

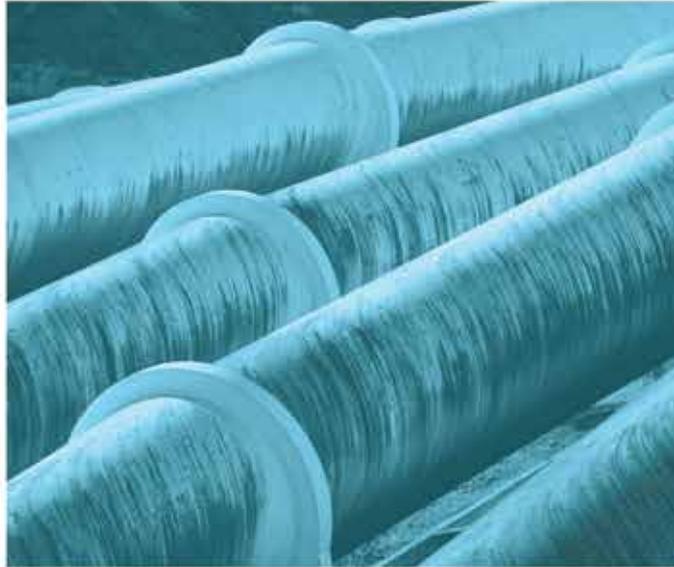


# Response to Submissions

Chain Valley Colliery - Modification 3 | Mannering Colliery - Modification 5

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Prepared for Great Southern Energy Pty Ltd (trading as Delta Coal)  
August 2019





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# Response to Submissions

Chain Valley Colliery - Modification 3 | Mannering Colliery - Modification 5

## Report Number

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H180564 RP1

## Client

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Great Southern Energy Pty Ltd (trading as Delta Coal)

## Date

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9 August 2019

## Version

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v1 Final

## Prepared by

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### David Richards

Senior Environmental Scientist

9 August 2019

## Approved by

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### John Arnold

Associate

9 August 2019

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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# Executive Summary

Chain Valley Colliery (CVC) and Mannering Colliery (MC) are underground coal mines located on the southern end of Lake Macquarie, approximately 60 kilometres (km) south of Newcastle. Great Southern Energy Pty Limited (trading as Delta Coal) took over as the owner and operator of both CVC and MC in April 2019.

CVC operates under Development Consent SSD-5465. The consent permits underground miniwall mining in the Fassifern Seam at a maximum rate of 2.1 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal, with all secondary extraction confined to areas under the Lake Macquarie waterbody.

Delta Coal is seeking to modify SSD-5465 (herein referred to as 'CVC Mod 3') pursuant to Section 4.55(1A) of the *NSW Environmental Planning & Assessment Act 1979* (EP&A Act) to allow for:

- the transport of product coal from CVC to MC via the approved underground linkage between the two operations at a rate up to the annual production level approved under SSD-5465, as modified, which is currently 2.1 Mtpa. The current approved rate of product coal transfer from CVC to MC is 1.3 Mtpa; and
- a change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary.

MC operates under Project Approval MP06\_0311. The approval permits the extraction of up to 1.1 Mtpa of ROM coal until 30 June 2022. It also permits the handling of up to 1.3 Mtpa of ROM coal with that coal transported via a dedicated overland conveyor to Delta Electricity's Vales Point Power Station (VPPS) for domestic energy generation.

Delta Coal is seeking to modify MP06\_0311 (herein referred to as 'MC Mod 5') under Section 4.55 (2) of the EP&A Act primarily to enable:

- an increase in the rate of ROM coal handling at, and transport via overland conveyor from, MC up to the approved extraction limit at CVC;
- an extension of the project approval period from 30 June 2022 to 31 December 2027 (consistent with Schedule 2 Condition 5 of SSD-5465); and
- an alternative approach to mine design.

This response to submissions report (RTS) responds to submissions received on CVC Mod 3 and MC Mod 5 following the public exhibition of the relevant statements of environmental effects (SEEs).

Following the public exhibition of the SEEs, 27 submissions for CVC Mod 3 and 25 submissions for MC Mod 5 were received by NSW Department of Planning, Industry and Environment (DPIE), including submissions from government agencies and other organisations and public feedback. Of the submissions received from individual community members, the majority (74% for CVC Mod 3 and 71% for MC Mod 5) of the submissions were in support of the proposed modifications.

The majority of the objections came from neighbouring residents that reside in Macquarie Shores village, which is approximately 650 m east of MC's pit top at its closest point. These objections primarily identified potential for increased noise and vibration impacts at their residences as a result of the proposed modifications. MP06\_0311 contains a requirement for Delta Coal to prepare a Noise Compliance Report (NCR). Pending the outcomes and findings of the NCR, Delta Coal will work with NSW Environment Protection Authority (EPA) and DPIE to undertake further noise mitigation works at MC if required.

No objections were raised by NSW Government agencies and all matters raised are addressed within this RTS.

Collectively, the proposed modifications are considered minor alterations to the approved developments and are considered to be in the public interest as they:

- will result in increased resource recovery potential at both CVC and MC;
- will lower capital and operating costs across Delta Coal's operations, as the existing infrastructure at MC has the proven ability to supply coal to VPPS at a higher and more efficient rate than directly from CVC due to more advanced coal clearance infrastructure;
- will improve the overall financial viability of CVC and MC, promoting the continuation of the social and economic benefits associated with the two developments (including increased job security for Delta Coal's employees);
- support the continued supply of coal to VPPS for local power generation;
- can achieve the associated benefits with minimal adverse environmental impact;
- are aligned with the principles of ecologically sustainable development (ESD); and
- meet all relevant government policies and guidelines.

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# 1 Introduction

## 1.1 Background

Chain Valley Colliery (CVC) and Mannering Colliery (MC) are underground coal mines located on the southern end of Lake Macquarie, approximately 60 kilometres (km) south of Newcastle (refer Figure 1.1). The current development consent boundary for CVC and project approval boundary for MC straddle the boundary of the Lake Macquarie and Central Coast local government areas (LGAs).

An underground linkage within the Fassifern Seam is approved between CVC and MC, which enables coal extracted at CVC to be transferred to, and handled at, MC. Great Southern Energy Pty Limited (trading as Delta Coal) took over as the owner and operator of both CVC and MC in April 2019.

CVC operates under Development Consent SSD-5465, as modified, which was originally granted on 23 December 2013 by the then Minister for Planning and Infrastructure under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), which relates to State significant development (SSD). The consent permits underground minewall mining in the Fassifern Seam at a maximum rate of 2.1 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal, with all secondary extraction confined to areas under the Lake Macquarie waterbody.

Adjacent to and south-west of CVC is MC. MC's pit top is located approximately 1.1 km south of CVC's pit top area. MC was granted project approval (MP06\_0311) under Part 3A of the EP&A Act on 12 March 2008 and, as modified, permits the extraction of up to 1.1 Mtpa of ROM coal until 30 June 2022. It also permits the handling of up to 1.3 Mtpa of ROM coal with that coal transported via a dedicated overland conveyor to Delta Electricity's Vales Point Power Station (VPPS) for domestic energy generation (refer Figure 1.1).

### 1.1.1 Chain Valley Colliery Modification 3

Delta Coal is seeking to modify SSD-5465 pursuant to Section 4.55(1A) of the EP&A Act to allow for:

- the transport of product coal from CVC to MC via the approved underground linkage between the two operations at a rate up to the annual production level approved under SSD-5465, as modified, which is currently 2.1 Mtpa. The current approved rate of product coal transfer from CVC to MC is 1.3 Mtpa; and
- a change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary.

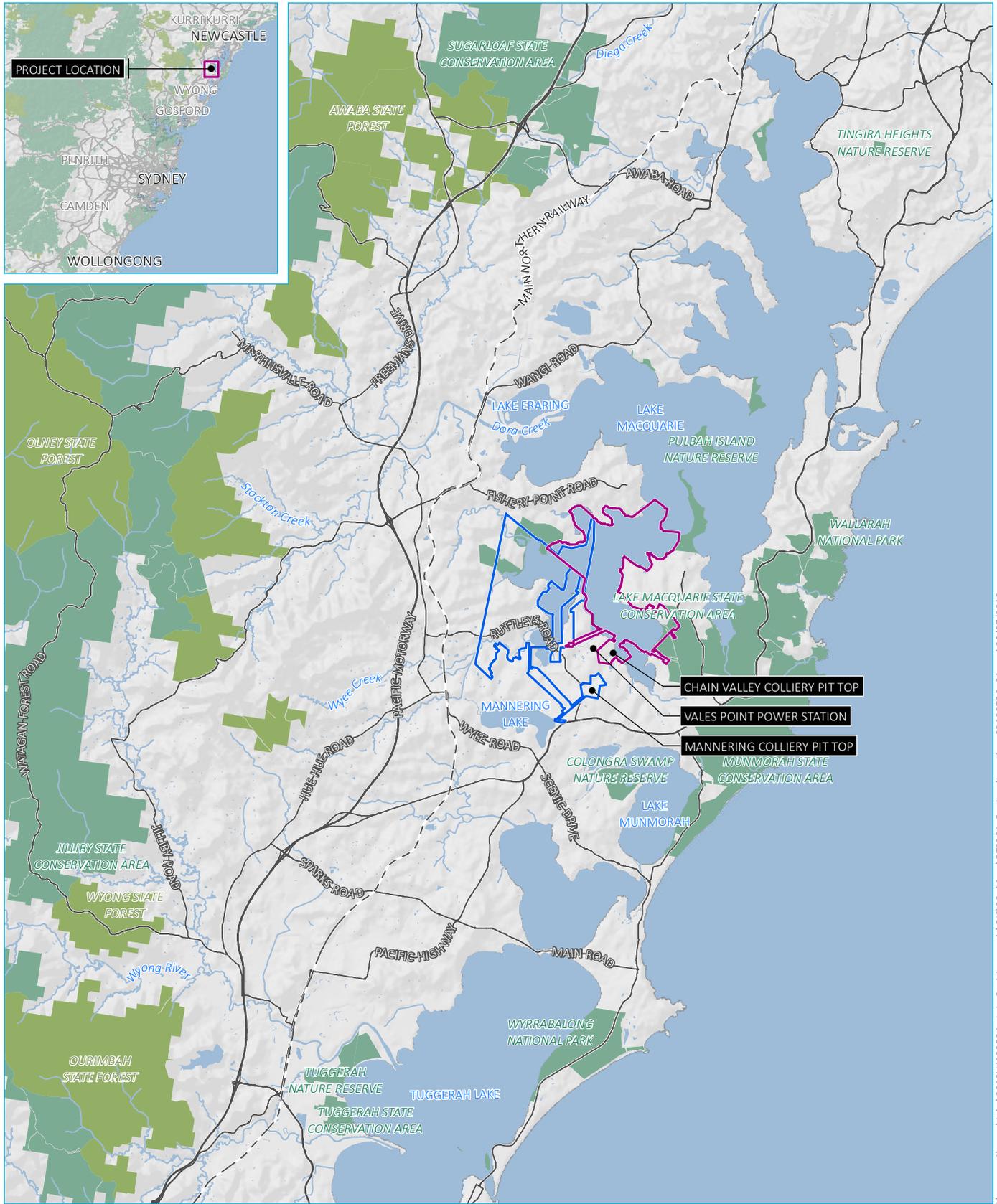
The proposed modification to SSD-5465 is herein referred to as 'CVC Mod 3'.

### 1.1.2 Mannering Colliery Modification 5

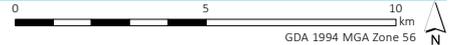
Delta Coal is seeking to modify the existing major project approval (MP06\_0311) under Section 4.55 (2) of the EP&A Act primarily to enable:

- an increase in the rate of ROM coal handling at, and transport via overland conveyor from, MC up to the approved extraction limit at CVC;
- an extension of the project approval period from 30 June 2022 to 31 December 2027 (consistent with Schedule 2 Condition 5 of SSD-5465); and
- an alternative approach to mine design.

The proposed modification to MP06\_0311 is herein referred to as 'MC Mod 5'.



Source: EMM (2019); DFSI (2017); GA (2011); CVC (2019)



**KEY**

- Chain Valley Colliery development consent boundary
- Mannerling Colliery project approval boundary
- Rail line
- Main road
- Watercourse/drainage line
- Waterbody
- NPWS reserve
- State forest

**Regional context**

Chain Valley Colliery Mod 3 and  
Mannerling Colliery Mod 5  
Response to submissions report  
Figure 1.1



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## 1.2 Approval process

EMM Consulting Pty Limited (EMM) prepared a statement of environmental effects (SEE) for both CVC Mod 3 and MC Mod 5, which were submitted to NSW Department of Planning, Industry and Environment (DPIE) and accompanied the applications to modify SSD-5465 and MP06\_0311, respectively. The SEEs for the proposed modifications were publicly exhibited together from 21 June to 4 July 2019.

Following public exhibition, a number of submissions were received by DPIE, including submissions from government agencies and public feedback.

DPIE confirmed that a combined response to submissions report (RTS) for both CVC Mod 3 and MC Mod 5 would be acceptable provided that it addresses all concerns and delineates the individual issues should they have been raised as particular site issues. This approach has been adopted for this RTS.

## 1.3 Purpose of this report

This RTS responds to issues raised in the submissions received following the public exhibition of the SEEs for CVC Mod 3 and MC Mod 5. This report will be submitted to DPIE who will distribute it to relevant government agencies for comment and then prepare their assessment report for consideration in the assessment and determination of the proposed modifications.

The submissions have been categorised, grouped and addressed by issue, rather than on an individual or stakeholder basis. This approach is consistent with Guideline 5 Responding to Submissions of the *Draft Environmental Impact Assessment Guidance Series* (DPE 2017).

## 1.4 Report structure

This RTS is structured as follows:

- Chapter 1 – Introduction
  - Provides an introduction to the proposed modifications, including an overview of CVC Mod 3 and MC Mod 5, information about the proposed modifications, the approval process, and the purpose and structure of this RTS.
- Chapter 2 – Analysis of submissions
  - Provides a detailed summary of the submissions received on the proposed modifications, including where the submissions were received from and the key issues raised.
- Chapter 3 – Agency responses
  - Provides responses to matters raised by government agencies in their submissions on the two SEEs and technical studies undertaken for the proposed modifications.
- Chapter 4 –Community submissions
  - Provides responses to matters raised in the individual community submissions on the two SEEs and technical studies undertaken for the proposed modifications.

- Chapter 5 – Statement of commitments

Provides a summary of management and mitigation measures based on the outcomes of the responses to the agency and community submissions.

- Chapter 6 – Project evaluation and conclusion

Provides an updated project evaluation and conclusion.

- Appendices:

- Appendix A – Register of submitters;
- Appendix B – Letter in relation to the air quality impact assessment; and
- Appendix C – Consideration of NSW *Coastal Management Act 2016* (CM Act) and State Environmental Planning Policy (SEPP) Coastal Management) 2018 (CM SEPP).

## 2 Analysis of submissions

### 2.1 Exhibition details

The CVC Mod 3 and MC Mod 5 SEEs were publicly exhibited from 21 June to 4 July 2019 at the following locations:

- DPIE (320 Pitt Street, Sydney) – electronic copies;
- Lake Macquarie City Council (LMCC) (126-138 Main Road, Speers Point) – hard copies;
- Central Coast Council (CCC) (2 Hely Street, Wyong) – hard copies;
- Nature Conservation Council office (14/338 Pitt Street, Sydney) – electronic copies; and
- NSW Service Centres – electronic copies.

The SEEs were also available online for review on DPIE’s Major Projects register, and electronic copies were sent to the EPA, NSW Roads and Maritime Services (RMS), Subsidence Advisory NSW, DPIE Resources Regulator, DPIE Biodiversity and Conservation Division (formerly NSW Office of Environment and Heritage), DPIE Division of Resources and Geoscience (DRG) and DPIE – Lands, Water and Department of Primary Industries (DPI).

### 2.2 Overview of submissions received

#### 2.2.1 Chain Valley Colliery Modification 3

Following the public exhibition of the SEE for CVC Mod 3, 27 submissions were received by DPIE. Submissions are available to view on DPIE’s website at:

- government, agency and other organisations: <https://www.planningportal.nsw.gov.au/major-projects/project/SSD-5465-Mod-3/submissions/13111/3251>; and
- public feedback: <https://www.planningportal.nsw.gov.au/major-projects/project/SSD-5465-Mod-3/submissions/12921/3251>.

A breakdown of the submissions received for CVC Mod 3 is provided in Table 2.1.

**Table 2.1 Summary of submissions received – Chain Valley Colliery Modification 3**

Source/type	Object	Support	Comment	Total
Community (unique)	4*	14**	1***	19
Government	0	1	7	8
<b>Total</b>	<b>4</b>	<b>15</b>	<b>8</b>	<b>27</b>

Notes: \*Two submissions were provided by S-68109 (D Paton).

\*\*Two submissions were provided by S-69178 (M Gemmill).

\*\*\*This submission did not provide any feedback on the CVC Mod 3 SEE but has been included to ensure consistency with the summary of submissions provided by DPIE.

The following NSW Government agencies provided submissions on CVC Mod 3:

- EPA;
- LMCC;
- RMS;
- Subsidence Advisory NSW;
- DPIE Resources Regulator;
- DPIE Biodiversity and Conservation Division;
- DPIE DRG; and
- DPIE – Lands, Water and DPI.

