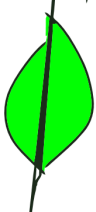


Environmental Impact Assessment Process  
including  
Draft Basic Environmental Impact Assessment Report  
&  
Environmental Management Program  
in terms of the  
Environmental Impact Assessment Regulations, 2014  
for the  
Carpe Diem Raisins Wastewater Evaporation Ponds & Associated Infrastructure  
Dawid Kruiper Local Municipality  
Northern Cape Province



VAN ZYL



ENVIRONMENTAL  
CONSULTANTS  
2009/073037/23



EAP Report Number:	2019/19
Environmental Report Date:	January 2023
Revision No.:	00



agriculture, environmental affairs,  
rural development and land reform

Department:  
agriculture, environmental affairs,  
rural development and land reform .  
NORTHERN CAPE PROVINCE  
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(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


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**Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.**

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**Kindly note that:**

- This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
- This report format is current as of 07 April 2017. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
- This report must be handed in at offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be an original signature.
- The report must be compiled by an independent environmental assessment practitioner.
- Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

## PUBLIC PARTICIPATION PROCESS

### INVITATION TO COMMENT ON THE DRAFT BASIC ENVIRONMENTAL IMPACT ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAM

The draft basic EIA report & EMPr is available for review. A digital copy can be requested from Van Zyl Environmental Consultants. The availability of the report is communicated to all potential & registered I&APs.

Please submit your written comments regarding this report on or before 20 February 2023 to Van Zyl Environmental Consultants. Declare with your comments any business, financial, personal or other interests you may have in the approval or refusal of the application.

If no correspondence have been received from you by this date, it would be assumed that you do not wish to submit any comments on or objections to the proposed WWEP.

Please state the EAP reference number at the top of this notice in order to ensure that your comments are allocated correctly. Email communication is preferred.

**Contact Person: Irmé van Zyl**

**Van Zyl Environmental Consultants**

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**Should this report be used as a reference, it should be cited as follows:**

Van Zyl, I.B., 2022. **Draft Basic Environmental Impact Assessment Report & Environmental Management Program in terms of the EIA Regulations, 2014 for the Carpe Diem Raisins Wastewater Evaporation Ponds & Associated Infrastructure, Dawid Kruiper Municipality, Northern Cape Province.** Van Zyl Environmental Consultants, Upington

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## GLOSSARY OF TERMS

<b>Aeration</b>	infusion with air
<b>Aerobic</b>	the breakdown of organic matter in the presence of free oxygen
<b>Algae</b>	simple living aquatic organisms that capture light energy through photosynthesis, using it to convert inorganic substances into organic matter
<b>Alien species</b>	Plants and animals which do not arrive naturally in an area - they are brought in by humans. Alien plants often force indigenous species out of the area. Mesquite is a good example of an alien species in the Northern Cape.
<b>Alternative</b>	A possible course of action, in place of another, that would meet the same purpose and need defined by the development proposal. Alternatives considered in the EIA process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.
<b>Alternatives</b>	different options with regard to site or location, type of activity, design or layout, technology, and operational aspects of the activity that could be considered in order to meet the general purpose and requirements of the activity
<b>Anaerobic</b>	the breakdown of organic matter in the absence of oxygen that typically produces methane, carbon dioxide and hydrogen sulphide
<b>Aspect</b>	Element of an organisation's activities, products or services that can interact with the environment.
<b>Auditing</b>	A systematic, documented, periodic and objective evaluation of how well the Environmental Management Program is performing. Auditing aims to help safeguard the environment by facilitating management control, including compliance with regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.
<b>Aquifer</b>	a geological formation of porous rock, such as sandstone, that has the ability to store water and may yield water to wells and springs
<b>Bacteria</b>	living micro-organisms of very small size which are largely responsible for the decomposition of wastewater sludge
<b>Biochemical</b>	the chemical processes and transformations in living organisms
<b>Biodiversity</b>	The rich variety of plants and animals that live in their own environment. The Succulent Karoo is a good example of rich biodiversity in the Northern Cape.
<b>Bioreactor/Biological Reactor</b>	a tank in which organic waste and effluent are reduced by means of bacteriological action, under controlled conditions
<b>Built environment</b>	Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.
<b>Catchment</b>	The area from which any rainfall will drain into the watercourse or watercourses or part of the watercourse, through surface flow to a common point or common points.
<b>Conservation</b>	Protecting, saving and using resources wisely, especially the biodiversity found in an area.
<b>Contamination</b>	Polluting something or making it impure.
<b>Corrective (or remedial) action</b>	Response required to address an environmental problem that is in conflict with the requirements of the EMPR. The need for corrective action may be determined through monitoring, audits or management review.
<b>Cumulative Impact</b>	an impact that is not necessarily significant in itself, but which may become significant when considered in addition to the existing and potential impacts of other similar or diverse activities in the area
<b>Degradation</b>	The lowering of the quality of the environment through human activities, e.g. river degradation and soil degradation.
<b>Denitrification</b>	the process of reducing nitrate and nitrite into gaseous nitrogen
<b>Direct Impact</b>	A generally obvious and quantifiable impact, usually associated with the construction, operation or maintenance of an activity, which is caused directly by the activity and generally occurs at the time and place of the activity.
<b>'Do-Nothing' Alternative</b>	The option of not undertaking the proposed activity or any of its alternatives, which provides the baseline against which the impacts of other alternatives should be compared.
<b>Ecology</b>	The scientific study of the relationship between living things (animals, plants and humans) and their environment.



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<b>Ecosystem</b>	The relationship and interaction between plants, animals and the non-living environment.
<b>Endangered Species</b>	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating, including taxa whose numbers of individuals have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.
<b>Endemic</b>	Having a distribution restricted to a particular area or region.
<b>Environment</b>	Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings.  all external conditions and factors, living and non-living (chemicals and energy), that affect an organism or other specified system during its lifetime (Miller, 2005: G6)
<b>Environmental Impact</b>	An environmental change caused by a human activity.
<b>Environmental Impact Assessment (EIA)</b>	An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives, recommendations for appropriate management actions for minimising or avoiding negative impacts and for enhancing positive impacts, and proposed monitoring measures.  a study of the environmental consequences of a proposed course of action, usually conducted in order to provide information for the consideration of an application for environmental authorisation as defined in NEMA
<b>Environmental Management</b>	Addressing environmental concerns in all stages of development, in order to ensure that the development is sustainable and does not exceed the carrying capacity of the environment.
<b>Environmental Management System (EMS)</b>	Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The ISO14001 EMS standard has been developed by the International Standards Organisation.
<b>Environmental Management Program</b>	An operational plan that organises and coordinates mitigation, rehabilitation and monitoring measures in order to guide the implementation of a proposal and its ongoing maintenance after implementation.
<b>Environmental policy</b>	Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.
<b>Eutrophication</b>	over-enrichment of a water body with nutrients resulting in excessive growth of organisms and depletion of oxygen concentration
<b>Evaporation</b>	the process whereby atoms or molecules in a liquid state gain sufficient energy to enter the gaseous state; evaporation is exclusively a surface phenomenon and should not be confused with boiling
<b>Existing Lawful use</b>	An existing lawful use means a water use which has taken place at any time during a period of two years immediately before the date of commencement of the National Water Act 1998, (Act 36 of 1998) or which has been declared an existing lawful water use under section 33 and which was authorised by or under any law which was in force immediately before the date of commencement of the National Water Act.
<b>Facultative</b>	capable of functioning under varying environmental conditions; used by certain organisms, such as bacteria that can live with or without oxygen
<b>Force Majeure</b>	An Event of Force Majeure means any circumstance which is beyond the control of the aggrieved party and is not reasonably foreseeable by the same, such as but not limited to: acts of God, orders of the authority, change of laws, etc.  1. An Event of Force Majeure can be: (a) drought, hail, heavy or torrential rain meaning precipitation of more than 40 mm per hour, floods, tornados, fires, landslides or other adverse natural phenomena except lightning strikes, which prevent the Contractor to perform the Works, get access to the Site or otherwise perform any of its obligations under this Agreement (b) epidemics, quarantine restrictions, war or civil conflicts, (c) national, territorial or sector strikes (other than strikes limited to the Contractor's or its subcontractors' business) (d) sabotage, terrorism, acts of vandalism, embargoes (e) explosions, archaeological finds (f) changes in applicable legislation, the revocation or suspension of any authorisation, permit or license or

- any other decision or act of any authority which cannot be ascribed to the party affected by the force majeure event
- (g) climate conditions that exceed those for which the plant was designed and that are detailed in the respective technical specifications of the plant
  - (h) climate or meteorological conditions that, according to health and safety laws and regulations, make the access to the site and/or the execution of the works unsafe or, otherwise, unviable.
2. For the sake of clarity, lightning strikes do not constitute an Event of Force Majeure.

<b>Habitat</b>	The physical environment that is home to plants and animals in an area, where they live, feed and reproduce.
<b>Hazardous waste</b>	Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.
<b>Homogeneous</b>	of the same nature
<b>Hydrogeological</b>	The study of distribution and movement of groundwater.
<b>Hydrological</b>	The study of movement, distribution, and quality of surface water and groundwater.
<b>Hydrology</b>	The science encompassing the behaviour of atmospheric, surface and ground water.
<b>Impact</b>	A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.
<b>Indigenous</b>	Having occurred naturally in the area in question before the year 1800.
<b>Indigenous species</b>	Plants and animals that are naturally found in an area.
<b>Indirect Impact</b>	An impact that occurs at a different time or place to the activity that causes it.
<b>Infrastructure</b>	The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.
<b>Integrated</b>	Mixing or combining all useful information and factors into a joint or unified whole. See Integrated Environmental Management.
<b>Integrated Environmental Management (IEM)</b>	A way of managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments.
<b>Interested and Affected Party (I&amp;AP)</b>	a person, group or organisation interested in or affected by a proposed activity, and any organ of state that may have jurisdiction over any aspect of the activity.
<b>Irrigation</b>	to water lands by means of canals, furrows or pipes
<b>Land use</b>	The use of land for human activities, e.g. residential, commercial, industrial use.
<b>Laydown area</b>	An area that has been cleared for the temporary storage of equipment and supplies. Laydown areas are usually covered with rock and/or gravel to ensure accessibility and safe manoeuvrability for transport and off-loading of vehicles.
<b>Maturation pond</b>	a manmade pond through which final effluent from a works passes in order to improve the effluent quality through exposure to ultraviolet light and natural bacteriological degradation before being released to the receiving water body
<b>Mitigation</b>	Measures designed to avoid, reduce or remedy adverse impacts.
<b>Monitoring program</b>	means a programme for taking regular measurements of the quantity and/or quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge.
<b>Natural environment</b>	Our physical surroundings, including plants and animals, when they are unspoiled by human activities.
<b>Organic</b>	material of animal or vegetable origin which can be consumed by bacteria
<b>Over-utilisation</b>	Over-using resources - this affects their future use as well as the environment.
<b>Oxidation</b>	the chemical reaction taking place when elements combine with oxygen to form oxides; not all oxidation reactions produce oxides
<b>Parameter</b>	a set of measurable factors such as temperature, pressure and pH that define a system and determine its behaviour.
<b>Photosynthesis</b>	the process in green plants and certain other organisms by which carbohydrates are synthesized from carbon dioxide

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	and water using light as an energy source; most forms of photosynthesis release oxygen as a by-product
<b>Photovoltaic Cell</b>	A cell that converts solar energy into electrical energy.
<b>Photovoltaic Effect</b>	the effect attained when the electrons within a photovoltaic cell are excited by solar radiation.
<b>Photovoltaic Module</b>	a packaged unit consisting of interconnected photovoltaic cells or development.
<b>Policy</b>	A set of aims, guidelines and procedures to assist in the decision-making and management of an organisation or structure. Policies are based on people's values and goals.
<b>Pollution</b>	means the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it - less fit for any beneficial purpose for which it may reasonably be expected to be used; or harmful or potentially harmful - to the welfare, health or safety of human beings; to any aquatic or non-aquatic organisms; to the resource quality; or to property;
<b>Process</b>	Development usually happens through a process – a number of planned steps or stages.
<b>Proponent</b>	Developer or entity applying for environmental approval and ultimately accountable for compliance with conditions stipulated in the Environmental Authorisation (EA) and requirements of the EMPr.
<b>Protection</b>	in relation to a water resource, means - maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way; prevention of the degradation of the water resource; and the rehabilitation of the water resource;
<b>Public Participation Process</b>	a process of involving the public in order to identify needs, address concerns, choose options, plan and monitor in terms of a proposed project, programme  a process of involving the public in order to identify needs and issues, obtain feedback on options and impacts associated with a proposed project, address concerns, choose options, plan and monitor in terms of a proposed project, program or development.
<b>Recycling</b>	Collecting, cleaning and reusing materials.
<b>Red Data Species</b>	a species listed in terms of the International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species, and/or the South African Red Data List
<b>Reserve</b>	means the quantity and quality of water required - (a) to satisfy basic human needs by securing a basic water supply, as prescribed under the Water Services Act, 1997 (Act No. 108 of 1997), for people who are now or who will, in the reasonably near future, be - • relying upon; • taking water from; or • being supplied from, the relevant water resource; and (b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource.
<b>Resources</b>	Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.
<b>Scoping</b>	a procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined
<b>Scoping Report</b>	A report presenting the findings of the scoping phase of the EIA. This report is primarily aimed at reaching closure on the issues and alternatives to be addressed in the EIA (in the case of a full EIA process).
<b>Significant Impact</b>	an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment
<b>Siltation</b>	is the movement of silt - tiny particles of clay and sand - into streams during erosion.

