DRAFT

ENVIRONMENTAL SCOPING REPORT

Onshore Salt Mining on EPL 8757, 36 Km North West Of Henties Bay, Erongo Region, Namibia

August 2022

EAP / Consultant:

ERONGO CONSULTING GROUP

Proponent:

Frampton Investment CC
t/a Henties Bay Salt Mining

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Disclaimer	As the lead environmental assessment practitioner (EAP) undertaking this environmental scoping report with assessment I hereby declare my independence from the proponent. There is no conflict of interest with respect to my taking up this project for Frampton Investment CC. I am aware that there is currently a legal dispute between the proponent and the other mineral licence holder that is developing new crystallisers and accessory works infrastructure at the EPL 8757 salt pan. Every attempt has been made to maintain objectivity regarding the salt mining project as presented to me by the proponent.

EXECUTIVE SUMMARY

Frampton Investment CC plans to develop a solar salt production facility at EPL 8757 salt pan, some 36km north of Henties Bay town in the Erongo Region. The saline pan lies within the Dorob National Park along the central coastline north of the town of Henties Bay. Frampton Investment CC was granted an exploration licence (EPL8757) over the surrounding of this pan. The area is around 578.2491 hectares. The location is flanked by other salt mining claims and enterprises that are not open to the public. The company intends to apply for a mining licence over the area for producing salt on the saline pan.

Frampton Investment CC plans to construct crystallisers within the salt pan, develop an accessory works area and complete the development of a new section of coastal road.

The area around the saline pan has been disturbed to varying degrees over many decades. This includes multiple roads and vehicle tracks for access to the saline pan for mining and to the beach for fishing. The gravel plains and washes around the pan fell prey to various types of disturbance, namely, the clearing of areas for the construction of buildings utilised for mining and tourism.

The main motivation for the project is to achieve the necessary economy of scale for a successful outcome for the salt projects in the greater Erongo Region, and Namibia at large.

Public Participation

Public consultation was thorough and Interested and Affected Parties (I&APs) were well informed about the project. I&APs had an opportunity to ask questions and raise their various concerns. Upon completion of this report and drafting of the environmental management plan (EMP) the Interested and Affected Parties have had an opportunity to provide additional input during the public review period.

Project Screening

At the start of the project and confirmed through site visits and public participation aspects were evaluated for their need to conduct in depths assessment. This screening determined the terms of reference of the impact assessment phase. Specialists were commissioned to undertake baseline studies and impact assessment. The outcomes of the mitigated impact assessments are tabulated below. A summary statement for each impact assessment is also provided below. This report is thus the product of the shortened EIA process and is referred to as an Environmental Scoping Report (ESR).

Based on the final screening process the following specialist studies were included:

1. Flora Assessment Study
2. Fauna Assessment Study
3. Marine Ecology Assessment Study
4. Archaeology Assessment Study
5. Traffic Assessment Study

Alternatives for the various aspects of the envisaged development were discussed with the individual specialists and, based on their input, with due consideration of the comments received by the public and stakeholders and the proponent's development plan, the options were described. Options were weighed in the assessments phase.

The preferred project alternatives have been fixed as follows:

- The project location at EPL8757 salt pan is vital to the success of the costal region salt project.
- Placement of the brine pipeline would be on the east side of the coastal road.
- Only one bitterns discharge pipeline / outlet would be constructed.
- Re-routing of the road goes ahead as planned. The two re-routing options to the east of the current coastal road were assessed by the specialist engineer.

Biodiversity Studies

The biodiversity studies identified 5 habitats based on the terrain and physical features. These are as follows:

- Rock outcrops
- Saline pan
- Coastal Hummocks
- Gravel plains
- Washes

The rock outcrops and the coastal hummock dunes were deemed the most sensitive. The accessory works area covered an area consisting of gravel plain and rock outcrops that represent disturbed environments to the east of the saline pan. Most of the mining activity will take place within the saline pan and secondly on the gravel plain adjacent to the saline pan. These 2 habitats have been disturbed over the preceding decades. The assessment considered all project activities and how they could potentially impact the various habitats.

Flora

The assessment also included the existing disturbed areas within the planned mining licence area, along the new road route and within the road reserve of the coastal road along which the brine pipeline extends. These disturbed areas moderated the severity, consequence and significance of the impact even without the consideration of mitigating measures that might decrease the significance.

The impacts on the plant and lichen biodiversity of the salt production on the salt pan and construction of infrastructure within the planned accessory works area was deemed to be low provided the mitigation measures are implemented during the various phases of the project's existence. The impacts on the plant and lichen biodiversity of the construction and operation of the new road section and brine pipeline was also deemed to be low provided the mitigation measures are implemented by the company.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Impact	**Mining activities may affect the ecology and biodiversity of flora directly or through habitat alteration within the planned mining area.**					
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Impact	**Brine pipeline construction, operation and decommissioning may affect the ecology or biodiversity of flora directly or through habitat alteration along the planned route.**					
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Impact	**Construction and operation of the new section of coastal road decommissioning may affect the ecology or biodiversity of flora directly or through habitat alteration along the planned route.**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

The recommended mitigation measures have been incorporated into the Draft EMP. The essential mitigations are listed here.

