SITE SENSITIVITY VERIFICATION REPORT

Construction and Operation of Attenuation Dams and Pollution Control Dams as associated infrastructure for the approved 60-year Ash Disposal Facility and Associated Infrastructure for the Kusile Power Station near Emalahleni in the Victor Khanye Local Municipality, Mpumalanga Province

Prepared by:

Ms Victoria Napier – Independent Environmental Assessment Practitioner (EAP)

989 Bloedhond Street, Garsfontein Ext 10, Pretoria, 0081 South Africa

Tel: +27 (0) 78 278 2898 Email: vici.napier@outlook.com

Applicant:

Eskom Holdings SOC Limited



Competent Authority:

Department of Environment, Forestry & Fisheries (DEFF)

DATE: September 2024 Project Ref: Eskom Kusile ADF Dams S&EIR Report Rev No: 01

PURPOSE OF THE DOCUMENT

The main aim of the **Site Sensitivity Verification Report** is to confirm the current use of the land and the environmental sensitivity of the site under consideration (i.e. a proposed development site where an Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and associated 2014 Environmental Impact Assessment (EIA) Regulations, as amended, is required) as identified by the national web based environmental screening tool. This should be undertaken prior to commencing with any specialist assessment/s. The site sensitivity verification must be undertaken using:

- A desktop analysis, using satellite imagery;
- A preliminary on-site inspection; and,
- Any other available and relevant information.

The following must be recorded within this report:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.; and,
- Contain a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.

This Site Sensitivity Verification Report must be submitted with the relevant assessment report prepared in accordance with the requirements of the EIA Regulations.

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)					
	Vici Napier:				
EAP RESPONSIBLE FOR THIS REPORT & THEIR EXPERTISE	 <u>Highest Qualification:</u> Masters in Conservation Biology - University of Cape Town, South Africa. <u>Years' Experience as an EAP:</u> 18 years <u>Summary of expertise (refer to detailed Curriculum Vitae in Appendix 1 of the Draft Scoping Report):</u> Registered Environmental Assessment Practitioner with EAPASA (Reg No. 2022/4749). Registered Professional Natural Scientist with SACNASP (Reg No. 400215/09). Experienced in managing large multi-disciplinary project teams for various types of environmental assessments Undertaken numerous EIAs and Strategic Environmental Assessments (SEAs) Undertaken numerous Water Use License Applications (WULAs) and other environmental authorisation application processes Experienced in training and skills transfer within the Environmental Management field 				

TABLE OF CONTENT

PURPOSE OF THE DOCUMENT						
DET		HE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)	2			
ТАВ		NTENT	3			
1						
2						
3	SCREENING TOOL RESULTS					
-	3.1.1	Relevant development incentives, restrictions, exclusions or prohibitions	5			
	3.1.2	Proposed Development Area Environmental Sensitivity & Specialist Assessments Identified	6			
4	DESKTOP	PANALYSIS OF POTENTIAL SITE SENSITIVITIES	7			
	4.1.1	Satellite Imagery	7			
	4.1.2	Known Environmental Sensitivities	8			
5	ON-SITE ASSESSMENT					
6	SPECIALIST ASSESSMENTS REQUIRED IN SUPPORT OF THE EIA		11			
	6.1.1	SPECIALIST ASSESSMENTS TO BE UNDERTAKEN	11			
	6.1.1.1	Terrestrial Biodiversity Compliance statement & Animal and Plant Species Compliance Statements	11			
	6.1.1.2	Blast (Vibration and Noise) Impact Statement/ Assessment	13			
	6.1.1.3	Groundwater Assessment	13			
	6.1.2	MOTIVATION FOR SPECIALIST ASSESSMENT NOT REQUIRED	13			
	6.1.2.1	Landscape/ Visual Impact Assessment	13			
	6.1.2.2	Archaeological and Cultural Heritage Impact Assessment	14			
	6.1.2.3	Palaeontology Impact Assessment	14			
	6.1.2.4	Aquatic Biodiversity Assessment	14			
	6.1.2.5	Hydrology assessment	15			
	6.1.2.6	Socio-Economic Assessment	15			

1 INTRODUCTION

The proposed project, consisting of the development of attenuation dams and Pollution Control Dams (PCDs) as associated infrastructure for the management of water on site for the already authorised Ash Disposal Facility (ADF) at Eskom Holdings SOC Limited's Kusile Power Station.