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<b>Sky glow</b>	Illumination of the night sky when light reflects off particles in the atmosphere such as moisture, dust, or smog.
<b>Sludge</b>	the general term applied to the accumulated solids separated from wastewater; a large portion of the sludge material in a digester consists of bacteria, which are responsible for decomposition of the sludge
<b>Stakeholders</b>	A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.
<b>Storm water management</b>	Strategies implemented to control the surface flow of storm water in such a way as to mitigate erosion, sedimentation and pollution of surface and groundwater resources in the immediate and surrounding environments. This is specifically important during the construction and decommissioning phases of a project.
<b>Sustainable development</b>	Development that is planned to meet the needs of present and future generations, e.g. the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.
<b>Sustainability</b>	Being able to meet the needs of present and future generations.
<b>Topography</b>	graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations
<b>Tributaries</b>	A stream or river which flows directly into a larger river or stream.
<b>Waste Management</b>	Classifying, recycling, treatment and disposal of waste generated during construction and decommissioning activities.
<b>Watercourse</b>	means - (a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.
<b>Water quality</b>	means the physical, chemical, toxicological, biological (including microbiological) and aesthetic properties of water that determine sustained (1) healthy functioning of aquatic ecosystems and (2) fitness for use (e.g. domestic, recreational, agricultural, and industrial). Water quality is therefore reflected in (a) concentrations or loads of substances (either dissolved or suspended) or micro-organisms, (b) physico-chemical attributes (e.g. temperature), and (c) certain biological responses to those concentrations, loads or physico-chemical attributes.
<b>Water Resource</b>	A water resource includes any watercourse, surface water, estuary or aquifer. Watercourses include rivers, springs, and natural perennial and non-perennial channels. Wetlands, lakes, dams, or any collection identified as such by the Minister in the Government Gazette.
<b>Water use license</b>	An authorisation from the Department to a designated water user to use water. The authorisation will provide details on the time-frames and conditions for the designated water use.
<b>Wetlands</b>	An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types e.g. vleis, swamps.
<b>Zoning</b>	The control of land use by only allowing a specific type of development in fixed areas or zones

## ABBREVIATIONS

<b>AIA</b>	Archaeological Impact Assessment
<b>BA</b>	Basic Assessment
<b>BATNEEC</b>	Best Available Technologies Not Exceeding Excessive Cost
<b>BEE</b>	Black Economic Empowerment
<b>BID</b>	Background Information Document
<b>BOD</b>	Biological Oxygen Demand
<b>BPG</b>	Best Practice Guideline
<b>CARA</b>	Conservation of Agricultural Resources Act (Act 43 of 1983)
<b>CBA</b>	Critical Biodiversity Area
<b>CDR</b>	Carpe Diem Raisins (Pty) Ltd
<b>CE</b>	Consulting Engineer
<b>CLO</b>	Community Liaison Officer
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>COD</b>	Chemical Oxygen Demand
<b>CSP</b>	Concentrating Solar Power
<b>DAFF</b>	Department of Agriculture, Fisheries and Forestry
<b>DENC</b>	Northern Cape Department of Environment and Nature Conservation
<b>DEA</b>	Department of Environmental Affairs
<b>DM</b>	District Municipality
<b>DNI</b>	Direct Normal Irradiation
<b>DoE</b>	Department of Energy
<b>DR&amp;PW</b>	Northern Cape Provincial Department of Roads and Public Works,
<b>DWA</b>	Department of Water Affairs
<b>DWS</b>	Department of Water and Sanitation
<b>EA</b>	Environmental Authorisation
<b>EAP</b>	Environmental Assessment Practitioner
<b>ECA</b>	Environmental Conservation Act (Act 73 of 1989)
<b>ECO</b>	Environmental Control Officer
<b>EIA</b>	Environmental Impact Assessment
<b>EIS</b>	Ecological Importance and Sensitivity
<b>EMC</b>	Electromagnetic Conformance
<b>EMF</b>	Environmental Management Framework
<b>EMP</b>	Environmental Management Programme
<b>EMPr</b>	Environmental Management Program
<b>EO</b>	Environmental Officer
<b>EPWP</b>	Expanded Public Works Programme

## ABBREVIATIONS

<b>ESA</b>	Ecological Support Area
<b>ESO</b>	Environmental Site Officer
<b>ESS</b>	Environmental Scoping Study
<b>F</b>	Fluorides
<b>FIT</b>	Feed-in Tariff
<b>GA</b>	General Authorisation
<b>GDP</b>	Gross Domestic Product
<b>GG</b>	Government Gazette
<b>GHG</b>	Greenhouse Gas
<b>GIS</b>	Geographical Information Systems
<b>GN</b>	Government Notice
<b>GPS</b>	Global Positioning System
<b>GWh</b>	Gigawatt Hour
<b>I&amp;APs</b>	Interested and Affected Parties
<b>IDP</b>	Integrated Development Plan
<b>IPP</b>	Independent Power Producer
<b>IWULA</b>	Integrated Water Use Licence Application
<b>IWWMP</b>	Integrated Water and Waste Management Plan
<b>kV</b>	Kilovolt
<b>LED</b>	Local Economic Development
<b>LM</b>	Local Municipality
<b>MAP</b>	Mean Annual Precipitation
<b>MAR</b>	Mean Annual Rainfall
<b>Mbgl</b>	Meter Below Ground Level
<b>MW</b>	Megawatt
<b>NCNCA</b>	Northern Cape Nature Conservation Act
<b>NCPSBP</b>	Northern Cape Provincial Spatial Biodiversity Plan 2016
<b>NEMA</b>	National Environmental Management Act (Act 107 of 1998)
<b>NEM:BA</b>	National Environmental Management: Biodiversity Act (Act 10 of 2004)
<b>NEM:WA</b>	National Environmental Management: Waste Act (Act 59 of 2008) as amended
<b>NERSA</b>	National Energy Regulator of South Africa
<b>NFA</b>	National Forests Act (Act 84 of 1998)
<b>NO<sub>3</sub> as N</b>	Nitrates
<b>NWA</b>	National Water Act (Act 36 of 1998)
<b>NWRS</b>	National Water Resource Strategy
<b>OD</b>	Oxidation Dams

## ABBREVIATIONS

<b>ONA</b>	Other Natural Area
<b>O&amp;M</b>	Operations and Maintenance
<b>PES</b>	Present Ecological State
<b>PIA</b>	Palaeontological Impact Assessment
<b>POL</b>	Petrochemicals, Oils and Lubricants
<b>PPE</b>	Personal Protective Equipment
<b>PV</b>	Photovoltaic
<b>RE</b>	Residential Engineer
<b>REFIT</b>	Renewable Energy Feed-In Tariff
<b>RFQ</b>	Request for Qualification
<b>RFP</b>	Request for Proposal
<b>RoD</b>	Record of Decision
<b>SAHRA</b>	South African Heritage Resources Agency
<b>SANBI</b>	South African National Biodiversity Institute
<b>SDF</b>	Spatial Development Framework
<b>SMMEs</b>	Small, Medium and Micro Enterprises
<b>SWMP</b>	Storm Water Management Plan
<b>TDS</b>	Total Dissolved Solids
<b>ToR</b>	Terms of Reference
<b>UV</b>	Ultraviolet
<b>VAC</b>	Visual Absorption Capacity
<b>WMA</b>	Water Management Area
<b>WSA</b>	Water Services Authority
<b>WUL</b>	Water Use Licence
<b>WULA</b>	Water Use License Application
<b>WWEP</b>	Wastewater Evaporation Ponds

## TERMS OF REFERENCE

Carpe Diem Raisins (Pty) Ltd (hereafter the applicant) has appointed Van Zyl Environmental Consultants as the independent environmental assessment practitioner (EAP) to conduct the Basic EIA Process, EMPr and public participation process related to the application process.

## STATEMENT OF INDEPENDENCE

Neither Van Zyl Environmental Consultants nor any of its specialist sub-consultants on this project are subsidiaries of or are affiliated to the applicant and does not have any material present or contingent interest in the outcome of this application, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of Van Zyl Environmental Consultants.

Van Zyl Environmental Consultants has no beneficial interest in the outcome of the assessment, which is capable of affecting its independence.

## DISCLAIMER

The opinions expressed in this report have been based on the information and project description supplied to Van Zyl Environmental Consultants by the applicant, information obtained from the water use licence application (WULA) process, WULA technical report, integrated water & waste water management plan, public participation related to that application process, specialist studies, water use licence issued by DWS and various sources referenced in this report. Should the development deviate from the description as stipulated within this report, the legislative requirements may change. Van Zyl Environmental Consultants has exercised all due care in reviewing the supplied information, but conclusions from the review are reliant on the accuracy and completeness of the supplied data. Van Zyl Environmental Consultants does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features, as they existed at the time of Van Zyl Environmental Consultants' investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which Van Zyl Environmental Consultants had no prior knowledge nor had the opportunity to evaluate.

Irmé B. van Zyl (Van Zyl Environmental Consultants cc)  
NAME OF EAP

\_\_\_\_\_  
SIGNATURE OF EAP

13 January 2023  
DATE

## **DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER**

Van Zyl Environmental Consultants is an environmental consulting firm providing environmental management services, including environmental impact assessments and planning to evaluate the environmental risk and ensure environmental compliance of proposed developments, water use licence application processes, rehabilitation processes as well as the implementation of environmental management tools.

Irmé van Zyl is managing this basic EIA application process. She is the sole member of Van Zyl Environmental Consultants and is fulfilling the duties as EAP.

Irmé van Zyl has been working in the environmental management field since 1996. She has conducted processes for environmental impact assessments, water use licence applications, waste license applications, rectification applications (S24G), compilation of EMPs, prospecting applications, mining permit applications, public participation processes, acting as environmental control officer, screenings as well as advice to developers on a wide range of projects in the Northern Cape.

She holds a National Diploma in Nature Conservation, a Further Diploma in Environmental Education and a Master's Degree in Environmental Management. (Appendix H)



## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES  NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in **Appendix I**.

### 1. ACTIVITY DESCRIPTION

#### a) Describe the project associated with the listed activities applied for

Carpe Diem Raisins (Pty) Ltd (hereafter Carpe Diem Raisins) is located approximately 15 km from Upington on the N10 route to Groblershoop south of the Orange River.

Carpe Diem Raisins is operating a raisin export packaging plant with associated infrastructure on parcel 81 and parcel 64 of the farm Vaal Koppies No. 40.

Raisins are received in bulk bins from January to May. These bins are stored and packed according to orders. During processing the bins are tipped onto a production line where the product is pre-cleaned, and stalks and foreign material removed. The product is put through a wash process and different laser sorters, X-ray, metal detection and hand sorting to ensure that the product is clean and comply to product specification. Different quality control measures are in place to ensure a safe product, including cleaning and sanitation, pest control, maintenance, etc. The company is BRC, Halaal and Kosher certified.

During the process, water is used to wash raisins, cleaning and sanitation of the process facility, for hygiene and sanitation purposes and drinking water for staff. The effluent, containing high organic matter, is channelled with a separate pipeline to the evaporation ponds where the solids are separated and removed from the waste water. The solids are used to prepare compost to be used in the gardens. Excessive solid waste will be disposed of at the registered municipality waste disposal area. The waste water is then channelled to the evaporation ponds consisting of 4 pans.

#### **Environment Conservation Act, 1989 (Act 73 of 1989)**

During 2004 the need for a raisin processing facility was identified and subsequently the EIA process done and authorised. An environmental authorisation, permit 79/2005 dated 28 May 2005, was issued in terms of Section 21 of the Environmental Conservation Act (hereafter ECA), 1989 (Act 73 of 1989) as published in the GG R1182 of September 1997 to Mr J. van der Colff for the development of a raisin processing facility (attached to the Land Use Change Application in appendix D4 as Annexure H and K).

The listed activity 2(c) authorised in terms of Schedule 1 of GG R1182:

*"The change of land use from agricultural or zoned undetermined use or an equivalent zoning, to any other land use"*

Permit 79/2005 authorised:

- the extension to the existing shed in order to make provision for the washing, classification and packing of the raisins; and
- the wash water from the raisins processing plant will be stored in oxidation ponds.

The developer undertook to construct the oxidation ponds according to the requirements and prescriptions of the Department of Water Affairs and Forestry, now Department of Water & Sanitation (hereafter DWS).

Carpe Diem Raisins was established during 2006. The processing plant has grown from 600 ton raisins processed during 2006 up to a current capacity of 22 000 tons. Carpe Diem Raisins supply approximately 22% of South Africa's total production of which 95% is exported globally. As an organic processor, Carpe Diem Raisins encourage and promote the use of organic plant protection products to contribute to a healthier environment and welfare. (Van Wyk, 2020) The description of works is attached to Appendix J2.

Carpe Diem Raisins provide jobs to 280 persons. The factory operates 24 hours, 5 days a week with day and

night shifts. (Van Wyk, 2020)

### **Organic Farming and Packing**

Carpe Diem Raisins process products produced by Carpe Diem Estate, Deo Gloria Estate and more than 80 other farms in the area that provides work to persons from local communities. CDR is the only certified organic packer in South Africa which differentiate them from all the other packers in South Africa.

### **National Water Act, 1998 (Act 36 of 1998)**

The Johan van der Colff Trust is in possession of an agricultural water use licence for 15,000m<sup>3</sup>/ha/annum for a scheduled area of 92,5 ha. The farm produce and packs grapes for the export market, which comprises 20% of the South African Dried Fruit Export Industry.

An industrial water use licence (WUL) has been issued to Carpe Diem Raisins by the DWS (Appendix J1).

The following water uses has been authorised:

- Section 21(a): Taking water from a water resource of approximately 170 KL/day for cleaning of the raisins (product), cleaning of the production facility and equipment, potable use and sanitation. The abstraction of water from the Orange River using existing infrastructure by Carpe Diem Raisins that is in place and in use by Carpe Diem Landgoed (Pty) Ltd.
- Section 21(c): Impeding or diverting the flow of water in a watercourse.  
The evaporation ponds will be located nearer than 100m from dry water rivulets. It was identified that the evaporation ponds would need to be replaced to comply with the National Water Act as well as compendium environmental legislation. The applicant subsequently appointed BVi that redesigned the ponds and provided a technical report (Appendix D3) and engineering drawings for the ponds (Appendix C1) that was accepted and authorised by the DWS (Appendix J1).  
A wetland delineation study (PES & EIS risk assessment included) as well as related rehabilitation plan was commissioned as part of the WULA (Appendices D2 and D5).
- Section 21(i): Altering the beds, banks, and characteristics of a watercourse. The presence of high sugar content and phosphates of the wastewater used in the packing plant to wash the raisins might impact the water quality in the rivulet and thus its characteristics.
- Section 21(g): Disposing of waste in a manner that may detrimentally impact on a water resource. The Evaporation ponds are currently not lined. However, the engineer proposed new WWEP with lining that will be implemented when and should the environmental authorisation be granted (Appendix D3). Therefore an integrated water and wastewater management plan formed part of the technical report that was reviewed and authorised by DWS. This drawing took the recommendations of the ecological assessment done for this development into consideration.

