

12th. February 2024.

1.

Att. Otago Regional Council.

I wish to ask the Otago Regional Council to decline the Resource Consent Application by Hawkeswood Mining Ltd, RC No. 230325. I include below the reasons I believe this proposal is not in the interests of my community and our environment.

Air.

HML's second application has acknowledged the risks of particulate matter. As this dangerous dust is mostly invisible, the proposed two monitors at each end of the site are surely inadequate. The Teviot Valley is a windy place, and the wind can and does blow from the four corners of the compass, not just during daylight hours but in darkness as well. Does the company have the ability to train two staff to address this matter and will this measure be sufficient to protect residents' health?

The PDP review (15 Dec 2023) states. "PDP has not undertaken a site visit and the review presented in this memorandum is based on a *desk top* analysis of the information provided".

PDP also acknowledges "the potential for a number of receptors to experience moderate to high dust impacts".

PDP also states, "there is the potential for adverse effects on neighbouring properties if the dust levels are not controlled and mitigated properly".

HML has not, from my observations, mitigated the potential dust from their existing 10m high stockpiles. Mitigating dust with water cannons and/or sprinklers may contribute to contamination of the groundwater beneath the site. ("Water is commonly used to reduce dust dispersed but can mobilize contaminants and facilitate transport through the vadose zone to groundwater") [osti.gov.]

Emissions.

HML tell us their project will be a "low emissions project". The quantity of diesel stored on site has risen from 10,000 litres in their first application to 60,000 litres in their second application.

The average petrol/fuel station stores around 10,000 litres of diesel.

60,000 litres of diesel are enough to fill the tanks of 1,000 cars!

Combusting a litre of diesel produces 2.6391 kgs of CO2 equivalent. [comcar.co.uk]

HML doesn't tell us how long this tank of diesel will last, but each tank full will produce around 160 tonnes of CO2 equivalent. Hardly low emissions.

My wife and I have on separate occasions smelt diesel fumes when passing the mine site via the Cycle Trail. At least one other local we've spoken to has had the same experience and mining hasn't begun yet!

"In a given year, gold mines emit more greenhouse gases than all passenger flights between European nations combined". [The Conversation website]

Diesel Particulate Matter (DPM) is also a well-documented health hazard.

It's generally accepted that two thirds of New Zealand's rivers are too polluted to swim in. ABC, The Guardian and Eljazeera are some of the foreign news agencies that have revealed "New Zealand's dirty secret". In fact, there seems to be a conspiracy of silence amongst most of our own news agencies regarding New Zealand's appalling water pollution. Has our local media offered a balanced portrayal of the potential risks to our environment from this proposed Open Cast Gold Mine?

The ORC has a river water monitoring site at Millers Flat which shows a likely improvement in nutrients over 20 years, but a decreased visual clarity. Two monitoring bores at Etrick are poorer than other areas, with several E-coli exceedances. Groundwater Nitrate levels are also high. These indicators are likely to worsen given the rapid land use change. The ORC has also publicized their concerns at the elevated contamination around the Bengier Burn. It's obvious the river catchment is under increasing pressure. An unnamed stream running through our property above the proposed mine site and discharging into the Clutha River, has an unpleasant odour and has tested as high as 760 cfu's per 100ml. It hasn't dried up in our time here. In this 5 year period the creek has gone from a clean aquatic life supporting water source to a sediment laden sewer. Even the eels don't come up the creek anymore. A smaller creek further up the Cycle Trail does dry up in the summer but can smell even worse than ours.

I used to regularly catch fish from our "front lawn" adjoining the Clutha 5 yrs ago. Alas, the fish in my part of the river have gone. Their habitat buried beneath large swathes of algae. The riverbed below our creek is in noticeably worse health than that above. Other fishermen concur that this part of the Clutha is fishing poorly. One who has fished the river for 30 years tells me the fishing is the poorest it's ever been in that time. As a recreational fisherman for more than 50 years, I've come to appreciate the warning role fish have had in numerous waterways I've seen decline in Southland, Canterbury and Otago. The fish leaving the Clutha are giving us a warning about the health of the river, one we should not be ignoring.

The ORC has told us in a report that drastic action is needed to clean up our polluted rivers and even suggested previously consented activities may have to be banned. Otago has the most polluted water after Canterbury and Southland and because of the contamination "in the post," we can expect it to deteriorate further before seeing any improvement.