2 PROJECT LOCALITY

The authorised ADF and associated infrastructure will be located at Eskom's Kusile Power Station (Farm on Farm Klipfontein 566 JR Portions 3, 7, 9, 10, 11, 19, 21, 25, 26, 30, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53 and 54), Nkangala District Municipality, Victor Khanye Local Municipality, Mpumalanga Province (Figure 1, Appendix 2 of the Draft Scoping Report).



Figure 1: Locality Map for the ADF and associated infrastructure study area at Kusile Power Station.

3 SCREENING TOOL RESULTS

The full Screening Tool Report generated from the national web based environmental screening tool is attached in Appendix A to this report. The following section discusses the on-site verification of the findings of the screening tool by the Environmental Assessment Practitioner (EAP).

3.1.1 RELEVANT DEVELOPMENT INCENTIVES, RESTRICTIONS, EXCLUSIONS OR PROHIBITIONS

The study area falls within the following development zones:

- Strategic Transmission Corridor- International Corridor;
- Air Quality: Highveld Priority Area (HPA); and,
- Renewable Energy Development Zones 9 Emalahleni

In terms of the Strategic Transmission Corridor, the required development of the attenuation dams and PCDs to support the authorised ADF project at Kusile Power Station does not trigger Listed Activity 09 of the EIA Regulations Listing Notice 2 of 2014, as amended; the project is not principally an electricity transmission and distribution project. Thus, the procedure for EA by way of a Basic Assessment application process is not believed to be applicable to this proposed development application.

In terms of the Renewable Energy Development Zones 9 – Emalahleni, the required development of the attenuation dams and PCDs to support the authorised ADF project at Kusile Power Station does not involve the development of large-scale wind and/or solar photovoltaic energy projects. Thus, this development does not trigger Listed Activity 1 of the EIA Regulations Listing Notice 2 of 2014, as amended, and therefore the development incentive is not applicable.

Most of the HPA experiences relatively good air quality, but ambient air quality standards for PM_{10} concentrations are exceeded in nine extensive areas within the HPA. These "hot spots" are illustrated in Figure 2 by the number of modelled exceedances of the 24-hour PM_{10} standard and are confirmed by ambient monitoring data. The air quality hot spots result mostly from a combination of emissions from the different industrial sectors and residential fuel burning, with motor vehicle emissions, mining and cross-boundary transport of pollutants into the HPA adding to the base loading.

The HPA Air Quality Management Plan (AQMP) has seven (7) overarching goals, namely:

- 1) By 2015, organisational capacity in government is optimised to efficiently and effectively maintain, monitor and enforce compliance with ambient air quality standards.
- 2) By 2020, industrial emissions are equitably reduced to achieve compliance with ambient air quality standards and dust fallout limit values.
- 3) By 2020, air quality in all low-income settlements is in full compliance with ambient air quality standards.
- 4) By 2020, all vehicles comply with the requirements of the National Vehicle Emission Strategy.
- 5) By 2020, a measurable increase in awareness and knowledge of air quality exists.
- 6) By 2020, biomass burning, and agricultural emissions will be 30% less than current.
- 7) By 2020, emissions from waste management are 40% less than current.

Kusile Power Station falls within the Witbank and Emalahleni hot spot for PM₁₀ sources. Thus, management of emissions from dust-generating activities (such as the construction activities associated with the dams) must be reduced in order to contribute to Goal 2 of the HPA AQMP. Kusile has existing operating procedures to monitor and manage dust generation on site (refer to Section 5.1.13 of the Draft Scoping Report as well as the Dust Fallout Monitoring Report in Appendix B), in addition to complying with their AEL. Thus, no additional assessments are required, as the construction of the greater ADF and associated infrastructure project has already been assessed and authorised.