Infrastructure, such as the pipeline, pumping stations etc., is in place and in use. It will still be utilised to abstract the water, pump it via the pipeline and store in six 10kl JoJo containers on site.

### **Spatial Planning and Land use Management Act, 2013 (Act 16 of 2013)**

Carpe Diem Raisins is operating the raisin export packaging plant with associated infrastructure on parcel 81 and parcel 64 of the farm Vaalkoppies No. 40. CDR now wants to subdivide a section from parcel 64 where the rest of the infrastructure related to CDR is situated, rezone it and consolidate it with parcel 81.

### **National Environment Management Act, 1998 (Act 107 of 1998) & EIA Regulations, 2014**

New HDPE lined wastewater evaporation ponds (WWEP) with a total size of approximately 1.8 ha are required that will replace the current WWEP to comply with the stipulations of the National Water Act. An EIA application has been identified for the new WWEP. (Figure 1).



Figure 1: Planned Wastewater Evaporation Ponds at Carpe Diem Raisins

During the period 2015-2020 two small informal ponds were constructed that is currently not in use. The rehabilitation of these ponds is included in this EIA application.

The involved farm portions is bordered by the N10 National Road to the north and the DR3035 Provincial Road to the west. Currently the involved Raisin Processing plant receives access from the N10 across Portion 64 of the Farm Vaalkoppies, No.40.

However, SANRAL restricted this access for vehicles with a maximum height of 2.4m and accordingly heavy motor vehicles that exceed this height limit will have to gain access to the plant via the DR3035. The DRPW in turn issued a no-objection in terms of the proposed land use changes. The approval of the proposed access position from the DR3035 is however, subject to the submission of detailed bellmouth designs which is currently being drawn up by an appointed engineer and will be submitted upon completion thereof to the DRPW and Dawid Kruiper Local Municipality. (Welthagen, 2022)

The access road reserve is ~ 12 m wide (less than 13m) and ~ 500m in length.

In light of the comments from DRPW regarding the access form the DR3035 Provincial Road, the right of way servitude to be registered in respect thereto might deviate from the position indicated in the figures included as part of this application if it is deemed necessary by the relevant department that the proposed access be moved. No problems are expected in this regard. (Welthagen, 2022)

**b) Provide a detailed description of the listed activities associated with the project as applied for**

Listed activity as described in GN 327, 325 and 324	Description of project activity
<p><b>Example:</b>  <b>GN 327 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</b></p>	<p><b>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</b></p>
<b>Listing notice 1 of 2014 (GN R983 as amended by GN 327)</b>	
<p>LN 1 Activity 12                      The development of—                      (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or                      (ii) infrastructure or structures with a physical footprint of 100 square metres or more;                      where such development occurs—                      (a) within a watercourse;                      (b) in front of a development setback; or                      (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —</p>	<p>New WWEP will be built. The old WWEP will be replaced. Although the infrastructure will not be built within the 32m from the edge of the watercourse, the construction footprint will be larger to enable the movement of construction machinery and vehicles to construct the earth embankments of the WWEP. This infrastructure are ponds that may be interpreted as not a dam. However, to provide for difference in interpretation both (i) and (ii) are listed to ensure continued compliance to the said regulations. Construction of access road. Reserve is ~ 12 m wide (less than 13m) and ~ 500m in length.</p>
<p>LN 1 Activity 19                      The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</p>	<p>Same as the above description.                      During the period 2015-2020 two small informal ponds were constructed that is currently not in use. The rehabilitation of these ponds is included in this EIA application. The earth embankments will be flattened and it is probable that more than 10m<sup>3</sup> of soil will be moved.                      These ponds are possibly outside to the watercourse. However, due to the proximity of one pond to the watercourse, this activity is listed as a precautionary measure to ensure compliance to the regulations. (Figure 1).</p>
<p>LN 1 Activity 27                      The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-                      (i) the undertaking of a linear activity; or                      (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>More than 1 ha of much disturbed and degraded indigenous vegetation will be removed to construct and operate the new WWEP and access road.</p>
<p>LN 1 Activity 28</p>	<p>The area has already been developed and authorised in</p>

<p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</p> <p>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>EA 79/2005 and it has been used for industrial purposes since then.</p>
<p>LN 1 Activity 43 The expansion and related operation of hatcheries or agri-industrial facilities outside industrial complexes, where the development footprint of the hatcheries or agri-industrial facilities will be increased by 2 000 square metres or more.</p>	<p>The area has already been developed and authorised in EA 79/2005 and it has been used for industrial purposes since then.</p>

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**a) Site alternatives**

**Note:** Carpe Diem Raisins is an existing facility with an existing WWEP. The new lined WWEP will be located on the same area as the current WWEP. Not any site alternatives are considered other than the “no-go alternative”.

**Note:** The different alternatives is addressed in detail within the EIA Report attached as Appendix F.

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>The current location of the WWEP was chosen for the following reasons:</p> <ol style="list-style-type: none"> <li>1. The existing WWEP has been located here fore approximately 15 years.</li> <li>2. All associated infrastructure is in place and in operation such as electricity, effluent transport pipeline, screening and grit removal etc.</li> <li>3. Existing disturbed area.</li> <li>4. The new WWEP has been authorised at this location by the DWS (Appendix J1).</li> </ol> <p>No alternatives were provided for the location of the WWEP other than the “no-go alternative”. The area required should preferably be as flat and open as possible. It should also be situated as close as possible to the raisin processing facility to curb costs.</p> <p>The existing access and internal roads are sufficient to facilitate the movement of construction vehicles during the construction as well as the maintenance and operational phases.</p> <p>Despite the presence of the two ephemeral drainage lines, this area is environmentally acceptable should the stipulations of the EMP, the ecology study, the hydrogeology study, and the civil engineering plans be complied with.</p> <p>This recommended area falls outside the recommended watercourse and drainage line buffer zone and is mainly confined to the transformed and degraded areas of the assessment area while only a small portion is located within the undeveloped northern shrubland portion. (Lamprecht, 2020)</p> <p>By application of the NEMA Mitigation Hierarchy, these potentially significant cumulative ecological impacts associated with the proposed development can be suitably reduced and mitigated to within acceptable residual levels by implementation of the recommended mitigation measures. It is therefore not anticipated that the proposed development will necessarily add any significant residual cumulative ecological impacts to the surrounding environment. (Lamprecht, 2020)</p>	28°27'20.06"S	21°19'23.99"E
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

**Note:** The access road reserve is ~ 12 m wide (less than 13m) and ~ 500m in length. This activity is therefore not a listed activity in terms of the EIA Regulations, 2014 (Appendix A2).

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
<ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>		
Alternative S2 (if any)		
<ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>		
Alternative S3 (if any)		
<ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

**b) Lay-out alternatives**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>The significant fourth order ephemeral watercourse will be adequately buffered out of the proposed development footprint area. A minimum approximately 50 m buffer will be placed around the watercourse and no development is allowed to take place within the buffered zone. (Appendix C1).</p> <p>The small ephemeral water drainage line will be adequately buffered out of the proposed development footprint area. A minimum approximately 32 m buffer will be placed around the drainage line and no development is allowed to take place within the buffered zone. This must be done in order to ensure the continued flow and subsequent ecological functionality and - integrity of the watercourse and drainage line. (Lamprecht, 2020) The engineering drawings of the evaporation ponds was amended and complies with the stipulation (Appendix C1).</p> <p>The ecologist proposed different layouts within the above constraints.</p> <p>The design of evaporation ponds was amended to fit into the alternative areas that are regarded as potentially suitable for the development by the ecologist. A section of the preferred alternative area selected by the ecologist was not selected by the engineer as it is not practicable for the design of the evaporation ponds.</p>	28°27'20.06"S	21°19'23.99"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)



<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

**c) Technology alternatives**

**Note:** The different alternatives is addressed in detail within the EIA Report attached as Appendix F.

<b>Alternative 1 (preferred alternative)</b>
<p>The wastewater evaporation pond system (WWEP) was chosen as the preferred alternative due to the following reasons:</p> <ul style="list-style-type: none"> <li>● the site is situated in favourable climatic conditions such as               <ul style="list-style-type: none"> <li>○ low rainfall per annum (arid area)</li> <li>○ high temperatures and therefore high evaporation rate</li> <li>○ a long summer period</li> </ul> </li> <li>● There is a vast open area for air circulation.</li> <li>● Scrubland does not hamper air circulation.</li> <li>● Enough land is available.</li> <li>● Funding for construction is limited. Lower Life-Cycle costs than conventional treatment plants:               <ul style="list-style-type: none"> <li>○ relatively low construction cost</li> <li>○ very low maintenance cost</li> <li>○ have a long life cycle</li> </ul> </li> <li>● Low technology. Neither technical skill to operate and maintain conventional treatment works nor funding for obtaining and retaining personnel with the relevant skills is available.</li> <li>● It is a rural area.</li> <li>● This type of system is widely accepted as the norm by Northern Cape communities.</li> </ul> <p>Should the new preferred WWEP become insufficient, the reed bed system can be added to prolong the life of the WWEP. The water from a reed bed system can be piped to the storage dam where water from the Orange River is pumped and stored. This would ensure sufficient dilution of the wastewater for use as irrigation as well as water treatment for potable use.</p>
<b>Alternative 2 – suitable alternative</b>
<p>The Reed Bed technology or constructed wetland is a high functional efficiency eco-friendly wastewater treatment plant that has a lower cost and lower carbon footprint compared to conventional wastewater treatment methods. (Reed Bed, 2021)</p> <p>The main principle consists of filtering and aerating waste water in different stages of sand filter basins planted with green wetland plants, in order to produce treated water. This system can be incorporated and combined with a wide range design of wastewater treatment plants and/or WWEP. (Reed Bed, 2021) They work by allowing bacteria, fungi and micro-organisms to break down, digest and clean the wastewater to the point where it can be safely discharged (Pullen, 2021), pumped to the storage dam on the farm from where it is mixed with the raw water pumped from the Orange River and used for irrigation and/or at the raisin processing facility.</p> <p>Reed beds have comparatively low operating costs when compared with established biological treatment systems. As flow by the system is regulated by gravitation, there are no prerequisites for pumping as soon as the wastewater is in the reed bed. (Bright Hub PM, not dated)</p> <p>In addition, a reed bed can become an aesthetically pleasing, functional part of a garden. (Bright Hub PM, not dated)</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"> <li>● Low operational and maintenance cost</li> <li>● Do not require energy</li> </ul>



- Effective treatment with minimal threat to the environment
- Simple to construct
- Do not need advanced technical skills to operate and maintain
- Several pond configurations possible
- Aesthetically pleasing when established and working correctly
- Provide habitat to invertebrates and wildlife
- No bad odours
- Topography is important and needs to slope gently to allow for gravity flow of wastewater as is the case at the preferred site.

**Disadvantages:**

- Require removal of organic solid material that would clog the growth medium and render it impervious to the wastewater. This, however is already being done on site. Should the vertical and horizontal reed bed system be combined, it would alleviate this problem significantly.
- Need large area for treatment
- Processing time longer than with conventional treatment works
- Not suitable for large amounts of wastewater
- Lining to be implemented

**Alternative 3 – not feasible due to the costs of such a plant**

**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

**Note:** The different alternatives is addressed in detail within the EIA Report attached as Appendix F.

**Alternative 1 (preferred alternative)**

Power Technology:

The pre-screening and removal of solids from the effluent prior to entering the WWEP requires power. Currently it is powered by ESKOM. Back up generators are in place to provide electricity to core business areas during power failures and loadshedding. The developer might choose to install PV power technologies should it become financially viable.

**Alternative 2**

**Alternative 3**

**e) No-go alternative**

The ‘do nothing’ alternative is the option of not undertaking the replacement of the WWEP. Should this alternative be selected, it would have local and broader impacts. It would entail maintaining the status quo. The “no-go” alternative will have a definite impact on the environment due to the fact that the current WWEP is overloaded, degraded and not lined to prevent seepage.

The use of the new WWEP technology is the least expensive of the options investigated.

In the long term the new WWEP will add socio-economic value to the local and broader communities due to the continued direct and indirect provision of jobs. This would not be the case if the WWEP are not replaced as DWS will issue a directive and stop operations.

The ‘do nothing’ alternative is not a preferred alternative in this application.

Paragraphs 3 – 13 below should be completed for each alternative.

### 3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

**Alternative:**

Alternative A1<sup>1</sup> (preferred activity alternative)  
Alternative A2 (if any)  
Alternative A3 (if any)

**Size of the activity:**

18,000 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)  
Alternative A2 (if any)  
Alternative A3 (if any)

**Length of the activity:**

m
m
m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Alternative:**

Alternative A1 (preferred activity alternative)  
Alternative A2 (if any)  
Alternative A3 (if any)

**Size of the site/servitude:**

120,000 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

### 4. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES	NO
	~500 m

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

Describe the type of access road planned:

The involved farm portions is bordered by the N10 National Road to the north and the DR3035 Provincial Road to the west. Currently the involved Raisin Processing plant receives access from the N10 across Portion 64 of the Farm Vaalkoppies, No.40.