### 2.2.2 Mannering Colliery Modification 5

Following the public exhibition of the SEE for MC Mod 5, 25 submissions were received by DPIE. Submissions are available to view on DPIE’s website at:

- government, agency and other organisations: [https://www.planningportal.nsw.gov.au/major-projects/project/MP06\\_0311-Mod-5/submissions/13111/3251](https://www.planningportal.nsw.gov.au/major-projects/project/MP06_0311-Mod-5/submissions/13111/3251); and
- public feedback: [https://www.planningportal.nsw.gov.au/major-projects/project/MP06\\_0311-Mod-5/submissions/12921/3251](https://www.planningportal.nsw.gov.au/major-projects/project/MP06_0311-Mod-5/submissions/12921/3251).

A breakdown of the submissions received for MC Mod 5 is provided in Table 2.2.

**Table 2.2 Summary of submissions received – Mannering Colliery Modification 5**

Source/type	Object	Support	Comment	Total
Community (unique)	4*	12	0	16
Government, agency and other organisations	1**	1	7	9
<b>Total</b>	<b>5</b>	<b>13</b>	<b>7</b>	<b>25</b>

Notes: \*Two submissions were provided by S-68110 (D Paton).

\*\*The submission from the Proprietor and Managing Director of Macquarie Shores Home Village has been classified by DPIE as from an ‘organisation’; however, as the matters raised were consistent with community submissions, responses are provided in Chapter 4.

The following NSW Government agencies provided submissions on MC Mod 5:

- EPA;
- LMCC;
- RMS;
- Subsidence Advisory NSW;

- DPIE Resources Regulator;
- DPIE Biodiversity and Conservation Division;
- DPIE DRG; and
- DPIE – Lands, Water and DPI.

## 2.3 Response methodology

All submissions received were collated and categorised based on who they were from, in accordance with the following categories:

- government; and
- unique community submission.

The submissions were reviewed, and the key issues raised in each submission identified.

Responses were prepared to each issue by EMM and Delta Coal, with input from the technical specialists who prepared the relevant impact assessments for the SEE, where required.

## 2.4 Origin of community submissions

### 2.4.1 Chain Valley Colliery Modification 3

The majority of community submissions for CVC Mod 3 came from either the Lake Macquarie LGA (n=9 or 47%), or Central Coast LGA (n=6 or 32%). As noted previously, the current development consent boundary straddles the boundary of the Lake Macquarie and Central Coast LGAs. All community submissions came from NSW. As shown in Table 2.1, approximately 74% of the community submissions for CVC Mod 3 were in support of the modification, 21% objected and 5% provided general comments.

### 2.4.2 Mannering Colliery Modification 5

The majority of community submissions for MC Mod 5 came from either the Lake Macquarie LGA (n=7 or 41%), or Central Coast LGA (n=7 or 41%). As noted previously, the current project approval boundary straddles the boundary of the Lake Macquarie and Central Coast LGAs. All community submissions came from NSW. As shown in Table 2.2, approximately 71% of the community submissions for MC Mod 5 were in support of the modification and 29% objected.

## 2.5 Summary of matters raised in community submissions

The matters raised in the individual community submissions lodged for CVC Mod 3 and MC Mod 5 were consistent and have subsequently been considered and addressed collectively in Chapter 4 of this report. A summary of the matters raised in these submissions is provided below.

### 2.5.1 Support

The individual community submissions received in support of CVC Mod 3 and MC Mod 5 predominantly raised the continued employment and local and regional economic benefits associated with the proposed modifications as reasons for support. In addition, the proposed modifications' contributions to energy security in NSW (by supplying an ongoing, local source of coal for VPPS) were also identified frequently as a reason for support.

Comments were also provided about the efficiency of maximising the use of existing infrastructure while removing impacts associated with the trucking of product coal from CVC to VPPS.

### 2.5.2 Objections

A total of seven different matters were raised within the individual community submissions objecting to the proposed modifications, which comprise:

- excess and increased noise and vibration impacts;
- excess and increased air pollution;
- health impacts on neighbouring residents;
- impacts on lifestyle;
- excess and increased truck and traffic movements in the local area;
- excess and increased stockpiling within the VPPS ash dam; and
- greater risk of contamination of Lake Macquarie and local groundwater from the VPPS ash dam.

The majority of the objections came from neighbouring residents that reside in Macquarie Shores village, which is approximately 650 m east of MC's pit top at its closest point. These objections primarily identified potential for increased noise and vibration impacts at their residences as a result of the proposed modifications.

## 3 Agency responses

As noted in Section 2.2, the following NSW Government agencies provided submissions on CVC Mod 3 and MC Mod 5:

- EPA;
- LMCC;
- RMS;
- Subsidence Advisory NSW;
- DPIE Resources Regulator;
- DPIE Biodiversity and Conservation Division;
- DPIE DRG; and
- DPIE – Lands, Water and DPI.

Of these agencies, DRG, DPIE Biodiversity and Conservation Division, DPIE Resources Regulator and Subsidence Advisory NSW provided a combined submission with consolidated feedback on both CVC Mod 3 and MC Mod 5. RMS, LMCC, EPA and DPIE – Lands, Water and DPI provided separate feedback on CVC Mod 3 and MC Mod 5.

Each of the relevant matters raised by these agencies have been addressed in Table 3.1. A response to the matters raised by DPIE in Attachment A of their request for the RTS has also been provided in Table 3.1.

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
EPA	EPA_1	CVC MOD 3	The EPA has reviewed the proposed modification and considers that it will not result in any significant increases in the existing environmental impact of the Chain Valley Colliery. The proposed modification is not seeking changes to the general extent or intensity of mining or any real changes in the mining method or equipment/fleet. If approved, the modification is not expected to require any changes to the operational Environment Protection Licence 1770 held by Delta Coal.	Noted.
EPA	EPA_2	MC MOD 5	<p>The EPA has reviewed the proposed modification and considers that it should not result in any significant increases in the existing environmental impact of the Mannering Colliery. The EPA notes that some complaints have arisen recently from residents at Macquarie Shores regarding noise and that DPE has been working with Delta Coal to set out the requirements for a yet to be completed Noise Compliance Report. This will establish whether noise from the Mannering Colliery is meeting the existing Conditions of Approval. Therefore, the EPA has focused its review on this element predominately.</p> <p>The Noise Mitigation Study (NMS) has documented the results of operational noise modelling and predicts that operational noise levels from the proposed modification, including mitigation, will meet the current noise criteria that form the existing Conditions of Approval. The EPA considers that this modelling has been appropriately carried out and reflects the proposed operating scenario. The EPA recommends that DPE should continue to work with Delta Coal to complete the Noise Compliance Report which should confirm whether these assumptions are correct and hence the model predictions are reflected in practice. The EPA would appreciate being informed of the outcome.</p>	<p>Noted.</p> <p>MP06_0311 contains a requirement for Delta Coal to prepare a Noise Compliance Report (NCR). EMM has been engaged by Delta Coal to prepare the NCR and the proposed scope and methodology has been discussed with, and endorsed by, DPIE.</p> <p>DPIE has requested that the NCR be prepared and submitted by 30 September 2019. A copy of the NCR will be provided to EPA for consideration.</p> <p>Pending the outcomes and findings of the NCR, Delta Coal will work with EPA and DPIE to undertake further noise mitigation works if required.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_1	CVC MOD 3	<p><b>Mine subsidence</b></p> <p>Clarity is sought with respect to the proposal: Section 1.3 describes the proposal (as copied in the summary above), but Table 2.1 includes the proposal to extract pillars. It is Council’s understanding that pillar extraction is a secondary workings method that has increased subsidence above that described in the statement.</p> <p>Where and when additional subsidence impact is to be approved above negligible levels, Council requests that the potential impact on foreshore erosion as a result of changes to wave action arising from subsidence of the lake bed is assessed, and that an ongoing monitoring program for foreshore erosion and seagrass impacts are established. The monitoring programs should be prepared in consultation with Lake Macquarie City Council.</p>	<p>As acknowledged within Table 2.2 of the CVC Mod 3 SEE, pillar extraction methods are considered to be a type of ‘second workings’ and would therefore not be permitted within Zone A (refer Table 2.1).</p> <p>The proposed definition of ‘second workings’ states ‘extraction of coal by miniwall, or by pillar extraction, pillar splitting and pillar reduction methods’ and has been proposed to align SSD-5465 with the definition within the NSW Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.</p> <p>If pillars were proposed to be partially or fully extracted, being a form of secondary extraction, this would be subject to an Extraction Plan approval. As noted in Section 5.2.1 of the CVC Mod 3 SEE, the Extraction Plan would need to be supported by a geotechnical mine design, which would require consideration of vertical subsidence and threats of serious or irreversible environmental damage (including impacts on Lake Macquarie).</p> <p>The extent of Zone A presented on Figure 2.1 of the CVC Mod 3 SEE has been specifically designed to ensure protection of both the Lake Macquarie foreshore (by the use of the High Water Mark Subsidence Barrier (HWMSB)) and seagrass communities (by the use of the Seagrass Protection Barrier (SPB)).</p> <p>CVC’s approved Seagrass Management Plan (EMP-D-16674) is an element of CVC’s Environmental Management System and was prepared in consultation with LMCC. In accordance with Section 4 of the Seagrass Management Plan, no secondary extraction is being undertaken, nor is it planned to be undertaken beneath seagrass beds. A copy of the Seagrass Management Plan is available at the link below:</p> <p><a href="http://www.deltacoal.com.au/environment/chain-valley-colliery/chain-valley-management-plans">http://www.deltacoal.com.au/environment/chain-valley-colliery/chain-valley-management-plans</a></p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_2	CVC MOD 3	<p><b>Greenhouse Gas Emissions Reduction Targets</b></p> <p>Lake Macquarie City Council’s adopted <i>Environmental Sustainability Action Plan 2014-2023</i> includes a city-wide target of 3% per annum reduction in greenhouse gas emissions. Council requests the assessment consider how the proposal contributes to this reduction target.</p>	<p>As acknowledged within Table 5.1 of the CVC Mod 3 SEE, there will be no mine life extension or increase in approved production rates under the proposed modification. Therefore, Scope 1 and 2 greenhouse gas (GHG) emissions will be unchanged as a result of the proposed modification.</p> <p>The proposed modification will not affect the level of Scope 3 emissions associated with the approved operations at CVC other than potential reductions in transport-related emissions due to increased transport of CVC coal to VPPS via MC’s conveyor system.</p> <p>All reasonable and feasible measures to minimise the release of GHG emissions from CVC will continue to be undertaken in accordance with the GHG management practices provided within Table 10 of CVC’s approved Air Quality Management Plan (EMP-D-16369). GHG emissions reporting will continue to be undertaken in accordance with the requirements of the Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i>.</p> <p>CVC provides a local source of thermal coal for VPPS. CVC generates less GHG emissions in the supply of product coal to VPPS than alternative coal mining operations due to its proximity to VPPS and, consequently, less GHG emissions relating to diesel usage. By obtaining coal from local sources, GHG emissions associated with coal deliveries to VPPS from more distant locations would also be decreased as a result of the proposed modification, contributing to LMCC’s overall reduction target.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_3	CVC MOD 3	<p><b>Impacts of Climate Change</b></p> <p>Extraction and use of coal has been found to significantly affect climate and biodiversity (<a href="https://www.ipcc.ch/sr15/">https://www.ipcc.ch/sr15/</a>). Council requests that consideration is given to the project's contribution to the impact on flora and fauna as a result of climate change caused by the broader coal and coal power industries, and where this proposal may fit within a plan to limit the impacts of anthropogenic climate change. Specifically, it is recommended that contributory industries, such as coal mining, are required to participate in carbon offset schemes.</p>	<p>As acknowledged within Table 5.1 of the CVC Mod 3 SEE, there will be no surface disturbance associated with the proposed modification and, therefore, no impact on native vegetation or fauna and fauna habitat, including Commonwealth listed threatened species, communities or migratory birds. Biodiversity will continue to be managed in accordance with CVC's approved Biodiversity Management Plan (EMP-D-16372).</p> <p>CVC's contribution to climate change and associated impacts arising from annual GHG emissions are in proportion with its contribution to global GHG emissions. All reasonable and feasible measures to minimise the release of GHG emissions from CVC will continue to be undertaken in accordance with the GHG management practices provided within Table 10 of CVC's approved Air Quality Management Plan (EMP-D-16369). GHG emissions reporting will continue to be undertaken in accordance with the requirements of the Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i>.</p> <p>CVC generates less GHG emissions in the supply of product coal to VPPS than alternative coal mining operations due to its proximity to VPPS and, consequently, less GHG emissions relating to diesel usage from rail or truck movements.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_4	MC MOD 5	The Environmental Risk Rating should be amended to also include the absolute risk rating, not just the incremental risk rating, in order to determine whether the risk category has been exceeded due to the additional increment.	<p>The purpose of the MC Mod 5 SEE is to provide the background to and description of the proposed modification, an assessment of its potential impacts, management considerations and consultation undertaken. Subsequently, the preliminary environmental risk assessment provided in Appendix A of the MC Mod 5 SEE focuses on risks associated with the incremental change from the proposed modification compared to the approved development and does not reflect the overall environmental risks related to each aspect considered.</p> <p>As acknowledged within Section 7.2 of the MC Mod 5 SEE, the proposed modification constitutes a minor change to an existing approved underground mine that would have negligible environmental impacts. The proposed modification is considered substantially the same as the approved development and is aligned with the principles of ecologically sustainable development (ESD).</p> <p>Given that the proposed modification will have minimal adverse environmental impacts, it can be assumed that the added incremental risk associated with the proposed modification will not result in any significant changes to the absolute risk ratings associated with the ongoing operation of MC.</p> <p>Where applicable, environmental safeguards have been developed to avoid or minimise any effect on the environment. Environmental management at MC will continue under the proposed modification in accordance with the existing environmental management processes identified in the various approvals, licences and management plans.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_5	MC MOD 5	<p><b>Air Quality</b></p> <p>Council seeks clarity on Table 8.5, which predicts an increase in the 24-hour average PM10 concentrations, but no increase in the “project plus background” value. It is noted that both the existing and proposed values appear to exceed the “Assessment criteria” figure.</p> <p>It is noted the statement predicts increases in annual TSP, PM10, PM2.5 and dust deposition as a result of the proposal, however these are expected to remain below the relevant threshold levels.</p>	<p>Appendix B of this report provides a response to comments from LMCC (LMCC_5) and DPIE (DPIE_2) in relation to the 24-hour average PM<sub>10</sub> concentrations presented in the air quality assessment.</p> <p>Table 8.5 of the air quality assessment (Appendix B of the MC Mod 5 SEE) presented the maximum 24-hour average PM<sub>10</sub> concentrations due to MC alone and cumulatively (ie MC plus background). The reason why there is minimal to no change in the cumulative 24-hour average PM<sub>10</sub> concentration is because the maximum cumulative 24-hour average PM<sub>10</sub> concentration is driven by the existing background concentration. As noted in the response (refer Appendix B), the maximum cumulative PM<sub>10</sub> concentration is a result of the measured background concentration on 6 May 2015 (ie 56 µg/m<sup>3</sup>), which coincided with a dust storm. The maximum predicted concentration from MC does not occur on the same date as the maximum measured background concentration.</p> <p>Approximately 99% of the measured 24-hour average PM<sub>10</sub> concentrations when both the current and proposed activities at MC and the existing background levels are considered are below 30 µg/m<sup>3</sup>.</p> <p>The data presented in Table 8.5 of the air quality assessment show minimal (if any) change in the predicted cumulative PM<sub>10</sub> concentrations between the existing and proposed operations. This is further demonstrated in the figures in Appendix B, which show the predicted 24-hour average contribution from MC (orange bars) and the corresponding background 24-hour concentration (blue bars) for each day of the year at all receptors.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_6	MC MOD 5	<p><b>Greenhouse Gas Emissions Reduction Targets</b></p> <p>Lake Macquarie City Council’s adopted Environmental Sustainability Action Plan 2014-2023 includes a city-wide target of 3% per annum reduction in greenhouse gas emissions. Council requests the assessment consider how the proposal contributes to this reduction target.</p>	<p>As acknowledged in Table 3.5 of the MC Mod 5 SEE, the proposed modification would not result in an increase in GHG emissions.</p> <p>The proposed extension to the project approval will extend the period of time over which GHG emissions are generated by MC. GHG emissions associated with MC will be managed in accordance with the existing greenhouse gas and energy efficiency plan (energy savings action plan) and GHG emissions reporting will continue to be undertaken in accordance with the requirements of the Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i>.</p> <p>Transport of coal from CVC via MC’s surface infrastructure provides a local source of thermal coal for VPPS. This generates less GHG emissions in the supply of product coal to VPPS than alternative coal mining operations due to the proximity of CVC and MC to VPPS and, consequently, less GHG emissions relating to diesel usage. By obtaining coal from local sources, GHG emissions associated with coal deliveries to VPPS from more distant locations would also be decreased as a result of the proposed modification, contributing to LMCC’s overall reduction target.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
LMCC	LMCC_7	MC MOD 5	<p><b>Impacts of Climate Change</b></p> <p>Extraction and use of coal has been found to significantly affect climate and biodiversity (<a href="https://www.ipcc.ch/sr15/">https://www.ipcc.ch/sr15/</a>). Council requests that consideration is given to the project's contribution to the impact on flora and fauna as a result of climate change caused by the broader coal and coal power industries, and where this proposal may fit within a plan to limit the impacts of anthropogenic climate change. Specifically, it is recommended that contributory industries, such as coal mining, are required to participate in carbon offset schemes.</p> <p>The use of locally-sourced coal for supply to Vales Point power station is supported in lieu of importing coal longer distances. To this extent, Council has no objection to the extension of the life of the mine subject to mitigation of the impact of the extended life as described above.</p>	<p>As acknowledged within Table 5.12 of the MC Mod 5 SEE, there will be no additional surface disturbance as a result of the proposed modification and, therefore, no impact on native vegetation, fauna and fauna habitat including Commonwealth listed threatened species, communities or migratory birds. Flora and fauna will continue to be managed in accordance with MC's approved Land Management Plan (EMPO25).</p> <p>MC's contribution to climate change and associated impacts arising from annual GHG emissions are in proportion with its contribution to global GHG emissions. GHG emissions associated with MC will continue to be managed in accordance with the existing greenhouse gas and energy efficiency plan (energy savings action plan). GHG emissions reporting will continue to be undertaken in accordance with the requirements of the Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i>.</p> <p>Transport of coal from CVC via MC's surface infrastructure provides a local source of thermal coal for VPPS. This generates less GHG emissions in the supply of product coal to VPPS than alternative coal mining operations due to the proximity of CVC and MC to VPPS and, consequently, less GHG emissions relating to diesel usage from rail or truck movements.</p> <p>No further mitigation measures are proposed.</p>
RMS	RMS_1	CVC MOD 3	Roads and Maritime has reviewed the information provided and raises no objection to or requirements for the proposed modifications as it is considered there will be no significant impact on the nearby classified (State) road network.	Noted.
RMS	RMS_2	MC MOD 5	Roads and Maritime has reviewed the information provided and raises no objection to or requirements for the proposed modifications as it is considered there will be no significant impact on the nearby classified (State) road network.	Noted.