The spatial extent of the crystallisers should be kept to within the saline pan area as planned.

The two planned bittern discharge structures that will cross the coastal hummock habitat should be reduced to one crossing pipeline only.

Submerge the bitterns pipeline in order to allow free movement along the north south axis.

The accessory works area for the processing plant, product stockpiling, workshops and offices must be allocated to the planned area only and any rocky outcrops within this predominantly gravel plain habitat must not be removed or constructed upon. The planning of the mine accessory works area layout must endeavour to reduce the footprint to a minimum

- Driving is only allowed on existing tracks as per Dorob National Park rules.
- The brine pipeline should be built on the edge of the road reserve as this land has already been disturbed.
- The pipeline can be placed under the ground where washes intersect the pipeline route.
- Placement of the pipeline on the eastern edge of the road reserve acts as a barrier to off-road driving.

- Covering the pipeline along its entire length with gypcrete or desert gravel will not only hide the presence of the pipeline, it will potentially provide a small barrier for trapping seeds which could potentially germinate. A negative aspect of creating a mound is that vehicle owners may be more easily tempted to breach the mound and thereby possibly damage the pipeline. An exposed pipeline could be a deterrent from entering the Dorob National Park indiscriminately and help to enforce the use of designated roads or tracks. Ultimately, the requirements of the Roads authority and the Dorob National Park management team needs must be met.

Fauna

The coastal hummock dunes are considered as very sensitive habitat. With the exception of the proposed bittern pipeline, the dune hummock belt should be designated a no-go area. No development should be allowed in the dune hummocks except the bittern pipelines and an access corridor that will allow routine maintenance.

The saline pan is considered least sensitive. Following the precautionary principle, it is suggested that brine ponds be identified, and samples taken from them to identify any macro invertebrate fauna that might occur. Regular monitoring of these brine ponds should take place during the mining operations.

The gravel plains are sensitive but of low concern, provided that activity remains within the proposed boundaries of the operational and accessory works area.

The washes are deemed sensitive areas. Neither the crystallisers nor the accessory works area will intrude into this habitat. Only the brine pipeline will pass through a few washes along the disturbed environment of the road reserve.

The rock outcrops are considered very sensitive. The accessory works area, although small in surface area, will be located where rock outcrop occurs and these individual spots should be avoided. From the historical and recent satellite imagery it is evident that much of the rock outcrops within the accessory works area has been disturbed.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Impact	**Direct and indirect loss of habitats and organisms; disturbance of ecological processes**					
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Impact	**Brine pipeline as a barrier to the normal movement of animals**					

Mitigated	**L**	**L**	**M**	**L**	**L**	**L**
Impact	**Bitterns discharge pipeline - direct and indirect loss of animals, as well as destruction and/or disturbance of part of a highly sensitive habitat**					
Mitigated	**L**	**M**	**L**	**L**	**L**	**L**

Impact	**New road route - direct and indirect loss of animals, as well as destruction and/or disturbance of habitat**					
Mitigated	**L**	**M**	**L**	**L**	**L**	**L**

- It should be noticed that the outcome of the significance of the impacts is low but conditional on applying specific mitigation measures. These are incorporated in the Draft EMP. A few essential mitigation measures are mentioned here below.
- Limit the footprint of the crystallisers and accessory works to the currently planned size and location (i.e. saline pan and gravel plain west of new road diversion, allow only one access point through coastal hummocks and minimise the routes through rock outcrop areas to only that which is absolutely necessary.
- Strictly keep all development in the southern sector of the saline pan within the boundary of the saline pan. No roads or pipelines may be developed in the gravel plains in the southern sector of the mining licence as this is part of the strict nature reserve area of the Dorob National Park.
- Do not expand to the east/northeast of the planned diversion road or planned accessory works area.
- Ensure that the coastal hummocks are accessed only for maintenance of the bittern pipelines. Enforce the dune hummocks as a no-go area.
- Provide ablution facilities and train staff and contractor staff about indiscriminate defecating.
- With respect to the bitterns' pipeline limit vehicle access for maintenance to a single-lane track directly next to the pipeline.
- Keep disturbance (i.e. pipeline and maintenance track) to as narrow a corridor as possible.
- Lay the pipes below the surface of the hummock dunes.
- With respect to the new road, during construction, keep disturbance within the designated footprint of the road and verges.
- After construction, start rehabilitation as soon as the disturbance has ceased.
- Put effective barriers along new road and C34 to prevent vehicle access to the washes and rocky outcrops, while not affecting the movement patterns of hyenas, jackals and springbok.

Marine Ecology

Taking into account the characteristics of the bitterns discharge from the salt works, potential impacts are most likely to target marine ecosystems in the immediate vicinity of the discharge and beneficial uses that rely on the health of marine organisms and plants, such as recreational angling.