However, SANRAL restricted this access for vehicles with a maximum height of 2.4m and accordingly heavy motor vehicles that exceed this height limit will have to gain access to the plant via the DR3035. The DRPW in turn issued a no-objection in terms of the proposed land use changes. The approval of the proposed access position from the DR3035 is however, subject to the submission of detailed bellmouth designs which is currently being drawn up by an appointed engineer and will be submitted upon completion thereof to the DRPW and Dawid Kruiper Local Municipality. (Welthagen, 2022)

In light of the comments from DRPW regarding the access from the DR3035 Provincial Road, the right of way servitude to be registered in respect thereto might deviate from the position indicated in the figures included as part of this application if it is deemed necessary by the relevant department that the proposed access be moved. The road will not be constructed within 100 meters from the watercourse. No problems are expected in this regard. (Welthagen, 2022)

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

## 5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as **Appendix A1**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

## 6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as **Appendix A2** to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

## 7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in **Appendix A3**.

## 8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under **Appendix B** to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as **Appendix C** for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

## 10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

• Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
<p>Parcel 81 of 1.3 ha is situated within parcel 64 (figure 1) of Farm Vaalkoppies No. 40. This area has been cleared of natural vegetation and the Carpe Diem Raisins raisin processing and packaging plant are situated on this property.</p> <p>Parcel 64 of 364.8 ha surround parcel 81 and Carpe Diem Raisins office building and related infrastructure of the Carpe Diem Raisins processing plant are situated near the processing plant on parcel 64. The WWEP are also situated on parcel 64 near parcel 81. The rest of the property is characterised by vineyards, infrastructure related to the grape industry, and natural vegetation.</p> <p>Refer to the land use change application in terms of the Spatial Planning and Land Use Management Act (Act 16 of 2013) (Appendix D4)</p> <p><b>Existing zoning:</b> Both Portions 81 &amp; -64 of the Farm Vaal Koppies, No.40 are currently zoned as C.a.2 Agriculture. (Welthagen, 2022)</p> <p><b>Existing land use:</b> Portion 81 of the Farm Vaal Koppies, No.40: Agricultural Industry – Raisin processing plant; Portion 64 of the Farm Vaalkoppies, No.40: ±9 ha is utilised in an agricultural industry capacity by means of a raisin processing plant &amp; the remainder is utilised in an agricultural capacity. (Welthagen, 2022)</p> <p>The landowner of the raisin processing plant, Carpe Diem (Pty) Ltd, situated on the involved farm portions wishes to ensure the continued legal and compliant operation thereof. The Raisin Processing plant originally functioned from Portion 81 of the Farm Vaalkoppies, No.40 that is owned by Carpe Diem Raisins (Pty) Ltd. (1971/008762/07). (Welthagen, 2022)</p>			

<p>The following land use change processes needs to be followed in order to achieve the mentioned objective (Welthagen, 2022):</p> <ol style="list-style-type: none"> <li>1. The Subdivision of a ±9 ha portion of the Farm Vaalkoppies, No. 40/64. This area will have to be transported from JOHAN VAN DER COLFF TRUST to CARPE DIEM RAISINS PTY LTD (see portion in Appendix A2.5 Figure 5);</li> <li>2. The Consolidation of the newly subdivided land unit with Portion 81 of the Farm Vaalkoppies, No. 40 (see portion in Appendix A2.5 Figure 5);</li> <li>3. The Rezoning of the newly consolidated land unit to E.a.1: Agricultural Industry. (see Appendix A4.2, Figure 6 for newly consolidated land unit);</li> <li>4. The Registration of two 12m right of way servitudes over Portion 64 of the Farm Vaalkoppies, No.40 in favour of Carpe Diem Raisins (Pty) Ltd (see Appendix A4.2, Figure 6).</li> </ol> <p>Please Note: The afore-measurements are only approximations that will be more accurately measured by the appointed land surveyor.</p> <p>The SPLUMA application was submitted during June 2022 and is still in process (Appendix D4).</p>			
<p>• <b>Will the activity be in line with the following?</b></p>			
<p><b>(a) Provincial Spatial Development Framework (PSDF)</b></p>	<p><b>YES</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>The agricultural sector is very important to the local economy and therefore represents an emerging strength which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation. (Welthagen, 2022)</p>			
<p><b>(b) Urban edge / Edge of Built environment for the area</b></p>	<p><b>YES</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>The raisin processing plant situated on Portion 81 of the Farm Vaalkoppies, No.40 and a portion of Portion 64 of the Farm Vaalkoppies, No.40 is situated beyond the Ntsikelelo urban edge in an area that is earmarked for agricultural-related development. The proposed subdivision, consolidation and rezoning is in line with the provisions of the SDF as it is also of agricultural nature. Additionally, the Dawid Kruiper SDF explicates that due to the specific factors influencing the location of the Agricultural Industry, the location thereof cannot be predetermined and as such can be considered across all structuring elements subject to all legal processes being followed. (Welthagen, 2022)</p>			
<p><b>(c) Will the activity be in line with the Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b></p>	<p><b>YES</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>The activities will be in line with the IDP &amp; SDF.</p> <p>The raisin processing plant situated on Portion 81 of the Farm Vaalkoppies, No.40 and a portion of Portion 64 of the Farm Vaalkoppies, No.40 is situated in an area that is earmarked for agricultural-related development. The proposed subdivision, consolidation and rezoning is in line with the provisions of the SDF as it is also of agricultural nature. (Welthagen, 2022)</p>			
<p><b>(d) Approved Structure Plan of the Municipality</b></p>	<p><b>YES</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>All the existing structures within the study area does not exceed the height restriction of the requested zoning. At this stage all the existing structures within the study area adheres to the building line restrictions requested zoning. (Welthagen, 2022)</p>			

<p><b>(e) Will the activity be in line with the Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed evaporation ponds will in all probability completely transform the majority of the existing natural surface vegetation on the portion of the assessment area used for the development (Lamprecht, 2020). The broader areas surrounding the assessment area, which are associated with the relevant vegetation types, are however extremely vast and also largely natural and undeveloped. The size of the proposed development is therefore minute relative to the surrounding natural region. (Lamprecht, 2020)</p>			
<p><b>(f) Any other Plans (e.g. Guide Plan)</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The entire assessment area is classified as an Ecological Support Area (ESA) in accordance with the Northern Cape Provincial Spatial Biodiversity Plan 2016 (NCPSBP), which sets out biodiversity priority areas in the province. ESA's are areas that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a Critical Biodiversity Area (CBA) or protected area or that play an important role in delivering ecosystem services (Collins, 2017). (Lamprecht, 2020) The proposed evaporation ponds will in all probability completely transform the majority of the existing natural surface vegetation on the portion of the assessment area used for the development. The broader areas surrounding the assessment area, which are associated with the relevant vegetation types, are however extremely vast and also largely natural and undeveloped. The size of the proposed development is therefore minute relative to the surrounding natural region. (Lamprecht, 2020)</p>			
<p><b>• Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The Dawid Kruiper Municipal Council recently approved the all-inclusive SDF 17/18 for the entire Dawid Kruiper Municipality. The all-inclusive SDF is well constructed and adhere to the requirements as stipulated in the Spatial Planning and Land Use Management Act (Act 16 of 2013), therefore providing a potential investor with adequate information to plan a development according to the spatial vision of the municipality. (Welthagen, 2022) The agricultural sector is one of the primary and most prominent economic sectors with in the municipality. According to the Dawid Kruiper SDF (2018:p29): <i>"the Agricultural sector is very important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation."</i>(Welthagen, 2022) The proposed subdivision, consolidation and rezoning is in line with the provisions of the SDF as it is also of agricultural nature. Additionally, the Dawid Kruiper SDF explicates that due to the specific factors influencing the location of the Agricultural Industry, the location thereof cannot be predetermined and as such can be considered across all structuring elements subject to all legal processes being followed. (Welthagen, 2022)</p>			
<p><b>• Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The agricultural sector is one of the primary and most prominent economic sectors with in the municipality. According to the Dawid Kruiper SDF (2018:p29): <i>"the Agricultural sector is very important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for</i></p>			

*expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation.”(Welthagen, 2022)*

The proposed subdivision, consolidation and rezoning is in line with the provisions of the SDF as it is also of agricultural nature. Additionally, the Dawid Kruiper SDF explicates that due to the specific factors influencing the location of the Agricultural Industry, the location thereof cannot be predetermined and as such can be considered across all structuring elements subject to all legal processes being followed. (Welthagen, 2022)

The raisin processing plant:

- promote the local economy development;
- create new job opportunities;
- is part of a highly standardized sector;
- contribute to the import of expertise;
- benefit from proven safety and reliability; and
- promote food security.

Employment opportunities created have long-term positive impacts that improve the lives of individuals and families locally. The majority of employment opportunities are offered to local workers that is trained in the different skillsets that such a plant requires.

Most of the goods, materials and services are procured locally that result in positive indirect socio-economic impacts.

<ul style="list-style-type: none"> <li>• <b>Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></li> </ul>	YES	NO	Please explain
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**Water**

The involved farm portions is situated beyond the bulk service infrastructure network of the Dawid Kruiper Municipality. The Johan van der Colff Trust and Carpe Diem Raisins both has water use authorisations in place. A water purification plant is in place and provides water to itself.

Water is pumped from the river to a large water reservoir situated on Portion 64 of the Farm Vaalkoppies, No. 40 from where the water is distributed to the areas of use. Infrastructure, such as the pipeline, pumping stations etc., are already in place and in use.

**Sewage**

Sewage is contained in closed cell tanks that the local municipality removes to the municipal sewage works when contacted when the tanks are nearly full (Appendix I1)

**Storm Water**

Carpe Diem Raisins has a storm water management plan in place that has been reviewed by DWS during the WULA process and subsequently authorised. The local municipality is not responsible for the storm water management of Carpe Diem Raisins as it is situated outside its area of responsibility.

**Road Network**

The involved farm portions is currently bordered by the N10 National Road to the North and the DR3035 Provincial Road to the West. Internal roads are managed and maintained by the Carpe Diem Group.


**Electricity**

The involved farm portions currently receives this service from ESKOM. The installation of any internal services and new connection points or upgrading of existing supply resulting from the proposed land use changes will therefore be at the cost of the developer. Back up generators are in place to provide electricity to core business areas during power failures and loadshedding.

<ul style="list-style-type: none"> <li>• <b>Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></li> </ul>	YES	NO	Please explain
<p>The agricultural sector is one of the primary and most prominent economic sectors with in the municipality. According to the Dawid Kruiper SDF (2018:p29): <i>“the Agricultural sector is very important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation.”</i> (Welthagen, 2022)</p>			
<ul style="list-style-type: none"> <li>• <b>Is this project part of a national programme to address an issue of national concern or importance?</b></li> </ul>	YES	NO	Please explain
<p>The project does not form part of a national programme. However, Carpe Diem Raisins falls within the agricultural value - &amp; agro-processing chain that is linked to food security and food pricing imperatives.</p>			
<ul style="list-style-type: none"> <li>• <b>Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b></li> </ul>	YES	NO	Please explain
<p>Carpe Diem Raisins is operating a raisin export packaging plant with associated infrastructure on parcel 81 and 64 of the farm Vaal Koppies No. 40 since 2006. All infrastructure is in place and operational and the remainder of legal procedures to ensure full compliance are completed or in process. The proximity to local and regional infrastructure for this raisin processing and exporting facility is located optimally for the continued socio-economic operation of this business.</p> <p>Intensive agricultural activities agglomerate along the Orange River. The majority of agricultural land are utilised in an extensive manner, through grazing of livestock, due to the semi-desert climate of the region. The involved farm portions have a favourable location in relation to the Orange River, on which vineyards and other crops are cultivated. Various agricultural industries, complementary to the agricultural uses mentioned, can also be found in the area including raisin processing plants and raisin drying tracks (Welthagen, 2022).</p>			
<ul style="list-style-type: none"> <li>• <b>Is the development the best practicable environmental option for this land/site?</b></li> </ul>	YES	NO	Please explain
<p>The new WWEP are required to prevent and manage environmental impacts and to ensure continued legal compliance and prevent any possible impacts to the surface and ground water resources due to the fact that the current WWEP is insufficient and also not lined. The planned WWEP has been accepted and authorised in the water use licence with the inclusion of S21(g) of the National Water Act. This EIA application process is the last legislative action that has to be completed to ensure that the construction and operation of the new WWEP is legal.</p> <p>The continued responsible operation of the raisin processing plant is important taken into account the socio-economic demands of the province and local communities.</p> <p>Currently, the construction of the new WWEP is the best available technology not exceeding excessive cost (BATNEEC principle). The best environmental option envisaged by Carpe Diem Raisins, in the long term, is for the wastewater to be re-used either within the plant or on the agricultural section of Carpe Diem Landgoed. This however, will require the implementation of expensive infrastructure such as a tru-osmosis plant and/or the sufficient dilution of the wastewater with strict monitoring of phosphates etcetera. The risk is to ensure the correct application concentrations during the correct and critical time frames of the plant cycle to ensure the blooming and fruit forming of the vineyards during the correct time frames of the season within the microclimate of this area.</p>			



<p>Should these concentrations, present in the wastewater, be applied in the incorrect concentrations and within the wrong time period of the plant physiology, it could and most probably would cause a total crop failure of the entire vineyards. Such a failure would have a high financial and socio-economic risk to all stakeholders involved with the highest risk to the workforce in an area with little or no other work opportunities.</p>			
<p>• <b>Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The new WWEP are required to prevent and manage environmental impacts and to ensure continued legal compliance and prevent any possible impacts to the surface and ground water resources due to the fact that the current WWEP is insufficient and also not lined. The planned WWEP has been accepted and authorised in the water use licence with the inclusion of S21(g) of the National Water Act. This EIA application process is the last legislative action that has to be completed to ensure that the construction and operation of the new WWEP is legal.</p>			
<p>• <b>Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>A precedent has already been set. Other businesses own processing facilities in the Dawid Kruiper Municipal area. The entire area is an economic hub for the dried fruit industry. This application is for the WWEP. Evaporation of wastewater is accepted and used extensively in the Northern Cape as a method to prevent the contamination of surface and ground water resources due to the favourable dry climatic conditions.</p>			
<p>• <b>Will any person's rights be negatively affected by the proposed activity/ies?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The raisin processing plant is in operation since 2006. It provides work to the local community and plays an integral part in the local, regional, and national economy with direct and indirect business and related work opportunities in the agriculture -, agri-industrial -, business -, logistical -, transport markets, and a wide range of support services. The new WWEP are required to prevent and manage environmental impacts and to ensure continued legal compliance. Not any complaints have been received to date regarding the new WWEP or the Carpe Diem Raisins processing facility in it's entirety during the WULA process including related public participation process since 2019.</p>			
<p>• <b>Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>Carpe Diem Raisins and the new WWEP is located outside of the Dawid Kruiper Municipal urban edge of Nstekelelo (Welthagen, 2022)</p>			
<p>• <b>Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b></p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The project does not form part of the Strategic Infrastructure Projects (SIPs) as described in the National Development Plan. However, Carpe Diem Raisins falls within the agricultural value - &amp; agro-processing chain that is linked to food security and food pricing imperatives. SIP 11:Agri-logistics and rural infrastructure: Improve investment in agricultural and rural infrastructure that supports expansion of production and employment, small-scale farming and rural development, including facilities for storage (silos, fresh-produce facilities, packing houses); transport links to main networks (rural roads, branch train-line, ports), fencing of farms, irrigation schemes to poor areas, improved R&amp;D on rural issues (including expansion of agricultural colleges), processing facilities (abattoirs, dairy infrastructure), aquaculture incubation schemes and rural tourism infrastructure.</p>			

