EnviroSci (Pty) Ltd
Reg No 2018/462716 /07

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To whom it may concern

Aquatic Comparative Assessment Statement for the proposed EA extension application for the Grid Connection Infrastructure to service the Loeriesfontein 3 Solar PV facility in the Northern Cape

EnviroSci (Pty) Ltd was appointed to review the findings of the proposed project in relation to the previous studies conducted in 2012, after which the project received approval (originally authorised under DFFE Ref: 12/12/20/2321/2, and as amended in 12/12/20/2321/2/A1; 12/12/20/2321/2/AM2; 12/12/20/2321/2/AM3; 12/12/20/2321/2/AM4 and 12/12/20/2321/2/2). This comparison was based on a detailed knowledge of the site and adjacent environs as the undersigned conducted assessments on the site and adjoining farms from 2010 onwards up until 2022. This also includes 7 wind farms, various connecting grid connections to the Helios substation and upgrades of the Transnet rail network also near the project site. A site-specific survey was also conducted by EnviroSci in January 2023 to confirm or refute if any changes had occurred to the aquatic environment since the original assessments in 2012.

Project description

South Africa Mainstream Renewable Power Loeriesfontein 3 (Pty) Ltd received the original Environmental Authorisation (EA) for the 100 MW Loeriesfontein 3 Photovoltaic (PV) Solar Energy Facility (SEF) and Grid Connection infrastructure on 29 October 2012 (DFFE Ref: 12/12/20/2321/2). Further to this, the original EA was amended on 10 July 2014 (DFFE Ref: 12/12/20/2321/2/A1), 27 October 2015 (DFFE Ref: 12/12/20/2321/2/AM2), 04 October 2017 (DFFE Ref: 12/12/20/2321/2/AM3) and 24 September 2019 (DFFE Ref: 12/12/20/2321/2/AM4). In addition, following the 2019 amendment, the EA was subsequently split into two separate EAs (1 for the 100MW PV SEF and 1 for the grid connection infrastructure), both dated 21 May 2021, as follows:

1) EA for the 100MW Loeriesfontein 3 PV SEF, 33/132kV Independent Power Producer (IPP) portion of the shared on-site substation (including Transformer) and associated infrastructure (DFFE Ref: 12/12/20/2321/2/1); and
2) **EA for the 132kV Grid Alignment and 132kV Eskom Portion of the shared on-site substation to service the 100 MW Loeriesfontein 3 PV SEF (DFFE Ref: 12/12/20/2321/2/2) (the subject of this statement).**

It should be noted that the split EAs for the Loeriesfontein 3 PV SEF (DFFE Ref:.12/12/20/2321/2/1) and Grid Connection infrastructure (DFFE Ref: 12/12/20/2321/2/2) dated 21 May 2021 respectively replaced the original EA dated 29 October 2012, as well as the subsequent amendments. **This report**

however addresses the EA extension application for the Grid Connection infrastructure specifically, and the EA extension application for the Loeriesfontein 3 PV SEF has been assessed and reported on as part of a separate standalone report.

The validity of the split EA for the Grid Connection infrastructure to service the 100MW Loeriesfontein 3 PV SEF lapsed on 29 October 2022, however, a Part 1 EA Amendment Application to extend the validity of the EA by 5 years (i.e., EA lapses on 29 October 2027) was submitted to the Department of Forestry, Fisheries and the Environment (DFFE) on 26 October 2022. It is important to note that according to Regulation 28(1B) of the National Environmental Management Act (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014 (as amended), "*an environmental authorisation which is the subject of an amendment application contemplated in this Chapter remains valid pending the finalisation of such amendment application."* The Part 1 EA Amendment Application was acknowledged by the DFFE on 09 November 2022 and additional information was requested to be submitted to the DFFE for consideration. Following this, comparative assessments are to be undertaken to motivate why the Department should extend the validity period of the EA for a further 5 years.