Certain areas of special interest that may potentially be impacted by the discharge of bitterns into the marine environment were identified. These specific areas include:

- The natural intertidal and shallow subtidal beach environments adjacent to the discharge site; and
- Recreational surf-angling.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Impact	**Impacts of elevated salinity on the physiological functioning of marine organisms**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Impact	**Impacts of elevated temperature on the physiological functioning of marine organisms**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Impact	**Impacts of ionic imbalances in the bitterns on the physiological functioning of marine organisms**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Impact	**Impacts of nutrient enrichment in the surf zone following release of bitterns**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Even though all potential marine ecology impacts resulting from the bitterns' disposal were assessed to be of low significance mitigation measures and management actions have been proposed and are applicable to all the impacts. These have been incorporated into the Draft EMP. A few essential ones are mentioned here below.

- Discharging through a single bitterns' outlet only (i.e. either the northern OR the southern option, but not both) thereby restricting the impact footprint;
- Monitoring of bitterns' density and ionic concentrations composition prior to release onto beach;
- Monitoring of discharge volumes and discharge rates on release of bitterns;
- Positioning of the discharge point as far down (i.e. nearer to sea) the beach as possible (e.g. through a flexible end section of the pipeline);
- Discharge of bitterns at half tide or higher during the ebbing tide only to maximise the effects of dilution;
- Reporting of any mortalities of marine life in the vicinity of the bitterns outlet as a direct consequence of the discharge.

Archaeology

A systematic foot survey of the proposed accessory works area revealed a single archaeological site close to the north-western margin of the project area in low-lying ground on the leeward side of a weathered dolerite dyke.

The site consisted of dispersed stone features probably representing windbreaks. There were no artefacts or other archaeological remains visible on the surface. The stone features are similar to those found in the vicinity of Cape Cross and Wlotzkasbaken.

Although the stone features appear to be undisturbed, the site lies on the edge of a large excavated pit with associated spoil heaps. The site is also crossed by a disused vehicle track.

It has been recommended that if the site does not lie unavoidably in the path of the proposed activities it should be demarcated and left undisturbed. The impact assessment resulted in a low significance subsequent to this mitigation. In addition to this the specialist stated that although undisturbed, the site that was discovered is considered to have negligible research value.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
The accessory works may cause physical disturbance or destruction of an archaeological site						
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Socio-economic

The proposed salt production facility will contribute towards the achievement of NDP5 in creating value-addition to Namibia's raw materials and in creating jobs.

Many positive impacts can be enhanced with careful management, and mitigation measures have been proposed which will reduce negative impacts.

The project will make a long-term contribution to the local, regional and national economy as operations could potentially continue for many decades. It is recommended that mine and processing staff live permanently in Henties Bay and commute daily to the salt works; on site accommodation should only be used for a limited compliment of personnel that may be required for maintenance or shift work. This will maximise benefits to the local economy and to employees' families. The proponent's salaries and benefits package must encourage home ownership which will help improve the housing stock. It is recommended that haulage truck operators should live in all three coastal towns to maximise the continuous flow of trucks yet enable the drivers to maintain a stable family life.

Salt production, tourism and restricted access to conservation areas have co-existed for many years in the area. There is a risk that increases in salt mining rates, processing and haulage may impact on the wider area's sense of place. This needs to be carefully monitored

and if negative impacts are too significant, mitigation measures may be needed such as a moratorium on night-time activities. The proponent must take the lead in engaging with local stakeholders to maximise synergies which will benefit all parties in the area.

Overall, salt mining and purification works will bring much needed, stable, socio-economic benefits to the local communities. The proposed project will at the very least supplement the salt production but could cumulatively add to the overall salt production.

The following table summarises the outcomes of the impact assessment for the salt project. The assessment is with mitigation measures implemented. The positive outcomes are significant.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Impact	**Employment Creation and Skills Development**					
Mitigated	**H+**	**H**	**H**	**H**	**H**	**H++**
Impact	**Economic Impacts at a local, regional and national level**					
Mitigated	**H+**	**H**	**H**	**H**	**H**	**H++**
Impact	**Increased demand for improved housing and schools**					

Road Safety or Traffic

Salt works vehicular movements across the existing main road increases the risk of 3rd party accidents. Due to the road being a salt road there are no road markings on the road. A fact which poses a risk to driver safety. Drivers are therefore reliant on Road Signs which currently consist of 'no road marking' signs, 'no-overtaking' signs, general warning signs and 'slippery when wet' signage. A mitigation measure is to add road signage to the new proposed deviation such as warning signs at the new proposed intersections leading onto the main road as well as speed limit signs and delineators next to the road shoulders to make drivers more alert of the imminent dangers.

Maintenance of the salt road was also considered in the impact assessment. The maintenance requirements of the south-bound lane with maximum axle loads will be an order of magnitude higher than that of the north-bound lane carrying empty trucks. The delays to traffic due to watering and grading can lead to frustration and risk taking by both truck drivers and the public. The maintenance of the new proposed deviation is not the responsibility of the proponent, but the responsibility of the Namibia Roads Authority as the owner of the road.