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
RMS	RMS_3	MC MOD 5	<p>It is noted that under Schedule 3, Condition 21 (d) of the previously approved Modification 4, prior to the number of workers (direct employees and contractors) at Mannering Colliery exceeding 70, the proponent must upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by Central Coast Council, or later updated versions of this Construction Certificate to the satisfaction of the Secretary.</p> <p>Roads and Maritime recommends that Central Coast Council ensure the requirements specified in above condition be considered once the number of workers at the Colliery exceeds 70.</p>	<p>Manning levels at MC are currently at 30. Delta Coal management are aware of the manning limit in the approval.</p> <p>As noted in Section 5.1 of the MC Mod 5 SEE, the proposed modification does not require a change to employee numbers at MC.</p> <p>Should manning at MC increase above 70, Delta Coal will upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by Central Coast Council, or later updated versions of this Construction Certificate to the satisfaction of the Secretary.</p> <p>No further mitigation measures are proposed.</p>
Subsidence Advisory NSW	SANSW_1	CVC MOD 3 MC MOD 5	Subsidence Advisory NSW has no objection to the proposed modifications.	Noted.
DPIE Resources Regulator	RR_1	CVC MOD 3 MC MOD 5	The Resources Regulator reminds the Applicant that the appropriate mechanism to capture the mining method to be used in particular areas is within the relevant Extraction Plan, and not the Mining Operations Plan as described in <i>Statement of Environmental Effects (SEE) for Chain Valley Colliery – Modification 3</i> Section 2.2.2 Changes to development consent conditions relating to the mining method.	<p>Noted. The type of mining method to be used in particular areas will be confirmed in the relevant documentation as specified by DPIE.</p> <p>Historically, extraction plans have been prepared by the mine operator and approved by DPIE for secondary extraction at CVC as defined by SSD 5465, which defines second workings as “extraction of coal by miniwall or pillar extraction methods”.</p> <p>As per Schedule 3, Condition 4 of MP06_0311, there is no allowance for second workings at MC. There are currently no requirements for the preparation of extraction plans or subsidence management plans for first workings at MC.</p> <p>No further mitigation measures are proposed.</p>
DPIE Biodiversity and Conservation Division	BCD_1	CVC MOD 3 MC MOD 5	<p><b>Biodiversity</b></p> <p>The Biodiversity and Conservation Division has no comment on biodiversity and no further biodiversity assessment is required.</p>	Noted.

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
DPIE Biodiversity and Conservation Division	BCD_2	CVC MOD 3	<b>Aboriginal cultural heritage</b> The Biodiversity and Conservation Division recommends that a consent condition is created that requires the Lake Coal Chain Valley Colliery Heritage Management Plan be updated by Delta Coal in consultation with Aboriginal stakeholders within 3 months of approval of Modification 3.	<p>There will be no surface disturbance associated with the proposed modification and, accordingly, no potential to adversely impact on any item or feature of Aboriginal cultural heritage that may be present. The management of Aboriginal cultural heritage at CVC will continue to be undertaken in accordance with CVC's approved Heritage Management Plan, which was prepared in accordance with Schedule 3, Condition 21 of SSD-5465.</p> <p>Nonetheless, Delta Coal intends to review and, if required, update CVC's Heritage Management Plan in consultation with Aboriginal stakeholders in accordance with Schedule 6, Condition 5 of SSD-5465, which requires that the plan be updated within three months of any modification to the conditions of SSD-5465.</p> <p>As requested by DPIE (refer DPIE_4), Delta Coal is considering preparing an updated Aboriginal Cultural Heritage Management Plan to cover both CVC and MC.</p> <p>No further mitigation measures are proposed.</p>
DPIE Biodiversity and Conservation Division	BCD_3	MC MOD 5	<b>Aboriginal cultural heritage</b> The Biodiversity and Conservation Division recommends that a consent condition is created that requires Delta Coal to prepare an Aboriginal Cultural Heritage Management Plan for the Delta Coal Mannering Colliery operations in consultation with Aboriginal stakeholders within 3 months of approval of Modification 5.	<p>There will be no surface disturbance associated with the proposed modification and, accordingly, no potential to adversely impact on any item or feature of Aboriginal cultural heritage that may be present.</p> <p>The findings of a recent independent environmental audit (IEA) at MC triggered a requirement for an Aboriginal Cultural Heritage Management Plan to be prepared for MC in consultation with Aboriginal stakeholders. The plan will be prepared in accordance with Schedule 3, Condition 18 of MP06_0311 and will be submitted to DPIE for review.</p> <p>As requested by DPIE (refer DPIE_4), Delta Coal is considering preparing an updated Aboriginal Cultural Heritage Management Plan to cover both CVC and MC.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
DPIE Biodiversity and Conservation Division	BCD_4	CVC MOD 3 MC MOD 5	<b>Flooding and flood risk</b> The proponent should consider any relevant requirements of the Coastal Management Act and Coastal Management SEPP. This should include detailed consideration of Clause 15 of the Coastal Management SEPP, which requires proponents to demonstrate that a proposed development is not likely to cause increased risk of coastal hazards on the development site or any other land. The proponent should also consider the management objectives specified for coastal wetlands and littoral rainforests areas.	Appendix C includes consideration of the relevant requirements of the CM Act and the Coastal Management SEPP. The proposed modifications are not considered likely to cause increased risk of coastal hazards within the development consent boundary for CVC or the project approval boundary for MC or any other land. No further mitigation measures are proposed.
DPIE DRG	DRG_1	CVC MOD 3 MC MOD 5	The Division has determined that identified risks or opportunities can be effectively regulated through the conditions of mining authorities issued under the Mining Act 1992.	Noted.
DPIE – Lands, Water and DPI	LWDPI_1	CVC MOD 3	<b>Crown Lands</b> If Crown land is involved in the proposal: <ul style="list-style-type: none"> <li>– All Crown Land and Crown Roads within a Mining Lease must be subject to a Compensation Agreement issued under Section 265 of the Mining Act 1992, to be agreed and executed prior to any mining activity taking place and within 12 months of Project/Modification Approval. The Compensation Agreement may include conditions requiring the Mining Lease Holder to purchase Crown land impacted on by mining activity.</li> <li>– All Crown Land and Crown Roads located within an Exploration Licence, where subject to exploration activity, must be subject to an Access Arrangement issued under Section 141 of the Mining Act 1992, to be agreed and executed prior to any exploration activity taking place.</li> </ul>	Noted. As noted in Table 2.1 of the CVC Mod 3 SEE, no change to the development consent boundary (as shown in Appendix 2 to SSD-5465) is required as part of the proposed modification. No further mitigation measures are proposed.

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
DPIE – Lands, Water and DPI	LWDPI_1	MC MOD 5	<p><b>Crown Lands</b></p> <p>If Crown land is involved in the proposal:</p> <ul style="list-style-type: none"> <li>– All Crown Land and Crown Roads within a Mining Lease must be subject to a Compensation Agreement issued under Section 265 of the Mining Act 1992, to be agreed and executed prior to any mining activity taking place and within 12 months of Project/Modification Approval. The Compensation Agreement may include conditions requiring the Mining Lease Holder to purchase Crown land impacted on by mining activity.</li> <li>– All Crown Land and Crown Roads located within an Exploration Licence, where subject to exploration activity, must be subject to an Access Arrangement issued under Section 141 of the Mining Act 1992, to be agreed and executed prior to any exploration activity taking place.</li> </ul>	<p>Noted.</p> <p>As noted in Table 2.1 of the MC Mod 5 SEE, no change to the project approval boundary (as shown in Appendix 1 to MP06_0311) is required as part of the proposed modification.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
DPIE	DPIE_1	MC MOD 5	<p><b>Noise</b></p> <p>The Department requests further information on the predicted frequency of operation of the coal handling equipment at Mannering to accommodate the increase in run-of-mine coal production. Will this increase operating hours during the evening and night period? Are there any options to limit the operating hours of Mannering’s coal handling plant, particularly during the night period?</p>	<p>MC currently has approval to operate 24 hours, 7 days a week. As part of the proposed modification, there will be no changes to the approved operating hours at MC; however, there will be a considered focus from Delta Coal to ensure that noise impacts associated with the continued operation of MC will not increase.</p> <p>As described in Section 5.3 and Appendix C of the MC Mod 5 SEE, noise mitigation works implemented at MC in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers, including Macquarie Shores. Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP06_0311 at all assessment locations under worst case meteorological conditions.</p> <p>As noted previously, EMM has been engaged by Delta Coal to prepare a Noise Compliance Report (NCR) and the proposed scope and methodology has been discussed with DPIE and EPA and endorsed by DPIE.</p> <p>The NCR is a requirement of MP06_0311 and is a response to complaints from residents of Macquarie Shores. The NCR will include a summary of the results of a targeted noise monitoring program in and around MC, which will include:</p> <ul style="list-style-type: none"> <li>– operator-attended measurements at three noise compliance monitoring locations, consistent with the approved Noise Monitoring Program (ENV 00003), on multiple occasions between 12 am and 6 am; and</li> <li>– unattended noise monitoring loggers which have been placed at MC, CVC, VPPS and Macquarie Shores.</li> </ul> <p>Pending the results of the NCR, Delta Coal will liaise with DPIE and EPA prior to establishing any further reasonable and feasible noise management and mitigation measures to address these issues.</p>
DPIE	DPIE_2	MC MOD 5	<p><b>Air quality</b></p> <p>Lake Macquarie City Council’s submission for Mannering Colliery Mod 5 seeks clarification on the predicted increases in the 24-hour average PM10 concentrations, as represented in Table 8-5 of the Statement of Environmental Effects. Please provide clarification regarding any predicted air quality exceedances.</p>	<p>Refer response provided to LMCC_5.</p> <p>No further mitigation measures are proposed.</p>

**Table 3.1 Agency responses**

Agency	Reference No.	Relevant application	Submission	Response
DPIE	DPIE_3	CVC MOD 3 MC MOD 5	<b>Coastal Management</b> Delta Coal must consider any relevant requirements of State Environmental Planning Policy (SEPP) (Coastal Management) 2018 and include a detailed consideration of clause 15 of that SEPP. Please refer to the Biodiversity and Conservation Division’s (BCD, formerly the Office of Environment and Heritage) submission.	Refer response provided to BCD_4. No further mitigation measures are proposed.
DPIE	DPIE_4	CVC MOD 3 MC MOD 5	<b>Heritage</b> The BCD submission recommends that revised Aboriginal Cultural Heritage Management Plans be prepared for Chain Valley and Mannering Collieries.  The Department supports the BCD’s recommendations and suggests that it would be efficient for Delta Coal to prepare an updated Aboriginal Cultural Heritage Management Plan to cover both sites. The Department asks that Delta Coal provides an update on this matter in its Response to Submissions.	Refer responses provided to BCD_2 and BCD_3. No further mitigation measures are proposed.

# 4 Community submissions

## 4.1 Excess and increased noise and vibration impacts

Noise and vibration impacts associated with CVC Mod 3 are discussed in Table 5.1 of the CVC Mod 3 SEE. There are no changes to surface infrastructure, operating hours, or intensification of CVC operations proposed by the modification. Noise emissions from the proposed modification would be within the predictions made in the *Mining Extension 1 Project EIS* (EMM 2013) and reflected in SSD-5465. No additional measures are therefore warranted and noise emissions will continue to be managed in accordance with CVC's approved Noise Management Plan (EMP-D-16370).

Noise and vibration impacts associated with MC Mod 5 are discussed in Section 5.3 of the MC Mod 5 SEE. The proposed modification would not require a change to existing infrastructure, currently approved hours of operation, transport methods or employee numbers. Therefore, operational noise emissions will be unchanged under the proposed modification and, therefore, no detailed noise assessment has been undertaken.

As noted previously, DPIE requested that the previous operators of MC, LakeCoal Pty Ltd (LakeCoal), provide additional information regarding the effectiveness of noise mitigation works at MC, predicted noise emission levels and an analysis of further potential noise mitigation measures. Subsequently, EMM prepared a noise mitigation study, which was included as Appendix C of the MC Mod 5 SEE. The noise mitigation works undertaken in 2018/2019 and reported in Appendix C of the MC Mod 5 SEE were predicted to have resulted in a 2–5 dB reduction of MC at surrounding residential locations.

As part of the noise mitigation study, potential noise emission levels from MC have been predicted and compared to the site's long-term noise goals outlined in MP06\_0311. Operational noise levels were assessed for the daytime, evening and night-time periods during worst case meteorological conditions. Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. Further, current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP06\_0311 at all assessment locations under worst case meteorological conditions.  $LA_{max}$  noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.

The proposed modification will not result in any changes to the approved operating hours at MC; however, there will be a considered focus from Delta Coal to ensure that noise impacts associated with the continued operation of MC will not increase.

EMM has been engaged by Delta Coal to prepare an NCR as required by MP06\_0311. The proposed scope and methodology of the NCR has been discussed with and endorsed by DPIE. The NCR will include a summary of the results of a targeted noise monitoring program in and around MC, including operator-attended measurements at three noise compliance monitoring locations on multiple occasions during the night-time period. Should the NCR identify any issues with the ongoing operation of coal handling equipment at MC, Delta Coal will liaise with DPIE and EPA prior to implementing reasonable and feasible noise management and mitigation measures to address these issues.

A number of submissions commented on vibration-generated by MC and associated impacts. There are no existing or proposed activities either at, or within the vicinity of MC, that would cause any significant ground-borne vibration. What has been described as vibration within these submissions could be noise with components of low frequency noise (LFN), which can be perceived as vibration. Low frequency noise is defined within the *Noise Policy for Industry* (NPfI) (EPA 2017) as "noise containing major components in the low-frequency range (10 hertz [Hz] to 160 Hz) of the frequency spectrum". Monitoring as part of the NCR will be undertaken in accordance with the requirements of the *Industrial Noise Policy* (INP) (EPA 2000) and NPfI (EPA 2017) and will include consideration of LFN, where applicable.

## 4.2 Excess and increased air pollution

Air quality impacts associated with CVC Mod 3 are discussed in Table 5.1 of the CVC Mod 3 SEE. There are no changes to surface infrastructure or intensification of CVC operations proposed by the modification. The changes to underground mining methods will not result in any changes to ventilation arrangements or any increase in particulate emissions from existing infrastructure used to ventilate the workings. Particulate emissions from the proposed modification would be within the predictions made in the *Mining Extension 1 Project EIS* (EMM 2013) and reflected in the conditions of SSD-5465. No additional measures are therefore warranted and dust emissions will continue to be managed in accordance with CVC's approved Air Quality Management Plan (EMP-D-16369).

Air quality impacts associated with MC Mod 5 are discussed in Section 5.2 and Appendix B of the MC Mod 5 SEE. As noted previously, there will be no significant changes to surface infrastructure at MC as part of the proposed modification as the existing infrastructure has adequate capacity to accommodate the additional coal throughput and no additional plant or equipment requirements are anticipated.

As part of the MC Mod 5 SEE, ERM undertook an air quality assessment, which considered the approved project and calculated the incremental change from the proposed modification compared to the approved project. The modelling predicted a minimal change in the contribution of dust emissions from the proposed modification compared to the approved project and that the incremental PM<sub>10</sub>, PM<sub>2.5</sub>, total suspended particulates (TSP) and dust deposition are all below the impact assessment criteria at the closest assessment locations. The cumulative assessment, incorporating existing background dust levels, also indicates that the proposed modification is unlikely to result in any additional exceedances of relevant impact assessment criteria at the assessment locations.

Air quality goals/criteria established under government policies are benchmarks set to protect the general health and amenity of the community in relation to air quality. This is reflected in the development of the Voluntary Land Acquisition and Mitigation Policy (VLAMP) air quality criteria, which was developed by the NSW Department of Planning and Environment (now DPIE) to protect the amenity, health and safety of people. Therefore, compliance with these would suggest that general health and amenity are being protected.

Appendix B of this report provides a response to comments from LMCC (LMCC\_5) and DPIE (DPIE\_2) in relation to the 24-hour average PM<sub>10</sub> concentrations presented in the air quality assessment (refer Table 3.1). As noted in Table 3.1, Table 8.5 of the air quality assessment (Appendix B of the MC Mod 5 SEE) presented the maximum 24-hour average PM<sub>10</sub> concentrations due to MC alone and cumulatively (ie MC plus background). The reason why there is minimal to no change in the cumulative 24-hour average PM<sub>10</sub> concentration is because the maximum cumulative 24-hour average PM<sub>10</sub> concentration is driven by the existing background concentration and the maximum predicted concentration from MC does not occur on the same date as the maximum background concentration.

