

Michael and Frances Retallack
Millamolong,
Millamolong Road,
Mandurama
NSW 2792

18th February 2021

Name of Application: Cadia Modification 14
Processing Rate Modification

Our property Millamolong, is an immediate neighbour to Cadia, we are identified as property number 2133.

We **OBJECT** to the proposal to increase the approved production rate from 32 Mtpa to 35 Mtpa.

We **OBJECT** to upgrades to processing capacity to 35Mtpa which are not required.

We **OBJECT** to the proposed construction works on the NTSF and STSF.

Air Quality

For several years there has been a high level of community concern in regard to the long term risks to health resulting from the air borne pollution generated by CVO activities.

The currently identified ore reserve is 2900 dry tonnes, at a production rate of 32 Mtpa the life of the mine is in excess of 80 years. Therefore many residents exposure to dust will be lifelong, there will be a measurable impact upon their morbidity, particularly for vulnerable age groups such as infants and the elderly.

CVO's current air quality criteria (Appendix F Table 3-1) is determined in effect by PA 06-0295 and is based upon air quality standards in place at the time of the original approval 30 years ago. These standards did not consider fine particles which are more dangerous and travel further. This air quality standard is now obsolete and less onerous than standards expected by the World Health Organisation and the current NSW EPA impact assessment criteria. The current NSW EPA Impact Assessment Criteria are discussed in Appendix F Table 3.3.

CVO barely complies with the current air quality standards and definitely will not comply, even at the current production rate, with the planned 2025 NSW EPA requirements of PM_{2.5} annualised at 7 µg/m³ and over 24 hours at 20 µg/m³.

Regardless of the air quality criteria it is imperative that consideration be given to the health impacts of the activity. No threshold value for PM_{2.5} has been identified by the EPA that is not associated with health impacts. An Australian Environmental Guideline for Particulate Matter (PM_{2.5}) to Assist in Development and Planning Decisions (Capon, Wright), published in Public Health Research and Practice December 2019 Vol 29(4) discusses the relationship between incremental PM_{2.5} exposure, life days lost and increased risks of mortality. This study suggested an incremental increase of annual average PM_{2.5} concentration of 1.7µg/m³ would have a greater than 1 in 10,000 increased risk of mortality, a level of third party risk which is generally considered barely acceptable.

Appendix F, Air Quality Assessment Figure E.3 shows predicted annual average PM_{2.5} concentration boundary lines at 8 µg/m³ and 6 µg/m³. Clearly the incremental PM_{2.5} for the anticipated Cadia Valley Operation exceeds acceptable mortality risks to immediate neighbours (approx. 40 receptors), and only very marginally meets current EPA Guidelines for another 60. CVO is unlikely to reliably meet the 2025 target of 7 g/m³ for these receptors.

There have been three dust incidents since this Modification was opened for review (January 26 and February 12 and February 18). Cadia has repeatedly demonstrated the difficulty in managing the tailings dams in a way which complies with current Air Quality standards.

We request that:

- ***the designated Air Quality Criteria be updated to reflect the current EPA requirements,***
- ***Air Quality Criteria should be updated automatically as new standards are introduced.***
- ***CVO limit production or invest in dust reduction measures to comply with required air quality standards as they are introduced. There is no capacity, given current dust output to increase production.***
- ***a plan to reduce PM_{2.5} emissions be formulated to meet the EPA 2025 target of 7µg/m³.***
- ***irrespective of EPA guidelines an incremental operational dust emissions target be established based on mortality risk probability.***
- ***emissions from the vent system need to be reduced by suitable filtration or deflectors.***

Land Acquisition Criteria

Part of the NSW Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (NSW Gov 2018) describes the NSW Governments Policy (Ref App F 3.4) towards voluntary rights. Voluntary acquisition rights apply to any residence on privately owned land, work place on privately owned land or on more than 25% of privately owned land where there is an existing dwelling or where a dwelling could be built under existing planning controls.

Project Approval 06-0295 condition 17,18 restricts acquisition rights to residences on privately owned land or on more than 25% of privately owned land. This is the standard adopted by the proposed McPhillamys Mine being developed by Regis Resources at the headwaters of the Belubula River.

We request that:

- ***conditions 17 & 18 should be updated to the current Acquisition and Mitigation Policy of the NSW Government.***

Tailings

The existing NTSF and STSF were originally designed for a deposition rate of 27Mtpa. This rate was subsequently increased to 32Mtpa. The Morgenstern Review was highly critical of the operation, design and construction of the tailings dams. The outstanding opinion was that they were operated “without sufficient care”. Following the ITRB Review the existing NTSF and STSF were deemed dangerous and were shut down. As an emergency measure to maintain the financial viability of CVO the tailings have been directed to the open cut pit.

