

Submission
No 155

**INQUIRY INTO CURRENT AND POTENTIAL IMPACTS OF
GOLD, SILVER, LEAD AND ZINC MINING ON HUMAN
HEALTH, LAND, AIR AND WATER QUALITY IN NEW
SOUTH WALES**

Name: Name suppressed
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Partially
Confidential

Submission to the inquiry into the current and potential impacts of gold, silver, lead and zinc mining on human health, land air and water quality in NSW 05 September 2023.

Thank you for the opportunity that this inquiry presents.

The local Newcrest Cadia Valey Operations mine has been a large source of stress for our family and many others, particularly this year as we realise the impacts that its excessive and toxic dust emissions have been having on our health. We strongly believe that the current structures around environmental monitoring and penalties are completely inadequate and significant changes are needed within approval frameworks, monitoring requirements and penalty provisions.

Addressing some of the specific terms of reference for the inquiry:

a) The impact on the health of local residents and mine workers, including through biomagnification and bioaccumulation.

Key points:

- My family have had health testing showing high levels of copper, selenium and nickel, along with a concerning mixture of other heavy metals and elements including lead, cobalt and molybdenum, which we believe have resulted from the dust from mining activities ending up in our tank water.
- We have had a wide range of negative health impacts which are associated with these elevated levels of heavy metals.
- These issues, on top of the physical and mental health impacts, have meant additional time off work and school, financial impacts of medical visits and procedures as well as funds spent on filtration, and general deteriorated lifestyle.

Our family became involved in a local water testing program after some friends found unacceptable levels of heavy metals and other elements in their tank water and suggested that we have ours tested as well. The water testing had come about as a result of concerns over the excessive levels of dust pollution being emitted by the local Cadia Valley Operations mine. Dust which lands on roofs as well as everywhere else and ends up accumulating in household water tanks. We live some 13.5km Northeast from Cadia Valley Operations and did not initially expect that we would have a problem. Our house and tank are only 10 years old.

Our tank water testing in February 2023 was completed on a small sample of 7 elements and showed unacceptable levels of lead, as well as other unexpected and disturbing results around nickel, arsenic and copper levels. At this point we started collecting drinking water from my parent's house in town. Further, more extensive testing has shown several other heavy metals and elements, mostly at acceptable levels, but the mixture of which is highly concerning and the potential impacts not known. Our water PH levels were also very acidic having been tested at 5.0 and 5.2 within different samples.

We will not know how high the heavy metal levels got to in our bodies, as it was a few weeks after we stopped drinking our tank water before we started getting blood and urine tests completed. This was in part due to the reluctance of the first GP I saw. As a family our results showed high levels of copper, selenium, nickel and disturbing though 'acceptable range' by then levels of lead. Lead levels

in blood reduce very quickly over a 4 week period, but it is widely understood it remains within the body replacing calcium in bones and teeth. The worst results were for our 4 year old son.

Our 4 year old had for well over a year, been complaining regularly about his stomach, had eczema forming around his mouth and also had escalating behavioural issues which we had not been able to obtain a diagnosis for. It had been described as 'emotional dysregulation' by a psychologist. When we stopped drinking the tank water and started rinsing with bottled water after showers his eczema cleared up within a few days, his stomach complaints disappeared within 2 months, and his 'emotional dysregulation' or severe irritability has significantly improved after 3-4 months.

All 4 family members have had a significant increase in asthma severity over the last 1 – 2 years.

The 3 family members tested have shown low iron levels at different times, despite high levels of iron in our water. All 4 of us have also shown low zinc levels. My understanding is that copper interferes with the body's ability to absorb both iron and zinc, and Cobalt also interferes with Iron absorption. I would highlight that none of us are vegetarians.

