

30 November 2021

Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124

Attention: Stephen O'Donoghue, Director, Resource Assessments

RE: Atlas-Campaspe Mineral Sands Project – Modification Report for the Workforce Shuttle Bus Modification

Dear Mr O'Donoghue,

OVERVIEW

- Tronox Mining Australia Limited (Tronox) is the proponent of the Atlas-Campaspe Mineral Sands Project (the Project) that was approved under Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) in 2014 (Development Consent [SSD_5012]).
- The closest regional centre (Mildura/Buronga) and the closest town (Balranald) are located approximately 120 km to the west-southwest and approximately 80 km to the south of the Atlas-Campaspe Mine, respectively.
- Tronox proposes a modification to Development Consent (SSD_5012) under section 4.55(1A) of the EP&A Act to allow for changes to the approved workforce shuttle bus access route (the Workforce Shuttle Bus Modification [the Modification]).
- The Modification would allow the shuttle buses to access the Atlas-Campaspe Mine via more direct access routes rather than the approved haulage route to minimise shuttle bus travel distances and associated travel times. This would reduce Project vehicle kilometres travelled between the Atlas-Campaspe Mine to Mildura/Buronga and Balranald which would reduce exposure to road accidents and reduce the risk of drivers driving fatigued.
- The Modification is expected to have positive impacts on the safety of the Project workforce and community members using the public road network (e.g. Mungo National Park users), and the road network (with the implementation of the existing/approved road upgrades) would satisfactorily accommodate the expected future traffic generated by the modified Project.
- The Balranald Shire Council and Wentworth Shire Council support the Modification and have confirmed that the existing/approved road upgrade and maintenance requirements are appropriate.
- In consideration of the assessment of impacts in this Modification Report, the Modification would involve minimal environmental impact as defined under section 4.55(1A) of the EP&A Act.
- In weighing up the main environmental impacts (costs and benefits) assessed and described in this Modification Report, the Modification is, on balance, considered to be in the public interest of the State of NSW.

INTRODUCTION

Tronox Mining Australia Limited (Tronox) is the proponent of the Atlas-Campaspe Mineral Sands Project (the Project) which includes the development of a mineral sands mining operation (the Atlas-Campaspe Mine), together with the construction and operation of a rail loadout facility located near the township of Ivanhoe (the Ivanhoe Rail Facility).

The Atlas-Campaspe Mine is located approximately 80 kilometres (km) north of Balranald, New South Wales (NSW). The Ivanhoe Rail Facility is located approximately 135 km north-east of the Atlas-Campaspe Mine (Figure 1).

The Project was approved under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) in 2014 (Development Consent [SSD_5012]).

Tronox proposes a modification to Development Consent (SSD_5012) under section 4.55(1A) of the EP&A Act to allow for changes to the approved workforce shuttle bus access route (the Workforce Shuttle Bus Modification [the Modification]).

This Modification Report has been prepared in consideration of the *State Significant Development Guidelines* (NSW Department of Planning, Industry and Environment [DPIE], 2021a), in particular Appendix E – *Preparing a Modification Report* (DPIE, 2021b).

STRATEGIC CONTEXT

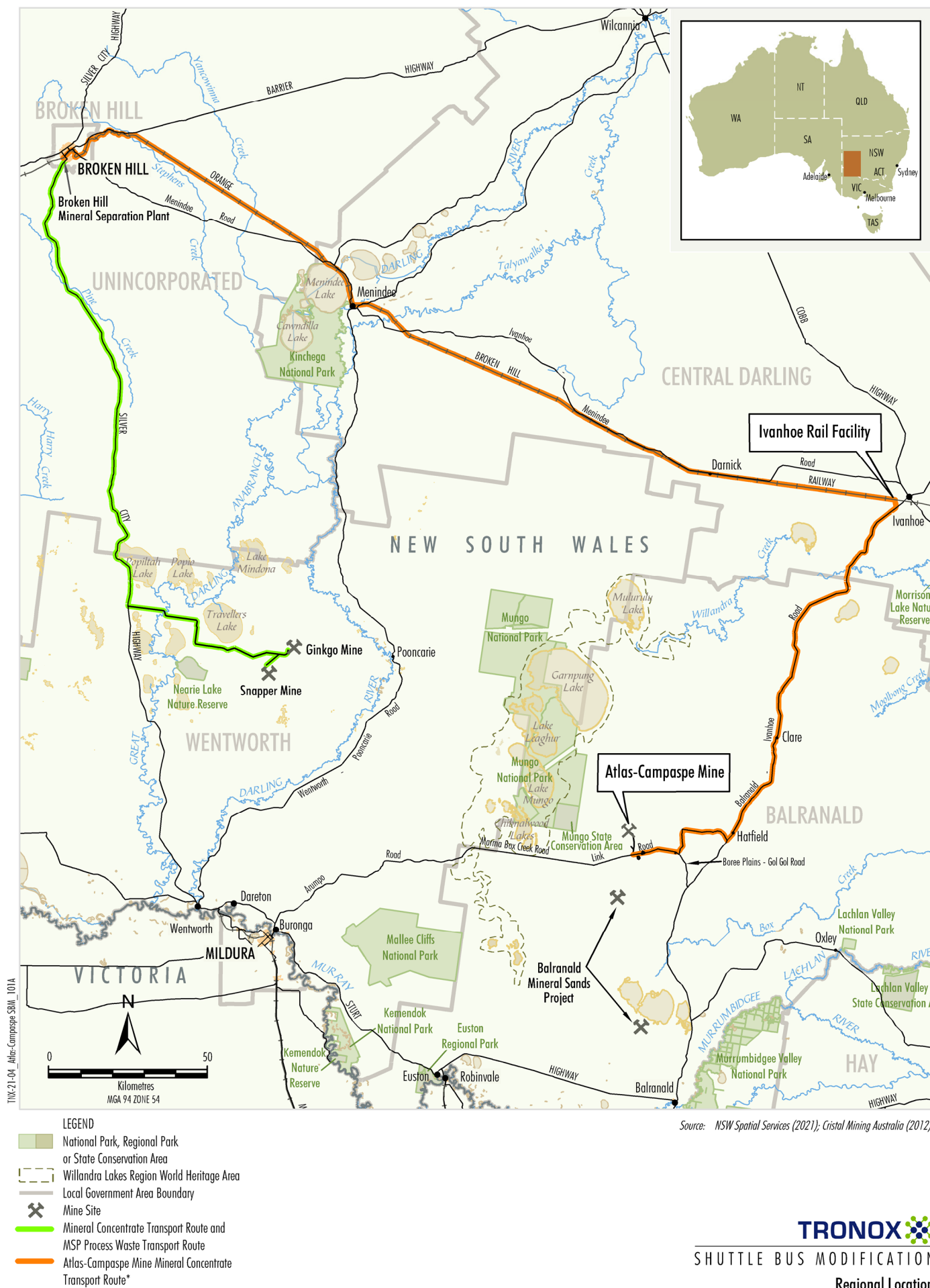
The Project is located within the Balranald Shire (Atlas-Campaspe Mine) and Central Darling Shire (Ivanhoe Rail Facility) local government areas (LGAs) (Figure 1). The closest regional centre (Mildura/Buronga) and the closest town (Balranald) are located approximately 120 km to the west-southwest and approximately 80 km to the south of the Atlas-Campaspe Mine, respectively.