The grid connection infrastructure to service the Loeriesfontein 3 PV SEF (as authorised as part of split EA dated 21 May 2021 with reference: 12/12/20/2321/2/2) consists of the following:

1) A 132kV overhead powerline and an on-site 132kV substation (Eskom's portion of the shared on-site substation) that will connect the Solar PV to the Grid.
2) Loeriesfontein 3 Grid Connection Powerline Corridor:

Centre Line Coordinates	**Latitude**	**Longitude**
Start point	S30° 22'30.979''	E29° 34'48.082''
Middle point	S30°26'20.771''	E19° 33'30.243''
End point	S30°29'58.002''	E19°33'37.699''

As mentioned above, the EA for the Grid Connection infrastructure to service the Loeriesfontein 3 PV SEF (as authorised under 12/12/20/2321/2, and as amended in 12/12/20/2321/2/A1; 12/12/20/2321/2/AM2; 12/12/20/2321/2/AM3; 12/12/20/2321/2/AM4 and 12/12/20/2321/2/2) lapsed on 29 October 2022. The Applicant therefore wishes to extend the validity period of the EA for a period of five (5) years (i.e., EA lapses on 29 October 2027).

Study Terms of Reference

The Terms of Reference (ToR) for the specialist inputs into the provision of a specialist statement for the Application for Amendment of the EA to extend the validity period require:

- Description of the status (baseline) of the environment that was assessed during the initial assessment.

- Confirmation of the current status of the assessed environment.
- Description and assessment of any changes to the environment that has occurred since the initial EA was issued, if any.
- Indication whether the impact rating as provided in the initial assessment remains valid; if the mitigation measures provided in the initial assessment are still applicable; or if there are any new mitigation measures which need to be included into the EA/EMPr, should the request to extend the commencement period, and other proposed amendments, be granted by the Department.
- Indication whether there are any new assessments and/or guidelines which are now relevant to the authorised development which were not undertaken as part of the initial assessment, must be taken into consideration, and addressed in the specialist statement/ report.
- Description and an assessment of the surrounding environment, in relation to new developments or changes in land use which might impact on the authorised project, the assessment must consider the following:
  - Similar developments within a 30km radius.
  - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.
  - Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
  - The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
  - A cumulative impact environmental statement on whether the proposed development must proceed.

The study must also conclude the following:

- Has the baseline status of the receiving environment changed significantly since the original Aquatic Assessment in 2012?
- Is the initial impact rating undertaken during the initial assessment still valid?
- Are the mitigation measures provided in the initial assessment (or subsequent updated assessments) still applicable?
- Are there any new mitigation measures that should be added to the EA/EMPr, should the DFFE approve the amendments?
- Describe any update/new mitigations (or refer to them in the EMPr update report), where relevant.
- Are the proposed amendments, including proposed extension of the validity period, acceptable (relative to your area of expertise)?

Results

The previous assessments undertaken (SiVEST, 2012) highlighted several watercourses that occurred along the grid corridor, which were then provided a suitable buffer with the recommendation that powerline towers avoid these areas.

The previous report indicated that the observed systems were dry ephemeral water courses with little to no vegetation, and no obligate aquatic vegetation. This was confirmed during this assessment conducted in January 2023 (Plate 1, Figure 1). **Due to the form and function of the observed aquatic systems, no change to these systems (baseline) has occurred in the past 12 years**.

The potential of several small depressions was indicated in the NFEPA Wetland Map, updated as part of the NSBA 2018 spatial data. These were also confirmed in the site visit conducted this year i.e., January 2023 (Plate 2, Figure 2). These same wetlands were also included in the Northern Cape Biodiversity Spatial Plan (2017) as Ecological Support Areas (ESAs) (Figure 3), as these have limited aquatic function, i.e., limited obligate aquatic function and only contain water for short periods after heavy rainfall events.

Based then on the assessment of the proposed powerline corridor and substation site, the **project would still have little bearing on the aquatic environment, assuming the final powerline tower positions are located outside of any watercourses and wetlands inclusive of the respective buffers (32m & 50m), while the service track should also be positioned within existing disturbed areas where possible**.

