

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT:

**Agricultural Expansion of River Bend Citrus Farm -
Remainder of Farm 82 Wolve Kop, Portion 1 of Farm 77
Wellshaven, and Portion 3 of Farm 77 Honeyvale; Sundays River
Valley Municipality.**

(DEDEAT Reference Number: EC06/LN2/M/12-10)

Final Environmental Impact Assessment Report

December 2012



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| <i>Title:</i> | Final Environmental Impact Assessment Report, Agricultural Expansion of River Bend Citrus Farms on the Remainder of Farm 82 Wolve Kop, Portion 1 of Farm 77 Wellshaven and Portion 3 of Farm 77 Honeyvale Scoping and Environmental Impact Assessment (DEDEAT Ref Number: EC06/LN2/M/12-10). |
| <i>Purpose of this report:</i> | <p>The Environmental Impact Assessment Report forms part of a series of reports and information sources that are being provided during the Environmental Impact Assessment (EIA) process for the proposed Agricultural Expansion of River Bend Citrus Farms on the Remainder of Farm 82 Wolve Kop, Portion 1 of Farm 77 Wellshaven and Portion 3 of Farm 77 Honeyvale, Sundays River Valley Municipality. In accordance with the EIA Regulations, the purpose of Final Environmental Impact Assessment Report is to:</p> <ul style="list-style-type: none"> • Provide a description of the proposed project as well as the affected environment at a sufficient level of detail to facilitate informed decision making; • Describe the local planning context and environment within which the project is proposed; • Provide an overview of the process being followed in the EIA and the public participation process, • Describe and assess the predicted impacts of the project on the environment; • Provide recommendations to avoid or mitigate negative impacts; and to enhance the benefits of the project. <p>The Final Environmental Impact Assessment Report is submitted to the Department of Economic Development and Environmental Affairs for their decision making.</p> |
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| <i>To be cited as:</i> | Wren S, Jacoby M, 2012. Scoping and Environmental Impact Assessment - Agricultural Expansion of River Bend Citrus Farms on the Remainder of Farm 82 Wolve Kop, Portion 1 of Farm 77 Wellshaven and Portion 3 of Farm 77 Honeyvale (DEDEAT Ref Number EC06/LN2/M/12-10), Final Environmental Impact Assessment Report. |

PROJECT BACKGROUND AND OVERVIEW

The applicant, San Miguel Fruits SA (Pty) Ltd, is proposing the expansion of existing citrus cultivation operations on the farm known as River Bend Citrus near Addo in the Sundays River Valley Municipality. The applicant initially proposed to clear a minimum of 300 ha of land for additional citrus cultivation, in a phased manner over a period of four years, however the outcome of the specialist assessments recommends that 263 ha of land is cleared for the establishment of citrus. The project is proposed to take place on three adjoining properties which form part of the existing River Bend Citrus farming operations, namely:

- Remainder of Farm 82 Wolve Kop (~908 ha),
- Portion 1 of Farm 77 Wellshaven (~22ha), and
- Portion 3 of Farm 77 Honeyvale (~128ha).

It is important to note that the Remainder of Farm 82 Wolve Kop measures 908 ha, however, 448 ha of this erf forms part of the River Bend Concession area with South African National Parks (SANParks) and is not being considered for the expansion of citrus production in line with the concession agreement with SANParks (land east of the Zuurberg road). In addition, approximately 110 ha of the Remainder of Farm 82 Wolve Kop is currently being actively farmed for citrus production. The three adjoining properties measure approximately 1 058 hectares in combined extent and this assessment has focused on 500 ha for the expansion of agricultural activities. The affected area can thus be broken down as follows:

- Total property boundaries = 1058 ha
- SANParks Concession area = 448 ha
- Total area included in this Assessment = 610 ha
 - 110 ha already under cultivation
- Area assessed in this EIA process = 500 ha

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMAA), and the NEMA EIA regulations, 2010 published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), the project requires full Scoping and Environmental Impact Assessment prior to the commencement of activities on site. The applicant appointed Public Process Consultants as the independent Environmental Assessment Practitioner (EAP) to undertake the Scoping and Environmental Impact Assessment for the project.