Given the remote location of the Atlas-Campaspe Mine, the Atlas-Campaspe Mine workforce will reside at an on-site accommodation camp during their roster and will generally need to travel significant distances to/from the Atlas-Campaspe Mine at the beginning and end of their rosters depending on their place of residence.

Tronox has conducted a review of workforce transport arrangements for the Project and is proposing to operate shuttle buses for the Project workforce from Buronga/Mildura and Balranald to the Atlas-Campaspe Mine.

The Modification would allow these shuttle buses to access the Atlas-Campaspe Mine via more direct access routes rather than the approved haulage route as currently required by Development Consent (SSD_5012) which would minimise shuttle bus travel distances and associated travel times.

The Modification would be consistent with the fatigue risk management framework in the *Fatigue management Guidance for the NSW mining and petroleum industries* (NSW Resources Regulator, 2018).



* MSP Process Waste Transport Route following cessation of operations at the Ginkgo and Snapper Mines.

Figure 1

DESCRIPTION OF THE MODIFICATION

Overview

Table 1 provides a summary comparison of the Atlas-Campaspe Mine component of the originally approved Project, the existing/approved Project and the Project incorporating the Modification.

No changes to the Ivanhoe Rail Facility component of the Project are proposed as part of the Modification.

Site Access

Development Consent (SSD_5012) identifies the following approved Atlas-Campaspe Mine site access routes (Figures 2a and 2b):

- **Haulage Route** – to/from Balranald-Ivanhoe Road via Hatfield – The Vale Road, Boree Plains-Gol Gol Road and Link Road (Appendix 3 of Development Consent [SSD_5012]).
- **Light Vehicle Access Routes** (Appendix 3A of Development Consent [SSD_5012]):
 - to/from Mildura/Buronga via Arumpo Road, Marma Box Creek Road and Link Road; and
 - to/from Balranald via Balranald-Ivanhoe Road, Boree Plains-Gol Gol Road and Link Road.

Condition 6, Schedule 3 of Development Consent (SSD_5012) requires **light vehicles** accessing the Atlas-Campaspe Mine to use the approved light vehicle access routes or the haulage route.

In addition, Condition 9, Schedule 3 of Development Consent (SSD_5012) requires Tronox to prepare a Transport Management Plan that includes measures to ensure that “**heavy vehicles** adhere to the designated haulage route”.

The shuttle buses proposed to transport the Project workforce would be classified as a “heavy vehicle” in accordance with the definition included in Development Consent (SSD_5012) and therefore would not be able to use the approved light vehicle access routes.

The Modification would allow for the shuttle buses to access the Atlas-Campaspe Mine via the following more direct access routes rather than the approved haulage route (Figure 2a):

- **Mildura/Buronga** – Arumpo Road, Marma Box Creek Road and Link Road; and
- **Balranald** – Balranald-Ivanhoe Road, Marma Box Creek Road and Link Road.

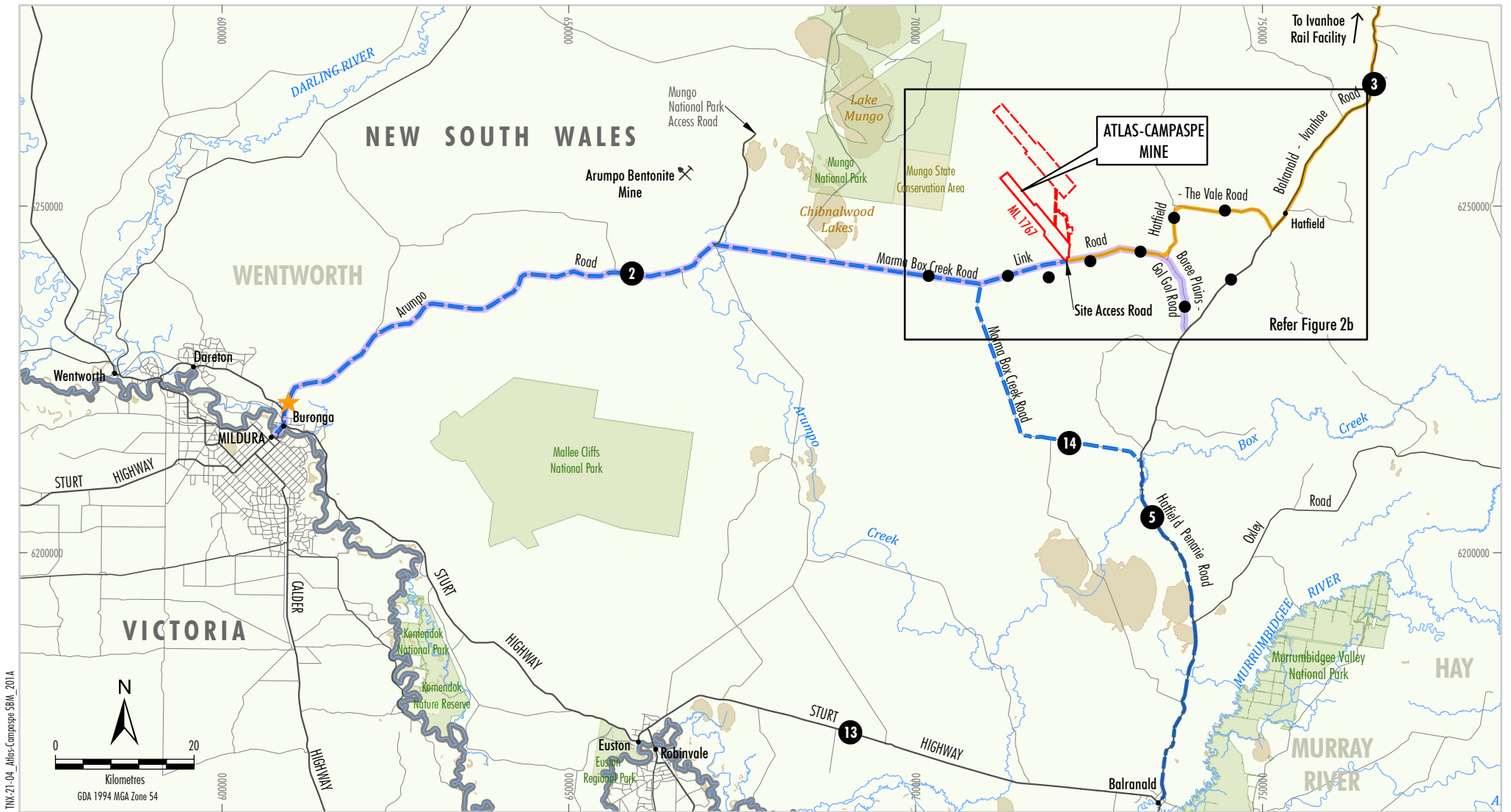
The Mildura/Buronga shuttle bus access route follows the approved light vehicle access route and is located in Wentworth Shire LGA and Balranald Shire LGA (Figure 2a).

