. 33 are set out in clause 2 of the SEPP and include:

- (a) *to amend the definitions of hazardous and offensive industries where used in environmental planning instruments, and*
- (b) *to render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in this Policy, and*
- (c) *to require development consent for hazardous or offensive development proposed to be carried out in the Western Division, and*
- (d) *to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account, and*
- (e) *to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact, and*
- (f) *to require the advertising of applications to carry out any such development.*

The Modification Proposal is supported by a submission prepared by Pinnacle Risk Pty Ltd. Pinnacle Risk undertook the Preliminary Hazard Analysis for the recent most Modification Application (Mod. 16) for the subject site. Pinnacle Risk have undertaken a review of the works associated with this current Modification Proposal and conclude that this modification also does not impact the findings of the previous PHA.

State Environmental Planning Policy (Coastal Management) 2018

This SEPP seeks to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016 by:

- a) *managing development in the coastal zone and protecting the environmental assets of the coast, and*
- b) *establishing a framework for land use planning to guide decision-making in the coastal zone, and*
- c) *mapping the 4 coastal management areas which comprise the NSW coastal zone, in accordance with the definitions in the Coastal Management Act 2016.*

This Policy applies to land within the coastal zone. Section 5 of the *Coastal Management Act 2016* provides that the **coastal zone** means the area of land comprised of the following coastal management areas:

- a) the coastal wetlands and littoral rainforests area,
- b) the coastal vulnerability area,
- c) the coastal environment area,
- d) the coastal use area.

Part 2 of the Coastal Management SEPP stipulates the Development Controls for Coastal Management Areas. Division 1 outlines the controls to be applied to development in the Coastal Wetlands and Littoral Rainforests Area.

Coastal Wetlands and Littoral Rainforests Area.

Mapping supporting the SEPP outlines the subject land is not mapped as containing coastal wetlands or littoral rainforest.

Coastal Environment Area

Division 3 of the SEPP stipulates the controls to be applied to development in the Coastal Environment Area.

The subject land is mapped under the NSW Coastal Management SEPP Mapping as being located within the Coastal Environment Area as seen below in **Figure 8**.

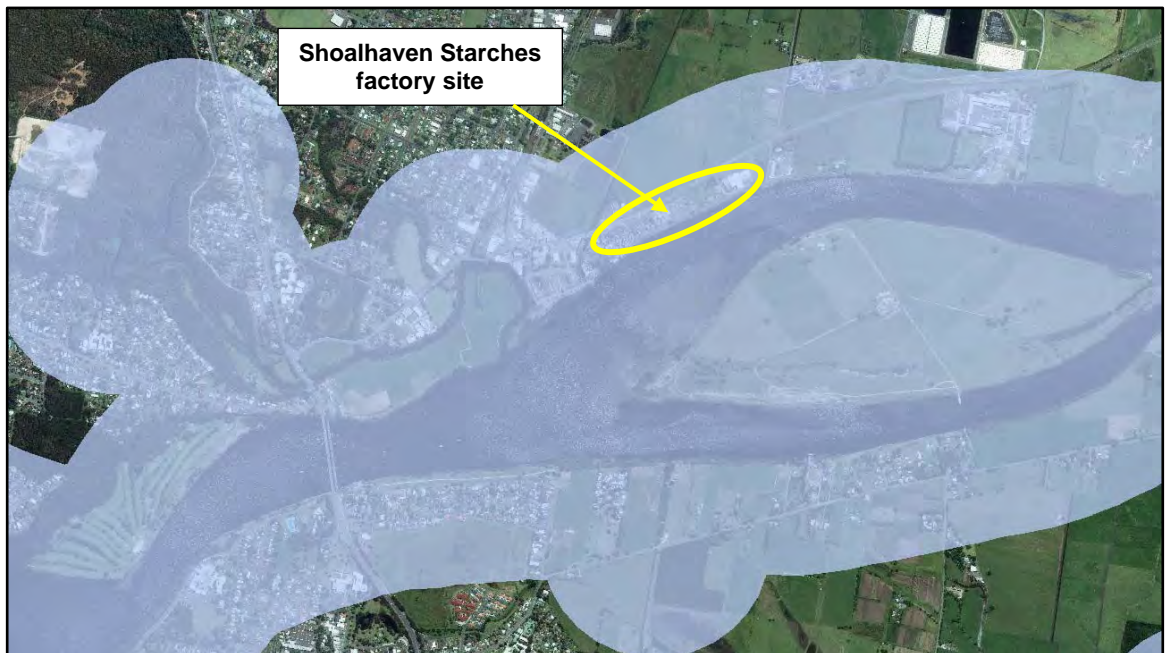


Figure 8: NSW Coastal Management SEPP: Coastal Environment Area Map.

Clause 13 of the SEPP specifies matters that must be considered in determining development applications on land within the Coastal Environment Area. Clause 13 reads:

- 1) *Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:*
 - a) *the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,*
 - b) *coastal environmental values and natural coastal processes,*
 - c) *the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,*
 - d) *marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,*
 - e) *existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*
 - f) *Aboriginal cultural heritage, practices and places,*
 - g) *the use of the surf zone.*
- 2) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:*
 - a) *the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or*
 - b) *if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or*
 - c) *if that impact cannot be minimised—the development will be managed to mitigate that impact.*

Comment:

- The proposal is not near a headland or rock platform and as such does not impact on public access to these areas.
- The proposal will not adversely impact on the visual amenity and scenic qualities of the coast.
- The proposal involves works within an existing developed industrial site and is unlikely to impact on items of Aboriginal cultural heritage.
- The proposal involves works within an existing developed industrial site and will not impact upon the integrity or resilience of the biophysical or ecological environment.

- The proposal will incorporate erosion and sediment control measures to minimise impact on the water quality of the adjoining watercourses.
- The proposal will not involve any significant adverse impact on marine or native vegetation.
- The proposed development is not located within close proximity to the surf zone and will not impact on coastal environmental values or natural coastal processes.

Coastal Use Area

Division 4 of the SEPP specifies the controls to be applied to development in the Coastal Use Area. The subject land is also within the Coastal use zone as seen below in **Figure 9**. As such the provisions which apply to this mapping are relevant to the proposed development.



Figure 9: NSW Coastal Management SEPP: Coastal Use Area Map.

Clause 14 of the SEPP specifies matters that must be considered in determining development applications on land within the Coastal Use Area. Clause 14 reads:

- (1) *Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:*
 - (a) *has considered whether the proposed development is likely to cause an adverse impact on the following:*
 - (i) *existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*

- (ii) *overshadowing, wind funneling and the loss of views from public places to foreshores,*
 - (iii) *the visual amenity and scenic qualities of the coast, including coastal headlands,*
 - (iv) *Aboriginal cultural heritage, practices and places,*
 - (v) *cultural and built environment heritage, and*
- (b) *is satisfied that:*
 - (i) *the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or*
 - (ii) *if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or*
 - (iii) *if that impact cannot be minimised—the development will be managed to mitigate that impact, and*
- c) *has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.*

Comment:

- The proposal will not impact on existing safe access to the foreshore. The proposal is not near a beach, headland or rock platform and as such does not impact on public access to these areas.
- The works associated with this modification proposal will not cause overshadowing of the foreshore area or wind funnelling. The development will not block views from public places. The proposal will not adversely impact on the visual amenity and scenic qualities of the coast.
- As detailed above, the proposal will not adversely impact on Aboriginal cultural heritage and places.
- The works associated with this modification proposal are of a bulk, scale and size that are consistent with existing industrial development on the site and will not create an adverse visual impact in this locality.

Under these circumstances the proposal is considered to be consistent with the objectives and provisions of the Coastal Management SEPP.

6.1.2 Local Environmental Plan

Shoalhaven Local Environmental Plan 2014

The parcels of land associated with this modification application are zoned IN1 General Industrial under the provisions of the Shoalhaven LEP 2014 (refer **Figure 10**).

Table 3
Land Use Permissibility – IN1 Zone (Shoalhaven LEP 2014)

Permitted without consent	Nil.
Permitted with consent	Bulky goods premises; Depots; Freight transport facilities; General industries ; Industrial training facilities; Kiosks; Light industries; Markets; Neighbourhood shops; Roads; Take away food and drink premises; Timber yards; Warehouse or distribution centres
Prohibited	Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Environmental facilities; Exhibition villages; Extractive industries; Farm buildings; Forestry; Function centres; Health services facilities; Highway service centres; Home-based childcare; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Mooring pens; Moorings; Office premises; Open cut mining; Places of public worship; Registered clubs; Residential accommodation; Respite day care centres; Restricted premises; Retail premises; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities.

The SLEP 2014 also has a number of specific provisions that apply to the land. The implications that these provisions have in relation to this proposal are discussed in **Table 4** below:

Table 4
Shoalhaven Local Environment Plan Provisions

SLEP 2014 Clause	Provisions	Comments
<i>Clause 4.3 Height of Buildings</i>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> (a) <i>to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,</i> (b) <i>to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,</i> (c) <i>to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.</i> <p>(2) <i>The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.</i></p> <p>(2A) <i>If the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres.</i></p>	<p>The proposal will involve the erection of a range of structures with heights above ground level ranging from 14.5 m to 30 m.</p> <p>Although there is no maximum height specified for the subject land, Clause 4.3(2A) imposes a maximum building height of 11 m where no specific height limit is designated.</p> <p>Under these circumstances this SEE is supported by a Written Request made pursuant to Clause 4.6 (Annexure 6) justifying non-compliance with this maximum building height limit..</p>
<i>Clause 4.6 Exceptions to development standards</i>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> (a) <i>to provide an appropriate degree of flexibility in applying certain development standards to particular development,</i> (b) <i>to achieve better outcomes for and from development by allowing flexibility in particular circumstances.</i> <p>(2) <i>Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.</i></p> <p>(3) <i>Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:</i></p> <ul style="list-style-type: none"> (a) <i>that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and</i> 	<p>The proposal will involve the erection of a range of structures with heights above ground level ranging from 14.5 m to 30 m that will exceed the 11 metre maximum as specified in Clause 4.3(2A).</p> <p>The proposed development will be erected within the broader approved Shoalhaven Starches factory site.</p> <p>As the proposed works will be built within the existing industrial complex it is not expected that the new development will have an undue effect due to its height.</p> <p>This Modification Application is supported by a Clause 4.6 Written Request justifying a departure to Clause 4.3(2A) under the specific circumstances of this case.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
4.6 continued	<p>(b) that there are sufficient environmental planning grounds to justify contravening the development standard.</p> <p>(4) Development consent must not be granted for development that contravenes a development standard unless:</p> <p>(a) the consent authority is satisfied that:</p> <p>(i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and</p> <p>(ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and</p> <p>(b) the concurrence of the Director-General has been obtained.</p> <p>(5) In deciding whether to grant concurrence, the Director-General must consider:</p> <p>(a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and</p> <p>(b) the public benefit of maintaining the development standard, and</p> <p>(c) any other matters required to be taken into consideration by the Director-General before granting concurrence.</p> <p>(6) Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:</p> <p>(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or</p>	

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
4.6 continued	<p>(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.</p> <p><i>Note. When this Plan was made it did not include all of these zones.</i></p> <p>(7) After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).</p>	
Clause 5.5 Development within the coastal zone	<p>(1) The objectives of this clause are as follows:</p> <p>(a) to provide for the protection of the coastal environment of the State for the benefit of both present and future generations through promoting the principles of ecologically sustainable development,</p> <p>(b) to implement the principles in the NSW Coastal Policy, and in particular to:</p> <p>(i) protect, enhance, maintain and restore the coastal environment, its associated ecosystems, ecological processes and biological diversity and its water quality, and</p> <p>(ii) protect and preserve the natural, cultural, recreational and economic attributes of the NSW coast, and</p> <p>(iii) provide opportunities for pedestrian public access to and along the coastal foreshore, and</p> <p>(iv) recognise and accommodate coastal processes and climate change, and</p> <p>(v) protect amenity and scenic quality, and</p> <p>(vi) protect and preserve rock platforms, beach environments and beach amenity, and</p> <p>(vii) protect and preserve native coastal vegetation, and</p> <p>(viii) protect and preserve the marine environment, and</p> <p>(ix) ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and</p>	<p>The subject land is located within the coastal zone.</p> <p>The proposal is not considered to adversely affect the coastal zone based on the following:</p> <ul style="list-style-type: none"> • The proposal does not affect or impinge on public access to or along the coastal foreshore. • The proposed development will be undertaken within an existing industrial site. Such is considered suitable development given its type, location and design. The development is also consistent with the zoning objectives for the land. • The development will not lead to overshadowing of foreshore areas. • The scenic qualities of the area will not diminish. Visual impact is further addressed in Section 6.2.6 of this SEE. • The proposal will not lead to adverse impacts on threatened fauna and flora.