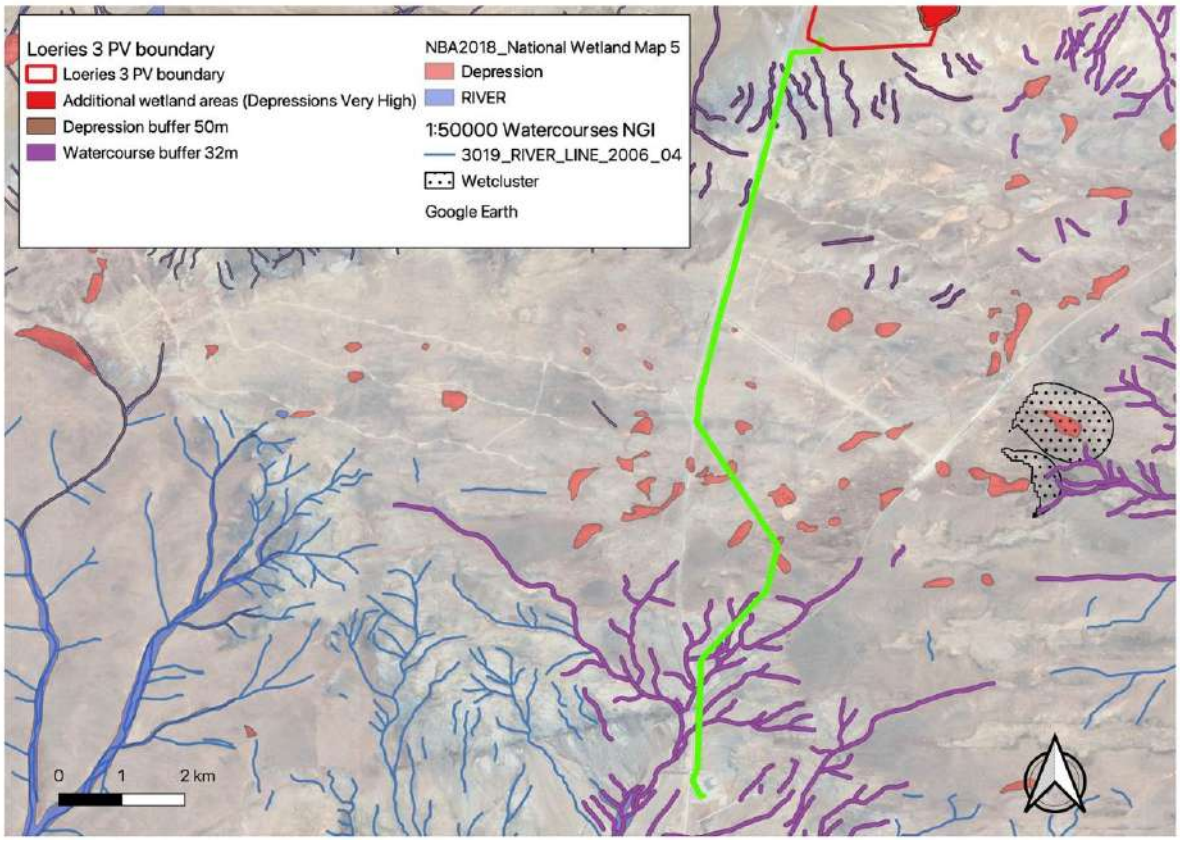


Figure 1: Results of the original survey findings, and more recent wetland spatial databases