The Balranald shuttle bus access route was developed in consultation with the Balranald Shire Council (BSC) and follows approved access routes with the exception of the section of Marma Box Creek Road (between Link Road and Ivanhoe-Balranald Road) (Figure 2a).

Project-related light vehicles would also use the shuttle bus access routes.

Table 1
Comparison of the Originally Approved, Existing/Approved and Modified Project

Project Component	Originally Approved Project	Existing/Approved Project	Modified Project
<i>Atlas-Campaspe Mine</i>			
Project Life	<ul style="list-style-type: none"> Mining operations until 30 June 2034. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Tenement	<ul style="list-style-type: none"> Mining Lease 1767 and Mining Lease Application 1. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Mining	<ul style="list-style-type: none"> Dry mining operation producing approximately 7.2 Mtpa of ore. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Mineral Concentration and Mineral Concentrate Transport	<ul style="list-style-type: none"> Gravity and magnetic separation methods to produce ilmenite-rich, leucoxene-rich and non-magnetic (containing rutile-rich and zircon-rich) mineral concentrates. Mineral concentrate production up to 546,000 tpa. Mineral concentrate transport up to 450,000 tpa. Up to 24 Transport for NSW (TfNSW)-approved haulage vehicle trips per day. 	<ul style="list-style-type: none"> No change to mineral concentration methods. Increase in mineral concentrate production and transport up to 665,000 tpa. Increase in TfNSW-approved haulage vehicle trips up to 35 per day. 	<ul style="list-style-type: none"> No change.
Supporting Infrastructure	<ul style="list-style-type: none"> Construction of supporting infrastructure within the approved surface development area. Water requirements will be supplied by the Atlas-Campaspe Mine borefield. Electricity supplied by diesel generator sets. 	<ul style="list-style-type: none"> Relocation of the accommodation camp. Development of an emergency airstrip. Construction and operation of a telecommunications tower. Option to develop on-site solar power generation infrastructure. 	<ul style="list-style-type: none"> No change.
Site Access	<ul style="list-style-type: none"> Access to the Atlas-Campaspe Mine is via the road haulage route. 	<ul style="list-style-type: none"> The use of the light vehicles access routes by Project-related light vehicles to access site. 	<ul style="list-style-type: none"> The use of the shuttle bus access routes by Project-related shuttle buses and light vehicles to access site.
Employment	<ul style="list-style-type: none"> Approximately 300 personnel during peak construction. Approximately 200 personnel during operations. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Rehabilitation Works	<ul style="list-style-type: none"> Progressive rehabilitation undertaken as mining advances. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Biodiversity Offset Area	<ul style="list-style-type: none"> Approximately 16,540 hectares will be established to offset native vegetation communities cleared for the Project. 	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.



TMA-21-04 Atlas-Campaspe SBM, 2011A

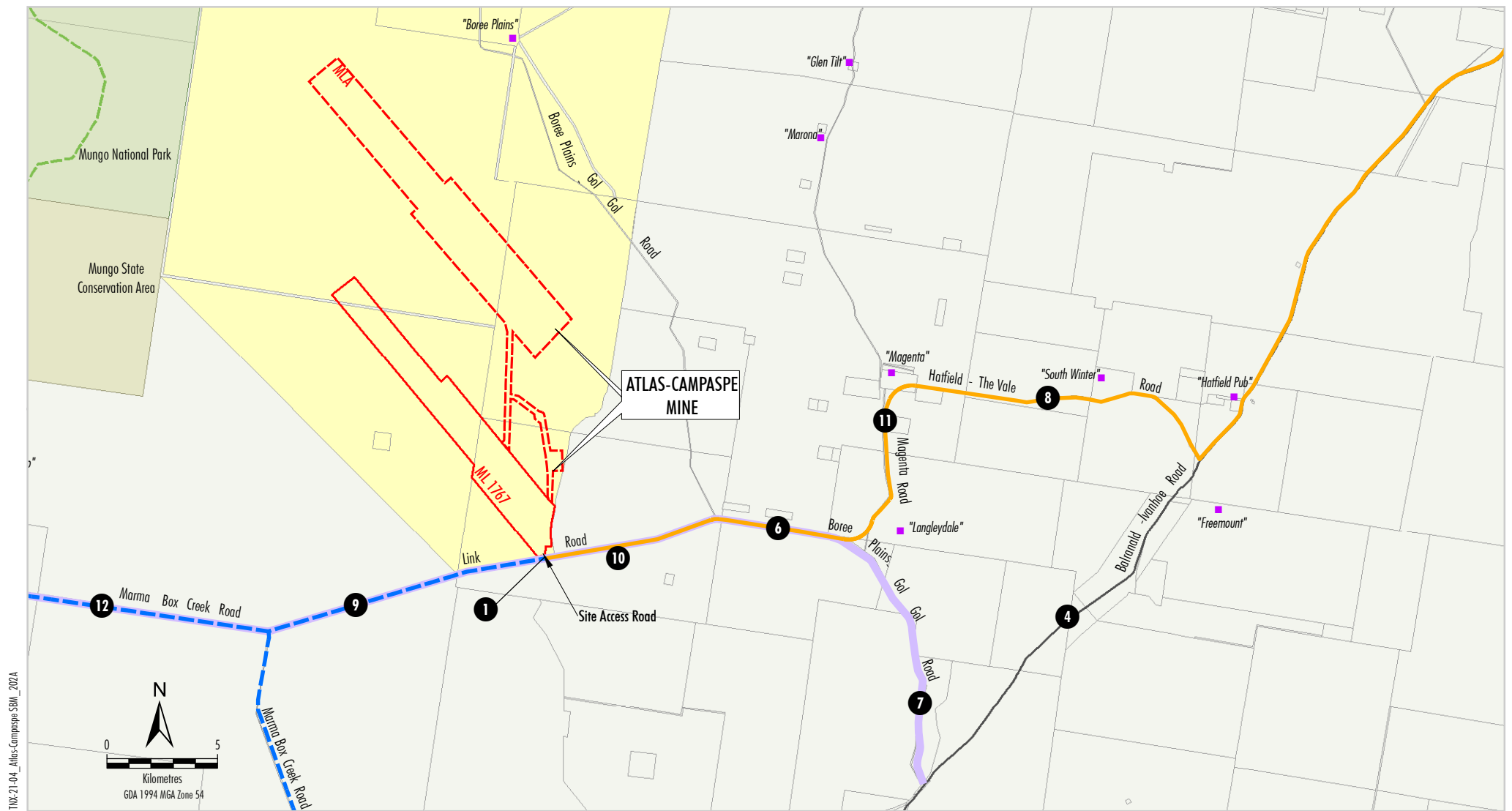
- LEGEND**
- Mining Lease Boundary
 - Mining Lease Application Boundary
 - National Park
 - Nature Reserve
 - Regional Park
 - State Conservation Area