<ul style="list-style-type: none"> <li>• <b>What will the benefits be to society in general and to the local communities?</b></li> </ul>	<p>Please explain</p>
<p>The raisin processing plant:</p> <ul style="list-style-type: none"> <li>• promote the local economy development;</li> <li>• provides job opportunities;</li> <li>• is part of a highly standardized sector;</li> <li>• contribute to the import of expertise;</li> <li>• benefit from proven safety and reliability; and</li> <li>• promote food security.</li> </ul> <p>Employment opportunities created have long-term positive impacts that improve the lives of individuals and families locally. The majority of employment opportunities are offered to local workers that is trained in the different skillsets that such a plant requires.</p> <p>Most of the goods, materials and services are procured locally that result in positive indirect socio-economic impacts.</p> <p><b>Industry Development</b></p> <p>The development would require industrial capacity: raw material providers; machinery and equipment providers; installers; and other services linked to it. This generates added value for the community; in terms of business generation during the construction phase.</p> <p><b>Employment</b></p> <p>The building of the new WWEP would possibly provide for some unskilled employment during the construction phase, but this would be very limited.</p> <p><b>Legal Compliance</b></p> <p>The trend of ensuring compliance to all relevant legal requirements set an example and ensure the continued improving of environmental responsible actions not only during development and/or expansions but also during the operational and maintenance phase.</p>	
<ul style="list-style-type: none"> <li>• <b>Any other need and desirability considerations related to the proposed activity?</b></li> </ul>	<p>Please explain</p>
<p>The new HDPE lined WWEP is to be constructed soonest to ensure compliance with the National Water Act and prevent any possible impacts to the surface and ground water resources due to the fact that the current WWEP is insufficient and also not lined. The planned WWEP has been accepted and authorised with the inclusion of S21(g) of the National Water Act in the water use licence. This EIA application process is the last legislative action that has to be completed to ensure that the construction and operation of the new WWEP is legal.</p>	
<ul style="list-style-type: none"> <li>• <b>How does the project fit into the National Development Plan for 2030?</b></li> </ul>	<p>Please explain</p>
<p>Carpe Diem Raisins falls within the agricultural value - &amp; agro-processing chain that is linked to food security and food pricing imperatives. Carpe Diem Raisins not only improve investment but also create investment in agricultural and rural infrastructure that supports expansion of production and employment in a very rural area.</p> <p>Economic development in the Northern Cape has seen a steady increase over the past decade with a 2.1% growth figure and contributing 2.0% to the growth of South Africa's GDP (StatsSA). Since the release of the last growth statistics, national growth has however seen a decline due to renewed global market pressures, as well as domestic challenges, such as energy production etc.</p>	

• **Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**

The potential impact of this proposed development has been identified, predicted and evaluated through:

1. Obtaining a detailed project infrastructure and activity description from the planning, construction through operational phase towards the closure phase from the applicant. The applicant, representatives and engineers has the responsibility and integrity to supply truthful and correct information to the EAP and will remain liable for the correctness of information supplied. However, the correctness of information provided is confirmed by the EAP and specialists by checking if it is practicable implementable where possible.
2. The EAP use the project description and an environmental aspect and impact/risk matrix to identify, predict and evaluate the actual and potential impacts on the environment, socio-economic conditions and cultural heritage, as well as the related risks and consequences.
3. Gaps, identified from the matrix, are addressed by appointing the relevant specialists to conduct specialist studies, identifying, predicting and evaluating the actual and potential impacts on their specific field of expertise and propose alternatives and options for mitigation of activities, with a view to preventing and minimising negative impacts, and maximising benefits.
4. The EMPr is compiled from the information obtained, considering and including all the relevant inputs from the various stakeholders, promoting compliance with the principles of environmental management in various ways. The aim is to prevent impacts from occurring, where not possible to minimise negative impacts and timely implementation of rehabilitation measures and the continuous maintenance of it.
5. At the start of the EIA process possible I&APs are identified and contacted, advertisements and notices placed. Throughout the EIA process several public participation processes are being run and I&APs are added as they are identified. Their concerns and inputs are addressed and included in the reports throughout the entire process.
6. The EMPr stipulates the enforcement of the measures stipulated within it so as to ensure the consideration of the environmental attributes in decision making and actions from management level to the lowest level of the developer, contractors and subcontractors on site guided by the independent ECO as well as internal environmental officers appointed by the contractors.

• **Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

The National Environmental Management Act (NEMA, Act 107 of 1998) expands on and specifies these principles. The act states that the principles of Integrated Environmental Management (IEM) should be adhered to in order to ensure sustainable development. Accountability to the various parties that may be interested in and/or affected by the proposed development forms an integral part of the IEM procedure. This procedure requires public participation, starting during the application phase, when the application for authorisation is submitted to the competent authority and continued through the environmental impact assessment decision making phases. The purpose of the IEM procedure is to ensure that the environmental consequences of a development proposal are understood and adequately considered and that negative aspects are resolved or mitigated and positive aspects enhanced.

The same principles for prevention, control and rehabilitation as set out within the EMPr for the construction and operation and maintenance phases would be applicable should it become necessary to decommission the WWEP and associated infrastructure in future.

Through the EIA and EMPr process the developer, it's contractors and subcontractors are bound to implement and ensure:

- Responsible environmental management principles that consider people and their needs (physical, psychological, developmental, cultural and social well-being) as essential and vulnerable and disadvantaged persons to be protected and justified.

- Measures are set for the effective, integrated implementation of environmentally sustainable socio-economic development by pursuing the selection of the best practicable environmental option, cautious of the risk posed to the environment and socio-economic effects due to limitations or gaps of current knowledge:
  - To anticipate, prevent and where it cannot be prevented, to minimise and remedy:
    - ξ Disturbance of ecosystems and loss of biological diversity with specific attention to sensitive, vulnerable, highly dynamic or stressed ecosystems;
    - ξ Pollution and degradation of the environment;
    - ξ Disturbance of landscapes and sites that constitute the nation’s cultural heritage;
    - ξ Negative impacts on people’s environmental rights;
  - Waste: Avoid, minimise, reuse, recycle and dispose responsibly.
  - For the responsible and equitable use and exploitation of non-renewable natural resources and the related ecosystems, understanding and taking into account the consequences of the depletion of the resource.

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

## 11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
Constitution of the Republic of South Africa (Act No 108 of 1996)	Overall	National Government	1996
National Environmental Management Act (Act 107 of 1998) EIA Regulations, 2014	Basic Environmental Assessment Process and thereafter monitoring and control.	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform	1998
National Environmental Management: Waste Act (Act No 59 of 2008)	Waste management on site, compliance of sub-contractors Application not required	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform	2008
National Environmental Management: Air Quality Act (Act No 39 of 2004)	Management of dust nuisance Application not required	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform	2004
National Environmental Management: Biodiversity Act (Act No 10 of 2004)	The assessment area is classified as an Ecological Support Area (ESA) Application not required	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform	2004
NEMBA Alien and Invasive Species Regulations, 2014	The declared invasive species <i>Salsola kali</i> (Category 1b) is present. All individuals must be eradicated and adequately disposed of in accordance with the Regulations.	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform Dir: Sustainable Resource Management	2014
Environment Conservation Act (Act No 73 of 1989)	Dust nuisance management Application not required	NC Dept. of Agric, Env. Aff., Rural Dev. & Land Reform	1989

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Water Act (Act No 36 of 1998)	WUL issued. S 21 (a), (c)&(i), (g) (Appendix J1)	DWS	1998
National Heritage Resources Act (Act No 25 of 1999)	HIA study done. Application not required	SAHRA NCHRA	1999
Conservation of Agricultural Resources Act (Act No 43 of 1983)	Land zoned for agricultural use Application not required	NC Department of Agriculture, Land Reform and Rural Development - Directorate: Sustainable Resource Management	1983
National Veld and Forest Fire Act (Act No 101 of 1998)	Fire breaks Application not required	DAFF	1998
National Forests Act (Act No 84 of 1998)	Application required for three <i>Boscia albitrunca</i> trees located on the WWEP footprint and possibly one <i>Vachellia erioloba</i> . <b>Please note</b> that the applicant is very keen regarding an agreement to establish <i>Vachellia erioloba</i> and other trees in the remaining natural areas (greening arrangement)	DAFF	1998
Northern Cape Nature Conservation Act(Act No 9 of 2009)	Indigenous and protected vegetation will be removed. Application for a permit required.	DENC	2009
Northern Cape Provincial Spatial biodiversity Plan, 2016	The assessment area is classified as an Ecological Support Area (ESA). The broader areas surrounding the assessment area, which are associated with the relevant vegetation types, are however extremely vast and also largely natural and undeveloped. The size of the proposed development is therefore minute relative to the surrounding natural region.	NC Department of Agriculture, Land Reform and Rural Development - Directorate: Sustainable Resource Management	2016
Promotion of Access to Information Act (Act No 2 of 2000)	Public has a right to access of information	Government	2000
Promotion of Administrative Justice Act, (Act 96 of 2000)	Rights of I&APs & Stakeholders, and Applicant	Justice Department	2000
Advertising on Roads and Ribbon Development Act (Act No 21 of 1940) Outdoor advertising Control	Restriction on infrastructure distance of 95 m from centre of provincial road. Not near provincial road. Restrictions on advertising along roads.	Department of Roads and Public Works	1940
Subdivision of Agricultural Land Act (Act 70 of 1970)	Land will be rezoned (Appendix D4)	DAFF, Local Authorities	1970
Fencing Act (Act No 31 of 1963)	The WWEP will be fenced to comply with health and safety	DAFF NC Department of	1963

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	regulations.	Agriculture, Land Reform and Rural Development	
South African Civil Aviation Regulation Act (Act 13 of 2009)	SACAA requested that an application be submitted due to the fact that the development is situated within the flight path and approaching route. Height of structures	SACAA	2009
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)	Cut to fill method will be used. Should gravel or rock be required, it will be obtained from registered and legal service providers.	DMR	2002
Occupational Health and Safety Act (Act No. 85 of 1993)	Environmental regulations for workplaces Already in place	Labour Dept	1993
Road Transportation Act (Act No. 74 of 1977)	Infrastructure and machinery will be trucked to and from the site. Portion 64 of the Farm Vaal Koppies No. 40 is bordered by the N10 National Road to the north and the DR3035 Provincial Road to the west. Currently the involved Raisin Processing plant receives access from the N10 across Portion 64. SANRAL restricted this access for vehicles with a maximum height of 2.4m and accordingly heavy motor vehicles that exceed this height limit will have to gain access to the plant via the DR3035.	DR&PW	1977
The South African National Roads Agency Limited and National Roads Act (Act No 7 of 1998)		SANRAL	1998
Siyanda (now ZF Mgcau) District Municipality EMF	Directly applicable to all aspects of the development	DEA, DENC, ZF Mgcau DM	2008
A Practical Field Procedure for the Identification and Delineation of Wetlands and Riparian Areas (Guideline), 2005	Wetland Delineation procedure for the delineation of the watercourses – used by the Ecologist.	DWS	2005
SPLUMA			

## 12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
	~10 m <sup>3</sup>

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

CDR has access to a truck that will remove the construction solid waste.

Where will the construction solid waste be disposed of (describe)?

The waste will be removed to the nearest legal waste facility. Uncontaminated or clean construction solid waste will also be used for infilling as there are a large old quarry on Portion 64 of the Farm Vaal Koppies No. 40. Most of the waste would be concrete waste, piping and lining cut offs.

Will the activity produce solid waste during its operational phase?

<b>YES</b>	<b>NO</b>
	~0,5 m <sup>3</sup>

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

The effluent, containing high organic matter, is channelled with a separate pipeline to the WWEP where the solids are separated with a mechanical screen and removed from the waste water. The solids are used to prepare compost to be used in the gardens. Excessive solid waste will be disposed of at the registered municipality waste disposal area.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Dawid Kruiper Local Municipal waste disposal facility

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

The clean organic matter may also be used for infilling as there are a large old quarry on Portion 64 of the Farm Vaal Koppies No. 40.

*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

<b>YES</b>	<b>NO</b>
------------	-----------

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

<b>YES</b>	<b>NO</b>
------------	-----------

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

**b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

<b>YES</b>	<b>NO</b>
------------	-----------

If YES, what estimated quantity will be produced per month?

m <sup>3</sup>	
----------------	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

<b>YES</b>	<b>NO</b>
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If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
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If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:	Cell:		
E-mail:	Fax:		

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Currently wastewater will not be recycled.

Currently, the construction of the new WWEP is the best available technology not exceeding excessive cost (BATNEEC principle).

The best environmental option envisaged by Carpe Diem Raisins, in the long term, is for the wastewater to be re-used either within the plant or on the agricultural section of Carpe Diem Landgoed. The option of reed bed systems can also be investigated.

The concentrations of phosphates and nitrates of the wastewater however, will either have to be either diluted or removed prior to re-use of the water. The risk is to ensure the correct application concentrations during the correct and critical time frames of the plant cycle to ensure the blooming and fruit forming of the vineyards during the correct time frames of the season within the microclimate of this area.

Should these concentrations, present in the wastewater, be applied in the incorrect concentrations and within the wrong time period of the season, it could and most probably would cause a total crop failure of the entire vineyards. Such a failure would have a high financial and socio-economic risk to all stakeholders involved with the highest risk to the workforce in an area with little or no other work opportunities.

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
-----	----

If YES, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

During construction the only emissions would be that from vehicles and machinery. This is controlled by legislation.

