

4th February 2019
Our ref: 1030_EGOVR:GM

Megan Dawson
Team Leader
Resources Assessments
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

ABN 76 000 106 972

Dear Megan,

**Re: Rix's Creek Continuation Project, Response to Recommendations –
Request for additional information from the Department of Planning and
Environment**

In response to your email dated 21st December 2018, detailing the Department's request for additional information, please find below responses to the information requested.

DP&E item 1

Having regard to the Resources Regulator comments, please provide a response to their comment #2, below, regarding cut and cover tunnel.

"Further information is required regarding the proposed retention of the proposed and existing cut and cover tunnels under the New England Highway to demonstrate how liability associated with these structures is to be managed following mine closure".

Response 1

Rix's Creek Pty Ltd has a Major Works Authorisation Deed – Private Financing & Construction with the RTA. This deed details the Approved Security provided by Rix's Creek Pty Ltd for the maintenance, routine inspection and reporting, demolition and removal of the tunnel and reinstatement of the highway.

The Deed also states that the RTA may agree to alternate proposals for the decommissioning of the cut and cover tunnel, other than demolition and removal of the tunnel, including the handover of the tunnel to the RTA.

Rix's Creek Pty Ltd consider the cut and cover tunnel to be an asset that will have future benefit beyond mining and have presented a configuration that is consistent with this and with the proposed future landuse for the area. The final arrangement and configuration of the tunnel will be determined through negotiations with the RTA at or near completion of mining. Should the RTA elect for the demolition of the tunnel then Rix's Creek Pty Ltd is obligated to undertake this work which will have minimal impact on the final landform around the tunnel.

It is expected that a similar Deed will be established for the second Cut and Cover Tunnel.

DP&E item 2

Having regard to OEH's comments, please provide OEH with the BioBanking credit calculation file and associated shapefiles for option 2, to allow them to verify the revised calculations.

Response 2

Email was sent to OEH (cc Megan Dawson, DPE) on 14th January 2019 with the requested shapefiles for option 2 of the Trade-off study. The credit calculations relating to these areas were submitted online to OEH on 4th January 2019 (proposal ID 191/2019/4953MP) as noted in the email.

DP&E item 3

Having regard to page 50 of your response and the commitment to secure all required offsets within three years of the consent being granted, I wish to flag that the Department has concerns with this proposal. As discussed in section 6.5.5 of the Department's preliminary assessment report, offsets should be secured prior to disturbance or (at worse) soon after (<18 months). The latter would be acceptable if land-based offsets have been identified but additional time is required to secure them. We appreciate that this can be quite a substantive upfront obligation so the alternative is to undertake disturbance/offsetting in stages. Please reconsider your offsetting proposal in light of this advice. Happy to discuss further.

Response 3

EMM have identified the credits required to offset against actual disturbance for Option 2 at years 2020, 2023, 2026 and 2029. The credits associated with disturbance at these years is presented in Table 3.1 of the report, attached to this letter, dated 15 January 2019 from EMM (H180448_RCCP_staged offsets_V1). (Attachment 1).

General offset strategy:

The offset strategy for the Rix's Creek Continuation Project, Option 2, is based on the fact that the assessment was completed under the Framework for Biodiversity Assessment (FBA). The Bloomfield Group understand that an assessment of reasonable equivalence would be required. It is The Bloomfield Groups expectation that would involve a conversion of credit quantities only, and that vegetation type or status will not be converted from its current status under the Continuation Project Biodiversity Assessment.

The strategy will involve a combination of land-based offsets, credit purchasing and/or payment into the fund. The method of offsetting is dependent upon the ecosystem credit type requiring to be offset. Likely methods for each credit type are:

- HU906 Bull Oak (4 credits): Purchase credits or Fund Payment
- HU819 Narrow-leaved Ironbark (4,276 credits): Land based offsets
- HU962 Grey Box Grassy Woodland (28 credits): Purchase credits or Fund Payment
- HU818 Spotted Gum (120 credits): land based offsets would be investigated, if not identified in conjunction with other credits requirements, then Purchase Credits or Fund Payment.

Satisfying the Stage 1 offsetting requirements within 18 Months of Consent:

The Bloomfield Group have already identified and purchased two offset sites which would fulfil like-for-like credit requirements for HU819. The first offset site ("Berewin", Rouchel) has been lodged with the Biodiversity Conservation Trust (BCT), and the second stewardship site application (Ranch Road, Scone Mountain) is due to be lodged in February 2019. The credits generated at the Rouchel site are being used to cover a separate offset requirement, the Consent Orders. The surplus of credits from the Rouchel site, and the credits generated from the Scone Mountain site will fulfil the HU819 credit requirement for Stage 1 of the Continuation Project. This is approximately 92% of the credits required for Stage 1.

The HU962 credit requirements for Stage 1, which is less than 1% of the Stage 1 credits, would be satisfied through purchasing credits from the market, or if not available, payment in to the fund.

In order to fulfil the credit requirements for HU818, the Bloomfield Group would like to explore the potential of identifying land based offsets. Searches identifying suitable land based offsets for HU819 have been undertaken, but these did not incorporate searching for offsets suitable for HU818 as impacts on this PCT have only come about due to the recent assessment of vegetation on rehabilitated land on the North Pit dump in Option 2.

Upon approval of the Continuation Project, the Bloomfield Group would commence the process to identify land based offsets to fulfil the credit requirements for the remaining stages of the project. If suitable land can be identified to fulfil not only the HU819 requirements for Stages 2-4, but also the HU818 requirements for Stage 1, then the Bloomfield Group would like to be provided an adequate timeframe to be able to identify, survey and secure this offset land. As such, the requirement for 18 months to secure offsets for Stage 1 is required.

The Bloomfield Group is committed to fulfilling all offsetting requirements for Stage 1 of the Continuation Project within 18 months of disturbance.