- Approved Mineral Concentrate Transport Route
- Approved Light Vehicle Access Route
- Proposed Shuttle Bus Access Route
- 2 Traffic Forecast Location
- ★ Traffic Survey Location

TRONOX
SHUTTLE BUS MODIFICATION
Project Transport Routes

Source: NSW Spatial Services (2021); Cristal Mining Australia (2012);
Tronox (2019) and TTPP (2019)

Figure 2a



TNX-21-04_Atlas-Campaspe SBM_202A

- LEGEND**
- | | | | |
|--|--|--|--|
| | Mining Lease Boundary (ML 1767) | | Dwelling |
| | Mining Lease Application Boundary (MLA) | | Proposed Shuttle Bus Access Route |
| | Willandra Lakes Region World Heritage Area | | Approved Mineral Concentrate Transport Route |
| | National Park | | Approved Light Vehicle Access Route |
| | State Conservation Area | | Traffic Forecast Location |
| | Tronox Owned Land | | |
| | Private Landholder | | |
- Source: © MCG Department of Finance, Services & Innovation

Source: © NSW Department of Finance, Services & Innovation (2018); Cristal Mining Australia (2012); Tronox (2019) and TTPP (2019)



 SHUTTLE BUS MODIFICATION
 Project Transport Routes - Inset

Figure 2b

As the workforce would reside at the Atlas-Campaspe Mine accommodation camp during their roster, the shuttle bus movements would vary each day depending on when rosters start and/or finish.

During peak construction, up to six shuttle bus movements per day would be generated to/from the Atlas-Campaspe Mine. On an average day, this would fall to approximately two shuttle bus movements per day. Once operational, up to eight shuttle bus movements per day would be generated to/from the Atlas-Campaspe Mine. On an average day, this would fall to approximately two shuttle bus movements per day.

Other Project-related heavy vehicles would continue to use the approved haulage route.

Road Upgrades and Maintenance

Conditions 1 and 1A, Schedule 3 of Development Consent (SSD_5012) requires road upgrades along sections of the haulage route and the light vehicle access route to be completed at Tronox's cost and to the satisfaction of BSC, Central Darling Shire Council (CDSC) and TfNSW.

In addition, Tronox will make annual financial contributions to the BSC for the maintenance of local roads along the light vehicle access routes located in the Balranald Shire in accordance with Condition 3A, Schedule 3 of Development Consent (SSD_5012). Tronox will also make annual financial contributions to the BSC and CDSC for the maintenance of the haulage route in accordance with Conditions 3 and 4, Schedule 3 of Development Consent (SSD_5012).

Tronox has consulted with the BSC, Wentworth Shire Council (WSC) and TfNSW regarding the proposed shuttle bus access routes and it was agreed that no changes to the existing/approved road upgrades and maintenance would be required for the Modification.

Development Consent (SSD_5012) Conditions to be Modified

Proposed modifications to Development Consent (SSD_5012) are provided in Attachment 1.

Modification Category

Refer to the Statutory Context section for a discussion on the appropriateness of the proposed approval pathway for the Modification including consideration of "substantially the same" and "minimal environmental impact".

STATUTORY CONTEXT

This section outlines the statutory requirements relevant to the assessment of the Modification. In accordance with the guideline *Preparing a Modification Report* (DPIE, 2021b), Attachment 2 provides a statutory compliance table for the Project incorporating the Modification that identifies all the relevant statutory requirements and the relevant sections in this Modification Report that address these requirements.

Environmental Planning and Assessment Act 1979

Assessment Pathway

Tronox is seeking to modify Development Consent (SSD_5012) under section 4.55(1A) of the EP&A Act. Section 4.55(1A) relevantly provides:

- (1A) ***Modifications involving minimal environmental impact*** A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—
- (a) *it is satisfied that the proposed modification is of minimal environmental impact, and*
 - (b) *it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and ...*

A comparative analysis that outlines the Atlas-Campaspe Mine components of the originally approved Project, the existing/approved Project and the key components of the Modification is provided in Table 1. The Project incorporating the Modification would demonstrably remain a large mineral sand mining project that incorporates the key elements originally approved under Development Consent (SSD_5012).

Furthermore, this Modification Report includes a Statement of Environmental Effects in accordance with clause 115(1)(e) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). The assessments contained herein conclude that the Modification is of “minimal environmental impact”.

The consent authority can be satisfied that the Project incorporating the Modification would remain “substantially the same” and that the Modification is of “minimal environmental impact”.

