

# Visual Impact Assessment Report

Proposed Abalone Farm and Abalone Processing Facility,  
on Portion of Remainder of Farm 385  
near Pearly Beach, Overstrand, Western Cape

June 2019

Prepared by:  
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Prepared for:  
Lornay Environmental Consulting

On behalf of:  
Pearly Beach Sea Farm (Pty) Ltd



## Specialist Declaration

We, Quinton Lawson and Bernard Oberholzer, as the appointed independent visual specialists, in terms of the 2014 EIA Regulations, hereby declare that we:

- act as the independent specialist in this application;
- perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- regard the information contained in this report as it relates to our specialist input/study to be true and correct, and do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- declare that there are no circumstances that may compromise my objectivity in performing such work;
- have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- will comply with the Act, Regulations and all other applicable legislation;
- have no, and will not engage in, conflicting interests in the undertaking of the activity;
- have no vested interest in the proposed activity proceeding;
- undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- all the particulars furnished by us in this specialist input/study are true and correct; and
- realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:



Name of Specialists: Quinton Lawson and Bernard Oberholzer

Date: 04 June 2019

## Expertise

**Bernard Oberholzer** Landscape Architect + Environmental Planner (BOLA)

*Qualifications:*

Bachelor of Architecture (UCT 1970), Master of Landscape Architecture (U. of Pennsylvania 1975)

*Professional registration/membership:*

Professional member of the SA Council for the Landscape Architectural Profession  
SACLAP reg. no. 87018.

Fellow of the Institute of Landscape Architects of South Africa.

B-BBEE Status: Level 4.

Bernard has 40 years of experience as a professional landscape architect, specialising in, environmental planning, coastal planning, urban landscape design and visual assessments.

He is currently an independent consultant, and was for 7 years the Convenor of the Master of Landscape Architecture Programme at UCT.

He has presented papers on *Visual and Aesthetic Assessment Techniques*, and provides specialist services as a reviewer of visual impact studies prepared by other firms.

He is the author of *Guideline for Involving Visual and Aesthetic Specialists in EIA Processes*, prepared with the CSIR for the Dept. of Environmental and Development Planning, Provincial Government of the Western Cape, 2005.

Bernard is currently an independent practitioner, involved in numerous land use suitability studies and visual assessments for a wide range of projects, and served as a member of the Stanford Heritage Committee.

**Quinton Lawson** Architect (qarc)

*Qualifications:*

Bachelor of Architecture (Univ. of Natal 1977)

*Professional registration/membership:*

Professional member of the SA Council for the Architectural Profession  
SACAP reg. no. 3686.

Member of the Cape Institute for Architects and SA Institute of Architects.

Quinton has practiced as a professional architect since 1978, specialising in architectural and urban design, environmental design and computer visualisation.

He was one of the founding partners of Meirelles Lawson Architects formed in 1988, initially specialising in economic and sustainable housing. He was a senior partner at MLB Architecture and Urban Design, with specialist expertise in visual modelling and design solutions.

In the past he has been a visiting lecturer at UCT teaching a post-graduate course on Computer Techniques in Landscape Architecture, including visualisation and visual assessment techniques.

Together with BOLA, Quinton has been involved in numerous visual impact assessments over a number of years. He is currently an independent practitioner and served on the Impact Assessment Review Committee of Heritage Western Cape.

1. (1) A specialist report prepared in terms of these Regulations must contain-	See Pg. 2
a) details of- i. the specialist who prepared the report; and ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;	
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Pg. 3
c) an indication of the scope of, and the purpose for which, the report was prepared; (ca) an indication of the quality and age of base data used for the specialist report; (cb) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 1.1 Section 1.5 Section 5.1
d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 1.6
e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1.3
f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure inclusive of a site plan identifying site alternatives;	Section 5.2 Figures 2 and 4
g) an identification of any areas to be avoided, including buffers;	Section 6.1, Figures 7 and 8
h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Figures 2 and 4
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.4
j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 7
k) any mitigation measures for inclusion in the EMPr;	Section 6
l) any conditions for inclusion in the environmental authorisation;	Section 6
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 6.5
n) a reasoned opinion- i. whether the proposed activity, activities or portions thereof should be authorised; (ia) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Sections 6 and 7 Executive Summary
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	By EAP
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	By EAP
q) any other information requested by the competent authority.	By EAP
(2) Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	By EAP HWC NID

## Executive Summary

The proposed Abalone Farm consists of 2 complexes, the southern complex being located on the coast and the northern complex adjacent to the R43 Route. Both of these, which include 2-story industrial-type buildings, could be visible to sensitive receptors, and have an effect on the rural character of the area.

Sensitive receptors include the Pearly Beach residential settlement to the east, recreation users of the pristine beaches, the Uilskraalmond Nature Reserve to the west, and users of the R43 road, which forms part of the area's Whale Route, and scenic route network of the Overstrand.

The visual impact significance for the full 6 phases of the Abalone Farm is assessed as having medium to high visual impact significance without mitigation and medium significance with mitigation, while the solar PV plant, which has a low profile and therefore not visually intrusive, is assessed as being **low** both before and after mitigation.

The proposed single storey staff houses would also have low visual impact significance, as they would not be easily visible from the surroundings, and would be partly screened by the Abalone production and storage buildings.

The effect of lights at night from buildings and lighting masts on the perimeter is a further visual concern in the rural setting, adding to visual impact significance.

The visual impact significance of the abalone farm would be long term to permanent and would only reduce to low with mitigation if the facilities are decommissioned after its operational life and the site rehabilitated.

The scenic integrity of the skyline needs to be protected from visually intrusive buildings and light masts. Although the development would be partly screened by the low dune topography, increasing the height of the dunes would provide additional visual mitigation. Setbacks from the coast in the south and from the R43 in the north have been recommended. A further mitigation would be to locate larger buildings in low-lying areas, and to reduce their heights as far as possible.

Some cumulative visual impacts could be expected as a result of the 6 phases of development over several years. More widespread cumulative impacts would be low given that other aquaculture farms are about 13km away.

Given the visually sensitive scenic and recreation resources, and the rural setting of the area, it is recommended that the mitigation measures be included in the design process and in the EMP, as well as the authorisation conditions.

Provided the visual mitigations are implemented, no fatal flaws relating to the proposed aquaculture farm from a visual perspective are expected, and the project could be given approval.

