SUBMISSION FOR THE DENDROBIUM MINE EXTENSION SSD-8194

FROM: National Parks Association of NSW Southern Sydney Branch

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Objection to Illawarra Coal's Proposed Mine Extension for Dendrobium. Project SSD-8194.

South32 proposes to extend the Dendrobium Mine Project for 30 years using aggressive longwall mining in the Special Area of the Sydney Water catchment. Documented evidence confirms the adverse impacts that previous operations at Dendrobium (and other mines in this area) have had on the water catchment, on the upland swamps and on the ecological integrity of the entire Woronora Catchment. This proposal will result in further damage to the catchment area and loss of irreplaceable water for Australia's largest city.

The Dendrobium Mine Extension Project proposes 30 years of longwall mining in the water catchment for Wollongong, Macarthur and Sydney. It will result in damage and loss of water to swamps, water courses and the Avon, Cordeaux and Nepean Reservoirs. Sydney is the only city in the world that allows longwall mining in a publicly owned water catchment. The proposed mining is in the protected "Special Areas" of the water catchment upon which 5 million people rely for drinking water.

The National Parks Association of NSW Southern Sydney Branch calls for the NSW Government to reject South32's Proposed Mine Extension for Dendrobium Mine.

Water must have Priority

Water is an essential resource for the operation of our society. In this case the Special Areas section of the Catchment Area is vital for the provision of safe drinking water for the largest city in Australia. Responsibility for the provision of water, and hence the management of the Sydney Catchment Area rests with WaterNSW.

In order to fulfil its responsibility, WaterNSW claims that:

"In Declared Catchment Areas mining and coal seam gas activities must not result in a reduction in the quantity of surface and groundwater inflows to storages or loss of water from storages or their catchments." (WaterNSW, Principles for Managing Mining and Coal Seam Gas Impacts in Declared Catchment Areas, p2).

The condition that there must not be any loss of surface, ground or storage water has been breached by existing operations. In its submission to the Independent Expert Panel for Mining in the Catchment (IEPMC), WaterNSW state that:

"It is now clear that subsidence effects over both of the operating mines [Dendrobium & Metropolitan] in the Special Areas are causing impacts on groundwater levels and surface water flows, which is a risk to the quantity of water available in the Special Areas. (WaterNSW, Submission to The Independent Expert Panel for Mining in the Catchment, March 2019, p5).

Attachment A, Table A1 of the WaterNSW submission provides an extensive list of observed impacts of mining by Dendrobium and Metropolitan mines in the Metropolitan and Woronora Special Areas that support the conclusion by WaterNSW, that the operation of this mine, 'is a risk to the quantity

of water available'. Of special interest is the number of reported cases where the impacts are 'Greater than Predicted'.

The 2018 initial report of the IEPMC states that:

"Supported by its own analysis, the Panel concludes that in the case of Dendrobium Mine:

• water inflow into all four mining areas (Areas 1, 2, 3A & 3B) exhibits some correlation with rainfall, ranging from weak in Area 3B to strong and rapid for Area 2

• it is very likely that the high rate of influx is associated with a connected fracture regime that extends upwards to the surface

• it is plausible that an average of around 3 ML/day of surface water and seepage from reservoirs is currently being diverted into the mine workings" (Independent Expert Panel for Mining in the Catchment, Initial report on specific mining activities at the Metropolitan and Dendrobium coal mines, 12 November 2018, p127)

The IEPMC 2018 report focused on water quantity impacts. The issue of water quality will be addressed in the panel's forthcoming 2019 report. However, the panel in reference to the importance of upland swamps, did comment that: 'The interaction of water with swamp soils and vegetation tends to produce base flow that is high quality, clear and acidic, and with very low salinity.' (p95)

With respect to water quantity impacts, the 2016 Audit of the Sydney Drinking Water Catchment reported that: '… there was reduced water availability across the Catchment in 2013-16 compared to the previous audit period and the overall total surface water extraction has increased since the previous audit periods.' (p 13). With respect to Dendrobium, the evidence confirms that Dendrobium mine, has in the past and continues in the present, to impact on surface, ground and storage water resources. With respect to water quality across all Sydney catchments, the 2016 Audit found that the majority of sites monitored had '… good levels of compliance with water quality guidelines …' (p 13). However the four listed storage and catchment areas having the poorest water quality, included the 'Upper Nepean River flowing to Lake Nepean' (p 13). This is part of the Special Area where the Dendrobium proposal is located. A link to bushfire impacts in this area are discussed in more detail below.