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
5.5 continued	<ul style="list-style-type: none"> (x) ensure that decisions in relation to new development consider the broader and cumulative impacts on the catchment, and (xii) protect and preserve items of heritage, archaeological or historical significance (xi) protect Aboriginal cultural places, values and customs, and (2) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority has considered: <ul style="list-style-type: none"> (a) existing public access to and along the coastal foreshore for pedestrians (including persons with a disability) with a view to: <ul style="list-style-type: none"> (i) maintaining existing public access and, where possible, improving that access, and (ii) identifying opportunities for new public access, and (b) the suitability of the proposed development, its relationship with the surrounding area and its impact on the natural scenic quality, taking into account: <ul style="list-style-type: none"> (i) the type of the proposed development and any associated land uses or activities (including compatibility of any land-based and water-based coastal activities), and (ii) the location, and (iii) the bulk, scale, size and overall built form design of any building or work involved, and (c) the impact of the proposed development on the amenity of the coastal foreshore including: <ul style="list-style-type: none"> (i) any significant overshadowing of the coastal foreshore, and (ii) any loss of views from a public place to the coastal foreshore, and (d) how the visual amenity and scenic qualities of the coast, including coastal headlands, can be protected, and 	

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
5.5 continued	<p>(e) <i>how biodiversity and ecosystems, including:</i></p> <ul style="list-style-type: none"> (i) <i>native coastal vegetation and existing wildlife corridors, and</i> (ii) <i>rock platforms, and</i> (iii) <i>water quality of coastal waterbodies, and</i> (iv) <i>native fauna and native flora, and their habitats, can be conserved, and</i> <p>(f) <i>the cumulative impacts of the proposed development and other development on the coastal catchment.</i></p> <p>(3) <i>Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority is satisfied that:</i></p> <ul style="list-style-type: none"> (a) <i>the proposed development will not impede or diminish, where practicable, the physical, land-based right of access of the public to or along the coastal foreshore, and</i> (b) <i>if effluent from the development is disposed of by a non-reticulated system, it will not have a negative effect on the water quality of the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</i> (c) <i>the proposed development will not discharge untreated stormwater into the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</i> (d) <i>the proposed development will not:</i> <ul style="list-style-type: none"> (i) <i>be significantly affected by coastal hazards, or</i> (ii) <i>have a significant impact on coastal hazards, or</i> (iii) <i>increase the risk of coastal hazards in relation to any other land.</i> 	

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
Clause 5.10 Heritage Conservation	<p>(1) <i>The objectives of this clause are:</i></p> <ul style="list-style-type: none"> (a) <i>to conserve the environmental heritage of Shoalhaven; and</i> (b) <i>to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views; and</i> (c) <i>to conserve archaeological sites; and</i> (d) <i>to conserve Aboriginal objects and Aboriginal places of heritage significance.</i> <p>(2) <i>Development consent is required for any of the following:</i></p> <ul style="list-style-type: none"> (a) <i>demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</i> <ul style="list-style-type: none"> (i) <i>a heritage item,</i> (ii) <i>an Aboriginal object</i> (iii) <i>a building, work, relic or tree within a heritage conservation area,</i> (b) <i>altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,</i> (c) <i>disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being, discovered, exposed, moved damaged or destroyed,</i> (d) <i>disturbing or excavating an Aboriginal place of heritage significance,</i> (e) <i>erecting a building on land:</i> <ul style="list-style-type: none"> (i) <i>on which a heritage item is located or that is within a heritage conservation area;</i> (ii) <i>on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,</i> 	<p>There are no heritage items within the subject land, and the subject site is not located within a heritage conservation area.</p> <p>The site is a highly disturbed industrial site that has been used for industrial purposes for decades. No excavation is proposed as such the proposal is not expected to disturb any Aboriginal objects or relics.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments												
5.10 continued	<p>(f) subdividing land:</p> <p>(i) on which a heritage item is located or that is within a heritage conservation area, or</p> <p>(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.</p>													
Clause 7.1 Acid sulfate soils	<p>(1) The objective of this clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.</p> <p>(2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulfate Soils Map as being of the class specified for those works, except as provided by this clause.</p> <table><tr><th>Class of Land</th><th>Works</th></tr><tr><td>1</td><td>Any works.</td></tr><tr><td>2</td><td>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</td></tr><tr><td>3</td><td>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</td></tr><tr><td>4</td><td>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</td></tr><tr><td>5</td><td>Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</td></tr></table>	Class of Land	Works	1	Any works.	2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.	3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.	4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.	<p>Whilst the subject site is identified as potentially containing acid sulphate soils – class 3 and 4, the original EA that support Mod 16 and which included then areas of the site associated with this proposal, and particularly the area of the site associated with Starches Dryer No. 5. were subject to an acid sulphate soils assessment carried out by Coffey Geosciences. Coffeys did not specifically identify these sites as being subject to ASS. The report by Coffey's concluded in terms of ASS:</p> <p><i>“Acid sulfate soils could be encountered within alluvial soils underlying the fill materials at depths below 3m. Disturbance of ASS is likely to occur at Sites requiring CFA piles and the new rail unloading pit at Sites 3 and 4, respectively.</i></p> <p><i>It is recommended that should the proposed development involve the excavation of soils to depths greater than 3m at any of the proposed development sites and/or dewatering that could result in lowering of the water table then an acid sulfate soil management plan (ASSMP) should be developed and actioned.”</i></p>
Class of Land	Works													
1	Any works.													
2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.													
3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.													
4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.													
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.													

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
7.1 continued	<p>(3) <i>Development consent must not be granted under this clause for the carrying out of works unless an acid sulfate soils management plan has been prepared for the proposed works in accordance with the Acid Sulfate Soils Manual and has been provided to the consent authority.</i></p> <p>(4) <i>Despite subclause (2), development consent is not required under this clause for the carrying out of works if:</i></p> <p style="padding-left: 20px;">(a) <i>a preliminary assessment of the proposed works prepared in accordance with the Acid Sulfate Soils Manual indicates that an acid sulfate soils management plan is not required for the works, and</i></p> <p style="padding-left: 20px;">(b) <i>the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works.</i></p> <p>(5) <i>Despite subclause (2), development consent is not required under this clause for the carrying out of any of the following works by a public authority (including ancillary work such as excavation, construction of access ways or the supply of power):</i></p> <p style="padding-left: 20px;">(a) <i>emergency work, being the repair of the works of the public authority required to be carried out urgently because the works have been damaged, have ceased to function or pose a risk to the environment or to public health and safety,</i></p> <p style="padding-left: 20px;">(b) <i>routine management work, being the periodic inspection, cleaning, repair or replacement of the works of the public authority (other than work that involves the disturbance of more than 1 tonne of soil).</i></p> <p style="padding-left: 20px;">(c) <i>minor work, being work that costs less than \$20,000 (other than drainage work).</i></p> <p>(6) <i>Despite subclause (2), development consent is not required under this clause to carry out any works if:</i></p> <p style="padding-left: 20px;">(a) <i>the works involve the disturbance of less than 1 tonne of soil, and</i></p> <p style="padding-left: 20px;">(b) <i>the works are not likely to lower the watertable.</i></p>	

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
Clause 7.3 Flood Planning	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> (a) <i>to minimise the flood risk to life and property associated with the use of land,</i> (b) <i>to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,</i> (c) <i>to avoid significant adverse impacts on flood behaviour and the environment.</i> <p>(2) <i>This clause applies to land at or below the flood planning level.</i></p> <p>(3) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</i></p> <ul style="list-style-type: none"> (a) <i>is compatible with the flood hazard of the land, and</i> (b) <i>will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and</i> (c) <i>incorporates appropriate measures to manage risk to life from flood, and</i> (d) <i>will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of riverbanks or watercourses, and</i> (e) <i>is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and</i> (f) <i>will not affect the safe occupation or evacuation of the land.</i> <p>(4) <i>A word or expression used in this clause has the same meaning as it has in the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005, unless it is otherwise defined in this Plan.</i></p> <p>(5) <i>(Repealed)</i></p>	<p>The application is supported by a submission prepared by WMA Water (Annexure 4) that reviews the modification proposal having regard to the previous flood assessment that was undertaken in relation to this site. This issue is further addressed in Section 6.2.4 of this SEE.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
Clause 7.4 Coastal Risk Planning	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> (a) <i>to avoid significant adverse impacts from coastal hazards,</i> (b) <i>to ensure uses of land identified as coastal risk are compatible with the risks presented by coastal hazards,</i> (c) <i>to enable the evacuation of land identified as coastal risk in an emergency,</i> (d) <i>to avoid development that increases the severity of coastal hazards.</i> <p>(2) <i>This clause applies to the land identified as “Coastal Risk Planning Area” on the Coastal Risk Planning Map.</i></p> <p>(3) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</i></p> <ul style="list-style-type: none"> (a) <i>will avoid, minimise or mitigate exposure to coastal processes, and</i> (b) <i>is not likely to cause detrimental increases in coastal risks to other development or properties, and</i> (c) <i>is not likely to alter coastal processes and the impacts of coastal hazards to the detriment of the environment, and</i> (d) <i>incorporates appropriate measures to manage risk to life from coastal risks, and</i> (e) <i>is likely to avoid or minimise adverse effects from the impact of coastal processes and the exposure to coastal hazards, and</i> (f) <i>provides for the relocation, modification or removal of the development to adapt to the impact of coastal processes and coastal hazards, and</i> (g) <i>has regard to the impacts of sea level rise.</i> <p>(4) <i>A word or expression used in this clause has the same meaning as it has in the NSW Coastal Planning Guideline: Adapting to Sea Level Rise (ISBN 978-1-74263-035-9) published by the NSW Government in August 2010, unless it is otherwise defined in this clause.</i></p>	<p>The <i>Coastal Risk Planning Map</i> that accompanies the SLEP 2014 does <u>not</u> identify the subject land as a “<i>Coastal Risk Planning Area</i>”.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
7.4 continued	(5) <i>In this clause:</i> coastal hazard has the same meaning as in the Coastal Protection Act 1979.	
Clause 7.5 Terrestrial Biodiversity	<p>(1) <i>The objective of this clause is to maintain terrestrial biodiversity, by:</i></p> <ul style="list-style-type: none"> (a) <i>protecting native flora and fauna,</i> (b) <i>protecting the ecological processes necessary for their continued existence, and</i> (c) <i>encouraging the recovery of native flora and fauna, and their habitats.</i> <p>(2) <i>This clause applies to land:</i></p> <ul style="list-style-type: none"> (a) <i>identified as “Biodiversity—habitat corridor” or “Biodiversity—significant vegetation” on the Terrestrial Biodiversity Map, and</i> (b) <i>situated within 40m of the bank (measured horizontally from the top of the bank) of a natural waterbody.</i> <p>(3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider:</i></p> <ul style="list-style-type: none"> (a) <i>whether the development is likely to have:</i> <ul style="list-style-type: none"> (i) <i>any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and</i> (ii) <i>any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and</i> (iii) <i>any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and</i> (iv) <i>any adverse impact on the habitat elements providing connectivity on the land, and</i> (b) <i>any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</i> <p>(4) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</i></p>	<p>The Terrestrial Biodiversity Map that accompanies the SLEP 2014 does <u>not</u> identify the subject land as including areas of Biodiversity - habitat corridor and/or Biodiversity - significant vegetation.</p> <p>Given the nature of the site the proposal is unlikely to have any adverse impacts on the ecological value of the land.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
7.5 continued	<p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause: bank means the limit of the bed of a natural waterbody. bed, of a natural waterbody, means the whole of the soil of the channel in which the waterbody flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the waterbody at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
Clause 7.6 Riparian land and watercourses	<p>(1) The objective of this clause is to protect and maintain the following:</p> <p>(a) water quality within watercourses,</p> <p>(b) the stability of the bed and banks of watercourses,</p> <p>(c) aquatic and riparian habitats,</p> <p>(d) ecological processes within watercourses and riparian areas.</p> <p>(2) This clause applies to all of the following:</p> <p>(a) land identified as “Riparian Land” on the Riparian Lands and Watercourses Map,</p> <p>(b) land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map,</p> <p>(c) all land that is within 50 metres of the top of the bank of each watercourse on land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:</p>	<p>The <i>Riparian Lands and Watercourses Map</i> that accompanies the SLEP 2014 identify a category 1 watercourse (Shoalhaven River), adjacent to the southern boundary of the Shoalhaven Starches factory site and a category 2 watercourse Abernethy’s Creek flowing through the factory site (north-south)</p> <p>The site is industrial land with no existing vegetation and is beyond the influence of normal fluvial geomorphic processes. As such the development will not have any adverse effect on water quality, flows within the watercourse, aquatic and riparian species or habitats and ecosystems of the watercourse.</p> <p>A geotechnical assessment was undertaken by Coffey Geosciences as part of the previous Mod.16 which included an assessment in relation to riverbank stability. As detailed earlier in this report, the proposed relocation of the baghouse adjacent to Starch Dryer No. 5 is consistent with</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
7.6 continued	<p>(a) <i>whether or not the development is likely to have any adverse impact on the following:</i></p> <ul style="list-style-type: none"> (i) <i>the water quality and flows within the watercourse,</i> (ii) <i>aquatic and riparian species, habitats and ecosystems of the watercourse,</i> (iii) <i>the stability of the bed and banks of the watercourse,</i> (iv) <i>the free passage of fish and other aquatic organisms within or along the watercourse,</i> (v) <i>any future rehabilitation of the watercourse and its riparian areas, and</i> <p>(b) <i>whether or not the development is likely to increase water extraction from the watercourse, and</i></p> <p>(c) <i>any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</i></p> <p>(4) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</i></p> <ul style="list-style-type: none"> (a) <i>the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</i> (b) <i>if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</i> (c) <i>if that impact cannot be minimised—the development will be managed to mitigate that impact</i> <p>(5) <i>For the purpose of this clause:</i></p> <p>bank means the limit of the bed of a watercourse.</p> <p>bed, of a watercourse, means the whole of the soil of the channel in which the watercourse flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the watercourse at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	<p>that originally proposed and assessed as part of Mod. 16 but was subsequently relocated.</p> <p>The Coffey report that supported Mod. 16 made the following comments about works associated with Starch Dryer No 5 at that time:</p> <p><i>“The various structures proposed are located on the western side of Abernethy’s Creek. The main structures are relatively remote from the nearest point of the creek bank. The sifter room and pipework associated with the new structures are close to the top of the western creek bank. Our recent observations of the creek bank did not reveal any obvious change to the creek banks since the previous observations by Coffey. Construction of concrete paving has occurred over the near level area to the west of the creek bank as part of the Starch Dryer No. 5 development. No evidence of erosion or slumping of the bank was observed.”</i></p> <p>The Coffey Report, in support of Mod. 16, made the following recommendations in relation to the works to be sited within proximity of Starch Dryer No.5 at that time:</p> <p>“Site 1 – Product Dryer Building and Warehouse.</p> <p><i>Only the minor structures including the sifter room developed along the top of the bank have the potential to disturb the ground or locally load the top of the bank. These structures may be founded on shallow footings positioned at least 2m from the top of bank or alternatively may be supported on deep footings below the zone of influence of the creek bank. In this case these structures will not influence the stability of the creek bank. The larger structures for this part of the development are more remote from the creek bank and will be founded on deep piles to rock, and therefore will have no influence on the stability of the creek bank.”</i></p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
Clause 7.7 Landslide risk and other land degradation	<p>(1) <i>The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land:</i></p> <p style="margin-left: 20px;">(a) <i>comprising steep slopes, and</i></p> <p style="margin-left: 20px;">(b) <i>susceptible to other forms of land degradation.</i></p> <p>(2) <i>This clause applies to the following land:</i></p> <p style="margin-left: 20px;">(a) <i>land with a slope in excess of 20% (1:5), as measured from the contours of a 1:25,000 topographical map, and</i></p> <p style="margin-left: 20px;">(b) <i>land identified as “Sensitive Area” on the Natural Resource Sensitivity—Land Map.</i></p> <p>(3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider any potential adverse impact, either from, or as a result of, the development in relation to:</i></p> <p style="margin-left: 20px;">(a) <i>the geotechnical stability of the site, and</i></p> <p style="margin-left: 20px;">(b) <i>the probability of increased erosion or other land degradation processes.</i></p> <p>(4) <i>Before granting consent to development on land to which this clause applies, the consent authority must be satisfied that:</i></p> <p style="margin-left: 20px;">(a) <i>the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</i></p> <p style="margin-left: 20px;">(b) <i>if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</i></p> <p style="margin-left: 20px;">(c) <i>if that impact cannot be minimised – the development will be managed to mitigate that impact.</i></p> <p>(5) <i>In this clause, topographical map means the most current edition of a topographical map, produced by Land and Property Information division of the Department of Finance and Services, that identifies the Council’s local government area and boundary.</i></p>	<p>The proposed works involve land identified as sensitive land under the SLEP 2014 mapping. Under these circumstances the provisions of this clause will apply to this proposal.</p> <p>As outlined above in relation to Clause 7.6 Coffey Geosciences previously undertook a geotechnical assessment of the site associated with the baghouse location adjacent to Starch Dryer No. and concluded these larger structures for this part of the development are more remote from the creek bank and will be founded on deep piles to rock, and therefore will have no influence on the stability of the creek bank.</p> <p>With respect to works carried out on the “Packing Plant” site on the northern side of Bolong Road, Coffey’s undertook a geotechnical assessment as part of Mod 9. This report made a series of recommendations in relation to works associated with roads and the rail spur line as part of this earlier proposal.</p> <p>The principal justification for elevating the services conduit aboveground has been based upon geotechnical advice provided by Dr Kourosh Kianfar of SMEC, as detailed in Section 4.3 of the SEE.</p>

Table 4 (continued)

SLEP 2014 Clause	Provisions	Comments
7.8 Scenic protection	<p>(1) <i>The objective of this clause is to protect the natural environmental and scenic amenity of land that is of high scenic value.</i></p> <p>(2) <i>This clause applies to land identified as “Scenic Protection” on the Scenic Protection Area Map.</i></p> <p>(3) <i>In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must:</i></p> <p style="padding-left: 40px;">(a) <i>consider the visual impact of the development when viewed from a public place and be satisfied that the development will involve the taking of measures that will minimise any detrimental visual impact, and</i></p> <p style="padding-left: 40px;">(b) <i>consider the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site, and</i></p> <p style="padding-left: 40px;">(c) <i>consider the siting of the proposed buildings.</i></p>	<p>The subject land is <u>not</u> identified as being within a “Scenic Protection” area by <i>Scenic Protection Area Mapping</i> that accompanies the SLEP 2014.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p> <p>The visual impact associated with this proposal are discussed in Section 6.2.6 of this EA.</p>

6.1.3 Development Control Plans (DCP) and Policies

Shoalhaven Development Control Plan (DCP) 2014

Given the nature of the works associated with this modification proposal it is considered the provisions of the Shoalhaven DCP 2014 are not directly relevant to this modification application apart from the provision of *Chapter G9: Development on Flood Prone Land*.