## Abbreviations

DEM	Digital Elevation Model
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
PV	Photovoltaic
SEA	Strategic Environmental Assessment
SDP	Site development plan
SRTM	Shuttle Radar Topography Mission
VIA	Visual Impact Assessment

## Glossary

<i>Definitions</i>	
<i>Cultural landscapes</i>	Human-modified landscapes, particularly those of aesthetic, historical or archaeological significance.
<i>Cumulative impacts</i>	The combined or incremental effects resulting from changes caused by a proposed development in conjunction with other existing or proposed activities.
<i>Receptors</i>	Viewers who would be affected by a proposed development, the viewers usually being residents, commuters, visitors or tourists.
<i>Sense of place</i>	The unique or special qualities found in a particular location, including the combined natural, cultural, aesthetic, symbolic and spiritual qualities.
<i>View corridor</i>	A linear geographic zone, usually along movement routes such as trails, roads and railways, visible to users of the routes.
<i>View shadow</i>	A zone within the view catchment area that is visually obscured from the proposed development by the topography, trees or structures.
<i>Viewshed</i>	A geographic zone encompassing a view catchment area, usually defined by ridgeline similar to a watershed.
<i>Visual buffer</i>	A geographic zone of varying distance, indicating visual sensitivity or visual constraint for proposed development or activities.

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Figure 1: Site Development Plan

Figure 2: Site Development Plan: Entrance Area

Figure 3: Site Development Plan: Production Area 3D Model

Figure 4: Site Development Plan: Production Area

Figure 5: Site Development Plan: Production Area 3D Model

Figure 6: Site Development Plan: Production Area Terrain Sections

Figure 7: Mitigation Measures: Entrance Area

Figure 8: Mitigation Measures: Production Area

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# 1 Introduction

## 1.1 Scope and Objectives

The proposed abalone facility near Pearly Beach triggers the need for a Basic Assessment process, which is being carried out by Lornay Environmental Consultants.

A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape in October 2018, where it was determined that the proposed abalone farm could have an impact on heritage resources. A Heritage Impact Assessment (HIA) is therefore required with specific reference to the following:

- Visual impacts of the proposed development
- Impacts to archaeological heritage resources

This report is a Visual Impact Assessment (VIA), while archaeological and other heritage issues are addressed by others.

The VIA includes an assessment of potential visual impacts and risks associated with the proposed abalone farm and provides recommended mitigations to minimise potential visual impacts. Mitigations would also be included in the Environmental Management Programme (EMPr) and form part of the conditions for environmental authorisation.

The assessment considers visual impacts on (1) the natural and cultural landscape, and (2) sensitive visual receptors in the area, including the effect of lights at night.

## 1.2 Terms of Reference

The terms of reference for a Level 4 visual impact assessment are as follows:

- Quantify and assess the existing scenic resources / visual characteristics on and around the site.
- Determine viewsheds and important viewpoints in order to assess the potential visual influence of the proposed project.
- Prepare visual maps, including landscape context, visual constraints, viewpoints, viewsheds and view corridors in relation to the proposed development.
- Undertake 3D modelling and prepare photomontages of the proposed development.
- Assess the significance of potential visual impacts (direct and on the cultural landscape) resulting from the proposed project from various important viewpoints.
- Identify practicable mitigation measures to reduce negative visual impacts and to identify how these can be built into the project design.

## 1.3 Approach and Methodology

The methodology involves a number of recognised procedures based on the Guideline for Involving Visual and Aesthetic Specialists (Oberholzer, B. 2015) including the following steps:

### *Baseline Study*

- Identification of existing scenic resources and sensitive receptors in and around the study area.
- Description of the proposed development context, characteristics of the area, intactness of the landscape and the particular sense of place.
- Description of the proposed project, including the siting, footprint and height of the proposed structures and related infrastructure, such as access roads and lighting.



### *Determining the Zone of Visual Influence*

- Mapping of viewsheds, view corridors and viewpoints in relation to the proposed facilities to determine the zone of visual influence of the proposed project. Areas in a view shadow may not be visible.
- Indication of distance radii from the project to give an idea of levels of visibility to surrounding receptors.

### *Identification of Visual Issues*

- Identification of visual issues, including those from the public participation, as well as issues identified by the visual, social or heritage specialists.

### *Assessment of Potential Visual Impacts*

- Assessment of the significance of potential visual impacts resulting from the construction, operational and decommissioning phases of the project, using both quantitative and qualitative criteria.
- Review of cumulative visual impacts of the combined project phases and related infrastructure, as well as other abalone farms or industry in the area.

### *Formulation of Mitigation Measures*

- Recommendation of possible mitigation measures to avoid or minimise potential negative visual impacts of the proposed project, including the project design.
- Formulation of mitigation measures for inclusion in the EMP and authorisation conditions.

## **1.4 Assumptions and Limitations**

Some assumptions have to be made about the project as the layout and design of buildings are only indicative at this stage. Approximate building footprints and heights have been provided, but architectural details of the buildings would only become available over time as the phases are rolled out.

## **1.5 Sources of Information**

The main sources of information for the visual baseline study included the following:

- Chief Directorate : National Geospatial Information 1:50 000 Topographic series, 3419 CB Gansbaai 1997
- Council for Geoscience : 1:250 000 Series, Worcester Sheet 3319 Geological Map 1997.
- Shuttle Radar Topography Mission (SRTM) 1 arcSEC 30m DEM Data 2014
- Google Earth Satellite Imagery 2019
- Google Maps and Open Street Map (OSM) Data 2019
- Photographic record of the site January 2019.

## **1.6 Site Investigation**

A visit to the proposed abalone farm site and surroundings was carried out on 31 January 2019. The season was not a consideration, nor had any effect on carrying out a visual assessment. A photographic survey was made of the site and surroundings, and from several selected viewpoints. The route of the field trip is indicated on Map 3.

## 1.7 Legal Context

The National Environmental Management Act (Act No. 107 of 1998) (NEMA) and the NEMA EIA Regulations (2014, as amended) apply as the proposed abalone farm is a listed activity requiring a Basic Assessment. The need for a visual assessment was identified in the Response to the Notification of Intent to Develop (NID) by Heritage Western Cape (HWC).

The National Heritage Resources Act (Act No. 25 of 1999) (NHRA), and associated provincial regulations, provide legislative protection for natural, cultural and scenic resources, as well as for archaeological and paleontological sites within the study area. This report deals with visual considerations, including scenic resources, which forms part of the National Estate. Archaeological resources are covered by the heritage specialist.

The Guideline for Involving Visual and Aesthetic Specialists in EIA Processes, by the Provincial Government of the Western Cape, (Oberholzer, B. 2005), was used as a general guide.

## 2 Key Visual Issues

No public participation had been undertaken at the time of this draft VIA Report, and will only commence once the Basic Assessment Report (BAR) has been prepared. The VIA will be incorporated into the Heritage Impact Assessment (HIA) to meet the requirements of HWC.