As a result of the pit operation there has been a reduction in water consumption, however some 2M ounces of gold reserves from a total of 40M ounces (5%) have been sterilized.

We object to the proposed modification of the NTSF and STSF for the following reasons:

- *The design does not address the high permeability of the dams into the aquifer underneath.* The NTSF and STSF are known to be leaking into the aquifer, continued use of the dams and the proposed increase in their height will exacerbate the rate of flow. EPA Solid Waste Guidelines require a maximum permeability of 1×10^{-9} m/s. Maximum permeability of well consolidated tailings would be in the order of 1×10^{-8} m/s, an order of magnitude less than EPA requirements. The tailings dams as constructed cannot comply with EPA requirements.
- *The information supplied is insufficient to understand what is actually being proposed.* Mod 14 specifies “either centreline or downstream lifts”. Figure 2.2 specifies buttressing at an angle of 3H:1V, however Section 2.4 refers to the slope being increased from 2.5H:1V to 2H:1V. However Cadia Newsletter January 2021, page 13, specifies a slope of 2H:1V. It would appear that there is uncertainty in regard to what is being built, further correspondence this week indicates a slope of 1.75H:1V. It is difficult to understand exactly what is proposed, the proposal is at best *misleading*. It appears the design actually uses elements of upstream, centreline and downstream construction. Hence it will require a management regime that considers a worst case upstream construction.
- *The proposed buttress slopes are simply too steep to rehabilitate.* The proposed buttressing has obviously been constrained by Panuara Road and the Mine Lease boundary rather than rigorous engineering and environmental and safety requirements. Whether the slope is 1.75:1, 2:1 or 3:1 a slope of this scale cannot be rehabilitated in a high rainfall area, any top soil or clay will simply wash off and we

will be left with an unstable rock scree. This slope is most unlikely to meet ANCOLDs 1000 year sustainability requirements.

- The total tailings storage facility for the life of the ore body is approximately 2900MT. The NTSF, STSF and the Pit have a combined capacity of approximately 650MT. *The existing dams are structurally flawed and are contaminating the ground water*, together they represent less than a quarter of the ultimate storage required. The proposed repairs will make the environmental outcome worse, the proximity to Panuara Road is inappropriate and likely hazardous to the public and will result in significant degradation to the visual amenity.
- The proposed *modification does not comply with ANCOLD (2019) 5.1.3, 1:100 year and 72 hour storm allowance for required storage capacity*. Of particular concern is the STSF Seepage Reclaim Pond which is required to be double its current capacity. There is no information on where this will be located and it is difficult to see how it could fit within the current consent boundary.
- *There is no fully costed Closure Plan as required by ANCOLD Guidelines on Tailings Dams (2019) Section 9.2, Safe Storage for 1000 years*, see below.
- *The proposed production increase would only become effective in 5 years time, 2025 hence its immediate financial impact is immaterial.*
- Increasing the rate of production over the remaining mine life increases the amount of tailings height required for storage, reduces the effective consolidation period and requires a larger higher stressed structure. Based on the current approved production rate of 32 Mtpa, the TSF would only require a capacity of 320 MT, far less than the proposed 362.7 MT as per Table 2.2 Indicative Ore Processing & Tailings Deposition Schedule.

We request that:

- ***there should be no increase in the storage capacity of the NTSF and STSF over and above what is required for the currently approved production level.***
- ***the NTSF and STSF should be repaired in such a way that they can be rehabilitated and are stable as required by ANCOLD closure requirements (refer below).***

Closure Plan

There is no fully costed Closure Plan as required by ANCOLD

“Decommissioning and rehabilitation options should be evaluated early in the life of the project. A Closure Plan should be prepared, and costed, as part of the initial project and included in economic, social and environmental analysis of the project viability. The Closure Plan should then be kept live and regularly reviewed and updated as the project develops through design, construction, operation and potential changes in scale and direction.” Section 9.0 ANCOLD Guidelines on Tailings Dams July 2019.

No consideration should be given to building a tailings dam if you don't know how it will be closed. Tailings dams are required to be built in such a manner as to be stable for 1000 years. Clearly this is not the case at CVO.