Figure 2: Modelled frequency of exceedance of 24-hour ambient PM₁₀ standards in the HPA, indicating the modelled air quality Hot Spot areas (AQMP, 2011)

3.1.2 PROPOSED DEVELOPMENT AREA ENVIRONMENTAL SENSITIVITY & SPECIALIST ASSESSMENTS IDENTIFIED

Table 1 highlights the relevant environmental themes and their associated environmental sensitivity for the ADF study area.

Theme	Very High	High	Medium	Low
Agriculture	Х			
Animal Species		X		
Aquatic Biodiversity	Х			
Archaeological and Cultural Heritage		X		
Civil Aviation				Х
Defence				Х
Palaeontology	Х			
Plant Species			Х	
Terrestrial Biodiversity	Х			

Table 1: Environmental sensitivities as per the DFFE Screening Tool Report

Based on the above, the following list of specialist assessments were identified for inclusion in the EIA.

- Landscape/ Visual Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontology Impact Assessment;
- Terrestrial Biodiversity Assessment;

- Aquatic Biodiversity Assessment;
- Hydrology Assessment;
- Socio-Economic Assessment;
- Plant Species Assessment; and,
- Animal Species Assessment.

4 DESKTOP ANALYSIS OF POTENTIAL SITE SENSITIVITIES

4.1.1 SATELLITE IMAGERY

Figure 3 provides a satellite image of the study area as of April 2023, while the historical image of June 2018 (Figure 4) shows the landcover ≈5 years ago.



Figure 3: Google earth satellite image of the study area in April 2023.



Figure 4: Historical Google Earth satellite image of the study area in June 2018

4.1.2 KNOWN ENVIRONMENTAL SENSITIVITIES

Based on the **2014 Mpumalanga Biodiversity Sector Plan's (MBSP)** Terrestrial Critical Biodiversity Areas (CBAs) data, the majority of the study area is regarded as heavily modified (i.e. cultivated lands based on the landcover layer), moderately modified – old lands with some other natural areas associated with the wetland/ non-perennial streams on site (Figure 4). The MBSP provides the following category descriptions:

- Modified: Areas that have undergone a significant and often irreparable degree of transformation that has led to a near-complete loss of biodiversity and ecological functioning. Common agents of modification include mining, arable agriculture and infrastructure development.
- Modified Old Lands: Areas that have been altered by cultivation and other activities within the last 80 years and subsequently abandoned. The biodiversity and ecological functioning in such areas is compromised but may still play a role in the provision of ecosystem services.
- Other Natural Areas: Areas that have not been selected to meet biodiversity conservation targets, yet they are likely to provide habitat for flora and fauna species and a range of ecosystem services.



Figure 5: Environmental Sensitivity Map of the ADF Study area based on existing environmental GIS datasets

The ADF study area falls within the Grassland Biome, and specifically within the Rand Highveld and Eastern Highveld Grassland vegetation types (Figure 6). Both vegetation types are listed as Vulnerable according to the 2022 revised national list of threatened ecosystems.



Figure 6: 2018 National Vegetation Map highlighting the relevant vegetation types within the ADF study area (SANBI BGIS, accessed September 2024)

5 ON-SITE ASSESSMENT

Various specialist investigations and site visits have been undertaken for the ADF and associated infrastructure project over the years, spanning from 2013 through to 2023. Aerial images using a drone have also been taken to track progress of site activities and monitoring any changes within the landscape/ environment.



Figure 7: Aerial photograph of the north-western corner of the ADF study area, taken by drone in May 2024.



Figure 8: Aerial photograph of the southern extent of the ADF study area, taken by drone in May 2024.



Figure 9: Aerial photograph of the ADF study area viewing the eastern boundary, taken by drone in May 2024.