Possible issues identified by the visual specialists include the following:

- Potential visual impact on the rural quality of the area surrounding Pearly Beach.
- Potential visual impact on receptors in the area, i.e. the western part of Pearly Beach, coastal dwellings on neighbouring properties, and on the Uilkraalsmond Nature Reserve, including lights at night from the proposed project.
- Potential visual impact on visitors and recreation users of the pristine beaches for which Pearly Beach is known.
- Potential visual impact on the R43 Provincial Main Road, which forms part of the Whale Route and the scenic route network of the Overstrand, and which links to the Agulhas National Park.

## 3 Description of the Project

The proposal consists of an abalone farm and associated infrastructure, which at full production (1000 tons) covering about 25ha in the southern coastal complex, and about 6ha in the northern complex adjacent to the R43 road. The abalone farm would consist of 6 phases of 160 tons (2,5ha) each.

The largest footprint of each of these phases would be the platforms for abalone grow-out tanks and seaweed production ponds. In visual terms these have a fairly low profile, and would not be easily visible outside the site.

Potentially more visible structures would be the 2-storey hatchery, training and office buildings, processing building, packing shed and multi-use platform buildings on the southern portion of the site, close to the coast.

The northern portion, close to the R43 Road, would have the 2-storey feed manufacture, storage and workshop buildings. The northern portion would also have 24 residential units for staff, and a 2ha solar array to generate power.

There would also be perimeter fencing, about 2,5m high, with 6m light masts at 50m spacing along all roads and the fence line.

A list of components for the proposed abalone farm is given in Table 1 below. A general layout of the project, is indicated in Figures 1 to 6.

Table 1: Description of Proposed Abalone Facilities

Production Facility	Footprint	Height	Comments
<b>Development footprint</b>	<b>24.72 ha</b>	-	1000 tons, developed in 6 phases of 160 tons each.
<b>Platform 1A and 1B</b>	34 560 m <sup>2</sup>	800mm	2 548 canvas grow tanks, 4m x 1.9m
<b>Platform 2A and 2B</b>	34 560 m <sup>2</sup>	800mm	2 548 canvas grow tanks, 4m x 1.9m
<b>Platform 3A and 3B</b>	34 560 m <sup>2</sup>	800mm	2 548 canvas grow tanks, 4m x 1.9m
<b>Manager's House</b>	300 m <sup>2</sup>	8m	Double storey, off-white plastered, green 30° pitch roof, height to top of gable
<b>Pump House</b>	1 080 m <sup>2</sup>	4m	Flat roof concrete structure
<b>Office Building</b>	560 m <sup>2</sup>	9m	Double storey, off-white plastered, green 30° pitch roof, height to top of gable
<b>Paddle Ponds</b>	3 000 m <sup>2</sup>	1.5m	Concrete block structure
<b>Hatchery</b>	5 000 m <sup>2</sup>	5 & 8m	Single/Double storey, Grey steel clad portal frame building
<b>Training and Office (x2)</b>	150 m <sup>2</sup> x2	7m	Double storey, off-white plastered, green 30° pitch roof, height to top of gable
<b>Header Tanks (x3)</b>	450 m <sup>2</sup> x3	8.5 m	Flat roof concrete structure, rooftop balustrade
<b>Security Camera Structure (x3 on Header Tanks)</b>	300 x 300 x 300mm	6m	Triangular lattice structure
<b>Live Export and Packing (x3)</b>	1 568 m <sup>2</sup> x3	8m	Double storey, Insulated panel clad portal frame building
<b>Electrical Room (x4)</b>	36 m <sup>2</sup> x4	3.2m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Multiuse Platform Building 1 (x3)</b>	380 m <sup>2</sup> x3	8.5m	Double storey, off-white plastered, green 30° pitch roof, height to top of gable
<b>Multiuse Platform Building 2 (x3)</b>	520 m <sup>2</sup> x3	8.5m	Double storey, off-white plastered, green 30° pitch roof, height to top of gable
<b>Processing / Cannery</b>	1 225 m <sup>2</sup>	8m	Single storey, Insulated panel clad portal frame building
<b>Security and Biosecurity</b>	150 m <sup>2</sup>		Off-white plastered, green 30° pitch roof, height to top of gable
<b>Generator Room</b>	100 m <sup>2</sup>	4.5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Access roads Parking</b>	28 546 m <sup>2</sup>	n/a	6.5m wide gravel access roads and parking
<b>Eskom Power Line</b>	3.5km	9m	Standard 3 phase Eskom powerline
<b>Perimeter Fencing</b>	2km	2.5m	2m Green ClearVue Fencing with electric fencing over
<b>Lighting</b>	-	6m	Solar street light poles, 50m spacing along all roads and perimeter fencing

<b>Related Infrastructure at R43 Entrance</b>			
<b>Development footprint</b>	<b>5.95 ha</b>		
<b>Open storage area</b>	500 m <sup>2</sup>	2.5m	Green ClearVue Fencing
<b>Eskom Transformer and Generator</b>	100 m <sup>2</sup>	4.5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Guard Hut</b>	50 m <sup>2</sup>	3.2m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Feed Manufacture and Storage</b>	1 200 m <sup>2</sup>	12m	Double storey. Grey steel-clad portal frame building
<b>Store and Receiving</b>	600 m <sup>2</sup>	8.5m	Double storey. Grey steel-clad portal frame building
<b>Workshop</b>	400 m <sup>2</sup>	8.5m	Double storey. Grey steel-clad portal frame building
<b>Guards and Security</b>	100 m <sup>2</sup>	4.5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Parking Security</b>	100 m <sup>2</sup>	-	Paved parking area
<b>Clinic</b>	100 m <sup>2</sup>	5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Creche Play Area</b>	200 m <sup>2</sup>	-	Grassed play area, Green ClearVue Fencing
<b>Creche</b>	200 m <sup>2</sup>	5.5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Children Play Area and Sports Field</b>	1 000 m <sup>2</sup>	-	Grassed play area, Green ClearVue Fencing
<b>Package Plant</b>	100 m <sup>2</sup>	-	Ground Level
<b>Housing Units x24</b>	225 m <sup>2</sup> erven 78 m <sup>2</sup> houses	4.5m	Off-white plastered, green 30° pitch roof, height to top of gable
<b>Entrance Area roads</b>	4 460 m <sup>2</sup>	n/a	6.5m wide tar roads and parking
<b>Access Roads</b>	3 277 m <sup>2</sup>	n/a	6.5m wide gravel access road to Production Area
<b>Perimeter Fencing</b>	1 275 m <sup>2</sup>	2.5m	2m Green ClearVue Fencing with electric fencing over
<b>Lighting</b>	-	6m	Solar street light poles, 50m spacing along all roads and perimeter fencing
<b>Solar Array</b>	20 000 m <sup>2</sup>	1m	Solar Panel Array

## 4 Description of the Affected Environment

Relevant visual, scenic and landscape features as well as the general character of the receiving environment are described below.

