

FINAL EIA REPORT

AGRICULTURAL DEVELOPMENT OF THE REMAINDER OF PORTION 7 OF THE FARM SCHEEPERS VLAKTE NO. 98, IN THE SUNDAYS RIVER VALLEY MUNICIPALITY (DEDEAT Reference No: EC06/C/LN2/M/47-2018)

April 2019



Prepared for:

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Title:	Final EIA Report, Agricultural Development of the Remainder of Portion 7 of the Farm Scheepers Vlakte No. 98, in the Sundays River Valley Municipality, (April 2019)
Purpose of this report:	<p>This Final EIA Report forms part of a series of reports and information documents that are being provided during the Environmental Impact Assessment (EIA) process for the proposed agricultural development of the Remainder of Portion 7 of the Farm Scheepers Vlakte No. 98, in the SRVM.</p> <p>As per Appendix 3, Section 2 of GN R326, the objectives of the EIA process are to:</p> <ul style="list-style-type: none"> • Assess how the proposed activity complies with the relevant policy and legislative context; • Describe the need and desirability of the proposed activity, including in the context of the development footprint on the approved site as contemplated in the accepted Scoping Report; • Identify the location of the development footprint within the approved site as contemplated in the accepted Scoping Report based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment; • Determine the -- <ul style="list-style-type: none"> ○ Nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and ○ Degree to which these impacts: <ul style="list-style-type: none"> ▪ Can be reversed; ▪ May cause irreplaceable loss of resources, and ▪ Can be avoided, managed or mitigated; • Identify the most ideal location for the activity within the development footprint of the approved site as contemplated in the accepted Scoping Report based on the lowest level of environmental sensitivity identified during the assessment; • Identify, assess, and rank the impacts the activity will impose on the development footprint on the approved site as contemplated in the accepted Scoping Report through the life of the activity; • Identify suitable measures to avoid, manage or mitigate identified impacts; and • Identify residual risks that need to be managed and monitored.
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KEY CHANGES FROM THE DRAFT EIA REPORT TO THE FINAL EIA REPORT

As per the correspondence from the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), dated 22 October 2018, amendments from the Draft EIA Report to the Final EIA Report (key changes), are outlined in the table below and are indicated in the body of the report by means of underlining.

General changes from the Draft EIA Report to the Final EIA Report (E.g. 'Draft Report' to 'Final Report' and date changes), have **not been indicated**. These changes have been made to all relevant Sections, Chapters and Appendices of the Final EIA Report.

SECTION	CHANGES
Executive Summary	<ul style="list-style-type: none"> Page ii. - update on the Public Participation Process for the review of the Draft EIA and submission of the Draft, as well as Final EIA to DEDEAT
Ch 1	<ul style="list-style-type: none"> Page 1.3 – update on the submission of the Draft EIA Report to DEDEAT, and subsequent correspondence from DEDEAT. Page 1.8 – update on the public participation process followed for the review of the Draft EIA Report.
Ch 4	<ul style="list-style-type: none"> Page 4.12 – update to the overview of the process to indicate where we are in the process. Page 4.15 – update on the phase of the Scoping and EIA process and communication with DEDEAT on the Draft EIA Page 4.16 – update on authority consultation. Page 4.17 – update on database maintenance as well as public participation for review of the Draft EIA Page 4.18 – update on the review of the Draft EIA. Page 4.18 – update on the submission of the Final EIA to DEDEAT. Page 4.19 -4.20 – update on the identification of issues during the Draft EIA comment period. Page 4.24 – 4.26 – update of comments and responses trail based on comments received during review of the Draft EIA. Page 4.27 – update on concluding remarks
App B	<ul style="list-style-type: none"> Page B.3 – B.9 – notice of Draft EIA Report submission and comment period to DEDEAT, including comment form. Page B.15 – acknowledgement of receipt of Draft EIA Report from DEDEAT. Page B.16 – B.17– comment on Draft EIA Report from DEDEAT.
App D	<ul style="list-style-type: none"> Page D.1 – D.2 – updated the database to indicate interaction with I&APs and Organs of State / State Departments.
App E	<ul style="list-style-type: none"> Page E.14 – E.33– copies of Letter 5 (hard copy and email) to I&APs for the notification of the comment period for the Draft EIA Report, including a comment form and executive summary. Page E.34 – E.34 – proof of Delivery of the Draft EA Report to Organs of State / State Departments.
App F	<ul style="list-style-type: none"> Page F.5 – F.8 – inclusion of copies of correspondence received from I&APs and Organs of State / State Departments during the review of the Draft EIA Report.
App G	<ul style="list-style-type: none"> Page G.10 – inclusion of confirmation of Supply from Eskom

EXECUTIVE SUMMARY

PROJECT BACKGROUND AND OVERVIEW

The project applicant, Scheepersvlakte Farms (Pty) Ltd, proposes to clear ~516ha on the Remainder of Portion 7 of the Farm Scheepers Vlakte 98 (~852.12ha), Sundays River Valley Municipality (SRVM), for the cultivation of annual crops (e.g. maize) and the establishment of a variety of citrus, as well as associated infrastructure. The farm is currently zoned Agriculture I (see Chapter One of the Final EIA Report for a Locality Map).

The applicant has obtained a Water Use Licence from DWS for the taking of water from a water resource in terms of Section 21(a) of the National Water Act which entitles them to utilise 650ha (5 850 000m³ per annum) of water from the LSRWUA canal system. In order to irrigate the proposed agricultural development, the construction of a new irrigation water storage dam (140 000m³ storage capacity; 7ha footprint), as well as the installation of irrigation pipelines of varying diameters is required. In addition, to provide support services to the proposed development, a new logistical services area (~6ha footprint) is proposed to be constructed.

Scheepers Vlakte Farm is located ~6km north of Sunland, in the SRVM. Access to the farm is proposed via an existing gravel road on the southern boundary of the site which links the farm with the gravel MN50077 road. The nearest boundary of the Addo Elephant National Park is located ~7km east of the farm.

A detailed project description is provided in Chapter Two of this report.

In terms of the NEMA EIA Regulations, 2014 (as amended), published in GN R326, 327, 325 and 324, promulgated under Chapter Five of the National Environmental Management Act (Act 107 of 1998) ("NEMAA"), and published in Government Gazette 40772 on the 7 April 2017, the project requires full Scoping and Environmental Impact Assessment (S&EIA), prior to the commencement of any activities on the site. The applicant appointed Public Process Consultants as the independent Environmental Assessment Practitioner (EAP) to undertake the S&EIA for the project.

OVERVIEW OF THE EIA PROCESS AND PUBLIC PARTICIPATION

This Final EIA Report has been preceded by a comprehensive Scoping Process with the Final Scoping Report (FSR), including the Plan of Study for EIA, being submitted to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) on the 14 November 2018. On the 19 December 2018 acceptance of the FSR and approval of the Plan of Study for EIA was received from the DEDEAT. This marked the end of the Scoping Phase of the EIA Process. The project then moved into the EIA Phase of the assessment.

The key issues identified during the Scoping Process, which have been the subject of separate specialist assessments during the EIA, are outlined below:

- Biophysical (Biological and Physical) site assessment including:
 - Potential project related impacts on natural vegetation and faunal habitat on the farm.
 - The consideration of any potential impacts on the Addo Elephant National Park and other areas in proximity to the proposed development area set aside for conservation purposes.
 - An aquatic survey to identify and map wetlands and watercourses on the farm.
 - Assign suitable buffers for aquatic resources identified on the farm.
 - Provide comment on the potential impact of the proposed development on Aquatic and Terrestrial CBAs, as identified in the ECBCP.
 - The determination of suitable buffers associated with meeting biodiversity conservation targets specific to the vegetation types on the farm, and in line with those targets indicated by the relevant planning frameworks for the area.
- The undertaking of a Phase 1 Palaeontological and Phase 1 Archaeological Impact Assessment to identify heritage resources, materials and artefacts that occur within the area under assessment and recommendations regarding the conservation thereof.
- The undertaking of a Traffic Impact Assessment to determine the impact of the additional trip generation and the suitability of the proposed access point to ensure safe access and egress from the site.
- The undertaking of a Soil Suitability Assessment in the form of a Reconnaissance Soil Survey, to determine the suitability of the soil for the establishment of citrus orchards and maize, to inform the proposed layout.

- A Visual Impact Assessment to determine the visual impact of the proposed agricultural development on the surrounding area, including the Addo Elephant National Park.
- The undertaking of a Roads and Wet Services Report to determine the footprint of the logistical services area including the pre-sort packhouse and staff housing as well as recommendations for the provision of bulk services (domestic water, stormwater, effluent management) for these facilities.

The primary objective of EIA Phase of the assessment is to present to I&APs and affected/ Juristic Organs of State and State Departments an overview of the predicted impacts, proposed mitigation measures (both positive and negative), closure outcomes, residual impacts of the activity and management actions required to avoid or mitigate the negative impacts; or enhance the positive impacts of the project. As required by the legislation, the Draft EIA Report and Environmental Management Programme (EMPr) were released for a 30-day I&AP and Authority review period, which extended from the 5 March 2019 to the 5 April 2019. Organs of State / State Departments were provided with a hard copy or electronic (CD or email) copy of the report, whichever they preferred, and the report was made available on the website www.publicprocess.co.za. Comments received from I&APs or Organs of State / State Departments during the 30-day review period are included in the Comments and Responses Trail in Chapter Four of this report and copies thereof are included in Appendix F. The assessment process is currently at the stage where the Final EIA is being submitted to DEDEAT for their decision-making. All I&APs on the project database will be notified in writing of the submission of the Final EIA Report to DEDEAT, as well as the outcome of the decision-making process.

ECOLOGICAL IMPACTS AND RECOMMENDED MITIGATION

- Loss of vegetation and associated habitat due to clearing (biodiversity loss).
- Loss of Critical Biodiversity Area and Ecological Support Area due to clearing of vegetation (biodiversity loss).
- Loss of floral and faunal species of conservation/ special concern due to vegetation clearing and poaching (biodiversity loss).
- Fragmentation and destruction of habitat on Scheepersvlakte Farm due to clearing (biodiversity loss).
- Potential loss of artificial wetland habitat and drainage systems (vegetation along the 1:50 000 drainage areas) (hydrological processes and biodiversity loss).
- Loss and fragmentation of drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss).
- Potential hydrological process impacts on artificial wetland habitat and drainage systems due to increased surface run-off from orchards and associated access roads (erosion, sedimentation, saturation and consequent impacts on biota).
- Potential hydrological process impacts on drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss).
- Potential increased water levels/ saturation in the artificial wetland habitats and drainage systems due to irrigation (hydrological processes).
- Water quality degradation of the artificial wetland habitat and drainage systems due to agricultural run-off high in pollutants (hydrological processes and biodiversity loss).
- Loss of vegetation along drainage areas due to maintenance repairs on the underground water supply pipelines and access roads at crossings (hydrological processes and biodiversity loss).

Potential Cumulative Impacts on the N40D catchment as a result of the proposed development include:

- Cumulative loss of vegetation due to clearing in the N40D catchments (biodiversity loss).
- Potential cumulative loss species of special concern due to clearing in the N40D catchment (biodiversity loss).
- Cumulative loss of riparian CBA and ESA buffers due to clearing of vegetation in the N40D catchments (biodiversity and hydrological process loss)
- Cumulative loss and modification of wetland habitat in the N40D catchments.
- Cumulative impacts on hydrological process of rivers and riparian areas in the N40D catchments (flow, water quality, erosion, sedimentation etc.).

All these impacts can be reduced by implementing the mitigation and management recommendations found in Chapters Six and Seven.