The SEE is supported by a submission prepared by WMA Water addressing flooding issues which arise in relation to this Modification Proposal. A copy of the WMA Water submission is included in **Annexure 4** of this SEE. Flooding issues are further in Section 6.2.4 of this SEE.

Table 5 below is an extract from the WMA Water submission addressing the relevant provisions (section 5.1) of Chapter G9 of the Shoalhaven DCP 2014.

Table 5
Performance Criteria – General (Section 5.1 DCP 2014)
Extract from WMA Water Flood Compliance Report

<i>Performance Criteria</i>	<i>Response</i>
P1 Development or work on flood prone land will meet the following:	
<i>The development will not increase the risk to life or safety of persons during a flood event on the development site and adjoining land.</i>	No additional workers will be on the site as a result of the proposed works.
<i>The development or work will not unduly restrict the flow behaviour of floodwaters.</i>	Refer Hydraulic Impact Assessment below.
<i>The development or work will not unduly increase the level or flow of floodwaters or stormwater runoff on land in the vicinity. The development or work will not exacerbate the adverse consequences of floodwaters flowing on the land with regard to erosion, siltation and destruction of vegetation.</i>	The proposed development is within existing built up industrial land with minimal vegetation on the site. All runoff under existing and future conditions will reach the ground in nearly identical locations and thus the works will have no impact on erosion or siltation.
<i>The structural characteristics of any building or work that are the subject of the application are capable of withstanding flooding in accordance with the requirements of the Council.</i>	A separate structural report will be provided.
<i>The development will not become unsafe during floods or result in moving debris that potentially threatens the safety of people or the integrity of structures.</i>	A separate structural report on the potential failure of existing buildings and stored equipment and product will be provided.
<i>Potential damage due to inundation of proposed buildings and structures is minimised.</i>	Inundation of the site and the proposed plant and / or debris impact may cause damage to electrical and other components feeding the equipment as well as damage to the plant itself. These issues will be considered in an updated Shoalhaven Starches Flood Plan taking into account the proposed works.

Table 5 (continued)

Performance Criteria	Response
<i>The development will not obstruct escape routes for both people and stock in the event of a flood.</i>	The proposed works will not occupy escape routes or cause workers to become trapped. Possible failure of the lift during a flood with workers inside will be considered in an updated Shoalhaven Starches Flood Plan.
<i>The development will not unduly increase dependency on emergency services.</i>	The works will not increase the number of workers from Shoalhaven Starches who may be subject to flood risk as a result of the proposed works.
<i>Interaction of flooding from all possible sources has been taken into account in assessing the proposed development against risks to life and property resulting from any adverse hydraulic impacts.</i>	Refer Hydraulic Impact Assessment below.
<i>The development will not adversely affect the integrity of floodplains and floodway's, including riparian vegetation, fluvial geomorphologic environmental processes and water quality.</i>	The works will be constructed on land that is partly designated as high hazard floodway in the 1% AEP event. The site is industrial land with limited existing vegetation and is beyond the influence of normal fluvial geomorphic processes. The works will have no impact on water quality.

6.1.4 Protection of the Environment Operations Act and associated Regulations

The existing Shoalhaven Starches factory site and Environmental Farm are subject to an Environmental Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 (POEO Act) (EPL No. 883) issued by the EPA. The licence imposes requirements in terms of:

- discharges to air, water and land;
- irrigation controls;
- management of irrigation;
- maintenance of irrigation reticulation;
- odour control;
- noise.

If approved, the proposed modification may necessitate the terms/provisions of this licence to be also reviewed.

With respect to the proposed use of woodchips as part of the fuel source for Boilers 2 and 4, the EPA have issued a renewed resource recovery order and resource recovery exemption for biomass (sawmilling and forestry residue) used as boiler fuel at the site, and which are included as **Annexure 7** to this SEE.

The resource recovery order and exemption have been made pursuant to clauses 91, 92 and 93 of the Environment Operations (Waste) Regulation 2014 (Waste Regulation). The resource recovery order and exemption imposes requirements that must be met by suppliers to which 'The Shoalhaven Starches sawmilling residue (energy recovery) exemption 2019' applies. The requirements apply in relation to the supply of sawmilling residue for use as a fuel during boiler operation at the Shoalhaven Starches facility.

The waste applies to sawmilling residue that is, or is intended to be, used as a fuel for the purpose of boiler operations and which applies to:

... sawmilling residue is uncontaminated, organic fibrous wood residues and natural wood wastes that result from forestry and sawmilling operations such as, heads, brash or tree thinnings, sawmill sawdust, shavings, chips, bark and other offcuts. Sawmilling residue is generated by Boral timber mill (Narooma, Nowra and Heron's Creek) and Romney Park sawmill operations, and supplied by Eco Mulch Supplies Pty Ltd and Nerrigundah Woodchips Pty Ltd, respectively.

Sawmilling residue must be comprised of natural timber residues and must be free from contamination, including treated, preserved, lacquered, glued, laminated or coated timber or wood products. Sawmilling residue does not include material that has been treated or sprayed by herbicides, pesticides or any other chemical treatment.

The exemption is subject to the following conditions:

- 6.1. *At the time the sawmilling residue is received at the premises, the material must meet all quality control requirements which are required on or before the supply of sawmilling residue under 'the Shoalhaven Starches sawmilling residue (energy recovery) order 2019'.*
- 6.2. *Sawmilling residue can be used as a fuel for the purposes of boiler operation at the Shoalhaven Starches facility located at 160 Bolong Road, Bombaderry NSW 2541.*
- 6.3. *The consumer must develop and implement a Waste Acceptance Procedure (WAP) to assess compliance of the material received, which should include:*
 - 6.3.1. *load inspection procedures to assess for the presence of potential contaminants;*
 - 6.3.2. *acceptance criteria for loads of White Cypress forestry residue received, including visual characterisation, homogeneity assessment and adequacy of the methods of transport;*
 - 6.3.3. *review of information and documentation provided with the transported load, such as compliance certificates and chain of custody documentation;*
 - 6.3.4. *quarantine and response measures for rejected loads; and*
 - 6.3.5. *provision to train staff on the identification of prohibited waste material and the WAP.*

- 6.4. *The consumer must provide adequate storage and transfer measures for all loads of sawmilling residue received, with consideration for minimising potential contamination. Storage considerations on site must also include a quarantine area for rejected loads.*
- 6.5. *The consumer must keep a written record of the following for a period of six years:*
- *the quantity of any sawmilling residue received; and*
 - *the name and address of the supplier of the sawmilling residue received.*
- 6.6. *The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.*
- 6.7. *The consumer must ensure that any use of the sawmilling residue as a fuel must occur within a reasonable period of time after its receipt.*

6.2 THE LIKELY IMPACTS OF THE DEVELOPMENT, INCLUDING ENVIRONMENTAL IMPACTS ON BOTH NATURAL AND BUILT ENVIRONMENTS, AND SOCIAL AND ECONOMIC IMPACTS IN THE LOCALITY

6.2.1 Risk Assessment of Potential Environmental Impacts

The purpose of this section of the SEE is to provide a risk assessment of the potential environmental impacts associated with the modification proposal. This section (**Table 6**) compares the potential impacts from the proposed modification against the approved project. The comparison uses the key environmental impacts assessed in the EA and summarises the relative change in environmental impacts associated with the proposed modification.

Table 6
Risk Assessment

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Air Quality (including Odour) Assessment		
<p>One of the primary issues that was addressed in the original EA for the Shoalhaven Starches Expansion Project concerned the need for a comprehensive air quality assessment (including odour assessment) and reduction of odours as part of the project.</p> <p>The SEE is supported by an air quality assessment prepared by GHD which addresses the relevant aspects of this Modification Application in terms of air quality (including odour) impacts. GHD's assessment concludes that</p> <p><i>“...a marginal increase was observed in predicted odour impacts as a result of the modification. The odour criteria is met at all residential sensitive receptors and it is considered highly unlikely that the increase in odour would be detected at sensitive receptors.</i></p> <p><i>Air quality impacts are predicted to comply with the criteria at all residential sensitive receptors. Manildra have implemented reasonable and feasible mitigation measures on site to reduce the potential air quality impacts from the new boiler.</i></p> <p><i>Overall, the proposal should be acceptable from an air quality perspective.”</i></p>	<p>GHD do not propose any additional management or mitigative measures are required for this Modification Application.</p>	<p>This issue is further addressed in Section 6.2.2 of this SEE.</p>

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Transport and Traffic		
<p>The proposed modification overall does not involve; any significant increases in traffic generated to the site; any changes to vehicle entrances to the site; or alternations to the layout of approved car parking areas.</p> <p>The use of woodchips as part of the fuel source for boilers 2 and 4 will slightly increase the overall volumes of fuel used at the site, by 1.7 trucks per week. In this regard the volumes of woodchips used will replace a lesser quantity of coal that would otherwise be used. As a result, there will be a slight increase in the volumes of material at the site or that are required to be delivered by truck to the site by 1.7 trucks per week. However, the use of woodchip as a fuel source will result in a reduction in ash that will be produced from combustion in the boilers which will result in a reduction in trucks removing ash from the site by 1 truck per week, resulting in an overall increase of less than 1 (0.7) truck per week</p> <p>This Modification Application therefore will not have any significant additional traffic or car parking impacts compared to the Approved Project.</p>	No additional management or mitigative measures are proposed in terms of traffic or car parking..	This issue is not further addressed in this SEE.
Site Contamination		
<p>The original EAs for Project Approval and the subsequent EA for Mod. 16 were supported by a Contamination Assessments prepared by Coffeys and GHD respectively.</p> <p>The Contamination Assessment prepared by Coffey's which supported the EA for the original Project Approval identified petroleum hydrocarbon and Asbestos Containing Material (ACM) within an area of fill located within the</p>	No additional management or mitigative measures are proposed in terms of this issue.	This issue is not further addressed in this SEE.

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
<p>central western part of the packing plant site. The subsequent Project Approval required that the site be the subject to a site audit report confirming the site will be suitable for its intended use. This requirement has been subsequently complied with. The area of concern identified by Coffey's however did not include the area of the packing plant site associated with this current modification.</p> <p>The subsequent assessment undertaken by GHD advised in relation to Mod. 16 identified the likelihood for widespread contamination within the proposed development areas, including the area associated with the location for the relocated dryer and baghouse associated with this modification application was considered low. The GHD assessment identified an abandoned underground storage tank (UST) within the vicinity of the proposed Specialty Products Building the subject of the Mod 16 approval. The Project Approval subsequently required further investigations to be undertaken to determine the location of the UST and provide a report of these investigations and any implement any recommendations of this report. It should be noted that the works associated with this modification application, in terms of the relocation of the bag house to the north of the existing Starch Dryer No. 5 are consistent with the location of this plant that was original considered in the GHD assessment. Under these circumstances this modification proposal does not warrant any further investigation in relation to this issue, as this part of the site was considered as part of the GHD assessment report as part of Mod. 16.</p>		

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Acid Sulphate Soils		
<p>The original EAs for Project Approval and the subsequent EA for Mod 16 were supported by an Acid Sulphate Soil (ASS) Assessments prepared by Coffey's and GHD respectively.</p> <p>The original ASS assessment carried out by Coffey's did not identify the presence of ASS for the Bolong Road crossing site for the pipe service conduits.</p> <p>The subsequent ASS assessment carried out by GHD identified that ASS could be encountered within alluvial soils underlying the fill materials at depths below 3 m. GHD recommended that should proposed development involve the excavation of soils to depths greater than 3 m at any proposed development site and / or dewatering that could result in lowering of the water table, then an acid sulphate soil management plan should be developed and actioned. Conditions of the Project Approval already make provision for the need for the preparation of ASS management plan for the site. As outlined above the works associated with this modification application, in terms of the relocation of the bag house to the north of the existing Starch Dryer No. 5, are consistent with the location of this plant that was original considered in the GHD assessment. Under these circumstances this modification proposal does not warrant any further investigation in relation to this issue, as this part of the site was considered as part of the GHD assessment report as part of Mod. 16.</p>	<p>No additional management or mitigative measures are proposed in terms of this issue.</p>	<p>This issue is not further addressed in this SEE.</p>

Table 6 (continued)