6 SPECIALIST ASSESSMENTS REQUIRED IN SUPPORT OF THE EIA

The Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool highlighted a number of specialist assessments that may be required in support of any development applications associated with the site (refer to Section 3.1.2. and Appendix A of this report). Based on the desktop analysis and various specialist investigations and site visit conducted, the following additional specialist studies are confirmed as relevant and will be undertaken in support of this NEMA EA application. The terms of reference for these studies are provided within Appendix E.

6.1.1 SPECIALIST ASSESSMENTS TO BE UNDERTAKEN

6.1.1.1 Terrestrial Biodiversity Compliance statement & Animal and Plant Species Compliance Statements

With reference to Section 4.1.2 above as well as the existing specialist assessments undertaken by Golder Associates in 2014 and Kimopax in 2023, the following findings are applicable:

- The majority of the study area is regarded as heavily modified (i.e. cultivated lands based on the landcover layer), moderately modified – old lands with some other natural areas associated with the wetland/ non-perennial streams on site.
- Golder Associates, May 2014: Terrestrial Ecosystems Assessment (Appendix 5 of the Draft Scoping Report):
 - No endemic, Red Data or protected species were recorded in the cultivated lands and the probability of such species occurring in this vegetation community is considered low.
 - Although many areas comprising Dry mixed Grassland are negatively impacted by overgrazing, within the context of the broader landscape matrix, this vegetation community provides valuable and important natural grassland habitat. The ecological integrity of this vegetation community ranges from medium in disturbed areas (dominated by *Hyparrhenia hirta*) to high in less disturbed areas. Two protected flora species (*Boophane disticha* and *Hypoxis species*) were recorded in the Dry mixed grassland and the suitability of this vegetation community as habitat for other Red Data and/or protected species is considered high. Accordingly, the conservation importance of areas of this vegetation community is also high.
 - Areas characterised by the moist grass and sedge vegetation community play a critical ecological role in the purification and supply of water and are thus highly valuable hydrological features. Moreover, they also provide important breeding, feeding and dispersal habitat for a variety of fauna, some of which may be Red Data and protected fauna, as well as a threatened flora species such as inter alia *Eucomis autumnalis* and members of the genus *Gladiolus*, all potentially occur in this vegetation community. The ecological integrity of this vegetation community is therefore considered high and accordingly, the conservation importance of these areas is considered high.
 - Twenty-five Red Data and/or protected plant species have historically been recorded in the general vicinity in which the study area is located according to the SANBI SIBIS database and data received from the Mpumalanga Tourism and Parks Agency. These are primarily from the families MESEMBRYANTHEMACEAE (5 species), IRIDACEAE (4 species), ORCHIDACEAE (4 species). All have a high probability of occurring in the study area. Plant species of conservation importance recorded in the study area include *Boophane disticha, Crinum bulbispermum, Hypoxis* sp. and *Gladiolus* sp.
 - Red Data and protected mammals:
 - Two Red Data/protected mammal species, namely the Aardvark and Cape clawless otter have been recorded in the study area. The Aardvark and Cape clawless Otter are Protected in terms of Schedule 2 of the Mpumalanga Nature Conservation Act, 1997 (Act No. 10 of 1997) [MNCA].
 - Twenty-one Red Data and/or protected mammal species potentially occur in the study area.
 - o Birds:
 - All of the birds identified are common and widespread species, typically associated with grassland and wetland habitats on the Highveld.