Vegetation, Biodiversity Patterns and Processes

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

- The biodiversity target areas indicated in Chapter Six should be retained (as per the proposed layout). which allows for a reduced loss of vegetation.
- Retain all the mapped Sundays Doringveld within the No-Go areas.
- The biodiversity No-Go Areas should be set aside for conservation in perpetuity.
- Remove only the required amount of vegetation for citrus/ crop cultivation activities i.e. minimize the extent of bare and exposed soils i.e. indiscriminate clearing should be avoided.
- If windbreaks are required, plant indigenous windbreaks, if possible.
- Existing crossings (across drainage areas) should be utilized as far as possible. In instances where vegetation is cleared to 'formalize' existing and new crossings, rehabilitation should be undertaken using indigenous flora.
- For all roads proposed within biodiversity No-Go areas, limit the width of the road to 4m.
- For any new roads within biodiversity No-Go areas, rehabilitate the equivalent number and length of existing roads within biodiversity No-Go Areas (this equates to an area of approximately 0.3ha or 0.4ha for a 4m or 6m wide road respectively).
- Rehabilitation of disturbed areas post-establishment with indigenous species, if necessary. Plants, however, can be used in the 'rehabilitation' of other disturbed areas that will be retained in the No-Go areas on the Farm. Succulents, such as the Aloes, will be easier to transplant and should be used.
- Rescue and translocation programme to be implemented.
- As many of the species should be rescued and then translocated elsewhere on the farm, noting that other areas outside the proposed agricultural area do support most of these species. It should be acknowledged that some of the species are weedy, pioneer species, which establish easily where disturbance has occurred, especially *Mesembryanthemum aitonis*, *Drosanthemum hispidum*, and *Delosperma* species. Focus should thus be on the Aloes, bulbs and other vygies.
- Permit applications to the Department of Economic Development, Environmental Affairs and Tourism for the protected species.
- Permit application to the Department of Forestry (of Department of Agriculture, Forestry and Fisheries) for the removal of *Sideroxylon inerme* trees.
- Control and management of alien invasive plants, such as *Opuntia ficus-indica* and *O. aurantiaca*, particularly within the No-Go areas; to be viewed as an additional biodiversity offset measure.
- Audit reporting by the Environmental Control Officer during construction/ clearing of cultivation areas.
- Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.
- Applicant/ Landowner/ Farm Manager to monitor strict compliance with the biodiversity no-go areas.

Fauna

It is anticipated that the vegetation on the site, as identified by the vegetation specialist, would provide habitat to several small to medium mammal, reptilian and amphibian species. The site is likely also frequented by a variety of avifaunal species. In addition, the wetland habitat associated with the aquatic habitats identified on the farm are also expected to provide significant faunal habitat. It is anticipated that most of the faunal species remaining on the farm will in all likelihood move off to undisturbed portions of the site as soon as site preparation commences.

Approximately 67.28ha (7.9%) of the natural vegetation on site has been modified historically. Thus, most of the vegetation on the farm can be described as near-natural or degraded. At the time of the site visit evidence of bush pig and porcupine presence was noted. Livestock grazing (cattle, sheep and goats) and intensive cultivation were historically undertaken on the farm, however, the livestock grazing apparently terminated ~14 years ago, whereas cultivation occurred in the 1950's.

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

- The mobile fauna which may be occurring on the site are expected to vacate the area that is to be developed once vegetation clearing and other site preparation activities commence and will seek refuge in intact natural or near-natural areas that are not proposed for development.
- Measures must be implemented to ensure that fauna on site are not harmed during site preparation or operational phase activities associated with the development, e.g. environmental induction process for construction personnel and/ or farm workers.
- Before site preparation and vegetation clearing commences, affected areas must be thoroughly searched for fauna that can be relocated. This is to be undertaken by a professional faunal specialist (with the necessary permits) and released into no-go areas or other suitable refuge areas.
- A professional reptile remover 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.
- Provide fencing that is more permeable to smaller fauna, thus increasing movement through the Farm.

- No fauna encountered on site to be intentionally harmed.
- Implement regular inspections for signs of poaching / illegal harvesting activities on the Farm, e.g. wire snares. All poaching materials to be removed from the property.
- Access to No-Go areas to be restricted to authorised personnel only. Signage to this effect to be erected and a fine system implemented for personnel found to be trespassing.

Aquatic Features (artificial and natural)

No natural wetlands were recorded on the Farm.

The field survey concluded the presence of 14 artificial wetland habitats¹, including the Scheepersvlakte Dam, and a number of dry 1:50 000 drainage areas (Figure 7.4; Table 7.3). The drainage areas are not typical streams/ rivers, but rather 'undefined', meaning that they presented without channel morphology (bed or banks), for the most part. Furthermore, riparian obligates and a marginal or non-marginal zone is not supported in these drainage areas.

A small dam (no. 5) was also recorded. This dam (no. 5) did not present with soil mottling or gleying during the 2017 field survey, despite supporting wetland obligates during the 2014 field survey. Consequently, it was classed as a dam and *not* 'artificial wetland' (artificial wetland, in this instance, would mean 'a dam that supports artificial wetland') due to the lack of wetland soils.

The Scheepersvlakte Dam (constructed in 1990) has a side channel (ogee) overflow (40m long), with a concrete spillway. The relevance being, that it will channel excess stormwater run-off during rainfall periods onto the property thus potentially increasing soil moisture levels.

The artificial wetlands, located on the Farm, are considered to be of *Low* ecological importance and sensitivity, whereas the hydro-functional importance is *Low to Very Low*.

The following mitigation and management is recommended to protect the aquatic resources on site:

- Adopt the recommended biodiversity No-Go areas including the 20m buffer around dams with artificial wetland habitat and the drainage areas.
 - The 20m buffer will not apply to Dam no. 5 (not classified as an artificial wetland), as no rare, unique or threatened species or large populations are supported and it is not a natural wetland. The proposed orchard layout avoids this dam.
- Dam no. 5 (not classified as an artificial wetland) could act as a monitoring site, to monitor potential impacts e.g. increased water/saturation and pollution impacts.
- The remaining artificial wetlands (created due to the formation of small livestock dams), to act as monitoring sites, to monitor potential impacts e.g. increased water/saturation and pollution impacts.
- Where existing crossings are utilized and some vegetation is cleared to 'formalize' the access roads, rehabilitate these areas with indigenous flora on site. In addition, limit the width of these crossings to a maximum of 4m.
- Rehabilitate the equivalent number of existing crossings as new crossings within the biodiversity No-Go areas i.e. 3 existing crossings in the biodiversity No-Go areas should be rehabilitated.
- **A water use application to be processed** with the DWS in terms of Section 21(c) and 21(i) of the National Water Act, where **crossings** are proposed.
- **A water use application should not be required** in terms of Section 21(c) and 21(i) of the National Water Act, as it relates to the **orchards** as the orchards are beyond the mapped 1:50 000 drainage areas.
- Audit reporting by the Environmental Control Officer during establishment of citrus orchards and associated infrastructure.
- Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), which *does not permit cultivation within the flood area of a watercourse or within 10m horizontally outside the flood area of a watercourse*.
- Monitor the buffers and crossings during operations to ensure ongoing compliance.
- An agricultural stormwater and erosion control plan should be developed. This could include:

¹ *The National Wetland Classification System (NWCS) classifies wetlands into natural and artificial wetlands. Artificial wetlands are produced anthropogenically; and are not naturally occurring. The NWCS defines a wetland as: an area of marsh, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed ten metres (Ollis et al, 2013; SANBI, 2009).*

- Infiltration swales or narrow linear and shallow trenches (within indigenous grasses or plants) along orchards to minimize impacts on the dams with artificial wetland habitat.
- Where existing crossings of the drainage areas occur, adequate measures should be implemented, where necessary.
- Mulching, to increase retention of soil moisture in-situ/ at tree; and if feasible, narrow, indigenous vegetation strips between orchards.
- Any other mitigation measures for the Scheepersvlakte Dam, as required by the Department of Water and Sanitation, should be adopted.

It is recommended that the following are included as conditions in the Environmental Authorisation:

- No-go areas for development (including aquatic and ecological buffer areas) must be demarcated on site before vegetation clearing commences.
- Any lay-down areas must be contained within the proposed disturbance area and may not encroach on any no-go areas on the site.
- Before site clearing commences, the development area must be surveyed for plant and faunal SSC by a suitably qualified specialist. Plant and faunal species of special concern must be translocated to the remaining patches of intact vegetation or buffer areas on the property. Permits must be obtained from the relevant authorities for the removal or transfer of protected flora and faunal species.
- No fauna encountered on site to be intentionally harmed.
- Exotic plants present on the site, which are listed in CARA (Conservation of Agricultural Resources Act 43 of 1983) or the NEMBA Alien Invasive Species List should be progressively removed from the site. In addition, regular follow-up clearing should be conducted for the duration of the project lifetime to ensure that the No-go areas are kept free of these plants.

All of the ecological impacts (vegetation, faunal and aquatic) that have been rated as having a potential *Medium to High Negative* impact can be mitigated to *Medium* or *Low Negative* or *Neutral*. For further information on the Ecological Impact Assessment and the Aquatic Impact Assessment see Chapters Six and Seven, respectively of the EIA Report.

HERITAGE IMPACTS AND MITIGATION

The study area on the Farm Scheepers Vlakte 7/98, is largely underlain by Early Cretaceous marine sediments of the Sundays River Formation (Uitenhage Group). This mudrock-dominated succession with subordinate sandstones has yielded rich fossil assemblages of marine invertebrates (notably molluscs, such as ammonites and bivalves), plant remains (e.g. driftwood), as well as very rare vertebrate remains (e.g. dinosaurs) from the Algoa Basin of the Eastern Cape. Several fossil localities have been recorded along the flanks of the Sundays River Valley to the west of Addo by McLachlan and Anderson (1976) and earlier authors. However, on Farm Scheepers Vlakte 7/98, the Sundays River Formation is largely mantled by Neogene (Late Tertiary) river gravels of the Kudus Kloof Formation, as well as by calcrete hardpans and thick alluvial soils that may be up to several meters thick and are, at most, very sparsely fossiliferous. Continental sediments of the Early Cretaceous Kirkwood Formation are mapped along the northern margin of the study area but were not encountered during fieldwork, perhaps due to lack of exposure.

It proved difficult to locate archaeological sites/ materials since most of the area is covered by dense/ impenetrable Thicket vegetation, low bushes and grass. Stone tools were the only archaeological material located and were mainly observed in areas where the river gravel is exposed and top soil has been disturbed by existing tracks, dams or other small-scale farming activities. Regardless of the large areas investigated on foot, no other remains such as bone, ostrich eggshell or pottery were observed. However, it is possible that sites/ materials are covered by vegetation and soil. *All the stone tools were in secondary context and not associated with any other archaeological material and of **low cultural significance**. No further action is required. There are no known graves or buildings older than 60 years on the property. In general, it would appear that the area is of **low cultural sensitivity** and that it is unlikely that any sensitive archaeological remains will be exposed during the development.*

Impacts and Management of Heritage Resources

Significant impacts on fossil heritage resources are, therefore, not anticipated here. No fossil remains were recorded during the site visit within the Cretaceous bedrocks, which are minimally exposed in this region, or from the Late Caenozoic superficial sediments.

The main impact on archaeological sites/ remains (if any) will be the physical disturbance of the material and its context. The clearing of vegetation for the proposed agricultural development (~516ha) will expose, disturb and displace archaeological sites/ material. However, from the investigation it would appear that the proposed area earmarked for development is of *low*

archaeological sensitivity. The Middle Stone Age stone tools observed in the proposed area to be developed are considered to be of *low cultural significance*, because they are in secondary context and not associated with any other archaeological remains. Notwithstanding, important materials may be covered by soil and vegetation.