Satisfying Stages 2 – 4 offsetting requirements:

Upon approval of the Continuation Project, the Bloomfield Group will commence the process to identification land based offsets to fulfil the HU819 credit requirement for the remaining stages (2-4) of the project. All sites would be secured under Stewardship agreements, and the required credits retired prior to the commencement of clearing for each respective stage. If sites identified do not also fulfil the credit requirements for HU906 and HU962, then these credits will either be purchased from the market, or if not available, payment into the fund would be made.

The Bloomfield Group is committed to fulfilling the offsetting requirements for Stages 2 – 4 of the Continuation Project prior to the commencement of each Stage. Notwithstanding this, the intent is that Bloomfield will seek to secure all the required offsets for the project within three years of the Consent being granted.

DP&E item 4

It is noted that section 2.5.2.1 and Appendix F of your response indicates that the air quality impacts would only minimally change under the preferred option 2. The contour maps are helpful, however we would like to have a closer look at the changes at a receiver level. Can you please provide revised air quality predictions or a representative sample of them. At a minimum I would like to see the revised predictions for all receivers where an exceedance of criteria was previously predicted.

Response 4

Todoroski Air Sciences have prepared a document dated 3 January 2019, which is attached to this letter. (Attachment 2). The document provides a selection of receptor results presented in table form and showing the location of the receptors on the contour plans. The receptors presented in the attached report are

- Receptors 1, 170 to 177 inclusive, are those that had previously been predicted to experience impacts as per Table 9-11 of the AQIA
- Receptors 19, 61, 140, 151, 163, 164 are the nearest receptors covering the area around the mine not covered by the receptors listed above

DP&E item 5

Please provide an updated development layout figure based on option 2. All key surface features should be shown and labelled, such as the disturbance boundaries, pits, OEAs, tailings storages, cut and cover tunnels, etc.

Response 5

Please see a copy of the updated plans attached to this letter as Project Area – Option 2 Figure 1-1, (Attachment 3) and Final Landform – Option 2 Figure 1-2. (Attachment 4).

Please do not hesitate to contact me should you have any further questions or requests for information

Yours sincerely



Geoff Moore
Chief Development Officer
The Bloomfield Group

Email: gmoore@bloomcoll.com.au | Website: www.bloomcoll.com.au

Attachment 1: DP&E Item 3. EMM- Staging of Biodiversity Offsets.

15 January 2019

Geoff Moore
Chief Development Officer
The Bloomfield Group
PO Box 4
East Maitland, NSW 2323

Re: Rix's Creek Continuation Project - Staging of biodiversity offset

Dear Geoff,

1 Introduction

Rix's Creek Continuation Project (RCCP) is currently progressing through the approval process, recently being assessed by the Independent Planning Commission (IPC). The Department of Planning and Environment (DPE) are administering the recommendations of the IPC. DPE have expressed concern over the proposed commitment to secure offsets within three years of consent being granted. DPE wish for offsets to be secured prior to disturbance or soon after (within 18 months).

The proponent (The Bloomfield Group) has requested that the credits for the following stages are calculated, so that offsets are staged in line with the actual disturbance of areas;

- Stage 1 – June 2020;
- Stage 2 – June 2023;
- Stage 3 – June 2026; and
- Stage 4 – June 2029.

This letter details the number of credits required for each stage and provides the methods used to complete the analysis.

1.1 Project understanding

1.1.1 Original design

Biodiversity was originally assessed for the RCCP using the BioCertification methodology based on the assumption that the Upper Hunter Strategic Assessment (UHSA) would eventuate (Eastcoast Flora Survey 2015). Owing to uncertainty regarding the UHSA, further biodiversity assessments were undertaken under the Framework for Biodiversity Assessment method (FBA, OEH 2014), which is provided in the Revised Response to Submissions - Biodiversity (EMM 2018).

A total of 5,808 ecosystem credits were required under the FBA with an impact footprint requiring the clearance of 212.79 ha of native vegetation. No species credit species were detected within the RCCP or were considered likely to occur; therefore, no species credits were required.

1.1.2 Option 2 footprint

As a result of the recommendations by IPC, a study of alternative overburden storage options and the corresponding offset obligations was conducted by EMM Consulting (EMM) on behalf of the Bloomfield Group (EMM 2018). Of the options considered 'Option 2' is preferred. The revised Option 2 footprint includes North Pit dump area, which is dominated by exotic vegetation and a small proportion of native planted vegetation. This allowed for a reduction in the original western overburden emplacement area (Figure 1), which in contrast consists of predominately native vegetation.

The percentage change in impact on vegetation zones comparing the original and the Option 2 footprints were calculated, and the relevant percentage changes applied to the original credits required.

The area of the revised Option 2 footprint is **257.45 ha**, which requires **4,428 credits**, a reduction in impact and credits required of 23.8%.

