

18 February 2020

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

Attention: Stephen O'Donoghue, Director, Resource Assessments
Andrew Rode, Senior Environmental Assessment Officer

Via email: donoghue@planning.nsw.gov.au, andrew.rode@planning.nsw.gov.au

**RE: TRONOX RESPONSES TO COMMENTS ON THE SNAPPER MINE NORTHERN
EXTENSION MODIFICATION SUBMISSIONS REPORT**

Dear Stephen and Andrew,

Tronox Mining Australia Limited is the owner and operator of the Snapper Mineral Sands Mine which is located approximately 85 km north-east of Wentworth and approximately 170 km south-east of Broken Hill in western NSW.

On 22 November 2019 Tronox submitted an application to modify Project Approval 06_0168 for the Snapper Mine Northern Extension Modification to the Department of Planning, Industry and Environment (DPIE). A Submissions Report for the Modification was subsequently submitted to the DPIE on 31 January 2020.

Tronox has since received correspondence from the NSW Biodiversity and Conservation Division (BCD) (within the DPIE), Crown Lands (within the DPIE), and the Manilla property leaseholders, which included comments on the Modification Submissions Report.

Please find attached Tronox's responses to the BCD, Crown Lands and Manilla property leaseholder's comments on the Modification Submissions Report.

Please don't hesitate to contact me if you have any queries or wish to discuss.

Yours sincerely,



Haakon Nielssen
Environmental Approvals Manager
Tronox Mining Australia Limited

ATTACHMENT 1

TRONOX RESPONSES TO COMMENTS ON THE SUBMISSIONS REPORT

Table 1
Tronox Responses to Comments on the Snapper Northern Extension Modification Submissions Report

Comment		Tronox Response
BCD		
1	<i>BCD Issue 1: Groundwater level monitoring could be improved by the installation of water pressure loggers measuring at daily or sub-daily intervals.</i> <i>We consider the groundwater monitoring frequency of monthly and quarterly groundwater level measurements should be increased to daily (or sub-daily). It is relatively inexpensive to install instrumentation to allow monitoring at daily levels, that can still be downloaded on a monthly or quarterly basis. Also see Issue 3 below.</i> <i>Recommend: Increase the frequency of groundwater monitoring to daily</i>	In accordance with Condition 2, Schedule 3 of Project Approval (06_0168), the approved Snapper Mine Water Management Plan¹ (WMP) was prepared in consultation with the NSW Office of Water (now the Natural Resources Access Regulator [NRAR]) and the Environment Protection Agency. Tronox conducts groundwater monitoring in accordance with the approved WMP. Tronox considers the frequency of the existing groundwater level monitoring program (i.e. monthly) to be suitable for detecting potential changes in groundwater levels, as the groundwater level changes at and surrounding the Snapper Mine are relatively minor and occur over relatively long-term time intervals (see Attachment A in the Modification Hydrogeological Review²). Further, the BCD has not provided any justification for why an increased frequency of groundwater level monitoring is required. Given the above, Tronox considers that the existing/approved groundwater monitoring program is appropriate.
2	<i>BCD Issue 2: The 2019 Hydrogeology Report provided no discussion of the Snapper Mine reverse osmosis plant or its management, which we consider to be an omission. In particular, no details are provided on brine treatment, volumes, storage or disposal and its potential effects on the environment (to surface water, groundwater or soils).</i> <i>We consider there is insufficient data presented on brine production (e.g. tonnes/annum) or disposal (brine produced by the reverse osmosis plant is approved to be disposed in the mine path with process wastes) and its effect on the environment.</i>	The Modification would not change the approved operations of the reverse osmosis (RO) plant or brine disposal and management. The RO plant is approved to produce up to approximately 50 litres per second of brine. The RO plant is currently operating at approximately 5% of its approved capacity³, and therefore brine production is currently lower than the approved rate. Brine produced by the RO plant is approved to be disposed in the mine path with process wastes (e.g. sand residues) behind the advancing mining operations, which is subsequently covered by overburden.

¹ GHD (2016) *Ginkgo and Snapper Mines Water Environmental Management Plan*. October 2016.

² GEO-ENG (2019) *Snapper Mine Northern Extension Modification Hydrogeological Review*, Pooncarie NSW.

³ Tronox (2019) *Snapper Mineral Sands Mine ML 1621 Annual Environmental Management Report 1st September 2018 – 31st August*.