NSW Environmental Planning and Assessment Act 1979 Objects

Section 1.3 of the EP&A Act describes the objects of the EP&A Act. The Modification is considered to be generally consistent with the objects of the EP&A Act, as it:

- would continue to involve the orderly economic use and development of land at the Project;
- would facilitate ecologically sustainable development, as it would improve road safety for the Project workforce and community members using the public road network in the vicinity of the Project, with no significant change to the currently accepted environmental impacts, and no increase in the duration of existing impacts of the Project;
- would not require additional surface development areas and therefore potential impacts on biodiversity and cultural heritage items as a result of the Modification would be minimised; and
- would be developed in a manner that incorporates community engagement, with a range of stakeholders consulted through the preparation of this Modification Report.

Evaluation under Section 4.15(1) of the NSW Environmental Planning and Assessment Act 1979

In evaluating the Modification, under section 4.15(1) of the EP&A Act, the consent authority is required to take into consideration a range of matters as they are of relevance to the subject of the application. While this is a requirement of the consent authority, this Modification Report has been prepared to generally address the requirements of section 4.15(1) of the EP&A Act to assist the consent authority, as follows:

- The requirements of relevant environmental planning instruments have previously been considered and the Modification would not change the existing considerations of these relevant environmental planning instruments.
- Clause 11 of the *State Environmental Planning Policy (State and Regional Development) 2011* states that development control plans do not apply to State Significant Developments, such as the Project.
- While no planning agreement or draft planning agreement has been developed for the Project to date, Tronox will make contributions to the BSC and CDSC in accordance with the requirements of Development Consent (SSD_5012).
- This Modification Report has been prepared in consideration of the prescribed matters in the EP&A Regulation.
- A description of the existing environment, an assessment of the potential environmental impacts associated with the Modification, and a description of the potential measures to avoid, mitigate, rehabilitate, remediate, monitor and/or offset the potential impacts of the Modification are described in this Modification Report.
- The suitability of the Project site has previously been considered and would not change for the Modification (i.e. the Modification is wholly located within the approved Development Application Area and the Project, as modified, would remain substantially the same).
- Consideration of whether, on evaluation, the Modification is considered to be in the public interest is provided in this Modification Report.

Other Relevant NSW Legislation

Other NSW legislation that may be applicable to the Project were described in the Project Environmental Impact Statement (Cristal Mining, 2013) and the Project Modification 1 Modification Report (Tronox, 2019). Tronox would continue to obtain relevant licences or approvals required under this NSW legislation for the Project incorporating the Modification.

Environment Protection and Biodiversity Conservation Act 1999

The Project was approved under the *Environment Protection and Biodiversity Conservation Act 1999* in September 2014 (2012/6447). It is concluded that the Modification would not have a significant impact on Matters of National Environmental Significance for the following reasons:

- The Modification would not have a significant impact on listed threatened species and ecological communities and/or migratory species as there would be no additional surface development area.
- The Modification would not have a significant impact on wetlands of international importance.

- The Modification would not have a significant impact on world heritage properties or national heritage places (i.e. Willandra Lakes Regional World Heritage Area).
- The Modification would not impact the Great Barrier Reef Marine Park and/or Commonwealth marine areas.
- The Modification is not a nuclear action.
- The Modification is not a coal mining or coal seam gas project that could have an impact on a water resource.

It is therefore considered that there is no need to refer the Modification to the Commonwealth Minister.

ENGAGEMENT

Tronox has consulted with relevant NSW Government agencies and local councils during the preparation of this Modification Report in consideration of the *Undertaking Engagement Guidelines for State Significant Project* (DPIE, 2021c). A summary of this consultation is provided below.

It is anticipated that consultation with government agencies and local councils will continue during the assessment of the proposal by the NSW Government.

Department of Planning, Industry and Environment

Tronox provided a briefing package and held a videoconference with the DPIE on 28 October 2021 to provide an overview of the Modification, proposed approval pathway and the proposed scope of the environmental assessment. Following the meeting, Tronox wrote to the DPIE regarding the Modification, the proposed approval pathway and the proposed scope of the environmental assessment.

The DPIE subsequently wrote to Tronox on 16 November 2021, confirming it agreed with the proposed approval pathway and the proposed approach to environmental assessment for the Modification.

Transport for NSW

Tronox provided a briefing package to the TfNSW on 10 November 2021 to provide an overview of the Modification, and the proposed road transport assessment approach.

TfNSW has not requested any additional information regarding the Modification at the time of writing.

Local Councils

The proposed shuttle bus access routes would be located in the Balranald Shire and Wentworth Shire LGAs (Figure 2a).

Tronox met with BSC on 4 November 2021 to provide an overview of the Modification. During this meeting, the BSC suggested changes to the originally proposed shuttle bus access route and these changes have been adopted in this Modification Report. The BSC also confirmed that it was satisfied with the existing/approved road upgrade and maintenance requirements.

Tronox met with the WSC on 25 November 2021 to provide an overview of the Modification. The WSC confirmed that it was satisfied with Tronox's proposed shuttle bus access route.

ASSESSMENT OF IMPACTS

Identification of Key Environmental Matters

Tronox has undertaken a review of the potential environmental impacts of the Modification to identify key potential environmental matters requiring assessment.

The key environmental matters identified are summarised in Table 2 and addressed in this section.

Road Transport

Background

The Transport Planning Partnership (TPPP) (2019) prepared a Road Transport Assessment for the approved Project and includes a detailed description of the road network in the vicinity of the Project (including the approved Project access routes).

The proposed shuttle bus access routes would consist of the following roads (Figure 2a):

- **Mildura/Buronga** – Arumpo Road, Marma Box Creek Road and Link; and
- **Balranald** – Balranald-Ivanhoe Road, Marma Box Creek Road and Link Road.

Traffic volumes on Balranald-Ivanhoe Road in the vicinity of the Atlas-Campaspe Mine are an average of 32 movements per day. Traffic volumes on Marma Box Creek Road and Link Road are expected to be lower than those recorded on Balranald-Ivanhoe Road. The south-western end of Arumpo Road in the vicinity of Buronga carries approximately 400 vehicles per day. Traffic volumes at the north-eastern end of Arumpo Road (further away from Buronga) however are expected to be lower (TPPP, 2019).

TPPP (2019) did not identify any inherent safety concerns on the approved Project access routes.

Management of potential road transport impacts at the Project is conducted in accordance with the Transport Management Plan and in accordance with Condition 9, Schedule 3 of Development Consent (SSD_5012). The Transport Management Plan includes details of the road upgrades and annual road maintenance contributions required by Development Consent (SSD_5012) (refer above).