2 Methods

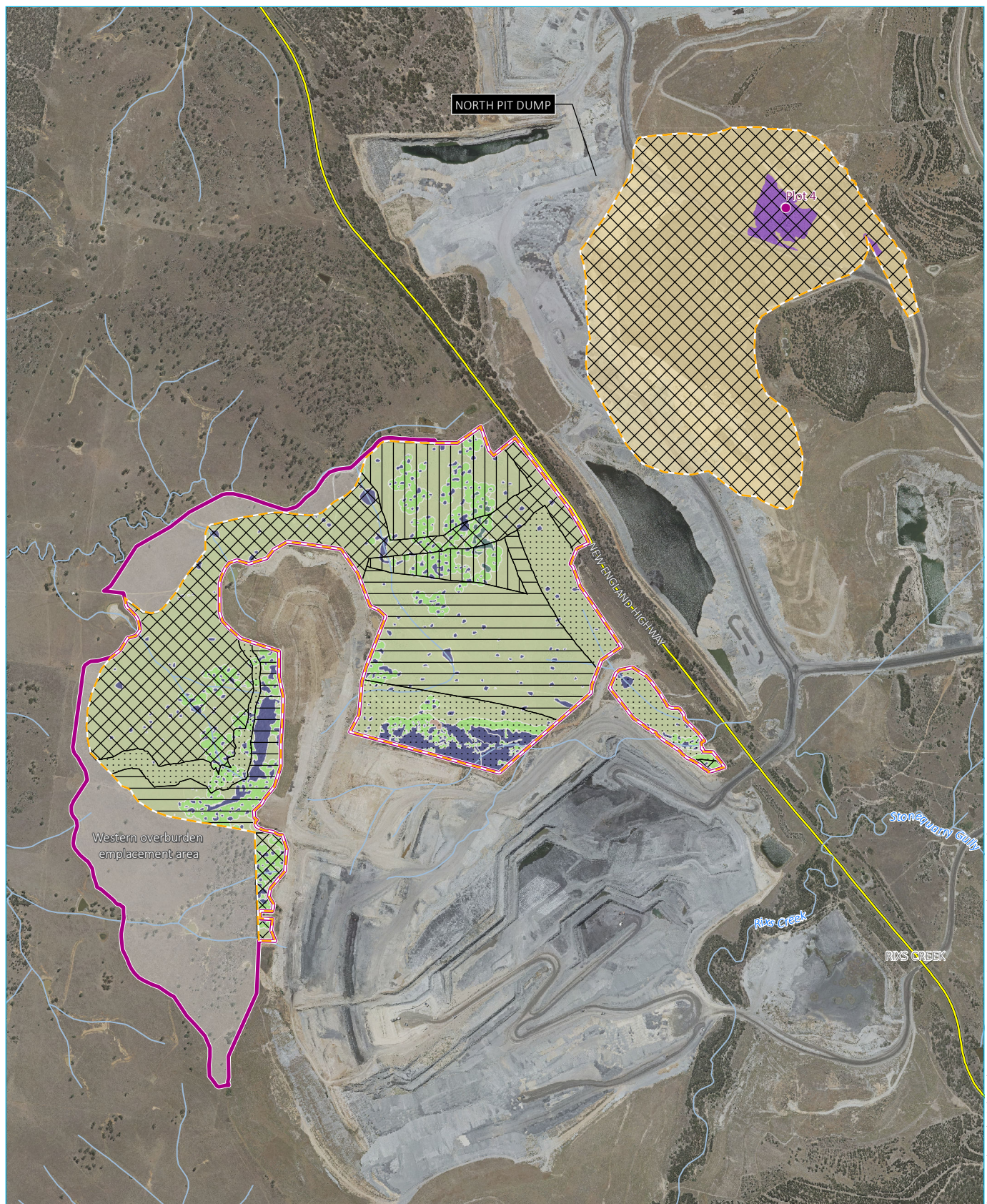
The vegetation extent and the number of credits required for the option two footprint were obtained from the Rix's Creek Continuation Project – ecological assessment of overburden dump locations (EMM 2018). Spatial data detailing the four stages were provided by the Bloomfield Group.

The staging layers were used in conjunction with the existing vegetation mapping to calculate the area of each vegetation type per stage using ArcGIS (Esri Australia). This was then converted to a percentage of the total area of the vegetation type (within the Option 2 footprint).

The total credit requirement for each vegetation zone was divided by the percentage area to give a credit amount per stage per vegetation type. Credits for each stage were rounded up for the earlier stages, with any discrepancies resolved in the final stage. This ensure that all disturbance is offset in accordance with each stage rather than delaying a small proportion of a credit to the next stage.

3 Results

The four proposed stages of the RCCP are detailed in Figure 1. The area of each vegetation zone impacted during each stage and the corresponding offset obligations are provided in Table 3.1.



Source: EMM (2019); DFSI (2017); GA (2015)

KEY

- Plot location
- Rix's Creek Continuation Project (original design)
- Option 2
- Stage1
- Stage2
- Stage3
- Stage4
- Main road
- Watercourse/drainage line

Plant community type

- Zone 2: PCT 1692 (Bull Oak grassy woodland)
- Zone 4: PCT 1605 (Narrow-leaved Ironbark-Native Olive shrubby open forest)
- Zone 5: PCT 1748 (Grey Box grassy open forest)
- Zone 7: PCT 1605 (Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter - derived grassland)
- Zone 8: PCT 1605 (Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter - other)
- Zone 10: PCT 2150/HU818 (Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter- moderate/good - young)
- Disturbed/Exotic

RCCP Staged offset areas (option 2)

Rix's Creek Continuation Project
RCCP overburden option assessment -
biodiversity
Figure 1

Table 3.1 **Impact area of each stage with the corresponding credit requirement**

Vegetation zone details	Stage 1 (June 2020)		Stage 2 (June 2023)		Stage 3 (June 2026)		Stage 4 (June 2029)		Total	
	Area (ha)	Credits	Area (ha)	Credits	Area (ha)	Credits	Area (ha)	Credits	Area (ha)	Credits
Zone 2: PCT 1692 (Bull Oak grassy woodland)	-	-	0.10	4	-	-	-	-	0.10	4
Zone 4: PCT 1605 (Narrow-leaved Ironbark-Native Olive shrubby open forest)	2.92	145	6.10	302	4.39	217	1.75	86	15.16	750
Zone 5: PCT 1748 (Grey Box grassy open forest)	0.34	13	-	-	0.01	0	0.41	15	0.76	28
Zone 7: Derived Native Grassland	45.11	1,112	22.96	566	35.33	871	13.37	330	116.78	2,879
Zone 8: PCT 1605 (Narrow-leaved Ironbark - Native Olive shrubby open forest of the central and upper Hunter)	6.11	173	4.87	138	5.43	153	6.46	183	22.87	647
Zone 10: PCT 2150 Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland of the central and lower Hunter*	3.96	120	-	-	-	-	-	-	3.96	120
Disturbed/exotic	97.81	-	-	-	-	-	-	-	97.81	-
Total	156.26	1,563	34.04	1,010	45.16	1,241	21.99	614	257.45	4,428

4 Summary

This assessment provides an estimate of the number of credits required to offset RCCP (Option 2 footprint) in four stages, which will be secured prior to disturbance of each stage or soon after (within 18 months).