OVERVIEW OF THE EIA PROCESS AND PUBLIC PARTICIPATION

This EIA Report was preceded by a comprehensive scoping process. The Final Scoping Report was submitted during May 2012 and approval for the Scoping Report and Plan of Study for EIA was received from DEDEAT on 9 July 2012, which marked the end of the Scoping phase of the EIA process. The project then moved into the impact assessment phase of the EIA. The key issues identified during the Scoping process, which have been the subject of separate specialist assessments during the EIA, are outlined below:

- Biophysical site assessment to include:
 - Identification and verification of Critical Biodiversity Areas on the site
 - Potential project related impacts on natural vegetation and faunal habitat need to be considered
 - The consideration of any potential impacts on the Addo Elephant National Park.
- A specialist wetland assessment in order to identify and delineate wetlands and watercourses on the site as well as provide appropriate no development buffers.
- A desktop Palaeontological assessment and phase 1 Archaeological Impact Assessment to potential Heritage impacts.
- Soil suitability assessment to determine the suitability of the soil for citrus cultivation in order to provide input into the layout for citrus production.
- Written confirmation regarding the availability of water for irrigation purposes from the LSRWUA

The Draft EIA Report was released for a 30 day I&AP review period to enable the authorities and I&APs to provide input and comment before the report was finalised to be submitted to DEDEAT for their decision-making. The comment period for the Draft EIA extended from the 6 November 2012 to the 5 December 2012.

The primary objective of the EIA Report is to present key stakeholders and affected organs of state an overview of the predicted impacts and associated management actions required to avoid or mitigate the negative impacts; or enhance the positive impacts of the project. A copy of the Final EIA can be downloaded from the website www.publicprocess.co.za

ECOLOGICAL IMPACTS AND MITIGATION

Vegetation

The proposed clearing of vegetation for conversion to cultivated land/ orchards (Chapter 2) will result in the clearing of intact and degraded Sundays Spekboom Thicket and Sundays Thicket. Approximately 199 ha of Sundays Thicket will be cleared, it is anticipated approximately 228 ha will be conserved within the No-go areas on the site. This represents conservation of approximately 51% of the Sundays Thicket occurring on the site. Approximately 18 % of the Sundays Spekboom Thicket in the southern portion of the site is proposed to be conserved within the No-go areas.

The site is fragmented in places by cut-lines and portions are in a degraded state due to historical grazing and bush clearing. Vegetation in the less dense areas does provide important faunal habitat. A fauna and flora search and rescue operation must be conducted before and during vegetation clearing activities. Relevant permits will also be required before search and rescue can commence.

The southern portion of the site has an abundance of Spekboom (*Portulacaria afra*), which is commonly used in the area for rehabilitation of degraded farmlands, and as part of carbon offset activities. It is highly recommended the Spekboom which will be cleared be used for rehabilitation of degraded portions on the site as well as be provided to contractors involved in rehabilitation work.

The **intact Sundays Spekboom Thicket** is considered of *Medium Conservation Value* due to the fact that it provides habitat for indigenous species and species of special concern; as well as for its role in providing ecosystem services (eg. carbon sequestration). The conservation value of this vegetation on the site is somewhat diminished by the heavily degraded nature of the surrounding vegetation and the use of the vegetation by domestic animals as well as a small extent of the remaining patch of intact vegetation.

The **degraded Sundays Spekboom Thicket** is considered of *Low Conservation Value* as it may provide some habitat for indigenous species and species of special concern. However, due to its degraded nature it has low species diversity and has lost some of its ability to support ecosystem functioning.

