17 October 2019

Secretary
Department of Planning, Industry and Environment
Level 22, 320 Pitt St
SYDNEY NSW 2000

c-/ Stephen O'Donoghue, Director, Resources Assessments

Dear Mr O'Donoghue,

RE: SNAPPER MINE – SITE VERIFICATION CERTIFICATE APPLICATION

Background

Tronox Mining Australia Limited (Tronox) is the proponent of the Snapper Mineral Sands Project (the Snapper Mine) which is located approximately 85 kilometres (km) north east of Wentworth in western New South Wales (NSW) (Figure 1).

Project Approval (06_0168) for the Snapper Mine was issued under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) in 2007. Tronox proposes a modification to Project Approval (06_0168), herein referred to as the Snapper Mine Northern Extension Modification (the Modification), and would be sought under section 4.55(2) of the EP&A Act.

Among other things, the Modification would include extension of the approved mine path and associated supporting infrastructure (e.g. overburden dumps and soil stockpiles) into a new Mining Lease (MLA 1 on Figure 2).

Tronox is seeking a Site Verification Certificate (SVC) for MLA 1 (the SVC Application Area) (Figure 2) in accordance with Division 3, Part 4AA of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Tronox is currently preparing a Mining Lease Application (MLA) for MLA 1, which will be lodged with the NSW Division of Resources and Geoscience within the Department of Planning, Industry and Environment (DPIE).

Biophysical Strategic Agricultural Land Assessment

An assessment of the land within the SVC Application Area in accordance with the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land* (the Interim Protocol) (NSW Government, 2013) has been conducted. The Interim Protocol outlines the following key steps for verifying Biophysical Strategic Agricultural Land (BSAL):

1. Identify the SVC Application Area to be assessed for BSAL.
2. Confirm access to a reliable water supply.
3. Choose appropriate approach to mapping soil information.
4. Conduct risk assessment to determine soils survey intensity.

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

LEGEND

- National Park, Regional Park or State Conservation Area
- Willandra Lakes Region World Heritage Area
- Local Government Area Boundary
- Mine Site
- Existing Mineral Concentrate Transport Route and MSP Process Waste Transport Route
- Approved Mineral Concentrate Transport Route*