During the operational phase it does not emit any emissions into the air at source as only water is evaporated from the oxidation pond system.

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

YES	NO
-----	----

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority



**e) Generation of noise**

Will the activity generate noise?

YES	NO
YES	NO

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

During construction noise will be generated by vehicles and construction machinery during working hours. During operational phase very little noise will be generated.

**13. WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	<b>River, stream, dam or lake</b>	Other	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

3,750,000 litres	
<b>YES</b>	NO

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

**Note:** An industrial water use licence (WUL) has been issued to Carpe Diem Raisins by the DWS (Appendix J1).

**14. ENERGY EFFICIENCY**

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

The WWEP and raisin processing plant receives electricity from ESKOM. Back up generators are in place to provide electricity to core business areas during power failures and loadshedding. PV power may be investigated in future.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

None

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.
- Has a specialist been consulted to assist with the completion of this section?

YES	NO
-----	----

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Note:** The details of the specialists and declaration of interests are attached to their reports.

Property description/physical address:

Province	Northern Cape	
District Municipality	ZF Mgcau	
Local Municipality	Dawid Kruiper	
Ward Number(s)	14	
Farm name and number	Farm Vaal Koppies No. 40	
Portion number	81 and 64	
SG Code	C0360000000004000081	C0360000000004000064

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Both Portions 81 & -64 of the Farm Vaal Koppies, No.40 are currently zoned as C.a.2 Agriculture. (Welthagen, 2022)

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO
-----	----

The following land use change processes needs to be followed in order to achieve the mentioned objective (Welthagen, 2022):

- The Subdivision of a ±9 ha portion of the Farm Vaalkoppies, No. 40/64. This area will have to be transported from JOHAN VAN DER COLFF TRUST to CARPE DIEM RAISINS PTY LTD (see portion in Appendix A2.5 Figure 5);

2. The Consolidation of the newly subdivided land unit with Portion 81 of the Farm Vaalkoppies, No. 40 (see portion in Appendix A2.5 Figure 5);
3. The Rezoning of the newly consolidated land unit to E.a.1: Agricultural Industry. (see Appendix A4.2, Figure 6 for newly consolidated land unit);
4. The Registration of two 12m right of way servitudes over Portion 64 of the Farm Vaalkoppies, No.40 in favour of Carpe Diem Raisins (Pty) Ltd (see Appendix A4.2, Figure 6).

**Please Note:** The afore-measurements are only approximations that will be more accurately measured by the appointed land surveyor.

The SPLUMA application was submitted during June 2022 and is still in process (Appendix D4).

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

**Refer to the Hydrogeological Assessment Report (Appendix D1, point 2.1 on page 3 as well as figure 2-2).**

<b>Flat</b>	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	– 1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	– 1:7,5 – 1:5	Steeper than 1:5
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### 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	<b>2.7 Undulating plain / low hills</b>	<input checked="" type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO

Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

#### 4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld – good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	<b>Natural veld with heavy alien infestation<sup>E</sup></b>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	<b>Cultivated land</b>	Paved surface	<b>Building or other structure</b>	<b>Bare soil</b>

If any of the boxes marked with an “<sup>E</sup>” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

**Note:** Ecology Assessment (Appendix D2)

#### 5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River (ephemeral watercourse)	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A significant fourth order ephemeral watercourse traverses the western portion of the assessment area and flows in a north-westerly direction. The watercourse eventually discharges into the Orange River, which is located approximately 1.7 km north of the assessment area. The watercourse is therefore viewed as playing an important role in the local and regional water catchment and drainage towards the River. (Lamprecht, 2020)

A very small ephemeral water drainage line also traverses the northern portion of the assessment area and flows in a westerly direction. It also discharges into the significant fourth order watercourse as discussed earlier above. This drainage line possesses no distinct riparian zone and merely a slight increase in the woody karroid shrub component is evident directly within the drainage line. (Lamprecht, 2020)

## 6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a **500m radius** of the site and give description of how this influences the application or may be impacted upon by the application:

<b>Natural area</b>	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential	Church	<b>Agriculture</b>
Retail commercial & warehousing	Old age home	<b>River, stream or wetland</b>
<b>Light industrial</b>	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, Koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line <sup>N</sup>	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
<b>Office/consulting room</b>	Airport <sup>N</sup>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO

Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

## 7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
The field assessment provided no aboveground evidence of prehistoric structures, buildings older than 60 years, graves or material of cultural significance or <i>in situ</i> archaeological sites within the study area. The proposed development footprint is not considered palaeontologically or archaeologically vulnerable. (Rossouw, 2021) (Appendix D6)		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

The field assessment provided no aboveground evidence of prehistoric structures, buildings older than 60 years, graves or material of cultural significance or <i>in situ</i> archaeological sites within the study area. The proposed development footprint is not considered palaeontologically or archaeologically vulnerable and is assigned a site rating of Generally Protected C (GP.C). (Rossouw, 2021) (Appendix D6)
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Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

## 8. SOCIO-ECONOMIC CHARACTER

### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The unemployment rate was 22.1% in 2011. The youth unemployment rate was 29% in 2011. (Dawid Kruijper Municipality, 2021)
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Economic profile of local municipality:

Key constraints/problems/issues in terms of the development of Dawid Kruiper Municipality include a shortage of job opportunities and job creation in the area. (Dawid Kruiper Municipality, 2021)

Dawid Kruiper Local Municipality benefits from a potentially economically active population that comprises approximately 67% of the total population, which provides the Municipality with a large human resource base. This allows opportunities for development projects to involve and benefit local people. The age distribution of the Municipality's population also indicates a fairly young potential economically active population, necessitating development to focus on the youth. (Dawid Kruiper Municipality, 2021)

In terms of economic indicators, the Municipality has comparative advantages in all of the economic sectors, except mining, compared to the District. The fastest growing sectors in the Municipality were those of the agriculture, electricity and water, and mining sectors. (Dawid Kruiper Municipality, 2021)

The LED Strategy has identified the following economic sectors to be the drivers of economic development to realise the Dawid Kruiper Municipality's 2030 LED vision (Dawid Kruiper Municipality, 2021):

1. Transport and logistics
2. Agriculture and Agro-processing
3. Renewable energy
4. Tourism (events, hunting and business tourism)
5. Services (banking, insurances, construction etc.)
6. Manufacturing and Special Economic Zone (SEZ)

The Dawid Kruiper Municipal area has a strong resource base that supports a variety of economic sectors, including agriculture, tourism, manufacturing and, lately, the renewable energy industry. An important development principle underlying economic development is the broadening of the local economic base. (Dawid Kruiper Municipality, 2021)

The LED Strategy is based on the underlying needs, opportunities and comparative and competitive advantages of the Municipality and provides the Municipality with plans to create and facilitate economic development in order to realise the underlying development potential and in order to encourage both private and public sector investment and local job creation. (Dawid Kruiper Municipality, 2021)

Level of education:

In 2011 26% over the age of twenty years have completed the 12th grade while 7.1% of people had no schooling. Higher education was 26% in 2011. (Dawid Kruiper Municipality, 2021)

**b) Socio-economic value of the activity**

**Note:** The Carpe Diem Raisins processing facility is existing and operational. The continued legal compliance, environmental responsible and sustainable operations of this facility will depend on the replacement of the existing WWEP with the new lined WWEP.

What is the expected capital value of the activity on completion?

~R 6,000,000.00
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What is the expected yearly income that will be generated by or as a result of the activity?

R Nil
-------

Will the activity contribute to service infrastructure?

YES	NO
-----	----

Is the activity a public amenity?

YES	NO
-----	----

How many new employment opportunities will be created in the development and construction phase of the activity/ies?

Outsourced
------------

What is the expected value of the employment opportunities during the development and construction phase?

What percentage of this will accrue to previously disadvantaged individuals?

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

Outsourced
Nil
2
~R 115,000.00/ Annum
Nil

## 9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIshelp@sanbi.org](mailto:BGIshelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as **Appendix D** to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category			
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)
<b>If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan</b>			
<p>The entire assessment area is classified as an Ecological Support Area (ESA) in accordance with the Northern Cape Provincial Spatial Biodiversity Plan 2016 (NCPSBP), which sets out biodiversity priority areas in the province. ESA's are areas that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a Critical Biodiversity Area (CBA) or protected area or that play an important role in delivering ecosystem services ((Collins, 2017) as cited in (Lamprecht, 2020)).</p>			
<p>Additional expert defined criteria were applied when defining CBAs. This was based on the fact that there are some types which are under significantly more pressure or where a specific basis exists for more strongly including them.</p> <p>These cover a very small percentage of the province:</p> <ul style="list-style-type: none"> <li>• Ecosystem Threat status: The standard National Biodiversity Assessment ((Driver, et. al., 2012) as cited in (Holness, et. al., 2016)) method for evaluating threat status was used. The following ecosystem type triggered CBA status on this basis: <ul style="list-style-type: none"> <li>o Lower Gariep Alluvial Vegetation – Endangered with known under-mapped degradation and transformation. (Holness, et. al., 2016)</li> </ul> </li> </ul>			



**b) Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	20%	<p>The remaining majority northern and central portions of the assessment area constitute a slightly sloping undeveloped karroid shrubland which is in a slightly disturbed state and therefore scored a moderate PES value. The presence of surrounding infrastructure and agricultural developments to the east and south and the associated continued anthropogenic activities tend to cause an ecological 'edge effect' which negatively impacts on the urban/rural interface area and has subsequently slightly decreased the ecological integrity of these portions. (Lamprecht, 2020)</p> <p>A significant fourth order ephemeral watercourse traverses the western portion of the assessment area and flows in a north-westerly direction. The watercourse possesses a distinct riparian zone which is mainly dominated by hydrophytic grass species but also houses a distinct woody component. The watercourse scored a relatively high Present Ecological State (PES) value. It eventually discharges into the Orange River, which is located approximately 1.7 km north of the assessment area and is therefore viewed as playing an important role in the local and regional water catchment and drainage towards the River. (Lamprecht, 2020)</p> <p>A very small ephemeral water drainage line also traverses the northern portion of the assessment area and flows in a westerly direction. It also discharges into the significant fourth order watercourse as discussed above. The existing infrastructure and agricultural developments to the east of the assessment area, have however continuously impeded the upstream catchment and drainage area of this drainage line, over time. This small drainage line is therefore not necessarily viewed as playing an important role in the local and regional water catchment. (Lamprecht, 2020)</p>
Degraded (includes areas heavily invaded by alien plants)	20%	<p>The south-eastern portion of the assessment area is in a highly disturbed and degraded state and is mainly dominated by weeds and legally declared invasive species. Significant dumping of vegetation debris and building rubble is also present within the most south-easterly corner of the assessment area. This portion is therefore not reminiscent of the natural climactic state of the relevant vegetation type and scored a very low Present Ecological State (PES) value. (Lamprecht, 2020)</p>
Transformed (includes cultivation,	60%	<p>The natural surface vegetation is transformed within the footprint area. The assessment area is also completely isolated to the east and</p>

dams, urban, plantation, roads, etc)		south by existing infrastructure- and agricultural developments. The virtually complete loss and transformation of natural habitat, biota and basic ecosystem functionality within the existing evaporation ponds' footprint areas is deemed irreversible. Sufficient ecological restoration of the relevant vegetation type and its functionality within these footprint areas, will therefore not be practicably feasible. (Lamprecht, 2020)
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**c) Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems (adjacent to the site)						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened							
		YES	NO	UNSURE	YES	NO	YES	NO

**d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)**

The assessment area form part of the Kalahari Karroid Shrubland vegetation type (NKb5) due to the lack of a well-established grass layer and the dominance of dwarf karroid shrub species (Lamprecht, 2020). This vegetation type is classified as least concerned (SANBI, 2006-2019) (Lamprecht, 2020).

The entire assessment area is classified as an Ecological Support Area (ESA) in accordance with the Northern Cape Provincial Spatial Biodiversity Plan 2016 (NCPSBP), which sets out biodiversity priority areas in the province (Lamprecht, 2020).

A significant number of clusters of the provincially protected species *Aloe claviflora* as well as a sporadic individuals of the provincially protected species *Psilocaulon subnodosum* are present within the surrounding undeveloped areas (Lamprecht, 2020).

The individuals/clusters of provincially protected species, that fall within the final design layout footprint of the proposed WWEP, will be removed and adequately relocated to a suitable and similar area as to where they were removed from. This removal and relocation process must be completed prior to the commencement of any vegetation clearance- or construction activities. A Provincial Flora Permit has to be obtained prior to the commencement of any such removal and relocation activities and for the destruction of any other provincially protected species such as *Psilocaulon subnodosum*. (Lamprecht, 2020)

Eight individuals of the nationally protected tree species *Vachellia erioloba* have been left intact within- and directly adjacent to the two cultivated lands within the assessment area. A further eight individuals of this species are also present within the riparian zone along the length of the significant fourth order ephemeral watercourse. (Lamprecht, 2020)

Four small individuals of the nationally protected tree species *Boscia albitrunca* grow within the undeveloped northern and central shrubland portions of the assessment area. (Lamprecht, 2020)

One *Vachellia erioloba* and 3 *Boscia albitrunca* (Figure 2) individuals fall within the final design layout footprint of the proposed WWEP. A Protected Tree License will firstly have to be obtained from the Department of Agriculture Forestry and Fisheries (DAFF) for their removal, prior to the commencement of any such removal activities.

With the exception of the identified nationally and provincially protected species individuals/clusters as discussed above, no Red Data Listed-, provincially- or nationally protected species or any other species of conservation significance were found to be present within the northern and central shrubland portions of the assessment area. (Lamprecht, 2020)

The south-eastern portion of the assessment area is in a highly disturbed and degraded state and is mainly dominated by weeds and legally declared invasive species. (Lamprecht, 2020)

A significant fourth order ephemeral watercourse traverses the western portion of the assessment area and flows in a north-westerly direction. The watercourse possesses a distinct riparian zone which is mainly dominated by hydrophytic grass species but also houses a distinct woody component. (Lamprecht, 2020) Infrastructure cut the surface flow of the watercourse off from the Orange River, which is located approximately 1.7 km north of the assessment area. It now discharges into an agricultural field and canal system.