The following actions are recommended:

- No further Palaeontological Specialist Studies or specialist mitigation are required for the proposed agricultural project, 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 these developments should be alerted to the possibility of important fossil remains and concentrations of archaeological materials and/ or human remains being found either on the surface or exposed by fresh excavations during construction and 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 (ECO) to be on site to report to the site manager if sites are found.
- An archaeologist should conduct a walkthrough of the area after the vegetation has been cleared, to check if any significant sites/ materials have been exposed. Further recommendations will follow after the investigation.
- Should such heritage resources be discovered during construction, these should be safeguarded (preferably *in situ*) and the ECO should alert the Eastern Cape Provincial Heritage Resources Authority (ECPHRA. Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; Email: smokhanya@ecphra.org.za). This is so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist (See tabulated Chance Fossil Finds Procedure appended to the EMP). The specialist involved would require a collection permit from ECPHRA. 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 (2013).
- Sufficient time should be allowed to investigate and to remove/ collect such material.

For further information on the Heritage Impact Assessments see Chapters Ten (Palaeontological) and Eleven (Archaeological), respectively of the EIA Report.

TRAFFIC IMPACTS AND RECOMMENDATIONS

The following conclusions can be drawn from the traffic specialist study:

- Access to the proposed development can be provided directly from MN50077 at the location indicated (see Chapter Nine) as sight distances are in excess of the prescribed minimum requirements;
- A total of 944 trips over the 95-week day picking season (472 in and 472 out), generated at full operational capacity (20 trips per day), will have minimal impact on the operational capacity of the adjacent road network, should regular maintenance be conducted.

The table below provides a summary of the key direct and indirect impacts associated with the development that have been identified by the traffic specialist. Only impacts that are rated as having a potential *Medium to High or Very High* negative impact are listed below:

ENVIRONMENTAL IMPACT	DEVELOPMENT PHASE	PRE-MITIGATION	POST-MITIGATION
Additional traffic volumes	Establishment	MEDIUM	LOW
Traffic Safety Impact due to slow moving traffic	Establishment	HIGH	MEDIUM
Additional traffic	Operational	HIGH	MEDIUM
Deterioration of Public Road Network	Operational	HIGH	LOW
Generation of Dust	Operational	MEDIUM	MEDIUM POSITIVE

In view of the findings of this study, it is recommended that:

- This TIA be approved by the Eastern Cape Department of Transport;
- Access to the proposed development be provided from MN50077, as indicated on Figure 9.2;
- Suitable warning signage be erected on the approaches to the proposed access point;
- Advanced warning signage be erected on either side of the narrow culvert on DR01983;
- Regular maintenance of DR01983/ MN50077 be conducted by the provincial Department of Transport.

For further information on the Traffic Impact Assessment see Chapter Nine of the EIA Report.

VISUAL IMPACTS AND RECOMMENDATIONS

The proposed development covers a large area of land but is **not visible** from any main roads, towns or from within the Addo Elephant National Park, even though it is located within 15km of all these receptors. The only visual points that will have visibility of the proposed development are Viewpoints V2 (located on the farm; full visibility) and V10 (partial visibility from the Park main gate), all located within 3km of the farm. None of the other identified viewpoints will have visibility (partial or complete) of the proposed development, as they all will be screened by existing vegetation and topography. Depending on the view point, the overall visibility and sensitivity may vary from LOW to MODERATE. None of the points were regarded as having a HIGH significance.

Overall, the impact for all viewpoints are regarded as:

- **LOW**, where the impact should not have an influence on the decision.

Only 2 of the identified receptors will have visibility of the proposed new site namely:

- Scheepersvlakte Farm (full visibility).
- R342 Road users (section past the Addo Elephant National Park entrance; partial visibility).

In assessing the direct impacts to visual resources, it has been recognized that, although the lifespan of the project is likely to extend into perpetuity, most of the structures can be removed on decommissioning. This means that although the proposed facility will undoubtedly have an impact on the visual resources of the area, it does not represent a completely irreversible loss of scenic resources.

The following impacts were identified:

- A change in character and loss of cultural scenic resources of the local area is not anticipated, as the proposed development will not significantly alter the scenic value of the local area. Agricultural developments, especially to the west of the site are extensive, therefore, the visual impact is local in nature.
- Road users, especially those using the R342 to access the Addo Elephant National Park, will not be impacted by the proposed development.
- The impact of existing agricultural developments in the local area on visitors within the Addo Elephant National Park, is already significant and adding the proposed development will not have a significant impact on the existing scenic value from viewpoints within the Park as it is likely to blend in with the already largely agricultural nature of the area. In addition, due to topography it has been established that the development will not be visible at the two viewpoints visited within the Park and should therefore not detract from the "wilderness experience" of visitors to the Park.
- The construction phase (when natural vegetation is cleared for agriculture) is recognized as significant and will result in visual scarring. The impact is temporary and of medium term, if mitigated (planted with citrus orchards).

The following mitigation measures are recommended:

- Lighting:
 - LSA and other permanent structures should, where practical, be situated off ridgelines so as to minimise the view catchment of the lighting, especially during nighttime;
 - All lighting should be fitted with deflectors to avoid light spillage and minimise visual impact of lights at night. The developer should specifically plan the type, placement and direction of lighting to ensure that light pollution is minimized, especially toward the east.
 - Timer switches or motion detectors should be used to control lighting in areas that are not occupied continuously.
- Visual Intrusion in the Landscape:
 - Possible vegetation screening along sections of the DR01983 road, as well as the DR02006 (Enon road), which is frequented by impacted individuals.

The proposed development will undoubtedly be imposing on the visual landscape for those in close proximity, especially during the site clearing/ construction phase, however, it is concluded that potential losses of scenic resources are not sufficiently significant to present a fatal flaw to the proposed project.

LOGISTICAL SERVICES AREA DESIGN AND RENOVATIONS RECOMMENDATIONS

A new logistical services area is proposed to be constructed near the southern boundary of the farm in order to provide administrative and logistical support for the development. The proposed logistical services area will measure ~6ha in extent and is proposed to consist of the following support infrastructure/ structures:

- Pre-sort packhouse (~6500 m²).

- Tractor/ trailer off-loading and receiving slab.
- Dispatch truck loading slab.
- Access road (~8m wide) including turning circles (~36m diameter).
- Workshop and storage area (300m²).
- Office/ administration area (150m²).
- Other staff facilities including ablution blocks (150m²).
- Staff housing (5 x 60m²).
- Onsite domestic effluent treatment system (e.g. Clearedge system) (641m²).
- Domestic water storage and treatment facilities (1 575m²).
- Stormwater detention facilities (2 260m²).

A Roads and Wet Services Report has been prepared in order to ensure that the proposed logistical services area and proposed staff housing are adequately serviced. The report is included as Chapter Twelve of this report and provides detailed information on the above services infrastructure, including domestic water supply, domestic effluent, road alignment and structure, as well as stormwater management.

The proposed workshop and storage area will include a fully enclosed bunded, roofed facility with a capacity to store ~30m³ of chemicals required for the proposed agricultural development. Storage and handling of chemicals on site must comply with standard Material Safety Data Sheet control measures. It is recommended that any waste packaging must be disposed of at a suitably permitted landfill site and not buried or burnt on site. In addition, it is proposed that an outdoor aboveground diesel tank, with the capacity to store ~14000L/ 14m³ of fuel, be constructed adjacent to the workshop area. In order to mitigate any potential risks associated with the fuel tank, due consideration must be given to appropriate design and construction. The tanks are required to be built to industry standard in order to be Global G.A.P. compliant.

Recommendations regarding the specifications for the fuel tank as well as the design and management of the chemical storeroom have been included in Chapter Two and Appendix G, respectively, of this report.

ASSESSMENT OF ALTERNATIVES

The following alternatives were identified for consideration in this assessment:

- No-Go alternative
- Property/ Location alternatives
- Land-Use alternatives
 - Grazing/ game
 - Crop cultivation and citrus orchard establishment
- Layout alternatives (development footprints)
- Alternatives as Raised by I&APs and Authorities
 - Tourism
 - Access Alternative
 - Buffers

The no-go option would result in the loss of potentially productive agricultural land in an area known for citrus production and at a site that is largely surrounded by agricultural development. The no-go option would result in the loss of a capital investment estimated to be approximately R185 million. The operational phase of the project will result in the creation of 200 permanent employment opportunities with an annual income of approximately R13.5 million and 1000 seasonal employment opportunities with an additional annual income of R31.4 million. In addition, given that this proposed agricultural development is an empowerment project the benefits to the potential beneficiaries will not be realized. The no-go option would result in a loss of these economic opportunities, as well as the increased production of food for local and international markets, which is considered to be a negative impact. While the no-go option will have no significant negative biophysical environmental impacts, it will result in the loss of positive social and economic benefits which are associated with the go option. Finally, the no-go option will result in the Farm not being optimally utilized for agriculture, for which it is zoned and well-positioned.

The preferred land-use, layout and alternatives as raised by I&APs and Authorities are described in full in Chapter Five of the EIA Report. Positive impacts associated with the **go option** are maximizing the use of available agricultural land whilst generating income from foreign currency (through export of citrus), thereby contributing to local economic growth, as well as assist in stimulating local markets. In addition, given that this agricultural development is an empowerment project there will

be additional benefits to be realized for beneficiaries associated with the project. The proposed development footprint has been informed by the relevant specialist assessments and mitigation measures have been recommended in order to reduce the impact of the proposed development on the biophysical environment.

OVERALL EVALUATION OF IMPACTS

Scheepersvlakte Farms (Pty) Ltd is a citrus farming business initiated by Sun Citrus (represented by Cecil Brummer), B Muller Family Trust (represented by Boetie Muller) and Hansie Klein Kinders Trust (represented by Hansie van der Westhuizen). The philosophy at Sun Citrus has always been that the Human Resources are the most important asset for the business. Since 2000 Sun Citrus has invested in their staff through training and education. However, Sun Citrus is now close to reaching its maximum size as an organization. As such, it is beginning to impose a “ceiling” both on the further development of individuals who have already risen through the ranks, and on those who are still to rise through the ranks of the company. Sun Citrus have, therefore, identified the need to create empowerment opportunities beyond the fruit packing, and farming business.

The Ukukhanya Business Trust was founded as a means/ business opportunity to further empower the employees of Sun Citrus, not only for the benefit of financial growth but also for personal growth and exposure to bigger business opportunities. For this reason, the proposed agricultural development of the Remainder of Portion 7 of the Farm Scheepers Vlakte 98 has been identified as an opportunity for staff from these entities to continue their growth and economic empowerment, while building on their already extensive knowledge of the citrus industry.

Seven Beneficiaries of the Ukukhanya Business Trust have already been identified. These seven beneficiaries will be the key players in the development of the project. Should the proposed development receive Environmental Authorisation, a further 600 employees will benefit from the development. It is also envisaged that in future the Trust will have the option to increase its shareholding in Scheepersvlakte Farms (Pty) Ltd. This will be made possible by utilizing a portion of their dividends to purchase such shareholding at a price to be determined by the auditors from time to time. Such dividends will be forthcoming from the 10th year of operation of the project. Should the proposed agricultural development receive Environmental Authorisation it will allow greater opportunities for existing staff to move to better positions.

Based on the outcome of the detailed specialist assessments, technical input and consultation process, it is proposed that ~516ha (~61% of the extent of the property) be cleared in order to facilitate the establishment of ~468ha of citrus, as well as associated infrastructure. This will include the construction of a new irrigation dam (~7ha), and a new logistical services area (~6ha) including a pre-sort packhouse. The additional clearance of ~516ha will result in ~29% of the near-natural and degraded vegetation on the farm being retained. By adopting the proposed no-go areas and all mitigation measures recommended by the Ecological Specialists, the biodiversity pattern target area for the various vegetation types, and the hydrological/ ecological process areas associated with aquatic features, will be safeguarded. In addition, these final no-go areas exceed the targets delimited on the SRV CBA Map (of 17%). In addition, the Sundays Doringveld on the Farm has been excluded from the development footprint.