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

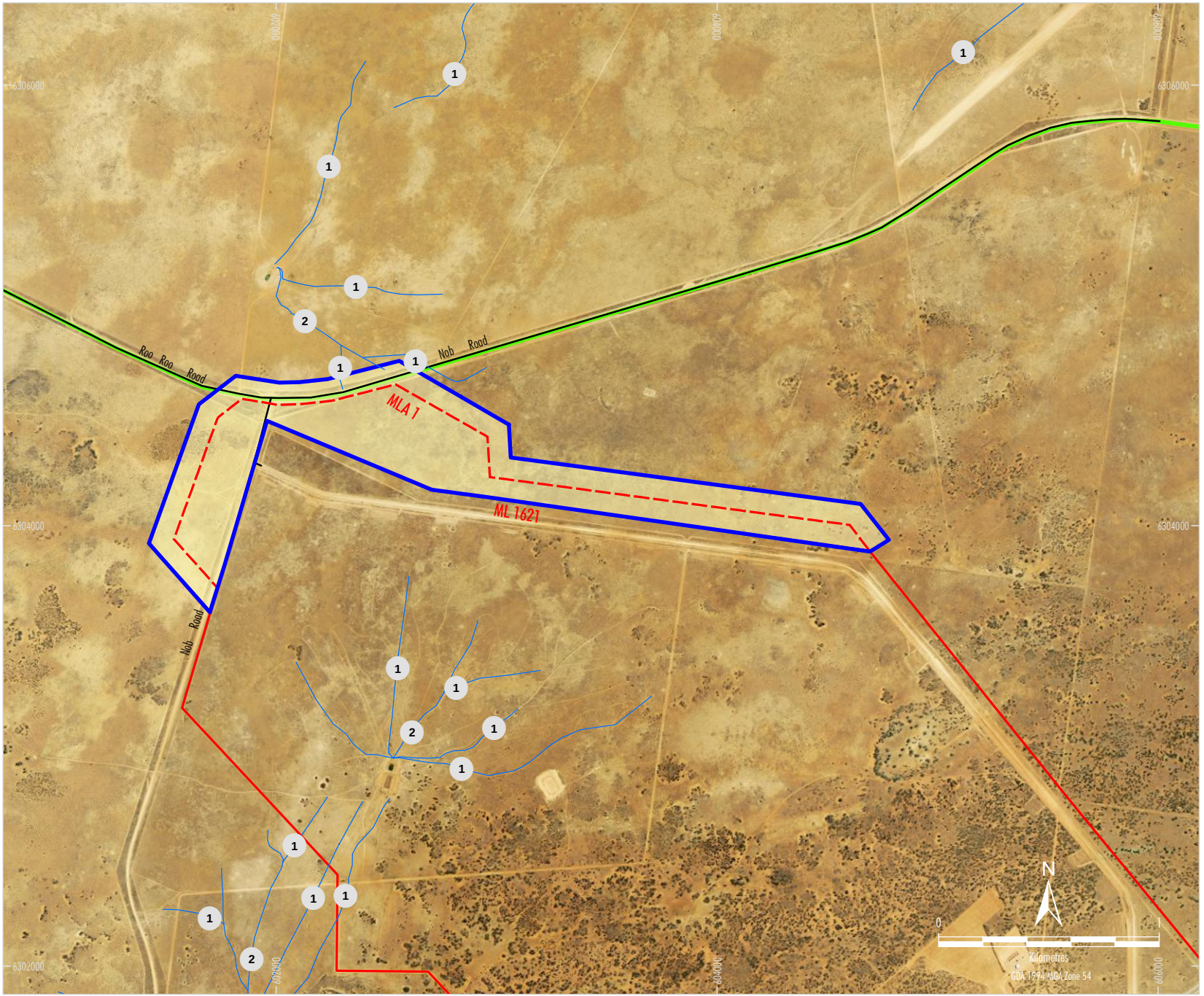
TRONOX

SNAPPER MINE

Regional Location

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

Figure 1



LEGEND

- Mining Lease Boundary (ML 1621)
- Mining Lease Application Boundary (MLA 1)
- Mineral Concentrate Transport Route and MSP Process Waste Transport Route
- Highway Access Road
- Site Verification Certificate Application Area
- Verified Non-Biophysical Strategic Agricultural Land
- 1 Strahler Stream Order Classification

Source: NSW Spatial Services (2019)
Orthophoto: Tronox (2018)

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SNAPPER MINE

Site Verification Certificate Application Area

Figure 2

CMA-19-08_SVAC_201C

Step 1: Identify the SVC Application Area to be assessed for Biophysical Strategic Agricultural Land

The SVC Application Area consists of MLA 1 (Figure 2), plus a 100 meter (m) buffer (in accordance with the Interim Protocol). The schedule of lands for the SVC Application Area is provided in Attachment 1.

The SVC Application Area is not located in a Strategic Regional Land Use Plan area. Based on the NSW Government regional mapping included in the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*, no regionally mapped BSAL (Figure 3) or Critical Industry Clusters are located within the vicinity of the SVC Application Area.

Step 2: Confirm Access to a Reliable Water Supply

The Interim Protocol includes a flow chart for verifying access to a reliable water supply and it is reproduced on Figure 4. An assessment in accordance with this flow chart has been conducted below to determine if a reliable water supply can be accessed from the SVC Application Area.

The *Reliable Rainfall in NSW* and *Groundwater Productivity in NSW* maps published by DPIE – Water are provided in Attachment 2. The SVC Application Area is located outside the DPIE – Water's Reliable Rainfall and Highly Productive Groundwater mapping and therefore the presence of a reliable surface water supply within 150 m of the SVC Application Area needs to be considered (Figure 4).

A reliable surface water supply is defined by the Interim Protocol as one of the following:

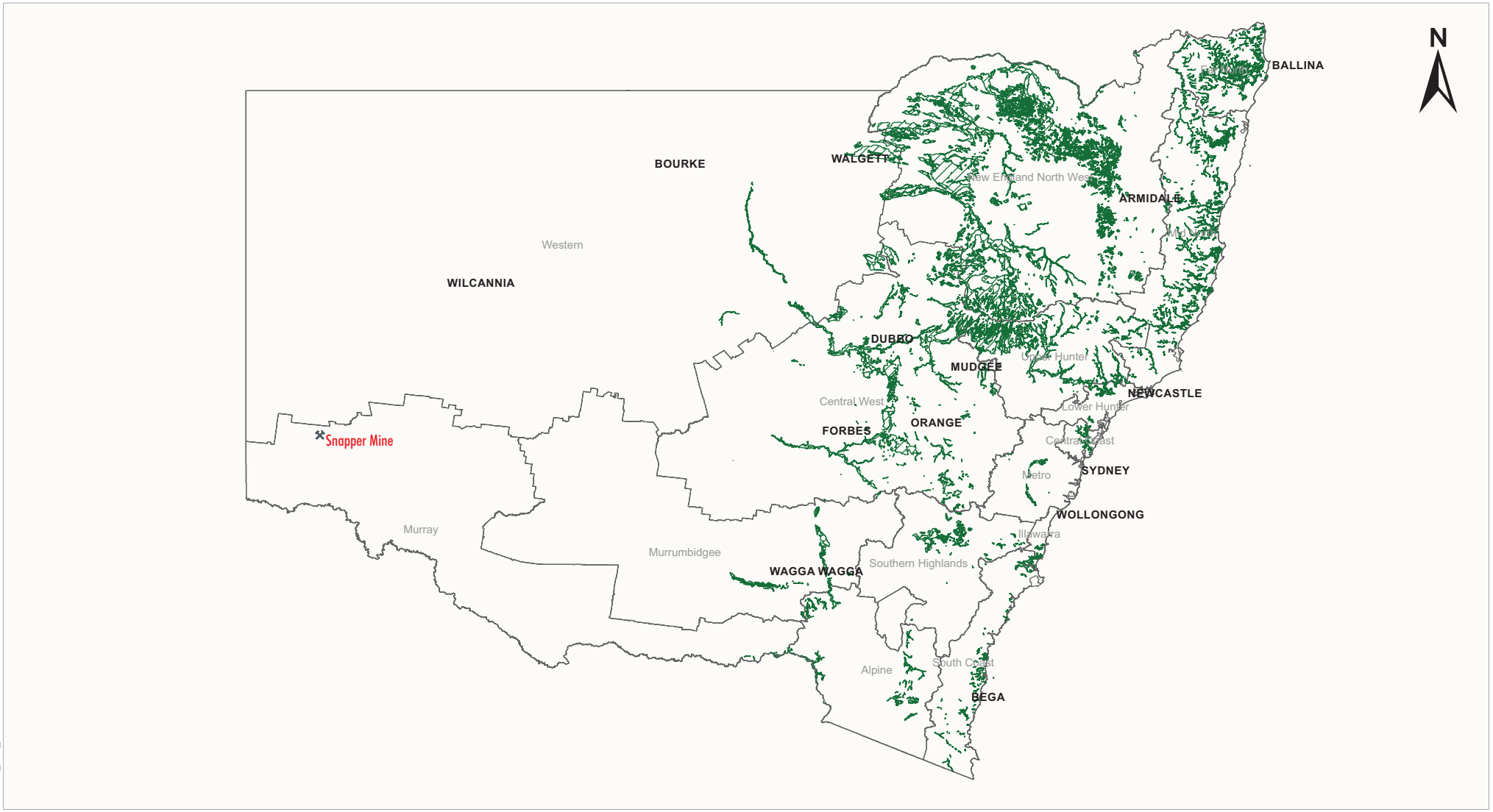
- a 'Regulated River' as defined within the relevant water sharing plan; or
- a stream of order 5 and above (using the Strahler stream order classification method) which is not a 'Regulated River' as defined within the relevant water sharing plan; or
- an unregulated river which flows at least 95% of the time.