The four stages represent the highest number of stages likely and the Bloomfield Group have indicated that one or more of these stages may be consolidated. Once the footprint is confirmed a final credit calculation may be required using the online framework for biodiversity assessment calculator, in order to verify the number of credits required.

EMM understands that the Bloomfield Group are currently investigating several methods of securing offsets which are outlined in Section 5 of the RCCP Revised Response to Submissions - Biodiversity (EMM 2018). It is noted that if credits are secured through the Biodiversity Conservation Trust, by establishing a biodiversity stewardship; site or buying BAM credits privately, a conversion factor is required to ensure equivalency between the Framework for Biodiversity Assessment and the more recent Biodiversity Assessment Method.

Yours sincerely



Eugene Dodd
Senior Ecologist
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Reviewed: Steven Ward 15.1.19

Attachment 2: DP&E Item 4. Todoroski Air Sciences 3 January 2019.



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3 January 2019

Geoff Moore
Chief Development Officer
The Bloomfield Group
Via email: gmoore@bloomcoll.com.au

RE: Rix's Creek South Continuation Project – Further Information for Trade-off Scenarios for the Independent Planning Commission of NSW

Dear Geoff,

The following provides further information regarding the potential change in air quality impacts due to the proposed trade-off scenarios developed for the Rix's Creek South Continuation Project. This letter report is an addendum to the *Rix's Creek South Continuation Project – Trade-off Scenarios for the Independent Planning Commission of NSW* (Todoroski Air Sciences, 2018).

Discrete incremental modelling predictions at a representative sample of privately-owned receptor locations for the modelled trade-off scenarios are presented in **Table 1**. The selected receptor locations are positioned surrounding the Rix's Creek Mine and include locations previously predicted to experience air quality impacts.

Table 1 presents the incremental modelled predictions at the selected receptor locations for the original scenario Option 1 and Option 2 for comparison.

Figure 1 to **Figure 4** present the dispersion modelling results comparing the predicted incremental 24-hour average $PM_{2.5}$, annual average $PM_{2.5}$, 24-hour average PM_{10} and annual average PM_{10} with the location of the selected receptor locations shown.

Please feel free to contact us if you would like to clarify any aspect of this letter.

Yours faithfully,
Todoroski Air Sciences

A handwritten signature in black ink, appearing to read "PH", followed by a horizontal line.

Philip Henschke
Atmospheric Physicist

References

Todoroski Air Sciences (2018)

"Rix's Creek South Continuation Project – Trade-off Scenarios for the Independent Planning Commission of NSW", prepared by Todoroski Air Sciences, November 2011.



Table 1: Summary of modelled predictions at selected receptor locations

Receptor ID	Original scenario				Option 1				Option 2			
	PM _{2.5}		PM ₁₀		PM _{2.5}		PM ₁₀		PM _{2.5}		PM ₁₀	
	24-hr ave.	Ann. ave.	24-hr ave.	Ann. ave.	24-hr ave.	Ann. ave.	24-hr ave.	Ann. ave.	24-hr ave.	Ann. ave.	24-hr ave.	Ann. ave.
1	8	2	62	14	8	2	61	13	8	2	62	14
19	4	1	34	4	5	1	37	5	5	1	37	5
61	5	1	36	8	4	1	32	7	4	1	34	8
140	4	1	32	6	4	1	29	5	4	1	30	5
151	2	0	13	1	2	0	12	1	2	0	12	1
163	3	0	20	2	2	0	18	2	2	0	19	2
164	3	0	22	2	3	0	20	2	3	0	21	2
170	5	1	36	9	5	1	35	8	5	1	36	9
171	5	1	36	10	4	1	30	8	4	1	32	9
172	4	1	26	6	4	1	29	6	4	1	28	6
173	5	1	38	8	6	1	41	8	5	1	38	9
174	4	1	27	5	4	1	31	6	4	1	28	6
175	2	0	14	2	2	0	15	2	2	0	15	2
176	3	1	20	4	3	1	24	4	3	1	22	4
177	2	0	14	2	2	0	16	2	2	0	15	2