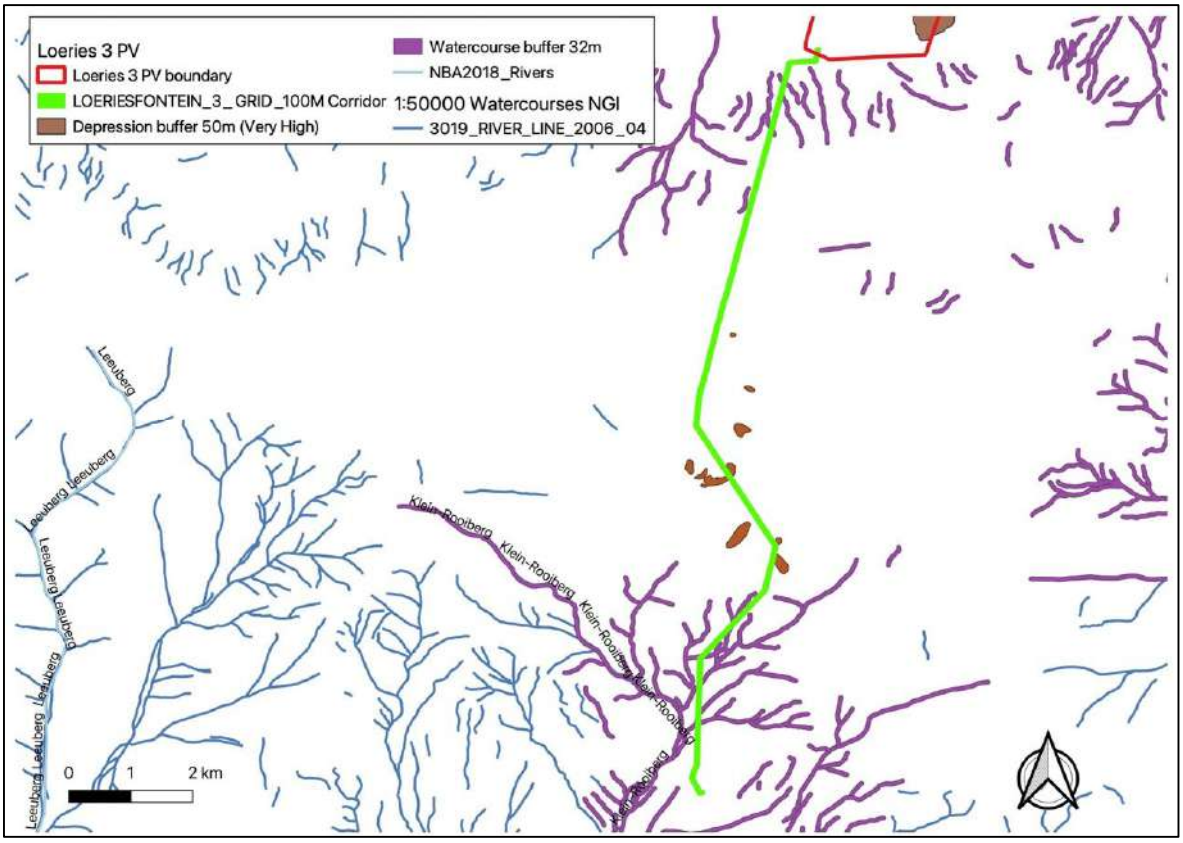


Figure 2: Results of the original survey findings, confirmed in this assessment with the appropriate buffers