### 4.1 Location and Context (Maps 1 and 2)

The site is located on Portion of the Remainder of Farm 385, approximately 1 km west of Pearly Beach, and 10 to 15km to the east of Franskraal and Gansbaai in the Overstrand Municipality. Access is via the R43 route. Uilkraalsmond Nature Reserve is approximately 600m west of the site. The property, which has agricultural zoning, is undeveloped, with a number of jeep tracks.

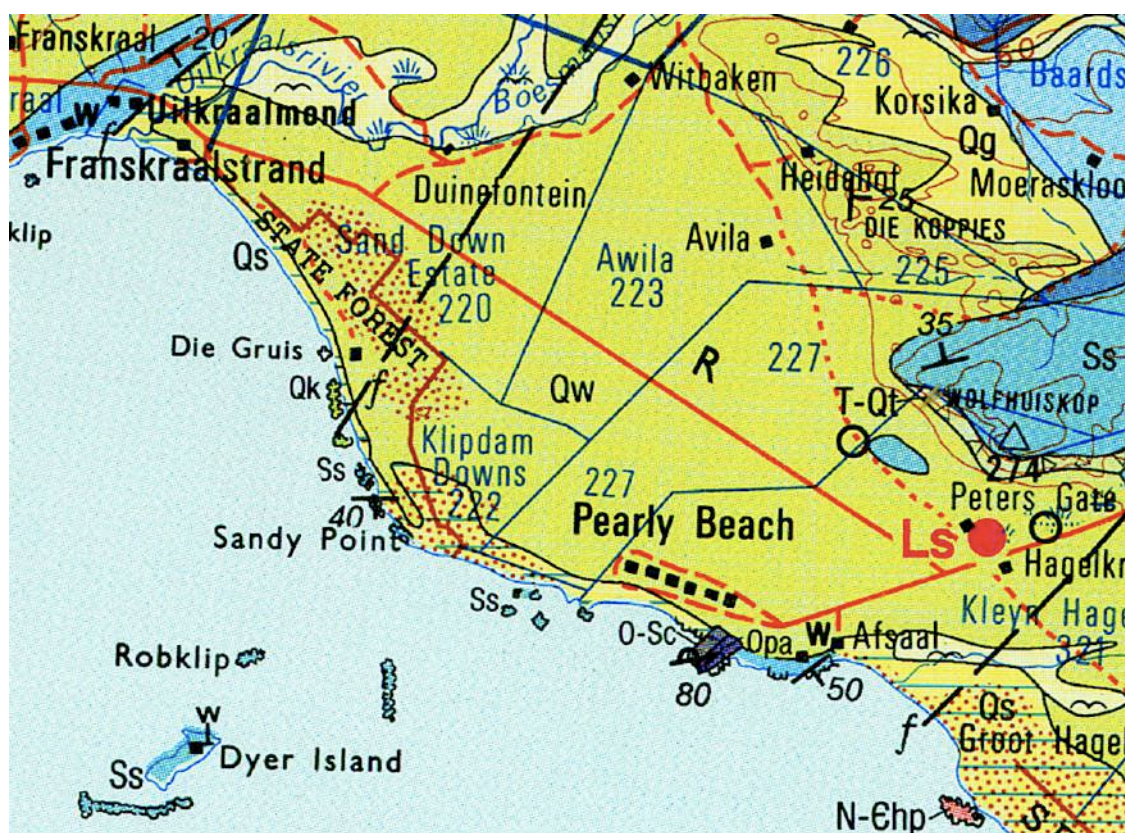
Pearly Beach consists of low density, single residential properties, many of which are mainly used for holiday or weekend purposes. The adjacent residential township of Eluxolweni is located on the north-west of Pearly Beach, along with a sewage treatment works to the north.

There are two dwellings close to the beach on the adjacent farm between Pearly Beach and the site, and a boat-launching facility in the dunes immediately to the west of Pearly Beach. The two dwellings and the boat launching site are accessed by sandy tracks.

### 4.2 Geology and Physical Landscape

The area, which forms part of a coastal plain, is underlain by the quartzitic sandstones of the Skurweberg Formation, which form part of the Table Mountain Group and are covered by a layer of semi-consolidated aeolian sand (wind-blown sand), near the coast, becoming more reddish and consolidated further inland.

Dune ridges and valleys trend mainly in a northwest-southeast direction, roughly parallel with the wind direction. Calcrete layers occur at or near the surface, mainly in the northern portion of the site, and noticeably in road cuts along the R43 Route.



Sandstone formations (Ss) shown in blue, crop out along the coastline and are covered by unconsolidated dune sand (orange dots) and semi-consolidated sand (Qw) shown in yellow. Ls indicates a limestone resource (calcrete). (Council for Geoscience 1997, Worcester Sheet).



### 4.3 Vegetation Cover

The vegetation of the site consists of Overberg Dune Strandveld, classified as 'Least Threatened' the terrestrial area being part of a Critical Biodiversity Area (CBA). There is evidence of the vegetation having been recently burned by a veld fire. The mobile sand dunes on the coast consist of pioneer dune vegetation. From a visual perspective, the relatively low, wind-pruned vegetation provides little visual screening for large buildings and other prominent infrastructure.



*Frontal dune and coastal dune thicket in sheltered dune slacks, along with alien rooikrans vegetation.*

### 4.4 Land Use and Cultural Landscape

The site of the proposed abalone farm is currently undeveloped, (vacant agriculture) with recently burned strandveld type vegetation, invaded in places by alien Rooikrans and Port Jackson thickets.

The two dwellings close to the beach on the adjacent farm are orientated to the south-east, away from the site, although they fall within the viewshed of the proposed development. A number of farms are located on the more stable soils inland of the R43 Route.



*Existing house on the neighbouring farm is located on top of the dune and faces SE, away from the site.*

#### 4.5 Visual and Scenic Features (Maps 2 and 3)

The coastline consists of long white sandy beaches, which have high natural landscape and scenic value, as well as recreational amenity, including fishing.

The R43 Route, which connects Gansbaai with the Agulhas National Park to the east, forms part of the Overstrand's whale route, and could be considered a local scenic route with tourism significance.