Dendrobium estimates the loss of water at '… less than 1% of the Avon and Cordeaux catchment yields' and states that they will compensate WaterNSW for the loss of '… surface water diverted from the Sydney drinking water catchment' (South32, Dendrobium Mine – Plan for the Future: Coal for Steelmaking – Environmental Impact Statement, July 2019, p ES ii).

However:

• evidence referred to above confirms that actual impacts have proved to be consistently greater that predicted by Dendrobium;

• compensation for water used does not replace lost water;

• in times of severe water shortage, water restrictions are imposed on users and currently some extreme water restrictions are in place for extreme drought impacted areas in NSW;

• unlike water, coal can easily be sourced from different locations. Australia has ample coal supplies and exports most of its coal production – as does Dendrobium;

• the water catchment is an integral part of our water supply infrastructure;

• it operates as an essential input into the production of the most valuable of all resources for society – water.

• if preserved in its pristine state, the catchment is a renewable and sustainable factor of production that will continue to capture water from rainfall;

• the only impediment to its operation would come from the lack of rainfall - as is being witnessed during the current severe drought. But the catchment would respond when the drought is broken by the return of rain.

• coal extracted from the catchment area is but a temporary resource – it is not a renewable product and hence not a sustainable resource.

• but any damage caused by mining, as documented from the Dendrobium operation, will incur permanent damage to the valuable resource that we have in the form of the Water catchment;

• no amount of monetary compensation for lost water or offsets for destruction of upland swamps or damage to catchment streams can reverse the damage and thus value to society of their water catchment - "The available data indicates that there has been a decline in the extent and condition of wetlands in some areas of the Catchment and efforts to rehabilitate wetlands that were impacted by longwall mining have been unsuccessful to date."(2016 Audit of the Sydney Drinking Water Catchment, (p 14).

• Catchment damage is permanent and without the catchment the dams cannot be filled!

Water must be given priority over coal mining

Dendrobium's Mining Methods

"The cumulative, and possibly accelerated, impact of mining on flow regimes in the Catchment is likely linked to the increased prevalence of the current longwall methods of underground mining". (Alluvium Consulting Australia, 2016 Audit of the Sydney Drinking Water Catchment, 2017, p. 21)

Dendrobium claims that 'We will not mine under water supply reservoirs, named watercourses and key stream features.' (South32, Dendrobium Mine – Plan for the Future: Coal for Steelmaking – Environmental Impact Statement, July 2019, p ES ii) and yet their operations continue to damage the Water Catchment.

Damage to Waratah Rivulet

Cracking of creek bed in Waratah Rivulet

It should be accepted that:

• The water catchment is an integrated entity. Surface water is not restricted to narrow stream beds and reservoir surfaces, it is captured from the entire catchment area. That is why such huge areas were set aside for the catchment in the first place.

• The mining methods employed by Dendrobium are extremely aggressive. Longwall mining was introduced by the Colliery in 2005 and in the past has extended under major tributaries and to the edge of reservoirs.

• The proposed dimensions of each new longwall are again very large and extend under smaller surface water streams and are in close proximity of major water sources and reservoirs.

• The IEPMC reported 'vertical surface subsidence typically of 2.5 to 3m' in existing operations using similar dimension longwalls in the proposed expansion areas.

• With respect to current operations in the catchment that have in-principle approval, WaterNSW requested:

• 'for Longwalls 17 and 18 at Dendrobium, the mining dimensions should be restricted to prevent increasing the environmental consequences on Wongawilli Creek and Avon Reservoir (e.g. substantial narrowing of longwalls and greater setbacks from Avon Reservoir), particularly given the presence of local geological structures, and

• for Longwalls 303 to 306 at Metropolitan, a substantial setback from Eastern Tributary should be maintained to prevent any further environmental impacts or consequences, particularly given the performance criteria has already been exceeded and shear planes and lineaments are likely to exist'

(WaterNSW, Submission to the Independent Expert Panel for Mining in the Catchment, March 2019, p6)

• No concessions have been offered by Dendrobium to modify the aggressive longwall model they propose to continue to operate. And yet there seems to be a possible correlation between the introduction of this operational model and the increase in adverse impacts on the catchment.

• Recommendations from the 2016 Audit of the Sydney Drinking Water Catchment to reduce mining risks and impacts in the Special Areas, (including Dendrobium) are listed in Table 6 P 26)

• Regardless of how many studies, risk evaluations and alleviation measures that might be offered, the inevitable conclusion is that mining and water are incompatible within the catchment area.