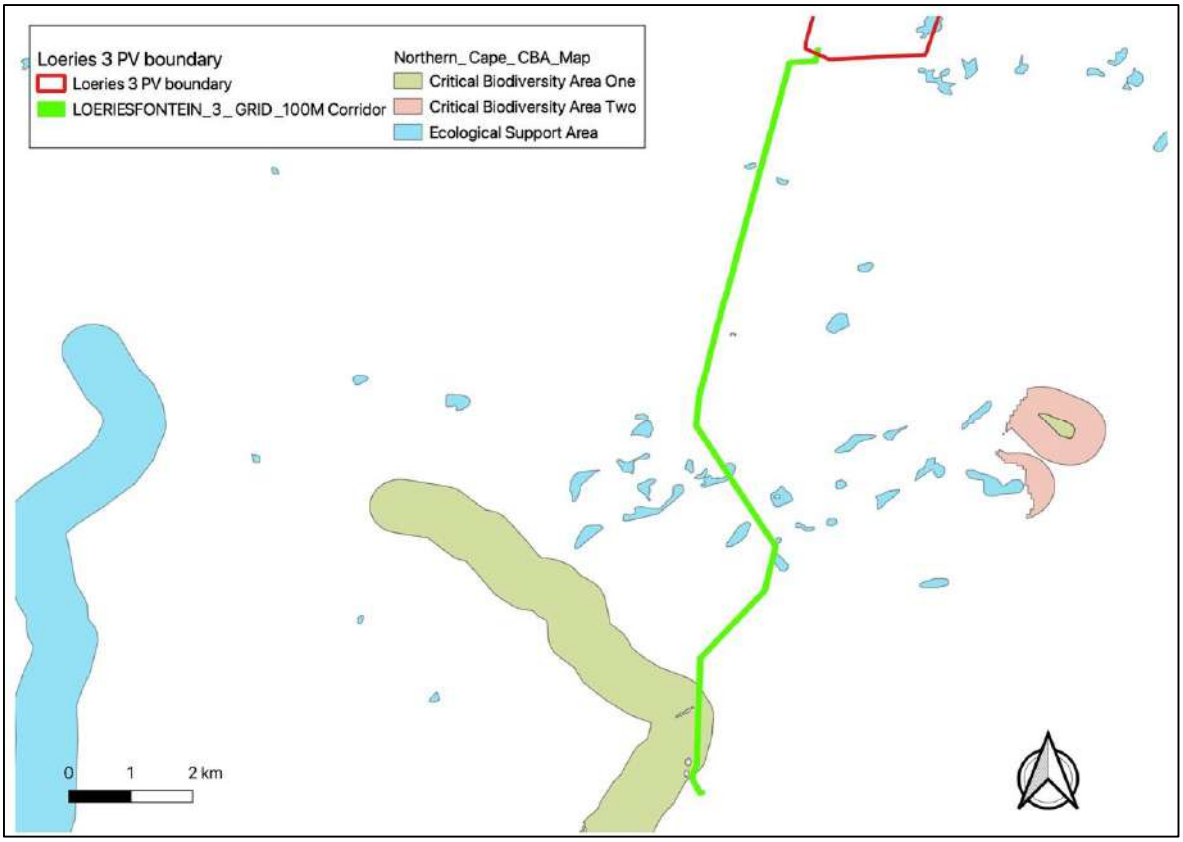


Figure 3: Ecological Support Areas (ESAs) as shown in the Northern Cape Biodiversity Conservation Plan (2017)

Plate 1: A view of one of the small drainage areas

Plate 2: A view of the one of the small depressions within the central portion of the grid corridor

The relevant legislation and/or guidelines which are relevant to the PV and associated grid connection development were considered as part of the previous assessments. In terms of new assessments, legislation and/or guidelines which are now relevant to the authorised development which were not undertaken as part of the previous assessments, the PROTOCOL FOR SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR THE ENVIRONMENTAL IMPACTS ON BIODIVERSITY, and in particular Aquatic Biodiversity, related to Government Gazette 43110, (20 March 2020) and Appendix 6 of the NEMA EIA Regulations, have also been considered in this compliance statement. As such, all relevant legislation, assessments and/or guidelines have been taken into consideration and addressed.

The DFFE screening tool indicated that that the project sites are **all located in Very High sensitivity areas (Aquatic Theme)**, as indicated in the Screening Tool Results (See Appendix 1). **This was confirmed during the site visit conducted in January 2023, due to the presence of the small depressions (Figure 2)**. However, **if these areas are avoided then the previously assessed impacts would thus remain unchanged against the previous assessments** (Table 1).

Table 1: Impact summary table comparing authorised infrastructure against the previous assessments and the overall findings of the site visit conducted in 2023, measured against the authorised project layouts

Issue & Impact	Authorised layout impact rating with mitigation	Additional works impact rating with mitigation	Comment
Site clearing, with removal of vegetation and soil disturbance	LOW	LOW	No additional impacts are anticipated but as recommended in the authorised project, a pre-construction walkdown must be conducted.
Upgrading existing roads	LOW	LOW	All the important aquatic zones can be avoided.
Loss of riparian systems and water courses	LOW	LOW	All the important aquatic zones can be avoided or contain high levels of alien tree cover.
Impact on aquatic systems through the possible increase in surface water runoff on downstream sedimentation and erosion	LOW	LOW	No additional impacts are anticipated, although the development of stormwater management features is reiterated. Similarly, this would then not impact on the overall water resource within the site, as none of the new structures must impede or divert water from the catchments
Potential impact on localised surface water quality	LOW	LOW	No impacts and or additional mitigation, when compared to the EIA, are required.
Cumulative impacts such as loss of ecosystem services	LOW	LOW	Through avoidance of any high value aquatic systems and the general improvement of existing crossings, a positive cumulative impact could occur if river/wetland rehabilitation occurs, which for the most parts include alien vegetation management and was included in the original proposed mitigation for the project.
No-Go option	LOW	LOW	Loss of natural systems within the region is on-going, as reported in the original assessment.