*The R43 Route to the north of the site forms part of the Whale Route and Overstrand scenic route network. An existing powerline runs parallel with the road.*

#### 4.6 Protected Environments

There are a number of nature reserves along the coast, including Uilkraalsmond Reserve about 600 m to the west of the site, Pearly Beach Reserve about 3,5 km to the east, Quoin Point Reserve 15 km to the east, and the Agulhas National Park, also about 15 km to the east, (Map 2).

#### 4.7 Provincial Heritage Study

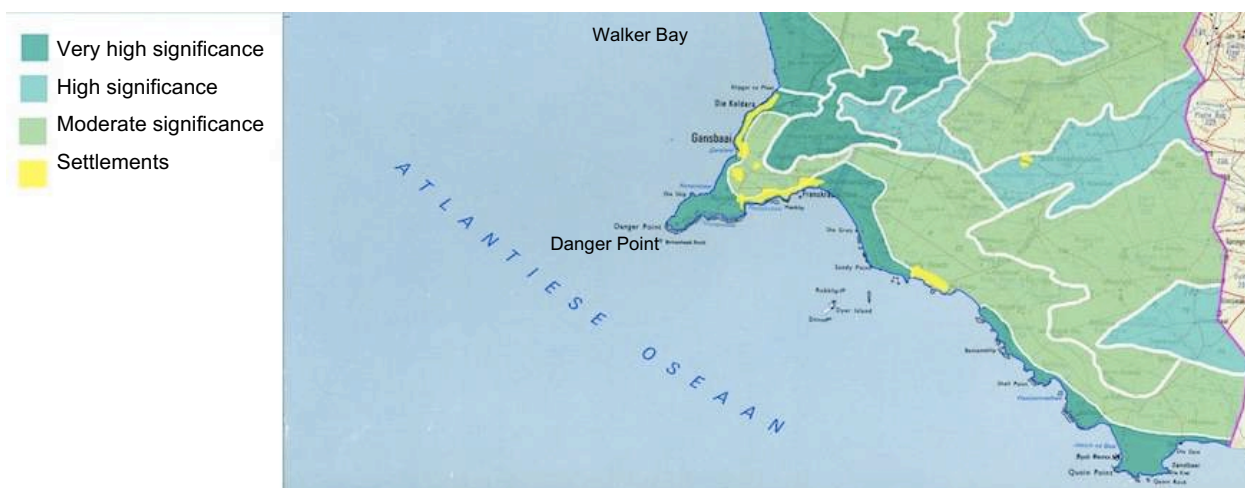
In a Heritage and Scenic Resources Report (Winter, S. and Oberholzer, B. 2014), prepared as part of the Western Cape Provincial Spatial Development Framework, The R43 coastal route was listed as having 'scenic, cultural and floristic landscape value', with a recommended heritage grading of III, which implies 'local significance'.

#### 4.8 Overstrand Heritage Survey

The Overstrand Heritage Survey (Baumann, N. *et al* 2009) prepared for, and adopted by the Overstrand Municipality, indicates that the coastline around Pearly Beach has high archaeological potential.

In the same Heritage Survey Report, the section on 'Landscape Character Assessment' (Oberholzer, B. 2008), indicates the coastal area between Franskraal and Pearly Beach (which includes the Uilkraalsmond Nature Reserve) as having an overall landscape significance rating of 'Very High Significance', based on a number of natural, scenic and cultural factors. The inland portion of the site is designated 'moderate significance' (see figure below).





Extract from Landscape Significance Map, Overstrand Heritage Survey, (Oberholzer, 2008).

#### 4.9 Overstrand Municipal Spatial Development Plan (MSDF)

Development principles in the MSDF for Pearly Beach include the following:

- Promote appropriate infill development (scale and form) within existing boundaries.
- Promote tourism development based on the ecological and heritage value of the region.
- Promote Pearly Beach as a retirement and tourism village.
- Restrict further expansion beyond the existing defined urban edge.
- Restrict commercial use to within clearly demarcated areas.
- Maintain the unique village / rural character of Pearly Beach.
- Maintain the preservation of the natural environment and the town's setting.

The MSDF principles and strategies are focused on the Pearly Beach urban area and provide little guidance for the surrounding farms.

## 5 Assessment of Visual Impacts

### 5.1 Potential Visual Impacts of the Project

#### *Construction Phase:*

- Potential dust, and wind-blown sand caused by heavy construction vehicles/ machinery.
  - Potential visual detraction and scarring of dunes resulting from the construction activities, earthworks and haul roads.
  - Increased construction vehicle traffic on the R43 Route.

#### *Operation Phase:*

- Potential visual intrusion caused by the considerable scale of the 6 phases, including the industrial type buildings, such as the processing facilities, pack house, and various ancillary structures, particularly where these occur on the skyline.
- Potential visual clutter caused by infrastructure such as above-ground pipelines and overhead powerlines.
- Potential visual intrusion of lights from buildings and outdoor security lighting.

#### *Decommissioning Phase:*

- Potential visual effect of remaining infrastructure, roads, platforms and concrete slabs on the landscape after decommissioning of the abalone farm.



*Indirect Visual Impacts:*

- Possible loss of natural and scenic attributes of the area and sense of place, with possible effects on recreation amenity value and tourism in the immediate area.

*Cumulative Visual Impacts:*

- Sets a precedent for the general change in character of the area from a natural landscape to a more industrialised (or commercial agricultural) landscape.

**5.2 Criteria for Determining Visual Impact Intensity***Visibility* (Table 2 and Map 3):

Based on the site visit and viewshed mapping, the proposed project could potentially be visible from the beach, the Uilkraalsmond Nature Reserve and the R43 Road. It is less likely to be visible from the Pearly Beach settlement because of view shadow effects caused by the undulating topography and foreground vegetation, although lights could be visible at night.

Possible degrees of visibility are indicated below, and from selected viewpoints in Table 2. (See also Photomontages in Figures 9-13). Visibility of lights at night could potentially be noticeable up to about 2 km. (See Photomontage, Figure 14).

High visibility:	Prominent feature within the observer's viewframe	0 - 500m
Mod-high visibility:	Relatively prominent within observer's viewframe	500 - 1 km
Moderate visibility:	Only prominent with clear visibility as part of the wider landscape	1 - 2 km
Marginal visibility:	Seen in very clear visibility as a minor element in the landscape	2 - 3 km

*Visual Exposure:* (Maps 5a to 5c)

The viewshed, or zone of visual influence, potentially extends for a distance out to sea, but is more restricted inland by the topography, parts of the area being in a view shadow, created by the dunes. As indicated on the viewshed maps, the zone of visual influence of the proposed abalone farm expansion and the processing plant would be fairly limited on the landward side.