The SVC Application Area lies in the lower Darling River system which extends from the Menindee Lakes to the junction of the Darling River and the Murray River at Wentworth, and is located in the *Water Sharing Plan for the Lower Murray-Darling Unregulated and Alluvial Water Sources 2011* area.

The Snapper Mine (located adjacent to the SVC Application Area) is located in an area with limited topographical relief and high evaporation rates, and there are no well-defined natural drainage channels within the Snapper Mine Area (Bemax Resources, 2007). Overland flow does occur during prolonged rainfall events and surface waters accumulate in topographic depressions and then evaporate or seep into the groundwater table over time (Bemax Resources, 2007).

Notwithstanding, several unnamed ephemeral drainage lines are mapped proximal to the SVC Application Area, and generally drain to the north and south (Figure 2). These drainage lines terminate in small topographic depressions outside the SVC Application Area (Figure 2).

The closest 'Regulated River' is the Great Darling Anabranch, which is located approximately 26 km to the west (Figure 1) and is located in the *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016* area. No 'Regulated River' is therefore located in or within 150 m of the SVC Application Area.



CMA-19-08_SVAC_001A

LEGEND

- Biophysical Strategic Land
- Planning Regions

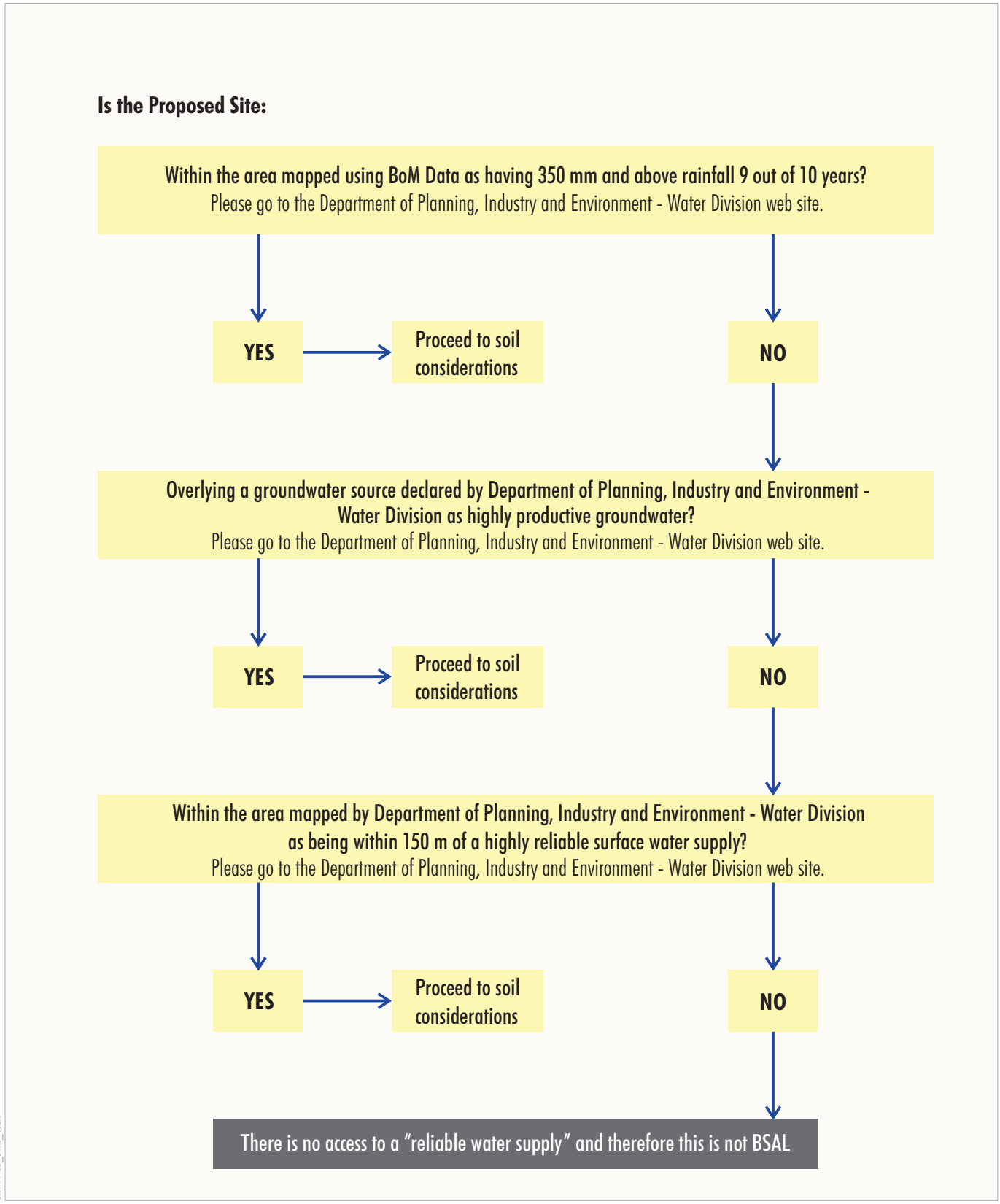
Source: NSW Governement (2019)