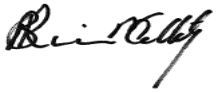
In conclusion, the final impact on the aquatic environment with avoidance of aquatic features, suitable stormwater management and or crossing designs, will remain unchanged from the original impact assessments if all the proposed mitigations are upheld.

Thus, based on the findings of this study, there is no objection from an aquatic impact perspective to the extension of the validity period of the EA, if all mitigations proposed in the reports submitted are carried out. Similarly, in the assessment of potential cumulative impacts, no additional impacts or changes to the previously assessed impacts would be required due to the proposed amendment.
This was compared to any current developments and future proposed developments within a 30km radius, and as EnviroSci has been involved in most of these projects, the same principle of avoidance rather mitigation has been applied by those projects. This then contributed to a **Low impact** on the observed systems as well as a **Low cumulative impact**, which has been confirmed as some of the projects have been established and have had no longer term impact on the aquatic resources. Furthermore, the sites will also be included in Water Use Application under a General Authorisation, being submitted to DWS.

In conclusion, no additional impacts or changes to the previously assessed impacts (including cumulative impacts) would be required, while no changes to the original mitigations or EMPr considerations are required either.

Please don't hesitate to contact me directly should you have any further queries.

Yours Sincerely



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Site verification report, as per the DFFE Screening Tool

Prior to finalising the Aquatic Biodiversity Specialist Assessment, in accordance with the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity (Government Notice 320, dated 20 March 2020), a site sensitivity verification was undertaken (18 January 2023) to confirm the current land use and environmental sensitivity of the proposed project area as identified by the National Web-Based Environmental Screening Tool (Screening Tool).

The details of the site sensitivity verification are noted below:

Date of Site Visit	18 January 2023
Specialist Name	Dr Brian Colloty
Professional Registration Number	400268/07
Specialist Affiliation / Company	EnviroSci (Pty) Ltd

Government Notice No. 320, dated 20 March 2020, includes the requirement that an Initial Site Sensitivity Verification Report must be produced for a development footprint. As per Part 1, Section 2.3, the outcome of the Initial Site Verification must be recorded in the form of a report that-

(a) Confirms or disputes the current use of the land and environmental sensitivity as identified by the national web based environmental screening tool.

(b) Contains a motivation and evidence of either the verified or different use of the land and environmental sensitivity.

(c) Is submitted together with the relevant reports prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

This report has been produced specifically to consider the aquatic biodiversity theme and addresses the content requirements of (a) and (b) above. The report will be appended to the respective specialist study included in the NEMA related reports produced for the project.

Site sensitivity based on the aquatic biodiversity theme included in the Screening Tool and specialist assessment

Based on the DFFE Screening Tool, the sites were rated **Very High sensitivity due to the presence of a National Freshwater Ecosystem Priority Areas – NFEPA and wetlands** (See Figure 1).