Of particular concern is:

- the ability to fit sufficient tailings storage in a stable land form within the area available to CVO;
- the slope of the tailings dams needs to be suitable for rehabilitation and revegetation and is required to be a stable land form for 1000 years;
- the NTSF and STSF are currently seeping into the ground water due to the high permeability of the base. This seepage needs to be stopped and a permanent solution found;
- the ability to perform rehabilitation of the dam surface whilst working within acceptable dust and safety criteria;
- there is no safety zone between the public access road and the tailings dams. The proposed slope of the wall may result in a public hazard in the event of seismic activity or storm inundation. Consideration should be given to relocation of the road;
- in its 2019 Annual Report Newcrest disclosed a rehabilitation provision of A\$388 million, this is intended to cover all mine operations around the world. Looking at the scale of works required at CVO in order to comply with ANCOLD and environmental requirements we believe this appears inadequate;
- the closure plan should be fully costed and appropriate deposits held in trust to ensure the site can be fully rehabilitated in the event Newcrest became insolvent;
- the site needs to be rehabilitated aesthetically. An important part of the social license is the visual impact of the mine; and
- the lack of a complete and fully costed closure plan damages Cadias social license to operate.

We request that:

- ***a detailed and complete Closure Plan be prepared and properly explained to the community; and***
- ***this Plan must be fully costed and appropriate deposits held in Trust, such amounts to be reviewed as the site develops.***

Water

The proposed modification to 35Mtpa increases the water requirements for the CVO site.

Commissioning of the NTSF and STSF will put more demands on the amount of water required due to evaporation and seepage / leakage. The last few years have been marked by water shortages for all members of the community. Shortage of water is currently a major constraint in development of further ore reserves in our region, (proposed McPhillamys mine near Blayney). In the interests of the environment and broader community a fair and sustainable level of water sharing needs to be established. We believe that this level is probably that required for 30 Mtpa (ie less than the current approved rate

of production). The purpose of setting production levels is to ensure that the business operates within sustainable and responsible parameters, rather than limited resources being stretched to meet a random short term economic goal driven by executive compensation and short term shareholder returns.

Purchasing Belubula River water entitlements downstream and extracting upstream has negative effects on the health of the river in our district.

We have grave concerns for the health of the endangered platypus and Spotted Murray Cod that still exist in multiple locations in our stretch of the Belubula.

On Monday 25th January 2021, Cadia notified us that 4-5ML of contaminated process water had been pumped into Cadia Angullong Creek over a 36 hour period. This incident raises a number of issues:

- the competence of a mine operator that doesn't notice a significant ongoing spillage for 36 hours. It is only luck that this water happened to be "slightly contaminated";
- the procedures followed having identified the spillage. We were not notified until several days after the incident and had no opportunity to remove livestock that might drink from the creek; and
- ongoing pollution of the Belubula to the detriment of platypus, murray cod and other species.

We request that :

- ***Cadia should be required to include the Belubula River in its assessment of wildlife impacts and surveys; and***
- ***the area affected by the pump station should be subtracted from the biodiversity offset area and the pump station should be redesigned to minimise its environmental impact.***

Environment

We refer to Mod 13, Conditions 38,39,40 and 41 which require a Land and Biodiversity Plan. It is most concerning that after some 20 years of operation the proponent has not adequately addressed this requirement. It is completely inappropriate to even consider progressing to Mod 14 without finalizing the special conditions of consent for Mod 13.

Belubula River impacts need to be considered in the context that every tailings dam in the Blayney Shire (Browns Creek and Junction Reefs) is leaking AMD into the river. The tailings dam for the proposed McPhillamys mine will be built on top of the headwaters for the Belubula – this is also expected to leak. These dams will leak forever, pollution will accumulate. Once they start leaking we cannot stop it. We know Cadias dams are leaking into the groundwater, if there must be tailings dams they should be required to be built to the highest possible standard. The NTSF and STSF do NOT meet current EPA seepage requirements and have not been built to current standards.

As part of its operation CVO has been required to purchase Biodiversity Offsets. There is a habit of buying them elsewhere and a culture of “oh well we will just buy more”. This attitude suggests to the community a complete disregard for the local environment and the damage caused by the mine. There is an opportunity to demonstrate a commitment to the rehabilitation of the area by locking up riparian areas owned by Cadia and creating biodiversity offsets within the site.

As a general principle of intergenerational equity we should seek to leave the environment better than we found it.

