the federation for a sustainable environment

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RE: OBJECTIONS TO URANIUM MINING IN THE KAROO

We, the Federation for a Sustainable Environment (FSE) hereby object to the proposed uranium mining in the Kareepoort block (EC10029MR) area. In addition, we would like it noted we object to uranium mining in the Karoo in general as the issues raised here apply to any of the proposed mining blocks. We request to be registered as an *Interested and Affected Party*.

We object on the following grounds:

1. In view of the reclamation operations of historical tailings storage facilities (TSFs), containing 600 000 tons of uranium, within the Witwatersrand gold fields, and the extraction of both residual gold and uranium from these TSFs, there is no economic justification for uranium mining within the Karoo. The historical TSFs contain sufficient uranium and the extraction of uranium from these TSFs is the best practicable environmental option.
2. The environmental and socio-economic legacy of uranium mining within the Witwatersrand gold fields (73 500 tons of uranium were extracted from 1953 to 1995) produces *prima facie* evidence of a narrow interpretation by the National Nuclear Regulator of its mandate to protect persons, property and the environment against nuclear damage in terms of the National Nuclear Regulator Act (47 of 199) (NNRA), inadequate regulatory control and systemic non-enforcement of contraventions of the NNRA, and gaps in legislation in particular in addressing the remediation of abandoned-, derelict and ownerless radioactive mine residue areas. To exemplify: 1.6 persons are living on radioactive mine residue areas within the Witwatersrand. (Please see attached powerpoint presentation.)
3. We contend that the surface water component of the Draft EIA & EMpr report is totally inadequate and should be redone and then peer reviewed before being resubmitted. Fundamental ecological facts were not understood by the research team as submitted in their very brief few paragraphs in Appendix 11 (pages 23-25) and elsewhere in a limited form in the EIA report. We support the submission stating objections and outlining deficiencies in the report on surface water handed in by the *STOP Uranium mining in the Karoo group* as compiled by C.G. Hayward.

4. Ground water resources are the Alpha and the Omega of life in the Karoo. Uranium mining poses severe and unacceptably high risks to both ground and surface water in the form of over-extraction and contamination. The report by Rosewarne and Esterhuyse (Appendix 11) relies on various models and scenarios. The assumptions in these models could well prove to be false, with the Karoo geology not necessarily conforming to the theoretical scope expected in the American based numerical models. This could result in an unexpected drop in water levels well beyond these model's estimates. The reality is that farmers who have lived in the area have found that the drawdown effect of boreholes is over a much wider area than this model's mere 3Km. This could be verified by farmers within 20 km of the proposed mining site residing on similar geological formations. If boreholes dry up or are contaminated, agriculture will collapse. As such we object to the proposed uranium mining activities – our water resources are irreplaceable.
5. We contend that the land values in proximity of the mine, including the nearby towns would greatly decrease once the noise, dust and water pollution impacts are felt. This will impact on all the farmers in a very wide area. Municipalities would also have to adjust their land values, consequently collect less revenue in levies and taxes and end up with less money, while potentially having to do more road repairs and incur other costs indirectly related to a mining operation.
6. The EIA makes the assumption that agriculture and uranium mining can co-exist in the Karoo landscape. We contend that this is not the case. The risks of contamination of agricultural products via dust, water and soil pose unacceptably high risks to the agricultural sector. The export of wool Alpacca and Mohair fibre, meat and livestock originating in the Karoo are but some of the high value commodities. The contamination of which would have disastrous consequences should the export market be shut down as a result of uranium mining. The direct competition for water by the mines will also threaten agriculture due to over-extraction and contamination by the mines. Neither of these factors can be adequately mitigated. How do you mitigate depleted ground water and dry boreholes?
7. We contend that the constant assurances of employment opportunities are both misleading and mischievous as demonstrated during the Aberdeen meeting (23 March 2017). The proposed 42 jobs were not presented in an objective and transparent manner. It was only at the insistence of a local farmer at the end of the meeting that Tasman finally revealed the minimum literacy requirements of employees. Tasman via Ferret Environment, failed to explain that the jobs were mostly for semi-skilled to skilled workers. This information only surfaced following persistent questioning of the issue.

   The omission of this information during the official presentation, attended by a large number of locally unemployed people, meant that many people are still not aware of it as they had left the meeting before this was brought up. The risks pertaining to the loss of jobs in the agricultural and tourism sectors as a direct result of the impacts by the proposed uranium mining activities needs to be investigated to put into perspective the real socio economic impact. We contend that a thorough peer reviewed study be conducted on this aspect, not merely a situation analysis of the current socio economic situation.