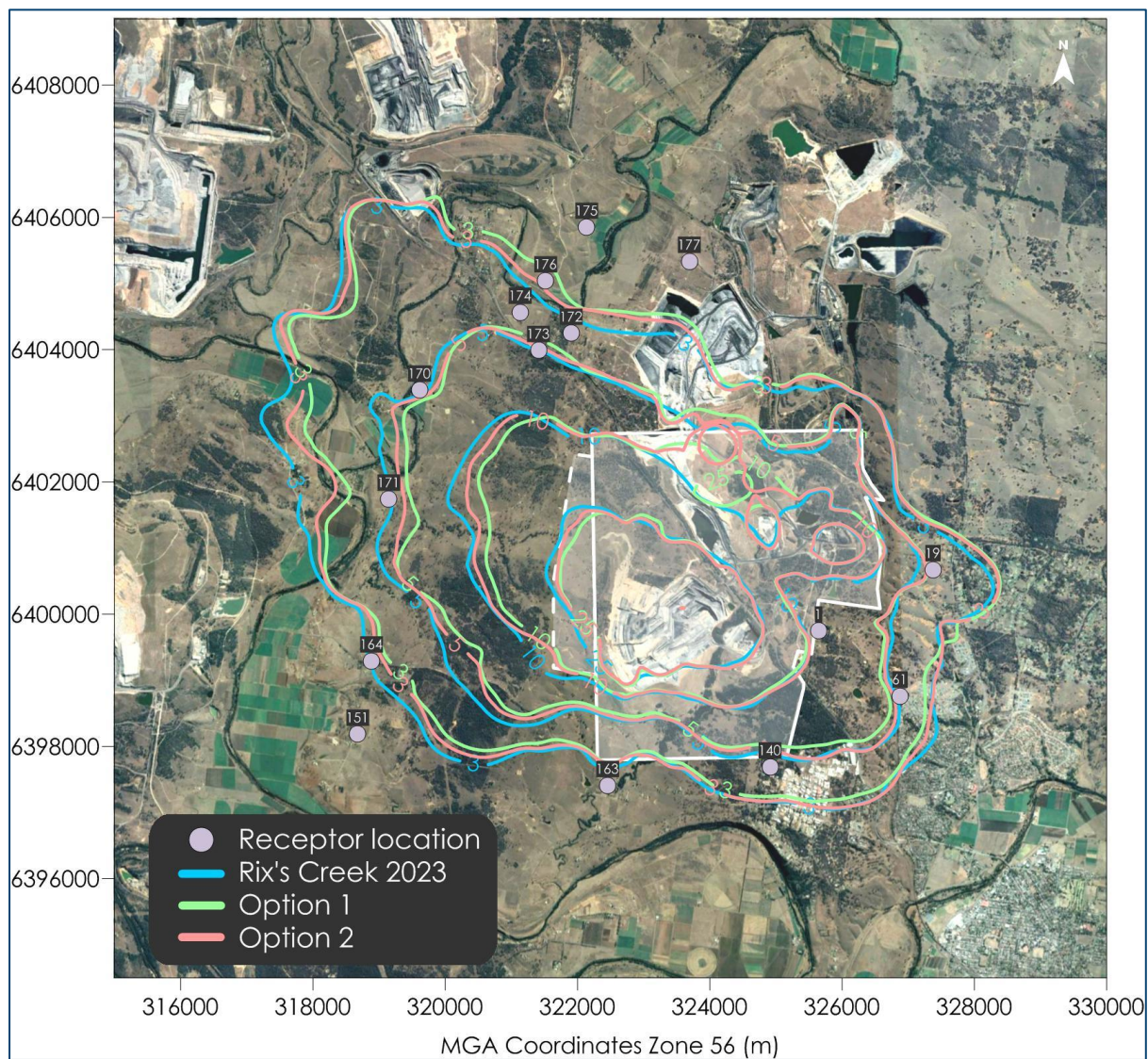


Figure 1: Comparison of incremental 24-hour average PM_{2.5} concentrations ($\mu\text{g}/\text{m}^3$)