As noted in Appendix B, the predicted contribution from MC is small when compared with the background, hence the reason the data presented in Table 8.5 of the air quality assessment show minimal (if any) change in the predicted cumulative PM<sub>10</sub> concentrations between the existing and proposed operations. This is further demonstrated in the figures in Appendix B, which show the predicted 24-hour average contribution from the MC (orange bars) and the corresponding background 24-hour concentration (blue bars) for each day of the year at all receptors.

The proposed modifications do not seek approval for any changes to the existing or future operation of the neighbouring VPPS. Under the NSW *Protection of the Environment Operations Act 1997* (POEO Act), VPPS must operate in accordance with its Environment Protection Licence (EPL) 761, which specifies the terms and conditions under which the site can operate and details the limits on emissions deemed polluting to the atmosphere and Lake Macquarie for all designated discharge points.

### 4.3 Health and lifestyle impacts on neighbouring residents

A number of submissions raised concern that the health of neighbouring residents would be adversely impacted as a result of the proposed modifications. Objections were raised in relation to amenity, dust and noise from existing operations and the potential for increased impacts as a result of the proposed modifications for both CVC Mod 3 and MC Mod 5. Night noise was specifically mentioned as affecting sleep and the wellbeing of neighbouring residents within the Macquarie Shores village.

Delta Coal recognises that the community is concerned about potential impacts to amenity due to the proposed modifications and how this will affect their lifestyle; however, no long-term impacts to the health or lifestyle of neighbouring residents are expected to result from the proposed modifications.

Potential impacts on the health and lifestyle of neighbouring residents have been considered in terms of noise, sleep disturbance, air quality and visual amenity below:

- **Noise** – As described in Section 4.1, operational noise emissions are expected to be unchanged under the proposed modifications. Noise emissions at CVC and MC will continue to be managed in accordance with approved management plans and the relevant conditions of SSD-5465 and MP06\_0311, respectively. EMM has been engaged by Delta Coal to prepare an NCR as required by MP06\_0311. Should the NCR identify any issues with the ongoing operation of coal handling equipment at MC, Delta Coal will liaise with DPIE and EPA prior to implementing reasonable and feasible noise management and mitigation measures to address these issues.
- **Sleep disturbance** – In NSW, criteria provided within the NPfl (EPA 2017) are used to assess potential for sleep disturbance from premises during the night-time period. Section 5.3.5 of the MC MOD 5 SEE noted that as part of the previous noise impact assessment for MC Mod 3 (EMM 2015), the highest predicted  $L_{Amax}$  noise level (being the operation of the conveyor belt alarms) at any assessment location was  $L_{Amax}$  47 dB at assessment location 8 under prevailing meteorological conditions and all results demonstrated that  $L_{Amax}$  noise levels were compliant with the relevant sleep disturbance criteria. Since the completion of the previous noise impact assessment for MC Mod 3 (EMM 2015), the conveyor belt alarms have been replaced with lower decibel units and have been redirected away from sensitive receptors. Therefore, the  $L_{Amax}$  noise levels received at the nearest assessment locations are predicted to decrease due to the mitigation works. Hence,  $L_{Amax}$  noise level events at MC are predicted to remain below the relevant sleep disturbance criteria. In June 2019, the emergency alarm system at MC was tested during a night shift, resulting in an  $L_{Amax}$  exceedance. Following this exceedance, the responsible staff member was counselled, a toolbox talk was completed and the relevant work order has since been updated to ensure that all future testing of the emergency alarm system is limited to daytime hours only. Noise emissions at CVC and MC will continue to be managed in accordance with approved management plans and the relevant conditions of SSD-5465 and MP06\_0311, respectively.
- **Air quality** – As described in Section 4.2, there are no changes to surface infrastructure or intensification of CVC operations proposed by CVC Mod 3 and there will be no significant changes to surface infrastructure at MC as part of MC Mod 5. Existing infrastructure at MC has adequate capacity to accommodate the additional coal throughput and no additional plant or equipment requirements are anticipated. The criteria under which potential air quality impacts resulting from MC Mod 5 have been assessed provide benchmarks, which are intended to protect the community against the adverse effects of air pollutants, and generally reflect current Australian community standards for the protection of health and against nuisance effects. Therefore, compliance with these would suggest that general health and amenity are being protected.
- **Visual amenity** – The proposed modifications do not involve any new surface infrastructure and, therefore, will not result in any additional visual amenity impacts. Visual amenity and lighting will continue to be

managed in accordance with Schedule 3, Condition 19 of MP06\_0311 (MC) and Schedule 3, Condition 22 of SSD-5465 (CVC).

The proposed modifications do not seek approval for any changes to the existing or future operation of the neighbouring VPPS. Under the POEO Act, VPPS must operate in accordance with its EPL 761, which specifies the terms and conditions under which the site can operate and details the limits on emissions deemed polluting to the atmosphere and Lake Macquarie for all designated discharge points.

#### 4.4 Excess and increased truck and traffic movements in the local area

Both the CVC Mod 3 SEE and MC Mod 5 SEE include consideration of the potential impacts of the proposed modifications on the local road network.

As noted in Table 5.1 of the CVC Mod 3 SEE, no changes are proposed to the approved coal extraction limit at CVC or employee numbers and there will be no change to approved trucking rates, routes or hours on the public road network.

Similarly, as noted in Table 5.12 of the MC Mod 5 SEE, the proposed modification will not generate additional employment at MC over and above that approved and will not result in any changes to traffic or transport levels and associated impacts.

The proposed increased transport of coal via the underground linkage between CVC and MC may result in a net reduction of truck movements from CVC via internal access roads. Further, it is anticipated that enabling the handling of additional coal at MC and its dispatch to VPPS via the existing overland conveyor will provide for an improved amenity outcome (in terms of air quality, noise and visual) when compared with the alternative of truck haulage of the additional volume of coal required to sustain the continued operation of VPPS.

#### 4.5 Excess and increased stockpiling within the VPPS ash dam

The proposed modifications will not result in the production of ash at either CVC or MC; however, it is noted that a major by-product of coal fuelled electricity generation is ash.

As noted previously, the proposed modifications do not seek approval for any changes to the existing or future operation of the neighbouring VPPS.

#### 4.6 Greater risk of contamination of Lake Macquarie and local groundwater from the VPPS ash dam

The proposed modifications will not result in the production of ash at either CVC or MC.

As noted previously, the proposed modifications do not seek approval for any changes to the existing or future operation of the neighbouring VPPS.

# 5 Statement of commitments

## 5.1 Chain Valley Colliery Modification 3

All aspects relating to environmental management at CVC will continue in accordance with SSD-5465, as modified, EPL 1770, the various approved plans and other elements of the development consent.

As noted in the CVC Mod 3 SEE, a detailed geotechnical assessment will be undertaken by a suitably qualified geotechnical engineer as part of the detailed mine plan design process.

No further mitigation measures are proposed.

## 5.2 Mannering Colliery Modification 5

Environmental management under the proposed modification will continue in accordance with the existing environmental management processes of the various approvals, licences and management plans documented in Section 2.1.2 of the MC Mod 5 SEE.

As noted in the MC Mod 5 SEE, a detailed geotechnical assessment will be undertaken by a suitably qualified geotechnical engineer as part of the detailed mine plan design process. The proposed modification will also require a variation to EPL 191 to reflect the increase in the rate of ROM coal throughput.

Pending the outcomes and findings of the NCR, Delta Coal will work with the EPA and DPIE to undertake further noise mitigation works, if required.

No further mitigation measures are proposed.

# 6 Project evaluation and conclusion

## 6.1 Overview

This RTS report responds to submissions received on CVC Mod 3 and MC Mod 5 following the public exhibition of the SEEs. The submissions received by Delta Coal in response to the proposed modifications have been reviewed. Responses to matters raised have been prepared by EMM and Delta Coal, with input from relevant technical specialists who undertook assessments for the SEEs.

Following the public exhibition of the SEEs, 27 submissions for CVC Mod 3 and 25 submissions for MC Mod 5 were received by DPIE, including submissions from government agencies and other organisations and public feedback.

Of the submissions received from individual community members, the majority (74% for CVC Mod 3 and 71% for MC Mod 5) of the submissions were in support of the proposed modifications.

The majority of the objections came from neighbouring residents that reside in Macquarie Shores village, which is approximately 650 m east of MC's pit top at its closest point. These objections primarily identified potential for increased noise and vibration impacts at their residences as a result of the proposed modifications. As noted previously, pending the outcomes and findings of the NCR, Delta Coal will work with EPA and DPIE to undertake further noise mitigation works if required.

No objections were raised by NSW Government agencies and all matters raised have been addressed in Table 3.1.

## 6.2 Conclusion

Collectively, the proposed modifications are considered minor alterations to the approved developments and are considered to be in the public interest as they:

- will result in increased resource recovery potential at both CVC and MC;
- will lower capital and operating costs across Delta Coal's operations, as the existing infrastructure at MC has the proven ability to supply coal to VPPS at a higher and more efficient rate than directly from CVC due to more advanced coal clearance infrastructure;
- will improve the overall financial viability of CVC and MC, promoting the continuation of the social and economic benefits associated with the two developments (including increased job security for Delta Coal's employees);
- support the continued supply of coal to VPPS for local power generation;
- can achieve the associated benefits with minimal adverse environmental impact;
- are aligned with the principles of ecologically sustainable development (ESD); and
- meet all relevant government policies and guidelines.

# References

EMM 2013, *Mining Extension 1 Project – Environmental Impact Statement*. Report prepared for LakeCoal Pty Ltd.

- 2015, *Mannering Colliery – Modification 3 Noise Impact Assessment*.

NSW Department of Planning and Environment (DPE) 2017, *Draft Environmental Impact Assessment Guidance Series - Guideline 5 Responding to Submissions*.

NSW Environment Protection Authority (EPA) 2000, *Industrial Noise Policy*.

- 2017, *Noise Policy for Industry*.

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Appendix A

# Register of submitters

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Register - CVC Mod 3

DPIE Submission ID	DPIE Submitter ID	Submitter	Objects/Supports/ Comments	Matters raised
SE-68106	S-68094	Individual	Comment	No comments.
SE-68119	S-68106	Individual	Support	Notions of support.
SE-68122	S-68109	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Health and lifestyle impacts on neighbouring residents.
SE-68169	S-68156	Individual	Support	Notions of support.
SE-68697	S-68684	Individual	Support	Notions of support.
SE-68703	S-68109	Individual	Object	Excess and increased noise and vibration impacts.
SE-68763	S-68748	Individual	Support	Notions of support.
SE-68768	S-68753	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Excess and increased truck and traffic movements in the local area. Excess and increased stockpiling within the VPPS ash dam. Greater risk of contamination of Lake Macquarie and local groundwater from the VPPS ash dam.
SE-68769	S-68754	Agency	Comment	Government or agency response.
SE-68770	S-68755	Agency	Comment	Government or agency response.
SE-68771	S-68756	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Health and lifestyle impacts on neighbouring residents.
SE-68775	S-68760	Agency	Comment	Government or agency response.
SE-69174	S-69159	Individual	Support	Notions of support.
SE-69178	S-69163	Individual	Support	Notions of support.
SE-69180	S-69165	Individual	Support	Notions of support.
SE-69184	S-69169	Individual	Support	Notions of support.
SE-69186	S-69171	Individual	Support	Notions of support.
SE-69188	S-69173	Individual	Support	Notions of support.
SE-69190	S-69175	Individual	Support	Notions of support.
SE-69193	S-69178	Individual	Support	Notions of support.
SE-69194	S-69178	Individual	Support	Notions of support.
SE-69196	S-69180	Individual	Support	Notions of support.
SE-69197	S-69181	Agency	Comment	Government or agency response.
SE-69198	S-69182	Agency	Support	Government or agency response.
SE-69311	S-69295	Agency	Comment	Government or agency response.
None provided	None provided	Agency	Comment	Government or agency response (DPIE Biodiversity and Conservation Division)
None provided	None provided	Agency	Comment	Government or agency response (Subsidence Advisory NSW)

## Register - MC Mod 5

DPIE Submission ID	DPIE Submitter ID	Submitter	Objects/Supports/ Comments	Matters raised
SE-68120	S-68107	Individual	Support	Notions of support
SE-68123	S-68110	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Health and lifestyle impacts on neighbouring residents.
SE-68696	S-68683	Organisation	Object	Excess and increased noise and vibration impacts. Health and lifestyle impacts on neighbouring residents.
SE-68698	S-68685	Individual	Support	Notions of support
SE-68704	S-68110	Individual	Object	Excess and increased noise and vibration impacts.
SE-68764	S-68749	Individual	Support	Notions of support
SE-68773	S-68758	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Excess and increased truck and traffic movements in the local area. Excess and increased stockpiling within the VPPS ash dam. Greater risk of contamination of Lake Macquarie and local groundwater from the VPPS ash dam.
SE-68774	S-68759	Individual	Object	Excess and increased noise and vibration impacts. Excess and increased air pollution. Health and lifestyle impacts on neighbouring residents.
SE-68776	S-68761	Agency	Comment	Government or agency response.
SE-68777	S-68762	Agency	Comment	Government or agency response.
SE-69175	S-69160	Individual	Support	Notions of support
SE-69177	S-69162	Agency	Comment	Government or agency response.
SE-69179	S-69164	Individual	Support	Notions of support
SE-69181	S-69166	Individual	Support	Notions of support
SE-69185	S-69170	Individual	Support	Notions of support
SE-69187	S-69172	Individual	Support	Notions of support
SE-69189	S-69174	Individual	Support	Notions of support
SE-69191	S-69176	Individual	Support	Notions of support
SE-69192	S-69177	Individual	Support	Notions of support
SE-69195	S-69179	Individual	Support	Notions of support
SE-69199	S-69183	Agency	Comment	Government or agency response.
SE-69200	S-69184	Agency	Support	Government or agency response.
SE-69247	S-69231	Agency	Comment	Government or agency response.
SE-69276	S-69260	Agency	Comment	Government or agency response.
None provided	None provided	Agency	Comment	Government or agency response (DPIE Biodiversity and Conservation Division)

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Appendix B

# Air quality impact assessment response

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David Richards  
EMM  
Level 1, 146 Hunter St  
Newcastle 2300



8 August 2019

Reference: 0503194

Dear David

Subject: Mannering MOD 5 – Response to Submissions – Air Quality

ERM completed an air quality assessment (AQA) (ERM, 2019) to support the Statement of Environmental Effects (SEE) prepared by EMM for the proposed modification (MOD 5) to the operations at Mannering Colliery.

Further to the public exhibition of the SEE, submissions were received from NSW Department of Planning, Industry and Environment (DPIE), other regulators and the general public.

With respect to air quality, there was one submission from Lake Macquarie City Council (LMCC) and the DPIE submission referred to the LMCC submission, namely:

- LMCC's submission sought clarification in relation to the predicted 24-hour PM<sub>10</sub> concentrations, as detailed in the image below:

#### **Air Quality**

Council seeks clarity on Table 8.5, which predicts an increase in the 24-hour average PM<sub>10</sub> concentrations, but no increase in the "project plus background" value. It is noted that both the existing and proposed values appear to exceed the "Assessment criteria" figure.

It is noted the statement predicts increases in annual TSP, PM<sub>10</sub>, PM<sub>2.5</sub> and dust deposition as a result of the proposal, however these are expected to remain below the relevant threshold levels.

- DPIE's submission references the LMCC submission:
  - *LMCC's submission for Mannering Colliery Mannering Colliery Mod 5 seeks clarification on the predicted increases in the 24-hour average PM10 concentrations, as represented in Table 8-5 of the Statement of Environmental Effects. Please provide clarification regarding any predicted air quality exceedances.*

This letter provides the details requested in response to these submissions.

**Response:**

As noted in both the LMCC and DPIE submissions, Table 8.5 of the AQA (replicated below for ease of reference as Table 1) presented the maximum 24-hour average PM<sub>10</sub> concentrations for both the Approved and Proposed activities due to the Project alone, and cumulatively (i.e. Project alone plus Background).

*Table 1: Maximum predicted 24-h average PM<sub>10</sub> concentrations due to the approved project and proposed modification-alone and cumulatively*

ID	MGA coordinates Zone 56		24 hour Average - PM <sub>10</sub> (µg/m <sup>3</sup> )			
	Easting (m)	Northing (m)	Project Alone		Project plus Background	
			Approved	Proposed	Approved	Proposed
	<i>Assessment criteria</i>		-	-	<i>50 µg/m<sup>3</sup></i>	
4	363695	6327246	6.2	9.7	56.0	56.0
5	363940	6327348	5.7	8.9	56.0	56.0
6	364178	6327283	4.8	7.5	56.0	56.0
7	365360	6328072	3.6	5.7	57.0	57.5
8	365018	6328097	5.8	9.1	57.7	58.6
9	365173	6328884	5.3	8.3	56.1	56.2
11	365312	6328713	4.0	6.3	56.3	56.5
18	365265	6328839	4.2	6.6	56.2	56.3
20	365169	6329047	5.2	8.2	56.0	56.1

The reason why there is minimal to no change in the cumulative 24-hour average PM<sub>10</sub> concentration is because the maximum cumulative is driven by the existing background concentration, and the maximum predicted concentration from the Project alone does not occur on the same date as the maximum measured background concentration.