By applying the mitigatory measures proposed *Construction Phase* direct and indirect impacts of medium to high significance can mostly be reduced to impacts of *medium to low negative or neutral impacts*. 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 high to medium significance to *impacts of medium to low 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.

TABLE OF CONTENTS

	Page No.
CHAPTER ONE: INTRODUCTION AND BACKGROUND	1.1
1.1 BACKGROUND AND PROJECT OVERVIEW	1.1
1.1.1 About the Project Applicant	1.3
1.2 PROJECT NEED AND DESIRABILITY	1.4
1.3 REQUIREMENTS FOR SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT	1.7
1.4 EIA TEAM	1.8
1.5 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CARRY OUT SCOPING AND EIA	1.9
1.6 OBJECTIVES OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS	1.10
1.7 ADDITIONAL INFORMATION REQUESTED IN THE APPROVED POS FOR EIA	1.14
CHAPTER TWO: PROJECT DESCRIPTION	2.1
2.1 INTRODUCTION	2.1
2.1.1 Proposed Project Location	2.1
2.2 PROPOSED PROJECT SCOPE AND ACTIVITIES	2.3
2.2.1 Preconstruction	2.8
2.2.2 Construction	2.8
2.2.2.1 <i>Vegetation Clearing and Landscaping</i>	2.9
2.2.2.2 <i>Construction of the Logistical Services Area and Staff Housing</i>	2.10
2.2.2.3 <i>Internal Roads and Access</i>	2.14
2.2.2.4 <i>Installation of Irrigation Infrastructure and Dam Construction</i>	2.14
2.2.2.5 <i>Windbreaks</i>	2.17
2.2.3 Operational	2.17
2.2.3.1 <i>Cultivation of Maize and the Establishment of Citrus Orchards and Associated Services</i>	2.17
2.2.3.2 <i>Water Use Entitlements and Availability</i>	2.18
2.3 CAPITAL INVESTMENT AND EMPLOYMENT GENERATION	2.18
2.4 PROJECT SCHEDULE	2.18
2.5 CONCLUDING REMARKS	2.19
CHAPTER THREE: DESCRIPTION OF THE AFFECTED ENVIRONMENT	3.1
3.1 INTRODUCTION	3.1
3.2 GEOGRAPHICAL CONTEXT	3.2
3.2.1 Site Locality and Overview	3.2
3.2.2 Surrounding Land-use	3.4
3.2.3 National Protected Areas Expansion Strategy	3.5
3.2.4 National Strategy on Buffer Zones for National Parks	3.6
3.3 ENVIRONMENTAL ATTRIBUTES	3.7
3.3.1 Biological	3.7
3.3.1.1 <i>Aquatic Vegetation</i>	3.7
3.3.1.2 <i>Terrestrial Vegetation</i>	3.9
3.3.1.3 <i>Site Observations</i>	3.14
3.3.1.4 <i>Fauna</i>	3.18
3.3.2 Physical	3.18
3.3.2.1 <i>Climate</i>	3.18
3.3.2.2 <i>Geohydrology and Surface Water</i>	3.18
3.3.2.3 <i>Geology and Topography</i>	3.19
3.3.2.4 <i>Agricultural Potential</i>	3.20
3.3.3 Heritage and Cultural	3.21
3.3.4 Socio-economic (Social and Economic)	3.21
3.4 CONCLUDING REMARKS	3.23
CHAPTER 4: ENVIRONMENTAL IMPACT ASSESSMENT PROCESS AND PUBLIC PARTICIPATION	4.1

4.1	INTRODUCTION	4.1
4.2	LEGAL CONTEXT FOR THIS EIA	4.1
4.3	LEGISLATION AND GUIDELINES APPLICABLE TO THIS EIA	4.5
4.3.1	National Legislation	4.5
4.3.1.1	<i>The Constitution of the Republic of South Africa (Act 108 of 1996):</i>	4.5
4.3.1.2	<i>National Environmental Management Act (as amended) and the Environmental Impact Assessment Regulations 2014 (as amended), published under Chapter Five of NEMA (GN R326, GN R327, GN R325 and GN R324):</i>	4.6
4.3.1.3	<i>National Environmental Management Biodiversity (Act 10 of 2004):</i>	4.6
4.3.1.4	<i>National Forests Act (Act 84 of 1998):</i>	4.7
4.3.1.5	<i>National Heritage Resources Act (Act 25 of 1999):</i>	4.7
4.3.1.6	<i>National Water Act (Act 36 of 1998):</i>	4.8
4.3.1.7	<i>National Environmental Management: Protected Areas Act (Act 57 of 2003):</i>	4.9
4.3.1.8	<i>Conservation of Agricultural Resources Act (Act 43 of 1983):</i>	4.9
4.3.1.9	<i>Other Applicable National Legislation:</i>	4.10
4.3.2	Provincial and Local Legislation	4.11
4.3.2.1	<i>Cape Nature and Environmental Conservation Ordinance (19 of 1974):</i>	4.11
4.3.2.2	<i>Eastern Cape Provincial Heritage Resources Act (Act 9 of 2003):</i>	4.11
4.3.2.3	<i>Other Applicable Provincial and Local Legislation:</i>	4.11
4.3.3	Policies and Guidelines	4.11
4.4	OVERVIEW OF THE SCOPING AND EIA PROCESS	4.12
4.4.1	Principles for Public Participation	4.13
4.4.2	Authority Consultation	4.14
4.4.3	Database Development, Maintenance and Ongoing Information Sharing	4.16
4.5	PUBLIC PARTICIPATION PROCESS	4.17
4.5.1	Draft EIA Report and EMPr Compilation	4.17
4.5.2	Draft EIA and EMPr Review and Ongoing Communication	4.18
4.5.3	Submission of the Final EIA and EMPr to Authorities	4.18
4.5.4	Decision on Application and Appeal Period	4.19
4.6	IDENTIFICATION OF ISSUES	4.19
4.7	CONCLUDING REMARKS	4.28
APPENDIX 4.1 GENERIC TERMS OF REFERENCE FOR THE ASSESSMENT OF IMPACTS		4.29
CHAPTER FIVE: IDENTIFICATION AND ASSESSMENT OF ALTERNATIVES		5.1
5.1	APPROACH TO THE ASSESSMENT OF ALTERNATIVES	5.1
5.2	NO-GO ALTERNATIVE	5.2
5.3	PROPERTY/ LOCATION ALTERNATIVES	5.3
5.3.1	Reasoning/ motivation for the elimination of an alternative	5.3
5.4	LAND USE/ ACTIVITY ALTERNATIVES	5.4
5.4.1	Grazing (not preferred)	5.4
5.4.2	Crop cultivation and Citrus Orchard Establishment (preferred)	5.5
5.5	LAYOUT ALTERNATIVES	5.7
5.5.1	Layout Alternative 1 (not preferred)	5.7
5.5.2	Layout Alternative 2 (preferred)	5.8
5.6	ALTERNATIVES RAISED BY I&APS	5.11
5.6.1	Tourism	5.11
5.6.2	Alternative Access	5.12
5.6.3	Buffers	5.12
5.7	CONCLUDING REMARKS	5.14
CHAPTER SIX: ECOLOGICAL SPECIALIST ASSESSMENT		6.1
6.1	INTRODUCTION	6.1
6.2	SPECIALIST TERMS OF REFERENCE	6.1
6.3	APPROACH AND METHODOLOGY	6.1
6.3.1	Assumptions and Limitations	6.1
6.3.2	Information Sources	6.2
6.3.2.1	<i>Biodiversity Planning Frameworks</i>	6.2
6.3.2.2	<i>Internet Resources</i>	6.2
6.3.3	Authority Consultation Process	6.2

6.3.4	Modelling, Analysis and Fieldwork Undertaken	6.2
6.4	LEGISLATIVE REQUIREMENTS	6.4
6.5	PROJECT DESCRIPTION	6.8
6.5.1	Project Specifications	6.8
6.5.2	Near Natural Vegetation Cover and Proposed Clearance Statistics	6.8
6.6	AVAILABLE DATA: VEGETATION AND FLORISTICS	6.8
6.6.1	Existing Broad-scale Vegetation Maps	6.8
6.6.1.1	<i>National South African Vegetation Map (2012)</i>	6.9
6.6.1.2	<i>Subtropical Thicket Ecosystem Programme (STEP) Vegetation Map (2002)</i>	6.10
6.6.1.3	<i>Low and Rebelo's South African Vegetation Map (1996)</i>	6.11
6.6.1.4	<i>Acocks Veld Types of South Africa (1975)</i>	6.12
6.6.2	Available Data: Species of Conservation Concern	6.12
6.7	BIODIVERSITY PLANNING FRAMEWORKS: OVERVIEW AND EVALUATION	6.13
6.7.1	The Sundays River Valley (SRV) Critical Biodiversity Area (CBA) Map (Skowno and Holness, 2012)	6.13
6.7.2	The Eastern Cape Biodiversity Conservation Plan's Critical Biodiversity Areas Map (Berliner and Desmet, 2007)	6.16
6.7.3	The Maputoland-Pondoland-Albany Hotspot Biodiversity Conservation Plan (2010)	6.18
6.7.4	The National and Provincial Protected Area Expansion Strategies	6.19
6.7.5	The National Strategy on Buffer Zones for National Parks (2012)	6.20
6.8	RESULTS	6.21
6.8.1	Vegetation and Floristics	6.21
6.8.2	Species of Special/ Conservation Concern	6.28
6.8.3	Land Cover, Land Use and Associated Land Use Impacts: Level of Modification and Degradation	6.32
6.8.4	Critical evaluation of the SRV and ECBCP CBA Maps, Based on Site Observations	6.35
6.8.4.1	<i>SRV CBA Map Evaluation: Site Observations compared with the CBA Map and associated Land Cover Map</i>	6.35
6.8.4.2	<i>The ECBCP CBA Map Evaluation: Site Observations compared with the CBA Map and Land Cover</i>	6.36
6.8.5	Ecologically Sensitive Areas, Biodiversity No-Go Areas and Biodiversity Offsets	6.36
6.8.5.1	<i>Biodiversity Target and Biodiversity No-Go Areas: Explanation and Calculations</i>	6.38
6.8.5.2	<i>Conservation Value of the Farm</i>	6.39
6.9	IDENTIFICATION AND ASSESSMENT OF IMPACTS	6.44
6.9.1	Construction Phase Direct Impacts	6.44
6.9.1.1	<i>Impact 1: Loss of vegetation due to clearing</i>	6.44
6.9.1.2	<i>Impact 2: Loss of CBA and ESA due to clearing (biodiversity and hydrological process loss)</i>	6.46
6.9.1.3	<i>Impact 3: Loss of species of special concern due to clearing</i>	6.47
6.9.1.4	<i>Impact 4: Fragmentation of natural habitat due to clearing (biodiversity and hydrological process loss)</i>	6.48
6.9.2	Indirect Construction Phase Impacts	6.48
6.9.3	Construction Phase Cumulative Impacts	6.49
6.9.4	Operational Phase Direct Impacts	6.51
6.9.5	Indirect Operational Phase Impacts	6.51
6.9.6	Operational Phase Cumulative Impacts	6.51
6.10	ENVIRONMENTAL MONITORING PROGRAMME RECOMMENDATIONS	6.51
6.11	CONCLUSIONS AND RECOMMENDATIONS	6.52
6.11.1	Impact Statement	6.52
6.11.2	Permitting and Licensing Requirements	6.54
6.12	DESKTOP FAUNAL ASSESSMENT	6.54
6.12.1	Methodology and Approach	6.54
6.12.1.1	<i>Assumptions and Limitations</i>	6.55
6.12.1.2	<i>Information Sources</i>	6.55
6.12.2	Description of the Environment	6.55
6.12.2.1	<i>Invertebrates</i>	6.55
6.12.2.2	<i>Amphibians and Reptiles</i>	6.56
6.12.2.3	<i>Birds</i>	6.58
6.12.2.4	<i>Mammals</i>	6.59