The frequency of maintenance on the road is not known by the author, but there is a maintenance plan in place by the Namibia Roads Authority in maintaining the Salt Road on a frequent basis.

Mitigation measures would be to take the maintenance operations into account in the planning of the transport operations of the salt mine in order not to have excess traffic of the salt mine piling up on the road.

Based on the Safety Audit conducted, the major concern is the fact that the proposed deviation will also be a salt road and that no road markings will be available. The usage of more informative traffic signs and reflective edge delineators will mitigate the imminent dangers. It is therefore recommended that:

- Warnings of salt roads having no road markings must be provided at both ends of the deviation and at the proposed T-junction.
- The warning of slippery when wet should be combined with the previous warning of salt road no road markings, either as a separate warning sign with 500m intervals, or a part of a high visibility combination sign.
- The new proposed junction should be widened to have deceleration and acceleration lanes to allow three lanes of traffic to be accommodated.
- Edge markers (delineators) in the form of white poles with yellow reflective strips must be maintained at standard spacing and at features (e.g., corners and vertical changes).
- The maintenance operations of a salt road must be taken into account in the planning of the transport operations of the salt mine.

The following table provides the outcome of the impact assessment after mitigation measures are implemented.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Impact	**Horizontal alignment: Salt works vehicular movement crossing the existing road**					
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Impact	**Lack of road markings and road signs poses a risk to safety**					
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Impact	**Maintenance of salt road causes frustration and risk**					
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Management Plan

All of the mitigation measures listed by the specialists have been considered for inclusion in the Draft Environmental Management Plan (EMP). Where a mitigation measure was deemed unrealistic and not necessary, justification for the decision is given. The Draft EMP also provides the monitoring requirements as well as the required rehabilitation activities.

Due to the long-term sustainability of salt production it is unlikely that the mine would ever need to close. Fluctuations in market demand may affect the mine from time to time. Should the mining project have to be closed permanently then rehabilitation of the mining area would need to be undertaken. A mine closure plan should take into consideration the recommended rehabilitation measures highlighted in EMP. Some rehabilitation should take place at the end of construction phase where activities resulted in disturbances along the pipeline route, road re-routing section of the road and along the bitterns' pipeline route.

Concluding Remarks

The EAP deems the project to be acceptable considering the input of the specialists and the low significance of the impacts provided the necessary mitigation measures and ongoing rehabilitation measures are all implemented with monitoring.

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1. INTRODUCTION

Frampton Investment CC (hereafter referred to as Henties Bay Salt Mining) is a wholly Namibian-owned private company, which was established by a number of Namibian partners. The focus of of the company is in the industrial mineral sector and specifically the development of salt mining projects in Namibia. The main motivation for the EPL 8757 salt mining project is to achieve the necessary economy of scale for the greater Cape Cross salt production area.

The proponent has commenced with an Environmental Impact Assessment (EIA) process based on the requirements of the Environmental Management Act (Act. No. 7 of 2007) and associated EIA regulations Government Notice (GN) No. 29 and 30. An Environmental Clearance Certificate (ECC) for the construction and operation of the proposed mining and processing activities is required and thus an EIA application with associated support documents need to be developed for submission to the Ministry of Mines and Energy (MME), as the Competent Authority. MME will review the application, including the relevant reports and submit their comments to the Ministry of Environment Forestry and Tourism (MEFT) for the review and decision. A mining licence (ML) application lodged with MME will follow this EIA process. Section 3 describes the EIA process that has been followed for this project. The proponent appointed Erongo Consulting Group, an independent Environmental Assessment Practitioner (EAP), to undertake the assessment and compile this Environmental Scoping Report with Assessment (ESR) and Environmental Management Plan (EMP) in support of the application for environmental clearance.

The proponent intends to develop a new solar salt crystallization facility with salt washing plant and accessory works at the EPL8757 saline pan. The planned project is located along the northern-central Namibian coast within the Dorob National Park some 36km north of Henties Bay.

2. ADMINISTRATIVE AND LEGAL FRAMEWORK

The only site-specific law and regulations which are pertinent to the project are pertaining to the Dorob National Park, which was gazetted as a national park under the Nature Conservation Ordinance No. 4 of 1975 on 1 December 2010.

In agreement with the national legal framework, there are several acts, policies, ordinances and regulations that govern the statutory decision-making process. In addition, Namibia is a signatory to several international conventions and agreements that bind Namibia to sustainable development and the conservation of biodiversity. The most relevant documents are listed in the following **Table**.