Relative Change in Environmental Impact	Additional Management or Mitigation Measures Required	Significance of Issue with this Modification Proposal
<p>Noise</p> <p>Shoalhaven Starches are licensed under the POEO Act (Environment Protection Licence No. 883) which sets noise limits for the operation of the overall factory complex. Noise goals have been designed for the site to ensure existing noise levels are not increased by additional plan. The noise goals for any new plant are 10 dBA below the EPL noise limits and range between 28 and 32 dBA depending upon the residential receptor location.</p> <p>This EA is supported by a Noise Assessment submission prepared by Harwood Acoustics Pty Ltd. A copy of this assessment is included in Annexure 3 to this EA.</p> <p>According to Harwood Acoustics, the proposed new location of the Baghouse adjacent to Starch Dryer No. 5 is not significantly different from the approved location. There will therefore be no appreciable change to previously predicted noise levels from the baghouse based on the new location compared with the approved location.</p> <p>The noise level predictions previously made by Harwood Acoustics therefore remain valid for this proposal. There were no specific noise control recommendations necessary for the baghouse. The level of noise emission from the operation of the baghouse is predicted to be well below the design noise goals at all receptor locations. This is based on the assumed sound power level for the pneumatic pulse of 100 dBA which is based on measurements of similar items of plant.</p> <p>Harwood Acoustics have also addressed the issue of the technical non-compliance with condition 14J(e) relating to the noise emission from one particular fan / silencer combination (B4263). Harwood Acoustics have recommended a proposed amendment to this condition.</p>		
	<p>The Noise Impact Assessment prepared by Harwood Acoustics does not make any recommendations in relation to the proposed modifications relating to the baghouse relocation adjacent to Starch Dryer No. 5.</p> <p>In relation to the technical non-compliance of one of the fans associated with Flour Mill B the Noise Impact Assessment prepared by Harwood Acoustics recommends that condition 14J(e) be modified to read:</p> <p><i>“silencers fitted to each exhaust fan must not exceed a sound pressure level such that the cumulative level of noise emission from all fans combined does not exceed a total sound pressure level of 74 dBA when measured or calculated at a distance of 3 m from the discharge silencers. The level of noise reduction achieved must be demonstrated through a final design noise verification required under Condition 14L”</i></p>	<p>Issues pertaining to Flour Mill B have been the subject of previous consultation with the Department of Planning, Industry and Environment in which it was recommended that this Modification Application address this technical non-compliance issue. Noise impacts are further addressed in Section 6.2.3 of this SEE.</p>

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Hazards		
<p>The original EA for Project Approval and the subsequent EA for Mod 16 were supported by a Preliminary Hazard Assessments prepared by GHD and Pinnacle Risk Management respectively.</p> <p>The current Modification Application is supported by a submission prepared by Pinnacle Risk Management. This submission concludes that the proposed modification does not impact the findings of the earlier PHA undertaken by Pinnacle Risk Management in.</p>	No additional management or mitigative measures are proposed in terms of this issue.	The SEE is supported by a submission prepared by Pinnacle Risk Management addressing this issue (Annexure 5). This issue is further addressing Section 6.2.5 of this SEE.
Flooding		
<p>The subject site is inundated during the 1% Annual Exceedance Probability (AEP) flood event by floodwaters from the Shoalhaven River. The sites are categorised as high hazard floodway and high hazard flood storage. This modification Application is supported by an assessment submission prepared by WMA Water ("WMA") (Annexure 4).</p> <p>The submission prepared by WMA Water identifies that the proposed works associated with this Modification Proposal will have no significant impact on flood levels of surrounding properties.</p>	No additional management or mitigation measures proposed.	The SEE is supported by a submission prepared by WMA Water addressing this issue (Annexure 4). This issue is further addressing Section 6.2.4 of this SEE.

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Waste Management		
The proposed modifications will not alter the way waste is managed on the site. The site is already subject to an existing Waste Management Plan prepared in accordance with the original Project Approval.	No additional management or mitigation measures proposed, although any approval for this Modification Application should require the existing Waste Management Plan to be revised to incorporate the elements that form part of this Modification Application.	Not a key issue. This issue is not further addressed in this SEE.
Site Stormwater Management		
A Stormwater Assessment was prepared by Allen Price and Scarratts in relation to Mod. 16. This assessment included the area of the site associated with this Modification Proposal. This Modification Proposal does not alter the findings of this previous assessment.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this SEE.
Visual Impact		
<p>The majority of the works associated with this modification will be situated within the vicinity of existing industrial development of a similar scale to that which is proposed. Furthermore, the appearance, scale and height of the proposed relocated baghouse will be similar to that originally considered as part of the Mod. 16 EA.</p> <p>The elevation of the service conduit from below ground to above ground, will introduce an additional physical structure within the Shoalhaven Starches site that has not previously been considered in terms of visual impact.</p>	No additional management or mitigation measures proposed.	The visual impacts associated with this modification proposal are addressed in Section 6.2.6 of this EA.

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Flora and Fauna		
The proposed works associated with this modification will all be located within the factory site, which is devoid of vegetation, or within the packing plant site located on the northern side of Bolong Road and will pass across land that has been cleared in the past. The original Flora and Fauna Assessment carried out by Kevin Mills & Associates for	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this SEE.
the Expansion Project did not identify any specific ecological constraints with this part of the site. The proposal will not require any additional vegetation to be disturbed. No change in environmental impacts from that originally identified in the EA are envisaged.		
Heritage and Archaeological		
The proposed works associated with this modification will be located within the factory site which was not previously identified by the EA for the Shoalhaven Starches Expansion Project as an area subject to either Aboriginal or European cultural heritage significance. The original Aboriginal Archaeological Assessment that supported the EA prepared by South East Archaeology did not identify any constraints with respect to the parts of the site associated with this modification proposal. The proposed works will have no additional impact in terms of indigenous or non-indigenous heritage. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this SEE.

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Effluent Irrigation and Storage		
This Modification Proposal does not seek to increase production at the site or increase waste waters that will need to be treated and disposed. This Modification Application does not seek to alter the existing approve wastewater treatment and disposal measures for the existing site operations.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this SEE.
Wastewater Treatment		
<p><u>Water Discharges</u></p> <p>The Shoalhaven Starches Factory and Environmental Farm are licensed premises under the Protection of the Environmental Operations Act. Wastewater discharges from the site are licensed by the DEC (EPL 883).</p> <p>The plant has a licensed outfall into the Shoalhaven River. The outfall point is a 50 cm diameter metal pipe discharging at the end of an existing jetty. It also has a cooling water discharge comprising a 50 cm diameter pipe which discharges onto a gabion spillway.</p> <p>Under the terms of the Company's EPL wastewater streams associated with the plant include:</p> <ul style="list-style-type: none"> • river water passed through the boiler condensers and the primary side of the heat exchangers; • boiler water treatment plant regeneration waters; and • pH adjusted glucose plant ion exchange unit regeneration waters. <p>All these must be discharged from the cooling water discharges.</p>	No additional management or mitigation measures.	Not a key issue. This issue is not further addressed in this SEE.

Table 6 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
<p>The limiting conditions in relation to these discharges include:</p> <ul style="list-style-type: none"> • The volume of water discharged from the cooling water discharges must not exceed 100,000 kilolitres per day. • The wastewaters discharged at both points shall not exceed a temperature of 32°C. • This Modification Proposal will not involve any changes to these discharge waters. 		

6.2.2 Air Quality Issues

GHD were engaged to conduct an air quality impact assessment for the proposed modifications associated with this Modification Application (**Annexure 2**). This section of the SEE provides a summary of the findings of the GHD Air Quality Impact Assessment for this Modification Application.

6.2.2.1 Criteria for Assessment

Odour

Odour 'strength' or concentration is measured in odour units (OU), where 1 OU represents the concentration of a sample that can just be detected by 50% of people in a controlled situation where there is no background 'ambient' odour.

The EPA have defined odour criterion and the guidelines which specify how it should be applied in dispersion modelling to assess the likelihood of nuisance impact arising from the emission of odour.

Odour impact is a subjective experience and has been found to depend on many factors, the most important of which are:

- The **F**requency of the exposure;
- The **I**ntensity of the odour;
- The **D**uration of the odour episodes;
- The **O**ffensiveness of the odour;
- The **L**ocation of the source.

These factors are often referred to as the FIDOL factors.

DEC defined the odour criterion to take account of two of these factors (**F** is set at 99 percentile, **I** is set at from 2 to 7 OU). The choice of criterion odour level has also been made to be dependent on the population of the affected area, and to some extent it could be said that population is a surrogate for location – so that the **L** factor has also been considered. The relationship between the criterion odour level **C** to affected population **P** is given below.

$$C = [\log P - 4.5] \div -0.6 \quad \text{Equation 1}$$

Table 7 lists the values of C for various values of affected populations as obtained using equation 1 as identified by GHD.

Table 7
Odour Assessment Criterion for the Assessment of Odour (GHD, 2019)

<i>Population of Affected Community</i>	<i>Odour Performance Criteria (nose response odour certainty units at 99th percentile)</i>
Single residence ($\leq \sim 2$)	7
~ 10	6
~ 30	5
~ 125	4
~ 150	3
Urban (~ 2,000)	2

The NSW Approved Methods specifies a criterion of two odour units at the 99th percentile over a short term averaging nose-response time of one second for a complex mixture of odorous air pollutants in an urban area (population greater than 2000 or with schools and hospitals). The criterion is applied at the location of the nearest sensitive receptor or likely future location of sensitive receptor.

5 OU is commonly taken as a conservative measure of the odour level which can be distinguished against the ambient background level of odour, and which if offensive, could result in complaint.

1 OU generally cannot be detected in a non-laboratory situation (ie. where the ambient background odour levels reduce the detectability of a given odorant).

Other Air Quality Impacts

According to GHD potential non-odorous air quality impacts from the site include dust and products of combustion. The following pollutants have been assessed by GHD against relevant criteria:

- Total suspended solids (TSP);
- Fine particulate matter less than 10 micron equivalent aerodynamic diameter PM₁₀;
- Fine particulate matter less than 2.5 micron equivalent aerodynamic diameter PM_{2.5};
- Products of combustion including carbon monoxide, oxides of nitrogen (NOX), sulfur dioxide (SO₂), hydrogen chloride (HCL), heavy metals (Type I & II), total volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAHs) and Hydrogen fluoride (HF).

The air quality assessment criteria for these pollutants as detailed by GHD is summarised in **Table 8** below.

Table 8
Air Quality Impact Assessment Criteria – Other Pollutants (GHD 2019)

<i>Pollutant</i>	<i>Averaging Period</i>	<i>Criterion</i>
Particulate Matter PM ₁₀	24 hours	50 µg/m ³
	Annual	30 µg/m ³
Particulate Matter PM _{2.5}	24 hours	25 µg/m ³
	Annual	8 µg/m ³
TSP	Annual	90 µg/m ³
Carbon monoxide(CO)	15 minutes	100 mg/m ³
	1 hour	30 mg/m ³
	8 hours	10 mg/m ³
Sulfur dioxide (SO ₂)	10 minutes	712 µg/m ³
	1 hour	570 µg/m ³
	24 hours	228 µg/m ³
Nitrogen dioxide (NO ₂)	1 hour	246 µg/m ³
	Annual	62 µg/m ³
Hydrogen fluoride (HF)	90 days	0.25 µg/m ³
	30 days	0.4 µg/m ³
	7 days	0.8 µg/m ³
	24 hours	1.5 µg/m ³
Hydrogen Chloride HCL)	1 hour	0.14 mg/m ³
Polycyclic aromatic hydrocarbon (PAH)	1 hour	0.0004mg/m ³
Type 1 metals		
Antimony	1 hour	0.009 mg/m ³
Arsenic	1 hour	0.00009 mg/m ³
Cadmium	1 hour	0.000018 mg/m ³
Lead	Annual	0.5 µg/m ³
Mercury	1 hour	0.0018mg/m ³
Type 2 metals		
Beryllium	1 hour	0.000004mg/m ³
Chromium	1 hour	0.00009 mg/m ³
Manganese	1 hour	0.018 mg/m ³
Nickel	1 hour	0.00018 mg/m ³

6.2.2.2 Meteorological Data

An annual wind rose has been created by GHD and is provided in **Figure 11** to show the wind field at the subject site. According to GHD the following trends are evident from **Figure 11**:

- Annual average wind speed of 3.2 m/s.
- Winds are most prevalent from the west and west northwest, accounting for around one third of all winds.
- Winds are least prevalent along the north-south axis.
- Light winds (shown in grey) are more prevalent from the north-west.
- Drainage flows occurring during stable conditions at night-time are dominated by the following distinct features (in order of scale):
 - Shoalhaven River running west to east through the site;
 - Browns Mountains to the northwest of the site;
 - Yalwal State Forest mountain range to the west.

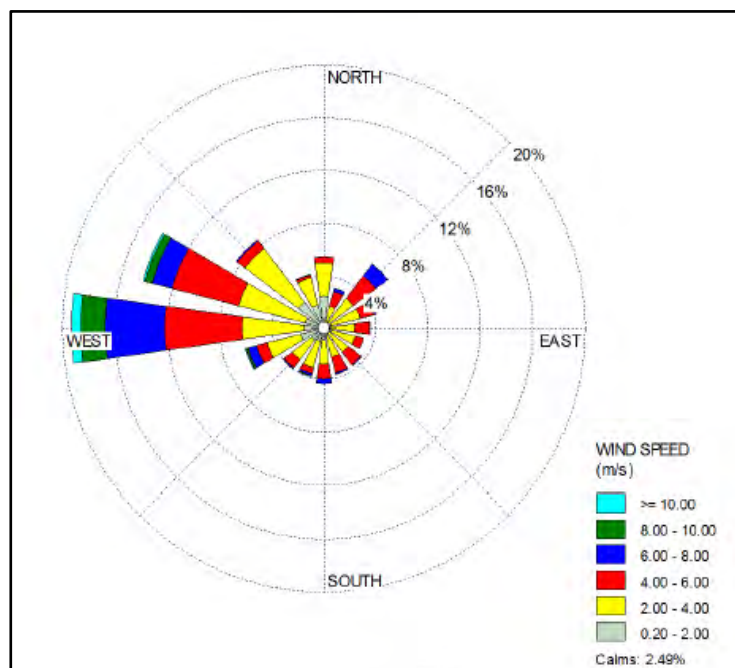


Figure 11: CALMET Wind Rose for factory (GHD, 2019).

6.2.2.3 Odour Assessment

Figure 12 shows the predicted 99th percentile odour impacts (one-minute nose-response time) for the proposed Mod. 17 operations and the previous modifications as modelled by GHD.