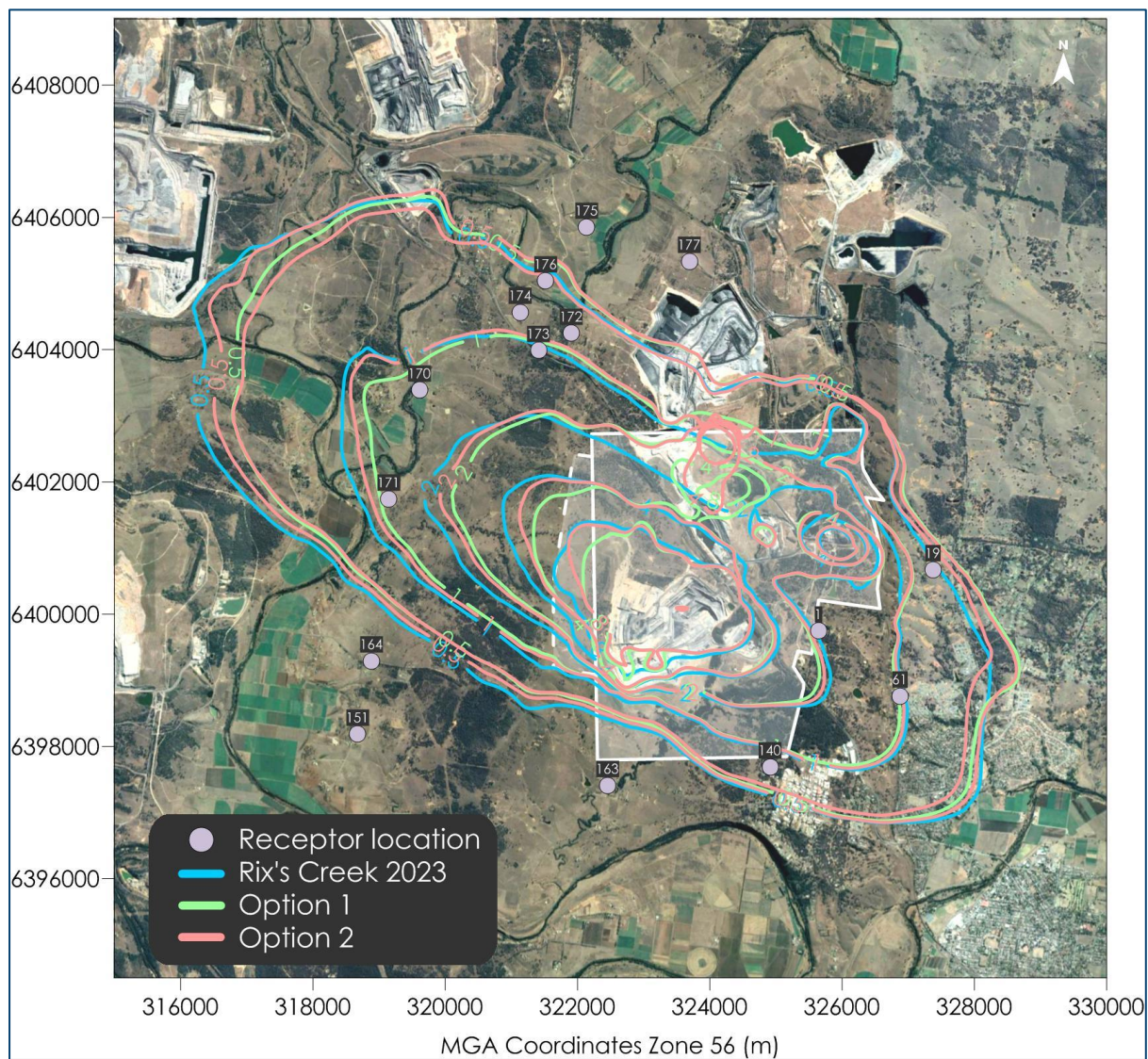


Figure 2: Comparison of incremental annual average PM_{2.5} concentrations (µg/m³)

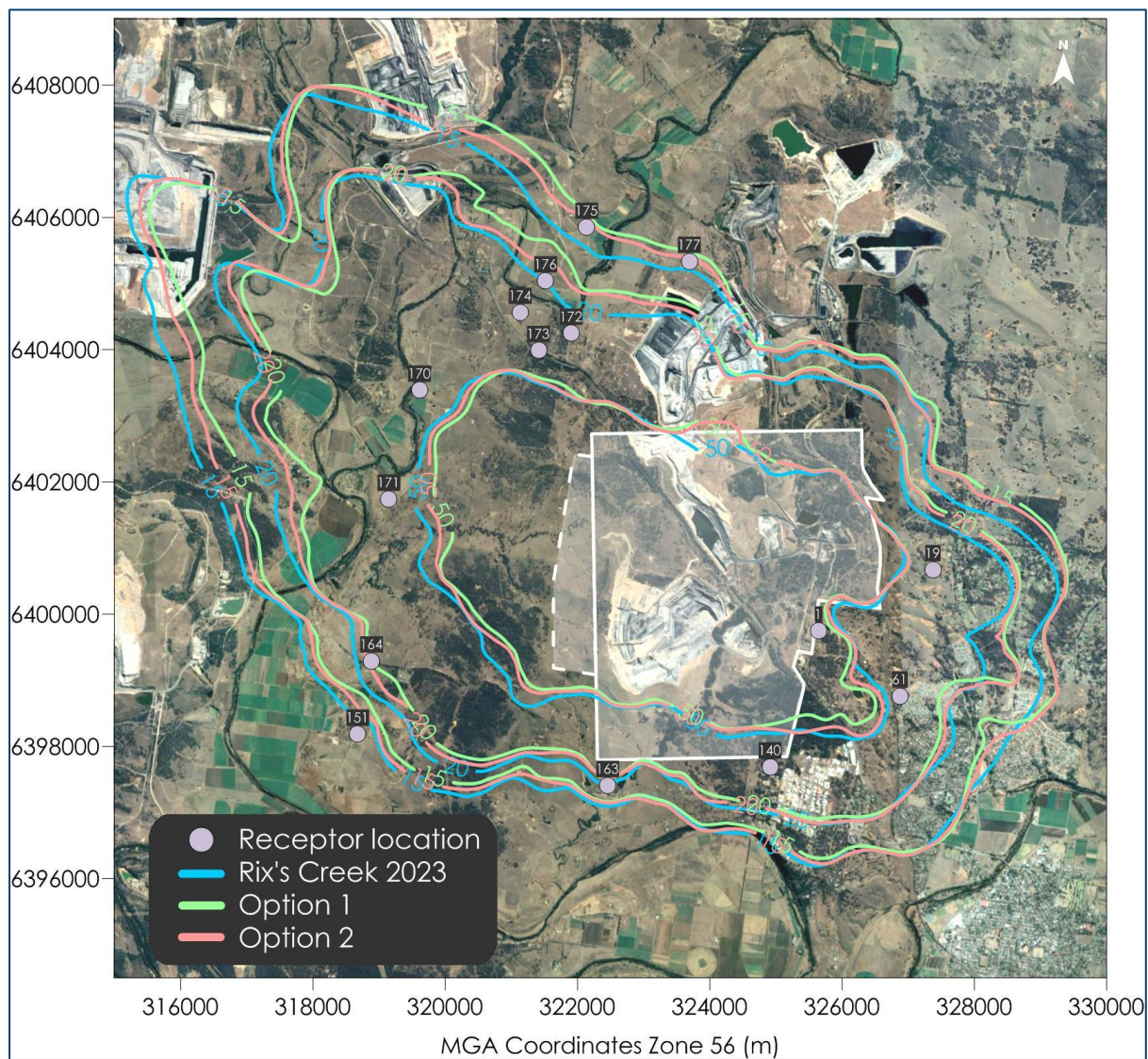


Figure 3: Comparison of incremental 24-hour average PM₁₀ concentrations (µg/m³)