Table 1: Legal requirements and international agreements

LEGISLATION/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
Namibian Constitution First Amendment Act 34 of 1998	- "The State shall actively promote… maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future" (Article 95(l)).	- Ecological sustainability should inform and guide this EA and the proposed development.
Environmental Management Act EMA (No 7 of 2007)	- Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). - Details principles that are to guide all EAs.	- The EMA and its regulations should inform and guide this EA process.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	- Details requirements for public consultation within a given environmental assessment process (GN 30 S21). - Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	
Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	- Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)).	- Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation

	- Prohibits the removal of and transport of various protected plant species.	of vegetation.
Labour Act 11 of 2007	- Details requirements regarding minimum wage and working conditions (S39-47).	- The Walvis Bay Municipality and Proponent should ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	
Public Health Act 36 of 1919	Section 119 states that "no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	
National Heritage Act 27 of 2004	Section 48(1) states that "A person may apply to the [National Heritage] Council [NHC] for a permit to carry out works or activities in relation to a protected place or protected object".	Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the NHC for relocation.
Burial Place Ordinance 27 of 1966	Prohibits the desecration or disturbance of graves and regulates how bodies may be unearthed or dug up.	Regulates the exhumation of graves.
Water Resources Management *Act* 11 of 2013.	To provide for the management, protection, development, use and conservation of water resources; to provide for the regulation and monitoring of water services and to provide for incidental matters.	The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon spills during operation and maintenance.
Namibia Water Corporation Act 12 of 1997	To establish the Namibia Water Corporation Limited; to regulate its powers, duties and functions; to provide for a more efficient use and control of water resources; and to provide for incidental matters.	
Urban and Regional Planning Act (No. 5 of 2018).	- Subdivision of land situated in any area to which an approved Town Planning Scheme applies must be consistent with that scheme (S31).	- The proposed use of the project site must be consistent with the Walvis Bay Town Planning Scheme
Road Ordinance 1972	- Width of proclaimed roads and	- The limitations applicable on RA

(Ordinance 17 0f 1972)	road reserve boundaries (S3.1) - Control of traffic on urban trunk and main roads (S27.1) - Rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads (S36.1) - Infringements and obstructions on and interference with proclaimed roads. (S37.1) - Distance from proclaimed roads at which fences are erected (S38)	proclaimed roads should inform the proposed layout and zonings where applicable.
Draft Dorob National Park Tourism Plan (2015)	Delineation of environmentally sensitive areas (See Section 5.7)	
Marine Resources Act, 2000	• Conservation of marine ecosystem • No disturbance of seabirds and seals • Dumping and discharge of waste • Disturbance of marine fauna • Declaration of protected areas and steps to be taken before • declaration	
National Policy on Prospecting and Mining	Excludes certain zones from prospecting and mining – See in Protected Areas, 2018 section 5.7. The Dorob National Park is not included in the exclusion list. The policy provides a map showing those parks that do not allow any mining or prospecting.	
Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1994)	Guidance for undertaking environmental impact assessments	
National Policy on Prospecting and Mining in Protected Areas, 2018	Excludes certain zones from prospecting and mining – See section 5.7. The Dorob National Park is not included in the exclusion list. The policy provides a map showing those parks that do not allow any mining or prospecting.	
Nature Conservation Amendment Act 5 (1996)	Conservation	
Nature Conservation General Amendment Act 1990	Conservation	
Nature Conservation Ordinance 4 of 1975 Declaration of protected areas, as well as the protection status with amendments and special regulations		

3. EIA Scoping Process

This section outlines the process from the project registration through to compilation of the ESR and Draft EMP. The following sub-headings follow almost exactly the chronological stages of this EIA project.

3.1. Initial Project Screening

The proponent wants to start mining salt at EPL 8757 salt pan. For application for a Mining Licence at the MME an environmental clearance is required. The proponent approached me, the EAP and requested a proposal to undertake the necessary EIA in order to apply for an environmental clearance for the envisaged project. The proposal submitted to the proponent considered the activities that were listed in the proponent's scope of works.

Drafting of the proposal required a first round of screening, which considered existing knowledge about the area and its bio-physical environmental, the project scope of works and any gaps in the information. The EAP considered it imperative at this point to include specialist studies for the fauna and flora, and to include a traffic safety assessment by engineers for re-routing of the road around the salt pan at EPL8757.

3.2. Project Alternatives

The alternatives have been formulated through discussion with the proponent and through the public consultation process. Project alternatives are divided into two categories.

Firstly, the 'no go' based on environmental grounds would have been considered if the impact assessment resulted in significant impacts regardless of any mitigations.

Secondly, should the planned project go ahead at EPL8757, the following project alternatives were to be weighed up during the assessment. These are listed as follows:

- Placement of the brine pipeline on east side of the road or the west side.
- The covering or submerging of the brine pipeline as opposed to leaving the pipeline on the surface.
- The necessity of one as opposed to two bitterns discharge pipelines.
- Three options for the route of the coastal salt road. These include leaving the road where it is or using one of two re-routing options to the east of the current coastal road.
- The extent of the crystallisers and accessory works area in terms of the neighbouring EPL holders' activities.