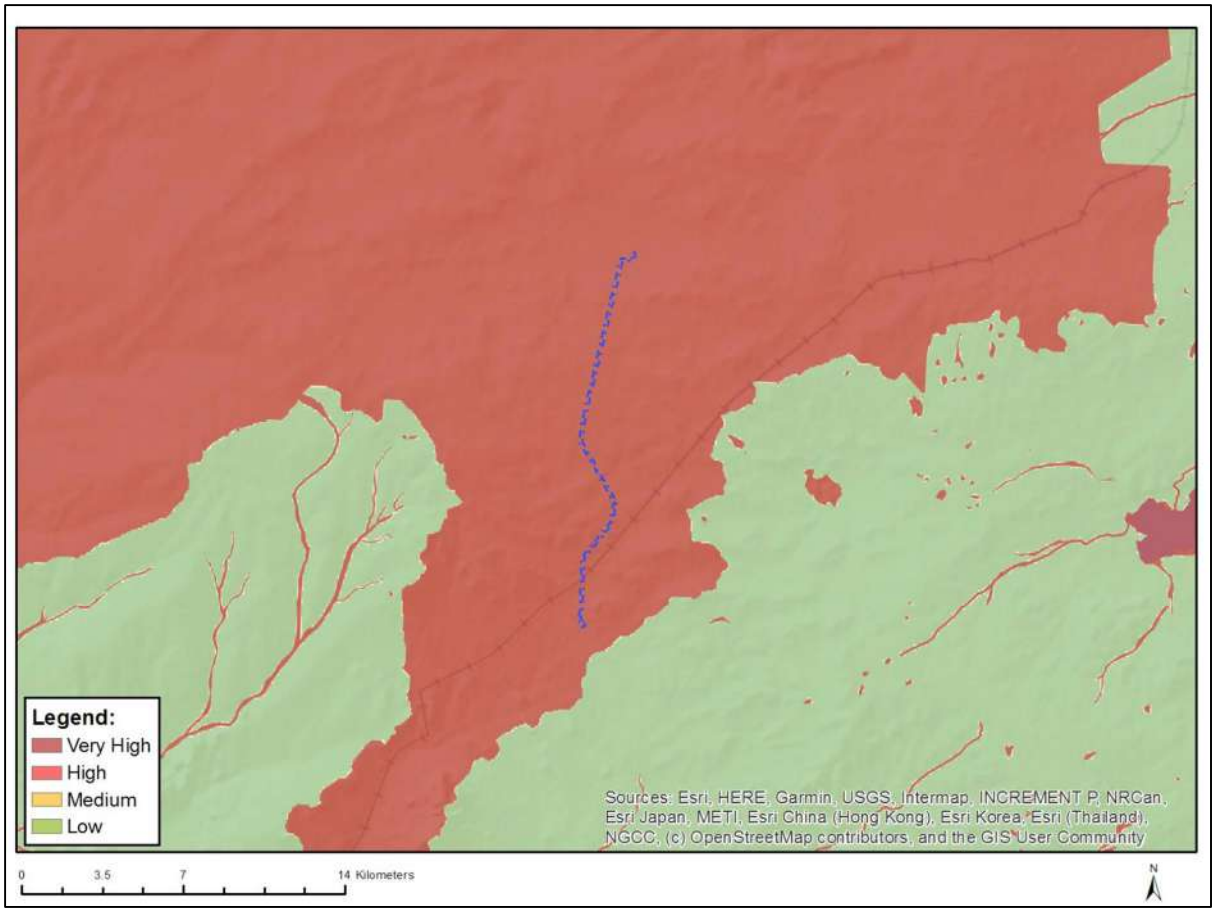

Figure 1. DFFE Screening Tool outcome for the aquatic biodiversity theme

Based on the above outcomes, the specialist **confirms** the environmental sensitivities identified on site, informed by site visits undertaken by Dr Brian Colloty would be rated as Very High. However, **this was not due to the presence of the NFEPA, as there is no direct connection with any surface water flows between the site and or any mainstem systems of importance (Figure 2), but the small depressions that would be considered sensitive were observed**. This information was substantiated by current wetland inventories, 1: 50 000 topocadastral surveys mapping and the Northern Cape Biodiversity Spatial Plan (2017).

Plate 1: A view of one of the small drainage areas

Plate 2: A view of the southernmost depression

Motivation of the outcomes of the sensitivity map and key conclusions

In conclusion, the DFFE Screening Tool identified **one sensitivity rating within the development footprint**, namely, **Very High**, which **was confirmed on site but at a finer scale** related to the small ephemeral wetland areas (depressions). However, **these can be avoided by the placement of any transmission line towers outside of these area inclusive of the 50m buffer**. These **areas should also be avoided by any service tracks**.