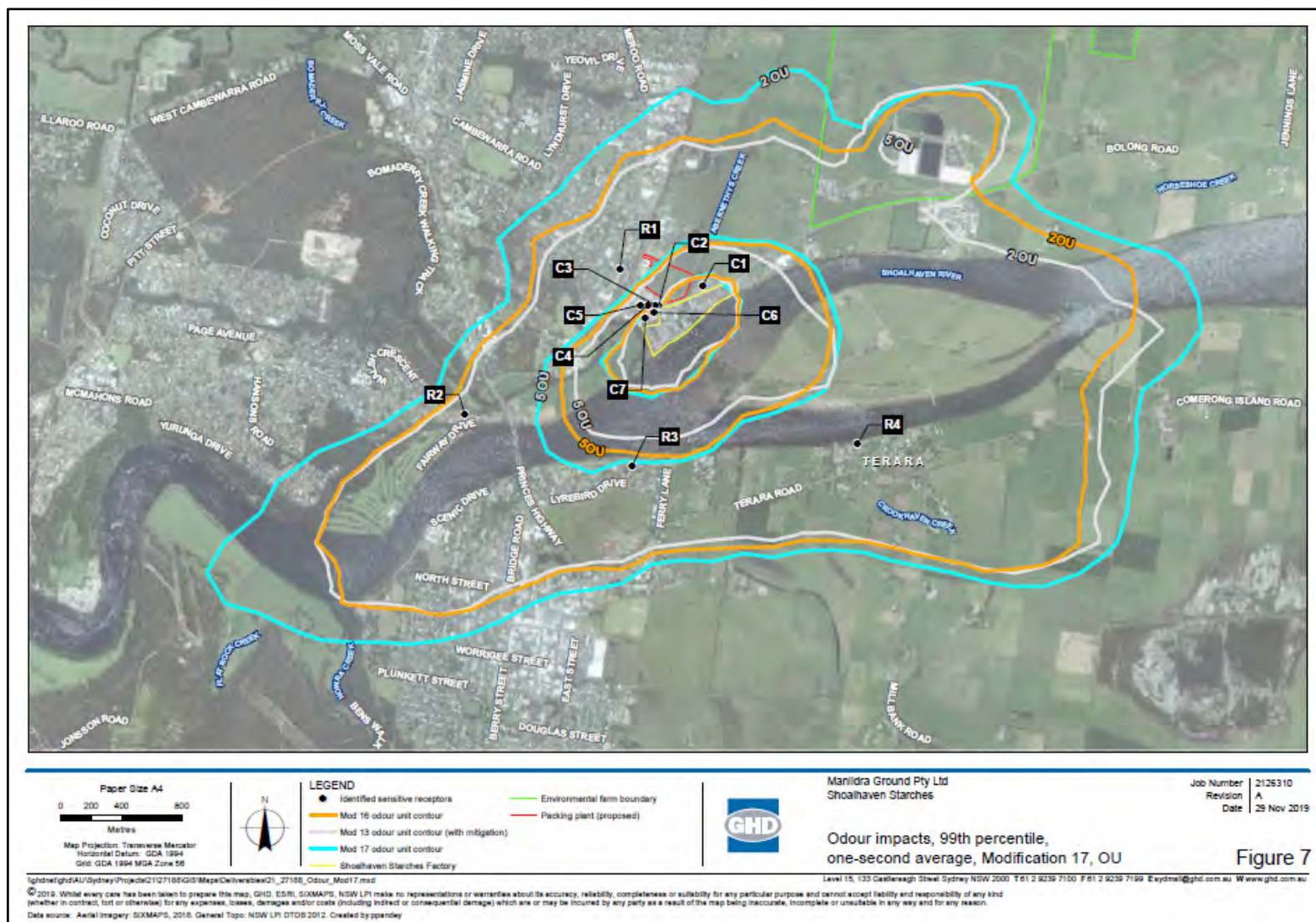


Figure 12: Odour impacts, 99th percentile on-second average Modification 17 (GHD, 2019).

According to GHD the predicted odour levels show an increase at all sensitive receptors. The increase is attributed to the higher quarterly results in the last four quarters, particularly the pellet plant stack (PPES). The increase is **not** a result of the proposed modifications according to GHD.

The results show, according to GHD, that the impact assessment odour criteria are achieved at all residential sensitive receptors.

Seven commercial/industrial receptors are included in the assessment by GHD. These are all located within approximately 125 m of the site. One hour, 99th percentile odour impacts have been predicted by GHD based on the hours of operation of the receptors. Commercial/industrial receptors C2, C3, C4, C5, C6 and C7 marginally exceed the criteria of 6 OU (assumed the same criteria as R1) due to the higher quarterly results.

Commercial receptor C1 is located approximately 45 m from the site and is the BOC CO₂ Plant. Given the industrial nature of C1, and its existing proximity to the site no significant odour impacts are anticipated from the proposal.

No odour complaints attributed to the Shoalhaven Starches plant were made in the previous four quarters.

6.2.2.4 Air Quality Assessment

In addition to odour emissions, the operation of the Shoalhaven Starches plant also has the potential to generate emissions of particulate matter and products of combustion.

Predicted Air Quality Impacts

Particulates

The impact of dust emissions principally relates to the potential effect on human health of inhalation of particles in the air column, and it is the finer fraction that have the greater potential to cause respiratory health effects.

Results of the assessment undertaken by GHD show full compliance with the PM_{2.5} and PM₁₀ 24 hour criteria at sensitive receptor R1.

Results of the assessment undertaken by GHD show full compliance with the PM_{2.5} 24 hour criteria at sensitive receptor C1. An exceedance of the PM₁₀ 24 hour criteria is predicted by GHD for one day of the year at sensitive receptor C1.

The site contributions at receptor C1 for the exceedance day are dominated by the following top four sources:

- S19 (Starch dryer no. 4): 3.6 µg/m³

- S20 (Spray dryer): 3.2 $\mu\text{g}/\text{m}^3$
- S01 (Starch dryer no. 1): 2.9 $\mu\text{g}/\text{m}^3$
- PPF (DDG Pellet Plant): 1.5 $\mu\text{g}/\text{m}^3$.

In total, these sources account for 82% of the site contribution on the day. The contributions from the boilers are as follows:

- Boiler 1: 0.1 $\mu\text{g}/\text{m}^3$
- Boiler 2: 0.2 $\mu\text{g}/\text{m}^3$
- Boiler 4: 0.3 $\mu\text{g}/\text{m}^3$
- Boiler 5/6: 0.3 $\mu\text{g}/\text{m}^3$
- Boiler 8: 0.1 $\mu\text{g}/\text{m}^3$.

According to GHD the contributions from all boilers account for 8% of the total concentration on the day, with boiler 8 accounting for less than 1% of the total contribution. Therefore, according to GHD, the proposal is not anticipated to increase levels PM_{10} significantly.

Plots of the predicted 24 hour maximum PM_{10} levels are provided in **Figure 13** (incremental impact) and in **Figure 14** (cumulative impact with 70th percentile PM_{10} levels at Albion Park South 2016 for comparative purposes).

Plots of the predicted 24-hour maximum $\text{PM}_{2.5}$ levels are provided in **Figure 15** (cumulative impact with 70th percentile $\text{PM}_{2.5}$ levels at Albion Park South 2016 for comparative purposes).

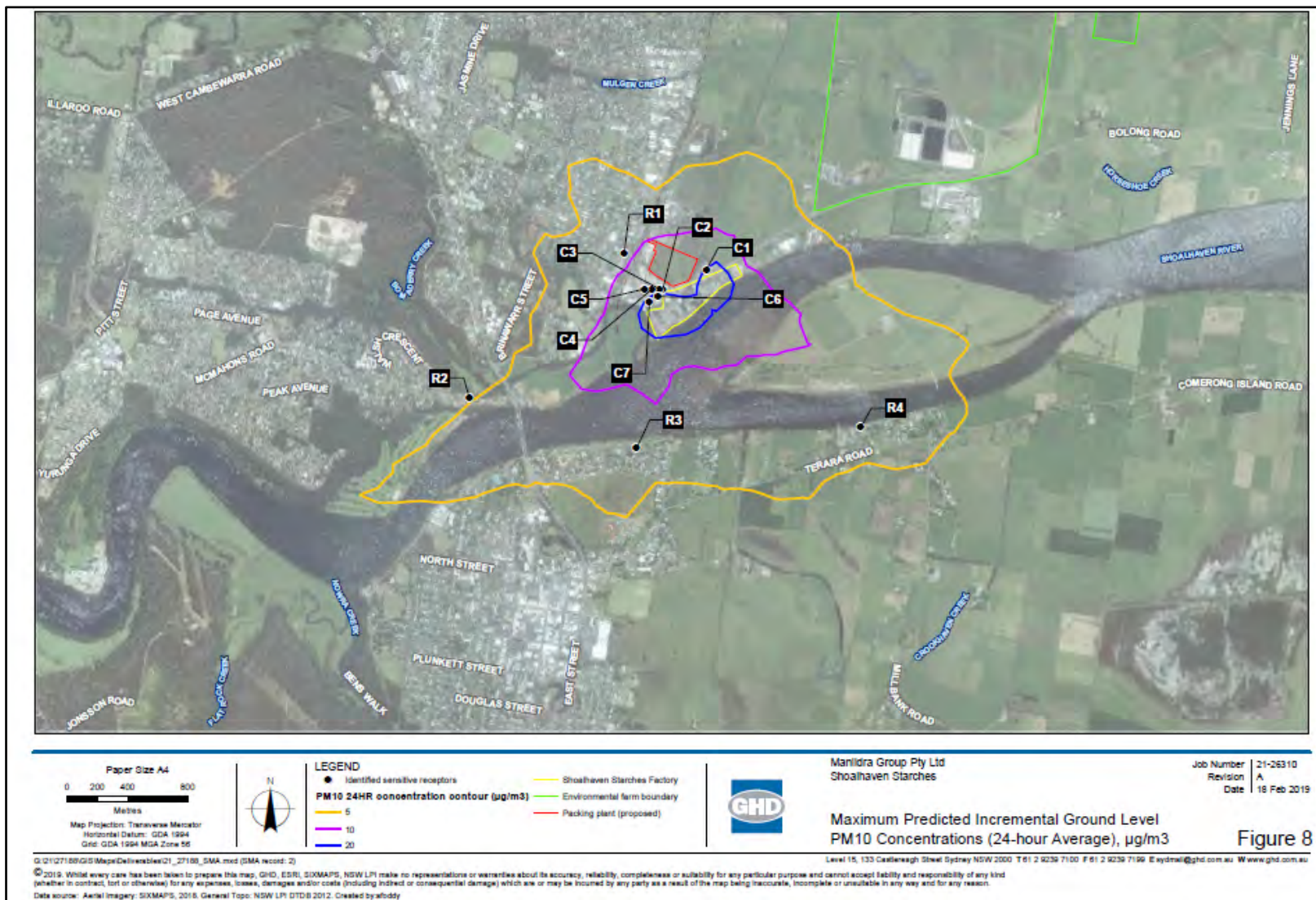


Figure 13: Maximum Predicted Incremental Ground Level PM₁₀ Concentrations (24-hour Average) (GHD, 2019).

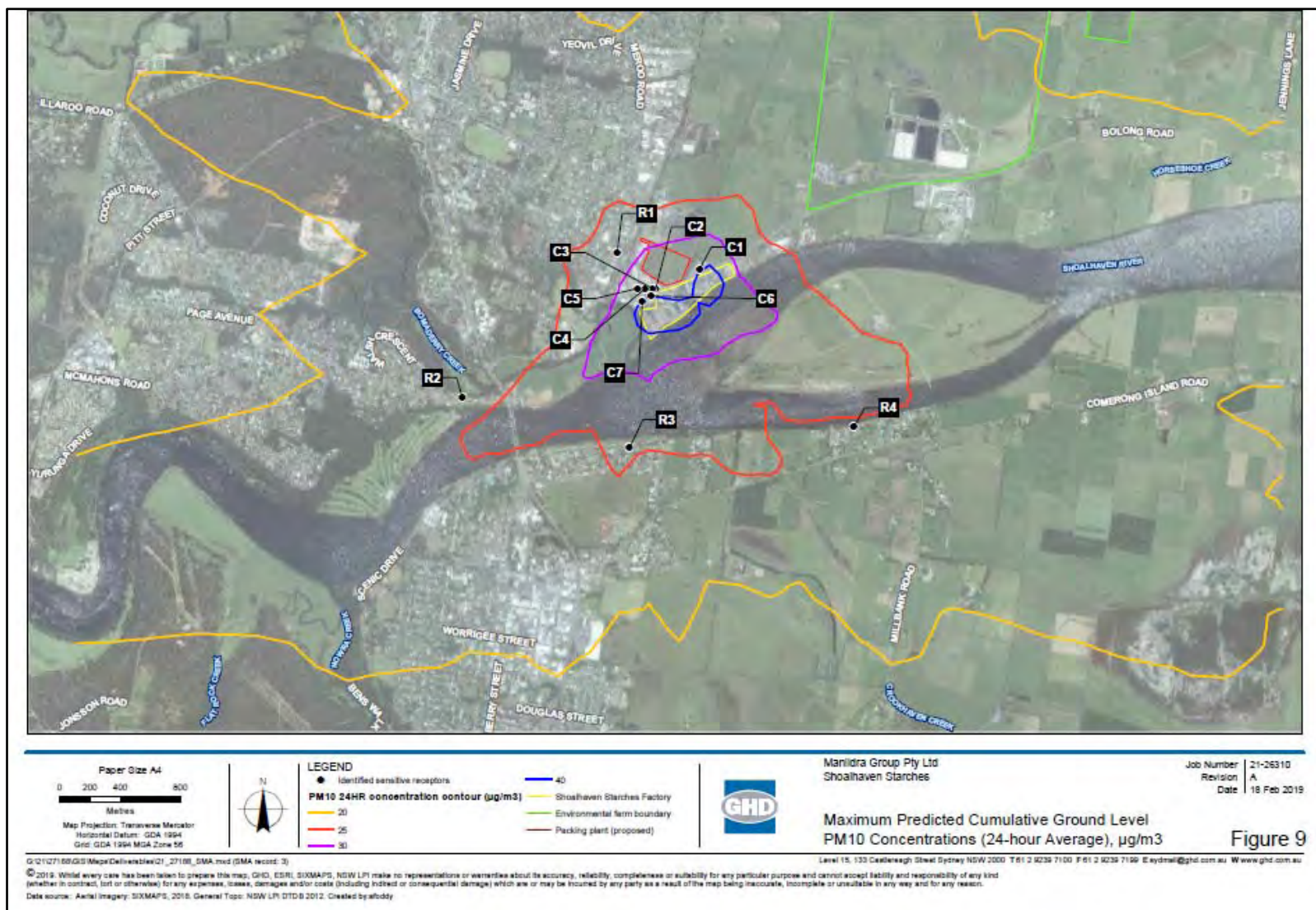


Figure 14: Maximum Predicted Cumulative Ground Level PM₁₀ Concentrations (24-hour Average) (GHD 2019).