3.3. Public Participation

The Environmental Management Act and the Environmental Assessment Regulations (MET, 2012) require that the proponent provide the public with details of the project during a public participation process. Consultation with the public forms an integral component of an Environmental Impact Assessment (EIA) and enables Interested and Affected Parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with the proposed operations and to identify additional issues which they feel should be addressed in the scoping (including assessment) phase. Consultation was initiated and facilitated through notification letters, site and press notices.

3.3.1. Site Notices

Due to the location of the area / site (remote), it wasn't deemed necessary to have site notices.

3.3.2. Press Notices

Press notices were placed in two widely distributed newspapers – Namib Times and New Era - for two consecutive weeks providing details of the project whilst giving the public an opportunity to register as I&APs. No objections, comments, or opinions were received.

3.3.3. Stakeholder Notification & Background Information Document

A Background Information Document (BID) was emailed to the various I&APs throughout the initial public participation process. Local government ministry officials received the BID by email:

- Henties Bay Municipality
- Erongo Region Governor's office,
- Erongo Region Government offices,
- the Chief warden of the Dorob National Park,

No comments or concerns were directly received by these stakeholders via email.

The BID document provided an overview and non-technical summary of the proposed development and acts as an easy reference to the proposed project.

3.4. Project Screening Decision

The following renders summary points from the consultation process that are either a priority or worthy of repeating.

Some aspects described in this report have been assessed without a specialist study as based on prior available secondary sources in the form of reports, professional judgement and direct observations made by the EAP. Those aspects that were not expected to be of effect and not expected to result in significant impacts were not considered for specialist studies. Some aspects have been considered for inclusion in the EMP in terms of mitigation measures and monitoring requirements for typical or industry norms even though no formal impact assessment was carried out either by a specialist or based on secondary data sources.

Table 3 lists the aspects, summary description statements, potential impact severity and rationale to undertake an impact assessment or if such is not required. That is, whether the aspect was included or excluded from the impact assessment and lastly whether a specialist study was required or not for that particular impact assessment. This table must be read with the various project activities and facilities (Section 4) and the baseline environmental and social conditions.

Table 2: Screening Process for the Terms of Reference for the Impact Assessments

Aspect	Summary Description	Potential Impact Severity and Rationale to undertake an impact assessment	inclusion or exclusion from the impact assessment	Specialist study
Noise	Mobile plant and fixed processing plant produce noise.	Noisy machinery can potentially affect the environment by disturbing the natural and social environment. The latter will not be affected because the remote setting of the mine can have not negative effect on urban life either at night or in the day. The effect on large fauna is unlikely to be significant.	Exclusion	no
Flora	Plant and lichen biodiversity and ecological functioning	Potential exists that habitats and biodiversity may be negatively affected. This could lead to a lowering of biodiversity and ecological functioning. Severity is at least expected to be moderate or measurable.	Inclusion	no
Fauna	Vertebrate biodiversity and ecological functioning	Potential that habitats and biodiversity may be negatively affected does exist. This could lead to a lowering of biodiversity and ecological functioning. Severity is at least expected to be moderate or measurable.	Inclusion	no
Marine	Ecological functioning of the marine intertidal zone	Potential exists that the marine intertidal zone may be negatively affected. This could lead to a lowering of biodiversity and ecological functioning. Severity is at least expected to be minor but unsure of the confidence level.	Inclusion	no
Archaeology	The existence of important heritage sites or artefacts within the mining licence area	Due to the highly disturbed nature of the mining licence area a minor severity of impact is expected but unsure of the confidence level. Included under the precautionary principle.	Inclusion	no
Socio-economic	The increase in employment opportunities and the	The potential impact is expected to be a positive and cumulative impact.	Inclusion	no

	nation's revenue through taxes.	the socio-economic baseline. Typical recommendations, mitigations and any monitoring requirements will be included in the EMP.		
Road safety	The capacity of the road for handling increased traffic and the public road safety along the planned new route and the intersection at the mine entrance and exit.	The increase in traffic volumes is not expected to increase significantly and the road network analysis for the Cape Cross salt project showed that the threshold would not be exceeded. The safety aspects of the intersection and the planned re-routing of a section of the coastal road was potentially affected and significant impacts could potentially result.	Inclusion	no
Surface water	Impact on ephemeral rivers	Two ephemeral rivers flow into the salt pan. The activities themselves will not prevent the rivers from flowing into the salt pan. The coastal road has formed a 'dam wall' across the salt pan from the time it was constructed. The diversion road will create the same obstruction. The mining activities could be potentially affected by flooding and activities would resume after potential reparations have been made. The mining project will not make any material changes to the existing situation. Spills of sewerage and diesel fuel could potentially occur and affect surface water receptors (i.e. ephemeral rivers and salt pan surface). The mitigation of such potential impacts will be covered in the EMP.	Exclusion EMP only	no
Groundwater	The abstraction of brine	The long-term sustainability of this abstraction is likely because of the sheer volumes of brine available and the continuous inflow of seawater into the saline groundwater system. An analysis of the planned usage and comparison with the greater Cape Cross salt project resulted in an expectation that no cumulative effect will result. Spills of sewerage and diesel fuel could potentially affect the crystallisers or the subterranean brine groundwater. The mitigation of such potential impacts will be covered in the EMP.	Exclusion EMP only	no