6.12.3	Faunal Recommendations	6.60
6.13	PERMIT REQUIREMENTS	6.60
6.14	FAUNAL RISK/ IMPACT ASSESSMENT	6.60
6.14.1	Impact Assessment Methodology	6.60
6.14.2	Assessment of Identified Impacts	6.62
6.14.3	Concluding Impact Statement	6.64
6.15	VEGETATION ASSESSMENT REFERENCES	6.65
6.16	FAUNAL ASSESSMENT REFERENCES	6.66
6.17	APPENDICES	6.67
6.17.1	Appendix A: Plant Inventory	6.67
6.17.2	Appendix B: Curriculum Vitae	6.70
CHAPTER SEVEN: AQUATIC SPECIALIST ASSESSMENT		7.1
7.1	INTRODUCTION	7.1
7.2	SPECIALIST TERMS OF REFERENCE	7.1
7.3	APPROACH AND METHODOLOGY	7.1
7.3.1	Assumptions and Limitations	7.1
7.3.2	Information Sources	7.2
7.3.2.1	<i>Biodiversity Planning Frameworks</i>	7.2
7.3.2.2	<i>Internet Resources</i>	7.2
7.3.3	Authority Consultation Process	7.2
7.3.4	Modelling, Analysis and Fieldwork Undertaken	7.2
7.4	LEGISLATIVE REQUIREMENTS	7.5
7.5	PROJECT DESCRIPTION	7.11
7.5.1	Project Specifications	7.11
7.5.2	Catchment Location: Proposed Agricultural Activities Relative to Aquatic Features	7.11
7.6	BIODIVERSITY PLANNING FRAMEWORKS	7.14
7.6.1	The National Freshwater Ecosystem Priority Areas (NFEPA) Map (Nel et al., 2011) River and Catchment	7.14
7.6.2	The Sundays River Valley (SRV) Critical Biodiversity Area (CBA) Map (Skowno and Holness, 2012)	7.15
7.6.3	The Eastern Cape Biodiversity Conservation Plan (ECBCP) Critical Biodiversity Areas (CBA) Map (Berliner and Desmet, 2007)	7.16
7.7	RESULTS	7.17
7.7.1	The Bio-Physical Environment: General Climate, Topography and Geology	7.17
7.7.2	Aquatic Resources: Wetland Habitat and 1:50 000 Drainage Areas	7.17
7.7.2.1	<i>Wetland Habitat: Characterization and Delineation</i>	7.20
7.7.2.2	<i>Wetland Ecological Importance, Ecological Sensitivity and Hydro-functional Importance</i>	7.30
7.7.2.3	<i>1:50 000 Ephemeral Drainage Areas: Characterisation and Delineation</i>	7.32
7.7.2.4	<i>1:50 000 Ephemeral Drainage Areas: Present Ecological State, Ecological Importance and Sensitivity</i>	7.37
7.7.3	Aquatic Resources: Recommendations	7.38
7.7.3.1	<i>Introduction: Generic Buffers Indicated for Each Province</i>	7.38
7.7.3.2	<i>Buffer Tool Guideline (Macfarlane and Bredin, 2017)</i>	7.40
7.7.3.3	<i>Buffer Recommendations for this Assessment</i>	7.40
7.7.4	Critical Evaluation of the SRV and ECBCP CBA Maps Based on Site Observations	7.43
7.7.4.1	<i>SRV CBA Map Evaluation: Site Observations Compared with the CBA Map and associated Land Cover Map</i>	7.43
7.7.4.2	<i>The ECBCP CBA Map Evaluation: Site Observations Compared with the CBA Map and Land Cover Map</i>	7.43
7.7.5	Ecologically Sensitive Areas, Biodiversity No-Go Areas and Biodiversity Offsets	7.46
7.8	IDENTIFICATION AND ASSESSMENT OF IMPACTS	7.48
7.8.1	Construction Phase Direct Impacts	7.49
7.8.1.1	<i>Impact 1: Potential loss of artificial wetland habitat and drainage systems (vegetation along the 1:50 000 drainage areas) due to orchards (hydrological processes and biodiversity loss)</i>	7.49
7.8.1.2	<i>Impact 2: Loss and fragmentation of drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss)</i>	7.50

7.8.2	Indirect Construction Phase Impacts	7.51
7.8.2.1	<i>Impact 3: Potential hydrological process impacts on the artificial wetland habitat and drainage systems due to increased surface run-off from orchard areas and associated access roads (erosion, sedimentation, saturation and consequent impacts on biota)</i>	7.51
7.8.3	Construction Phase Cumulative Impacts	7.52
7.8.4	Operational Phase Direct Impacts	7.54
7.8.4.1	<i>Impact 4: Potential hydrological process impacts on artificial wetland habitat and drainage systems due to increased surface run-off from orchard areas and associated access roads (erosion, sedimentation and consequent impacts on biota)</i>	7.54
7.8.4.2	<i>Impact 5: Potential hydrological impacts on drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss)</i>	7.55
7.8.4.3	<i>Impact 6: Potential increased water levels/ saturation in the artificial wetland habitats and drainage systems due to irrigation (hydrological processes)</i>	7.55
7.8.4.4	<i>Impact 7: Water quality degradation of the artificial wetland habitat and drainage systems due to agricultural run-off high in pollutants (hydrological processes and biodiversity loss)</i>	7.57
7.8.4.5	<i>Impact 8: Loss of vegetation along drainage areas due to maintenance repairs on the underground water supply pipelines and access roads at crossings (hydrological processes and biodiversity loss)</i>	7.59
7.8.5	Indirect Operational Phase Impacts	7.59
7.8.6	Operational Phase Cumulative Impacts	7.60
7.9	ENVIRONMENTAL MONITORING PROGRAMME RECOMMENDATIONS	7.61
7.10	CONCLUSIONS AND RECOMMENDATIONS	7.64
7.10.1	Impact Statement	7.64
7.10.2	Permitting and Licensing Requirements	7.67
7.11	REFERENCES	7.67
7.12	APPENDICES	7.70
7.12.1	Appendix A: Curriculum Vitae	7.70
CHAPTER EIGHT: SOIL SUITABILITY ASSESSMENT		8.1
8.1	INTRODUCTION	8.1
8.2	SPECIALIST TERMS OF REFERENCE	8.1
8.3	APPROACH AND METHODOLOGY	8.1
8.4	SOIL TYPES AND SOIL MAP	8.2
8.5	PHYSICAL SOIL LIMITATIONS	8.3
8.5.1	Low Clay Content of Top- and Upper Subsoils	8.3
8.5.2	Dense Subsoil Clay Layers	8.4
8.5.3	Wetness	8.4
8.5.4	Coarse Fragments in Top- and / or Subsoils	8.5
8.5.5	Weathered Rock	8.5
8.6	AMELIORATION OF PHYSICAL SOIL LIMITATIONS	8.5
8.7	SOIL SUITABILITY WITH SPECIAL REFERENCE TO CITRUS AND ANNUAL CROPS	8.6
8.8	REFERENCES	8.8
8.9	ANNEXURE 1	8.9
8.10	ANNEXURE 2	8.21
8.11	ANNEXURE 3	8.24
8.12	ANNEXURE 4	8.28
CHAPTER NINE: TRAFFIC IMPACT ASSESSMENT		9.1
9.1	INTRODUCTION	9.1
9.2	SPECIALIST TERMS OF REFERENCE	9.1
9.3	APPROACH AND METHODOLOGY	9.1
9.4	LAND USE RIGHTS, DEVELOPMENT AND ENVIRONS	9.1
9.4.1	Land Use Rights	9.1
9.4.2	Development Overview	9.3
9.5	DATA COLLECTION	9.5
9.5.1	Historical Daily Traffic Volumes	9.5

9.5.2	Road Network	9.5
9.6	TRIP GENERATION AND DISTRIBUTION	9.6
9.7	PROPOSED ACCESS ARRANGEMENTS	9.6
9.8	IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS	9.7
9.8.1	Impacts	9.7
9.8.2	Impact Assessment	9.8
9.8.3	Construction Phase Impacts	9.8
9.8.4	Operational Phase Impacts	9.9
9.9	PROPOSED MITIGATORY MEASURES	9.10
9.9.1	Road Condition Measures	9.11
9.9.2	Traffic Safety Measures	9.11
9.10	MANAGEMENT ACTIONS	9.11
9.11	CONCLUSIONS	9.11
9.12	RECOMMENDATIONS	9.11
9.13	REFERENCES	9.12
9.14	ANNEXURES	9.13
CHAPTER TEN: PALAEOLOGICAL IMPACT ASSESSMENT		10.1
10.1	INTRODUCTION	10.1
10.2	NTRODUCTION AND BRIEF	10.1
10.3	LEGISLATIVE FRAMEWORK	10.3
10.4	METHODOLOGY	10.4
10.4.1	Assumptions and Limitations	10.5
10.5	GEOLOGICAL BACKGROUND	10.7
10.6	PALAEOLOGICAL HERITAGE	10.17
10.6.1	Fossils in the Sundays River Formation	10.17
10.6.2	Fossils in Late Caenozoic High Level Gravels	10.19
10.7	CONCLUSIONS AND RECOMMENDATIONS	10.20
10.8	ACKNOWLEDGEMENTS	10.21
10.9	REFERENCES	10.21
10.10	QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR	10.24
APPENDIX 1: GEOLOGICAL AND GPS DATA		10.25
APPENDIX 2: CHANCE FOSSIL FINDS PROCEDURE		10.26
CHAPTER ELEVEN: ARCHAEOLOGICAL IMPACT ASSESSMENT		11.1
11.1	INTRODUCTION	11.1
11.2	PROJECT INFORMATION	11.1
11.2.1	Type of Development	11.1
11.2.2	Purpose of the Study	11.4
11.2.3	Site and Location	11.4
11.2.4	Relevant Impact Assessments from the Adjacent Region, Databases and Collections	11.5
11.3	BRIEF ARCHAEOLOGICAL BACKGROUND	11.5
11.3.1	Literature Review	11.5
11.3.2	References	11.6
11.4	ARCHAEOLOGICAL INVESTIGATION	11.6
11.4.1	Methodology	11.6
11.4.2	Assumptions and Limitations	11.9
11.4.3	Results and Findings	11.9
11.5	ASSESSMENT OF THE IMPACTS	11.10
11.5.1	Pre-colonial Archaeology	11.10
11.6	ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PRE-COLONIAL ARCHAEOLOGY	11.11
11.7	DISCUSSION AND MITIGATION	11.12
11.8	GENERAL REMARKS AND CONDITION	11.13
11.9	APPENDICES	11.15
11.9.1	Appendix A: Brief Legislative Requirements	11.15
11.9.2	Appendix B: Identification of Archaeological Features and Material from Inland Areas: Guidelines and Procedures for Developers	11.16