The **intact Sundays Thicket (no Spekboom)** is considered of *High Conservation Value* due to its providing habitat for indigenous species and species of special concern as well as, in some instances, providing connectivity between intact vegetation on adjacent properties. These portions of the site have relatively high species diversity and have little degradation or invasion by alien vegetation.

The **degraded Sundays Thicket (no Spekboom)** is considered of *Medium to Low Conservation Value*. The conservation value of this vegetation type as it is found on the site varies due to the varying levels of degradation and associated species diversity. It does however still have value as it provides faunal habitat and some indigenous elements and may provide connectivity between intact vegetation on adjacent properties.

Cultivated agricultural lands in the centre of the site are of *Low Conservation Value*. The agricultural lands on the site represents largely transformed habitat, with no indigenous species and some invasion by exotic weeds and grasses. It does not represent particularly unique faunal habitat, or provide

significant ecosystem services. It may however provide habitat for some birds that are often associated with agricultural lands.

Transformed areas at the site are of Very Low Conservation Value. They represent areas that have few or no indigenous plant species. Some of these areas are characterised by the presence of structures such as dwellings, as well as areas that have been cleared of natural vegetation for the grazing of livestock.

The following recommendations are made with regards to the mitigation and management of impacts on vegetation:

- Plant species of special concern should be transplanted from the disturbance footprint to refuge areas on the site (e.g. remaining intact thicket).
- An alien plant control program should be implemented which ensures that all invasive exotic plants (Prickly Pear) must be removed from the site and alien plant control must take place on an ongoing basis.
- Areas having steep slopes must be avoided and measures implemented to remove alien invasive species and improve the natural vegetation cover as a stabilisation measure.

Fauna

The central portion of the site (RE/82 Wolve Kop) under assessment currently forms part of the Ntsomi Game Farm and as such provides habitat for a number of large mammals for example Giraffe and Kudu as well as smaller mammals such as Impala, bushbuck, blue duiker, porcupine and monkeys. It is anticipated that there is also a variety of bird and reptile species to be found on this portion of the site.

The southern portion of the site is unlikely to have the same level of diversity or abundance of faunal species when compared to the central portion, as it is bounded by transformed areas to the north, west and east; and because of the presence of human and domestic animals on this portion of the site. It does however still provide habitat for a variety of bird and reptile species, and perhaps small mammals.

The proposed clearing of vegetation for the establishment of citrus orchards does not fall within any official national, provincial or municipal protected areas, nor is it included within an Important Bird Area (Birdlife South Africa, Barnes 1998) or Ramsar wetland site (Ramsar 2007). However, it lies within close proximity to Addo Elephant National Park as well as a number of private game farms and lodges. It therefore does form part of an important corridor for faunal movement and other ecological processes. However, it does lose some of its effectiveness to function as a corridor because of the gravel Zuurberg Road (R335) which runs along the eastern boundary.

The following provides recommendations for the management of impacts on fauna:

- Most of the mobile fauna are expected to vacate the area once vegetation clearing and other site preparation activities commence and will seek refuge in intact natural or near-natural areas.
- Measures should be implemented to ensure that fauna are not harmed during site preparation or operational phase activities, e.g. environmental induction process for construction personnel and / or farm workers.
- Removal of animals from the affected areas before the start of site clearing and relocating these to safe areas would only be a valid mitigation option in the case of tortoises.
- All other reptile and small mammal species are extremely difficult to catch and it would be a futile attempt to try and relocate them. Before doing site clearing, affected areas should be thoroughly searched for tortoises. Tortoises found must be released in the no-go areas.
- A professional reptile remover (with the necessary permits) needs to be contacted to remove dangerous reptiles when in conflict with the workers.
- Search and rescue operations before and during the site preparation phase will decrease the impacts considerably.