*Scenic Resources / sensitive receptors:* (Map 4)

The sandy beaches and rocky headlands are visually sensitive landscape features. Potential sensitive receptors include the Pearly Beach settlement, surrounding farmsteads, the Uilkraalsmond Nature Reserve and users of the R43 route.

*Landscape Integrity:*

The surrounding area is renowned for its natural coastal scenic value and marine life. The landscape is largely intact except for nearby residential settlements, jeep tracks and sporadic invasive alien vegetation.

*Visual Absorption Capacity:*

The area around the project site is generally flat to gently undulating, with low fynbos scrub vegetation and therefore visually exposed, with moderate visual absorption capacity provided by the dunes, i.e. medium potential to screen any proposed structures.

The above visual criteria are summarised in Table 3 in order to determine visual intensity (severity) of the proposed abalone farm, processing plant and solar PV facility.

Table 2: Viewpoints and Potential Visibility of proposed Abalone Farm

View-point	Location	Coordinates	Distance	Visibility of the project
VP1	Castle Beach access boardwalk	34.666946°S 19.496532°E	2.4km	Marginally visible
VP2	Charlie van Breda Road, beach lookout	34.664882°S 19.492501°E	2.01km	Marginally visible
VP3	The beach, opposite the house on the dunes	34.661874°S 19.474315°E	502m	Moderately visible, partly screened by dunes
VP4	The beach, opposite the site	34.660800°S 19.467145°E	70m	Highly Visible
VP5	Rotunda Road at western end of Pearly Beach residential area	34.659454°S 19.480687°	860m	Moderately visible, but mostly screened by dunes and vegetation.
VP6	On ridge near Eluxolweni settlement	34.654411°S 19.484942°E	945m	Moderately visible, partly screened by ridges.
VP7	Access road near sewage works	34.649674°S 19.494992°E	836m	Moderately visible
VP8	R43 Route east of the site	34.643769°S 19.501490°E	627m	Highly visible
VP9	R43 Route west of the site	34.636222°S 19.488332°E	661m	Highly Visible, partly screened by vegetation.
VP10	R43 route near site boundary	34.638047°S 19.491371°E	318m	Highly Visible
VP11	Access road on eastern boundary of the site	34.644689°S 19.486696°E	332m	Moderately visible

Table 3: Visual Impact Intensity (severity) of full development phases

Visual Criteria	Comments	Southern abalone farm complex	Northern abalone farm complex	Solar PV Facility
<b>Visibility of facilities</b> (distance)	Based on visibility by receptors in the surroundings.	Med-high	Med-high	Low
<b>Visibility of powerlines</b>	Visibility of 9m poles along eastern boundary	Medium	Medium	Medium
<b>Visibility of lights at night</b>	Visibility of security lighting on the perimeter and at strategic infrastructure.	High	Med-high	n/a
<b>Visual exposure Level</b> (viewshed)	Viewshed extends along beach and out to sea. Partly restricted to the northeast by dunes.	Medium	Medium	Low
<b>Visual sensitivity</b> (features/receptors)	Effect on Pearly Beach, nature reserve, surrounding farmsteads.	Medium	Medium	Low
	Effect on beach users, R43	High	High	Low
<b>Landscape integrity</b> (intactness)	Effect on natural coastal and rural landscape character.	High	High	Low
<b>Visual absorption capacity</b> (screening)	Visually exposed coastal plain, low undulating dunes and low scrub vegetation.	Med-high	Medium	Low
<b>Visual Impact intensity</b>	<b>Summary</b>	<b>Medium to high</b>	<b>Medium to high</b>	<b>Low to medium</b>

Using impact assessment criteria provided by Lornay Environmental Consulting, the degrees of visual impact, as well as overall significance without and with mitigation, are determined in Table 4 below. (See Appendix A for criteria).

As the visual intensity for the southern and northern complexes of the proposed abalone farm are similar, these have been grouped in the assessment tables.

Table 4: Degree of potential visual impacts before and after mitigation

Criteria	Description
<b>Nature of impact</b>	<i>Construction Phase:</i> <b>Negative</b> , visual effect of construction activities. <i>Operation Phase:</i> <b>Negative</b> , visual intrusion of the project.
<b>Intensity</b> (severity) See Table 3 above	<i>Construction Phase:</i> Abalone farm: <b>Med-high</b> Solar PV array: <b>Low</b> <i>Operation Phase:</i> Abalone farm: <b>Med-high</b> Solar PV array: <b>Low-medium</b>
<b>Spatial extent</b>	<i>Construction Phase:</i> <b>Local scale</b> , Incl. construction traffic. <i>Operation Phase:</i> <b>Local scale</b> , Little visual effect beyond about 2km.
<b>Duration</b>	<i>Construction Phase:</i> <b>Short term</b> <i>Operation Phase:</i> <b>Long term to permanent</b>
<b>Consequence</b> (intensity x extent x duration)	<i>Construction Phase:</i> Abalone Farm <b>Low</b> Solar PV Plant <b>Low</b> <i>Operation Phase:</i> Abalone Farm <b>Medium-high</b> Solar PV Plant <b>Low</b>
<b>Probability of impacts occurring</b>	<i>Construction Phase:</i> <b>Probable</b> (for both abalone farm and solar PV plant). <i>Operation Phase:</i> <b>Probable</b> .
<b>Confidence of impact prediction</b>	<i>Construction Phase:</i> <b>High</b> <i>Operation Phase:</i> <b>High</b>
<b>Irreplaceability</b> (loss of resources)	<i>Construction Phase:</i> <b>Medium</b> (some modification to the landscape). <i>Operation Phase:</i> <b>Medium</b>
<b>Degree impact can be reversed</b>	<i>Operation Phase:</i> <b>Poor</b> , during operation. <i>Decommission. Phase:</i> <b>Good</b> , if site rehabilitated.
<b>Indirect visual impacts</b>	<i>Construction Phase:</i> <b>Medium</b> (noise). <i>Operation Phase:</i> <b>Med-high</b> (loss of rural character/ sense of place).
<b>Cumulative impact before mitigation</b>	<b>Low</b> , for Phase 1, <b>Medium</b> for development of all phases. Little or no other commercial or industrial development within 15km.
<b>Significance before mitigation</b> (consequence x probability)	<i>Construction Phase:</i> Abalone Farm <b>Medium</b> Solar PV Plant <b>Low</b> <i>Operation Phase:</i> Abalone Farm <b>Medium-high</b> Solar PV Plant <b>Low</b>
<b>Degree impact can be avoided</b>	<i>Construction Phase:</i> <b>Low</b> <i>Operation Phase:</i> <b>Low</b>
<b>Degree to which impact can be mitigated</b>	<i>Construction Phase:</i> <b>Medium</b> <i>Operation Phase:</i> <b>Medium</b>
<b>Proposed visual mitigation</b>	See mitigations in Section 6.
<b>Residual visual impacts</b>	Large-scale industrial-type buildings and lights at night in the rural setting. Powerline on the skyline.
<b>Cumulative impact after mitigation</b>	<b>Low to Medium</b> (as before mitigation).
<b>Significance of seafarm impacts after mitigation</b>	<i>Construction Phase:</i> Abalone Farm <b>Medium</b> Solar PV Plant <b>Low</b> <i>Operation Phase:</i> Abalone Farm <b>Medium</b> Solar PV Plant <b>Low</b>

### 5.3 Consideration of Alternatives

Two layouts were made available, followed by a number of refinements based on specialist studies. Therefore only the preferred alternative has been assessed. Further refinements will need to be considered, based on the visual mitigations recommended in the VIA and HIA.

