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Proposed Ncwabeni Off-Channel Storage Dam: Review of Draft EIA Report

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Dear Mr Henning,

Thank you for the opportunity to comment on the draft EIA for this project.

It is WESSA's position that provision of an adequate water supply is a basic human right, and that water storage infrastructure is therefore equally essential. We also prefer the off-channel storage option in situations where it can be undertaken without compromising other priorities. In view of the critical water supply situation in the Hibiscus Coast Municipality we welcome this investigation into the feasibility and suitability of an off-channel storage facility.

In principle this project appears to present a win-win situation in many respects, although not in all respects. We are satisfied that the selection of potential sites and the assessment of their feasibility has been done in a thoroughly professional manner. However we are not satisfied with the geotechnical information provided, and are very concerned with the practical implementation of the project.

We would therefore request more, or more detailed information on the following.

1. Size

The Mzimkulu Water Resource Study indicated a minimum capacity requirement for a dam on the Mzimkulu system of 0.17MAR. (It also indicated that MAR is at 1453M m³ implying a minimum storage capacity of 247M m³.) We are aware that there are other possible sites for reservoirs, and it is likely that the Ncwabeni project will not be the whole solution, but how far does a capacity of 16M m³ meet the "future scenarios". The draft report repeatedly states that this has been considered, but we are not satisfied that the data given is adequate to quantify and validate the assertion that the size is sufficient. Furthermore it was implied at the public meeting that the dam would not be sufficient, but cost was a limiting factor.

In section 10.6.3 the report affirms that the ecological reserve must be preserved as a legal requirement. This is confirmed in the report tabled by Mr Niel J van Wyk (Pr. Eng.), Chief Engineer, National Water Resource Planning (east) on 6th November 2010, detailing the DWEA requirements: "The Directorate: National Water Resource Planning therefore recommends that further abstraction of water from the river system should only be allowed if appropriate measures are implemented which will ensure that water required for the environmental requirements, downstream of the proposed abstraction points is available at all times."

We would draw attention to the phrase "at all times" since in this report it would appear that the assessment was based on "medium winter flows", whereas the critical period for the ecological reserve would be the low flow regime. Evidence in the Mzimkulu Resource study indicates that at present abstraction exceeds the legal maximum. We therefore require quantitative data to show that this project will ensure that at no period of the year, even during a drought cycle, will any portion of the ecological reserve be abstracted.

2. Geotechnical Report

It appears from sections 6.5.1 and 6.5.2 of this report that a detailed geotechnical study supported by geophysical investigations will only be undertaken if the project is approved to proceed. We also noted that there does not appear to be a separate report on the preliminary geotechnical studies, compiled by an independent specialist, attached to the Draft EIA, although we understood that such a document had been compiled. If it exists it should be made available, and if not it is an omission of great concern.

Such a report must address all those geotechnical issues which might constrain the viability of the project. Specifically we are concerned about potential losses due to seepage along the fault line and/or through the bedrock. We are aware that, for example, there was a quite extensive drilling program, but information on the results of this program given in the draft report seems to be confined to the suitability of construction materials and founding depths for the dam wall. Details of the bedrock were sketchy, and the plan showing the borehole sites in Appendix B6 does not indicate their relationship to the fault-zones. This information is essential in order to validate the conclusions of the report.

It would appear from the completed drilling program that the valley floor includes a quite deeply weathered horizon, with fissures and open veins. What is not clear is the extent of this zone, and especially its nature along the fault-line. Because of the critical significance of the latter we consider this omission unacceptable. Nor does there appear to be any record of in situ stress measurements. Although these are unlikely to be high near the surface, if there is a horizontal stress component there is also potential for movement, which could be facilitated by the hydraulic pressure of the impounded water. Although the report notes that there is minimal likelihood of a natural earthquake sufficient to damage the type of dam under consideration, the possibility of an artificially induced event does not appear to have

been considered. There are a number of records of this scenario occurring, and the report needs to address this issue, given the presence of faulting below the dam wall. As this is a public safety issue, as well as an issue of proper use of public funds, we consider that a full assessment of this issue and the potential cumulative effects of artificially created stresses, is critical prior to approval being given.

3. Environmental Management Plan

We are pleased to see the EMPs included in this report (Appendix F2), as we consider that this is an essential requirement in terms of the NEMA duty of care. Nonetheless we are concerned that the resources and capacity to adequately implement the EMPs for a project like this may not be locally available, and that the local water authority, UGU, especially appears to lack these resources. We note that over the last few weeks there has been widespread criticism of UGU because of their failure to quickly address water supply problems. There also appears to be a chronic shortage of adequately qualified personnel. Given the sensitive nature of ecosystems, and the fact that this project has a direct impact on a river system this lack of capacity is unacceptable.

We are aware that during a previous project UGU took care to relocate a number of specimens of flora, but failed dismally to ensure their survival at the new site. In the light of this we would have to question whether UGU has the will and the capacity to successfully implement the "search and rescue aspects recommended in this report.

We would also like to see provision for a suitable offset for the lost natural habitat. And again we would have to question whether UGU has either the will and the capacity to implement such a provision, given that they apparently have not yet complied with the provision for this in the RoD issued for the sports complex near Ghamalake.