Various through the household over the last 1-2 years we have had heightened stress and anxiety levels, fatigue, brain fog, muscle and joint pains, acid reflux, irritable bowel symptoms and sudden onset high blood pressure along with increased asthma and allergy symptoms and numerous rolling cold and flu like illnesses. While accepting that much of this may have other potential causes, they could also have been caused or at the very least exacerbated by the contamination found in our household water tank. Much of this has begun to improve after a reasonable amount of time off tank water.

Our family have had increased doctor visits and medical tests, costly regular psychologist and occupational therapy sessions and both my partner and I have been sent for colonoscopies to try and determine any cause for our low iron levels. In recent times we have also been attending numerous community meetings held by Cadia Valley Operations as well as those of our concerned community members and spending a lot of time researching these health and environment issues. This is all additional time spent away from our young family and adds to the stress load.

This has impacted our family's health both physically and emotionally, caused increased time off work and school and been very costly financially.

To date there has been no acknowledgement from Cadia Valley Operations that they are contributing to any household water tank contamination. They have however been supplying our bottled drinking water since late February 2023. We are aware that they have more recently been declining this arrangement for new requests from concerned local families who rely on tank water.

b) the impact on catchments and waterways, affecting both surface and groundwater destined for local and town water supplies, including rainwater tanks, and on aquatic biodiversity.

As note above, we believe our household rainwater tank has been impacted by the dust pollution emitted by the Cadia Valley Operations mine.

Our property is also located within the city of Orange water catchment area, and I have concerns that some of the mining dust contamination would then also been running into local waterways and potentially have some, albeit significantly diluted, impact on the town water supplies.

It is our understanding that town drinking water is not regularly tested for this type of contamination.

We are aware that Cadia Valley Operations have completed a 12 month dust analysis program and they have sent a 'fact sheet' to the community advising that there is no evidence that they are contributing to the local dust and therefore water contamination.

We were provided a copy of the ANSTO dust report and attended the 2 hour presentation at Cadia Valley Operations from the ANSTO professors. The 'fact sheet' presented by Cadia Valley Operations is misleading and does not address the issue of the mining dust from ongoing operations or from their tailings area.

The ANSTO professors confirmed that the report has only addressed particle matter size PM2.5, or 2.5 micrometres. Particles of this size we were advised come mainly from burning activities such as vehicle engines and wood fire heaters, with some small amounts found in soil. This particle size is invisible to the human eye. The report confirmed that the volumes of this size particle in our local air is not considered concerning to human health over the previous 12 month period of wet weather and good ground cover growth. It also recommended that further studies were needed as the data collected for this report was the absolute minimum.

The larger particle sizes which would be created by mining activities, and which can clearly be seen by the human eye being emitted from the main CVO vent shaft and from time to time lifting from the tailings area, were not collected and analysed as a part of this report.

During the zoom meeting with the ANSTO professors I asked if the larger particle size would be expected to travel over 10 or 20kms the answer was yes, it would easily be travelling that far or further depending on the wind conditions. There was no acknowledgement of this within the paraphernalia Cadia Valley Operations have distributed to residents. This is only one example of the misleading behaviour we have seen from Cadia Valley Operations.

c) The impact on land and soil, crops and livestock, including through biomagnification and bioaccumulation.

We have not yet had any of our soil tested, including our vegetable garden. I am however reluctant to eat much of our home grown produce since learning of the issues with our dust and water, which we often use to water our vegetable garden.

Testing is an expensive arrangement on top of the additional costs we have been covering this year relating to additional filtration, medical costs and water and health testing.

d) The adequacy of the response and any compliance action taken by the regulatory authorities in response to complaints and concerns from communities affected by mining activities.

Key Points:

- The EPA phone and email lines handling resident's complaints are completely inadequate, resulting in no action being taken despite several complaints. Residents were told that issues with tank water are a maintenance problem and cleaning their tanks was their own responsibility. It was a significant discouragement for future complaints.

- The regulatory action of a \$15,000 fine for dust pollution is utterly pathetic in its ability to affect any sort of changed outcomes from an organisation the size of Cadia Valley Operations, or any other mining business in Australia.