In the no-go alternative, there would be no additional abalone farm facilities or access roads, and therefore no visual intrusion on the coastal landscape and on surrounding receptors would occur. At the same time no additional production or job opportunities would be provided.

The potential visual impact significance of the 'no-go' scenario would be **neutral** as there would be no further visual impacts and the existing strandveld vegetation would remain.

### 5.4 Assessment of Cumulative Impacts

Cumulative visual impacts would potentially occur from the combined development of all the proposed abalone farm phases (6 platform phases over several years), along with the development of the proposed processing plant, storage facilities and solar PV array.

Other existing abalone farms on the Danger Point Peninsula, are about 13km away. As abalone farms of this scale have little or no visual effect beyond about 2 to 3 km, it is estimated that the combination of the proposed project with the existing abalone farms would not have any influence on cumulative visual impacts.

## 6 Visual Mitigation Measures

### 6.1 Planning and Design Mitigation Measures

- Maintain a 42m minimum setback from the high water mark (HWM) for all structures, including paddle ponds, pump house, electrical rooms, parking and fencing, to provide adequate space for coastal dunes and screening of large scale structures when viewed from the beach. (Fig. 8).
- Increase the height of the frontal dunes to a minimum of 6.5m above MSL and stabilize the dunes with suitable planting to provide visual screening and coastal protection.
- Maintain a 100m minimum setback from the HWM for all other development, to minimize visibility of proposed 2-storey structures from the beach, and for coastal legislation purposes.
- Maintain a 60m minimum visual setback from the R43 property boundary to minimize visibility of the proposed development from the scenic / tourist route, (Fig. 7).
- Reduce the height of the feed manufacture and storage building (Building 'D') from 12m to 8.5m.
- Restrict the height of all buildings in the proposed development to 8.5m (eaves height) and 10.0m (top of gable, or roof line), measured from natural ground level.
- Construct a planted dune along the R43 boundary with a minimum height of 7.0m above road level. Spoil material from the earthworks for the development could be used.
- Except for gate posts at the entrance, no solid walls on the R43 to be permitted. Only see-through type fencing to be used, in order to retain the rural character of the area.
- Avoid locating powerlines on the crests of dunes or on high ground, where they will be visible on the skyline.
- Fit all security and perimeter lighting with sensors so that these are only activated by movement, to minimize the visual impact of lighting at night on the rural surroundings.
- Maintain existing topographic ridges and high points, where possible to maintain the visual integrity of the skyline seen from surrounding areas.
- Locate large structures in low-lying positions of the site, where possible, and minimize earthworks and disturbance to the site by taking the topography into account. Consider locating Platforms 3A and 3B further north to avoid high ground and excessive earthworks.

- Provide an earthworks plan, indicating levels of buildings, platforms and roads, and all cut and fill slopes, including embankment gradients. The earthworks plan to be submitted as part of the Basic Assessment submission.
- Consider grouping the proposed staff houses around a werf or courtyard, to create a more rural village character, instead of the current 'township' layout. Consider locating the housing complex in a NW-SE direction in keeping with the topography.
- Locate the solar PV arrays in a low-lying area, off any dune ridges, and in sympathy with the topography.
- Reduce the visibility of proposed seafarm buildings by using muted colours for wall and roofs.
- Screen buildings and infrastructure with planted earth berms (artificial dunes), where possible.
- Keep access roads as narrow as possible, as currently proposed, and use existing tracks where appropriate.



*Even small-scale water tanks are visually intrusive on the dunes. All structures and fences should be located behind the dune.*

## 6.2 Construction Mitigation Measures

- Locate the construction camp and related storage/stockpile areas in visually unobtrusive positions on the site, where these are not visible from the beach or R43.
- Provide measures to prevent wind-blown sand, dust and litter as part of the EMPr.
- Locate pipelines and powerlines underground, where possible.
- The EMPr to be monitored by an Environmental Control Officer (ECO).

## 6.3 Operation / Lighting Mitigation Measures

- Use infrared technology or movement sensors for perimeter security, to minimize the effect of ambient lighting at night on the rural surroundings.
- Keep general outdoor lighting as unobtrusive as possible through use of low-level bollard type lights, where needed, such as parking areas and footpaths.
- Use discrete external signage and avoid commercial advertising or billboard-type signs. Fix signs to buildings or walls, if possible, to avoid the visual clutter of signposts.

#### 6.4 Decommissioning Mitigation Measures

- On closure of the abalone operation remove all above-ground buildings and structures and recycle building materials.
- Rip and regrade all hardened platform areas and access roads that are no longer required.
- Regrade and revegetate exposed or disturbed areas and return these to natural strandveld to blend with the surroundings. (Revegetation measures to be prescribed by the vegetation/biodiversity specialist).

#### 6.5 Monitoring Recommendations

##### *Construction Phase Monitoring:*

Ensure that visual mitigation measures are included as part of the EMP, monitored by an ECO, including the siting of the construction camp and stockpiles, dust suppression and litter control measures, with regular reporting to an environmental management team.

##### *Operation Phase Monitoring:*

Ensure that visual mitigation measures are monitored by management on an on-going basis, including the control of signage, lighting and wastes on the site, with interim inspections by a delegated ECO.

##### *Decommissioning Phase Monitoring:*

Ensure that procedures for the removal of structures and stockpiles during decommissioning are implemented, including recycling of materials and rehabilitation of the site to a visually acceptable standard as prescribed in a rehabilitation plan, and signed off by the delegated authority.

## 7 Conclusion and Findings

The visual assessment, including the photographic montages of the proposed abalone farm, with its industrial-type buildings, indicates that the project could have a significant visual effect on both the rural landscape and on sensitive receptors once the full 6 phases have been implemented, particularly viewed from the R43 Route and the beach.