Biodiversity Patterns and Processes

The Biodiversity Planning Resources for the area show that the site under assessment falls within an Ecological Corridor (STEP) as well as a Critical Biodiversity Area (ECBCP). The Ecological Corridor described in STEP extends from Bontrug (near Kirkwood) in the west to just the other side of the River

Bend Concession Area in the east. The gravel Zuurberg Road (R335) limits the effectiveness of the eastern extent of this corridor as it restricts faunal movement between the Addo Elephant National Park and the study site.

Most of the site that has not been transformed for orchards or grazing land is classified as a BLMC 1, with a few parcels identified as degraded classified as BLMC 2. However, the ECBCP is a broad scale biodiversity plan and as such requires ground truthing. In this instance most of the site has been degraded to some extent by historical land use practices. It would therefore be more appropriate to classify the majority of the site as BLMC 2, with perhaps a few patches of BLMC1.

The small valleys associated with the drainage lines on site would represent Ecological Process Areas that could link up the Zuurberg Mountain Range with the Coerney River, flowing through the centre of the site. Due to the fact that the ecological corridor formed by the site has been compromised by the establishment of orchards along the Coerney River's banks as well as the barrier created by the gravel Zuurberg Road (R335) the impacts on the biodiversity of the area as a result of the proposed development are likely to be less significant than may otherwise have been anticipated.

Development of the entire site would pose a significant risk to the Critical Ecological Process Areas, Ecological Corridors and Critical Biodiversity Areas occurring thereon. It is therefore proposed that portions of the site be excluded from the proposed development so as to conserve biodiversity pattern and process. These areas are to include the portions of the site where vegetation is intact as well as a buffer area (50 metres) around the drainage lines and endorheic pans (wetlands), as recommended by the ECBCP.

The following provides recommendations for the management of impacts with regards to biodiversity patterns and processes:

- No activities, inclusive of site preparation related pedestrian or vehicle traffic, should be allowed within wetlands or any of the areas designated as No-go areas.
- Drainage line / watercourse crossings may be required for the internal roads to service the citrus orchards, wherever possible existing vehicle tracks should be used and no other development (establishment of citrus orchards) should be allowed within the designated buffer area.

Wetlands (modified pans) and Watercourses

Past and to a lesser extent, present land use activities have disrupted the natural flow of the water along the two water courses within the proposed development area. The drainage lines have been modified to such an extent that shortly after the confluence of the two systems, the channel or water course area is no longer definable and was confirmed by the Chief Surveys and Mapping data.

This together with the channel form limits the formation of permanent riparian / obligate riparian zones being found within the development area. Plant species recorded were mostly associated with the 2 local thicket types and are thus not dependent on sources of water.

With regards to the observed wetlands, these six areas were defined as endorheic pans, of which only three remain partly functional as pans / depressions. These pans can further be defined by the National Wetland Classification system as endorheic systems.

Typically it would seem that the natural depressions have been altered by increasing their catchment depth, through excavation of the pan floor. The area however still functions as a pan and several wetland plant and animals species still make use of the available habitat. Therefore although modified these three pans would be considered wetlands due to the functional role they play within the landscape.

The Department of Water Affairs presented a desktop analysis of the Coerney River in 1999 in which the overall PES for the river reach within the study area was rated as C (Moderately modified). Due to the overall degradation of the site, the current riparian vegetation PES would be lower i.e. D when compared to the 1999 rating. This is due to the lack of riparian zone continuity due to removal or

disturbance of the river bank vegetation and the disturbed nature of the floodplain / channel environment.

Similarly the PES rating systems have only been developed for those palustrine or riparian associated wetland areas. Therefore using a modified Wetland Integrated Habitat Assessment Approach, the endorheic pans, although mostly disturbed, would have a low PES score of D.

The Environmental Importance and Sensitivity or EIS is a measure of the conservation value. Due to the current disturbances within the study area the EIS would be rated as **LOW**, due to the lack of any important riparian vegetation or sensitive plant species associated with the water courses. This was further emphasised by the lack of riparian plant diversity (1 opportunistic species *A. karroo*). Also no protected or species of special concern were observed within or adjacent to the water courses due to the degree of past disturbance.