CHAPTER TWELVE: ROADS AND WET SERVICES REPORT		12.1
12.1	INTRODUCTION	12.1
12.2	SPECIALIST TERMS OF REFERENCE	12.1
12.3	SCOPE OF WORK	12.1
12.4	DATA COLLECTION	12.2
12.4.1	Traffic Impact Statement	12.2
12.4.2	Layout and Survey Details	12.2
12.4.3	Field Record and Observations	12.2
12.4.4	Engineering Geological Report	12.3
12.5	ANALYSIS	12.3
12.5.1	Methodology	12.3
12.5.2	Acceptable Objectives	12.3
12.5.3	Appropriate Design Standards	12.3
12.6	INVESTIGATION AND PRELIMINARY DESIGN	12.4
12.6.1	Roads – Access	12.4
12.6.2	Roads – Structural	12.4
12.6.3	Roads – Geometric Design	12.5
12.6.4	Stormwater System	12.6
12.6.5	Water Supply System	12.7
12.6.6	Foul Sewer System	12.9
12.7	RESOURCE PROTECTION AND WATER USE AUTHORISATION	12.12
12.8	CONSLUSION	12.12
12.9	ANNEXURE A	12.13
12.9.1	Layout Drawings	12.13
CHAPTER THIRTEEN: VISUAL IMPACT ASSESSMENT		13.1
13.1	INTRODUCTION	13.1
13.2	THE VISUAL ASSESSMENT PROCESS	13.1
13.3	SPECIALIST TERMS OF REFERENCE	13.1
13.4	LEGAL, POLICY AND PLANNING CONTEXT	13.2
13.4.1	Legislation	13.2
13.4.1.1	<i>National Environmental Management Act (NEMA) (107 of 1998) and the EIA Regulations 2014 (as amended)</i>	13.2
13.5	THE PROJECT TEAM	13.2
13.5.1	Details of Specialist	13.3
13.5.2	Expertise	13.3
13.5.3	Declaration	13.3
13.6	APPROACH AND METHODOLOGY	13.4
13.6.1	Triggers for Specialist Visual Input	13.5
13.6.2	Selecting Appropriate Approach for the Visual and Aesthetic Assessment	13.6
13.6.3	Glossary of Terms Relevant to the VIA	13.8
13.7	VISUAL ASSESSMENT INFORMATION	13.9
13.7.1	Relevant Project Information	13.9
13.7.2	Details and Nature of Structures	13.13
13.7.3	Description of the Affected Physical Environment	13.14
13.8	ASSESSMENT OF IMPACTS	13.15
13.8.1	Potential Visual Impacts	13.15
13.8.2	Visual Impact Assessment Criteria	13.15
13.8.2.1	<i>Visibility of the Project</i>	13.16
13.8.2.2	<i>Visual Sensitivity and Visual Intrusion</i>	13.16
13.8.2.3	<i>Visual Exposure and Sensitivity of Receptors</i>	13.17
13.8.3	Assessment of Visual Impacts from Selected Observer Points	13.17
13.8.4	High Sensitivity	13.24
13.8.4.1	<i>Viewpoint V1</i>	13.24
13.8.4.2	<i>Viewpoint V2</i>	13.25
13.8.4.3	<i>Viewpoint V3</i>	13.26
13.8.5	Moderate Sensitivity	13.27
13.8.5.1	<i>Viewpoint V8</i>	13.28

13.8.5.2	<i>Viewpoint V9</i>	13.29
13.8.6	Low Sensitivity	13.30
13.8.6.1	<i>Viewpoint V4</i>	13.31
13.8.6.2	<i>Viewpoint V5</i>	13.32
13.8.6.3	<i>Viewpoint V6</i>	13.34
13.8.6.4	<i>Viewpoint V7</i>	13.35
13.8.6.5	<i>Viewpoint V10</i>	13.36
13.9	ASSESSMENT OF SIGNIFICANCE	13.37
13.9.1	Consideration of Alternatives	13.38
13.9.1.1	<i>No Development</i>	13.38
13.9.2	Approach to Assessment of Significance	13.38
13.9.2.1	<i>Criteria Used for the Assessment of Impacts</i>	13.38
13.9.2.2	<i>Establishing Thresholds of Significance</i>	13.39
13.9.3	Direct and Indirect Impacts	13.40
13.9.4	Assessment	13.41
13.9.4.1	<i>Planning and Design Phase: Direct Visual Impacts</i>	13.41
13.9.4.2	<i>Indirect Impacts: All Phases</i>	13.42
13.9.4.3	<i>Cumulative Impacts: All Phases</i>	13.43
13.9.5	Mitigation Measures	13.44
13.9.5.1	<i>Mitigation Against Lightning</i>	13.44
13.9.5.2	<i>Mitigation Against Visual Intrusion in the Landscape</i>	13.44
13.10	CONCLUSIONS AND RECOMMENDED MANAGEMENT ACTIONS	13.44
13.10.1	Concluding Statement	13.46
13.11	REFERENCES	13.46
13.12	APPENDICES	13.47
13.12.1	Curriculum Vitae: Mark Marshall	13.47
13.12.2	Curriculum Vitae: Roy De Kock	13.50
CHAPTER FOURTEEN: CONCLUSIONS AND RECOMMENDATIONS		14.1
14.1	INTRODUCTION	14.1
14.2	IMPACTS ON ECOLOGY AND RECOMMENDED MITIGATORY MEASURES	14.2
14.2.1	Impacts and Management of Ecology	14.2
14.2.2	Summary and Additional Recommendations	14.8
14.3	HERITAGE IMPACTS AND RECOMMENDATIONS	14.10
14.3.1	Geological Background	14.10
14.3.2	Palaeontological Results and Findings	14.11
14.3.3	Archaeological Results and Findings	14.11
14.3.4	Impacts and Management of Heritage Resources	14.12
14.4	TRAFFIC IMPACTS AND RECOMMENDATIONS	14.13
14.5	VISUAL IMPACTS AND RECOMMENDATIONS	14.13
14.5.1	Mitigation Measures	14.15
14.5.2	Concluding Statement	14.15
14.6	LOGISTICAL SERVICES AREA DESIGN AND RENOVATIONS RECOMMENDATIONS	14.15
14.6.1	Roads	14.16
14.6.2	Stormwater	14.16
14.6.3	Water	14.16
14.6.4	Domestic Effluent System	14.17
14.6.5	Chemical Store	14.18
14.7	ASSESSMENT OF ALTERNATIVES	14.18
14.7.1	No-Go Option	14.18
14.7.2	Property/ Location Alternatives	14.19
14.7.3	Land Use Alternatives: Crop Cultivation and Citrus Orchard Establishment	14.20
14.7.4	Layout Alternatives	14.21
14.7.5	Alternatives as Raised by I&APs and Authorities: Alternative Access	14.22
14.7.6	Alternatives as Raised by I&APs and Authorities: Buffers	14.22
14.8	PERMIT REQUIREMENTS	14.23
14.9	OVERALL EVALUATION OF IMPACTS	14.23

MAPS		
Map 1.1	The location of the Remainder of Portion 7 of Farm 98, known as Scheepers Vlakke Farm, in relation to the nearest town, Sunland, as well as the Addo Elephant National Park.	1.2
Map 2.1	A plan indicating the coordinates of the boundary of the Remainder of Portion 7 of Farm 98, known as Scheepers Vlakke Farm, upon which the agricultural development is proposed to take place.	2.3
Map 2.2	The preferred development footprint, indicating the proposed orchard layout and associated infrastructure, on Scheepers Vlakke Farm.	2.5
Map 2.3	The preferred logistical services area, located near the southern boundary on Scheepers Vlakke Farm.	2.6
Map 2.4	Co-ordinates of turning points of the proposed pipeline route from the canal offtake point (A) to the proposed new dam (D).	2.16
Map 3.1	Locality map of the Remainder of Portion 7 of Farm 98.	3.3
Map 3.2	Properties (red outline) adjacent to the Remainder of Portion 7 of Farm 98. Portion 10 of Farm 98 (yellow outline), owned by DWS, is located within the property under assessment.	3.5
Map 3.3	The Remainder of Portion 7 of Farm 98 does not fall within the NPAES Focus Areas, which are located ~2km north of the nearest boundary of the Farm.	3.6
Map 3.4	The Addo Elephant National Park Buffer Zone relative to the Remainder of Portion 7 of Farm 98.	3.7
Map 3.5	Remainder of Portion 7 of Farm 98, as described by the National Freshwater Ecosystem Priority Areas (NFEPA) mapping resources.	3.8
Map 3.6	Remainder of Portion 7 of Farm 98 (red outline) in terms of the ECBCP Aquatic CBA mapping resources.	3.9
Map 3.7	Remainder of Portion 7 of Farm 98, as mapped in the NBA mapping resources, showing the vegetation types on site.	3.10
Map 3.8	Remainder of Portion 7 of Farm 98, as mapped in the STEP mapping resources, showing the vegetation types on site.	3.11
Map 3.9	Remainder of Portion 7 of Farm 98 (red outline) falls within a Biodiversity Corridor (purple) and is situated adjacent to Vulnerable (yellow), as well as Impacted Areas (hatching), as identified in the STEP mapping resources.	3.11
Map 3.10	Remainder of Portion 7 of Farm 98 (red outline) in terms of the ECBCP Terrestrial CBA mapping resources.	3.12
Map 3.11	Remainder of Portion 7 of Farm 98, as mapped in the SRVM Biodiversity Sector Plan mapping resources.	3.13
Map 3.12	Fossil Sensitivity of the Remainder of Portion 7 of Farm 98, as given by the SAHRA mapping software.	3.19
Map 3.13	Contour map (5m contour intervals) showing topography of the Remainder of Portion 7 of Farm 98 (red outline).	3.20
Map 3.14	Remainder of Portion 7 of Farm 98, Agricultural Land Capability (AGIS, 2007, www.agis.agric.za).	3.21
Map 5.1	Alternative 1 proposed to clear ~650ha of indigenous vegetation for the establishment of citrus orchards, including associated infrastructure.	5.8
Map 5.2	Alternative 2 proposes to clear ~516ha of indigenous vegetation for the establishment of citrus orchards and maize, including associated infrastructure. This preferred alternative is based on specialist and technical input, as well as public participation.	5.9
Map 5.3	The proposed logistical services area layout, located near the southern boundary on Scheepers Vlakke Farm, also indicating the preferred access road.	5.10
Map 11.1	1:50 000 Topographic maps indicating the location of the proposed development. The red lines mark the location and approximate size of the property.	11.2
Map 11.2	Aerial images indicating the location of the proposed development. The red lines outline the approximate size of the property.	11.3
Map 11.3	Preferred layout of the proposed development indicated with black squares (map courtesy of Public Process Consultants).	11.4
Map 13.1	Location of the proposed agricultural development on the Remainder of Portion 7 of the Farm Scheepers Vlakke 98, in the Sundays River Valley Municipality.	13.10
Map 13.2	Layout of the proposed agricultural development on the Remainder of Portion 7 of the Farm Scheepers Vlakke 98, in the Sundays River Valley Municipality.	13.11