TRONOX

SNAPPER MINE

Biophysical Strategic Land Mapping in NSW

Figure 3



CMA-19-08_SVAC_002A

Source: After NSW Governement (2013)

TRONOX

SNAPPER MINE

Flowchart for Determining Access to Reliable Water Supply

Figure 4

There are no streams of order 5 and above, or unregulated rivers which flow at least 95% of the time, located in or within 150 m of the SVC Application Area (Figure 2)[1]. There are two watercourses with a Stream Order of 1 (using the Strahler stream order classification method) located within 150 m of the SVC Application Area (Figure 2)[1]. These watercourses are ephemeral and therefore do not flow for at least 95 percent of the time.

Given the above, there is no reliable surface water supply within 150 m of the SVC Application Area.

The SVC Application Area does not have access to a reliable water supply for the following reasons:

- the SVC Application Area is located outside the DPIE - Water's Reliable Rainfall mapping;
- the SVC Application Area is located outside the DPIE - Water's Highly Productive Groundwater mapping; and
- there is no reliable surface water supply within 150 m of the SVC Application Area.

In accordance with the Interim Protocol, as the SVC Application Area does not have access to a reliable water supply, it is not BSAL.

Steps 3 and 4: Soil Considerations

Given the SVC Application Area has been determined not to be BSAL in Step 2, Steps 3 and 4 have not been addressed in this SVC Application.

Consideration of Interim Protocol Requirements

Attachment 3 describes how this application, including the provision of associated digital and hardcopy data, addresses the requirements of the Interim Protocol.

Notification

Notice of Tronox's intention to lodge this SVC application were provided to the relevant leaseholders on 16 October 2019. Copies of these notices are provided in Attachment 4.

Conclusion

It is concluded that the land within the SVC Application Area is not BSAL. This finding is consistent with the regional BSAL mapping included in the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

If any additional information or clarification is required, please do not hesitate to contact me.

[1] The watercourses shown on Figure 2 are based on the NSW Government Hydroline Spatial Data (1.0): https://trade.maps.arcgis.com/apps/webappviewer/index.html?id=07b967fd0bdc4b0099fc5be45b6d1392 .

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

Yours sincerely,

Haakon Nielssen

Manager Environment AUS-Murray Basin

Tronox Mining Australia Limited

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

ATTACMENT 1

SITE VERIFICATION CERTIFICATE APPLICATION AREA
SCHEDULE OF LANDS

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

Site Verification Certificate Application Area
Schedule of Lands

Lot	DP
1926	763904
1927	763905

And all road reserves within the Site Verification Certificate Application Area shown on Figure A1-1.