Assessment

The Modification would result in the following changes on the road network surrounding the Project:

- Project-related shuttle buses and light vehicles would operate on the proposed shuttle bus access routes; and
- the number of Project-related light vehicles operating on the approved light vehicle access routes would reduce.

Table 2
Summary of Key Potential Environmental Matters/Impacts

Environmental Aspect	Key Potential Environmental Issues/Impacts	Report Section
Road Transport	Potential road transport impacts associated with the use of the shuttle bus access routes by Project-related shuttle buses and light vehicles.	Refer Below
Biodiversity	Tronox has undertaken an assessment of the impacts of the Modification on biodiversity values, in consideration of the NSW <i>Biodiversity Conservation Act 2016</i> and Clause 30A, Sections 1(a) and 2(c) of the <i>Biodiversity Conservation (Savings and Transitional) Regulation 2017</i> . In summary, as the Modification would require no additional surface development areas, the Modification would not increase impacts on vegetation abundance, vegetation integrity, habitat suitability, threatened species abundance, habitat connectivity, threatened species movement, flight path integrity or hydrological processes that are known to sustain a threatened species or ecological community.	N/A
Aboriginal Cultural Heritage	As the Modification would not change the existing/approved surface development area at the Project, no material changes to the approved impacts on Aboriginal cultural heritage, historic heritage and land resources are expected.	N/A
Historic Heritage		N/A
Land Resources		N/A
Water Resources	As the Modification would not change Project construction and/or operational activities (e.g. surface development area, mining method, production rates, water demand, water management system), no changes to the approved water resource impacts are expected.	N/A
Noise and Air Quality	As the Modification would not change Project construction and/or operational activities (e.g. mining method, production rates, fleet), no changes to the approved noise and air quality impacts are expected.	N/A
Greenhouse Gas	As the Modification would not change Project construction and/or operational activities (e.g. mining method, production rates, fleet, power demand), no significant changes to the approved greenhouse gas emissions are expected. The introduction of shuttle buses would however reduce greenhouse gas emission associated with the transport of the Project workforce to the Atlas-Campaspe Mine.	N/A
Visual	As the Modification would not change the design or arrangement of the approved Project, no changes to the approved potential visual impacts are expected.	N/A
Hazards and Risks	As the Modification would not change the existing potential risks or hazard consequences identified in the Preliminary Hazard Analysis (Cristal Mining, 2012) for the approved Project, no significant changes to the approved potential hazards and/or risks are expected	N/A
Social and Community Infrastructure	As the Modification would not result in any additional demand for employees or change the expected employee residential distribution, no material alteration to the approved social and community infrastructure impacts is expected.	N/A

The Modification would not change other existing/approved Project-related traffic movements.

A summary of the predicted distribution of the approved and modified Project maximum case traffic on the road network during the construction and operations phases is provided in Table 3.

Based on the predicted distribution of the approved and modified Project (Table 3), Project-related traffic volumes at the forecast locations would either reduce or be unchanged with the exception of Marma Box Creek Road (between Link Road and Balranald-Ivanhoe Road) (Location 14). This section of Marma Box Creek Road was included in the proposed shuttle bus access route based on the advice of the BSC. The Modification would result in the following additional traffic at this location:

- Construction Phase (Peak) – an additional four light vehicle movements per day and two shuttle bus movements per day; and
- Operations Phase (Peak) – an additional eight light vehicle movements per day and two shuttle bus movements per day.

These increased traffic movements are minor and would not significantly impact the performance, capacity and safety of Marma Box Creek Road (between Link Road and Balranald-Ivanhoe Road).

The Modification would allow these shuttle buses to access the Atlas-Campaspe Mine via more direct access routes rather than the approved haulage route to minimise shuttle bus travel distances and associated travel times. This would reduce Project vehicle kilometres travelled between the Atlas-Campaspe Mine to Mildura/Buronga and Balranald which would reduce exposure to road accidents. In addition, the reduction in travel times would reduce the risk of drivers driving fatigued.

Based on the above, the Modification is expected to have positive impacts on the safety of the Project workforce and community members using the public road network (e.g. Mungo National Park users), and the road network (with the implementation of the existing/approved road upgrades) would satisfactorily accommodate the expected future traffic generated by the modified Project.

Mitigation Measures, Management and Monitoring

Tronox would implement the existing/approved road upgrades and road maintenance requirements outlined in Development Consent (SSD_5012) for the modified Project.

The Transport Management Plan, and its relevant mitigation and management measures, would be reviewed and, if necessary, revised by Tronox to include the Modification (subject to any modified Development Consent conditions).

Table 3
Predicted Peak Approved and Modified Project Traffic Volumes (Vehicles/Day)
on the Road Network

	Location ¹	Construction Phase		Operations Phase	
		Approved Project (LV/HV/Bus) ^{2, 3}	Modified Project (LV/HV/Bus) ²	Approved Project (LV/HV/Bus) ^{2, 3}	Modified Project (LV/HV/Bus) ²
1	Atlas-Campaspe Mine Access Road	228/10/0	98/10/6	156/80/0	88/80/8
2	Arumpo Road between Marma Box Creek Road and Silver City Highway	110/0/0	20/0/4	58/0/0	10/0/6
3	Balranald-Ivanhoe Road between Ivanhoe Rail Facility and Hatfield-The Vale Road	68/2/0	68/2/0	42/72/0	42/72/0
4	Balranald-Ivanhoe Road between Hatfield-The Vale Road and Boree Plains-Gol Gol Road	0/8/0	0/8/0	0/8/0	0/8/0
5	Balranald-Ivanhoe Road between Boree Plains-Gol Gol Road and Sturt Highway	50/8/0	10/8/2	56/8/0	16/8/0
6	Boree Plains-Gol Gol Road between Link Road and Magenta Road	118/10/0	74/10/0	98/80/0	70/80/0
7	Boree Plains-Gol Gol Road between Magenta Road and Balranald-Ivanhoe Road	50/0/0	6/0/0	56/0/0	8/0/0
8	Hatfield-The Vale Road between Magenta Road and Balranald-Ivanhoe Road	68/10/0	68/10/0	42/80/0	42/80/0
9	Link Road between Atlas-Campaspe Mine access and Marma Box Creek Road	110/0/0	24/0/6	58/0/0	18/0/8
10	Link Road between Atlas-Campaspe Mine access and Boree Plains-Gol Gol Road	118/10/0	74/10/0	98/80/0	70/80/0
11	Magenta Road between Boree Plains-Gol Gol Road and Hatfield-The Vale Road	68/10/0	68/10/0	42/80/0	42/80/0
12	Marma Box Creek Road between Link Road and Arumpo Road	110/0/0	20/0/4	58/0/0	10/0/6
13	Sturt Highway between Balranald and Mildura	0/2/0	0/2/0	0/2/0	0/2/0
14	Marma Box Creek Road between Link Road and Balranald-Ivanhoe Road	0/0/0	4/0/2	0/0/0	8/0/2

¹ Refer to Figures 2a and 2b.