Figure 2: Occurance of *Boxcia albitrunca* and *Vachellia erioloba*

A very small ephemeral water drainage line also traverses the northern portion of the assessment area and flows in a westerly direction. It also discharges into the significant fourth order watercourse as discussed above. This small drainage line is not playing an important role in the local and regional water catchment. (Lamprecht, 2020)

The assessment area does not fall within any Important Bird Areas (IBA) as per the latest IBA map obtained from the Birdlife SA website (<https://www.birdlife.org.za/what-we-do/important-bird-and-biodiversity-areas/media-and-resources/#1553597171790-6f83422a-a731>). Sporadic nests of common resident bird species were observed within some of the very sparsely represented shrub and small tree individuals, but no important bird species,

unique or specialised bird habitats were observed or are expected to utilise the northern and central shrubland portions of the assessment area for breeding and/or persistence purposes. The watercourse and its associated riparian zone however provide locally unique and distinct aquatic habitat attributes within the broader terrestrial landscape. It is therefore reasonably expected that this area is utilised by a variety of common and specialised bird species for breeding, foraging and persistence purposes. (Lamprecht, 2020)

Due to the surrounding operations of the raisin processing facility, the northern and central shrubland portions of the assessment area are subjected to continued anthropogenic activity and disturbance. It is therefore not anticipated that any large or conservationally significant faunal species would utilise these portions for breeding and/or persistence purposes. (Lamprecht, 2020)

## SECTION C: PUBLIC PARTICIPATION

Consultation with the public and stakeholders forms an integral component of this investigation and enables interested and affected parties (I&APs) to identify the issues and concerns, relating to the proposed activity, which they feel should be addressed in the EIA Report and EMPr.

### 1. ADVERTISEMENT AND NOTICE

Publication name	Gemsbok	
Date published	9 December 2022	
Site notice position	Latitude	Longitude
	28°26'53.50"S	21°19'0.28"E
Date placed	15 December 2022	

Proof of the placement of the relevant advertisements and notices is attached in **Appendix E1**.

It is not foreseen that the proposed WWEP would have any regional impact beyond the district municipal area. An advert was placed, according to stipulations in regulations, in the Gemsbok, a local newspaper in the area.

#### 1.1 Content of Advertisements and Notices

The notice, notice board and advertisement:

- (a) give details of the application which is subjected to public participation; and
- (b) state—
  - (i) that a **basic assessment procedure** is being applied to the application;
  - (ii) the nature and location of the activity to which the application relates;
  - (iii) where further information on the application or activity can be obtained (The contact details of the EAP were supplied and I&APs were invited to submit their comments with regard to the proposed development.); and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

The notice board is at least 60 cm by 42 cm and display the required information in lettering size 22pt and larger and in the Arial narrow format.

The purpose of the newspaper advertisement was to inform the widest possible group of potential I&APs of the proposed development and related EIA.

### 2. DETERMINATION OF APPROPRIATE MEASURES

**Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.**

#### EIA Regulations, 2014 – Chapter 6 - Section 41 - Public participation process

- (2) The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by-
  - (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to-
    - (i) illiteracy;

- (ii) disability; or
- (iii) any other disadvantage.

- (6) When complying with this regulation, the person conducting the public participation process must ensure that—
- (a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and
  - (b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.

The EAP must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not, based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage, that should have been addressed, may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

During the public participation phases, done for the Carpe Diem Raisins WULA, interest was very low and/or the public accept the presence of the raisin processing plant and associated infrastructure. Stakeholders and registered I&APs did not raise any serious issues during that process. A public meeting would not add any value and therefore not planned during this process.

Information of the proposed development is being sent to the ward councillor of the area. Ratepayers associations and traditional authorities are not functioning in the surrounding area.

The EAP that conducted the public participation process, took into account any guidelines applicable to public participation as contemplated in Chapter 6 of the EIA Regulations, 2014; and gave notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board at the entrance gate to the Carpe Diem Landgoed, next to the N10 between Upington and Groblershoop, conspicuous to and accessible by the public on the fence at the entrance to—
  - (i) the site where the activity, to which the application relates, is or is to be undertaken;
- (b) giving written notice to—
  - (i) the occupiers of the site **is the applicant and in control of the site** and, if the proponent or applicant is not the owner (Johan van der Colff Trust is the owner of Portion 64 of the farm Vaal Koppies No. 40. The trust has given permission to the applicant to apply for the proposed WWEP. Gog van der Colff, Trustee of the johan van der Colff Trust, has also been informed of the application process as well as the availability of the draft environmental assessment report.) ~~or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; the owner or person in control of that land if the applicant is not the owner or person in control of the land;~~
  - (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken ~~and to any alternative site where the activity is to be undertaken;~~
  - (iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers (business chamber) that represent the community in the area;
  - (iv) the **Dawid Kruijer Local Municipality** and **ZF Mgcawu District Municipality** which has jurisdiction in the area;
  - (v) any organ of state having jurisdiction in respect of any aspect of the activity;
  - (vi) any other party as required by the competent authority; and



- (vii) the competent authority where the application was lodged.
- (c) placing an advertisement in—
  - (i) one local newspaper (**Gemsbok**); or
  - (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) ~~placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii); and;~~
- (e) using reasonable alternative methods **such as WhatsApp, Telegram etcetera**, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

### 2.1 Identification of Key Stakeholders

The Public Participation Process was started by identifying key stakeholders and obtaining their contact details in order to inform them about the EIA Process. The list was confirmed and expanded prior to the notification regarding the availability of the draft EIA. The list is continually updated to ensure that stakeholder information and contact details is correct.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733:

**Note:** The list of stakeholders is attached as Appendix **E2.1**

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

### 2.2 Notification of I&APs

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E2.2**. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- any other proof as agreed upon by the competent authority.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Telkom/Openserve (Mvelaphande Trading) Not any infrastructure of openserve will be affected	Noted Letter and scetch plan will be attached to the final EIA.
SAHRA Submit EIA on SAHRIS	The draft EIA and attachments submitted on SAHRIS.
SANRAL The subdivision, consolidation and rezoning is approved.	Approval attached to Appendix D4
SACAA All obstacles require an approval from SACAA. Formal obstacle assessment to be conducted to	Noted. Information provided to the applicant.

determine if the proposed WWEP will affect the safety of flights in any way. Application procedure and process is available on the SACAA website.	
Department: Agriculture, Land Reform and Rural Development Directorate Land and Soil Management Consent No. 56643 on application in terms of the subdivision of portion 64 of farm Vaalkoppies No. 40.	Approval attached to Appendix D4
Telabase (Pty) Ltd Letter of consent	Consent attached to Appendix D4
DRPW DRPW does not have objections to the application. The proposed road access position from DR3035 will be reviewed upon submission of detailed designs.	Letter attached to Appendix D4.

#### 4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as **Appendix E3**.

#### 5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

**Note:** The list of authorities is attached as Appendix **E4.1**

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **Appendix E4.2**

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

#### 6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of **registered** I&APs must be included as **Appendix E5**.

Copies of any correspondence and minutes of any meetings held must be included in **Appendix E6**.



## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a **summary** and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

**Note:** Appendix F1: Environmental Impact Matrix  
Appendix F2: Environmental Impact Assessment

Phase of Development	Alternatives Investigated	Outcome
<p>Planning and Design Phase</p> <p>When a developer plan for a development, the suitability of a site, activity, technology etcetera are investigated during the planning phase. This EIA process forms part of this planning phase that need to inform the developer regarding the suitability of the different options that is being investigated. After the suitability of the alternatives have been investigated by the project team, consisting of specialists of different fields, the developer will make an informed decision on the best alternative(s) to persue. The spesialists will then further investigate the impacts of the chosen alternatives in detail and propose mitigation measures for implementation to assist the developer to implement the best practicable system with mitigatory measures to best reach the intended outcome without causing detrimental harm to the environment. These alternatives will all influence each other and are related to each other due to constraints, vulnerabilities, advantages, etc.</p>	The Site/Location	Current Site Location
	Technology: WWEP Reed Bed Conventional Treatment Plant Reverse Osmosis Treatment	WWEP/Reed Bed Technologies chosen The Conventional Treatment Plant and Reverse Osmosis Treatment was not investigated further due to the nature of the wastewater as well as financial and technical limitations.
	Layout Alternatives	The ecology study identified no-go areas and buffers regarding the watercourses. The engineer amended the layout accordingly without compromising the requirements of the WWEP/Reed Bed technologies.
	Power Technology: Eskom Generators Photovoltaics	Eskom and generators are already installed and therefore to part of this application. PV can be investigated in future as Eskom and fuel reliability and availability deteriorates (load shedding)
	Alternatives related to the technology: Resources Technical Competence	These alternatives investigated support the choice of the WWEP/Reed Bed technology option

	Demand Activity/Land Use	
	"No Go" Alternative	Not a feasible course of action
Construction Phase	WWEP/Reed Bed	WWEP are investigated for implementation. Option is to add the reed bed at a later stage.
Operational Phase	WWEP/Reed Bed	WWEP
Decommissioning and Closure Phase	WWEP/Reed Bed	WWEP

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative) Site and WWEP</b>			
Planning & Design	<b>Direct impacts:</b> Planning of Layout Site demarcation & development Heritage Resources – HIA/AIA/PIA	H	Mitigation measures pertaining to <b>water resources</b> are contained in the Pre-construction section of the Environmental Management Programme.  <b>The layout of all infrastructure within the site shall be planned in such a way as to minimise the impacted area, as well as the impacts on environmental features. Unnecessary clearing of vegetation, excavation, placement and compaction of soil shall be avoided. Environmental limitations and opportunities must be balanced with technical and financial requirements.</b>
	<b>Indirect impacts:</b> Project Contract and Programme Appointment & Duties of Project Team Vegetation removal and soil disturbance Method Statements		
	<b>Cumulative impacts:</b> Cognisance of other developments in the area.		
Construction	<b>Direct impacts:</b> Water Resources - water use Soil & Agriculture – soil disturbance & land use Biodiversity – vegetation removal Social	L  M M +M	Mitigation measures pertaining to <b>water resources</b> are contained in the following sections of the Environmental Management Programme:  <u>Preconstruction Phase:</u> Water use – construction phase; provision for groundwater monitoring; WWEP system lining;  <u>Construction Phase:</u> Handling Stockpiles; Oil and Chemicals; Cement and Concrete Batching; Provision of Storage Facilities for Dangerous and Toxic Materials; Bulk Storage of Fuels and Oils; Use of Dangerous and Toxic Materials; Toilets and Ablution

	<p>Visibility –construction activities &amp; infrastructure Economy Traffic – increase in traffic Noise – noise sensitive areas Air Quality – dust, smell/odours Heritage Resources</p>	<p>L +M L L L H</p>	<p>Facilities; Waste Management; Workshop Equipment, Maintenance and Storage; Erosion and Sedimentation; No-Go/Sensitive Areas; Access Route/Haul Roads; Hydrology; &amp; Soil.</p> <p>Mitigation measures pertaining to <b>soil and agriculture resources</b> are contained in the following sections of the EMPr:</p> <p><u>Preconstruction Phase:</u> Site Demarcation and Development; Planning of Layout;</p> <p><u>Construction Phase:</u> Handling Stockpiles; Oils and Chemicals; Provision of Storage Facilities for Dangerous and Toxic Materials; Bulk Storage of Fuels and Oils; Use of Dangerous and Toxic Materials; Dust; Erosion and Sedimentation; No-Go/Sensitive Areas; Access Route/Haul Roads; Traffic Impacts; Hydrology; and Soil; Excavation, Backfilling and Trenching.</p>
	<p><b>Indirect impacts:</b></p> <p>Water Resources Soil Biodiversity Social Visibility Economy Noise Air Quality Tourism</p>	<p>L M M +M L +M L L L</p>	<p>Mitigation measures pertaining to <b>ecology and biodiversity aspects</b> are contained in the following sections of the EMPr :</p> <p><u>Preconstruction Phase:</u> Site Demarcation and Development; Biodiversity Offset Agreements; Planning of Layout;</p> <p><u>Construction Phase:</u> Fires; Erosion and Sedimentation; Fauna; Flora; No-Go/Sensitive Areas; Access Route/Haul Roads; and Ecological Specialist Findings.</p> <p>Mitigation measures pertaining to the <b>social environment</b> are contained in the following sections of the EMPr:</p> <p><u>Preconstruction Phase:</u> Communication with Stakeholders and I&amp;APS;</p> <p><u>Construction Phase:</u> Cognisance of Other Developments; Employment Opportunities for Local Communities; Capacity Building in Local Communities; and Crime, Safety and Security.</p>
	<p><b>Cumulative impacts:</b></p> <p>Water Resources Soil Erosion Habitat transformation Impacts on common fauna spp. Social Visibility Economy Traffic volumes</p>	<p>L H L L +L L +L L</p>	<p>Mitigation measures pertaining to the <u>Economy</u> have been addressed in the EMPr :</p> <p><u>Preconstruction Phase:</u> Project Contract and Programme; Appointments and Duties of Project Team;</p> <p><u>Construction Phase:</u> Crime, Safety and Security.</p> <p><b>Traffic</b> to and from the study area would have to be monitored and controlled closely by the Project Manager. Further mitigation measures are stipulated in the EMPr:</p> <p><u>Preconstruction Phase:</u> Site Demarcation and Development; Planning of the Layout;</p> <p><u>Construction Phase:</u> Access Route and Haul Roads; Traffic Impacts; and Visual Impact.</p> <p>Mitigation measures pertaining to the <b>noise impacts</b> are contained in the <u>Construction Phase</u> Noise section of the EMPr.</p> <p>Impacts on <b>air quality</b> that would occur during the <u>construction and decommissioning phases</u> and could involve dust nuisance and emissions by vehicles and construction equipment. Mitigation measures are included in the Dust section of the Construction Phase sections of the EMPr.</p> <p>No <b>heritage resources</b> have been identified on the study area. Mitigation measures pertaining to the heritage impacts are contained in the Construction Phase Heritage section of the EMPr.</p> <p>Mitigation measures pertaining to <b>tourism</b> have been addressed in the EMPr :</p> <p><u>Preconstruction Phase:</u> Site Demarcation and Development;</p> <p><u>Construction Phase:</u> Visual Impact.</p>
<p>Ope</p>	<p><b>Direct impacts:</b></p>		<p>Mitigation measures pertaining to <b>water resources</b> are contained in the following sections of the Environmental Management</p>