With regard the wetland areas, only two facultative hydrophilic plants species were evident namely *Juncus effuses* and *Cyperus spp* (grazed, thus no identification could be made). These species were found in areas with permanent inundation. Therefore these area form unique habitats within the landscape and the EIS of the three remaining pans would be rated as **MODERATE**.

The following mitigation and management is recommended:

- Stormwater should be managed using suitable structures such as swales, gabions and rock rip-wrap so that any run-off from the orchards site is attenuated prior to discharge. Silt and sedimentation should be kept to a minimum, through the use of the above mentioned structures and by also ensuring that all structures don't create any form of erosion.
- Areas susceptible to erosion must be protected by appropriate measures and repair of any damage caused by erosion due to construction must be undertaken as soon as possible.
- Minimise erosion and sedimentation into water courses through effective stabilisation (gabions and reno mattresses) and re-vegetation of disturbed river banks.
- Stabilisation of sandy, dispersive slopes or slopes steeper than 1:3 will be required.
- Stabilisation of near vertical slopes (1:1 – 1:2), if created during construction, will be required using hard structures that have a natural look.
- Vegetation clearing should occur in parallel with the developments progress to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment.
- It is suggested that all construction camps, lay down areas and any storage areas should be more than 50m from any demarcated wetland or riverine area.
- Similarly during the operations phase, fuels, herbicides and insecticides must be stored within demarcated, bermed areas, with the necessary hazardous materials spill contingency systems in place.
- Where any works (e.g. storm water control measures) near a wetland or river is required specific attention should be paid to the immediate re-vegetation of cleared areas to prevent future erosion or sedimentation issues.

Summary and Additional Recommendations

The following provides a summary of the key direct and indirect impacts associated with the construction phase of the development. Only impacts that are rated as having a potential *Medium to High or Very High* negative or positive impact are listed below:

- Destruction of habitat for plant species of special concern (SSC) within the development footprints can be mitigated from a *High to a Medium Negative impact*.
- Destruction of habitat for faunal species of special concern (SSC) can be mitigated from a *Medium to a Low Negative impact*.
- Loss of plant SSC due to vegetation clearing and disturbance can be mitigated from a *Medium to a Low Negative impact*.
- Loss of faunal SSC due to construction activities can be mitigated from a *Medium to a Low Negative impact*.

- Disruption of ecological corridors, patterns and processes can be mitigated from a *High to a Low Negative impact*.
- Increased erosion risk and topsoil loss due to vegetation clearing and can be mitigated from a *Medium to a Low Negative impact*.
- Loss of plant species of special concern (collection for ethno-botanical use, firewood, etc.) can be mitigated from a *Medium to a Very Low Negative impact*.
- Increased exotic plant invasion due to disturbance of soils and vegetation can be mitigated from a *High Negative to a Low Positive impact*.

Construction phase direct and indirect impacts of medium to high significance, both positive and negative can, by applying the mitigatory measures proposed, can mostly be reduced to impacts of low to very low negative or neutral significance as well as impacts of positive significance.

The following provides a summary of the key direct and indirect impacts associated with the operational phase of the development. Only impacts that are rated as having a potential *Medium to High or Very High* negative or positive impact are listed below:

- Erosion risk and topsoil loss due to stormwater runoff and wind and can be mitigated from a *Medium to a Low Negative impact*.
- Pollution of surface and groundwater by herbicides, pesticides and fertilizer and can be mitigated from a *Medium to a Low Negative impact*.
- Loss of faunal species of special concern (poaching, domestic dogs & cats) and can be mitigated from a *Medium to a Low Negative impact*.
- Introduction of exotic flora and risk of alien plant invasion and can be mitigated from a *Medium Negative to a Neutral Impact impact*.

The key direct and indirect impacts associated with the operational phase of the development can, by applying the mitigatory measures proposed can be reduced from negative impacts of medium significance to impacts of low significance and neutral significance.