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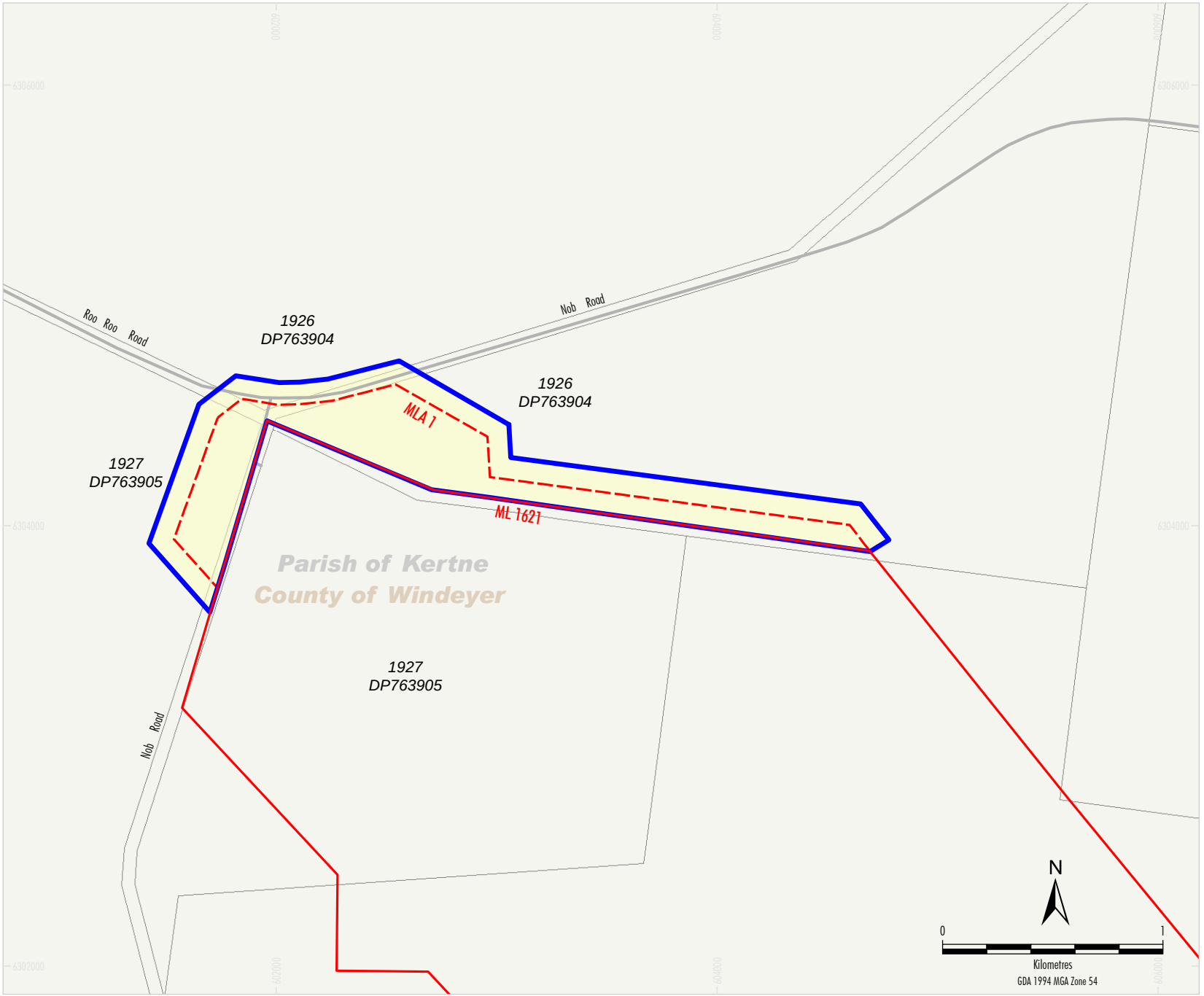
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com



LEGEND

- Mining Lease Boundary (ML 1621)
- Mining Lease Application Boundary (MLA 1)
- Highway Access Road
- Site Verification Certificate Application Area
- Verified Non-Biophysical Strategic Agricultural Land
- Cadastral Boundary

Source: NSW Spatial Services (2019)