- An additional 15 Red data/protected species may occur in the study area.
- o Herpetofauna
 - All recorded reptile and amphibian species are common and not restricted in terms range or habitat.
 - According to Schedule 2 of the MNCA, all species of reptile excluding both monitor species and all snakes, are listed as Protected. This notwithstanding, the Spotted Harlequin snake (Homoroselaps lacteus) which may potentially occur in the study area, has been categorized by provincial authorities as Near-threatened, while two other species which may also occur in the study area, the Breyer's long-tailed seps (*Tetradactylus breyeri*) and the Striped Harlequin snake (Homoroselaps dorsalis), are listed by the IUCN as Vulnerable and Near Threatened, respectively. The probability that these species occur in the study area is considered moderate.
 - In terms of amphibians, the Giant bullfrog (*Pyxicephalus adspersus*) is the only listed amphibian that may potentially occur in the study area. According to Schedule 2 of the Mpumalanga Nature Conservation Act (No 10 of 1997) this species is Protected, while the NEMBA TOPS List (2007) and IUCN categorise it as Near Threatened. The probability of Giant bullfrog occurring in the Moist grass and sedge vegetation community in the study area is considered high.
- o Arthropoda
 - All taxa recorded were common and widespread species.
 - The Marsh sylph (*Metisella meninx*) has a high probability of occurring in the study area. This species is listed as Vulnerable according to Henning *et al.* (2009) and favours wetland and marsh habitats on the Highveld. Within the study area this species potentially occurs in undisturbed sites comprising the Moist grass and sedge vegetation community.
 - Other arthropods of conservation importance that potentially occur in the study area include members of the CTENIZIDAE (trapdoor spiders) and THERAPHOSIDAE families (Baboon spiders). These spiders usually live in burrows or silk-lined retreats, none of which were observed in the study area. That said, on-site habitat is suitable for these species and the probability that they are present is considered moderate.
 - Scorpions of conservation importance: Opistacanthus Validus and Opistophthalmus glabrifrons were not recorded in the study area, the probability that they are present is also considered high, particularly in areas of Rocky scarp.
- Kimopax, 2023: Ecological Survey, Search and Rescue of Plant Species and Avifauna Assessment for the construction of the 60-year Ash Disposal Facility at Kusile Power Station, Ogies, Mpumalanga (Appendix 5 of the Draft Scoping Report).
 - The vegetation within the area had been largely disturbed by previous land uses for agricultural practices, thus the areas of grassland within the project area have been altered from the natural state and are dominated by *Themeda triandra*, *Eragrostis curvula* and *Sporobolus africanus*.
 - Species of *Helichrysum* and *Hypoxis hemerocallidea* were identified throughout the project area.
 - Species of *Cyperus esculentus* and *Juncus effusus* were identified within the moist areas associated with the non-perennial streams and wetlands.
 - \circ The overall plant diversity within the project area was considered low.
 - No Red Data plant species were recorded within the project area.
 - *Hypoxis hemerocallidea* (African Potato) with medicinal value was the only plant species of conservation concern identified and listed as Declining.
 - Avifauna: No threatened species (Red Data species) were recorded within the project area during the survey.
 - The ecological sensitivity of the study area was rated as Low.
 - Assessment of impacts associated with the loss of floral and faunal habitat and ecological structure, and the direct loss of fauna, was rated as Low negative significance.

• The impact of the spread of alien invasive plant species was rated as Low negative significance.

Based on the recent (2023) Kimopax Search and Rescue study for the ADF and associated infrastructure footprint and their finding that the terrestrial ecological sensitivity of the study area was rated as being of **low significance**, a **Terrestrial Biodiversity Compliance Statement** will be undertaken in support of the current NEMA EA application process, in order to specifically address the Plant and Animal Species compliance statements as per the gazetted protocol for such specialist investigations (GGN R. 1150 of October 2020) for sensitive plants and animals identified within the DFFE Screening Tool Report.

6.1.1.2 Blast (Vibration and Noise) Impact Statement/ Assessment

An assessment of the potential impact of vibration and noise (air blast) emanating from blasting activities for the construction of the PCDs on site is proposed. The potential impacts associated with blasting were not included within the original 2014 Environmental Noise Impact Assessment.

6.1.1.3 Groundwater Assessment

A Groundwater Assessment will be commissioned in order to assess the potential impacts of dewatering (i.e. removing water found underground, with immediate release back into the receiving environment) during the construction phase.