Map 13.3	Layout Map of the proposed agricultural development on the Remainder of Portion 7 of the Farm Scheepers Vlakte 98, in the Sundays River Valley Municipality, on a Google Earth aerial image.	13.12
PHOTOS		
Photo 2.1a	Example of maize being mechanically harvested onto a tractor-trailer, using a combine harvester.	2.7
Photo 2.1b	Maize will be directly transported to silos for further processing. Paterson silos pictured above.	2.7
Photo 2.2	Example of crates being packed within the orchards during harvest season.	2.7
Photo 2.3	Example of an aboveground fuel tank within a roofed and bunded area at a Packhouse facility in the Sundays River Valley.	2.13
Photo 2.4	Example of internal service roads on an existing citrus farm in the Sundays River Valley.	2.14
Photo 3.1	The dominant vegetation on the Remainder of Portion 7 of Farm 98 is a combination of natural to moderately degraded Sundays Thicket (A and B above). Some riparian vegetation was also identified within one of the drainage lines on the Farm (C).	3.15
Photo 3.2	Existing structures on the Remainder of Portion 7 of Farm 98.	3.15
Photo 3.3	DWS dam on Portion 10 of Farm 98 (excluded from this assessment), located within the boundary of the Remainder of Portion 7 of Farm 98.	3.16
Photo 3.4	Sections of the vegetation on the Remainder of Portion 7 of Farm 98 are encroached by <i>Opuntia ficus indica</i> (Prickly Pear), which is an indicator of a degraded vegetation state, possibly due to previous livestock grazing and browsing, as suggested by the water trough.	3.16
Photo 3.5	Grassy, open patches on the Remainder of Portion 7 of Farm 98.	3.16
Photo 3.6	Wetland area within and adjacent to the southern boundary of the Remainder of Portion 7 of Farm 98 (A). The wetland possibly results from overflow from the Scheepersvlakte Dam (owned by the DWS, not part of this assessment) on Portion 10 of Farm 98 flowing into the Scheepersvlakte overflow dam (B), located south of the boundary of the Farm. Historical imagery (1957; C), shows an absence of this reed bed (circled in green).	3.17
Plate 6.1	Photographic images of the vegetation identified on the Farm.	6.24
Plate 6.2	Photographic images of some of the Species of Special Concern on site.	6.29
Plate 7.1	Photographic images of the artificial wetland habitat supported in dams.	7.25
Plate 7.2	Photographic images of the 1:50 000 drainage areas.	7.34
Photo 13.1	Example of an existing irrigated citrus development in the area.	13.14
Plate 13.1	Potentially important receptors.	13.17
Photo 13.2	(a) Google Earth image and (b) Panoramic view from Viewpoint V1 towards the proposed development.	13.25
Photo 13.3	(a) Google Earth image and (b) Panoramic view from Viewpoint V2 towards the proposed development.	13.26
Photo 13.4	(a) Google Earth image and (b) Panoramic view from Viewpoint V3 towards the proposed development.	13.27
Photo 13.5	(a) Google Earth image and (b) Panoramic view from View point V8 towards the proposed development.	13.29
Photo 13.6	(a) Google Earth image and (b) Panoramic view from Viewpoint V9 towards the proposed development.	13.30
Photo 13.7	(a) Google Earth image and (b) Panoramic view from Viewpoint V4 towards the proposed development.	13.32
Photo 13.8	(a) Google Earth image and (b) Panoramic view from Viewpoint V5 towards the proposed development.	13.33
Photo 13.9	(a) Google Earth image and (b) Panoramic view from Viewpoint V6 towards the proposed development.	13.35
Photo 13.10	(a) Google Earth image and (b) Panoramic view from Viewpoint V7 towards the proposed development.	13.36
Photo 13.11	(a) Google Earth image and (b) Panoramic view from Viewpoint V10 towards the proposed development.	13.37
TABLES		
Table 1.1	EIA Team and Specialists.	1.8

Table 1.2	Summary of where information requirements in terms of Appendix 3 of the EIA Regulations, 2014, (as amended) are provided for in this report.	1.11
Table 1.3	Additional Information requested by DEDEAT in Approved PoS for EIA.	1.14
Table 2.1	Project cadastral information.	2.2
Table 2.2	Co-ordinates of turning points of the proposed pipeline route.	2.16
Table 2.3	Proposed project schedule.	2.19
Table 3.1	Activities on the land adjacent to the area under assessment.	3.4
Table 4.1	Listed activities according to GN R327, 325 and 324 requiring Environmental Authorisation in terms of the NEMA EIA Regulations, 2014 (as amended).	4.2
Table 4.2	Summary of Issues Raised.	4.19
Table 4.3	Comments and Responses Trail.	4.21
Table 6.1	Existing near-natural areas, degraded and modified on Scheepersvlakte Farm.	6.8
Table 6.2	Vegetation types mapped on the proposed agricultural footprint, with associated data (pre-transformation).	6.9
Table 6.3	Threatened species mapped by the Maputoland-Pondoland-Albany Hotspot study in 3325AD/BC (SANParks metadata, 2010) and the SANBI website (http://posa.sanbi.org/specieslist.php?).	6.12
Table 6.4	CBA Map statistics for the N40D catchment (WGS84 TM25 calculations).	6.14
Table 6.5	Terrestrial biodiversity land management classes (BLMC), Recommended Land Use Objectives and Land Use (Berliner and Desmet, 2007).	6.18
Table 6.6	Alien invasive plants recorded on site.	6.27
Table 6.8	Species of Special Concern recorded on Scheepersvlakte Farm.	6.28
Table 6.9	Criteria used to determine biodiversity no-go areas.	6.36
Table 6.10	No-go versus Go areas (hectares and percentage) for the alternative layouts.	6.38
Table 6.11	Original extent of vegetation types supported on the Farm pre-transformation, with approximate area (hectares and percentage), including the required biodiversity targets (hectares and percentage).	6.40
Table 6.12	Vegetation statistics pre- and post-clearance, relative to the biodiversity no-go areas (BNG) and required biodiversity targets, for the alternative layouts.	6.40
Table 6.13	Summary of impacts pre- and post-mitigation.	6.53
Table 6.14	Potential invertebrate Species of Special Concern.	6.56
Table 6.15	Conservation status of amphibians that may potentially occur in the area.	6.56
Table 6.16	Conservation status of reptiles that may occur in the area.	6.57
Table 6.17	Vulnerable Avifauna observed in the vicinity of the study area.	6.59
Table 6.18	Protected mammal species that may occur on the site.	6.59
Table 7.1	Descriptions of the A-F ecological categories (adapted from Kleynhans, 1996, Kleynhans, 1999; cited in DWAF, 2007 and Kleynhans et al., 2008	7.4
Table 7.2	Aquatic CBA with recommended transformation thresholds and aquatic buffers (Berliner and Desmet, 2007	7.17
Table 7.3	Summary of artificial wetland habitat supported in dams.	7.20
Table 7.4	Preliminary rating of the hydrological benefits likely to be provided by a wetland given its particular hydro-geomorphic type (Kotze et al., 2008).	7.30
Table 7.5	Importance of wetland size in contributing to the provision of particular benefits (Kotze et al., 2008).	7.31
Table 7.6	Results via DWAF criteria methodology (unpublished) for determining ecological importance and ecological sensitivity.	7.31
Table 7.7	Results via DWAF criteria methodology (unpublished) for determining hydrological importance.	7.32
Table 7.8	A synthesis of these studies for the key functions the buffer will provide (Macfarlane et al., 2009 and Macfarlane et al., 2014).	7.39
Table 7.9	Review of different buffer types and the recommended minimum buffer zone widths (Macfarlane et al., 2014).	7.40
Table 7.10	Land cover statistics for quaternary catchment N40D (GIS metadata, Sundays River Valley land cover data).	7.44
Table 7.11	Land cover statistics for the two sub-quaternary catchments of N40D (GIS metadata, Sundays River Valley land cover data).	7.44
Table 7.12	Summary of impacts pre- and post-mitigation, for Alternative 1 (pre-mitigation) and 2 (post mitigation).	7.65
Table 8.1	Coordinates of soil profiles.	8.9
Table 8.2	Soil forms and families listed alphabetically according to soil form abbreviation symbol.	8.10

Table 8.3	Soil types with a complete list of described soil profiles and codes – Scheepers Vlakte Farm, Addo.	8.12
Table 8.4	Brief description of soil types on Scheepers Vlakte Farm, Addo.	8.14
Table 8.5	Limitations of soil types.	8.19
Table 8.6	Recommended physical soil amelioration measures for deep rooted crops; e.g. citrus.	8.20
Table 8.7	Reclassified previous soil profiles.	8.29
Table 9.1	ADT and Annual Growth Rates.	9.5
Table 9.2	Rural Road Categories by Traffic Volume.	9.5
Table 9.3	Summary of Generated Trips.	9.6
Table 9.4	Generic table for rating of impacts.	9.8
Table 11.1	Impacts on the pre-colonial archaeology.	11.11
Table 13.1	Key to categories of Development.	13.6
Table 13.2	Categorization of issues to be addressed by the visual assessment (DEA&DP Guidelines).	13.7
Table 13.3	Description of the key categories of visual impact expected.	13.7
Table 13.4	Visual impact criteria to be considered (Oberholzer; 2005)	13.16
Table 14.1	Summary of artificial wetland habitat supported in dams.	14.5
Table 14.2	Key direct and indirect ecological impacts (Medium to High Negative pre-mitigation only).	14.8
Table 14.3	Key direct and indirect traffic impacts (Medium to High Negative pre-mitigation only).	14.13
FIGURES		
Figure 1.1	Extract from the National Development Plan (2030; Page 219).	1.6
Figure 3.1	Breakdown of the Employment Sector for the Sundays River Valley Municipality (Final SRVM IDP 2015/ 2016).	3.22
Figure 6.1	Field Survey (2014 and 2017) showing GPS points and tracks.	6.3
Figure 6.2	The SA Vegetation Map delineates Sundays Thicket and Albany Alluvial Vegetation on Scheepersvlakte Farm (pre-transformation).	6.10
Figure 6.3	The STEP vegetation units on Scheepersvlakte Farm (pre-modification levels) (Vlok and Euston-Brown, 2002).	6.11
Figure 6.4	Critical Biodiversity Areas and Ecological Support Areas on the Farm according to the Sundays River Valley Biodiversity Sector Plan Critical Biodiversity Areas Map (Skowno and Holness, 2012).	6.15
Figure 6.5	Land Cover delineated on the Farm (Skowno and Holness, 2012).	6.15
Figure 6.6	Critical Biodiversity Areas and Ecological Support Areas delineated in the N40D quaternary catchment, including Protected Area (Addo Elephant National Park).	6.16
Figure 6.7	The Eastern Cape Biodiversity Conservation Plan Critical Biodiversity Area Map classifies the majority of the Farm as terrestrial CBA 2.	6.17
Figure 6.8	Map indicating the Maputoland-Pondoland-Albany Hotspot Albany Corridor and Greater Addo Complex key biodiversity areas relative to the Farm.	6.19
Figure 6.9	Priority areas of the national (red) and provincial Eastern Cape (white dots) protected area expansion strategies relative to the Farm.	6.20
Figure 6.10	The Addo Elephant National Park Buffer Zone relative to the Farm (black square).	6.21
Figure 6.11	Vegetation Map for Scheepersvlakte Farm (pre-transformation levels) indicating Sundays Thicket (equivalent to STEPs Sundays Spekboom Thicket) and Sundays Doringveld. Since the Sundays Thicket is equivalent to STEPs Sundays Spekboom Thicket, it is referred to as Sundays (Spekboom) Thicket. Refer to Figure 6.13 for levels of degradation and modification, which also reflects vegetation sensitivity.	6.23
Figure 6.12	The historical aerial imagery (1957) shows past clearing for cultivation and livestock grazing.	6.33
Figure 6.13	Land cover map, with vegetation types (Sundays Doringveld and Sundays Thicket equivalent to Sundays Spekboom Thicket), indicating level of degradation and modification (which includes transformed access tracks which have not been digitized). Vegetation sensitivity decreases with increased degradation and modification levels.	6.34
Figure 6.14	Ecological Sensitivity Map based on biodiversity No-Go Areas (~248ha) i.e. excluding transformed land (e.g. canal, main road, quarry). The other No-Go areas that are of no biodiversity value are indicated in orange (~24ha) i.e. previously transformed areas. Refer to Figure 6.16 below for the proposed crossings and access roads that traverse the biodiversity no-go areas and the 1:50 000 drainage areas.	6.41