This was demonstrated in Figure 8-10 of the AQA that showed the predicted 24-hour average PM<sub>10</sub> contribution from the Project alone (orange bars), together with the corresponding background 24-hour average PM<sub>10</sub> concentration for each day of the year (blue bars) at private receptor (R4). It is apparent that the maximum cumulative concentration is due to the measured background concentration on 6 May of 56.0 µg/m<sup>3</sup>. The New South Wales Air Quality Statement 2015 (NSW OEH, 2016) states that a dust storm occurred on 6<sup>th</sup> May. Approximately 99% of the measured 24-hour average PM<sub>10</sub> concentrations are below 30 µg/m<sup>3</sup>.

To demonstrate this further, Table 2 shows for each receptor, for both the existing and proposed operations:

- the maximum predicted 24-hour average PM<sub>10</sub> concentration due to the Project alone;
- the date the maximum predicted 24-hour average PM<sub>10</sub> concentration due to the Project alone occurred;
- the corresponding background concentration on the date the maximum predicted 24-hour average PM<sub>10</sub> concentration due to the Project alone occurred; and

- the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration on the date the maximum predicted 24-hour average PM<sub>10</sub> concentration due to the Project alone occurred.

Table 2 shows that the maximum predicted 24-hour average PM<sub>10</sub> concentration due to the Project alone occurs on different dates for each receptor, and therefore the background concentration (and thus the calculated cumulative concentration) varies. Table 2 also shows the predicted increase due to the Project alone and cumulatively for the proposed activities compared with the existing.

However, as shown in Table 3, the maximum predicted contribution from the Project alone does not occur on the same day as the maximum background.

Table 2: Maximum predicted 24-hour average PM<sub>10</sub> concentrations due to Project alone and corresponding background concentrations on the same date

Receptor ID	Maximum predicted 24-hour average PM <sub>10</sub> due to Project alone (µg/m <sup>3</sup> )	Date maximum predicted 24-hour average PM <sub>10</sub> due to Project alone occurred	Background 24-hour average PM <sub>10</sub> on date maximum due to Project alone occurred (µg/m <sup>3</sup> )	Cumulative 24-hour average PM <sub>10</sub> on date maximum due to Project alone occurred (µg/m <sup>3</sup> )
<b>Existing</b>				
4	6.2	24-Mar	11.8	18.0
5	5.7	21-Oct	17.9	23.6
6	4.8	20-May	10.0	14.8
7	3.6	15-Jan	14.7	18.3
8	5.8	15-Jan	14.7	20.5
9	5.3	9-Mar	24.2	29.5
11	4.0	4-Oct	15.1	19.1
18	4.2	9-Mar	24.2	28.4
20	5.2	9-Mar	24.2	29.4
<b>Proposed</b>				
4	9.7	24-Mar	11.8	21.5
5	8.9	21-Oct	17.9	26.8
6	7.5	20-May	10.0	17.5
7	5.7	15-Jan	14.7	20.4
8	9.1	15-Jan	14.7	23.8
9	8.3	9-Mar	24.2	32.5
11	6.3	4-Oct	15.1	21.4
18	6.6	9-Mar	24.2	30.8
20	8.2	9-Mar	24.2	32.4

When considering the maximum cumulative 24-hour average PM<sub>10</sub> concentrations across the entire year, Table 3 shows the following:

- the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration;
- the date the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration occurred;
- the background concentration on the date the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration occurred; and
- the Project alone concentration on the date the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration occurred.



Table 3 shows that the maximum predicted cumulative 24-hour average PM<sub>10</sub> concentration occurs on the same date at all receptors (6 May) due to the maximum background concentration occurring on that date.

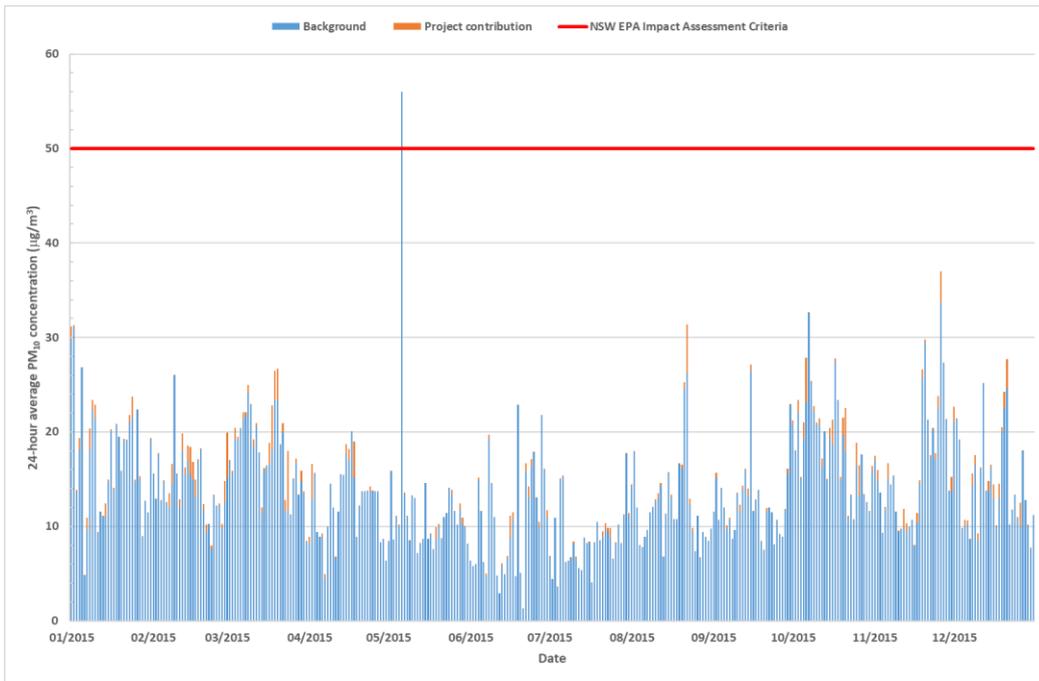
On the same date, the predicted contribution from the Project alone is small (for the Proposed project this is a maximum of 5% at R8) when compared with the background. Hence the reason the data presented in Table 8.5 of the AQA (shown as Table 1 above) shows minimal (if any) change in the predicted cumulative concentrations between the existing and proposed operations.

This is further demonstrated in Figure 1 to Figure 9 which show the predicted 24-hour average contribution from the Project alone (orange bars) and the corresponding background 24-hour concentration (blue bar) for each day of the year at all receptors.

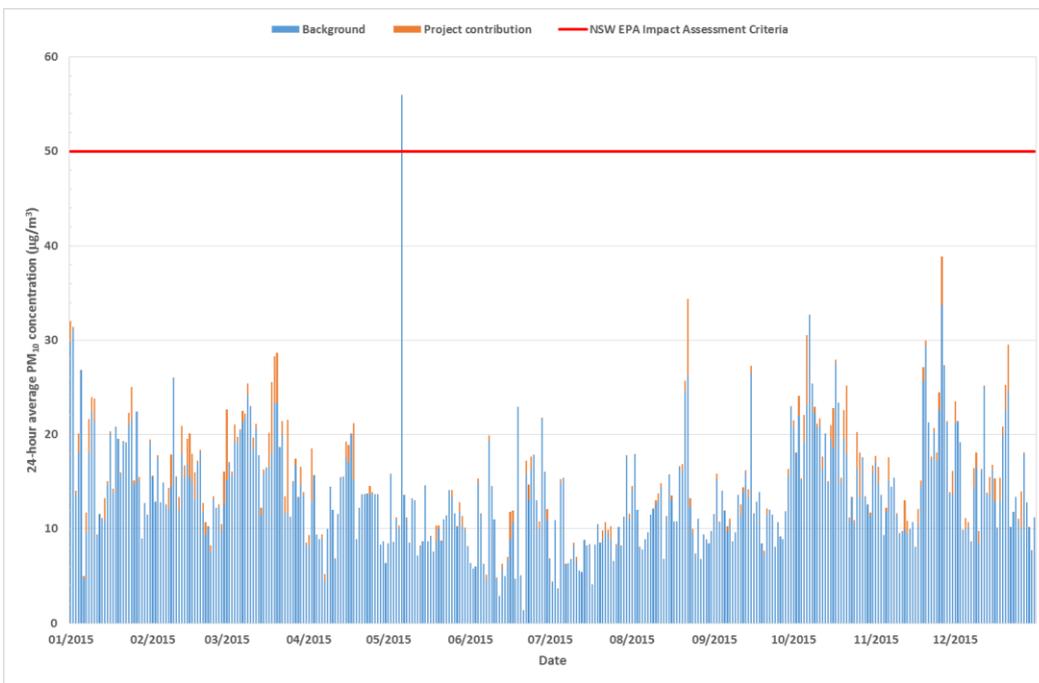
Table 3: Maximum predicted 24-hour average PM<sub>10</sub> concentrations due to Project alone and corresponding background concentrations on the same date

Receptor ID	Maximum predicted cumulative 24-hour average PM <sub>10</sub> (µg/m <sup>3</sup> )	Date maximum predicted cumulative 24-hour average PM <sub>10</sub> occurred	Background 24-hour average PM <sub>10</sub> on date maximum cumulative occurred (µg/m <sup>3</sup> )	Project alone 24-hour average PM <sub>10</sub> on date maximum cumulative occurred (µg/m <sup>3</sup> )
<b>Existing</b>				
4	56.0	6-May	56.0	8.15E-07
5	56.0	6-May	56.0	2.28E-03
6	56.0	6-May	56.0	4.08E-03
7	57.0	6-May	56.0	1.03E+00
8	57.7	6-May	56.0	1.73E+00
9	56.1	6-May	56.0	1.30E-01
11	56.3	6-May	56.0	3.18E-01
18	56.2	6-May	56.0	1.76E-01
20	56.0	6-May	56.0	3.48E-02
<b>Proposed</b>				
4	56.0	6-May	56.0	1.63E-06
5	56.0	6-May	56.0	3.64E-03
6	56.0	6-May	56.0	6.51E-03
7	57.5	6-May	56.0	1.51E+00
8	58.6	6-May	56.0	2.55E+00
9	56.2	6-May	56.0	2.03E-01
11	56.5	6-May	56.0	4.68E-01
18	56.3	6-May	56.0	2.70E-01
20	56.1	6-May	56.0	5.50E-02



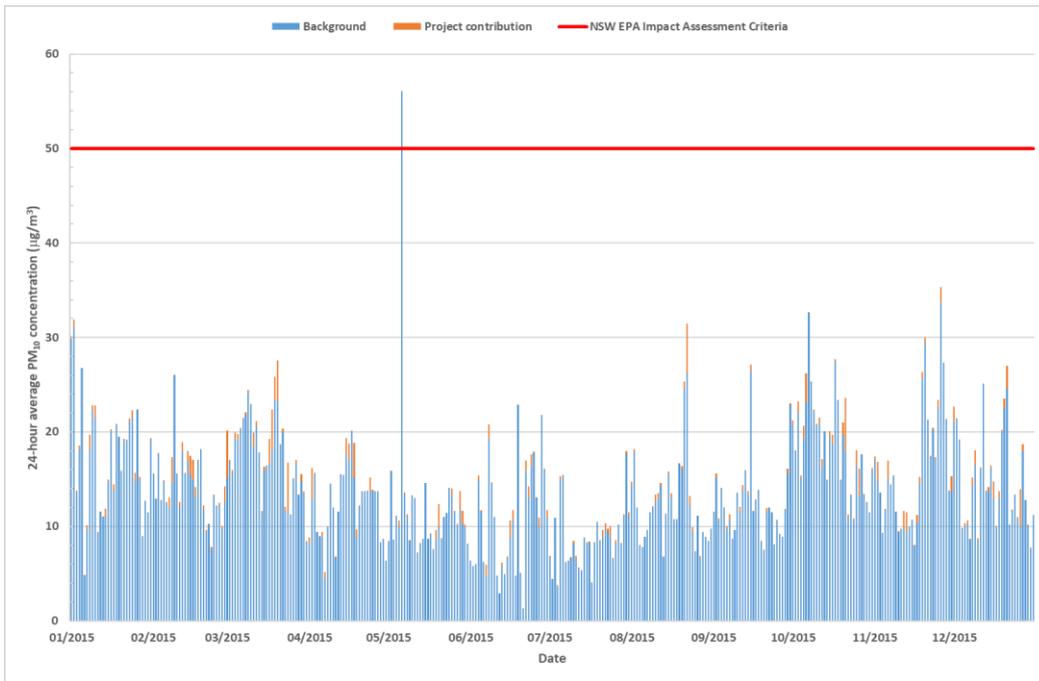


**Approved Project**

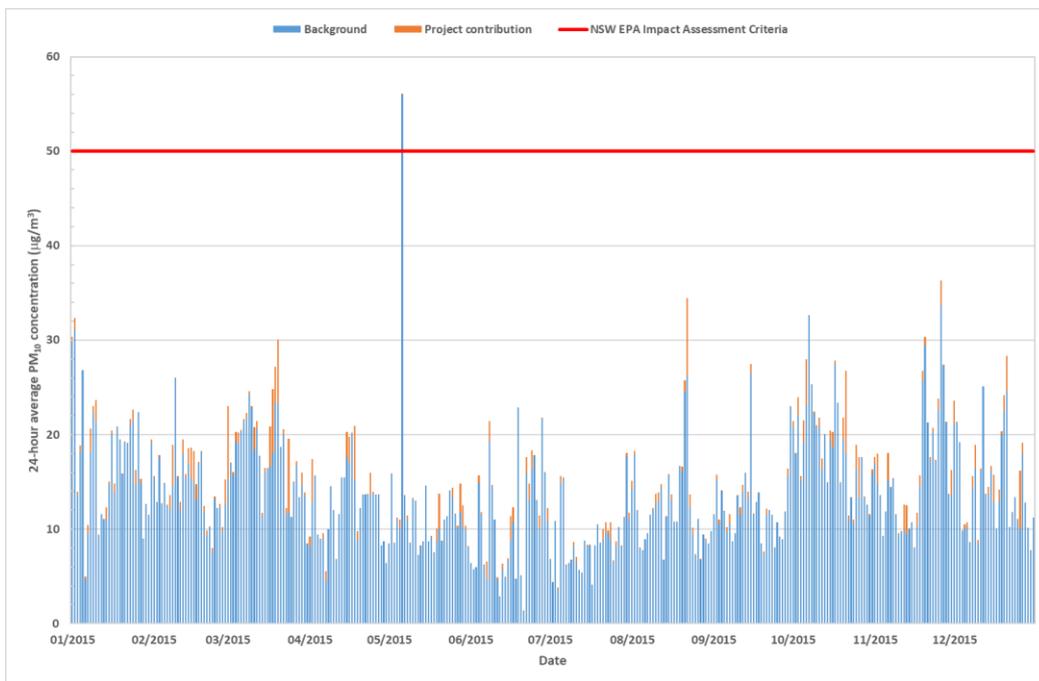


**Proposed Modification**

Figure 1: Predicted 24-hour average  $PM_{10}$  concentrations at Receptor 4 Project-alone plus background at CVC TEOM ( $\mu g/m^3$ )

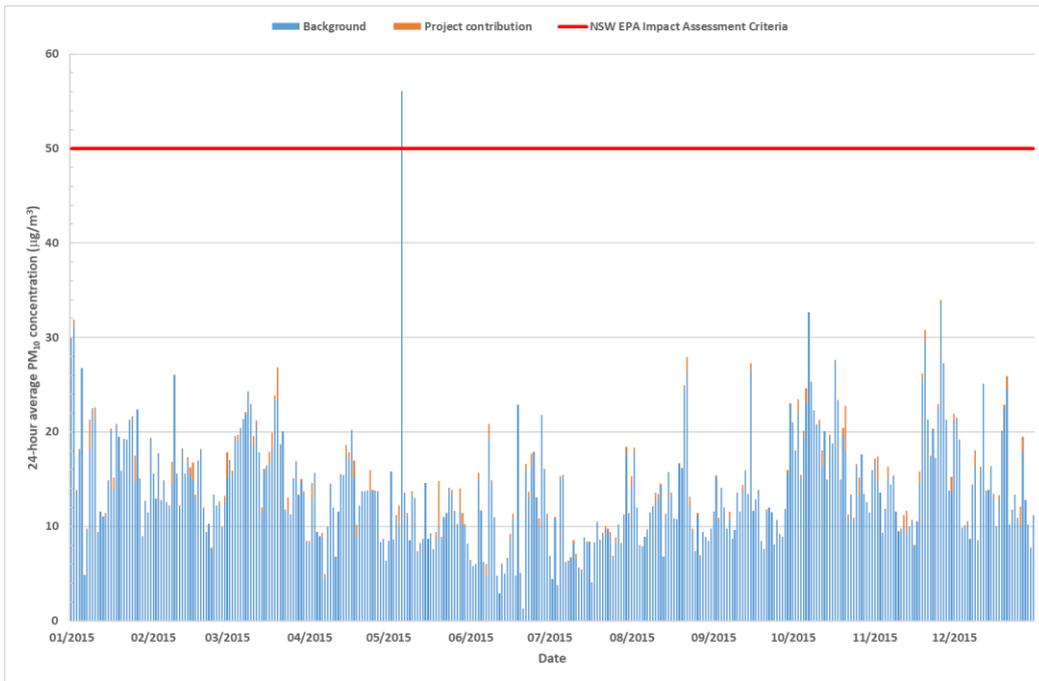


**Approved Project**

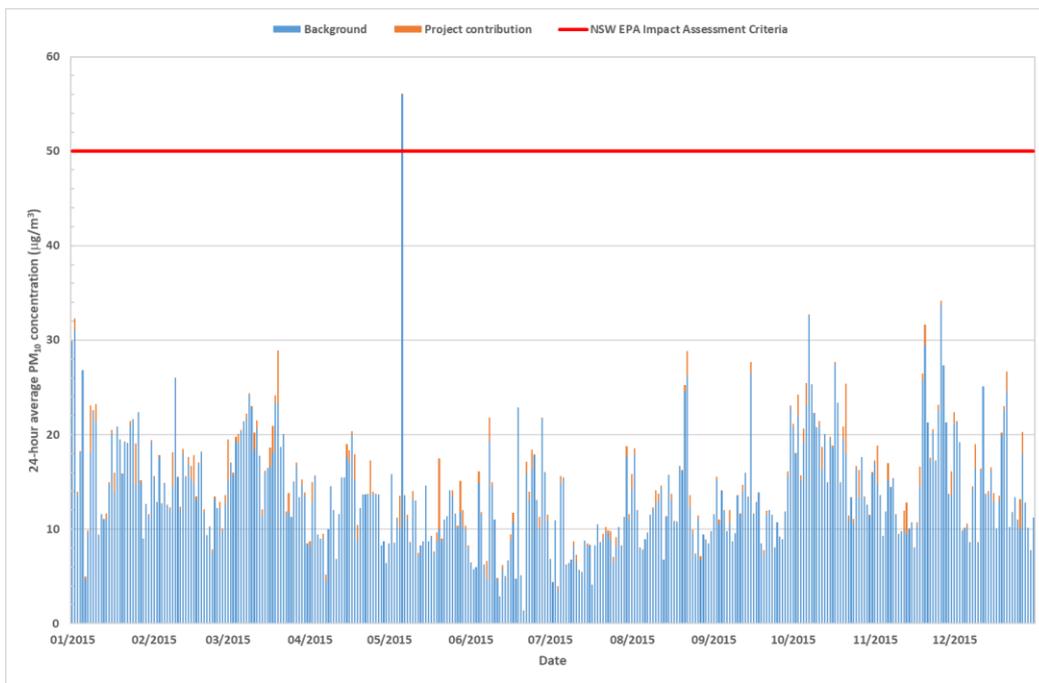


**Proposed Modification**

Figure 2: Predicted 24-hour average PM<sub>10</sub> concentrations at Receptor 5 Project-alone plus background at CVC TEOM (µg/m<sup>3</sup>)

