

Dear Commissioners,

I respectfully implore you to reject the Russell Vale Underground Expansion Project.

I was born in Wollongong, conducted all my schooling here, and am now raising my own child here. I undertook undergraduate studies in environmental science, with honours on nutrient cycling in coastal wetlands. I have worked in various environmental field roles, science communication and sustainable food enterprises. Since 2017 I have been an elected representative on Wollongong City Council for Ward 2.

I am alarmed that the state government agencies are suggesting that Russell Vale UEP be approved pending conditions reports on the pillars in the Bulli seam. So much of this application is based on the assumption that there will be negligible subsidence. However the only way to assure that there will be no subsidence is to reject the mine expansion. Pending conditions are problematic because so often they not be open to public or independent scrutiny or appeal.

I am concerned that the triple seam mining will result in subsidence in the long term. Once pillars degrade and collapse subsidence can impact the water quantity in the catchment. Cracking under upland swamps makes them flammable instead of moist, water-logged fire retardant ecosystems. The picture below from University of Sydney ecology PhD candidate highlights the risk.



In July 2020 Ian Baird and Doug Benson published findings in Australasian Plant Conservation 20(1):12-15 article titled “Severe impacts of longwall coal mining in endangered Newnes Plateau Shrub Swamps, exposed in December 2019 fires” <https://www.researchgate.net/publication/343334733> [Severe impacts of longwall coal mining in endangered Newnes Plateau Shrub Swamps exposed in December 2019 fires](https://www.researchgate.net/publication/343334733)

“Newnes Plateau Shrub Swamps are an endangered, groundwater-dependent, peat swamp ecological community restricted to the Newnes Plateau in the Blue Mountains, NSW, Australia. Underground longwall coal mining under or adjacent to a number of these swamps has resulted in a lowering of water tables in these previously groundwater-dependent ecosystems, making them more vulnerable to the impacts of fire through combustion of dry, organic-rich or peaty soils. The extensive mega-fires in late 2019 in the Blue Mountains, during a long drought, burnt most or all of these swamps. In this article we report our observations of the catastrophic nature of the fires in undermined swamps, compared to non-undermined reference swamps, with implications for the future of these peat swamps under conditions of increased drought and more intense fire regimes.”

Sydney-Illawarra was fortunate that the special areas didn't burn over last Spring/Summer's catastrophic bushfire season. It's essential the remaining upland swamps and the areas surrounding it which influences the water table level, are protected from further undermining.

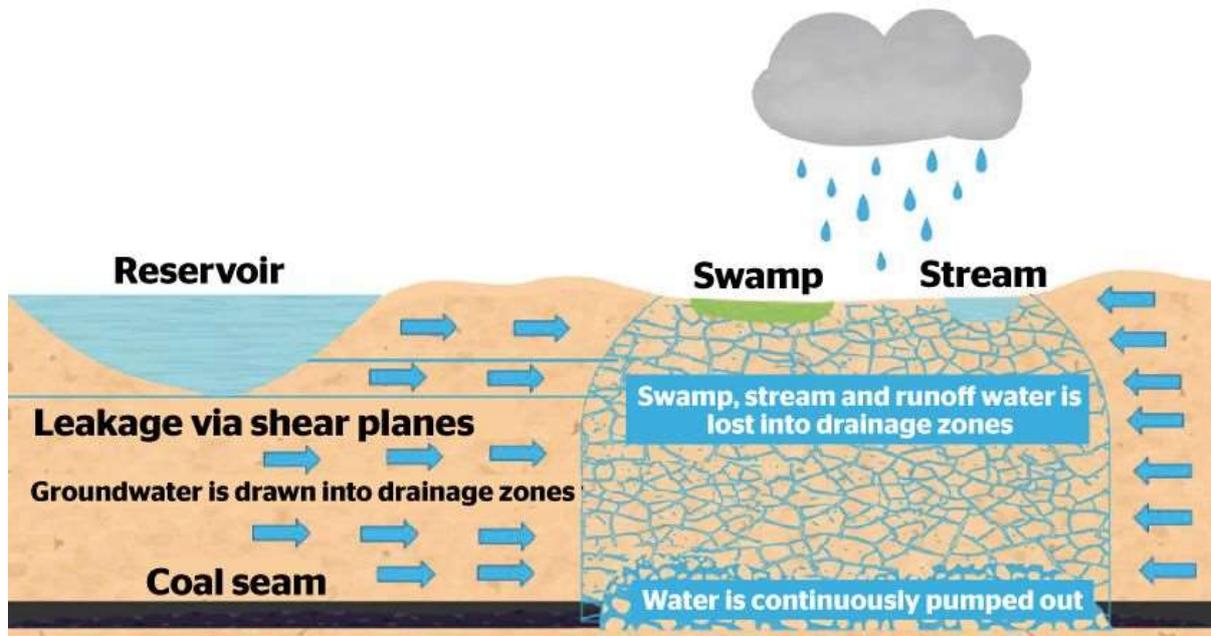
During the IPC the Subsidence Principle Inspector from the Resources Regulator: “without a reasonable understanding of this key risk factor, we are in the dark in making decisions in relation to Russell Vale Colliery's proposed revised underground expansion project... As a subsidence engineer working many, many years, I say this: this is fundamentally important for a meaningful subsidence prediction/assessment and the subsequent development of risk-management plans”.