6.1.2 MOTIVATION FOR SPECIALIST ASSESSMENT NOT REQUIRED

The following specialist assessments are not deemed necessary, as motivated below.

- Landscape/ Visual Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontology Impact Assessment;
- Aquatic Biodiversity Assessment;
- Hydrology Assessment; and,
- Socio-Economic Assessment.

6.1.2.1 Landscape/ Visual Impact Assessment

A Visual Impact Assessment (VIA) was undertaken by Newtown Landscape Architects cc in October 2014 (Appendix C). The following findings are pertinent:

- The existing sense of place was determined to be mixed industrial / pastoral.
- The severity of visual impact had been rated as moderate. The Project would be prominent but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape. Construction of the Kusile Power Station would have been completed and the station fully operational by the time of the implementation of the ash disposal facility. The Project would in most instances be viewed against a backdrop including the Kusile Power Station.
- The ADF would remain on site after its operational life has been completed. This dump will then become part of the characteristics of the landscape. It is therefore very important that the ash disposal facility should be rehabilitated in a way that would be best fitting into the natural (undisturbed) features of the environmental setting at the end of the operational life of the facility.
- The Significance of the Construction and Operational Phases of the ADF, both prior to and after the correct and effective application of mitigation measures, was rated as high. This is due to the fact that residents and travellers will still be able to see the construction and operational activities due to the landscape character and height of structures. Mitigation will only partially obstruct views. The body of the facility would remain after the operational life time (i.e. the ADF).

The construction of attenuation dams and PCDs was assessed within the 2014 VIA. While the attenuation dams are now larger, they are still temporary in nature compared to the ADF itself. The PCDs were included as part of the associated infrastructure of the ADF assessed in 2014, the only difference is that they have change location in terms of the original layout. It is the EAPs opinion that the findings of the 2014 VIA for the construction phase (which is the phase within which the attenuation dams and PCDs would be constructed and operational) would not change. Neither would the operational phase of the ADF's impacts change, as the most significant contributor to the visual impact is the enormity of the ash dump itself, not the associated infrastructure surrounding it, as depicted in Figures 17 and 18 on pages 37 – 38 of the specialist assessment (Appendix C).

6.1.2.2 Archaeological and Cultural Heritage Impact Assessment

PGS Heritage compiled a Heritage Impact Assessment (HIA) Report in June 2014 as part of the original EIA for the approved ADF and associated infrastructure project. Their report provides the baseline and heritage status quo for the study area. Refer to Appendix 5 of the Draft Scoping Report for the full report. The study identified two (2) heritage structures and four (4) cemeteries within the ADF study area (Figure 5 and Table 2).

Site No.	No. Description	
A1	Cemetery of 24 African graves, cemetery to be relocated.	
A2	A2 Small farm labourer accommodation structure, possible burials adjacent to structure.	
A3	Remains of a recent farmhouse. No mitigation required before destruction.	
A5	Informal cemetery with 10 informal graves, cemetery to be relocated.	
A6	Informal cemetery with 10 informal graves, cemetery to be relocated.	

Table 2: Graves and Farm Structures located within the ADF study area

The archaeological and cultural heritage of the study area would not have changed within the last 10 years; thus this study will not be "updated" as the same findings will be realised.

6.1.2.3 Palaeontology Impact Assessment

The palaeontological research (undertaken by Metsi Metseng Geological and Environmental Services in January 2013 – Appendix 5 of the Draft Scoping Report) for the project identified palaeontological sensitive areas within the ADF study area. The Vryheid Formation is well-known for the occurrence of coal beds that resulted from the accumulation of plant material over long periods of time. Numerous plant fossils have been described by Bamford (2011) from the Vryheid Formation. Although no vertebrate fossils have been recorded from the Vryheid Formation, invertebrate trace fossils have been described in some detail by Mason and Christie (1985). Thus, the palaeontological sensitivity of the Vryheid Formation was rated as a "high sensitivity" (Figure 5). The underlying geology of the study area would not have changed (cannot change) within the last 10 years, hence an "update" of this assessment is not necessary, as the same findings will be realised.

