



Open letter to Mr Pijoo Nganate, Governor of the Omaheke region, on in-situ leach mining of uranium in the drinking water aquifer of the Stampriet Artesian Basin

Dear Mr Nganate,

You mentioned in your address at the Ritja career fair that we should abandon our “fear of the unknown” and say that Uranium One should be allowed to continue with its uranium exploration.

In contrast, it is what science tells us and what we know about the underground geology of the Stampriet Artesian Basin, about the underground water and about in-situ leach mining of uranium that is of critical concern. These things are known.

Underground maps of the geology of the basin compiled from the samples obtained from thousands of boreholes drilled into the basin are published in book 3 of the Geology of Namibia published by the Geological Survey of Namibia. These tell us exactly which underground layers contain water.

Hundreds of analyses of water samples tell us which layers have good quality drinking water and which have salty water. NamWater provides top quality drinking water for Leonardville, Aranos, Aminius, Stampriet and other towns. This water all comes from the underground aquifer layer that geologists call the Auob Formation. This aquifer has top quality water throughout the basin, and is used for town supply, irrigation and farms.

The Omaheke and Hardap regions are semi-desert areas. All the water in the Stampriet Artesian Basin is from underground sources.

Without drinkable water there will be no people and no animals.

The uranium deposits that Uranium One has discovered are in the main aquifer, the Auob Formation. This provides the top quality drinking water referred to above. Uranium One wants to mine the uranium in this drinking water by means of in-situ leaching.

There is so much water in the Auob Formation that it would immediately flood open-pit or underground mines. The only way to mine such deposits is by in-situ leaching.

Many long publications (some up to 600 pages long) by the International Atomic Energy Agency, the United States Nuclear Regulatory Commission, the Australian Council for Scientific and Industrial Research Organisation and others describe how in-situ leach mining of uranium works and point out its many technical and environmental problems.

In-situ leach mining of uranium (ISL) involves mixing sulphuric acid (battery acid) with water and pumping this down into the uranium orebody in the drinking-water aquifer. The acid dissolves the uranium and many other metals that occur with the uranium, including arsenic. This mine solution is then pumped to surface where the uranium is removed from the solution. More acid

is added to the remaining water and pumped down again. The process is repeated without changing the water.

It all takes place in the drinking-water aquifer.

The content of dissolved uranium and the other metals is several hundred times higher than the safe levels for drinking water given by the World Health Organisation. Because of this, all ISL mines are surrounded by monitoring boreholes that check for the escape of the highly radioactive and poisonous mine solutions. Such escape of solution does occur and some is totally lost into the aquifer.

All the people in the area depend on this underground water for their survival and livelihoods. Irrigation pumps the underground water at a far higher rate than the mining would do and so would draw water through and out of the mine area into the rest of the aquifer.

This will be a huge danger to other people using that water.

Minister Schlettwein was perfectly correct in stopping additional drilling. All leaders have the responsibility of understanding where problems of any kind of development may occur. Of top priority is, protecting the health and safety of all Namibians. Radioactivity is invisible and tasteless but can kill in the end. Contamination of drinking water **WILL** occur, can last for decades and is of major concern in all countries where ISL takes place.

PREVENT CONTAMINATION BEFORE IT EVEN STARTS.

Our committee recognises that mining brings huge benefits to Namibia but, with it, also major environmental and safety problems. ISL mining of uranium in the Stampriet Artesian Basin is a project that cannot be supported because there is no alternative water source for the region. The water in the aquifer is critical, sustainable and supports farming activities that are sustainable and will be sustainable for many generations to come – as long as it remains uncontaminated.

Sincerely

SAUMA Management Committee

22 February 2023