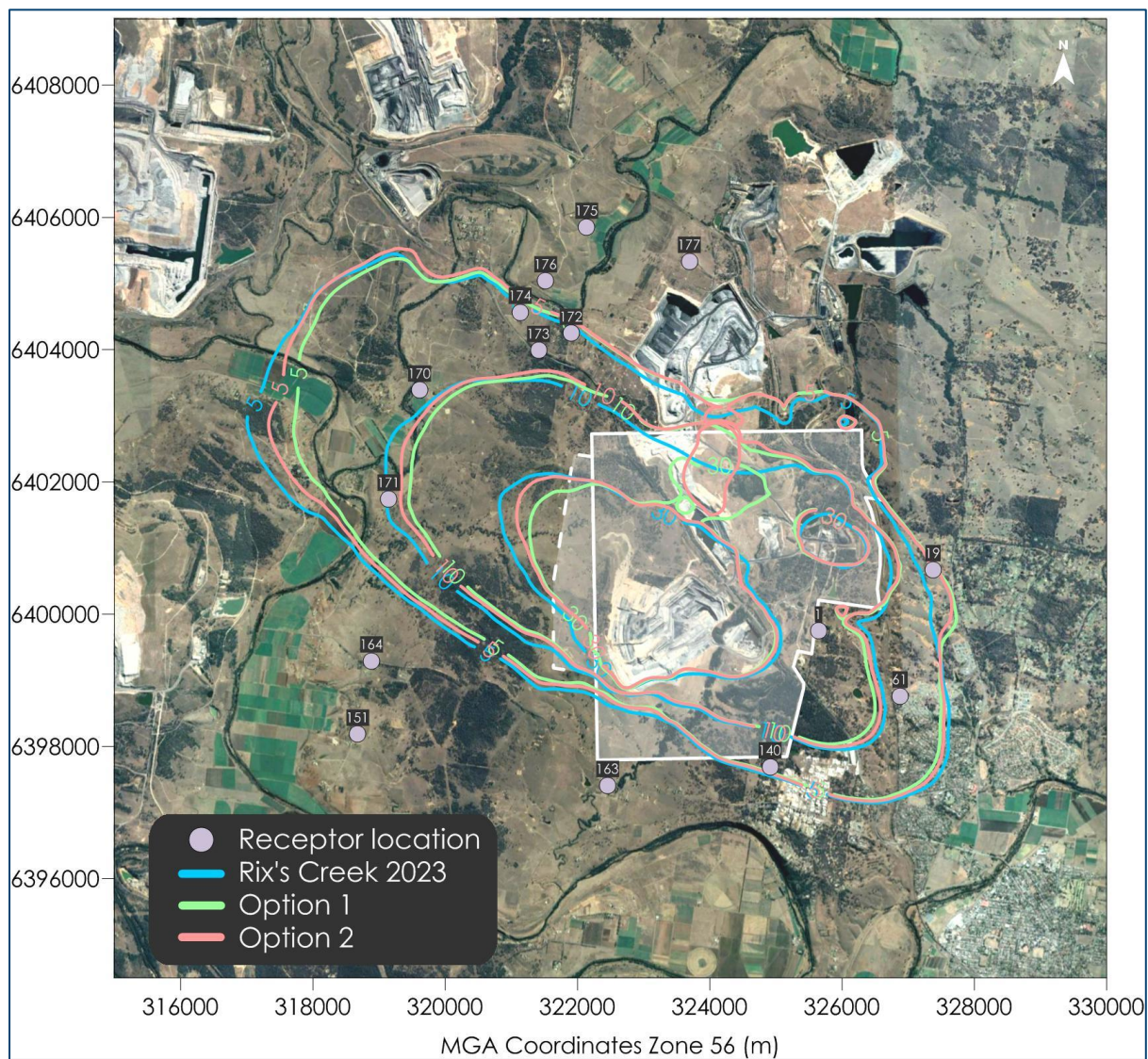
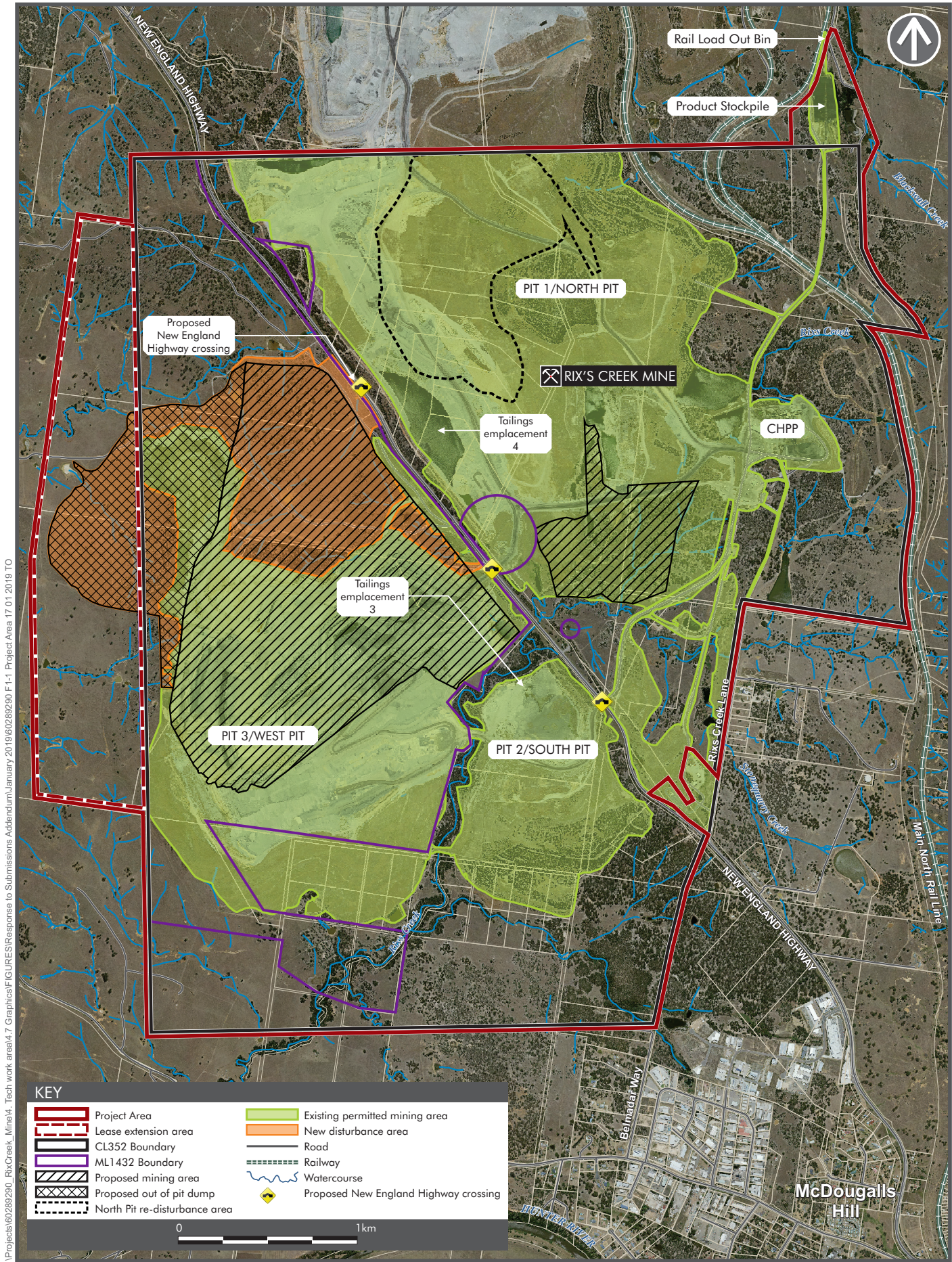