Figure 6.15	Map indicating vegetation in a near-natural and severely degraded state that will be retained within the biodiversity No-Go Areas. Refer to Figure 6.16 below for the proposed crossings and access roads that traverse the biodiversity no-go areas and the 1:50 000 drainage areas.	6.42
Figure 6.16	The proposed roads (6m wide) that traverse the biodiversity no-go areas on existing roads, new roads or where partial alignment is achieved. The map also shows where the proposed road crosses the drainage areas at five points i.e. the watercourse crossings.	6.43
Figure 7.1	Map indicating 1:50 000 topographical aquatic features relative to the Farm and general hydrology due to topography (2012 Aerial Imagery) (catchment N40D).	7.13
Figure 7.2	The National Freshwater Ecosystem Priority Areas (NFEPA) Map – wetlands, dams and catchments relative to the Farm.	7.15
Figure 7.3	The Farm does not fall within an aquatic CBA, according to the Eastern Cape Biodiversity Conservation Plan (ECBCP). ECBCP land cover (2000) overlaid.	7.16
Figure 7.4	Map indicating artificial wetland habitat, which includes small dams and the large Scheepersvlakte storage dam, as well as the dry 1:50 000 drainage areas on Scheepersvlakte Farm and within the 500m and 100m radius of the proposed agricultural footprint. Dam No. 5 is not classified as an artificial wetland/ wetland habitat.	7.19
Figure 7.5	Close-up of the artificial wetland habitat surrounding the overflow dam (No. 13), indicating the <i>Phragmites australis</i> stand and saturated soils beyond the <i>Phragmites</i> stand, which largely supported the weed, <i>Chenopodium album</i> ; and <i>Polypogon viridus</i> , an alien grass, which is a facultative wetland species.	7.24
Figure 7.6	Recommended 20m aquatic buffer for the dams with artificial wetland habitat, as well as the largely undefined 1: 50 000 drainage areas.	7.42
Figure 7.7	Map indicating land cover in the quaternary catchment N40D (Skowno & Holness, 2012), with the national land cover data overlaid for comparison (DEA, 2013/2014).	7.45
Figure 7.8	Map indicating land cover in the two sub-quaternary catchments of N40D, east and west, which the Farm extends across (Skowno & Holness, 2012), with the national land cover data overlaid for comparison (DEA, 2013/2014).	7.46
Figure 7.9	The proposed main roads and associated crossings (X 5) over the 1:50 000 drainage areas i.e. the watercourse crossings. Crossings A, C and E are new crossings; whereas B and D are existing crossings. The map also shows where these proposed roads traverse the biodiversity no-go areas along existing roads, new roads or where partial alignment is achieved.	7.47
Figure 8.1	Soil map of Scheepers Vlakte Farm.	8.24
Figure 8.2	Soil suitability for citrus (ha given inside each unit).	8.25
Figure 8.3	Soil suitability for annual crops (ha given inside each unit).	8.26
Figure 8.4	Slope analyses of Scheepers Vlakte Farm (area shown as to be excluded is now included in survey area).	8.27
Figure 8.5	Profiles of previous soil report, plotted after reclassification as given in Table 8.7, Annexure 4.	8.28
Figure 9.1	Locality Plan.	9.2
Figure 9.2	Proposed Access Arrangements.	9.4
Figure 10.1	Extract from 1: 250 000 topographical sheet 3324 Port Elizabeth (Courtesy of the Chief Directorate: National Geo-spatial Information, Mowbray) showing the approximate location (red rectangle) of the agricultural project study area on the Remainder of Portion 7 Farm Scheepers Vlakte 98 Addo, Sundays River Valley Municipality, Eastern Cape.	10.2
Figure 10.2	Google Earth© satellite image of the Farm Scheepers Vlakte 7/98 near Addo (yellow polygon), showing the dense cover by Thicket vegetation and general lack of bedrock exposure. The small area containing the Department of Water and Sanitation's Scheepersvlakte Dam (orange polygon), belongs to a separate land portion and is excluded from the present development and assessment. Scale bar = 1 km. N towards the top of the image.	10.2
Figure 10.3	Extract from 1: 250 000 geological map 3324 Port Elizabeth (Council for Geoscience, Pretoria). The study area on Farm Scheepers Vlakte 7/ 98, ~13 km northwest of Addo, Eastern Cape (yellow polygon), lies on the northern side of the Sundays River Valley. The majority of the area is underlain at depth by Early Cretaceous sediments of the Sundays River Formation (Ks, red) that are mantled in higher-lying areas by Noegene (Late Tertiary) pediment gravels of the Kudus Kloof Formation (T-Qg, pale	10.6

	yellow with red stipple), although these are not fully shown on the map. Early Cretaceous continental sediments of the Kirkwood Formation (J-Kk, orange) are mapped across the northern margins of the study area but are apparently not exposed here.	
Figure 10.4	Extract from map of High Level Terrace Gravels of the Sundays River published by Hattingh (2001, Appendix 2), showing the presence of Terrace 6 and 7 gravels (purple and blue respectively) of inferred Late Pliocene age within the Farm Scheepers Vlake 7/ 98 study area (black rectangle). The older terrace gravels are now grouped within the Kudus Kloof Formation (Hattingh 1994).	10.6
Figure 10.5	General view across Farm Scheepers Vlake 7/ 98 from the northern edge of the property, showing gentle hilly terrain with extensive cover by dense, often impenetrable Thicket vegetation.	10.9
Figure 10.6	View towards the northeast, across Farm Scheepers Vlake 7/ 98, showing open areas in the lowlands and thicket-clad hillslopes. The highlands in the background (off site) form part of the Suurberge Range.	10.9
Figure 10.7	Dense bossieveld of dwarf shrubs in the open lowland areas seen in the previous figure with alluvial soils and sparse surface gravels (Loc. 009).	10.10
Figure 10.8	Shallow drainage line in the central sector of the study area, showing absence of bedrock exposure due to thick alluvial soils and dense vegetation.	10.10
Figure 10.9	Open grassy area on hillcrest in the southwestern sector of the study area, with patchy exposure of gravelly soils.	10.11
Figure 10.10	Weathered Sundays River Formation mudrocks overlain by calcretised gravels of downwasted khaki sandstone, exposed along edge of the Lower Sundays River Water Users Association canal, south the of Scheepersvlakte Dam (Loc. 002).	10.11
Figure 10.11	Close-up view of sandstone rubble (and possibly in situ channel sandstone package) seen in the previous figure (Loc. 002).	10.12
Figure 10.12	Low, rubbly exposure of Sundays River channel sandstone in a farm track (Loc. 010) (Hammer = 30cm).	10.12
Figure 10.13	Borrow pit exposure of calcretised cobbly conglomerates and overlying gravelly soils overlying weathered Sundays River Formation saprolite (Loc. 001) (Hammer = 30cm).	10.13
Figure 10.14	Well-developed calcrete hardpan with dispersed quartzite gravels overlain by brown gravelly soils that locally infill solution hollows (Loc. 001) (Hammer = 30cm).	10.13
Figure 10.15	Rubbly calcrete hardpan with bright orange-brown sandy soils on top, exposed on margins of an extensive borrow pit (Loc. 003) (Hammer = 30cm).	10.14
Figure 10.16	Diamictite of greenish-grey Sundays River sandstone blocks, quartzite pebbles and calcrete rubble along the margins of a borrow pit (Loc. 004) (Hammer = 30cm). This may be material displaced by mining, or perhaps a poorly-sorted debris flow deposit.	10.14
Figure 10.17	Section through brick-red sands containing dispersed quartzite gravels, overlying calcrete on the margins of a borrow pit (Loc. 004). The sands might be reworked Nanaga Formation aeolianites (Plio-Pleistocene).	10.15
Figure 10.18	Orange-brown soil with small calcrete glaebules and dispersed quartzite gravels as seen in material from several test pits excavated along tracks in the study area.	10.15
Figure 10.19	Thick, unconsolidated, quartzitic terrace gravels of the Kudus Kloof Formation mantling upper hillslopes and crests in the study area (Loc. 012). These deposits are probably Pliocene in age.	10.16
Figure 10.20	Recently cleared area just outside the northeast corner of Farm Scheepers Vlake 7 /98 study area (off site), showing calcrete and calcrete-patinated quartzite gravels in upland areas (Loc. 013).	10.16
Figure 10.21	Resistant-weathering clasts exposed along the margins of the Scheepersvlakte Dam – mainly quartzite cobbles (some flaked) and calcrete (Loc. 002a). No fossils such as petrified wood or shells were observed here.	10.17
Figure 10.22	Well-preserved specimen of the ammonite <i>Olcostephanus</i> from the Sundays River Formation (Albany Museum, Grahamstown). This is a macroconch (female) and ~ 25 cm across (Image from Almond 2010).	10.19
Figure 10.23	Well-preserved specimen (“Devil’s toenail”) of the common free-living oyster <i>Aetostreon</i> from the Sundays River Formation, main brick pit at Coega (Image from Almond 2010).	10.19
Figure 10.24	Fossil localities in the Sundays River Formation of the Algoa Basin near Addo (town marked by red triangle), with the present study area approximately indicated by a red rectangle. Several groups of marine invertebrates (molluscs, including bivalves,	10.20

	gastropods and ammonites, as well as serpulid worm tubes) are reported from Sundays River Formation beds on the flanks of the Sundays River Valley in the area west of Addo, while various dinosaur and other vertebrate remains are recorded from Barclay Bridge to the south of Addo (Figure modified from McLachlan & Anderson 1976, their Fig. 8).	
Figure 11.1	General views of the proposed area for development, as seen from the Scheepersvlakte Dam (main image and top left insert), reverse view towards the Scheepersvlakte Dam (top right insert) and images of the dense grass and Thicket vegetation (bottom inserts).	11.7
Figure 11.2	Wide angle view of the proposed area to be developed (main image) and images of the different types of dense vegetation cover.	11.8
Figure 11.3	Examples of the Early and Middle Stone Age stone tools eroding in places from the yellow alluvial soil among open spaces in the dense Thicket vegetation.	11.9
Figure 12.1	Drawing no. RN/2018-07/AS/01	12.14
Figure 12.2	Drawing no. RN/2018-07/RS/01.	12.15
Figure 12.3	Drawing no. RN/2018-07/W/01.	12.16
Figure 12.4	Drawing no. RN/2018-07/FS/01.	12.17
Figure 12.5	Drawing no. RN/2018-07/BP/01.	12.18
Figure 13.4	Location of the visual viewpoints (V1 to V10).	13.22
Figure 13.5	Viewshed analysis of the proposed development, showing the Addo Elephant National Park in red.	13.23

APPENDICES

APPENDIX A	Project EAP CV
APPENDIX B	Correspondence with DEDEAT
APPENDIX C	Specialist Declarations
APPENDIX D	Project Databases
APPENDIX E	Correspondence to I&APs
APPENDIX F	Correspondence from I&APs
APPENDIX G	Supporting Documentation
APPENDIX H	Locality Plan

ABBREVIATIONS

CARA	Conservation of Agricultural Resources Act
CBA	Critical Biodiversity Area
CSR	Consultation Scoping Report
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	National Department of Environmental Affairs
DEDEAT	Provincial Department of Economic Development, Environmental Affairs and Tourism
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECBCP	Eastern Cape Biodiversity Conservation Plan
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
ESA	Ecologically Sensitive Area
FEPAs	Freshwater Ecosystems Priority Areas
FSR	Final Scoping Report
I&AP	Interested and Affected Party
LSRWUA	Lower Sundays River Water Users Association
NBA	Nation Biodiversity Assessment (2011)
NEMA	National Environmental Management Act (Act 107 of 1998), as amended
NEMAA	National Environmental Management Amendment Act (Act 107 of 1998)
NFEPAs	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act (Act 25 of 1999)

NMBM	Nelson Mandela Bay Municipality
NPAES	National Protected Areas Expansion Strategy
PES	Present Ecological State
PoS	Plan of Study
SABIF	South African Biodiversity Information Facility
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
STEP	Subtropical Thicket Ecosystem Project
S24G	Section 24G Assessment
ToR	Terms of Reference