8. The potential for small business contracts was also presented in a misleading manner in the official presentation at the Aberdeen meeting (23 March 2017). Again it was a local farmer who only got a chance to give his input at the end of the meeting, which explained the full restrictive truth to the local community. The vital issue of all contractors being compelled to register their staff transport vehicles with the required stringent safety features with the mine before getting involved in any contract. This alone would put contracting a service to the mine beyond the financial capabilities of a lot of these poor and unemployed people.
9. The health risks caused by exposure to contaminated dust and radioactive gasses associated with uranium mining are well documented. Despite assurances from the various consultants on behalf of Tasman, that contamination levels will be within allowed levels, we contend that any contamination level is too high. We have a clean and healthy environment in the Karoo, our right to it staying that way is enshrined in our constitution.
10. Uranium mining generates large amounts of radioactive waste material. Tasman proposes using tailings dams to store hazardous waste water. The risks of dams breaching, flooding, or drying up and the dust being spread by wind are great, and are well documented in the literature. We consider the risks associated with storing this waste, which remains hazardous for thousands of years to be too great for people (both current and future generations) and the environment. Uranium products and waste will require transport as well, adding further unacceptable risks should an accident occur during transport.
11. Rehabilitation of Karoo veld in fragile arid environments is a very long term and mostly prohibitively expensive undertaking. From hard experience farmers can testify to the fact that full rehabilitation is in many cases virtually impossible. The dramatic impact and total transformation uranium mining will have means that it is unlikely that the environment will ever recover. That is not a good trade off, given that the current land use is sustainable into perpetuity.
12. Mitigation measures for open cast mining include storing and replacing topsoil. Soil microbial components do not survive long term soil storage – the result being that even if the topsoil is replaced, soil productivity is lost, in addition to the inevitable loss of soil structure, so that the recovery of the plant components is unlikely. This means that the only other land use, agriculture would not be able to resume, and biodiversity would be permanently lost on these areas.
13. We contend that the concept of replacing the topsoil and replanting plants from a greenhouse, is botanically and ecologically flawed. This does not take into account successional stages of plant establishment or the loss of pollinators and geophytes. We question how these unique, special and rare plants will be sustained for four years in artificial circumstances.
14. Roads would be exposed to a large number of mine, transport and contractor's vehicles. This will put stress on the local community and regional access routes, and limited municipal budgets.
15. We question the long term sustainability and viability of the mine's economic model, where the current spot price for Uranium is $25 to $28 per pound. This must be measured against the potential long term damage to the environment by allowing a mine in this very brittle

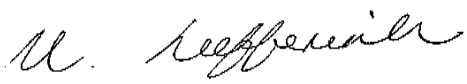
and ecological environment. There is also the ever present risk of toxic substances spreading and potentially harming humans as well.

16. There is a real possibility that with so many specialist reports, knowledge gaps could occur where some aspects are not fully covered by one or another report. Certainly various cumulative impacts have not been taken into consideration in the EIA and EMPr. That leaves us with the unexpected ecological nightmare where the only mitigation would be: 'We did not think that could happen and it was not forecast by our models and specialists'. The fact is that if Uranium mining goes wrong we poison the whole environment through water, air and all living creatures.
17. Tourism will no doubt be severely affected in a negative way. Hunting in the area could well decrease. Agritourism is hard to sell in a mining area. This will decrease business and financial inflow into our small local economies. Tourism presently is a major source of income for the local villages.
18. We support the submission made by P.M. Mc Naughton on ecology and particularly the *Nananthus* plants as well as other rare "Rock plants" that could be harmed in a mining process. A factor of great worry here is that the existence of this species, which potentially could be very rare or possibly even undescribed was missed in the EIA by the specialists doing the relevant report. On the 7th of April 2017 *Nananthus* plants were seen on the precise site of the proposed mining activities. The field observations and surveys must be questioned. The report should be referred back to be redone and alternative peer review sought.
19. The effect on migrant and moving ungulates is a big worry from an environmental point of view. As well as many reptiles, rodents and a myriad of insects that would all adversely be affected by uranium mining. There is a very delicate ecological balance in existence here.
20. Constitutionally South Africa belongs to all of its citizens. We all have the right to clean air and water; mining will jeopardise our constitutional rights.
21. Blasting and the transport of mining materials and products by large machinery will generate large amounts of dust. Anyone living in the Karoo that has experienced an August day with strong seasonal Westerly winds blowing knows that suggested mitigation measures of putting tarpaulins on trucks and damping down roads will be hopelessly insufficient to curtail dust pollution being spread far and wide by the prevailing winds.
22. There is much reference to the checks and balances in place, what if a safety aspect goes wrong? We will end up with poison in our environment. Mining will always be a massive intrusion on the environment. Let us never forget that Uranium mining is far worse, as it deals with deadly toxic substances and gases.
23. We further object to the piece-meal fashion in which this disruptive industry is forced on us. The De Pannen / Kareepoort Block application does not make sense without the Central Processing Plant and all the other developments at Ryst Kuil (WC10085MR) and potentially Quaggasfontein (WC10086MR) in the Western Cape being tabled at the same time. We cannot effectively take the cumulative impacts of multiple mining sites into account if only shown one small block at time. We are aware that the ores mined at De Pannen will be treated in the vicinity with a host of unknown and as yet unlicensed industrial activities in

the rural areas South of Beaufort West. It is like building a bridge, but not having the authorization for the road to connect the bridge. This does not make sense. We need to see the entire undertaking as one and have it considered in its entirety. We cannot have the dirty processing on certain properties without due consideration first of the impact on the whole area before the mining ever starts. This we also link to the project's potential economic viability given uranium's current low price and critically low water levels in this part of the Karoo.

24. There is concern for the health of the general public on the critical R61 route (linking the "Transkei' area to Cape Town) using the water from a borehole at the Rooidam Farm stall a mere few Km away from the proposed mining area bearing in mind the high risk of contamination of water, soil and air.

SUBMITTED BY:



Mariette Liefferink

CEO: FEDERATION FOR A SUSTAINABLE ENVIRONMENT

16 April 2017