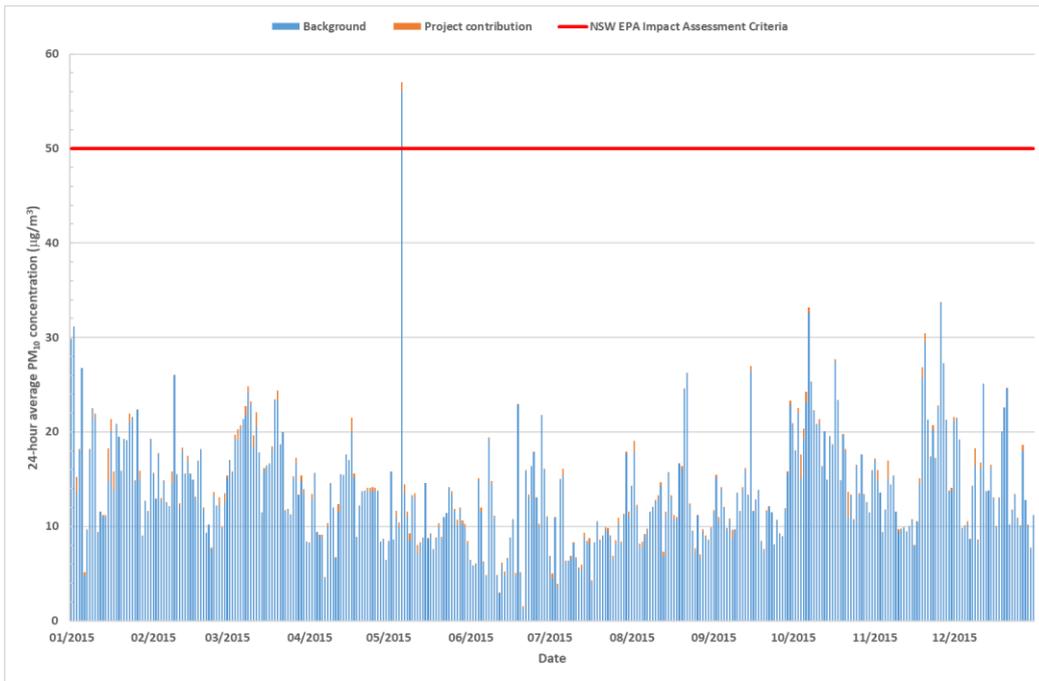


**Approved Project**

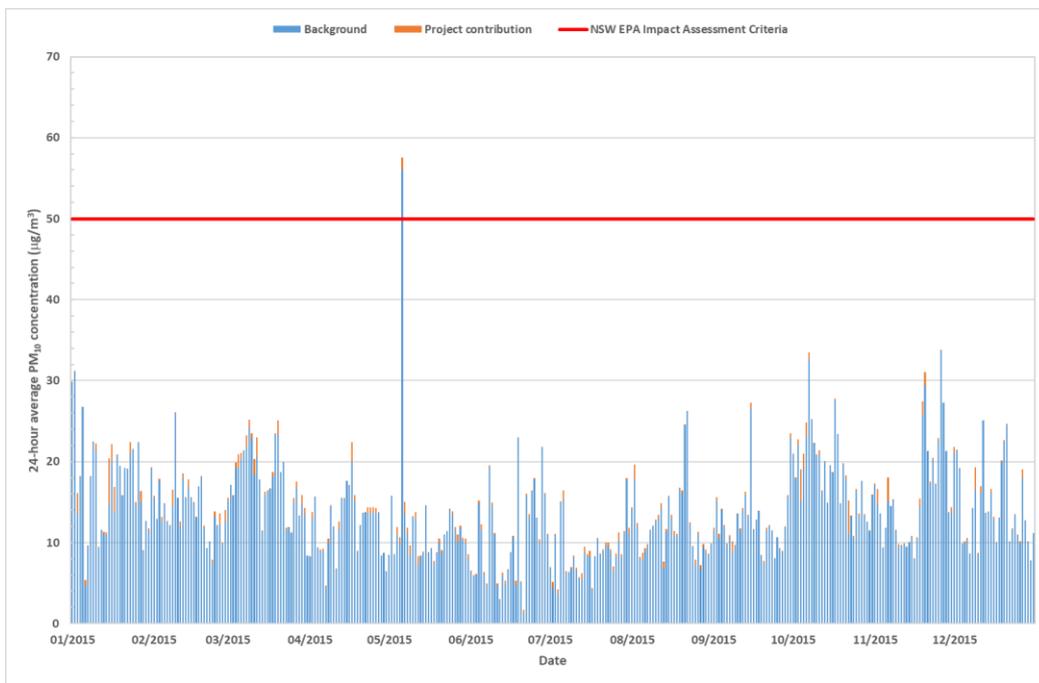


**Proposed Modification**

Figure 3: Predicted 24-hour average PM<sub>10</sub> concentrations at Receptor 6 Project-alone plus background at CVC TEOM (µg/m<sup>3</sup>)

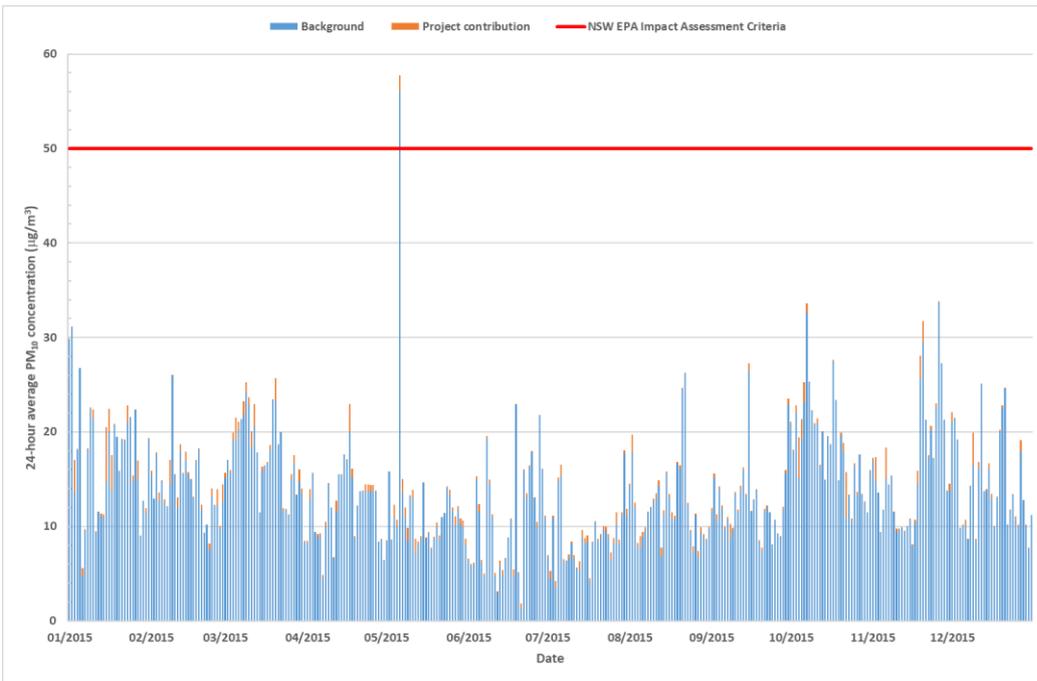


**Approved Project**

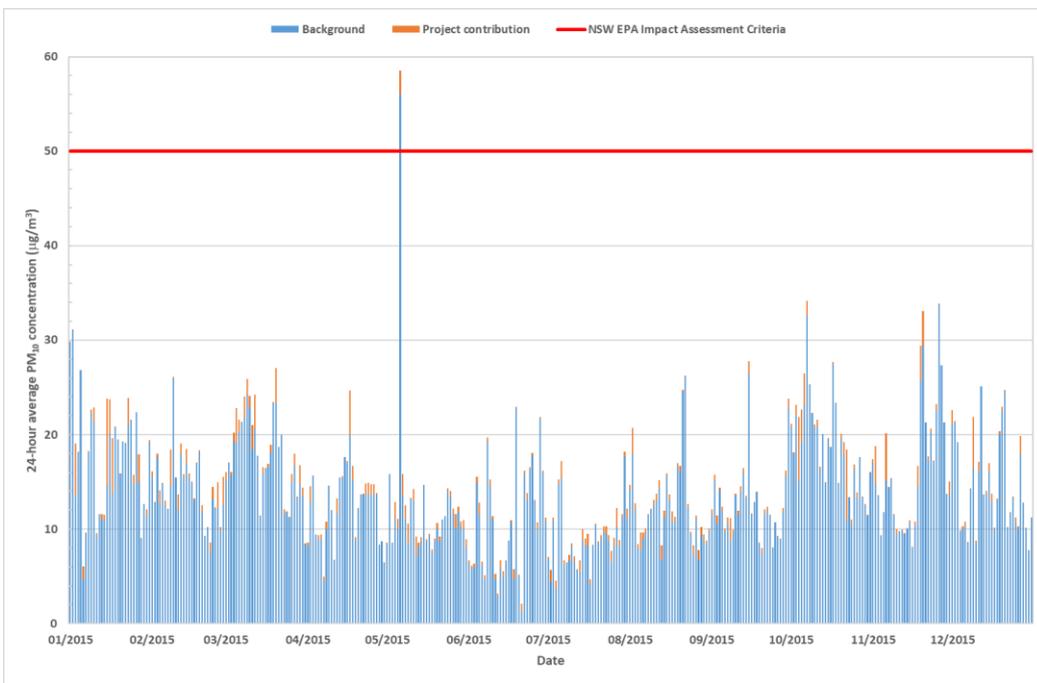


**Proposed Modification**

Figure 4: Predicted 24-hour average  $PM_{10}$  concentrations at Receptor 7 Project-alone plus background at CVC TEOM ( $\mu\text{g}/\text{m}^3$ )

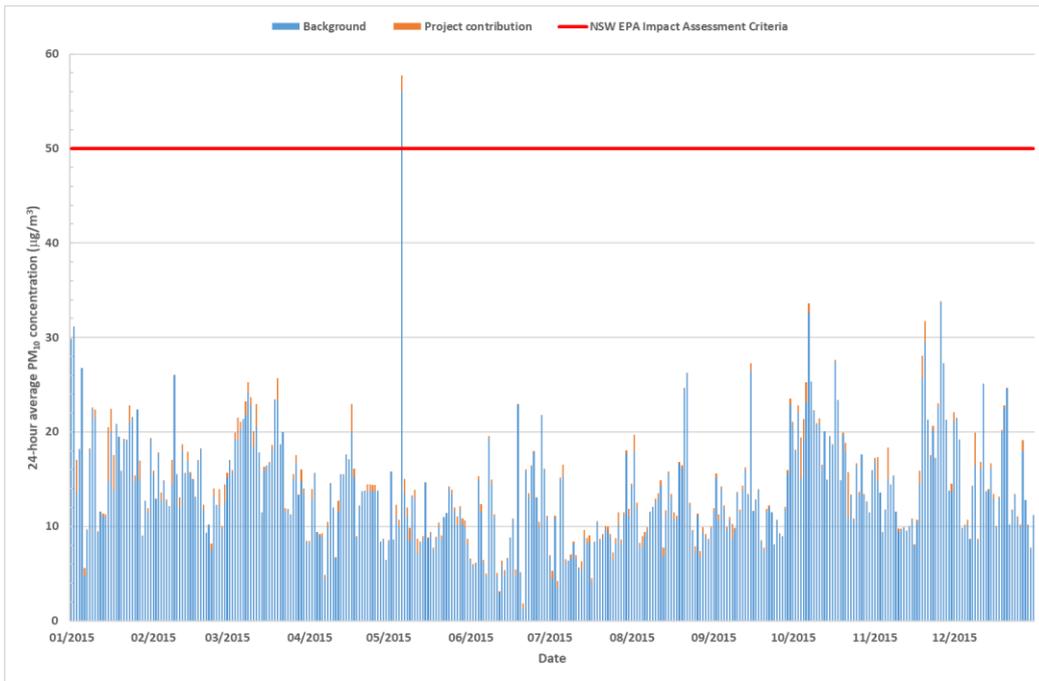


**Approved Project**

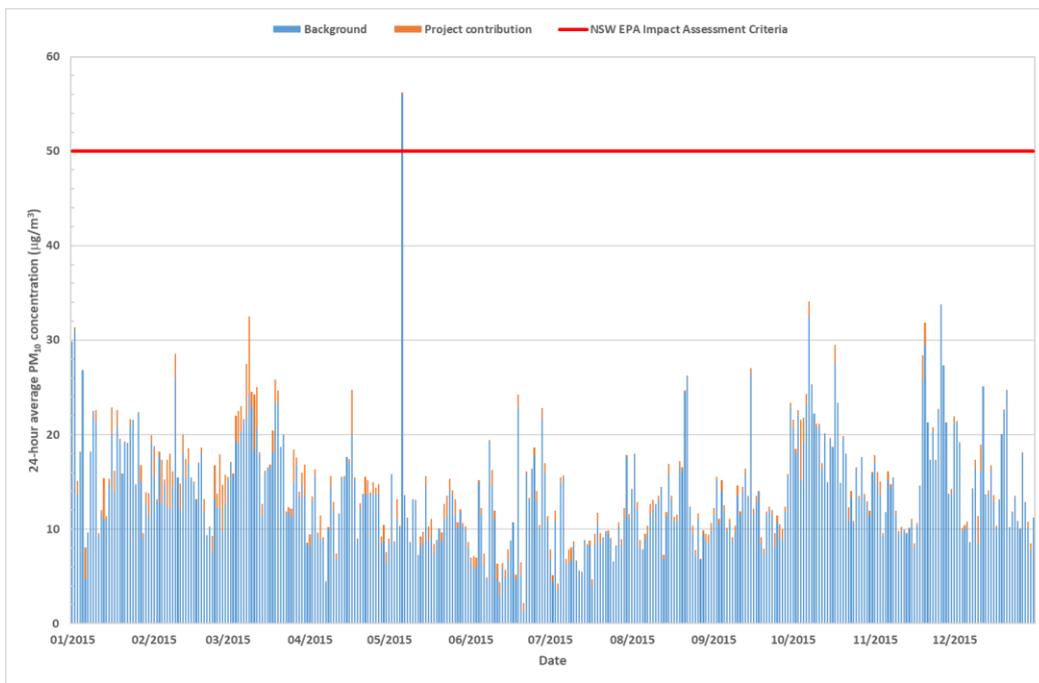


**Proposed Modification**

Figure 5: Predicted 24-hour average  $PM_{10}$  concentrations at Receptor 8 Project-alone plus background at CVC TEOM ( $\mu\text{g}/\text{m}^3$ )