I have grave concerns about the mine contaminating our groundwater and the Clutha River. I have twice had my domestic water contaminated by consented activities. Firstly, in South Canterbury when a consented activity contaminated my private bore and later in the summer, drained the aquifer completely. This despite assurances from the consenting authority that the activity would have no impact on my water. Several years later I moved to mid Canterbury and again a consented activity contaminated my water supply. On both occasions the consenting authority denied any responsibility and told me the problems were mine to fix! In South Canterbury there was no "fix" available. The consequences were devastating. Just as the consequences for Millers Flat residents will be devastating if their only water source is contaminated.

3.

As shareholders in the Millers Flat water scheme, my wife and I receive a restricted reticulation from the scheme's bore, located approximately 1500m downstream from the proposed mine site. The water from this scheme is pristine and hugely valuable to this community as an essential amenity. The Environmental Associates Ltd technical assessment (the second one) states there is "nil" chance of the proposed mine contaminating the Millers Flat Community bore. This assurance worries me for two reasons. Firstly, I have heard similar assurances not once, but twice before. The "experts" were very wrong on both occasions. Secondly, two engineers, one with a mining background and two water scientists have all told me recently they would not/could not offer that kind of guarantee or use that kind of definitive language regarding a mine operating in the groundwater and just metres from the river.

There has been hydrology testing done in the Millers Flat area before. In the late eighties a study was undertaken for the then Ministry of Works and Development. [docs.niwa.co.nz] A map shows the groundwater beginning above Teviot, passing down through the proposed mine site and Millers Flat, before culminating around Island Block. It might be interesting for an independent expert to see if there's any difference in the hydraulic connection between the groundwater and the Clutha River in this report, and that of the EAL Assessment.

Safe water setbacks are a blurry picture in New Zealand. I've spoken to a water scientist at the ESR and he was reluctant to be drawn on this subject. The ESR website talks of contamination travelling 2kms underground. An American study recorded with their National Library of Health indicates contamination in a coarse gravel aquifer can travel 58kms. In a fine gravel aquifer 13kms. [ncbi.nlm.nih.gov] Lots of variables can skew these distances, however, contamination can travel more than 1.5kms underground, the distance separating the mine from the MFWC bore. The mine from our drinking water source!

We can computer model the mine site indefinitely, but how have so many of our rivers and so much of our groundwater become polluted if experts and their computers are infallible?

From the EC Otago Report, under 10 Limitations.

"There is no investigation that is thorough enough to preclude the presence of materials at the site that presently, or in the future, may be considered hazardous. As the regulatory criteria are subject to change, a status with respect to contamination that is presently considered to be acceptable may in the future become subject to different regulatory standards that cause the site to become unacceptable for existing or proposed land use activities".

Council records reveal the site is already contaminated.

The dewatering of the mine pit could be around 60 litres per second. This means 60 litres of water is contaminated with sediment every second.

This equates to 5,184,000 litres of water being contaminated with sediment each day!

That's almost two Olympic swimming pools of water contaminated with sediment each day and pumped back onto land.

A YouTube video of the Waikaia Dredge (now the HML dredge) in its filthy pond, is available online.

4.

Landcare Research published in Feb. 2020

"Fine sediments are one of the most common causes of contamination in New Zealand rivers and estuaries".

"Sediments can carry other pollutants such as heavy metals, nutrients and microbes".

From the United States Geological Service.

"Stream, river and lakebed sediments are reservoirs for many contaminants. These contaminants include some 'legacy' contaminants like DDT and PCB's etc". Many contaminants adhere to sediment rather than dissolving in water".

"These chemicals can persist in the sediment for many years, long after they are no longer detectable in water".

The mining company proposes to use the Clutha River as a toilet. To flush away their contaminants. I understand this is called 'attenuation'. When we flush our toilets at home, it doesn't disappear, it merely goes to another place.

Conclusions.

I understand our local body councils are in something of a transitional phase. We have the National Policy Statement – Fresh Water. The coalition Government has pledged to replace the NPS-FW. With what, we don't know. The government probably doesn't know either.

The NPS-FW and Te Mana o Te wai give clear guidelines as to how we must change our relationship with water. The heirachy of priorities makes water our number one priority, ahead of economic outcomes. Water must come before money. The United Nations' 17 goals of sustainability echo these aspirations.

The Clutha River and our precious groundwater need restoration and protection. Not more contamination from gold miners. The world doesn't need any more gold. We can all live without gold, but none of us can live without clean water. The world is running out of fresh water. It's far more precious than gold. Yet this mining proposal plans to contaminate our precious amenity.

Thank you.



Graeme Young