The draft EMP appears to be quite comprehensive as regards the operations it encompasses, but we are concerned about the provisions for compliance, and the delegation of decision-making for specialist functions to the project manager. This clearly risks potential conflicts of interest. The project manager is primarily employed to keep the project on track and to minimise costs. This would inevitably conflict with the time and cost of environmental actions, and could prejudice the environmental outcomes. For example, determining the best practise for controlling invasive species is not primarily based on financial criteria, but requires specialist training, and should not be left to the manager's discretion.

We are also concerned that in some areas the EMP is not sufficiently definitive. An EMP has to be written from the basis of ensuring compliance, by looking at the worst-case scenario and assuming that not everyone is both adequately trained and cooperative. For example the phrase "Preserve protected flora species outside of construction areas" sounds good, but implies that if the manager feels like it he can define the construction areas so broadly that destruction of protected species will be excessively widespread. Similarly the requirement to use only indigenous flora for rehabilitation should be amended to read "locally indigenous".

In consequence of the past history of infrastructure projects in this district we therefore believe that a more comprehensive and legally enforceable management plan must be compiled and approved prior to the issuing of a permit for this project.

We would strongly recommend the appointment of a fully independent ECO, with the authority and mandate to enforce the EMP, if necessary by referring disputes to a higher authority such as the DAEA or SAP environmental crimes unit. The Eco should act as an advisor to the project manager, but report primarily to the permitting authority.

The establishment of a monitoring committee could provide a valuable tool, however it needs to have clearly established functions and authority. It is also essential that its composition gives it credibility and competency, with a predominance of expertise and independance. It should include a limited number of representatives of all the various stakeholder groups, and it may be necessary to provide it with sufficient funding to ensure that the non-governmental representatives are not excluded due to expenses.

We would also like to see the inclusion of an EMP for the operational phase of the project, with clear guidelines on the abstraction and release conditions, and a specific requirement for compliance with the legal priorities regarding the ecological reserve.

The operational EMP should also determine what is permissible in terms of additional benefits. It is important to realise that this project could assist in job creation in an area which needs it desperately. For example, the project has potential to support tourism and recreation activities. However, introducing invasive alien species (such as some game fish species) should be prohibited. Similarly there is potential for boating, but power-boats could result in pollution of the resource.

4. Power Supply:

A separate EIA process for the Eskom power line is not supported, as the two elements are integral. We see no benefit, and considerable extra expense in separating these two parts. Furthermore there are aspects such as visual impact which would constitute cumulative impacts, and these must be addressed for the whole project. We are also concerned that if the first part is approved this could lead to a biased consideration and prejudice in favour of the second application.

5. Off-take Weirs:

This study should also address environmental issues relating to the weir construction both for the OCS Dam and for St Helen's Rock. Excluding the St Helen's rock infrastructure is in direct conflict with the NEMA requirement to consider cumulative impacts. For example, the two weirs together may considerably increase the area of shallow water in the river, leading to additional losses by evaporation. Whilst the volume lost may not be significant in terms of the catchment capacity, it could become significant for the local ecosystem during low flow periods. There are also other potential impacts such as creating a relatively placid pond which could facilitate the spread of invasive aquatic flora and fauna.

6. Cumulative Impacts

Reference is made in the report to the Mhlabatshane Dam, but no details are given. The draft EIA report must make clear whether there are potential cumulative impacts which need to be considered, and whether the transfer of water between catchments is environmental best practise. As a general principle WESSA does not support inter-catchment transfers, because of the additional negative impacts on both natural hydrological systems.

Similarly the report needs to state clearly that no other projects likely to impact on the ecology of the catchment are in the pipeline. If there are such projects then the cumulative impacts must be properly and comprehensively assessed. This includes the possibility of additional OCS or other schemes in the future, since the statement that the two sites are not unique, and therefore one of them can be transformed without excessive impacts is predicated on the alternative ecological assets remaining untransformed. Unless this asset situation is sustainable then this aspect of the motivation is fatally flawed.

This draft EIA, along with its appendices, is a weighty document and it covers a lot of ground. Whilst it is true that there will always be additional information which has not been included, it is essential that certain key aspects are sufficiently covered. As detailed above there are still concerns about the size, the geotechnical data, and the management of the project.

This Draft EIA only gives a summary of the geotechnical data, and that summation appears to be inadequate. The capacity of the dam must be sufficient to ensure adequate water for all the required purposes, including the ecological reserve, and at all times. All aspects of the project must be included, along with all the cumulative impacts. The EMP must be fool-proof and enforceable. And all the data given needs to be sufficient in quantity and quality to justify the human, environmental and economic investment required to bring the concept to fruition safely.

We have serious reservations about the capacity of UGU to manage this project without compromise to the natural environment, both in the construction and in the operational phase. We would therefore prefer to see this implemented and operated by the national department.

We trust that the implementation of this project will be for the benefit of all, and with minimal negative impacts. And we hope that these comments will be of assistance in achieving that goal. Please keep us informed of progress.

Yours Sincerely

P Norman.