We are aware of several complaints made to the EPA complaints line about the dust emissions from Cadia Valley Operations and this involving concerns over residents drinking water being impacted. The generic response to these complaints was that residents are responsible for their own water tanks and the EPA can provide maintenance guidelines.

The EPA response was completely inadequate on many fronts:

- There was a refusal to acknowledge the core issue that the heavy metal and toxic mineral laden mining dust was landing on our neighbourhood and being ingested by residents,
- It did not take into account that many of these heavy metals and toxins are not easily removed by standard filtration systems, Nickel being a prime example,
- There was no follow up action despite several complaints from different families,
- This continual stone walling by the EPA complaints line was a significant discouragement for further complaints and discouraged additional residents from complaining.

Even after the EPA were forced to listen to residents after the presentation of health information from local residents, it is not always possible to get an email response from their engagement email box. For example, I emailed the engagement team about concerns from 3 local families who had spoken to myself and my partner, advising that they had contacted Cadia Valley Operations about the provision of safe drinking water and had been declined this service. We had thought from the initial draft licence amendments put out by the EPA that there was going to be pressure on Cadia Valley Operations to provide clean drinking water to all concerned residents relying on tank water, however this did not eventuate, and I was unable to get a response from the EPA on this matter.

We are aware through media reports of the fine which was applied to Cadia Valley Operations in 2022 relating to dust pollution. I find it difficult to put into words how inadequate a \$15,000 fine is when charged to a business with the size and profit generating capacity of Newcrest, and Cadia Valley Operations. It is not just less than a slap on the wrist, it is an absolute nothingness.

e) the effectiveness of the current regulatory framework in terms of monitoring, compliance, risk management and harm reduction from mining activities.

Key Points:

- The self reporting structure around compliance obligations is not working. Cadia Valley Operations never had any intention of reporting the extremely excessive dust being emitted from their dust vents, nor the multiple significant dust events from their failed tailings dump area.
- The monetary limit on fines which the EPA is able to impose makes them effectively meaningless.
- The water sampling program completed by the EPA has utilised seriously flawed methods of tiny samples from the tops of tanks, which completely missed the majority of the problem, that settles at the bottom of tanks and is drawn by pipes from near the bottom of tanks for household consumption. Incorrect data collection leading to incorrect assumptions that there is no issue with tank water, just issues with the pipes in homes new and old.

- The lack of a truly independent, government agreed environmental group to oversee the emissions monitoring has meant that the dust monitors utilised around Cadia Valley Operations are far too few, and with none sitting within the predominant wind direction which is towards the largest local populace.

g) the effectiveness of New South Wales Government agencies to regulate and improve outcomes including:

i) the measurement, reporting and public awareness

The response to the health concern of residents around Cadia Valley Operations by the NSW Department of Health has been woefully inadequate.

There has been a refusal to alert local residents or GPs to any health concerns. Instead we are aware that there was a video conference in July instructing the local GPs to stop allowing medicare funded heavy metal testing. This is despite several residents having demonstrated high heavy metal loads after contact/ingestion via tank water.

I was advised by a senior local NSW Health staff member to contact the Primary Health Network as an avenue to have GPs informed of the local health implications. I contacted the Primary Health Network on April 3rd 2023 via phone and email and have never received any response.

The EPA also have been unwilling to widely distribute any form of warning to local residents around the potential hazards in our tank water. While they have held 2 community drop in meetings, these were called very quickly and with limited local media advices. Most of the 1000+ residents affected by this issue would have remained unaware. We fear that many of these residents are still unaware of the health risks and small children are still drinking contaminated water.

iii) the ability to ensure the health of at-risk groups

All local residents within 20 km of Cadia Valley Operations who are reliant on drinking tank water I would consider as an at risk group. This represents over 1000 people.

Both the EPA and NSW Health refused to provide any sort of warning of potential drinking water hazards, even after presented with the health results of a significant number of local residents.