A previous study indicates that the coastal portion of the site falls within an area of 'very high landscape significance'. The site is also within 600m of the Uilkraalsmond Nature Reserve.

Much of the undulating dune topography would need to be formed into flat sites to accommodate the large footprints of the tank platforms, which would in turn reduce the screening effect of the dunes.

The skylines of the dune crests are visually sensitive, and the visual effect of lights at night in a rural context are an additional concern.

A number of essential visual mitigations have been recommended, which could help to reduce the significance of the visual impacts and should be included when making refinements to the site development plan.

The scenic and recreational value of the beach and coastal dunes means that these should be conserved for both their visual screening function and the protection they provide for storm surge events, not to mention climate-change adaptation imperatives.

The visual mitigations, if implemented, could help to reduce the visual impact significance to medium, based upon which the project could be approved, from a visual perspective.

Table 5: Summary of Visual Impacts Without and With Mitigation

Impact	Nature of impact	Consequence			Probability	Significance without mitigation	Degree to which impact:			Significance with mitigation
		Intensity	Extent	Duration			Reversibility	Irreplaceability	Possibility for mitigation	
<b>Abalone Farm</b>										
Construction Phase	Negative	Med-high	Local	Short-term	Probable	Low	Low	Medium	Medium	Low
Operation Phase	Negative	Med-High	Local	Long term	Probable	Medium-high	High if decommissioned	Medium	Medium	Medium
<b>Solar PV Plant</b>										
Construction Phase	Negative	Med-Low	Local	Short-term	Probable	Low	Low	Medium	Medium	Low
Operation Phase	Negative	Med-Low	Local	Long term	Probable	Low	High if decommissioned	Medium	Medium	Low



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## APPENDIX A:

**Table A.1: Criteria for visual impact assessment (adapted from SLR, 2018).**

Criteria	Rating	Description
<b>INTENSITY (SEVERITY) of environmental impacts</b>	<b>ZERO TO VERY LOW</b>	Negligible change, disturbance or nuisance. Landscape and scenic resources are not affected. Visual receptors are not adversely affected.
	<b>LOW</b>	Minor (Slight) change, disturbance or nuisance. Impact on the landscape or receptors is not detectable.
	<b>MEDIUM</b>	Moderate change, where the landscape is altered, but scenic resource remain largely intact. Receptors are not seriously affected.
	<b>HIGH</b>	Prominent change, disturbance or degradation where scenic resources are altered to a noticeable extent. Receptors and property values are patently affected.
<b>DURATION of impacts</b>	<b>SHORT TERM</b>	< 5 years.
	<b>MEDIUM TERM</b>	5 to < 15 years.
	<b>LONG TERM</b>	> 15 years, but where the visual impact will eventually cease through decommissioning.
	<b>PERMANENT</b>	Where mitigation will not occur in such a way or in such time span that the impact can be considered transient.
<b>EXTENT / SPATIAL SCALE of impacts</b>	<b>LOCAL</b>	Impact is confined to project or study area or its immediate surroundings.
	<b>REGIONAL</b>	Impact is confined to the municipal region.
	<b>NATIONAL</b>	Impact is confined to the country.
	<b>INTERNATIONAL</b>	Impact extends beyond the national scale.
<b>PROBABILITY of impacts</b>	<b>IMPROBABLE</b>	Where the possibility of the impact to materialise is very low i.e. $\leq 30\%$ chance of occurring.
	<b>POSSIBLE</b>	Where there is a distinct possibility that the impact would occur, i.e. $> 30$ to $\leq 60\%$ chance of occurring.
	<b>PROBABLE</b>	Where it is most likely that the impact would occur, i.e. $> 60$ to $\leq 80\%$ chance of occurring.
	<b>DEFINITE</b>	Where the impact would occur regardless of any prevention measures, i.e. $> 80\%$ chance of occurring.
<b>DEGREE OF CONFIDENCE of the assessment</b>	<b>LOW</b>	$\leq 35\%$ sure of impact prediction.
	<b>MEDIUM</b>	$> 35\%$ and $\leq 70\%$ sure of impact prediction.
	<b>HIGH</b>	$> 70\%$ sure of impact prediction.
<b>DEGREE TO WHICH IMPACT CAN BE MITIGATED</b>	<b>NONE</b>	No change in impact after mitigation.
	<b>VERY LOW</b>	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
	<b>LOW</b>	Where the significance rating drops by one level, after mitigation.
	<b>MEDIUM</b>	Where the significance rating drops by two to three levels, after mitigation.
	<b>HIGH</b>	Where the significance rating drops by more than three levels, after mitigation.
<b>LOSS OF RESOURCES</b> - the degree to which a resource is irreplaceable	<b>LOW</b>	Where the activity results in a loss of scenic resources but where the natural, cultural and social functions and processes are not affected.
	<b>MEDIUM</b>	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified way.
	<b>HIGH</b>	Where the activity results in an irreplaceable loss of a resource.

Table A.2: Determining Consequence (SLR, 2018)

Rating	Description
VERY HIGH	Impacts could be EITHER: of <i>high intensity</i> at a <i>regional level</i> and endure in the <i>long term</i> ; OR of <i>high intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>long term</i> .
HIGH	Impacts could be EITHER: of <i>high intensity</i> at a <i>regional level</i> and endure in the <i>medium term</i> ; OR of <i>high intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>long term</i> ; OR of <i>high intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>long term</i> .
MEDIUM	Impacts could be EITHER: of <i>high intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>medium term</i> ; OR of <i>high intensity</i> at a <i>regional level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>regional level</i> in the <i>long term</i> .
LOW	Impacts could be EITHER of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>high intensity</i> at a <i>local level</i> and endure in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>short term</i> ; OR of <i>low intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>medium intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> .
VERY LOW	Impacts could be EITHER of <i>low intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>short term</i> ; OR of <i>low to medium intensity</i> at a <i>local level</i> and endure in the <i>short term</i> . OR <b>Zero to very low intensity</b> with any combination of extent and duration.

Table A.3: Determining Significance (SLR, 2018)

		PROBABILITY			
		IMPROBABLE	POSSIBLE	PROBABLE	DEFINITE
CONSEQUENCE	VERY LOW	INSIGNIFICANT	INSIGNIFICANT	VERY LOW	VERY LOW
	LOW	VERY LOW	VERY LOW	LOW	LOW
	MEDIUM	LOW	LOW	MEDIUM	MEDIUM
	HIGH	MEDIUM	MEDIUM	HIGH	HIGH
	VERY HIGH	HIGH	HIGH	VERY HIGH	VERY HIGH