² Light Vehicles/Heavy Vehicles/Shuttle Bus.

³ TTPP (2019).

Evaluation of Merits

The Modification would allow the shuttle buses to access the Atlas-Campaspe Mine via more direct access routes rather than the approved haulage route as currently required by Development Consent (SSD_5012). The modified Project would be substantially the same as the originally approved Project (Table 1).

Tronox has consulted with relevant stakeholders and the outcomes of this engagement has informed the preparation of this Modification Report.

Tronox has undertaken a review of the potential environmental impacts of the Modification to identify key potential environmental issues requiring assessment and the key potential environmental impacts are related to changes to Project-related traffic movements and the associated potential road transport impacts (Table 2).

The Modification is expected to however have positive impacts on the safety of the Project workforce and community members using the public road network; and the road network (with the implementation of the existing/approved road upgrades) would satisfactorily accommodate the expected future traffic generated by the modified Project.

Tronox would implement the existing/approved road upgrades and road maintenance requirements outlined in Development Consent (SSD_5012) and update the Transport Management Plan for the modified Project.

In consideration of the assessment of impacts in this Modification Report, the Modification would involve minimal environmental impact as defined under section 4.55(1A) of the EP&A Act.

A detailed statutory compliance table for the Project incorporating the Modification that identifies all the relevant statutory requirements and the relevant sections in this Modification Report that address these requirements is provided in Attachment 2.

In weighing up the main environmental impacts (costs and benefits) assessed and described in this Modification Report, the Modification is, on balance, considered to be in the public interest of the State of NSW.

Please do not hesitate to contact me if the DPIE requires any further information.

Yours sincerely,

Chaka Chirozva
Approvals and Stakeholder Specialist
Tronox Mining Australia Limited

REFERENCES

- Cristal Mining (2012) *Atlas-Campaspe Mineral Sands Project Preliminary Hazard Analysis*.
- Cristal Mining Australia (2013) *Atlas-Campaspe Mineral Sands Project Environmental Impact Statement*.
- Department of Planning, Industry and Environment (2021a) *State Significant Development Guidelines*.
- Department of Planning, Industry and Environment (2021b) *State Significant Development Guidelines – Preparing a Modification Report*.
- Department of Planning, Industry and Environment (2021c) *Undertaking Engagement Guidelines for State Significant Projects*.
- Resources Regulator (2018) *Fatigue management Guidance for the NSW mining and petroleum industries*.
- Tronox Mining Australia (2019) *Atlas-Campaspe Mineral Sands Project Optimisation Modification – Modification Report*.
- The Transport Planning Partnership (2019) *Atlas-Campaspe Mineral Sands Project Optimisation Modification Road Transport Assessment*.

ATTACHMENT 1
PROPOSED MODIFICATIONS TO DEVELOPMENT CONSENT (SSD_5012)

Definitions

In the list of Definitions, it is proposed to insert the following in alphabetical order:

<i>Shuttle Bus Access Route</i>	<i>The route identified in Appendix 3A</i>
<i>Shuttle Bus</i>	<i>Shuttle buses used to transport workers at the Development to and from the Development site.</i>

Schedule 3 – Environmental Performance Conditions

Condition 6

In Condition 6, Schedule 3, include the following changes:

Local Roads

The Applicant shall ensure that light vehicles use only the following local roads to access the site:

- (a) those local roads that form part of the road haulage route shown in Appendix 3;*
- (b) those local roads that form part of the light vehicle access route shown in Appendix 3A, if conditions 1A and 3A of this schedule have been met; ~~or~~*
- (c) **those local roads that form part of the shuttle bus access route shown in Appendix 3B, if conditions 1A and 3A of this schedule have been met; or***
- ~~(e)~~(d) any local road during an emergency to avoid the loss of life, property and/or to prevent environmental harm.*

Note: This condition does not apply to any employees that may reside on a local road that does not form part of the haulage route or the light vehicle access route (in the vicinity of the development), or the infrequent use of the roads for consultation, environmental monitoring and inspection and maintenance of nearby infrastructure.

Condition 6A

Insert new Condition 6A, Schedule 3 as follows:

Shuttle Buses

The Applicant shall ensure that shuttle buses use only the following local roads to access the site:

- (a) those roads that form part of the shuttle bus access route shown in Appendix 3B, if conditions 1A and 3A of this schedule have been met;***
- (b) any road during an emergency to avoid the loss of life, property and/or to prevent environmental harm; or***
- (c) any road approved by the Secretary.***

Condition 9

In Condition 9, Schedule 3, include the following changes:

Transport Management Plan

The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Secretary. This plan must:

- (a) be prepared in consultation with the RMS, BSC and CDSC;*
- (b) be submitted to the Secretary for approval prior to carrying out any construction on site;*
- (c) include a program to monitor and report on the:*
 - *amount of mineral concentrate transported from the site;*
 - *amount of MSP process waste returned to the site; and*
 - *date and time of each train movement generated by the development;*
- (d) include the measures that would be implemented to address the relevant requirements in the Code of Practice for the Safe Transport of Radioactive Materials (ARPANSA, 2001, or its latest version);*
- (e) focus on traffic management along the haulage route and light vehicle access route;*
- (f) include a Road Transport Protocol for all drivers transporting materials to and from the site with measures to ensure:*
 - *heavy vehicles (**except for shuttle buses**) adhere to the designated haulage route;*
 - *all vehicles transporting mineral concentrate are completely covered whilst in transit*
 - *the staggering of heavy vehicle departures to minimise impacts on the road network, where practicable;*
 - *no disruption to school bus timetables;*
 - *the management of worker fatigue during trips to and from the site;*
 - *appropriate driver behaviour including adherence to speed limits, safe overtaking and maintaining appropriate distances between vehicles (i.e. a Driver Code of Conduct);*
 - *adherence to drug and alcohol policies;*
 - *appropriate vehicle maintenance and safety;*
 - *contingency plans when the haulage route is disrupted due to low visibility or closed due to wet weather;*
 - *emergency response plans;*
 - *the safe transportation MSP process wastes; and*
 - *compliance with and enforcement of the protocol.*

Appendix 3B

Insert Figures 2a and 2b from the Modification Report in new Appendix 3B.