These organisations have the ability to provide warnings and safeguard the health of local residents, however are unwilling to do so.

h) whether the regulatory framework for heavy metals and critical minerals mining is fit for purpose and able to ensure that the positive and negative impacts of heavy metals and critical minerals mining on local communities, economies (including job creation) and the environment are appropriately balanced

The published NSW Heavy Metals and Critical Minerals Strategy document appears more relevant to government and industry than any regulatory framework. This document specifically talks to the government's willingness to cut through green tape and ensure a smooth road for mining investments in NSW and most particularly in the Central West NSW hub.

There is no requirement to take a reasonable level of background sampling data from residents, household drinking water tanks or soils prior to the commencement of mining activities. This then allows for the ability of the mining industry to simply brush off resident's concerns that they have had any impact.

It appears that the VIC government has a far better process in place of ensuring that environmental reports are compiled by truly independent environmental businesses, rather than allowing the mining sector to pick and choose from experts who are in large part reliant on their business for income and have therefore a vested interest in the mine being happy with their report outcomes for future work opportunities.

The Canadian mining regulation system also incorporates a far more thorough and real time monitoring requirement which could be easily copied into the NSW regulatory model.

i) any other related matters.

Financial impacts.

The financial impacts of the deteriorated health of our family have been adding up quickly. We are covering additional Doctors visits, medical tests, medications, psychologist appointments, occupational therapy sessions, vitamin supplements.

We are also facing the costs of having our water independently tested and looking at expensive filtration systems which will then need filter cartridges replaced on a regular basis.

Then there is the concern of future medical issues which may arise as a result of these heavy metal contaminants, particularly lead which accumulates and remains within the body.

We live on a multi-generational family farm and the idea of needing to sell at some point because the health cost of the unabated environmental impacts on our family become too great is a stress so large it cannot be considered, and the financial impacts of needing to establish somewhere else would be massive.

Misleading Information.

Reports released by Cadia Valley Operations have been misleading and erroneous. These messages have not been challenged publicly by the EPA and the local community simply do not have the funding required to challenge such regular matters in court.

As examples:

- An air quality report which Cadia Valley Operations arranged documented only the extremely small particles which are produced mainly from burning, rather than the larger particles which come from crushing and mining style activities and they have used this to 'prove' that our dust contamination is not from them.
- Cadia Valey Operations have used very selective lead fingerprinting arrangements to show that there are a mix of lead sources in the worst affected water tanks in our area and suggested that because their ore body is the same as that found in minute quantities in the local soil, that there is no proof any lead contamination is from them, suggesting it is all coming from local soil dust. While 15% of the lead in the worst affected local tanks are coming from local sources, this could mean that all, or the vast majority of, the smaller

amount of lead in our water tank is from them, as we have no lead sources in our building materials which some far older buildings and sheds may have. This probability was not followed up within the limited amount of testing which Cadia Valley Operations were required to complete.

- The most recent environment report produced is a Human Health Impact Assessment released 1st September 2023. This report clearly demonstrates that there are significant health risks to the local community mainly as a result of the tank water being consumed. The report has been based on a seriously inadequate water sampling regime which has effectively tested the top 10cm of water in our tanks, when the problem settles out towards the bottom of tanks. They have then tested the kitchen tap water and found contamination in the kitchen tap water, but none in the tanks. This has led to the erroneous conclusion that the vast majority of local residents have a problem in their plumbing works between the tank and the tap, and no issues with the water in their tanks. Again, inaccurate data and misleading advice to the community that we need to fix our plumbing and the problem will then go away.

Conclusion

We are hopeful that this enquiry is the beginning of a process which can bring about real life improvements for local residents impacted by mining activities.

Mining is an essential industry in this state, however human health must come before profits.

A self reporting system of monitoring does not work.

The regulatory authorities should be required to investigate resident's complaints, regardless of their own assumptions.

Penalties must have an impact relevant to the scale of the organisation creating the damage.

Environmental impact reports should only be completed by truly independent government appointed expert businesses.