Again, leaving the risk management assessment until after the approval is highly problematic. Too often impacts are monitored and documented, not prevented. Subsidence damage is irreversible. Bit by bit it's turning our drinking water catchment from a basement into a colander. Even if a glass of water has an intact base, if it's sides are pierced it won't hold water. So even if the upland swamps are not directly mined under, mining adjacent to them can divert the surface waters and cause them to dry out.

In September 2019 I was fortunate to attend a catchment visit with Water NSW staff, academic researchers and journalists. While this field trip visited different upland swamps being undermined by a different operator with a predominantly different method, should subsidence occur the destruction of the upland geomorphology and surface water holding capacity is the same. Accounts of the day can be viewed here:

“Sydney, Illawarra drinking water catchment under threat as mining takes toll on key wetlands” by Ainslie Drewitt-Smith posted online 17 September 2019: <https://www.abc.net.au/news/2019-09-17/longwall-mining-impact-on-drinking-water/11519970>

“Where's the squelch?': Coal mine drying out Greater Sydney catchment” by Peter Hannam in the Sydney Morning Herald online 18 September 2019:
<https://www.smh.com.au/environment/sustainability/where-s-the-squelch-coal-mine-drying-out-greater-sydney-catchment-20190917-p52s4v.html>



SOURCE: Peter Turner, National Parks Association

I am also concerned that the pumping out of water from the mine workings can exacerbate water leakage from the reservoir via shear planes, as pictured above taken from the SMH article.

I also object to the UAP's removal of 10 million litres from the Sydney water drinking catchment, especially as it is proposed to be done without obtaining a water licence. Offsetting with groundwater licenses is inappropriate. It fails the like for like test. Taking pristine fresh surface water and replacing it with contaminated brine water is not in the interests of NSW. Water treatment is a time-specific, expensive and energy intensive process. An intact water cycle operates in perpetuity. Furthermore treatment of mine wastewater does not eliminate pollutants, it just displaces them. When it comes to nearby Appin and Dendrobium mines they are processing ground water through reverse osmosis, which is a good thing for protecting the upland tributaries. However, the concentrated wastewater is a brine laden with heavy metals. At the moment this is pumped to Allans Creek in Unanderra, feeding in to Port Kembla Harbour. The load of heavy metals in our estuarine waterways and oceans is a significant and detrimental impact. Heavy metals bioaccumulate in the food chain, detected in molluscs and other higher order species.

There are significant economic risks if this project goes ahead. I am concerned that the economic benefits as touted by the proponent and other supporters are overstated. Defaulting on supplier contracts is an economic calamity that has occurred in

the past. Leaving workers without their entitlements is also an economic risk of this project.

I greatly appreciate the time and consideration that the IPC take with the assessment of the Russell Vale UEP.

Many thanks,

Cath Blakey