

REPORT TO THE COASTWATCHERS ASSOCIATION ON DARGUES GOLD MINE AUGUST 2021

The Dargues mine is close to the village of Majors Creek at the top of the Moruya River catchment, and so represents a risk to the ecosystem health of the river, riparian areas, the estuary and potentially nearby coastal areas should there be any significant release of contaminants from the mine. It is important for us to monitor the operation of the mine and its environmental performance, and this is done through Coastwatchers' membership of the Dargues Mine Community Consultative Committee (CCC) - we are represented by Stewart Needham. The CCC meets quarterly, usually in Majors Creek, and since mining operations have been in progress most meetings have been preceded by a visit to the mine site. These visits focus on the processing plant and water management systems and structures, as these are the areas where the community has most concerns (ie noise, dust, truck movements etc, and water quality and management).

Water. Overall, the mine is operating well in terms of environmental protection. It was designed to be a 'no release site', and that objective is being met in spite of some heavy rainfall events they have had earlier this year. Most natural run-off is effectively diverted away from the active mine area, including the tailings dam, by bunds (earth embankments). Some water (rainfall, overland flow) flows into the tailings dam and processing plant areas and joins the 'process water circuit' whereby contaminated waters are ultimately stored in the tailings dam. Natent water (ie particulate-free water above the settled tailings sediment and sludge) is recycled from the tailings dam for use in the processing plant. Shortfalls in this requirement are met from bores (including bores in old mine workings) and clean-water dams dotted around the mine project area. The level of water in the tailings dam is therefore of interest from an environmental standpoint (to minimise the potential for contaminated water release through overtopping into the Spring Creek/ Araluen Creek/Moruya River system), and from a mine operational standpoint (water is critically necessary to the processing plant's operation).

Owing to a wet period in the first half of 2021, the water level in the tailings dam reached its highest level in June and was seen by CCC members at the June mine inspection. The water level was well below the capacity of the dam - see *Figure 1*. Work is underway to raise the level of the dam further, which will increase the level of safety as regards containment of contaminated water, as well as providing extra space for tailings storage.

An interesting fact working in favour of minimising the risk of water release and contamination is that the mine is much drier than predicted by groundwater consultants, so less groundwater is being pumped from the underground workings than anticipated. Hence there is less water in the system which is reflected in the relatively low water level in the tailings dam. Clean water for other uses is sourced from several small dams (just like farm dams) in grassland around the mine project area. Before the period of heavy rains, water had to be trucked in to meet

requirements, and it is likely that this will happen again during extended dry weather episodes.



Figure 1. Tailings dam with tailings being discharged from a line of spigots on the far side on the inside of the dam wall; note narrow 'beaches' of exposed tailings; black material is the impervious liner; note bund (earth embankment) which diverts clean overland flow away from the dam; work is underway on the left hand side to raise the height of the containment.

The mine site has been engineered to direct any contaminated waters into special catchment ponds to minimise the risk of polluting any watercourses that flow offsite and downstream into the Moruya River catchment. For example, runoff from the processing plant area drains into a pond which is recirculated into the processing circuit - see *Figure 2*. An adjacent pond collects sludge from the processing plant; recently this pond overtopped which resulted in overflow into the underground mine as designed, avoiding any release to or impact on the surface water drainage system.



Figure 2. Panorama from processing plant area showing processing plant ponds of contaminated water in centre; mine access road and waste rock dump on skyline at left; the tailings dam wall behind the ponds.

In summary, from the point of view of water management and the risk of release of contaminated water, the mine is operating well. There has been no release of tailings dam or processing circuit waters to date, and provided the mine remains

'dry' the probability of any water release from the tailings dam or processing plant areas is low. Mining is continuing to greater depths, but so far there has been no significant change in groundwater flow as each new level is established. On another positive note, the low levels of water being pumped from the mine suggest that the impact of mine dewatering on the volume of natural flows in Spring Creek (which flows into Araluen Creek) will be minimal.

Noise. The issue which garners virtually 100% of community complaints is noise. The mining company has been working with the Majors Creek community to address this and has progressively installed sound baffling around some noise generating components of the processing plant. The crusher and ball mill shed was soundproofed last year, and this year they have enclosed and soundproofed the blower and compressor units. A muffler has also been fitted to the processing plant exhaust vents which were thought to be the source of a short-duration noise waking up some villagers at night. There is still noise coming from the dumping of ore into the crusher bin and the crusher itself, which is the next area they plan to address. The number of noise complaints has significantly dropped in the last 6 months. However, another noise (and traffic) concern for locals is truck movements, and this could become a significant issue again if more water needs to be trucked in during extended dry weather periods.

Change of ownership. The ownership of the mine has changed to Aurelia Metals, which has other gold mining interests elsewhere in New South Wales (Peak and Hera mines near Cobar). Coastwatchers has raised concerns with the company at CCC meetings about non-publication of environmental monitoring data for some months after the change of ownership, which was blamed on delays in moving to a new website. A limited suite of environmental data on surface water quality is now being published on a monthly basis, without the comparative graphing which was provided by the previous owners. We and other CCC representatives with 'downstream interests' are currently assessing which analytical data are critical to our interests with a view to increasing the number of variables being reported, and increasing the level of assessment and presentation (such as historical graphing) to assist in understanding the adequacy of environmental management procedures at the mine site. We are also seeking information from NSW Government agencies to determine whether the reduction in reporting of environmental data for surface water quality since the change in ownership may constitute non-compliance.

Exploration drilling to test for extensions of the ore body towards the tailings dam area have concluded, but no data have been released as yet. The new owners are hoping to increase ore reserves and extend the operational life of the mine (which would be subject to a new application and approvals process).

If you have any questions, please contact Stewart Needham on 0402 778726