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SNAPPER MINE

Site Verification Certificate Application Area

Figure A1-1

CMA-19-08_SVAC_202C

ATTACHMENT 2

DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT – WATER

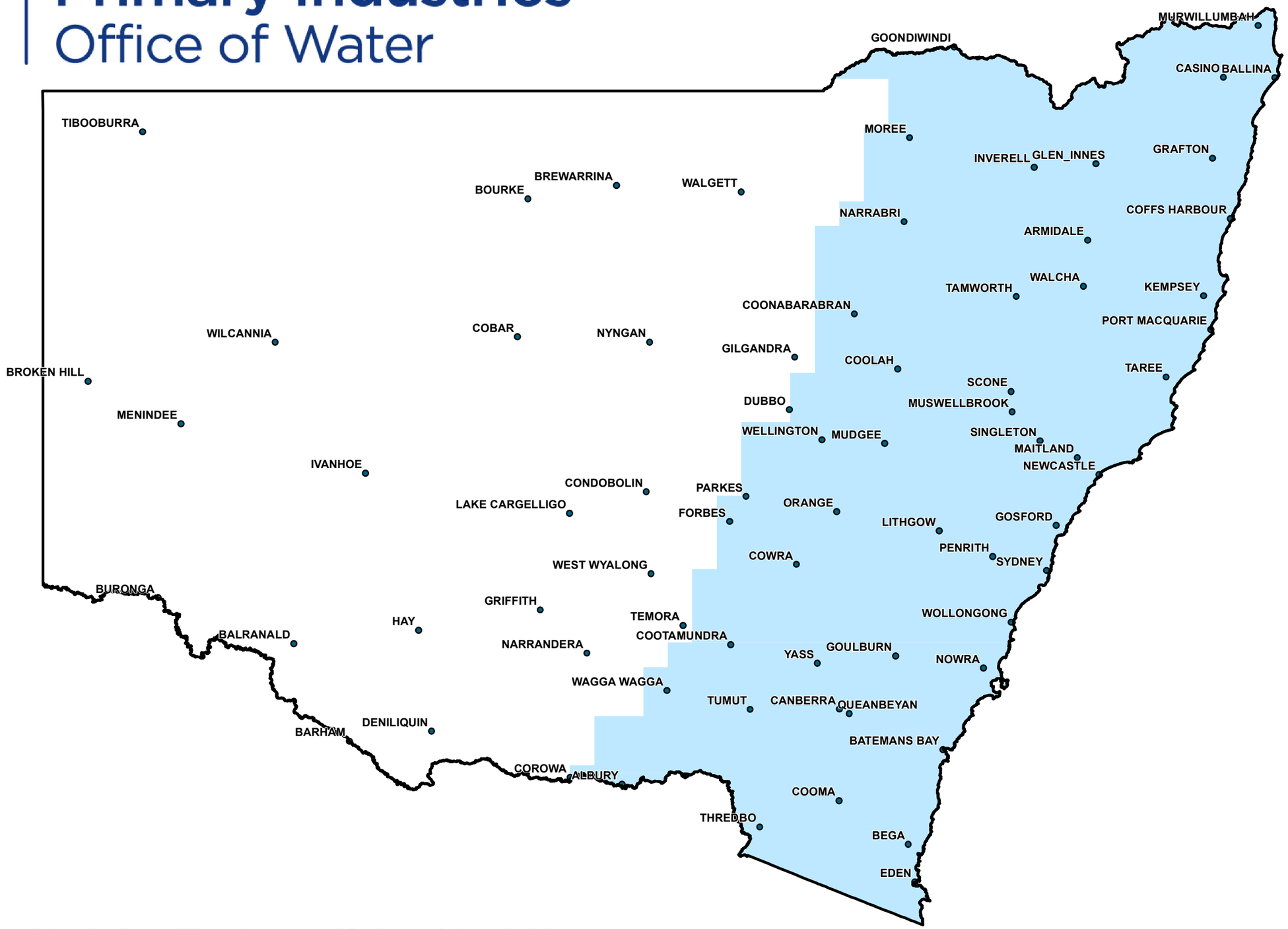
RELIABLE RAINFALL AND GROUNDWATER PRODUCTIVITY IN NSW MAPS

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

NSW GOVERNMENT

Department of Primary Industries
Office of Water

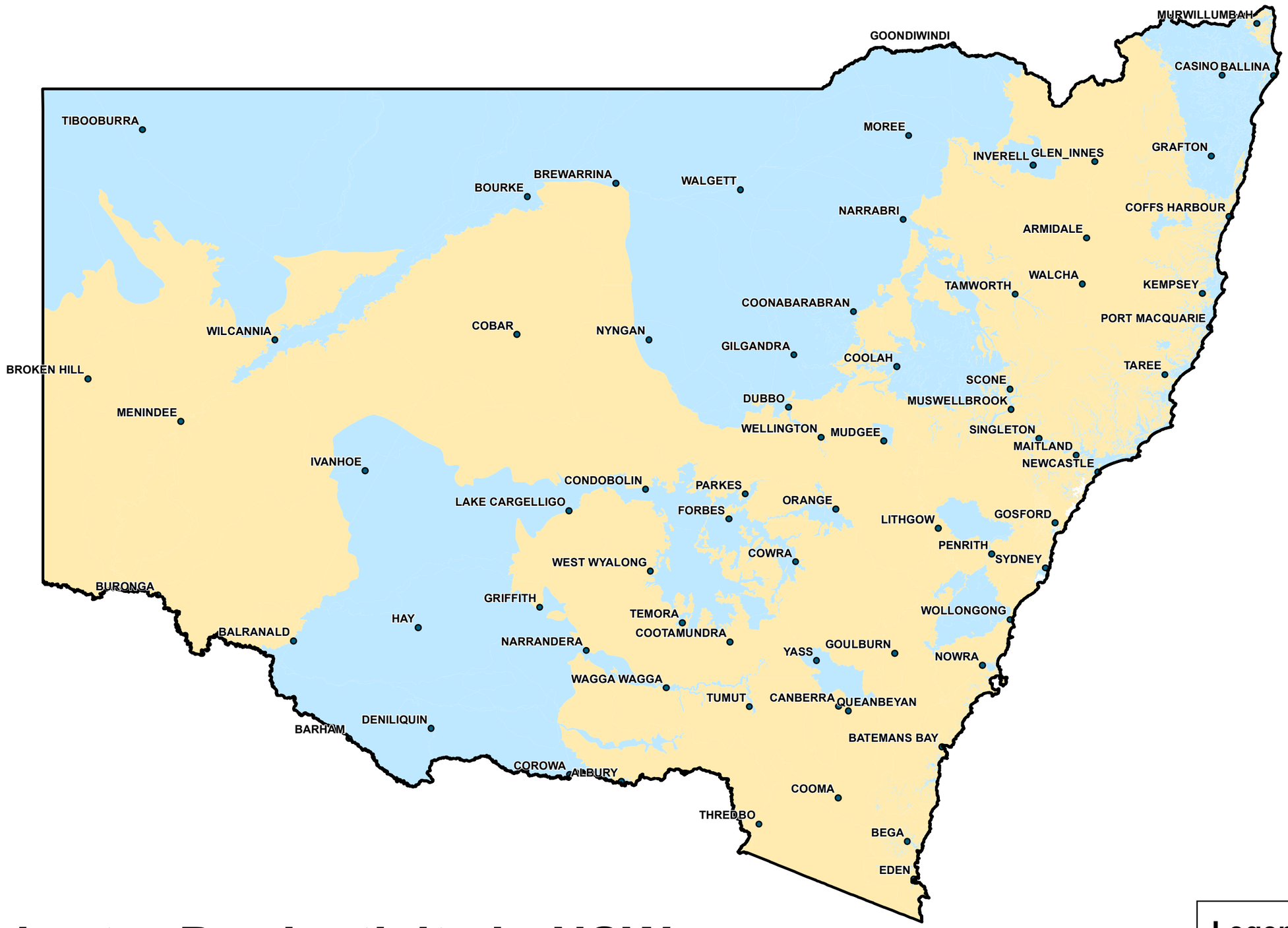


Reliable Rainfall in NSW

0 60 120 240 360 480 Kilometers

Legend

Rainfal 350mm or more per annum



Groundwater Productivity in NSW

0 60 120 240 360 480 Kilometers

Legend

- Highly Productive Groundwater
- Less Productive Groundwater

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ATTACHMENT 3

CONSIDERATION OF THE REQUIREMENTS OF THE
INTERIM PROTOCOL FOR SITE VERIFICATION AND MAPPING OF BIOPHYSICAL
STRATEGIC AGRICULTURAL LAND

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

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Interim Protocol Requirements

Interim Protocol Requirement	Consideration
Personnel	
Evidence provided by the applicant that a qualified soil scientist oversaw the verification assessment and signed off on the quality and extent of the work.	Not relevant as consideration of soil resources not required.
Maps	
Geographically accurate base map (at 1:25,000) of Application Area supplied. Spatial dataset (boundary of Application Area) supplied in GIS format.	A geographically accurate base map of the SVC Application Area is provided on Figure 2, which has been prepared suitable for presentation on an A4 page at 1:25,000. A spatial dataset in GIS format of the SVC Application Area boundaries has been provided with this application.
A soil map of the project area (at 1:25,000) supplied including all observation sites. Spatial dataset (soil map, observation sites and data reliability/data source diagram) supplied in GIS format.	Not relevant as consideration of soil resources not required.
A map of assessment area showing BSAL (at 1:25,000) and exclusion zones marked according to their BSAL limitation. Spatial dataset (boundary of BSAL areas) supplied in GIS format.	A map of the SVC Application Area showing the verified non-BSAL area (the entire Application Area has been verified non-BSAL) is provided on Figure 2. Figure 2 has been prepared suitable for presentation on an A4 page at 1:25,000. Exclusion zones are not relevant to this application. A spatial dataset in GIS format of the SVC Application Area showing the verified non-BSAL area has been provided with this application.
Maps presented in correct datum with appropriate symbology, north points, unambiguous legends, meaningful colour ramps, scale bars and sampling grid included.	Maps have been prepared in accordance with the Interim Protocol requirements.

Interim Protocol Requirement	Consideration