Coal Mining in the Catchment and Water Supply are Incompatible

Climate Change

The proposal will result in significant quantities of greenhouse gas emissions

The proposal is estimated to create up to 23.7 million tonnes of CO2e in the production stage and 237 million tonnes in the transport and consumption of the coal produced. This brings the total emissions to between 256 million and 260.7 million tonnes of CO2e for the life of the project.

The current climate emergency means it is no longer morally acceptable for the NSW government to support projects that will severely negatively impact its capacity to meet greenhouse gas reduction targets. The Rocky Hill case supported climate responsibility in its judgement against the Rocky Hill mine, citing the mining SEPP Clause 14: "... the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development."[iii]

To put the volume of emissions in context, the federal government estimates Australia's greenhouse gas emissions for the year to December 2018 as 538.2 million tonnes[iv]. Thus approval of this mine would lock in emissions over the life of the project the equivalent of 48% of the 2018 annual emissions for all of Australia.

Annually it would add an average of 8.69 million tonnes per annum (260.7 million tonnes over 30 years) of CO2e to the atmosphere[v]. This is comparable to 1.6% of Australia's current annual emissions.

Climate change will increase the risks to water quantity and quality in the catchment and with this project. Hotter and drier weather impacts on vegetation and increases the risk of surface damage via erosion. This impacts both water flows and quality. Climate change brings with it increases in the frequency and severity of bushfires. Damage to surface runoff and quality follow.

"Poor water quality recordings, particularly in the Nepean storage, appears to relate to the extensive bushfires across the sub-catchment in 2013 and heavy rainfall the following year." (2016 Audit of the Sydney Drinking Water Catchment, (p 22). Changes to normal water supply sources were undertaken to bypass the impacted water at the time.

The Illawarra region along with much of SE Australia is predicted to experience reduced rainfall along with increased temperatures and prolonged periods of drought. Currently, the region is experiencing these predicted effects. At the same time the population of Sydney is predicted to continue to grow.

Taken together climate change with population growth will impose increased pressure on water supply.

Climate Change will Adversely Impact on Sydney's Water Supply

Planning Approval Experience

In the past Coal appears to have been given priority over Water in planning decisions for mining approvals.

The risk of adverse impacts to the catchment from mining have been identified in past approval processes and considered acceptable, subject to various conditions imposed on miners. But experience confirms that adverse impacts do occur and that, the observed severity of these impacts, tend to be greater than predicted. In addition, impacts caused by subsidence may not be immediate – they may take years occur and / or appear.

Scientific analysis of mining impacts continues to improve but prediction of adverse impacts remains a difficult task. The planning decision for mining approval in the catchment therefore continues to be a subjective evaluation of extensive reports, on the risk of adverse impacts on the catchment, weighed against, possible economic gains to miners, community and government.

The critical methodology of risk evaluation has evolved. No longer is the probability of an adverse event simply based on either crude subjective classification or statistical measurement of past adverse impacts. Risk needs to include the potential for unknown adverse events and the severity of the impact of the adverse event plus involve sophisticated computer modelling. An example of an unknown adverse event would have been the prediction that a tornado would sweep across a narrow part of the Kurnell peninsula and render Sydney's Desalination Plant unusable for several years. An example of a low probability but catastrophic impact, would be the recognition of a potential draining of an entire water reservoir through the entrance of an underground mine, such as Russell Vale that would inundate several suburbs of the Illawarra.

The risk profile for mining has changed due to a combination of climate change + rapid population growth + more aggressive mining techniques + extension of mining closer to critical tributaries and reservoirs + ongoing permanent damage to catchment (swamps, tributaries, surface subsidence).

This submission argues that:

• past mining approvals have reflected a bias towards short term economic gains, claimed by mining companies, against long term permanent adverse impacts, on essential social and economic infrastructure assets, claimed by State water enterprises;

• the parameters and methodologies involved in catchment mining approvals have changed and hence the risks associated with mining under the catchment have increased;

• current mining operations, including Dendrobium's aggressive longwall operations and Metropolitan's approval to mine directly under Woronora Dam reservoir, continue to inflict unacceptable damage on the catchment;

and therefore, calls for:

• a rejection of the proposed Dendrobium Mine Extension

Further, although beyond the terms of reference for this submission, it is considered that there are grounds for:

• curtailment of the current approved longwall operations in the catchment; and

• development of a transition plan for the end of all coal mining from the catchment.

Preservation of the Water Catchment is Vital for Sydney's Future

Thank you for considering this submission.

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For and on behalf of National Parks Association of NSW Southern Sydney Branch

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References

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