ATTACHMENT 2
DETAILED STATUTORY COMPLIANCE RECONCILIATION TABLE

Table A2-1
Summary Statutory Compliance for State Legislation

Relevant Legislation or Instrument	Mandatory Consideration	Relevant Section in Modification Report	Modified Project Compliance Status
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>			
section 1.3	<p>Relevant objects of the EP&A Act:</p> <ul style="list-style-type: none"> Promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources. Facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment. Promote the orderly and economic use and development of land. Protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats. Promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage). Promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State. Provide increased opportunity for community participation in environmental planning and assessment. 	Statutory Section – NSW EP&A Act Objects	✓
section 4.15	<p>Relevant environmental planning instruments:</p> <ul style="list-style-type: none"> <i>State Environmental Planning Policy (Koala Habitat Protection) 2020.</i> <i>State Environmental Planning Policy (Koala Habitat Protection) 2021.</i> <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP).</i> <i>State Environmental Planning Policy (SEPP) No 33: Hazardous and Offensive Development (SEPP 33).</i> <i>State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55).</i> <i>Mid-Western Regional Local Environmental Plan 2012.</i> Any planning agreement or draft planning agreement that a developer has entered into under section 7.4 of the EP&A Act. The <i>Environmental Planning and Assessment Regulation 2000</i> (EP&A Regulation). <p>The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality; the suitability of the site for the development; any submissions made in accordance with the EP&A Act or the EP&A Regulation; the public interest.</p>	Statutory Section – Evaluation under Section 4.15(1) of the NSW EP&A Act	✓

Table A2-1 (Continued)
Summary Statutory Compliance for State Legislation

Relevant Legislation or Instrument	Mandatory Consideration	Relevant Section in Modification Report	Modified Project Compliance Status
EP&A Regulation			
clause 115AA	An application for modification of a development consent for State significant development under the Act, section 4.55(1), (1A) or (2) or 4.56(1) must— <ul style="list-style-type: none"> a) be in the form approved by the Planning Secretary and made available on the NSW planning portal, and b) include particulars of the nature of the proposed modification to the development consent, and c) be prepared having regard to the State Significant Development Guidelines, and d) be lodged on the NSW planning portal. 	This Modification Report	✓
Biodiversity Conservation Act 2016			
section 7.14(2)	The consent authority is to take into consideration the likely impact of the proposed development on biodiversity values as assessed in the BDAR.	Assessment of Impacts – Table 2	✓
section 7.16(3)	If the consent authority is of the opinion that the Modification is likely to have serious and irreversible impacts on biodiversity values, the consent authority is required to: <ul style="list-style-type: none"> • take those impacts into consideration; and • determine whether there are any additional and appropriate measures that will minimise those impacts if consent or approval is to be granted. 	Assessment of Impacts – Table 2	✓
Protection of the Environment Operations Act 1997 (PoEO Act)			
section 43	Operations at the Project are currently undertaken in accordance with existing Environment Protection Licence 21007 issued under the PoEO Act. EPL 21007 contains conditions that relate to emission and discharge limits, environmental monitoring and reporting. It is not anticipated that any changes to EPL 21007 would be required as a result of the Modification.	Statutory Section – Other Relevant NSW Legislation	✓
Water Management Act 2000			
sections 89, 90 and 91	The Modification would not change peak water licensing, supply sources and storage requirements for the Project. Tronox would continue to obtain and hold licences required under the <i>Water Management Act 2000</i> for licensable take.	Statutory Section – Other Relevant NSW Legislation	✓
National Parks and Wildlife Act 1974			
section 90	An Aboriginal cultural heritage impact permit under section 90 of the <i>National Parks and Wildlife Act 1974</i> is not required for the Project, including for the Modification.	Statutory Section – Other Relevant NSW Legislation	✓

Table A2-2
Summary Statutory Compliance for Environmental Planning Instruments

Relevant Legislation or Instrument	Mandatory Consideration	Relevant Section in Modification Report	Modified Project Compliance Status
<i>Mining SEPP</i>			
clause 12	Before determining an application for consent for the purposes of mining the consent authority must: (a) consider – (i) the existing uses and approved uses of land in the vicinity of the development, and (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and (b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).	No Change	✓
clause 13	Before determining an application for development in the vicinity of mining, petroleum or extractive industry, the consent authority must (among other things) consider whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery.	No Change	✓
clause 14	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner (including conditions to ensure that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable, that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable, and that greenhouse gas emissions are minimised to the greatest extent practicable). This includes considering an assessment of greenhouse gas emissions (including downstream emissions) having regard to any applicable State or National policies, programs of guidelines concerning greenhouse gas emissions.	Assessment of Impacts – Table 2	✓
clause 15	Before determining an application for consent for the purposes of mining the consent authority must consider the efficiency of the development in terms of resource recovery and whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resources recovery and the reuse or recycling of material.	No Change	✓

Table A2-2 (Continued)
Summary Statutory Compliance for Environmental Planning Instruments

Relevant Legislation or Instrument	Mandatory Consideration	Relevant Section in Modification Report	Modified Project Compliance Status
<i>Mining SEPP (continued)</i>			
clause 16	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions regarding transport of materials.	Assessment of Impacts – Road Transport	✓
clause 17	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions regarding rehabilitation, including the particular considerations set out in clause 17(2).	No Change	✓
<i>SEPP 33</i>			
clause 13	A consent authority must consider current circulars or guidelines published by the DPIE relating to hazardous or offensive development, whether to consult with relevant public authorities regarding any environmental or land use safety requirements, a preliminary hazard analysis prepared by the applicant, feasible alternatives to the development and likely future use of surrounding land.	Assessment of Impacts – Table 2	✓
<i>SEPP 55</i>			
clause 7(1)	A consent authority must consider whether the land is contaminated and be satisfied that, if the land is contaminated, the land is suitable in its contaminated state (or will be suitable after remediation) for the purpose of the Project.	No Change	✓
<i>Balranald Local Environmental Plan 2010</i>			
clause 2.3	A consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within that zone.	No Change	✓
<i>Central Darling Local Environmental Plan 2012</i>			
clause 2.3	A consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within that zone.	No Change	✓