Metadata for spatial datasets have been provided.	Metadata for spatial datasets prepared in accordance with ISO 19115 has been provided with this application.
Lodgement of Site and Laboratory Data	
All site observations lodged on BSAL Soil Data Cards and all required field attributes completed correctly.	Not relevant as consideration of soil resources not required.
All laboratory data supplied in the SALIS Lab Data Template, appropriate test procedures identified and all relevant test results completed.	Not relevant as consideration of soil resources not required.
Model of Soils Distribution	
Where the proponent does not have access to the land, a model of soils distribution is provided.	Not relevant as consideration of soil resources not required.
Site Assessment	
The Project area of part thereof contains a contiguous area of at least 20 hectares which meets all BSAL conditions.	Not relevant as consideration of soil resources not required.
Sampling density is as specified in the Interim Protocol.	
Observation sites (check, detailed and exclusion sites) are relatively evenly distributed across the survey area.	
Each soil type identified has at least three detailed sites.	
All relevant data has been collected and provided for detailed sites as per the Interim Protocol.	
Detailed sites are representative of the soil type being assessed.	
Description of detailed sites is accompanied by a photograph of the site and of the soil profile being assessed.	

Interim Protocol Requirement	Consideration
Appropriate information collected for all exclusion sites.	Not relevant as consideration of soil resources not required.
At least two exclusion sites per polygon in excluded areas.	
Adequate number of check sites used to (i) allocate a site to a soil type and soil map unit and, (ii) confirm existing mapping.	
Cross Reference Assessment with OEH Soils Data	
Soil mapping and attributes appear consistent with OEH soil and landscape data and expected/anticipated soil types in the Project area or locally.	Not relevant as consideration of soil resources not required.

ATTACHMENT 4

SITE VERIFICATION CERTIFICATE APPLICATION
NOTIFICATION LETTERS

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

16 October 2019

Gary & Stacey Cullinan
Carstairs Station
8864 High Darling Road,
WENTWORTH NSW 2648

Via email: gandscullinan@activ8.net.au

RE: NOTICE OF APPLICATION FOR A SITE VERIFICATION CERTIFICATE

Dear Gary and Stacey,

Tronox Mining Australia Limited (Tronox), a wholly owned subsidiary of Tronox Holdings Plc, is planning to make an application to the Secretary of the Department of Planning, Industry & Environment (DPIE) for a Site Verification Certificate that land within Mining Lease Application 1 does not constitute Biophysical Strategic Agricultural Land (BSAL). As shown on the enclosed cadastral plan of this letter, a portion of Mining Lease Application 1 is located on Lot 1927, DP 763905, otherwise known as the 'Carstairs' property.