We request that:

- ***the Mine Closure Plan needs to address the issue of ongoing permeability and seepage from the NTSF and STSF. These facilities have not been built to current EPA ground water permeability standards; and***
- ***Biodiversity Offsets should so far as possible be created within the Newcrest owned land as a priority over purchasing elsewhere.***

Financial Justification

It is claimed Modification 14 will result in an additional 35 jobs. An immaterial increase. Our district is already at full employment levels, we are experiencing one of the highest rates of growth in demand for housing in NSW, driven not only by COVID but other industrial developments in the region and a strong farming and medical community. An additional 35 jobs will have no measurable impact on the local economy and *does not* represent a financial benefit.

Before Newcrest uses the creation of 35 relatively low skilled jobs as an excuse for further polluting our environment perhaps it should bring its accounts processing and IT departments back from India. Morally we should be working to keep those skilled jobs in the country. You should not be entitled to claim job creation as a benefit when you have shipped an entire management function offshore!

Newcrest is currently benefitting from an extraordinary combination of record high gold prices and the lowest interest rates ever. A financial environment more attractive to Newcrest than any scenario imagined at the time of their original plans to develop Cadia. Newcrest is clearly driven by short term profit motives, benefitting the executive team in Melbourne which receives a significant proportion of their compensation through share and option schemes. We believe the decision making process is being distorted by short term executive compensation packages. Short term greed at the expense of long term sustainable and profitable operation.

It is in all of our interests for Cadia to operate for its full mine life, realising sovereign wealth for Australia and the region for decades to come. Newcrest has come uncomfortably close to destroying this resource and their own organisation, 2 million ounces of gold have been sterilized because of a “lack of care” in the operation of the tailings dams.

It is not apparent that there is a long term plan to maximize the Cadia Valley resource. A production plan needs to be carefully developed that looks at the existing 50 year resource and utilizes spent areas for tailings and waste and minimizes sterilization of ore resources.

We note that to date Cadia has received only one fine for dust exceedences, \$15,000. It is actually more economically rational for CVO to minimise dust mitigation and incur an occasional fine. How can we in an educated wealthy society accept this behaviour. It is time our regulators stepped up and enforced the legislation. So long as Cadia believes the regulators will not act they will continue to profit at the expense of their neighbours lives. This matter needs to be addressed in the short term. Cadias license expires in 2031, if Australia is to realise the value of the resources we have and CVO is to extend its mine life the community MUST be protected.

At present CVO is vulnerable to a major class action from more than 100 receptors adversely affected by its dust.

Frequency of Modifications

The original EIS was published in 2009. Within 12 years we are at Modification 14! Either there is a complete lack of forward planning at Newcrest or this is a strategy to creep changes through, either way this is not acceptable.

Constant modifications undermine community confidence in:

- the management of Newcrest
- the planning and management of CVO
- the Department of Planning Industry and Environment.
- The EPA

Social License to Operate

For a period there was a level of acceptance that the mine was here and there are some community benefits. However it is increasingly apparent that those benefits come at a disproportionate cost to a few.

Neighbours requests to deal with issues are often ignored: night light pollution, dust, traffic speed.

Knowingly operating the mine outside of Australias dust standards for years is simply not acceptable and ignores the morbidity implications of reduced life expectancy. We need to work together and the mine needs to acknowledge that it is damaging the life expectancy of its neighbours and their property values. The quid pro quo is that we quite reasonably expect it to operate to the highest possible health and safety standards and certainly in compliance with Australian regulations.

CVO has a very high turnover of senior staff. Relationships built over years with local management and an “understanding” of local pressure points have been lost with a churning of management. The current team is relatively new and the community believes is being pushed to maximise production by operating targets set in Melbourne. There is a disconnect between Melbournes financial imperative and what the community will tolerate. As we come towards the end of the current Mine Licence, 2031, and CVO looks to expand its operational footprint with additional storage facilities, Newcrest would be well advised to listen to the local community. The communities willingness to bear the personal costs for the benefit to the region is at breaking point.

In closing we would like you to consider this statement in a paper by by L Tyler and J Heyes from BHP (delivered at The Mine Closure Conference, 2019, Perth Australia);

“Mining is the bedrock of our society. Its presence is felt in everything we touch. It delivers the products that we need to make the world work. Yet, at the same time, social acceptance of mining continues to be a challenge. Industry must develop trust with the communities in which we operate. If we damage the environment through operations but fail to remediate it, we will lose trust and lose our social license to operate.

To conclude, expectations of the resources sector have changed. As scientists and engineers, we must rise to the challenge and ‘think big’, otherwise we risk our social license.”

We declare we have not made any financial contributions or other contributions to any political party in the past two years.

Dated February 18th 2021
Michael Retallack and Frances Retallack
Millamolong,
Millamolong Road
Mandurama 2792
0419 413 317