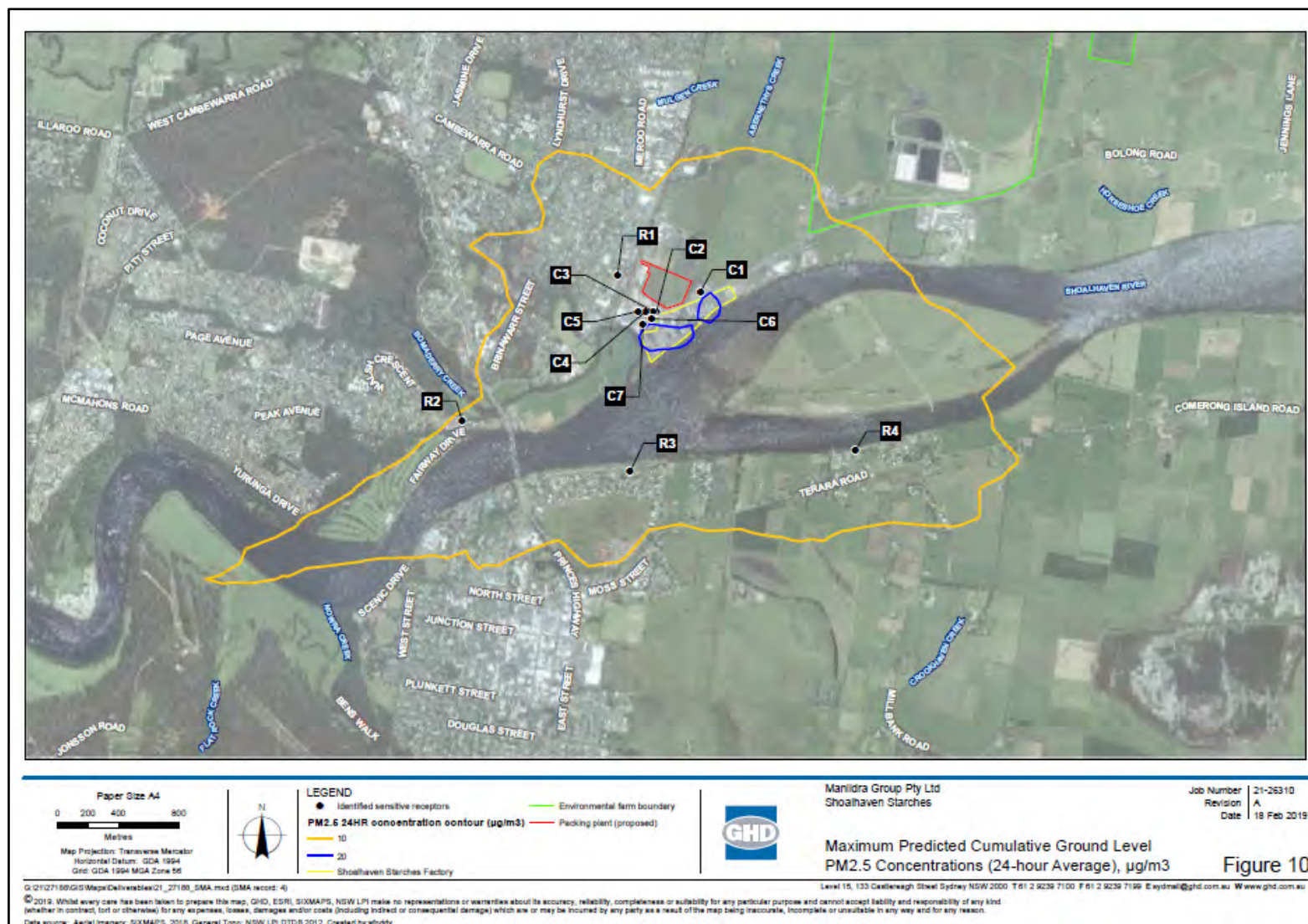


Figure 15: Maximum Predicted Cumulative Ground Level PM_{2.5} Concentrations (24-hour Average) (GHD 2019).

Products of Combustion

The primary pollutants in coal and gas fired boiler emissions, according to GHD, are oxides of nitrogen (NO_x), formed by the high temperatures in the combustors, sulfur dioxide (SO_2), formed from the sulfur content of the fuel, VOCs, hydrogen chloride, polycyclic aromatic hydrocarbons (PAH), carbon monoxide (CO) and hydrogen fluoride (HF) all formed by incomplete combustion of the fuel. All pollutants have all been assessed by GHD against their relevant criteria from the Approved Methods.

The predicted levels for nitrogen dioxide exceed the criteria at all commercial/industrial sensitive receptors. However, the predicted levels assume that 100% of NO will be converted to NO_2 as per Method 1 of the Approved Methods. This is considered extremely conservative as in reality, only a fraction of the NO will be converted to NO_2 .

Therefore, a more detailed assessment has been undertaken by GHD for all receptors using Method 2 of the Approved Methods. Method 2 is based on NO reacting with ozone in the atmosphere to form NO_2 .

The NO_2 levels are predicted by GHD to comply with the criteria at all sensitive receptors using method 2 of the Approved Methods. Contour plots of cumulative SO_2 predictions are shown in **Figure 16**.

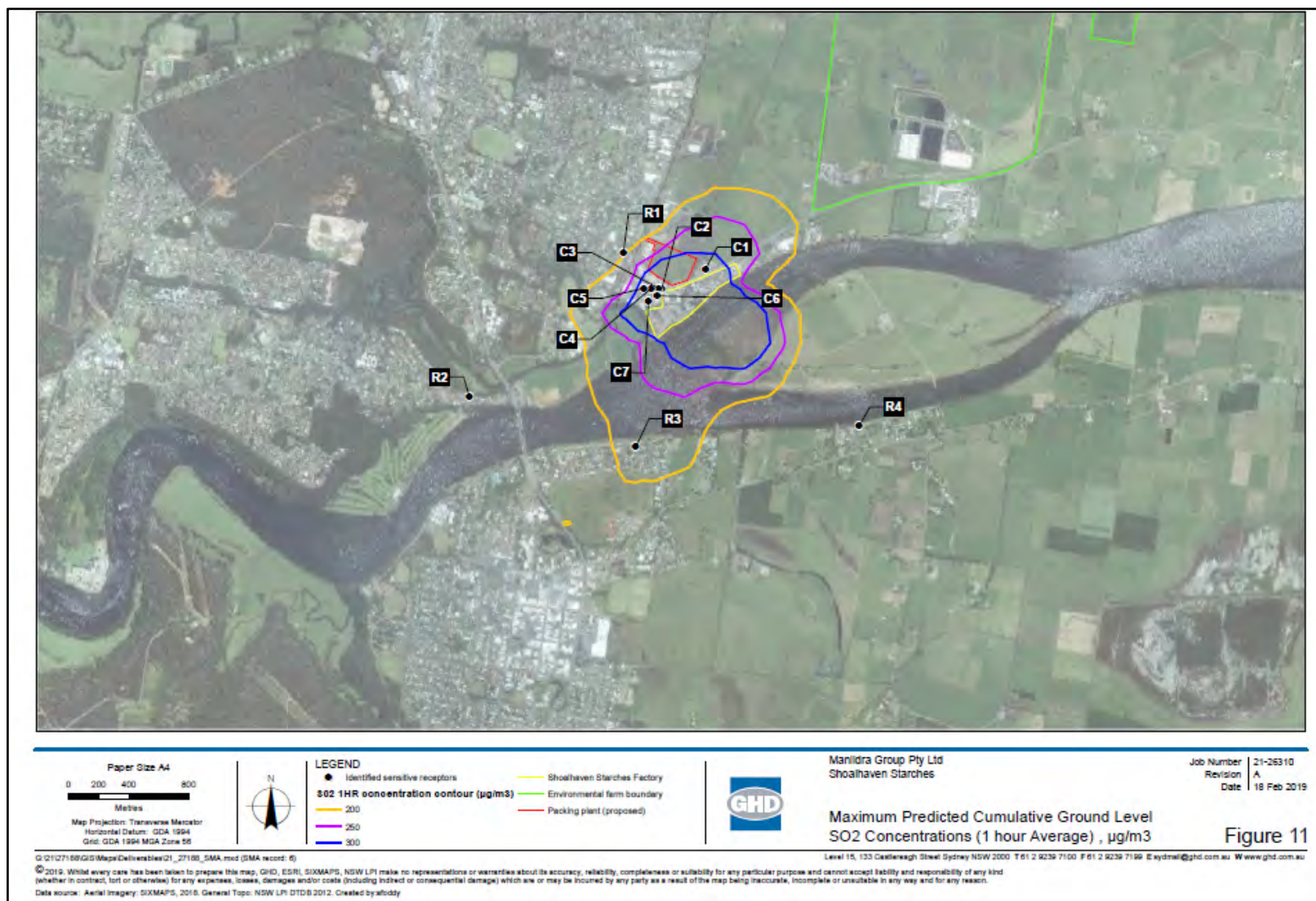


Figure 16: Maximum Predicted Cumulative Ground Level SO₂ Concentrations (1-hour average) (GHD 2019).

PAH, VOCs and Metals

The maximum predicted (99.9 percentile, 1-hour average) ground level incremental PAH, VOC and metal concentrations, within and beyond the factory site boundary are provided in **Table 9**. According to GHD the predicted levels are significantly lower than the respective EPA principal toxic air pollutant criteria for all substances both within and beyond the site boundary.

Table 9
Maximum Predicted Ground Level PAH, VOC and Metal Concentrations

Receptor	Incremental Impact (mg/m ³)										
Pollutant	PAH	VOC	Antimony	Arsenic	Cadmium	Mercury	Beryllium	Chromium	Manganese	Nickel	Lead
Criteria	0.0004 mg/m ³ (1 hour)	Individual VOCs (1 hour)	9.00E-03 mg/m ³ (1 hour)	9.00E-05 mg/m ³ (1 hour)	1.80E-05 mg/m ³ (1 hour)	1.80E-03 mg/m ³ (1 hour)	4.00E-06 mg/m ³ (1 hour)	9.00E-05 mg/m ³ (1 hour)	1.80E-02 mg/m ³ (1 hour)	1.80E-04 mg/m ³ (1 hour)	0.5 µg/m ³ (Annual)
Bomaderry (R1)	1.54E-07	7.91E-04	1.08E-06	1.39E-06	1.39E-07	2.44E-06	2.61E-07	1.22E-06	6.95E-06	4.47E-06	4.90E-04
North Nowra (R2)	1.33E-07	7.03E-04	1.05E-06	1.37E-06	1.17E-07	2.43E-06	2.64E-07	1.17E-06	6.77E-06	4.51E-06	3.02E-04
Nowra (R3)	1.68E-07	8.77E-04	1.37E-06	1.94E-06	1.47E-07	3.62E-06	3.77E-07	1.80E-06	9.34E-06	6.50E-06	1.91E-04
Terara (R4)	8.42E-08	4.81E-04	7.16E-07	9.52E-07	7.34E-08	1.69E-06	1.80E-07	8.16E-07	4.70E-06	3.07E-06	1.21E-04
C1	4.53E-07	2.40E-03	3.62E-06	4.87E-06	3.99E-07	8.81E-06	9.32E-07	4.13E-06	2.40E-05	1.60E-05	1.33E-03
C2	3.93E-07	2.18E-03	3.05E-06	4.13E-06	3.57E-07	7.64E-06	7.88E-07	3.51E-06	2.02E-05	1.37E-05	1.42E-03
C3	3.69E-07	2.00E-03	2.81E-06	3.81E-06	3.33E-07	6.93E-06	7.25E-07	3.24E-06	1.87E-05	1.25E-05	1.33E-03
C4	3.26E-07	1.75E-03	2.43E-06	3.25E-06	2.94E-07	5.97E-06	6.19E-07	2.79E-06	1.60E-05	1.07E-05	1.19E-03
C5	2.82E-07	1.49E-03	2.00E-06	2.69E-06	2.58E-07	5.14E-06	5.14E-07	2.29E-06	1.32E-05	8.87E-06	1.01E-03
C6	3.98E-07	2.11E-03	2.90E-06	3.91E-06	3.66E-07	7.11E-06	7.44E-07	3.34E-06	1.92E-05	1.28E-05	1.59E-03
C7	3.22E-07	1.71E-03	2.34E-06	3.10E-06	2.91E-07	5.69E-06	5.85E-07	2.67E-06	1.53E-05	1.01E-05	1.40E-03
Maximum level (on site)	6.02E-07	3.61E-03	6.13E-06	8.74E-06	6.46E-07	1.74E-05	1.71E-06	7.19E-06	4.25E-05	2.97E-05	Not applicable

The Air Quality Impact Assessment prepared by GHD concludes with respect to this Modification Proposal:

GHD was engaged by Manildra to conduct an air quality and odour impact assessment for a proposed modification to the approved SSEP.

The proposed changes include minor modifications to boiler operations and the addition of a new starch dryer stack.

A marginal increase was observed in predicted odour impacts as a result of the modification. The odour criteria is met at all residential sensitive receptors and it is considered highly unlikely that the increase in odour would be detected at sensitive receptors.

Air quality impacts are predicted to comply with the criteria at all residential sensitive receptors. Manildra have implemented reasonable and feasible mitigation measures on site to reduce the potential air quality impacts from the new boiler.

Overall, the proposal should be acceptable from an air quality perspective.

It should also be noted that GHD indicate the use of woodchips in the boilers as part of this Modification Proposal is likely to reduce emissions from the boilers.

6.2.3 Noise Impact Issues

The most recent environmental noise impact assessment undertaken for the Approved Project was undertaken by Harwood Acoustics for Mod 16. Harwood Acoustics have undertaken a review of the current Modification proposal in light of their findings with respect to their earlier assessment for Mod. 16.

In addition, Harwood Acoustics have also addressed the issue of the technical non-compliance of one of the fans associated with Flour Mill B.

A copy of Harwood Acoustics findings in relation to this current Modification Application as a result of this review is included as **Annexure 3** to this SEE.

Noise Impact from Proposed Modification

With respect to the modifications relating to the relocation of the baghouse adjacent to Starch Dryer No. 5; the provision of a service lift adjacent to Starch Dryer No. 5; and elevating the service conduit to the Packing Plant on the northern side of Bolong Road; Harwood Acoustics make the following comments:

“There are no significant noise producing items of plant and equipment associated with the service lift or service conduit and the level of noise from the operation of the Site will not be increased by these proposed modifications.

The baghouse servicing starch dryer number 5 was included in the NIA prepared for Modification 16 and the assessment addressed noise arising from the pneumatic pulse. The proposed new location is not significantly different

from the approved location. There will therefore be no appreciable change to previously predicted noise levels from the baghouse based on the new location compared with the approved location.

The noise level predictions previously made therefore remain valid for this proposal. There were no specific noise control recommendations necessary for the baghouse. The level of noise emission from the operation of the baghouse is predicted to be well below the design noise goals at all receptor locations. This is based on the assumed sound power level for the pneumatic pulse of 100 dBA which is based on measurements of similar items of plant.

This will be validated within 12 months of construction as required by the approval.”

Flour Mill B Noise Validation - Condition 14J

Condition 14J of the modified Project Approval MP 06_0228 MOD 10, condition 14J, states:-

“Validation

14J. Prior to the commencement of operation of flour mill B and the mill feed structure, the Proponent shall provide evidence to the satisfaction of the Secretary to confirm that the design specifications detailed in the EA for MOD 10 have been implemented. The design specifications include:

- a) the walls of the flour mill B building have a minimum weighted sound reduction index of Rw 24;*
- b) the ceiling of the flour mill B building has a minimum weighted sound reduction index of Rw 23;*
- c) no penetrations in the building walls, or ceiling have occurred without acoustic treatment;*
- d) sections of the northern and eastern walls only may be fitted with acoustic louvres to provide natural ventilation, if required. The required insertion loss of acoustic louvres must be evaluated through a final design noise verification, required under Condition 14L;*
- e) silencers fitted to each exhaust fan must not exceed a sound pressure level of 65 dB(A) when measured at a distance of 3 m from the discharge silencer. The level of noise reduction achieved must be demonstrated through a final design noise verification required under Condition 14L; and*
- f) a sound barrier to the south of external mechanical plant at the mill feed structure, as determined by the final design noise verification required under Condition 14L.*

A combination of visual inspections and noise measurements was carried out by Harwood Acoustics at Flour Mill B between March 2019 and June 2019.