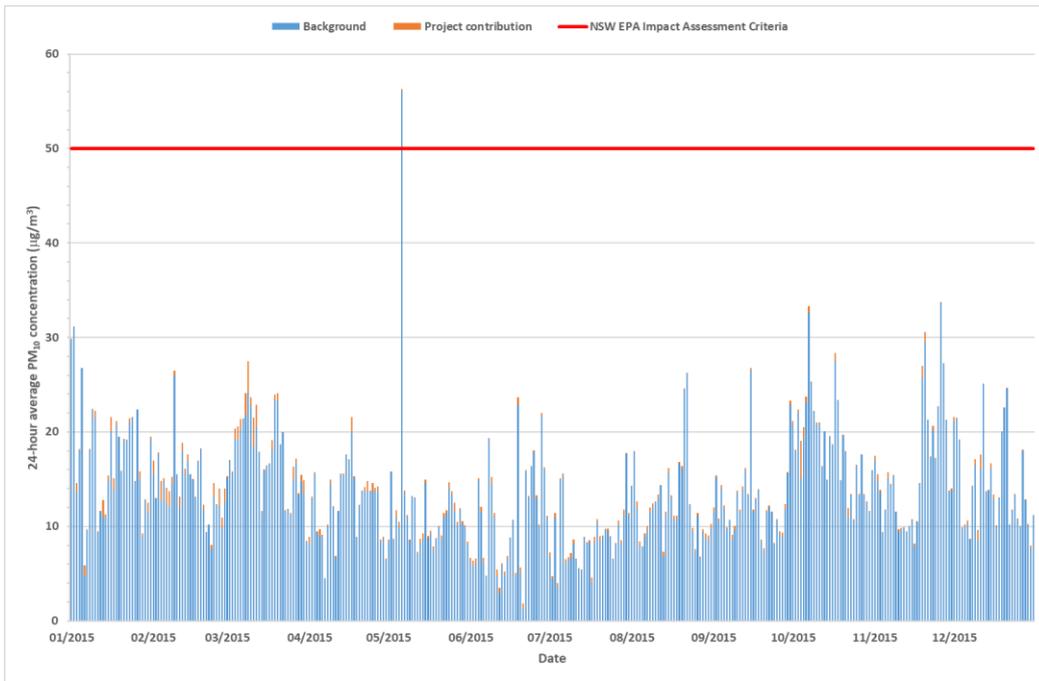


**Approved Project**

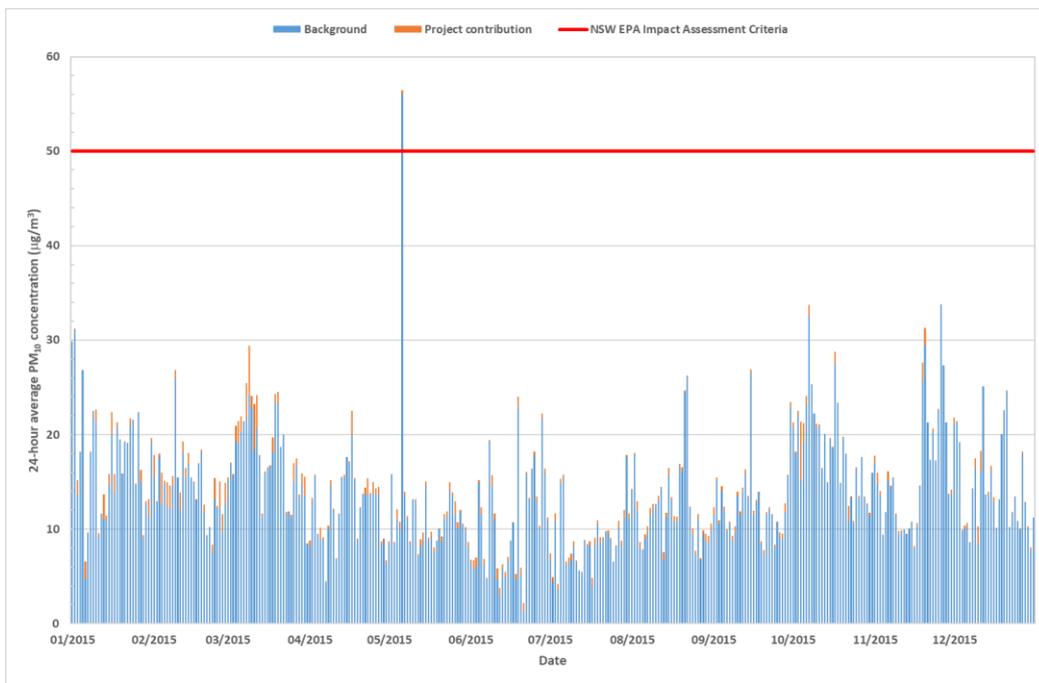


**Proposed Modification**

Figure 6: Predicted 24-hour average PM<sub>10</sub> concentrations at Receptor 9 Project-alone plus background at CVC TEOM (µg/m<sup>3</sup>)

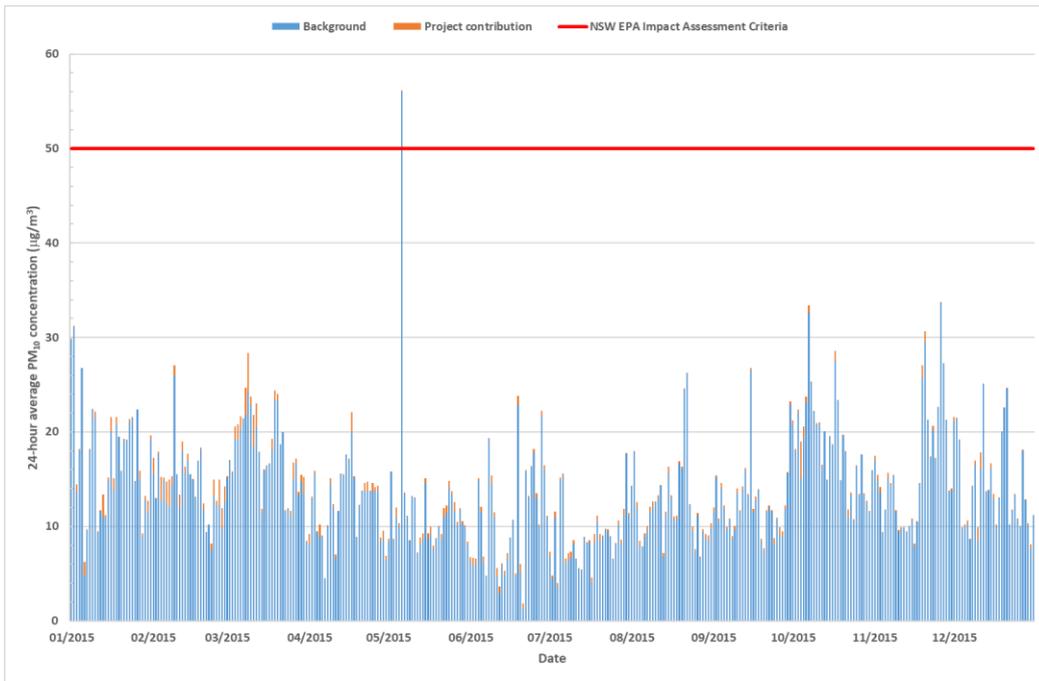


**Approved Project**

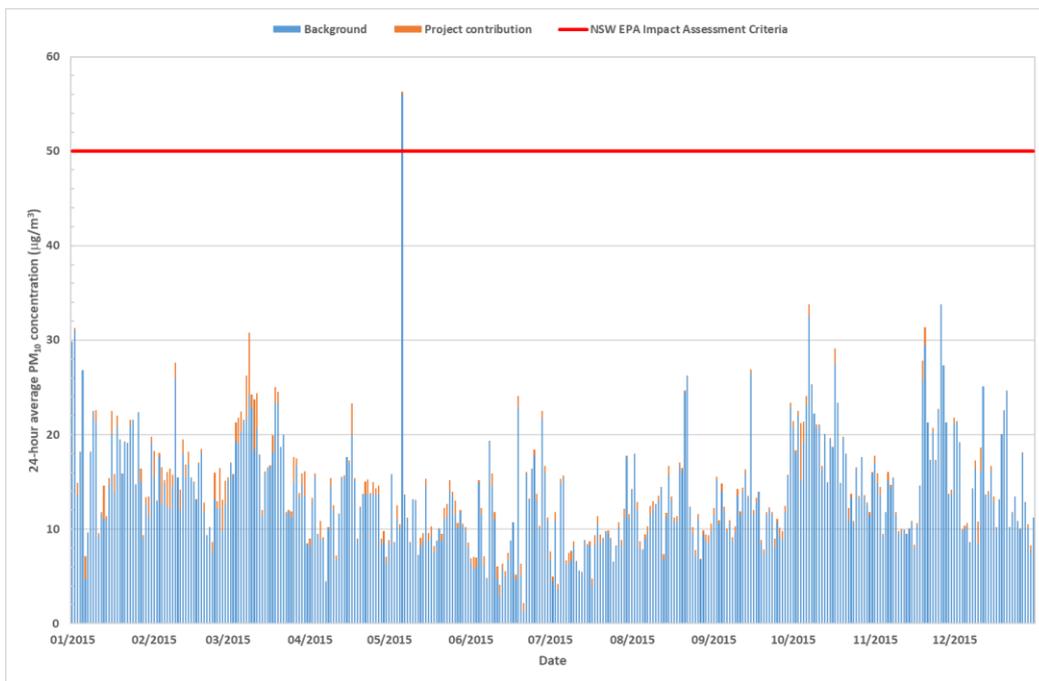


**Proposed Modification**

Figure 7: Predicted 24-hour average  $PM_{10}$  concentrations at Receptor 11 Project-alone plus background at CVC TEOM ( $\mu\text{g}/\text{m}^3$ )

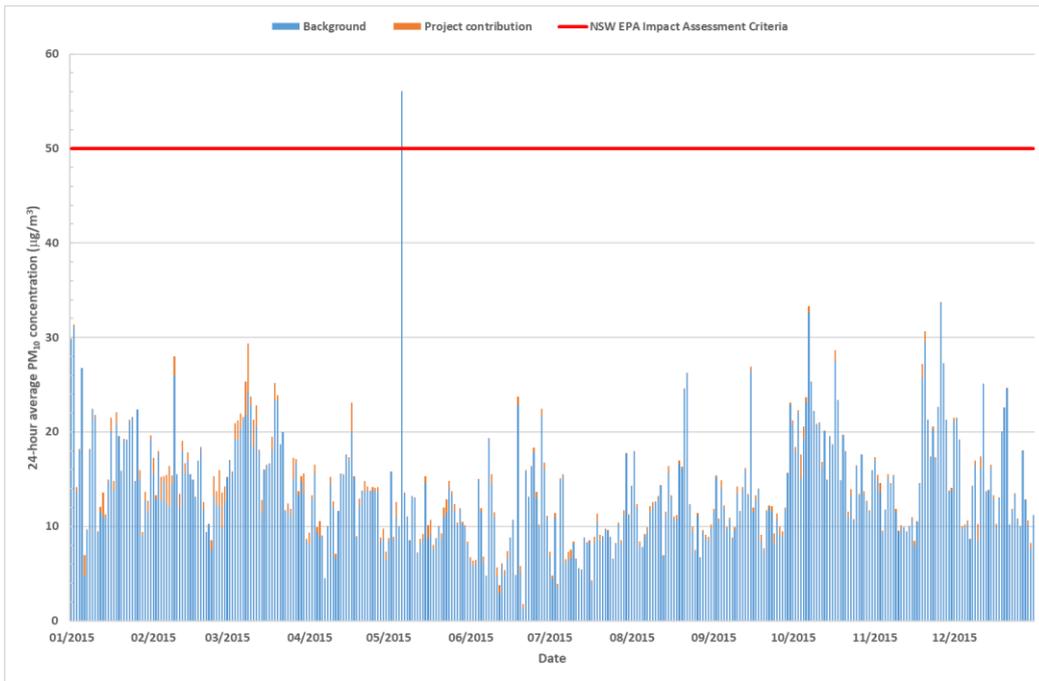


**Approved Project**

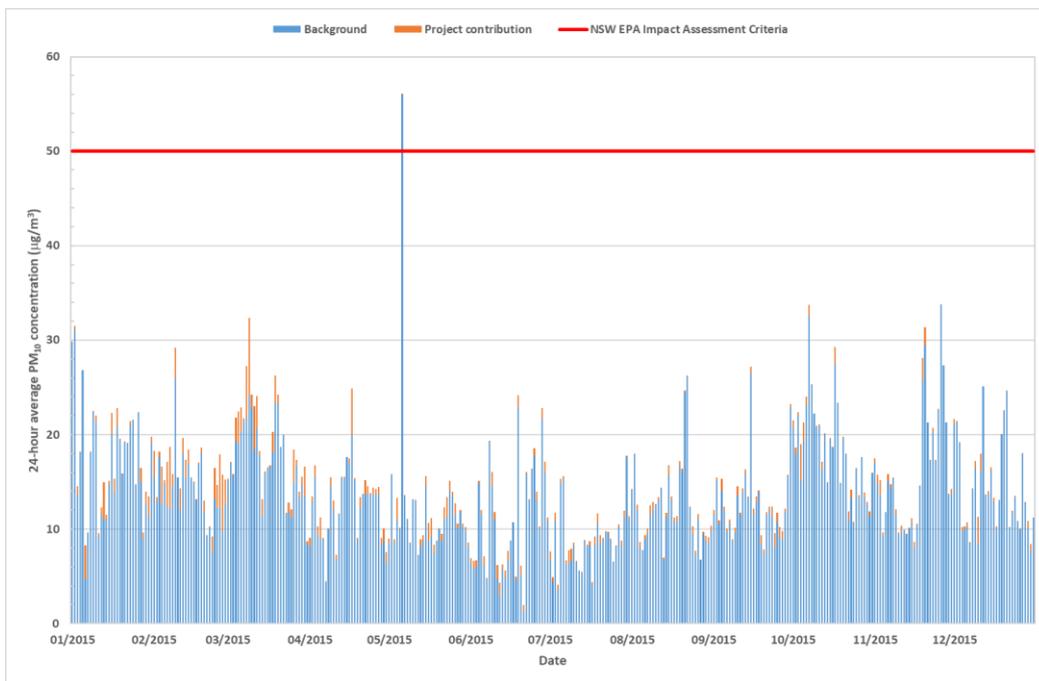


**Proposed Modification**

Figure 8: Predicted 24-hour average PM<sub>10</sub> concentrations at Receptor 18 Project-alone plus background at CVC TEOM (µg/m<sup>3</sup>)



**Approved Project**



**Proposed Modification**

Figure 9: Predicted 24-hour average  $PM_{10}$  concentrations at Receptor 20 Project-alone plus background at CVC TEOM ( $\mu\text{g}/\text{m}^3$ )

I trust the information provided is sufficient. Please do not hesitate to contact me should you require anything additional.

Yours sincerely,



Judith Cox CAQP  
Principal Consultant

### References

ERM (2019). Mannering Colliery Modification 5. Air Quality Assessment. 21 May 2019. Project no. 0503194.

NSW OEH (2016). New South Wales Air Quality Statement 2015.

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Appendix C

# Consideration of CM Act and CM SEPP

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## C.1 NSW Coastal Management Act 2016

The NSW *Coastal Management Act 2016* (CM Act) is the enabling legislation for coastal management in NSW. The CM Act is a relevant consideration because the development consent boundary for CVC and the project approval boundary for MC fall within the NSW 'coastal zone', which comprises land mapped under the State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP) as:

- coastal wetlands and littoral rainforests area;
- coastal vulnerability area;
- coastal environment area; and
- the coastal use area.

The CM SEPP does not currently include a 'coastal vulnerability area' for any of the coastal areas within the Lake Macquarie or Central Coast LGAs. The coastal zone relative to CVC's development consent boundary and MC's project approval boundary is therefore defined by the presence of any mapped coastal environment area, coastal use area or coastal wetlands and littoral rainforests area.

It should be noted that the coastal area is only relevant to land mapped as a coastal management area. The heads of consideration and development controls which are provided under the CM SEPP relate to the coastal zone land and are not expanded to include, for example, the residual area within a lot which is otherwise not mapped as part of the coastal zone.

## C.2 State Environmental Planning Policy (Coastal Management) 2018

### C.2.1 Consideration of Clause 15

The submissions from DPIE (DPIE\_3) and DPIE'S Biodiversity and Conservation Division (BCD\_4) specifically require consideration of Clause 15 of the CM SEPP.

Clause 15 states:

**Development in coastal zone generally—development not to increase risk of coastal hazards**

Development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.

For clarity, it should be noted that Clause 15 was inserted in the CM SEPP as a generic requirement to consider coastal hazards in the absence of any mapped 'coastal vulnerability area'.

The matter to be considered by the consent authority is whether the proposed modifications (ie CVC Mod 3 and MC Mod 5) are likely to cause increased risk of coastal hazards on that land or other land.

The CM Act defines a coastal hazard as either: beach erosion; shoreline recession; coastal lake or watercourse entrance instability; coastal inundation; coastal cliff or slope instability; tidal inundation; or erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters.

Subsequently, to consider Clause 15, consideration should be given to the physical manifestations of the proposed modifications, and the extent to which those physical manifestations might have an influence on, or be influenced by, coastal hazards.

## i Proposed modifications

As described in Section 1.1.1, Delta Coal is seeking to modify SSD-5465 pursuant to Section 4.55(1A) of the EP&A Act to allow for:

- the transport of product coal from CVC to MC via the approved underground linkage between the two operations at a rate up to the annual production level approved under SSD-5465, as modified, which is currently 2.1 Mtpa; and
- a change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary.

The proposed modification is not seeking to change the approved annual coal extraction limit at CVC, nor is it seeking any change to approved trucking rates, routes or hours on the public road network. There are no changes to surface infrastructure, operating hours, or intensification of CVC operations proposed by the modification.

As described in Section 1.1.2, Delta Coal is seeking to modify the existing major project approval (MP06\_0311) under Section 4.55 (2) of the EP&A Act primarily to enable:

- an increase in the rate of ROM coal handling at, and transport via overland conveyor from, MC up to the approved extraction limit at CVC;
- an extension of the project approval period from 30 June 2022 to 31 December 2027 (consistent with Schedule 2 Condition 5 of SSD-5465); and
- an alternative approach to mine design.