Table 1 (Continued)
Tronox Responses to Comments on the Snapper Northern Extension Modification Submissions Report

Comment		Tronox Response
BCD (Cont.)		
2	<i>The proposed modification is likely to increase brine production and need for disposal, but insufficient data has been presented to enable meaningful assessment of this.</i> <i>Recommend: A Brine Management Report detailing volumes, disposal and monitoring protocols be required as a condition of consent.</i>	Disposal of brine in the mine path would have no significant impact on groundwater due to the high salinity of the groundwater (i.e. total dissolved solids in excess of 35,000 milligrams per litre in the upper aquifer). Given the above, Tronox considers the recommendation to include a condition in Project Approval (06_0168) requiring the preparation of a "Brine Management Report" unnecessary.
3	<i>BCD Issue 3: Monitoring bore GW036669 is located between the Snapper and Ginkgo mines (see Figure 3 in EIS Hydrogeology Report). Ginkgo Mine commenced in late 2005, Snapper Mine commenced towards the end of 2009.</i> <i>The Department's examination of WaterNSW monitoring data indicates that GW036669, which had been stable since 1990 (AHD=-34-36m), now shows a decline (~1m post 2010). Importantly there are greater fluctuations in two of the bore holes (holes 2 & 3) post-2010, whereas levels in bore hole 1 remained relatively constant.</i> <i>Recommend: Raw monitoring data to be supplied to the Department on request be a condition of consent</i>	Groundwater levels at bore GW036669 ('hole 1') are analysed monthly in accordance with the approved WMP. To date, groundwater levels at bore GW036669 have been stable (as noted by the BCD) and have not triggered the relevant groundwater trigger level for this bore (i.e. 21.6 m) in the approved WMP. As outlined in the approved WMP, remedial actions (developed in consultation with NRAR and relevant landholders) would be implemented if trigger levels are exceeded to allow groundwater levels to recover. Monitoring results from the Snapper Mine groundwater monitoring program are presented annually in the Snapper Mine Annual Environmental Management Report, which are available on the Tronox website (https://www.tronox.com/). Although 'hole 2' and 'hole 3' at bore GW036669 are not monitored as part of the approved WMP, monitoring results for government monitoring bores (including GW036669) are publicly available on the WaterNSW website (https://realtimedata.waternsw.com.au/). Given the above, Tronox considers the recommendation to include a condition in Project Approval (06_0168) requiring the provision of raw monitoring data to the BCD unnecessary.

Table 1 (Continued)
Tronox Responses to Comments on the Snapper Northern Extension Modification Submissions Report

Comment		Tronox Response
Crown Lands		
1	<i>Section 4.2.2 Rehabilitation and Land Use – Comment 6</i> <i>Will the proposed stripping by Tronox of the topsoil and subsoil of the overburden emplacement areas be stored on-site for use during the land rehabilitation and final landform? If not, what is proposed to happen to these soils?</i>	Yes. The topsoil and subsoil stripped from the areas associated with the temporary overburden emplacements would be stored in soil stockpiles for use during rehabilitation of the Snapper Mine, in accordance with the approved Snapper Mine Mining Operations Plan⁴ and Land Management Plan⁵.
	<i>The department notes the Acid Rock Drainage Assessment undertaken and the assessed and confirmed non-acid forming nature of the five major overburden units.</i>	Noted.
2	<i>Section 4.9 Mine Access – Comment 18</i> <i>The department would like to clarify which is the ‘northern access road’ on Figure 2 that will not be constructed for the Modification – is this the proposed ‘realigned’ Nob Road identified on Figure 2?</i>	The approved (but not yet constructed) northern access road is the small portion of ‘Highway Access Road’ shown to extend south from the intersection of Nob Road and Roo Roo Road into the northern portion of Mining Lease (ML) 1621 (Figure 2 of the Submissions Report). As described in Section 2.1 of the Modification Report, the northern access road would not be constructed for the modified Snapper Mine. The Nob Road realignment does not form part of the northern access road.
	<i>Figure 2 shows the Highway Access Road (HAR) and Mineral Concentrate Access Route as the main access for the Modification; is access to the Modification area immediately adjoining the HAR, therefore access will be using internal roads in the Mining Lease Application Boundary (MLA 1) only?</i>	Access to the Snapper Mine will continue to be provided by the ‘Mineral Concentrate Transport Route and MSP Process Waste Transport Route’ which enters ML 1621 on the eastern side of the Snapper Mine (Figure 2 of the Submissions Report). Access to MLA 1 would be provided by existing internal haul roads within ML 1621 (i.e. no separate access to MLA 1 is proposed as part of the Modification).
	<i>The department notes that even though the re-alignment of Nob Road will be outside of the MLA 1, if the works to re-align the road are included in the Modification, then an easement acquisition for the proposed new road casement will be required.</i>	Tronox is consulting with Crown Lands, the Wentworth Shire Council (WSC) and the relevant leaseholders regarding the Nob Road realignment and will obtain the relevant approvals under the <i>Crown Land Management Act 2016</i>.