6.1.2.4 Aquatic Biodiversity Assessment

An Aquatic Ecosystems Assessment was undertaken by Wetland Consulting Services (Pty) Ltd in 2013/2014 for the ADF and associated infrastructure project. The findings, applicable to the ADF study area, were summarised as follows: *"Alternative A is located furthest away from the Wilge River. It falls within quaternary catchment B20F and will affect the Holspruit and Klipfonteinspruit. The major impacts associated with this site will be water quality and continued erosion of the Klipfonteinspruit. These impacts can, however, be mitigated on-site with effective stormwater management and careful design of diversions according to ecological principles, including creation of habitats and mimicking natural hydrological patterns. Impacts due to the conveyor are likely to be relatively minor, restricted to two wetland crossings, and mainly limited to the operational phase. At a catchment level, only one quaternary catchment and two watercourses will be impacted upon, making it easier to mitigate impacts on site and contain spills, thus preventing impacts to the Wilge River. A number of additional off-site mitigation and rehabilitation measures should also be considered for Alternative A*

so as to manage impacts to water resources at a catchment level. Effective implementation of all mitigation should reduce the overall project impact to a moderate level at a district level, with an overall residual risk of 'Moderately High'."

The Wetland Environmental Impact Assessment and Offset Strategy Update undertaken by Digby Wells Environmental in July 2022 provides an updated assessment of the aquatic environments within the ADF study area – specifically the Channel Valley Bottom (CVB) and Hillslope Seep wetlands associated with the Klipfonteinspruit and Holfonteinspruit. This assessment was undertaken in order to re-assess the impact of the amended ADF footprint and layout on the wetland systems, as the Klipfonteinspruit no longer requires diversion with the change in the ADF's footprint and layout. Thus, this assessment will suffice in terms of assessing the change in attenuation dam size and number, as well as the PCDs (which were included in the original EIA).

6.1.2.5 Hydrology assessment

A hydro-pedological (wetland flow driver) assessment was undertaken by Geo Pollution Technologies (Pty) Ltd in July 2022 with the aim to characterise dominant surface and sub-surface flow paths of water through the landscape to wetlands and streams or groundwater. Thus, this study will be utilised to provide an assessment of the impacts of the amended footprint and layout of the ADF and associated infrastructure project on the surface hydrology of the area. This study considered that there would be fewer and larger attenuation dams as compared to the layout and design assessed within the 2014 EIA.

6.1.2.6 Socio-Economic Assessment

The socio-economic environment described within the 2013 assessment (Appendix D) remains relatively unchanged compared to the current situation - based on the findings of the 2024/25 Victor Khanye Local Municipality Integrated Development Plan (IDP) review. The assessment of the impacts associated with the greater ADF and associated infrastructure project will not change materially – and are still applicable (as assessed) in 2024. The development of the attenuation dams and PCDs was included, de facto, as associated infrastructure and the fact that the dams now trigger an additional listed activity (because the dam wall heights are higher than 5m) will not change the socio-economic impacts identified and the findings of the impact assessment. The following conclusion of the report remains valid: "When considering the social impacts of the ash disposal facility, the importance of the Kusile power station on a national scale must be considered. The supply of electricity is a critical issue in South Africa and the proposed project will add to the stability of the service. The new ash disposal facility will extend the life of the power station, which is extremely important on a national level. Most of the land on Alternative A already belongs to Eskom and no people will have to be resettled, only parts of commercial farming units. The biggest impact on the surrounding communities will be a change in the quality of their living environment, with an anticipated increase in nuisance created by dust, noise, traffic (increase in commuting time) and the presence of strangers. There are concerns about the health of the community members as well as that of livestock and crops. Pressure on physical and social infrastructure is also a concern, but it is anticipated that the project's contribution to this pressure would be quite small."