The increased volume of coal will be sourced from CVC, which currently has a maximum extraction limit of 2.1 Mtpa of ROM coal under SSD-5465, or a combination of production from CVC and MC. There will be no change to the existing MC surface infrastructure, production rates, employee numbers or operating hours.

When considering the coastal management implications of CVC Mod 3 and MC Mod 5, there are two components which have potential to influence coastal matters, namely:

- the broader use of bord and pillar mining methods within the approved consent boundary at CVC; and
- the extension of the project approval period at MC.

It is proposed that future mining within approved mining areas at CVC will consider the use of either miniwall or bord and pillar mining methods depending on the geological conditions of the area. Therefore, the broader use of bord and pillar mining at CVC would be as a replacement to miniwall mining methods. In terms of coastal hazards, the implication of this shift to greater use of bord and pillar mining methods would be that this mining method generates less subsidence when compared to miniwall mining methods. This change would therefore manifest as a reduced impact of mining operations on the coastal zone.

The extension of the project approval period at MC will result in the extension of existing approved operations at MC over a longer period. The proposed extension of the project approval period at MC from 30 June 2022 to 31 December 2027 aligns with CVC's development consent (SSD-5465), thereby enabling Delta Coal to operate both collieries in a co-ordinated manner. There is no proposed change to the annual rate of extraction.

To provide Delta Coal with increased flexibility in mining and the ability to maximise resource recovery, an alternative approach to mine design at MC is proposed as part of MC Mod 5 whereby mining methods would be restricted by currently approved levels of subsidence (ie <20 mm or 'zero' subsidence), which would not change under the proposed modification. MC is seeking approval to allow the use of different bord and pillar

configurations throughout the approved mining area. This change is therefore unlikely to change impacts of underground mining operations on the coastal zone.

## ii Consideration of coastal hazards resulting from the proposed modifications

### a Beach erosion

As noted above, CVC Mod 3 proposes a change to the definition of first workings within SSD-5465. Where bord and pillar mining methods replace miniwall mining within the approved underground mining area at CVC, this change would result in a reduced level of subsidence.

Whilst bord and pillar mining methods have historically been used at CVC, the predominant mining method used since 2011 has been miniwall mining. First workings bord and pillar methods involves the formation of roadways and pillars that are geotechnically designed to be long-term stable, resulting in negligible subsidence effects (ie vertical subsidence of  $\leq 20$  mm).

The net effect of providing flexibility to Delta Coal to use bord and pillar methods more broadly will be to produce a lesser subsidence than might otherwise have occurred under the current consent conditions.

The proposed modification (ie CVC Mod 3) would remove restrictions on the use of bord and pillar methods such that it could replace the use of miniwall mining, where appropriate. Delta Coal will be obligated to use bord and pillar methods within Zone A and, where deployed, the net impact will be reduced subsidence.

Where subsidence occurs, a logical consequence is that water depth increases by the equivalent amount. Changes in water depth can reduce light penetration to the lake bed, and this in turn can cause changes to benthic ecological communities, such as seagrasses. Other factors can also impact benthic communities, such as turbidity or nutrient loads, but these are not attributable to the proposed modifications.

In summary, reduced subsidence has potential to reduce changes to benthic communities and would represent a net benefit in terms of the resilience of foreshores and submerged land in the approved underground mining area at CVC.

In terms of coastal processes, Lake Macquarie has a constrained entrance which causes significant attenuation of the tidal range and which restricts any penetration by ocean waves other than in the most powerful long-period easterly swells. Any impacts of ocean wave penetration are limited to the immediate estuary entrance precinct of the lake. The process of beach erosion, if it occurs within the foreshore areas of CVC and MC, would likely be driven by short period waves generated within the embayment of Lake Macquarie. The erosive capacity of short period waves will not be materially influenced by reduced subsidence in submerged lands. Indeed, if there is to be an impact it will be positive.

The scope of CVC Mod 3 and MC Mod 5 have no further physical manifestations which could alter coastal processes or cause beach erosion.

### b Shoreline recession

Shoreline recession will not be materially impacted by the proposed modifications for the same reasons outlined regarding 'beach erosion' above.

The proposed change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary at CVC has potential to result in reduced subsidence impacts within the approved underground mining area.

#### c Coastal lake or watercourse entrance instability

Lake Macquarie has a trained and permanently open entrance but it remains a constrained entrance system which causes significant attenuation of the tidal range and which restricts any penetration by ocean waves other than in the most powerful long-period easterly swells.

The development consent boundary for CVC extends as far north as the suburb of Sunshine within the submerged lands of Lake Macquarie and at its closest point is more than 8 km from the entrance to Lake Macquarie. Subsequently, there is a negligible prospect of any impact on entrance instability.

#### d Coastal inundation

Coastal inundation will not be materially impacted by the proposed modifications for the same reasons outlined regarding 'beach erosion' above.

The proposed change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary at CVC has potential to result in reduced subsidence impacts within the approved underground mining area.

#### e Coastal cliff or slope instability

Coastal cliff and slope instability will not be materially impacted by the proposed modifications for the same reasons outlined regarding 'beach erosion' above.

The proposed change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary at CVC has potential to result in reduced subsidence impacts within the approved underground mining area.

#### f Tidal inundation

Tidal inundation will not be materially impacted by the proposed modifications for the same reasons outlined regarding 'beach erosion' above.

The proposed change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary at CVC has potential to result in reduced subsidence impacts within the approved underground mining area.

#### g Erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters

The hazard of combined tidal and wave action will not be materially impacted by the proposed modifications for the same reasons outlined regarding 'beach erosion' above.

The proposed change in the definition of 'first workings' in SSD-5465 to allow the broader use of bord and pillar mining methods within the approved consent boundary at CVC has potential to result in reduced subsidence impacts within the approved underground mining area.

### C.2.2 Consideration of Clause 10

Clause 10 of the CM SEPP relates to development on certain land within coastal wetlands and littoral rainforest areas. Consideration of Clause 10 in relation to the proposed modifications is provided in Table C.1 below.

**Table C.1 Consideration of Clause 10 of the CM SEPP**

Clause 10 requirements	Response
1. The following may be carried out on land identified as “coastal wetlands” or “littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map only with development consent:	-
(a) the clearing of native vegetation within the meaning of Part 5A of the <i>NSW Local Land Services Act 2013</i>	No clearing of native vegetation is proposed as part of CVC Mod 3 or MC Mod 5.
(b) the harm of marine vegetation within the meaning of Division 4 of Part 7 of the <i>NSW Fisheries Management Act 1994</i>	Harm to marine vegetation is not proposed nor caused by the proposed modifications. The proposed modification at CVC has the effect of reducing harm that might otherwise occur. MC Mod 5 is not expected to impact marine vegetation.
(c) the carrying out of any of the following:	-
(i) earthworks (including the depositing of material on land),	Earthworks are not proposed as part of the proposed modifications.
(ii) constructing a levee,	There is no proposal to construct a levee.
(iii) draining the land,	There is no proposal to drain land.
(iv) environmental protection works,	Environmental protection works are not proposed.
(d) any other development.	As noted above, the developments are appropriately characterised as mining, as defined under the <i>Standard Instrument - Principal Local Environmental Plan</i> .
2. Development for which consent is required by subclause (1), other than development for the purpose of environmental protection works, is declared to be designated development for the purposes of the Act.	The proposed developments are already classified as SSD, and it is noted that subsection 4.10 of the EP&A Act provides: (1) Designated development is development that is declared to be designated development by an environmental planning instrument or the regulations. (2) Designated development does not include State significant development despite any such declaration. The subject developments are therefore not designated developments.
3. Despite subclause (1), development for the purpose of environmental protection works on land identified as “coastal wetlands” or “littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map may be carried out by or on behalf of a public authority without development consent if the development is identified in:	The works are not by or on behalf of a public authority.
(a) the relevant certified coastal management program, or	
(b) a plan of management prepared and adopted under Division 2 of Part 2 of Chapter 6 of the <i>NSW Local Government Act 1993</i> , or	
(c) a plan of management approved and in force under Division 6 of Part 5 of the <i>NSW Crown Lands Act 1989</i> .	

**Table C.1 Consideration of Clause 10 of the CM SEPP**

Clause 10 requirements	Response
(4) A consent authority must not grant consent for development referred to in subclause (1) unless the consent authority is satisfied that sufficient measures have been, or will be, taken to protect, and where possible enhance, the biophysical, hydrological and ecological integrity of the coastal wetland or littoral rainforest.	If mining is carried out beneath coastal wetlands (noting that there are no littoral rainforests within the development consent boundary for CVC or the project approval boundary for MC), then the ability to substitute bord and pillar mining methods for the prevailing miniwall mining methods at CVC would result in a reduced impact on the biophysical, hydrological and ecological integrity of the coastal wetlands due to the reduced subsidence impact associated with this mining method. MC Mod 5 is not expected to have a physical impact on the biophysical, hydrological and ecological integrity of the coastal wetlands.
(5) Nothing in this clause requires consent for the damage or removal of a priority weed within the meaning of clause 32 of Schedule 7 to the NSW <i>Biosecurity Act 2015</i> .	The proposed modifications do not propose the removal of priority weeds.
(6) This clause does not apply to the carrying out of development on land reserved under the NSW <i>National Parks and Wildlife Act 1974</i> if the proposed development is consistent with a plan of management prepared under that Act for the land concerned.	A portion of the Lake Macquarie State Conservation Area lies within CVC's development consent boundary and MC's project approval boundary. Under the NPW Act, state conservation areas are managed to provide for (inter alia) the undertaking of uses permitted under other provisions of the NPW Act (including uses permitted under Section 47J, such as mineral exploration and mining), having regard to the conservation of the natural and cultural values of the state conservation area. The plan of management notes that the state conservation area is reserved to a depth of 20 m in recognition of the significant coal reserves and coal extraction activities that exist in the Lake Macquarie catchment. The plan of management also states that "the potential impacts of mining activities, and particularly of mine subsidence, remains a major issue of concern for the Service within Lake Macquarie State Conservation Area and Pulbah and Moon Island Nature Reserves." To this extent the proposed modifications are either unrelated to subsidence (MC Mod 5) or have potential to reduce the impact of subsidence (CVC Mod 3).

### C.2.3 Consideration of Clause 11

Clause 11 of the CM SEPP relates to development on land in proximity to coastal wetlands and littoral rainforest areas. Consideration of Clause 11 in relation to the proposed modifications is provided in Table C.2.

**Table C.2 Consideration of Clause 11 of the CM SEPP**

Clause 11 requirements	Response
(1) Development consent must not be granted to development on land identified as "proximity area for coastal wetlands" or "proximity area for littoral rainforest" on the Coastal Wetlands and Littoral Rainforests Area Map unless the consent authority is satisfied that the proposed development will not significantly impact on:	With respect to CVC Mod 3, should mining be carried out beneath the proximity area of coastal wetlands then the ability to substitute bord and pillar mining methods for the prevailing miniwall mining methods will result in a reduced impact on the biophysical, hydrological and ecological integrity of the coastal wetlands due to the reduced subsidence impact associated with this mining method. There is a similar beneficial impact in terms of the quantity and quality of surface and groundwater flows to and from the adjacent coastal wetland.
(a) the biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or	
(b) the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest.	

## C.2.4 Consideration of Clause 12

Clause 12 is not triggered because there is no coastal vulnerability area mapped at this location.

## C.2.5 Consideration of Clause 13

Clause 13 of the CM SEPP provides a range of matters for consideration when determining proposed developments within the coastal environment area. Consideration of Clause 13 in relation to the proposed modifications is provided in Table C.3.

**Table C.3 Consideration of Clause 13 of the CM SEPP**

Clause 13 requirements	Response
(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.	<p>The current methods of miniwall extraction at CVC are authorised by existing consent conditions and the subsidence associated with that method was assessed and considered via earlier consent determinations. CVC Mod 3 seeks to remove the restrictions on the use of bord and pillar methods such that it could replace the use of miniwall mining, where appropriate. A greater use of bord and pillar methods has potential to result in reduced subsidence.</p> <p>Where subsidence occurs, a logical consequence is that water depth increases by the equivalent amount. Changes in water depth can reduce light penetration to the lakebed, and this in turn can cause changes to benthic ecological communities, such as seagrasses. Other factors can also impact benthic communities, such as turbidity or nutrient loads, but these are not attributable to the proposed modifications.</p> <p>In summary, reduced subsidence would therefore reduce the changes to benthic communities and has potential to represent a net benefit in terms of the resilience of foreshores and submerged land, including their biophysical, hydrological and ecological attributes.</p>
(b) coastal environmental values and natural coastal processes.	<p>As noted above, a greater use of bord and pillar methods within CVC's approved underground mining area would result in reduced subsidence.</p> <p>Where subsidence occurs, a logical consequence is that water depth increases by the equivalent amount. Changes in water depth can reduce light penetration to the lakebed, and this in turn can cause changes to benthic ecological communities, such as seagrasses. Other factors can also impact benthic communities, such as turbidity or nutrient loads, but these are not attributable to the proposed modifications.</p> <p>In summary, reduced subsidence would therefore reduce adverse impact on coastal processes and would represent a net benefit in terms of environmental values.</p>

**Table C.3 Consideration of Clause 13 of the CM SEPP**

Clause 13 requirements	Response
(c) the water quality of the marine estate (within the meaning of the <i>Marine Estate Management Act 2014</i> ), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1.	<p>Lake Macquarie is not listed as a sensitive coastal lake in Schedule 1 of the CM SEPP. It is noted as a coastal lake.</p> <p>As noted elsewhere, the effect of the proposed modifications may be to reduce subsidence and therefore provide broader environmental benefits, including water quality, by reducing the changes that may otherwise occur in benthic communities. The overall impact on water quality is positive.</p>
(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms.	<p>The proposed modifications have potential to reduce subsidence impacts, which in turn means that marine vegetation, native vegetation and fauna and their habitats, and the headlands and rock platforms within the development consent boundary for CVC or the project approval boundary for MC (should they occur) will be less impacted than might otherwise be the case.</p>
(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.	<p>The proposed modifications will not adversely impact access. The modifications do not propose any change to approved trucking rates, routes or hours on the public road network. There are no changes to surface infrastructure or operating hours. Public open space is not enhanced nor diminished by the proposed modifications.</p>
(f) Aboriginal cultural heritage, practices and places.	<p>There will be no surface disturbance associated with the proposed modification and, accordingly, no potential to adversely impact on any item or feature of Aboriginal cultural heritage that may be present.</p> <p>To the extent that reduced subsidence may occur as a result of the proposed modifications, and that Aboriginal cultural heritage, practices and places might be impacted by subsidence, the proposed modification has a net benefit effect.</p>
(g) the use of the surf zone.	<p>There is no surf zone within the development consent boundary for CVC or the project approval boundary for MC.</p>
(2) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:	<p>The intent and effect of the proposed modifications is to avoid adverse impacts by enabling a method of mining which results in less subsidence.</p>
(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or	<p>The proposed modifications avoid all of the adverse impacts referenced in sub-clause (2).</p>
(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.	

### C.2.6 Consideration of Clause 14

Clause 14 of the CM SEPP provides a range of matters for consideration when determining proposed developments within the coastal use area. Consideration of Clause 14 in relation to the proposed modifications is provided in Table C.4.

**Table C.4 Consideration of Clause 14 of the CM SEPP**

Clause 14 requirements	Response
(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	The proposed modifications do not adversely impact access. The modifications do not propose any change to approved trucking rates, routes or hours on the public road network. There are no changes to surface infrastructure or operating hours. Access to foreshores, headlands, beaches and rock platforms are neither enhanced nor diminished by the proposed modifications.
(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores	There are no changes to surface infrastructure as a result of the proposed modifications and therefore nil impact on overshadowing, wind behaviour or viewsheds from public places.
(iii) the visual amenity and scenic qualities of the coast, including coastal headlands	Visual amenity is not impacted. There are no changes to surface infrastructure as a result of the proposed modifications. The scenic qualities of the Lake Macquarie area will not be impacted as the modifications are either administrative or relate to underground works.
(iv) Aboriginal cultural heritage, practices and places	There will be no surface disturbance associated with the proposed modification and, accordingly, no potential to adversely impact on any item or feature of Aboriginal cultural heritage that may be present.  To the extent that reduced subsidence may occur as a result of the proposed modifications, and that Aboriginal cultural heritage, practices and places might be impacted by subsidence, the proposed modification has a net benefit effect.
(v) cultural and built environment heritage.	There will be no surface disturbance associated with the proposed modification and, accordingly, no potential to adversely impact on any item or feature of cultural and built environment heritage that may be present.  The local heritage values of the southern Lake Macquarie area will not be impacted as the modifications are either administrative or relate to underground works.
(b) is satisfied that:	CVC Mod 3 will enable a method of mining which results in less subsidence than that which is currently approved.
(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or	The proposed modifications avoid all of the adverse impacts referenced in Paragraph (a).
(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.	The bulk and scale of the proposed developments will not be materially altered by either MC Mod 5 or CVC Mod 3. The modifications are administrative and relate to the volumes of material transported or proposed underground mining methods, none of which vary the bulk, scale and size of the proposed developments.

**Table C.4**      **Consideration of Clause 14 of the CM SEPP**

<b>Clause 14 requirements</b>	<b>Response</b>
(2) This clause does not apply to land within the Foreshores and Waterways Area within the meaning of <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i> .	The subject sites for MC and CVC are not within the lands identified as foreshores and waterways under the <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i> .