PALEONTOLOGICAL IMPACTS AND MITIGATION

The study area on the River Bend Citrus Farm near Addo is largely underlain by non-marine fluvial to estuarine sediments of Early Cretaceous age assigned to the Kirkwood Formation (Uitenhage Group). This succession has yielded important fossil biotas of Mesozoic land plants (ferns, cycads, conifers etc) and non-marine molluscs as well as sparse but numerous specimens of fossil bones, including large and small dinosaurs, from several localities along the northern margin of the Algoa Basin. There is also evidence for occasional marine incursions here in Early Cretaceous times from fossil marine molluscs.

However, the Kirkwood Formation bedrocks are mantled by alluvial sediments of the Coerney River in the southern part of the study area. Elsewhere they appear to lie beneath a thick (2m or more) superficial cover of soils, alluvium and colluvium of low palaeontological sensitivity. The proposed extension of the cultivated area on the River Bend Citrus Farm is therefore not considered significant in terms of palaeontological heritage conservation. Providing appropriate mitigation is carried out, the majority of developments involving bedrock excavation can make a positive contribution to our understanding of local palaeontological heritage. The potential impact on palaeontological resources at the site is rated as medium negative without mitigation but can be mitigated to medium positive by implementing the recommendations proposed.

Recommendations

- No further palaeontological heritage studies or specialist mitigation are required, pending the discovery or exposure of any substantial fossil remains (e.g. vertebrate bones and teeth, large blocks of petrified wood, fossil plant-rich horizons, buried laminated shales) during the construction phase.
- The ECO responsible for the development should be alerted to the possibility of important fossil remains being found either on the surface or exposed by fresh excavations during construction.
- Should fossil remains be discovered during construction, these should be safeguarded (preferably *in situ*) and the ECO should alert the Eastern Cape Provincial Heritage Resources Authority so that

appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.

- The specialist involved would require a collection permit from SAHRA. Fossil material must be curated in an approved repository (e.g. museum or university collection) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.

ARCHAEOLOGICAL IMPACTS AND MITIGATION

The primary impact of the proposed project on archaeology is from site clearance. The development footprint is near the Coerney and Sundays Rivers and freshwater shell middens may be exposed during the clearing of the dense vegetation. In general the proposed property for development appeared to be of low archaeological sensitivity. The potential impact on archaeological resources at the site is rated as low negative without mitigation but can be mitigated to neutral by implementing the recommendations proposed.

Recommendations

- The proposed development will take place close to the Coerney River, in an area where one would expect to find fresh water shell middens. If such features are exposed, work should stop immediately and reported to the Albany Museum and/or the SAHRA.
- If any other concentrations of archaeological material are uncovered during development, it should be reported to the Albany Museum and/or the SAHRA immediately so that systematic and professional investigation/excavations can be undertaken. Sufficient time should be allowed to remove/collect such material.
- Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. It is suggested that a person be trained to be on site to report to the site manager if sites are found.

Assessment of alternatives

The **no-go option** would result in the loss of potentially productive agricultural land in an area known for citrus production. The no-go option would result in the loss of capital investment estimated to be approximately R70m and annually employment opportunities estimated to be R0.6m (permanent) and R4.m (temporary). The annually turnover, once the orchards reach maturity age in 5 to 6 years is estimated to be approximately R60m. The no-go option would result in a loss of these economic opportunities for the region.

The initial project application identified the intention of the applicant to clear approximately 300 ha for additional citrus production, however the specialist studies conducted for this assessment process recommends that a more sustainable area is approximately 263 ha for additional citrus production.

Alternative layouts for citrus in the northern portion of the properties under assessment were considered and a layout which would not fragment existing intact habitat is the preferred layout option. The northern portion of the property is also in close proximity to the intact portions of Thicket on the slopes of the Zuurberg Mountain and the maintenance of ecological processes in this area was the preferred alternative.