⁴ Cristal (2015) *Snapper Mineral Sands Mine Mining Operations Plan*.

⁵ Cristal Mining Australia Ltd (2015) *Mine Site Land Management Plan Environment Management*.

Table 1 (Continued)
Tronox Responses to Comments on the Snapper Northern Extension Modification Submissions Report

Comment		Tronox Response
Crown Lands (Cont.)		
3	<i>If Crown land is involved in the proposal:</i> <i>1. All Crown Land and Crown Roads within a Mining Lease must be subject to a Compensation Agreement issued under Section 265 of the Mining Act 1992, to be agreed and executed prior to any mining activity taking place and within 12 months of Project/ Modification Approval. The Compensation Agreement may include conditions requiring the Mining Lease Holder to purchase Crown land impacted on by mining activity.</i>	Tronox is consulting with Crown Lands, the WSC and the relevant leaseholders regarding MLA 1 and will obtain the relevant approvals under the <i>Crown Land Management Act 2016</i> and <i>Mining Act 1992</i> prior to mining activities occurring within MLA 1.
	<i>2. All Crown Land and Crown Roads located within an Exploration Licence, where subject to exploration activity, must be subject to an Access Arrangement issued under Section 141 of the Mining Act 1992, to be agreed and executed prior to any exploration activity taking place.</i>	No exploration activities are proposed outside of MLA 1 for the Modification.
Manilla Property Leaseholders		
1	Rehabilitation <i>It appears from the Submissions Report there will be no final depression in Manilla Station. From 4.4.2 Rehabilitation and Land Use Response 5 it seems our land will be left; “safe, stable and non-polluting and would be integrated with the surrounding landscape” This is a big improvement on that proposed in the Modification Application and we thank Tronox for making those changes. Irrespective of that the land will be forever changed by mining.</i>	Noted.
2	Noise <i>We note “Tronox is committed to implementing noise mitigation measures at the Manilla Homestead”. There is however, no mention of the measures to be used. To make any real difference to the noise issue at Manilla homestead structural changes need to be made to the dwelling like those being currently quoted on (double glazing and under roof insulation blanket).</i>	In accordance with the <i>NSW Voluntary Land Acquisition and Mitigation Policy</i>, based on the results of the Modification Noise Review⁶, Tronox is not required to undertake any mitigation measures at the Manilla homestead. Notwithstanding the above, Tronox is continuing to consult with the occupants of the Manilla homestead regarding potential measures to minimise noise impacts at the Manilla homestead (which may include, for example, double glazing and under roof insulation). Tronox is committed to implementing noise mitigation measures at the Manilla homestead.

⁶ Wilkinson Murray (2019) *Snapper Mine Northern Extension Modification Noise Review*.

Table 1 (Continued)
Tronox Responses to Comments on the Snapper Northern Extension Modification Submissions Report

Comment		Tronox Response
Manilla Property Leaseholders (Cont.)		
3	Air Quality Response 16 <i>“Tronox considers that dust deposition on vegetation at the Manilla property would therefore also be due to regional dust sources and not operations at the Snapper or Ginkgo Mines” Notwithstanding that, you just have to drive along the mine haulage road to see there is a large amount of dust generated by the mining operation. Whilst “regional dust sources” are certainly contributing to dust deposition because of the current severe drought, when the drought breaks that will be significantly reduced. The mines however, will continue to generate substantial dust deposition.</i>	As described in the Modification Air Quality Review⁷, the Modification is expected to result in negligible change to the existing/approved dust deposition rates at the Manilla homestead. In addition, the Modification would not change the approved air quality impacts associated with the transport of mineral concentrate and MSP process waste along the Mineral Concentrate Transport Route and MSP Process Waste Transport Route as there would be no change to road traffic volumes associated with the Modification.

⁷ Katestone Environmental (2019) *Snapper Mine Northern Extension Modification Air Quality Review*.