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**I herewith object to the Dendrobium Extension Project (SSD 8194)**

Thank you for this opportunity to comment on the proposed development. While there are many very good reasons to object - and not many why this should be approved - I will focus on the two that are most important to me: Environmental damage and climate risk.

**Environmental damage**

While South 32’s predictions for subsidence are unreasonably conservative and not in line with experience from previous mines of similar width, the mining and associated subsidence will in either scenario cause cracking of the land on the surface – affecting  rivers, creeks, smaller watercourses and swamps that feed our drinking water reservoirs – and subsequent water loss to the catchment.

WaterNSW has been clear that mining in the Special Areas causes loss of yield to the reservoirs and the swamps and water courses that charge them.

In dry years, the watercourses in the mined area that flow into Avon Reservoir are expected to totally dry up. This will not only cause a very meaningful water loss to the catchment, it will also mean irreparable damage to the associated biospheres. No level of damage is acceptable to the Special Areas.

The NSW Government’s Independent Advisory Panel for Underground Mining has said,

“It is not possible, at this stage, to be comfortable that the worst-case losses from the surface water regime have been identified. Stream depletion can arise from combinations of reductions in overland and groundwater flow to the streams and increases in stream losses to the groundwater. (...) Previous iterations of the model had predicted surface water take at the existing Dendrobium Mine and that these predictions had increased 5-fold in the 5 years since 2014 (now 1372 ML/year)”.

The mining expansion is even expected to cause potentially dangerous ground movement at the dam walls. WaterNSW stated that the 1000m setback from the dam walls is not enough and the setback should be at least 1500m, adding that, “Should any impacts occur to these dams, there is the potential that the risks and consequences could be extreme.”

In particular, the upland swamps of the Woronora Plateau play an important role in the water catchment by capturing and holding water, filtering it and in times of drought releasing it slowly into the creeks and rivers that feed into the reservoirs.

These swamps are also classified as Endangered Ecological Communities (EEC) and are significant in terms of their biodiversity.

Each swamp is a unique island community containing rare plants and animals. The specialised flora and fauna of the EEC even carry individual protection at species level. Dewatering the swamps will result in local extinctions in breach of multiple layers of State and Federal legislative protection.

There are 46 swamps in the mining area and 25 of these are expected to be cracked by the mining.  Water drains away from swamps into the mining void, the swamps dessicate, the flora and fauna die off, and dryland species take over.  The swamps lose their capacity to hold water in drier times.  They are more prone to erosion and more prone to bushfire.  Research shows that swamps that have been undermined are less able to recover after bushfire compared to swamps that were not undermined. Dewatering of the forest, bushland and swamps above the mining will also make the area more prone to bushfire to begin with.

South32 wants to purchase water licenses and pay cash compensation to WaterNSW for the water they take from the catchment.  This cannot possibly compensate for the irreversible damage to the Special Areas and for the legacy of water loss.

Our precious environment  belongs to the Australian people and cannot be ‘paid out’ in cash to a single entity.

**Climate risk**

The IPCC 2018 Special Report warned that to limit global warming to 1.5°C then, globally, by 2030, primary energy from coal needs to have reduced by a minimum of 59 %. In this context, this coal mining extension proposal spanning 28 years (to 2048) should not even be considered.

Approval of this mine would lock in emissions over the 28-year life of the project equivalent to 48% of the 2018 annual emissions for all of Australia.  The project would add an average of 9.3 million tonnes per annum (260.7 million tonnes over 28 years) of CO2e to the atmosphere.

This is comparable to 1.73% of Australia’s current annual emissions for this one project alone.

In 2016 Australia had higher emissions than 90 % of all countries; had the seventh highest emissions per capita; and even worse as an exporter of GHG emissions, ranked third after Russia & Saudi Arabia for exports of fossil fuel CO2e potential. Coal makes up more than 80 % of this export.

The emissions from combustion of coal that Australia sells (i.e. scope-3 emissions) are very significant.  Australia needs to take responsibility for them as well and rapidly transition to zero carbon steelmaking.

Furthermore, the coastal upland swamps mentioned above also provide carbon capture and storage ecoservices. Neither South32 or DPIE have even considered or estimated greenhouse gas emissions associated with expected swamp destruction, or loss of carbon uptake that the swamps currently perform.

Under such circumstances, approving this project is totally irresponsible.

Thank you for your kind consideration of my submission. Given that the mining company has mobilised their own staff to make submissions, I hope you will give this one from an independent concerned citizen the adequate weight. It is high time that we Australians stop looking at short term and comparably small job creation and start valuing the survival of our land we all depend on.

Best regards,

Daniela Osiander