Figure 4: Comparison of incremental annual average PM_{10} concentrations ($\mu g/m^3$)

Attachment 3: DP& E Item 5 – Project Area - Option 2 Figure 1-1.



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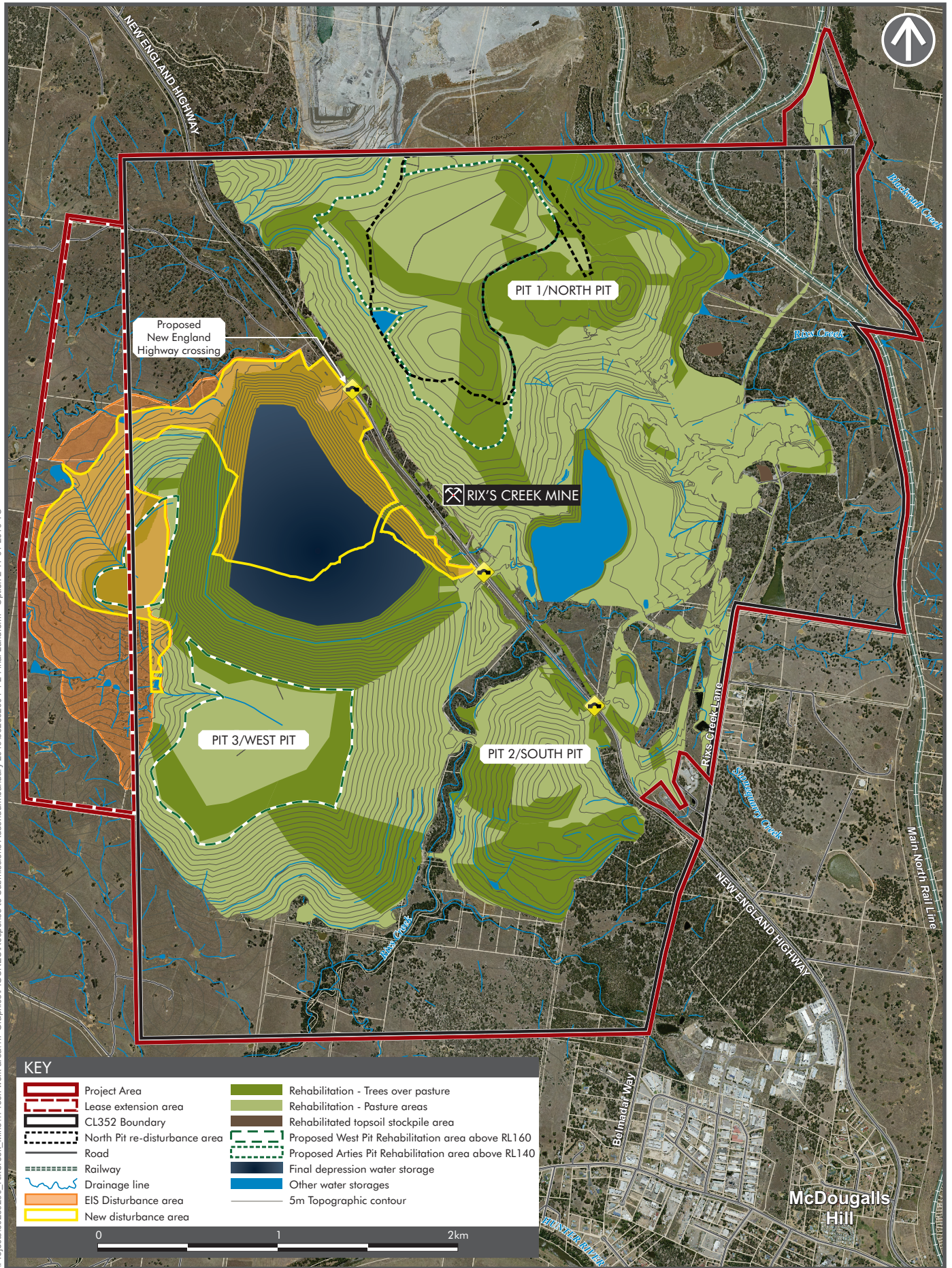
Note: Existing mine infrastructure within the Project Area yet external to the Existing Permitted Mining Area has been approved under separate development consents or is considered exempt and complying development pursuant to State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

PROJECT AREA - OPTION 2
Rix's Creek Continuation of Mining
Response to Submissions

FIGURE 1-1

Attachment 4: DP& E Item 5 – Final Landform - Option 2 Figure 1-2.

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AECOM

FINAL LANDFORM - OPTION 2

Rix's Creek Continuation of Mining
Response to Submissions

FIGURE 1-2