		The mitigations incorporated into the EMP for the salt project will be considered for inclusion in the EMP for this project. The mitigations, recommendations and monitoring is described in the previous chapter.		
Air quality	The creation of dust during construction and operational activities.	The construction and operational activities are not expected to create dusty conditions on multiple days exceeding those that are typical during windy conditions during morning dust storms in winter or windy spring and summer afternoons. Typical mitigations for dust suppression will be included in the EMP as are practically possible in this remote and arid location.	Exclusion EMP only	no
Visual – sense of place	The planned infrastructure Will alter aesthetics	The construction of a new road route around the pan is expected to improve the sense of place as the vista across the pan would be from a greater distance and any structures on the pan would not be so noticeable. The mine Site is remote and would not affect the sense of place for residents of an urban environment. It is important to note that this is a brown fields project and the expectation for many decades has been that salt mining activities occur in this area. The area has been historically disturbed and no significant change to the sense of place is expected. Thus, there is no cumulative impact to be expected. Typical mitigations for creating a pleasant visual experience will be implemented and these will be included in the EMP.	Exclusion EMP only	no

Land use	The planned salt mine is located within the Dorob National Park.	Historically, salt mining has occurred within various salt pans along the central Namib coastline long before the declaration of the Dorob National Park. Tourism related activities have occurred alongside salt mine for decades. It is understood that within the Dorob National Park there are areas of high priority due to their sensitivity to disturbance. The area has been historically disturbed. The planned infrastructure and salt pan activities was not expected to fall within one of the highly sensitive zones within the Dorob National Park. The Fauna and Flora assessments were deemed sufficient to address any potential risks with respect to this aspect. The guidelines and park rules will be incorporated into the EMP. Tourism is discussed with the socio-economic impact assessment. Conservation aspects are described in the previous chapter. Potential negative impact on third party users of the area are to be assessed.	Inclusion under socio-economic impact assessment	no
Waste Management	Storage and disposal of waste.	The expectation is that all non-mineral waste will be removed from site on a weekly basis. Guidelines will be given in the EMP.	Exclusion EMP only	no

3.5. Impact Assessment Terms of Reference

Based on the final screening process the following specialist studies were included:

1. Flora Assessment Study
2. Fauna Assessment Study
3. Marine Ecology Assessment Study
4. Archaeology Assessment Study
5. Traffic Assessment Study

An assessment of potential impacts on the socio-economic environment was based on reconnaissance visits to the site by the EAP. Mitigation measures and monitoring requirements for all the aspects are incorporated into the Draft EMP.

Alternatives for the various aspects of the proposed development were discussed with the individual specialists and, based on their input, with due consideration of the comments received by the public and stakeholders also the project proponent's development plan and description, either only one option or all options were then weighed up in the assessments.

The project alternatives have been fixed as follows:

- The project location at EPL8757 salt pan is vital to the success of the Cape Cross salt project.
- Placement of the brine pipeline would be on the east side of the road.
- The brine pipeline would lie on the surface.
- One bitterns discharge pipeline / outlet would be constructed.

The 'no go' alternative was not expected from an environmental perspective. The economy of scale is the greatest incentive to go ahead with the project at EPL8757 and the argument remains strong.

3.6. Public Review

Emmanuel M'kundi, as the Lead Associate undertook the review of the ESR report and Draft EMP.

No direct I&AP correspondence, nor comments or concerns were received by email or other form of correspondence up to this date. Notification of the review period was made to all IAPs.

3.7. Final Report

Access to the final documents has been granted to all IAPs.

4. PROJECT DESCRIPTION

The proposed project is located about 36 km north of Henties Bay town. The planned EPL8757 salt mining project provides similarly good conditions for constructing crystallisers for producing salt. If environmental clearance is granted for the current project, then commencement will occur within the first period of the clearance.

Rectangular constructed crystallisers are planned to be constructed upon the surface of the EPL8757 pan. Thus, a pipeline conveying saturated brine from the salt pan to the processing plant / crystallizers is planned for solar evaporation and further processing at the proposed EPL8757 crystallisers.

The proposed EPL8757 salt project includes the following components:

- Crystalliser construction and operation,
- Construction and operation of a salt processing facility,
- Pipeline construction and brine conveyance,
- Bittern discharge into the sea,
- New road development,
- Power generation (Diesel Generators),
- Fuel storage (Bunded Diesel Tanks),
- Security and shift staff accommodation,
- Salt product transport or haulage

4.1. Construction Phase Activities

This will comprise of the following:

- Construction of salt pan crystallisers
- Construction of a salt processing facility (includes fuel storage and power generation facility)
- Construction of a new section of C34 road
- Construction of a new brine pipeline from the Cape Cross salt pan
- Construction of bitterns discharge pipelines.