According to Harwood Acoustics, at the time of the preparation of the original Noise Impact Assessment for Flour Mill B, the manufacturer of the silencers specified a design that

would achieve a noise level of 65 dBA at 3 metres for each of the fans. This stated level was more than adequate to achieve the design noise goals at all receptor locations and was consequently included as part of the noise control recommendations for this particular project. The stated level is equivalent to a noise level of **74 dBA** for all fans combined.

By the time of construction and installation, the specific fan and silencer in question (B4263) was re-selected as a higher air flow capacity was required. The initial silencer did not achieve the stated level due to the higher noise level of the re-selected fan. The silencer was then replaced and was measured on site to have achieved a level of 68 dBA at 3 metres, again due to the larger fan. This level is also acceptable, according to Harwood Acoustics, to ensure that the overall noise emission from the site achieves the design noise goals, as is evidenced by noise compliance testing at each receptor whilst the fans are running.

Notwithstanding this, the level of noise emission from the fan with silencer B4263 is technically not compliant with the specified noise level in Condition 14J(e).

In order to resolve the technical noncompliance with this condition, Harwood Acoustics recommend that the specific wording of condition 14J(e) be reworded.

According to Harwood Acoustics, the difference is not significant and for all fans combined, would not be discernible.

For example, based on the initial design goal for nine fans:

- 8 fans at 65 dBA = **74 dBA** (from $65 + 10 \log_{10} (8) = 74$),

whereas

- 1 fan at 68 dBA plus 8 fans at 65 dBA = **75 dBA**
(from $10 \log_{10} 10^{(68/10)} + 10^{(74/10)} = 75$).

However according to Harwood Acoustics, several of the fan / silencer combinations were below the specified level of 65 dBA at 3 metres, meaning the inclusion of the B4263 silencer at 68 dBA does not increase the overall design goal for all fans combined above the initial 74 dBA equivalent combined level.

As such, Harwood Acoustics recommend that condition 14J(e) be modified to read as follows:

*“14J(e) silencers fitted to each exhaust fan must not exceed a sound pressure level such that the cumulative level of noise emission from all fans combined does not exceed a total sound pressure level of **74 dBA** when measured or calculated at a distance of 3 m from the discharge silencers. The level of noise reduction achieved must be demonstrated through a final design noise verification required under Condition 14L”*

This equivalent level of noise reduction for all fans combined has been demonstrated by Harwood Acoustics through a final design noise verification assessment under Condition 14L. Therefore, the reworded Condition 14J(e), which is acoustically equivalent to the current condition is satisfied.

6.2.4 Flooding Issue

The most recent flood impact assessment undertaken for the Approved Project was undertaken by WMA Water for Mod. 16. WMA Water have undertaken a review of the current Modification proposal in light of their findings with respect to their earlier assessment for Mod. 16.

A copy of WMA Water's flood assessment in relation to this current Modification Application as a result of this review is included as **Annexure 4** to this SEE.

All the sites associated with this Modification Proposal are inundated in the 1% Annual Exceedance Probability (AEP) flood event by floodwaters from the Shoalhaven River. The submission prepared by WMA Water provides an assessment of the implications of this modification proposal on flood levels, flows and velocities having regard to their most recent assessment for this site as part of the Mod 16 approval.

In addition, the WMA Water report provides an assessment of the modified proposal having regard to the relevant section of Shoalhaven City Council's Chapter G9: Development on Flood Prone Land of the Shoalhaven Development Control Plan 2014 (ie. section 5.1 of WMA Water Report and as detailed in Section 6.1.3 of the SEE).

A detailed hydraulic assessment and modelling was undertaken as part of the WMA Water flood impact assessment that accompanied the original environmental assessment for Mod. 16. WMA Water have assessed the proposed works associated with this Modification Proposal having regard to their previous assessment for Mod. 16. WMA Water stating in relation to this Modification Proposal, having regard to their previous flood impact assessment:

3.2.1 Modification to the Location of the Baghouse for the No. 5 Starch Dryer

The modified location is the same as assumed in our 30 April 2018 report (refer below) thus there will be no change to the prior results.

3.2.2 Installation of a 'services lift' to the outside of the existing staircase adjacent to the No. 5 Starches Dryer Building

The services lift is within the 30 April 2018 approved building complex (refer below) and thus will have no effect on the prior results.

3.2.3 Modification to the service conduit extending from the Shoalhaven Starches factory site on the southern side of Bolong

Road to the proposed Packing Plant on the northern side of Bolong Road by elevating a section of the conduit above ground level

The conduit will be elevated some 12m above the ground with the only possible affectation being from the piers and the approximate 30m above ground section where the top of the pipe will be approximately 0.7m above the ground (refer below). This work will have no significant impact on flood levels on surrounding properties.

6.2.5 Preliminary Hazard Analysis

The most recent Preliminary Hazard Analysis undertaken for the Approved Project was undertaken by Pinnacle Risk Management for Mod. 16. Pinnacle Risk Management have undertaken a review of the current modification proposal in light of their findings with respect to the Preliminary Hazard Analysis undertaken in support of Mod. No. 16. A copy of Pinnacle Risk Management's findings as a result of this review is included as **Annexure 5** to this SEE.

According to Pinnacle Risk Management:

"The baghouse filter for Starch Dryer 5 is proposed to be located closer to Bolong Road. It is understood that the explosion vent will be located 16 m above ground level. Preliminary calculations show that the estimated length of the fireball is approximately 32 m. From the layout drawings supplied to Pinnacle Risk Management, the distance from the proposed baghouse filter to the site boundary is approximately 36 m. Given the height of the explosion vent, the limited duration of vented dust explosions and that the estimated fireball length is less than the distance to the nearest site boundary then the off-site risk of fatality is deemed to be acceptable, i.e. this modification does not change the findings of the 2018 PHA. This modification will be reviewed in detail with the other dust explosion vents in the Final Hazard Analysis when the design details are known.

The services lift (for personnel) has no impact on the PHA assessment and results.

The service conduit will contain the following services:

1. *Pneumatic transfer lines (lean phase conveyors, 150 kPa maximum pressure):*
 - *Four starch transfer pipes; and*
 - *Three gluten transfer pipes.*

The pipes will be 200 mm diameter nominal, 304L stainless steel with rolled long radius elbows.

2. *One wastewater return pipe (80 mm diameter nominal, 304L stainless steel). The wastewater will be wash down water from the truck loadout area (where powder can spill onto the ground). This area will be primarily cleaned with a dry vacuum but the design will include an allowance for a sump return.*

An analysis of pipe failures (for natural gas) was included in the PHA (Section 5.2.2). The likelihood of pipe failures with subsequent ignition was shown to be low and acceptable. This modification also does not impact the findings of the PHA.”

In terms of hazards, Pinnacle Risk Management conclude the proposed modifications do not introduce any additional aspects that change the findings of the Preliminary Hazard Analysis previously undertaken for the site.

6.2.6 Visual Impact

The Shoalhaven Starches factory site is situated on Bolong Road, the gateway to Bomaderry, within an area currently containing a mixture of rural and industrial land uses. These different land uses contrast with each other and result in a mixed visual character.

The rural areas, much of which comprises the Shoalhaven Starches Environmental Farm, are generally flat to gently undulating and planted with pasture grasses. These areas have a typical rural/agricultural character, common throughout the region. To the north and forming a background to the rural landscape are the timbered slopes of the Cambewarra escarpment.

The Shoalhaven Starches factory complex is characterised by typical industrial structures with an overall bulk and scale that dominates the surrounding locality. The site, despite being partially screened by vegetation along Bolong Road, the Shoalhaven River and Abernethy's Creek visually dominates the locality. The development is particularly exposed to view along Bolong Road. This view reveals some of the internal structures within the site including recovery and storage tanks, car park, fermentation tanks and the Ethanol Plant. Overall the appearance of the site is typical of an industrial facility of this nature.

The most relevant vantage points from where the overall factory site is visible would include:

- The Princes Highway – views of the existing factory site are possible from selected locations along the Princes Highway north of Bomaderry, travelling in both a northerly and southerly direction. Whilst the factory site is visible in the landscape, its overall visual impact is reduced by virtue of the distance between the plant; the intermittent nature of the views; a rise in topography which screens the site from view; and vegetation.
- Burruga (Pig) Island – Burruga Island is situated in the middle of the Shoalhaven River and provides the closest vantage point to the southern boundary of the site. The island however is privately owned and not accessible to the public. Vegetation

screening along the riverbank adjacent to the site also reduces the visibility of the existing buildings and structures.

- **Bolong Road** – Bolong Road runs along the frontage of the site. Views of the factory are possible when travelling in either an easterly or westerly direction. Some attempts have been made to provide some tree planting along the boundaries to “soften” the appearance of the development. The existing building forms and structures are however clearly visible to motorists travelling along this stretch of Bolong Road.
- **Nowra Bridge** – The Nowra Bridge crosses the Shoalhaven River and provides limited opportunities for views of the factory site. The dominant visual elements from the bridge are the river, vegetation along the riverbanks and the escarpment. The visual impact of the factory site is reduced by distance as well as the bridge structure which permits only glimpses of the site.
- **Bomaderry urban area** – The existing plant is visible from a number of locations within the eastern outskirts of Bomaderry. Bomaderry is slightly elevated and some locations within the urban area do have extensive views of the site.
- **Terara** – Distant views of the Plant are possible from a number of vantage points in and around the village of Terara on the southern bank of the River. The visual impact of the site however is reduced by distance, the intervening landform of Burraga (Pig) Island and the vegetated riverbanks.
- **Riverview Road** – Views of the site are available from residential development on the southern bank of the Shoalhaven River. Vegetation along both the northern and southern banks of the river partially screen the site from view.
- **Cambewarra Lookout** – Cambewarra lookout is a popular tourist lookout providing panoramic views over the Shoalhaven floodplain and estuary. Shoalhaven Starches, like the other significant industrial sites, is visible from the lookout.

Visual Impact of Proposal

This modification proposal involves several relatively minor amendments to the Project Approval that have relevance in terms of potential visual impacts including:

- The modification of the location of the baghouse for No. 5 Starches Dryer.
- The installation of a ‘services lift’ to the outside of the existing staircase adjacent to the No. 5 Starches Dryer Building to allow ongoing access for personnel and customers to the floors within the building.

- The elevation of the service conduit on the northern side of Bolong Road by elevating a section of the conduit above ground level.

Starch Dryer No. 5 Baghouse

The approved location of the Starches Dryer No. 5 Baghouse under Mod. 16 was immediately to the west of the dryer and sat above the Dryer Building. As a result, the approved baghouse comprised a height above natural ground level of 36 m.

The modification proposal seeks to relocate the Starch Dryer No. 5 Baghouse to the north side of the building and between this building and Bolong Road. The relocated baghouse will have a height above ground level of 30.0 metres, and therefore will sit lower on the site compared to the approved baghouse.

Service Lift

The proposed service lift will be located on the western side of the existing Starch Dryer No. 5 building. This structure will comprise a simple lift well that will extend up the western side of the Starch Dryer No. 5 building to a height of 24.4 m, which will be 2 metres above the height of the existing Starch Dryer No. 5 building, although below plant located upon the top of this building which rise up to an elevation of 34.385 m.

Service Conduit to Packing Plant on North Side of Bolong Road

Under the Project Approval product is proposed to be transferred to the Packing Plant to be constructed on the north side of Bolong Road by pipes laid beneath ground level from the existing factory site on the southern side of Bolong Road, beneath Bolong Road and to the Packing Plant building on the northern side of Bolong Road.

The modification proposal still seeks to extend pipework underground from the existing factory site on the southern side of Bolong Road and under Bolong Road. It is proposed to then lift the service conduit pipes to just above ground level for a distance of 26 m, before raising the height of the service conduits along a cable stayed pipe bridge with a height above ground level of 14.5 metres which will extend for a distance of almost 52 metres to the packing plant building.

The proposed works associated with this modification reflect a character and scale that is consistent with the existing structures at Shoalhaven Starches and the site in general. The visual impact of these works from the identified vantage points (refer **Figure 17**) is described as follows:

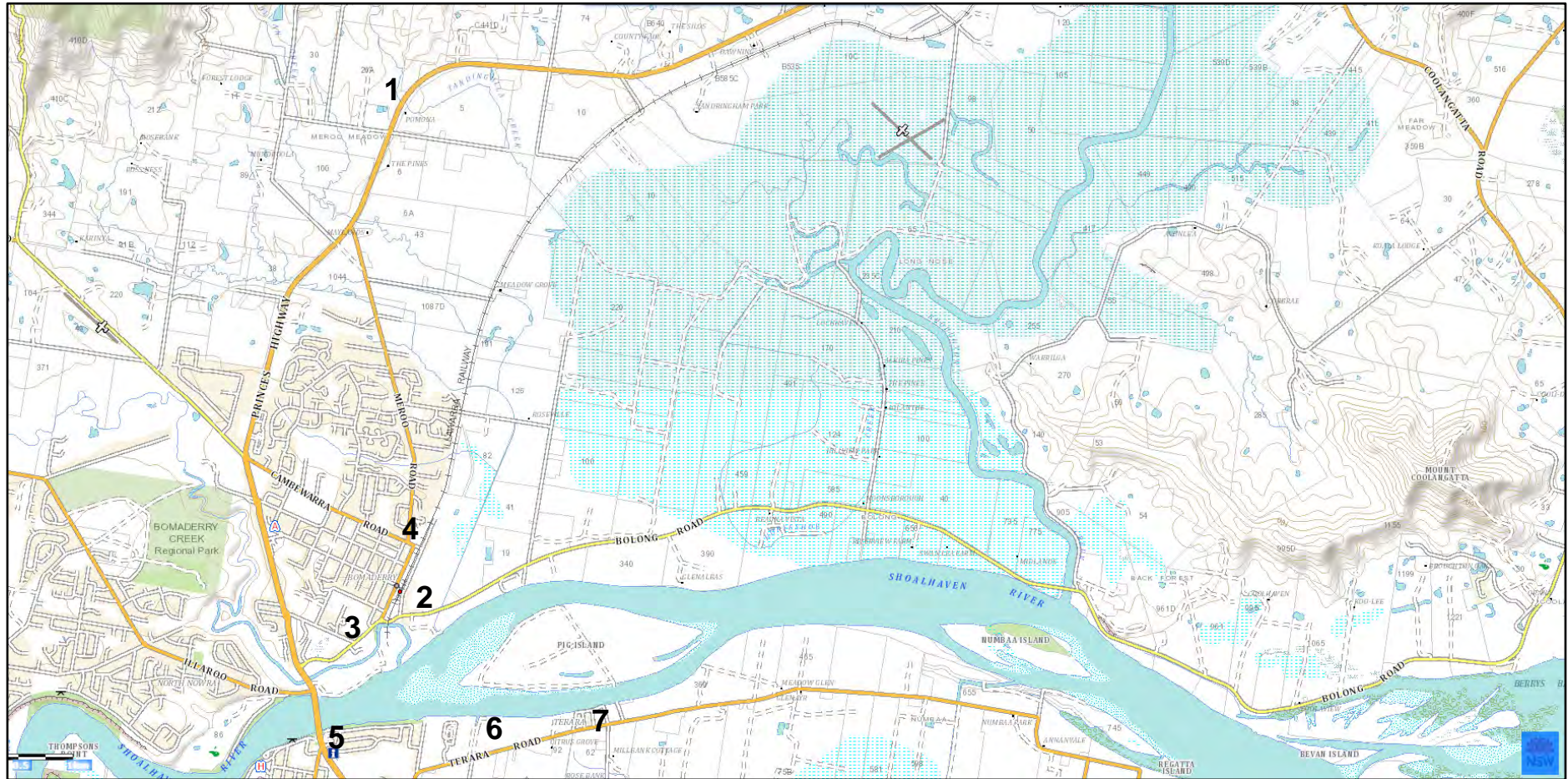


Figure 17: Vantage Points for Plates 1 – 7.