Tronox will give notice of the proposed application for a Site Verification Certificate to the landholder of Lot 1927 DP 763905 in accordance with Clause 17C(3)(a) of the New South Wales *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Application Details

Proponent:	Tronox Mining Australia Limited 337-381 Benetook Avenue MILDURA VIC 3500
Site Description:	The Application area is contained within Mining Lease Application 1 immediately adjacent to Tronox's existing Snapper Mine operation, within the local government area of the Wentworth Shire Council. A cadastral plan of the Application area is enclosed with this letter.

A copy of the application and any Site Verification Certificate issued will be placed on the DPIE website.

For further information, please don't hesitate to contact the undersigned.

Yours sincerely,

Haakon Nielssen
Manager Environment AUS-Murray Basin
Tronox Mining Australia Limited

16 October 2019

Mark & Lindy Withers
Woodlands Station
Silver City Highway via Wentworth
WENTWORTH NSW 2648

Via email: dalwoodman@bigpond.com, nicholas.pollard@bigpond

RE: NOTICE OF APPLICATION FOR A SITE VERIFICATION CERTIFICATE

Dear Mark and Lindy,

Tronox Mining Australia Limited (Tronox), a wholly owned subsidiary of Tronox Holdings Plc, is planning to make an application to the Secretary of the Department of Planning, Industry & Environment (DPIE) for a Site Verification Certificate that land within Mining Lease Application 1 does not constitute Biophysical Strategic Agricultural Land (BSAL). As shown on the enclosed cadastral plan of this letter, a portion of Mining Lease Application 1 is located on Lot 1926, DP 763904, otherwise known as the 'Manilla' property.

Tronox will give notice of the proposed application for a Site Verification Certificate to the landholder of Lot 1926 DP 763904 in accordance with Clause 17C(3)(a) of the New South Wales *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Application Details

Proponent:	Tronox Mining Australia Limited 337-381 Benetook Avenue MILDURA VIC 3500
Site Description:	The Application area is contained within Mining Lease Application 1 immediately adjacent to Tronox's existing Snapper Mine operation, within the local government area of the Wentworth Shire Council. A cadastral plan of the Application area is enclosed with this letter.

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For further information, please don't hesitate to contact the undersigned.

Yours sincerely,

Haakon Nielssen
Manager Environment AUS-Murray Basin
Tronox Mining Australia Limited

16 October 2019

Crown Lands - Far West Area
Department of Planning, Industry and Environment
PO Box 2185
DANGAR NSW 2309

Via email: western.region@crownland.nsw.gov.au

RE: NOTICE OF APPLICATION FOR A SITE VERIFICATION CERTIFICATE

To Whom It May Concern,

Tronox Mining Australia Limited (Tronox), a wholly owned subsidiary of Tronox Holdings Plc, is the owner and operator of the Snapper Mine, located approximately 85 km north-east of Wentworth in western New South Wales (NSW).

Tronox is seeking a Site Verification Certificate (SVC) for the land within Mining Lease Application 1 in accordance with Division 3 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.*

Tronox gives notice of the proposed application for a SVC in accordance with Clause 17C(3)(a) of the New South Wales *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Application Details

Proponent:	Tronox Mining Australia Limited 337-381 Benetook Avenue MILDURA VIC 3500
Site Description:	The Application area is contained within Mining Lease Application 1 immediately adjacent to Tronox's existing Snapper Mine operation, within the local government area of the Wentworth Shire Council. A cadastral plan of the Application area is enclosed with this letter.

A copy of the application and any SVC issued will be placed on the Department of Planning, Industry & Environment website.

Note that Tronox has also notified the relevant leaseholders of Lot 1927 DP 763905 (Western Lands Lease 4086) and Lot 1926 DP 763904 (Western Lands Lease 4090) of the proposed application for a SVC.

For further information, please don't hesitate to contact the undersigned.

Yours sincerely,

Haakon Nielssen
Manager Environment AUS-Murray Basin
Tronox Mining Australia Limited

Tronox Mining Australia Limited ABN 60 009 247 858
375-381 Benetook Avenue
MILDURA, VIC 3500, Australia

T +61 3 5025 4600 • F +61 3 5022 0100
www.tronox.com

16 October 2019

General Manager
Wentworth Shire Council
PO Box 81
WENTWORTH NSW 2648

Via email: council@wentworth.nsw.gov.au

RE: NOTICE OF APPLICATION FOR A SITE VERIFICATION CERTIFICATE

Dear Ken,

Tronox Mining Australia Limited (Tronox), a wholly owned subsidiary of Tronox Holdings Plc, is the owner and operator of the Snapper Mine, located approximately 85 km north-east of Wentworth in western New South Wales (NSW).

Tronox is seeking a Site Verification Certificate (SVC) for the land within Mining Lease Application 1 in accordance with Division 3 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.*

Tronox gives notice of the proposed application for a SVC in accordance with Clause 17C(3)(a) of the New South Wales *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

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Yours sincerely,

Haakon Nielssen
Manager Environment AUS-Murray Basin
Tronox Mining Australia Limited