ration	Water Resources Soil & Agriculture Biodiversity Social Visibility Economy Traffic Noise Air Quality Heritage Resources	H H H M VL +M VL VL M M	<p>Programme:</p> <p><u>Operational &amp; Maintenance (O&amp;M) Phase:</u> Water use – Operational Phase; Handling Stockpiles; Oil and Chemicals; Cement and Concrete Batching; Provision of Storage Facilities for Dangerous and Toxic Materials; Bulk Storage of Fuels and Oils; Use of Dangerous and Toxic Materials; Toilets and Ablution Facilities; Waste Management; Workshop Equipment, Maintenance and Storage; Erosion and Sedimentation; No-Go/Sensitive Areas; Access Route/Haul Roads; Hydrology; &amp; Soil.</p> <p>Mitigation measures pertaining to <b>soil and agriculture resources</b> are contained in the following sections of the EMPr:</p> <p><u>O&amp;M Phase:</u> Handling Stockpiles; Oil and Chemicals; Provision of Storage Facilities for Dangerous and Toxic Materials; Bulk Storage of Fuels and Oils; Use of Dangerous and Toxic Materials; Dust; Erosion and Sedimentation; No-Go/Sensitive Areas; Access Route/Haul Roads; Hydrology; and Soil; WWEP; Groundwater Monitoring; Desludging.</p>
	<b>Indirect impacts:</b> Water Resources Soil & Agriculture Biodiversity Social Visibility Economy Tourism	H M M M VL +M M	<p>Mitigation measures pertaining to <b>ecology and biodiversity aspects</b> are contained in the following sections of the EMPr :</p> <p><u>O&amp;M Phase:</u> Fires; Erosion and Sedimentation; Fauna; Flora; No-Go/Sensitive Areas; Access Route/Haul Roads; and Ecological Specialist Findings.</p> <p>Mitigation measures pertaining to the <b>social environment</b> are contained in the following sections of the EMPr:</p> <p><u>O&amp;M Phase:</u> Cognisance of Other Developments; Employment Opportunities for Local Communities; Capacity Building in Local Communities; and Crime, Safety and Security.</p>
	<b>Cumulative impacts:</b> Water Resources Biodiversity Soil & Agriculture Social Visibility Air Quality	H L L L VL L	<p>Mitigation measures pertaining to the <b>Economy</b> have been addressed in the EMPr :</p> <p><u>O&amp;M Phase:</u> Crime, Safety and Security.</p> <p><b>Traffic</b> to and from the study area would have to be monitored and controlled closely by the Project Manager. Further mitigation measures are stipulated in the EMPr:</p> <p><u>O&amp;M Phase:</u> Access Route and Haul Roads; Traffic Impacts; and Visual Impact.</p> <p>Mitigation measures pertaining to the <b>noise impacts</b> are contained in the <u>O&amp;M Phase</u> Noise section of the EMPr.</p> <p>Impacts on <b>air quality</b> would mostly occur during the <u>O&amp;M phase</u> and could involve odour nuisance emanating from the WWEP should it not be operated correctly. Mitigation measures would be to manage and maintain the WWEP correctly to ensure that as little as possible odours occur.</p> <p>No <b>heritage resources</b> have been identified on the study area. Mitigation measures pertaining to possible heritage impacts are contained in the O&amp;M Phase Heritage section of the EMPr.</p> <p>Mitigation measures pertaining to <b>tourism</b> have been addressed in the EMPr :</p> <p><u>O&amp;M Phase:</u> Visual Impact.</p>
Decommissioning &	<b>Direct impacts:</b> Water Resources Soil & Agriculture Ecology & Biodiversity Social Aspects Visibility	L-M H M- H L-M	<p>Construction and Rehabilitation phase in the EMPr.</p>

Closure	Traffic	M		
	Noise	M		
	Air Quality	M		
		M		
	<b>Indirect impacts:</b>			
	Water Resources	L		
	Soil & Agriculture	M		
Ecology & Biodiversity	M			
Social Aspects	L			
Visibility	L			
<b>Cumulative impacts:</b>				
Social	L			
<b>Alternative 2: The reed bed wastewater treatment system</b>				
This system uses the same site location, area required and infrastructure as the WWEP. The only difference that it is slightly angled to facilitate slow flow of water through rocks and plants are added that removes the phosphates and nitrates from the water to such a quality to enable its reuse or safe disposal.				
Construction	<b>Direct impacts:</b>		The impacts and mitigation measures would be the same as for the WWEP	
	<b>Indirect impacts:</b>			
	<b>Cumulative impacts:</b>			
O&M	<b>Direct impacts:</b>		Most of the impacts and mitigation measures would be the same as the WWEP. The positive impact is that the cleaned water can be reused. The limitation is that the water would flow slowly through the rocks and water storage would be required for the wastewater. All the impacts and mitigation measures as stipulated for the WWEP would be the same for this location and technology. Should this option be implemented a S21 (e) water use licence application would be required in terms of the NWA.	
	<b>Indirect impacts:</b>			
	<b>Cumulative impacts:</b>			
<b>Alternative 3:</b>				
	<b>Direct impacts:</b>			
	<b>Indirect impacts:</b>			
	<b>Cumulative impacts:</b>			
	<b>Direct impacts:</b>			
	<b>Indirect impacts:</b>			
	<b>Cumulative impacts:</b>			
<b>No-go option</b>				

	<p><b>Direct impacts:</b> Water Resources Socio-Economic</p>	<p>-H -H</p>	<p>The 'do nothing' alternative is the option of not undertaking the replacement of the WWEP. Should this alternative be selected, it would have local and broader impacts. It would entail maintaining the status quo. The "no-go" alternative will have a definite impact on the environment due to the fact that the current WWEP is overloaded, degraded and not lined to prevent seepage.</p> <p>The "no-go" alternative will have a definite impact on the environment due to the fact that the current WWEP is overloaded, degraded and not lined to prevent seepage. There is therefore a possibility that water resources, soil and groundwater may be impacted currently and will be continuing should the system not be implemented. The remedial action may have legal and financial implications to the developer and CA.</p> <p>The use of the new WWEP technology is the least expensive of the options investigated.</p> <p>The 'do nothing' alternative is not a preferred alternative in this application.</p>
	<p><b>Indirect impacts:</b> Biodiversity Socio-Economic</p>	<p>-M -M</p>	<p>Deciding not to proceed with the development would have a negative impact on the biodiversity, water resources and socio-economic development of the area.</p> <p>In the long term the new WWEP will add socio-economic value to the local and broader communities due to the continued direct and indirect provision of jobs. This would not be the case if the WWEP are not replaced as DWS will issue a directive and stop operations.</p>
	<p><b>Cumulative impacts:</b> Socio-Economic</p>	<p>-M</p>	<p>The construction of the new WWEP is required to comply with the stipulations of the WUL and NWA. This will have a further legal and financial risk to the developer and CA assessing this application as DWS is awaiting the urgent replacement of the old WWEP and will issue a directive and proceed with legal action should this not be done.</p>

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as **Appendix F**.

## 2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Alternative A (preferred alternative)

Not any potentially significant issues were identified should the mitigation measures, stipulated in the EMP and specialist recommendations, be adhered to and implemented correctly.

## **2.1 Conclusions drawn from the Evaluation of the Proposed Study Area**

Impacts that might potentially be associated with the construction and O&M phases of the WWEP include impacts on water resources; soil and agricultural potential (risk of erosion (especially wind erosion causing dust), land use potential and restriction of land use); ecology and biodiversity (impacts on ecology, flora and fauna, incl. avifauna); social aspects on the macro-, meso- and microlevel; visual quality and aesthetics; economic impacts (mostly positive); traffic impacts (construction, upgrading and decommissioning phases); noise (construction, upgrading and decommissioning phases); air quality regarding dust pollution and odour nuisance; heritage resources; and tourism activities.

Most of the potential impacts identified are anticipated to be site-specific. No environmental fatal flaws were identified.

The significance levels of the majority of identified negative impacts can generally be reduced to acceptable levels should the recommended mitigation measures be implemented.

### **2.1.1 Impacts on Water Resources**

If all the recommended mitigation measures for the construction phase are adequately implemented and managed, it should prove sufficient in preventing any continued impeding of- or significant impact on the watercourse and drainage line and the associated local and regional water catchment and drainage towards the Orange River (Lamprecht, 2020).

There is a slight risk of contamination of the aquifer by spillage/leakage of wastewater from the site and the WWEP. This potential impact significance is rated as very low and can be mitigated to insignificant by appropriate engineering design, good housekeeping, and regular maintenance of infrastructure. The fractured-rock aquifer is also naturally protected against these potential contaminants by a deep water table of c.15 to c.20 mbgl and a low permeable hard granitic bedrock with low aquifer vulnerability. This impact is assessed to be of very low significance. (Visser, 2021)

The cut to fill earthworks operation could be utilized, where the ponds are excavated to 500mm below natural ground level, and the excavated material is then utilized to construct the surrounding embankments. (Meiring, 2020) By utilizing this method of construction, and maintaining a top level of 500mm above Normal Ground Level, any risk of stormwater damage is negated. (Meiring, 2020)

### **2.1.2 Soils**

No significant soil erosion is currently evident within or around the assessment area. The entire assessment area possesses a slightly sloping topography. The area could therefore be prone to slight soil erosion due to the loosening of materials and vegetation clearance caused by construction activities. (Lamprecht, 2020)

The impact on land use potential, agricultural potential and restriction of land use would be very low due to the small scale of development as well as the degradation of the surrounding area.

### **2.1.3 Impacts on Ecology and Biodiversity (including flora, and fauna)**

Due to the surrounding operations of the raisin processing facility, the northern and central shrubland portions of the assessment area are subjected to continued anthropogenic activity and disturbance. It is therefore not anticipated that any large or conservationally significant faunal species would utilise these portions for breeding and/or persistence purposes, or would necessarily have historically utilised the existing evaporation ponds' footprint areas.

(Lamprecht, 2020)

The construction of the facility will have a moderate impact on the ecology, but it will be at a very local scale. The construction of the road will have a low significance.

A recommended development area of approximately 1.8 ha in size has been selected which should result in the least negative ecological impact on the surrounding undeveloped environment. This recommended area falls outside the recommended watercourse and drainage line buffer zone and is mainly confined to the transformed and degraded areas of the assessment area while only a small portion is located within the undeveloped northern shrubland portion. (Lamprecht, 2020)

The broader areas surrounding the assessment area, which are associated with the relevant vegetation types, are however extremely vast and also largely natural and undeveloped. The size of the proposed development is therefore minute relative to the surrounding natural region. (Lamprecht, 2020)

The historic construction of the existing evaporation ponds has completely transformed all previously existing natural surface vegetation within their footprint areas. The assessment area is also completely isolated to the east and south by existing infrastructure- and agricultural developments. The virtually complete loss and transformation of natural habitat, biota and basic ecosystem functionality within the existing evaporation ponds' footprint areas is deemed irreversible. Sufficient ecological restoration of the relevant vegetation type and its functionality within these footprint areas, will therefore not be practicably feasible. (Lamprecht, 2020)

#### **2.1.4 Impact on Air Quality**

Dust nuisances duration period would be short. The dust may have a direct impact on the respiratory health of the construction workers. The extent, duration and intensity would be low.

#### **2.1.5 Impacts on Heritage Resources**

The field assessment provided no aboveground evidence of prehistoric structures, buildings older than 60 years, graves or material of cultural significance or in situ archaeological sites within the study area. (Rossouw, 2021)

The proposed development footprint is not considered palaeontologically or archaeologically vulnerable and is assigned a site rating of Generally Protected C (GP.C). (Rossouw, 2021)

### **Alternative B**

The impacts as described at alternative A would be the same for B.

### **Alternative C**

## **2.2 No-go alternative (compulsory)**

The 'do nothing' alternative is the option of not undertaking the replacement of the WWEP. Should this alternative be selected, it would have local and broader impacts. It would entail maintaining the status quo. The "no-go" alternative will have a definite impact on the environment due to the fact that the current WWEP is overloaded, degraded and not lined to prevent seepage.



The use of the new WWEP technology is the least expensive of the options investigated.

In the long term the new WWEP will add socio-economic value to the local and broader communities due to the continued direct and indirect provision of jobs. This would not be the case if the WWEP are not replaced as DWS will issue a directive and stop operations.

The construction of the new WWEP is required to comply with the stipulations of the WUL and NWA. This will have a further legal and financial risk to the developer and CA assessing this application as DWS is awaiting the urgent replacement of the old WWEP and will issue a directive and proceed with legal action should this not be done.

The 'do nothing' alternative is not a preferred alternative in this application.

- Water Resources
- Surface Water Pollution and Quality Degradation;
  - Ground Water Pollution;
  - Impact on sustainability of aquifer/groundwater of the area
- Soil pollution
- Habitat degradation
- Socio Economic Environment
  - Health Impacts
  - Economic impacts
  - Financial impacts
  - Damage to property
  - Stakeholder interest
  - Business risk/benefit
- Visual & Aesthetic Impacts
- Air Quality
  - Odours

## SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

-

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Most of the potential impacts identified are anticipated to be site-specific. No environmental fatal flaws were identified.

All recommendations and mitigation measures that should be included in the authorisation is addressed in the EMPr. Should the amended EIA report and EMPr be accepted and authorised, all aspects that have been discussed within the report and program would be addressed.

It is imperative that the EMPr be implemented during pre-construction, construction and operational phase and continued compliance to it be ensured. This would be possible by stipulating that the EMPr should form part of all contracts with businesses, contractors and sub-contractors, as well as the work force.

Is an EMPr attached?

YES	NO
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The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in **Appendix I.**

**Note:** The declarations of interest of the specialists are attached to their reports in Appendix D.

Any other information relevant to this application and not previously included must be attached in **Appendix J.**

Irmé Bernadette van Zyl

NAME OF EAP

\_\_\_\_\_  
SIGNATURE OF EAP

\_\_\_\_\_  
DATE

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## **SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information