OVERALL EVALUATION OF IMPACTS

The Draft IDP (2011) for the Sundays River Valley Municipality indicates that the current unemployment rate in the municipal area may be as high as 44.1%. The monthly income of economically active individuals (age 15-65, employed or unemployed) living within the SRVM is generally low, with the greater majority earning less than R800 a month.

Agriculture remains a primary focus for employment opportunities as it currently represents almost 50% of the employment for the SRVM area. The agricultural industry centres mainly on citrus fruit farming in the Sunday's River Valley and dairy and chicory farming towards the Alexandria area in the east. Approximately 25% of South Africa's navel oranges and 50% of the country's lemons are produced in the Sunday's River Valley with the Sunday's River exporting more than 13 million cartons of navels per year, earning more than R1 billion in foreign exchange for the country (Draft SRVM IDP, 2011).

The total capital value for the proposed agricultural expansion of River Bend Citrus Farm is estimated to be R70 million. It is anticipated that 20 permanent direct and 10 permanent indirect employment opportunities will be created during the operational phase of the proposed development. In addition, approximately 250 seasonal jobs will also be provided.

The average monthly wage for seasonal employment opportunities (a period of 8 months) is approximately R2000 per month, thus an additional annual income of R4 million will be available in the local market as a result. In addition, the average wage for the additional direct permanent employment opportunities is approximately R2500 per month, thus an additional annual income into the local market of R0.6 million will occur as a result of the proposed development.

Construction Phase direct and indirect impacts of medium to high significance, both positive and negative can, by applying the mitigatory measures proposed, can mostly be reduced to impacts of low to very low negative or neutral impacts as well as impacts of positive significance.

The key direct and indirect impacts associated with the *Operational Phase* of the development can, by applying the mitigatory measures proposed is reduced from negative impacts of medium significance to impacts of low significance and high positive significance.

The Environmental Assessment process has not identified any negative impacts that should be considered “fatal flaws” from an environmental perspective, and thereby necessitate substantial re-design or termination of the project. Taking into consideration the findings of the EIA process, it is the opinion of the Environmental Assessment Practitioner that the project benefits outweigh the negative residual environmental impacts, provided that the specified mitigation measures are applied effectively, it is proposed that the project receive environmental authorization in terms of the EIA process.

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| PART B | Environmental Management Programme (EMPr) |

ABBREVIATIONS

| | |
|-----------|--|
| DEA | National Department of Environmental Affairs |
| DEDEAT | Department of Economic Development, Environmental Affairs and Tourism |
| DSR | Draft Scoping Report |
| DWAF | Department of Water Affairs and Forestry |
| EC DEDEAT | Eastern Cape Department of Economic Development, Environmental Affairs and Tourism |
| EIA | Environmental Impact Assessment |
| EIS | Ecological Importance and Sensitivity |
| EMPr | Environmental Management Programme |
| FEPAs | Freshwater Ecosystems Priority Areas |
| FSR | Final Scoping Report |
| I&AP | Interested and Affected Party |
| NEMA | National Environmental Management Act (Act 107 of 1998) |
| NEMAA | National Environmental Management Amendment Act (Act 107 of 1998) |
| NEM:WA | National Environmental Management Waste Act |
| NEM:AQA | National Environmental Management Air Quality Act |
| NHRA | National Heritage Resources Act (Act 25 of 1999) |
| NMBM | Nelson Mandela Bay Municipality |
| PES | Present Ecological State |
| POS | Plan of Study |
| SABIF | South African Biodiversity Information Facility |
| SAHRA | South African Heritage Resources Agency |
| SC&A | Scherman Colloty & Associates |
| SDF | Spatial Development Framework |
| SEA | Strategic Environmental Assessment |

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|------|---------------------------------------|
| STEP | Subtropical Thicket Ecosystem Project |
| TIA | Traffic Impact Assessment |
| ToR | Terms of Reference |