The Princes Highway

The Shoalhaven Starches factory is mainly visible from a section of the Princes Highway between Boxsells Lane and Devitts Lane, Jaspers Brush (refer **Plate 1**). Due to the configuration of the highway and the siting of the factory, only southbound vehicles view the site. Vantage points along this section of the highway are 4.5 to 5.0 km from the site. The site becomes less exposed and is eventually obscured by a rise in topography further south of Boxsells Lane.

Given the distance from these vantage points the factory site is only barely visible. The rising topography upon which Bomaderry is sited screens the western portion of the site, as does intervening vegetation.

Given the distance of these views, and the screening of the site attributed to terrain and vegetation it is considered the works associated with this modification proposal will not adversely impact on views from these vantage points.



Plate 1: View of Shoalhaven Starches Factory from Princes Highway
(within vicinity of Devitts Lane).
(Site of proposed works not clearly visible from this vantage point.)

Bolong Road

The existing factory site is clearly visible from Bolong Road by vehicles approaching from the east and west, and along the frontage of the site refer (**Plate 2**).



Plate 2: View of Shoalhaven Starches factory site (and Starch Dryer No. 5 building) from Bolong Road.

Works associated with the relocation of the baghouse and the service lift adjacent to Starch Dryer No. 5 involve structures of a similar bulk and scale as the existing Starch Dryer No. 5 building and other existing structures within this part of the site.

Elevating the service conduit pipework from below ground level to above ground level will introduce additional structures to that which has been previously considered for the Project Approval. These works will be visible from along Bolong Road and most notably from the section of Bolong Road immediately along the frontage of the proposed Packing Plant site (**Plate 3**).

The cable stayed pipe bridge that will carry the service conduit pipes above ground level, which will create the main visual impact associated with this part of the modification proposal, will be set back approximately 39 m from the Bolong Road frontage of the site. The bridgework will be erected on three separate support post structures. The pipework or transfer lines will be elevated 14.5 m above ground level. Seven separate lines will be attached to this bridge.

These works however need to be considered in context of the approved works on this part of the site. The approved packing plant will comprise a height of 18 m above ground level. Silos associated with the packing plant will have heights of between 20 and 34.3 metres above ground level. The packing plant will have a footprint of 60 m x 108 m.

In addition to the packing plant approved development on the north side of Bolong Road associated with the Project Approval include a Container Storage area, and an additional rail siding.

In this context the proposed pipe bridge will not be a visually significant structure when comprised to the approved development on this side of Bolong Road, and will be consistent in scale and character as the approved development on this part of the Project Approval site.



Plate 3: View of proposed Packing Plant site and alignment of proposed service conduit from Bolong Road

Bomaderry Urban Area

The township of Bomaderry is slightly elevated and some locations within this urban area have extensive views of the site (refer **Plate 4**).

In light of the prevailing scale of existing development located within Shoalhaven Starches site the proposed modification works will be largely viewed as part of the main industrial centre of the Shoalhaven factory site. The works associated with the relocation of the

baghouse or Starch Dryer No. 5 and the service lift, will be seen in context of the Starch Dryer building which is visible from this location. These works will be of a scale and character of development that will be in keeping with the prevailing scale and character of development associated with the Shoalhaven Starches factory site. The proposed elevated pipework extending onto the northern side of Bolong Road to the approved packing plant will not be visually prominent from this vantage point.



Plate 4: View of Shoalhaven Starches factory site from corner of Railway Street and Cambewarra Road, Bomaderry.

Nowra Bridge

The view from Nowra Bridge to the east is mainly dominated by the river, riparian vegetation and the floodplain (refer **Plate 5**).

The site is largely obscured by riverside vegetation. The Starch Dryer No. 5 building is not clearly visible from this vantage point. Given the proposed baghouse is to be relocated to the northern side of this building (and therefore further away from this vantage point) and given the scale of the service lift in context of the existing and approved development for this site, these works will not be visually prominent from this vantage point. The pipe bridge will also not be visible from this vantage point.



Plate 5: View of Shoalhaven Starches factory site from Nowra Bridge over the Shoalhaven River. (Starch Dryer No. 5 Building and alignment of elevated service conduit not visible from this vantage point).

Riverview Road

The main vantage point from where the proposed works could be visible will be from residences along Riverview Road directly south of the site (refer **Plate 6**). This view is from a distance of about 750 metres. Riverside vegetation along both the northern and southern banks of the river softens much of the site from view. The proposed works are generally situated to the north of existing development that is visible from this vantage point and will therefore be screened from view from this vantage point.. The proposed works will therefore not have an adverse visual impact when viewed from this vantage point.



Plate 6: View of Shoalhaven Starches factory site from Riverview Road area.
(The proposed relocated baghouse site and elevated service conduit alignment
will not be visible from this vantage point)

Terara

The village of Terara is approximately 1.5 kilometres from the factory. The view of the Shoalhaven Starches factory site as seen from the banks of the Shoalhaven River adjacent to the village of Terara is shown in **Plate 7**.

The existing Starch Dryer No. 5 is not visually prominent from this vantage point. The works associated with the relocation of the baghouse and the service lift will therefore not be visible from this vantage point. The works associated with elevating the service conduit pipework to the packing plant will also not be visible from this vantage point. The proposed works associated with this modification proposal will therefore not result in an adverse visual impact from this vantage point.



Plate 7: View of Shoalhaven Starches factory site from village of Terara.
(The proposed relocated baghouse site and elevated service conduit alignment
will not be visible from this vantage point)

Cambewarra Lookout

Cambewarra Lookout is situated about 7 km to the north-west of the site. Views from the lookout are from an elevation over 620 m ASL and encompass the Shoalhaven River floodplain and the coast including Jervis Bay. Whilst the factory site is visible from this vantage point, due to scale of the view, it would be extremely difficult to make out the works associated with the project from this vantage point.

Overall it is considered that the proposed works will not create a significant adverse visual impact due, principally, due to the works comprising a scale and character consistent with existing development on the site. There are however measures which Shoalhaven Starches could undertake to minimise the visual impact of the proposal. Where appropriate and possible, the proposed structures should be constructed of similar materials as those previously used on the site and be of a non-reflective nature. Colours should blend with existing structures on the site to ensure visual harmony. Consideration should be given to incorporating a cladding colour if possible which will match existing development on the site.

6.3 THE SUITABILITY OF THE SITE FOR DEVELOPMENT

In our view the site is suitable for the development, and including the development as modified by this application:

- The subject land is suitably zoned and the proposal satisfies state and local planning provisions applying to the land.
- The modified proposal will not have any additional impacts on the environmental values of this locality over and above those envisaged by the original approved development.
- The modified development will not result in any significant adverse effects on local amenity.
- The modification proposal does not seek to alter the approved physical extent of operations. Under these circumstances the proposal will not result in any increased inputs to the production process; increased production; or increases in traffic or other impacts on the locality.

Given these circumstances it is our view that the subject site is suitable for the proposed development.

6.4 SUBMISSIONS

It is envisaged that the development application once submitted to the Department will be placed on public exhibition; and the general public will be afforded an opportunity to review the documentation supporting the application.

Any public submissions made following the exhibition will need to be taken into consideration by Council when it determines the application.

6.5 THE PUBLIC INTEREST

It is our view that the modification proposal is in the public interest:

- The proposal is consistent with the objectives of state and local planning provisions applying to the site.
- The modified proposal will not result in any significant adverse environmental impacts.
- The modified proposal will not result in any significant amenity impacts in the locality.
- The modified proposal will be substantially the same development as that approved under the Project Approval.

7.0 CONCLUSION

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including starch, gluten, glucose and ethanol.

Project Approval MP06_0228 was granted by the Minister for Planning on the 28th January 2009 for the Shoalhaven Starches Expansion Project. This approval also encapsulated previous approvals for the site into one overall approval for the site (at that time).

The Shoalhaven Starches Expansion Project sought to increase ethanol production at the Bomaderry plant in a staged manner from 126 million litres per year to 300 million litres per year. To accomplish the increase in ethanol production, this project required a series of plant upgrades and increase in throughput of raw materials, principally flour and grain.

Following the Minister's determination Shoalhaven Starches have been implementing and commissioning works in accordance with this approval.

Shoalhaven Starches now propose to undertake the following modifications to the Project Approval MP06_0228:

- To relocate the approved location of the baghouse associated with No. 5 Starch Dryer from the western side of this building to the northern (Bolong Road) elevation of this building.
- To install a service, lift adjacent to the western wall of the No. 5 Starch Dryer to enable ongoing access for Shoalhaven Starches personnel to the floors within the building.
- To modify the pipework that has been approved extending from the Shoalhaven Starches factory site located on the southern side of Bolong Road to the approved Packing Plant that is to be constructed on the northern side of Bolong Road. Under the current Project Approval this service pipework was to be provided entirely underground. This Modification Application seeks to elevate a portion of the pipework above ground level located on the Packing Plant site on the northern side of Bolong Road.
- To alter the fuel source for Boilers Nos 2 and 4 from their current fuel source solely of coal, to include a blend of woodchips and coal. In this regard it should be noted that woodchips were previously used as a fuel source in Boiler 2 prior to its conversion to solely coal as part of Mod. 13.
- In addition, the modification application also addresses an issue that has arisen following the Noise Validation Report (NVR) prepared by Harwood Acoustics in connection with the approved Flour Mill B prepared pursuant to condition 14J of the Project Approval. The NVR identified that one of the silencers fitted to the exhaust fans situated on top of the Flour

Mill B building exceeds the relevant maximum sound pressure level as detailed in condition 14J(e) of the Project Approval. This is a technical non-compliance, and the Department of Planning have suggested that condition 14J(e) be modified (as part of this modification application) to alter the design specifications of the silencers. This Modification Application therefore addresses this matter as well.

The Shoalhaven Starches Expansion Project was a ‘transitional Part 3A Project’ for the purposes of Schedule 6A of the Environmental Planning & Assessment Act. As of the 1st March 2018 the transitional arrangements for former Part 3A projects have been discontinued. The discontinuation of the transitional arrangements for Part 3A projects and concept plans means that modifications are assessed through the State Significant Development (SSD) pathway. As such this Modification Application is made pursuant to Section 4.55(1A) of the Environmental Planning & Assessment Act 1979.

This SEE therefore supports a modification application made pursuant to Section 4.55(1A) of the Environmental Planning & Assessment Act.

The preparation of this Statement of Environmental Effects has been undertaken following consultation with The Department of Planning, Industry and Environment in which it was determined that formal requirements from the Secretary of the Department of Planning, Industry and Environment were not necessary for this modification application.

The SEE is supported by the following expert assessments:

- An Air Quality Impact Assessment by GHD. GHD identify a marginal increase in predicted odour impacts, however this increase is not attributable to the proposed modification proposal. The odour criteria however is met at all residential sensitive receptors and it is considered highly unlikely that the increase in odour would be detected at sensitive receptors according to GHD.

GHD also conclude that air quality impacts are predicted to comply with the criteria at all residential sensitive receptors. GHD state that Shoalhaven Starches have implemented reasonable and feasible mitigation measures on site to reduce the potential air quality impacts from the new boiler.

Overall GHD conclude that the proposal should be acceptable from an air quality perspective.

- A Noise Assessment by Harwood Acoustics. Harwood Acoustics make the following conclusions:
 - There are no significant noise producing items of plant and equipment associated with the service lift or service conduit and the level of noise from the operation of the site

will not be increased by these proposed modifications. The proposed new location of the baghouse adjacent to Starch Dryer No. 5 is not significantly different from the approved location. There will be no appreciable change to previously predicted noise levels from the baghouse based on the new location compared with the approved location.

- In order to resolve the technical noncompliance with condition 14J in relation to one of the silencers fitted to the exhaust fans on the top of Flour Mill B, it is proposed to have the specific condition reworded. Firstly, it is worth noting that Harwood Acoustics state the difference is not significant and for all fans combined, would not be discernible. However, several of the fan / silencer combinations were below the specified level of 65 dBA at 3 metres, meaning that the inclusion of the B4263 silencer at 68 dBA does not increase the overall design goal for all fans combined above the initial 74 dBA equivalent combined level.
- A Flooding Assessment by WMA Water which concludes that the modification works will not have any significant impacts on flood levels;
- A Hazard Analysis Assessment by Pinnacle Risk Pty Ltd that identifies the proposed works associated with this modification will not alter the findings of their earlier Preliminary Hazard Analysis.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in production rates from the site, nor will it involve any changes in level of impacts arising from the approved development.

It is considered that this Modification Application; will have minimal environmental impact; and the development to which Project Approval MP06_0228 as modified relates will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified. .

The SEE includes an assessment of the proposal having regard to the relevant matters for consideration as listed under Section 4.15 of the Environmental Planning and Assessment Act, 1979. The assessment concludes that the modification proposal, within its local context, is satisfactory and should be approved.

Approval for this Modification Application is sought.



Stephen Richardson RPIA
COWMAN STODDART PTY LTD

ANNEXURE 1

Plans of Modification Proposal

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 2

Air Quality Assessment

**prepared by
GHD Pty Ltd**

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 3

Noise Impact Assessment

**prepared by
Harwood Acoustics**

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 4

Flooding Assessment

**prepared by
WMA Water**

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 5

Hazard Assessment

**prepared by
Pinnacle Risk Pty Ltd**

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 6

Clause 4.6 Written Request

**prepared by
Cowman Stoddart Pty Ltd**

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 7

**Resource Recovery Order
and Resource Recovery Exemption
for Biomass (Sawmilling and Forestry Residue)**

issued by EPA

**Shoalhaven Starches
Bolong Road, Bomaderry**