In the development and construction phase, salt crystallizers will be established on the impermeable base of the natural salt pan. The construction involves levelling and compacting the salt pan surface and the construction of impermeable sidewalls using sheeted UPVC plastic liner and clay with sand and gypsum from the salt pan's surface layer.

A PVC pipeline with a 25 cm diameter for brine transport will be constructed.

Solid waste will be removed off site and taken to Henties Bay's rubbish dump. Ablution facilities will use sealed septic tanks and the sewerage taken to the Henties Bay sewerage plant periodically.

No power supply infrastructure to the site is planned but electricity requirements will rely on diesel generators. Construction staff will be accommodated at local lodges / camps. Security will be supplied on a 24-hour basis at the mine and processing plant construction sites. The support services and facilities constructed during this phase will either be removed at the end of the construction phase or incorporated into the operational phase of the project.

4.2. Operational Phase Activities

Salt production will be similar to other solar salt facilities near Swakopmund and Walvis Bay and in many solar salt production facilities in the world.

4.2.1. Operational Times

Mining is planned for daylight hours whilst processing is planned to use 12-hour shifts, 24 hours/day and 7 days/week. The routine nature of much of the work and these long working hours will require stringent processing safety standards and human resources retention initiatives. These long hours will be tough on maintaining quality family life, whether male or female, and will be even longer if there is additional travelling time home at the end of 12-hour shifts. Accommodation facilities on site will be constructed for a core shift staff.

4.2.2. Brine Source

The brine will be pumped from the salt pan via a pipeline. The maximum design pump rate / volume for the pipeline will be 0.9 million m^3 of brine per annum.

Pumping of brine will ensure that brine of high salt concentration is immediately available for crystallisation at evaporation pans.

4.2.3. Salt Production

Salt crystals precipitate from the saturated brine from the floor and sides of the crystalliser into the brine. The wind and sun drive the evaporation of the water, thereby increasing the concentration of the brine solution. The warmer and the windier the climate, the greater the evaporation and the greater the precipitation or crystallisation that will result from the process. The crystallisers will produce approximately 220 000 tons of salt from the planned development on an annual basis.

4.2.4. Bitterns Discharge

Magnesium and unwanted salt ions which do not crystallize with the sodium chloride salt accumulate over time in the crystallizer brine and require to be purged to the sea prior to harvesting of the salt. The discharge of these bitterns will take place onto the beach below the highwater mark. The bitterns' pipeline will be made of black durable plastic (PVC) with a diameter of 13 inch, flanged every 6 metres. The pipeline will be laid partially underground to cater for a

constant slope from the crystallizer outlet trench to the discharge point on upper-tidal beach elevation and to ensure minimum disturbance to the habitat of the dune hummocks. Discharge of bitterns is expected to take place intermittently and on an infrequent basis.

4.2.5. Salt Harvesting

After allowing for solar evaporation and growth for approximately six months the new salt layer is removed by using a customized salt harvester. The planned solar salt production facility will allow for production of approximately 220 000 tons of crystallised salt.

4.2.6. Salt Processing

From the harvester the salt gets loaded directly onto dump trucks which take the raw product to the processing site. The process plant will comprise of a crusher, salt wash section and a bagging plant. Furthermore, ancillary pipelines, power generation, ROM and product storage, offices and workshops will be required.

4.2.7. Energy Source

The processing plant will receive electrical energy from diesel powered generators. The diesel will be stored in a self-bunded container which meets the requirements for safe containment. Diesel consumption at the site will be approximately 10 000 l per month, which also includes the harvesting and other mobile plant at site.

4.2.8. Water Source

Fresh potable water for the offices and ablutions will be trucked in from Henties Bay as and when the need arises.

4.2.9. Salt Haulage

Salt will be transported as bulk cargo as well as in bagged form. The salt production which is planned for the EPL8757 crystallizers will fall into the overall production envelope.

Some of the truck drivers may come from or want to live in Uis, Swakopmund or Walvis Bay where the larger towns can offer better schools and recreation benefits although the cost of housing is likely to be higher. Recruitment from Henties Bay will carry a more significant positive local impact compared to recruitment from Uis, Swakopmund or Walvis Bay, where there are more employment opportunities.

4.3. Decommissioning Phase Activities

The life of the mine is unknown currently. The very large resource of rock salt and saturated brine can sustain pumping of brine as envisaged for the EPL8757 operation. Solar salt production, which

ultimately has the vast resource of the sea as raw material, can operate sustainably for an unlimited period.

Decommissioning activities will include the removal of infrastructure, preparation of final landforms for closure and where necessary rehabilitate the environment as close as possible to baseline conditions as at the commencement of the project.

It is anticipated that the proposed construction will commence within six months of receiving the ECC from the MEFT and that the relevant permits and licences have been issued by the different regulatory bodies.

5. DESCRIPTION OF THE RECEIVING ENVIRONMENT

5.1. Land Use, Mining Legacy & Current Disturbance Footprint

5.1.1. Land use

The planned mining project is to be located within the Dorob National Park, whose primary purpose is conservation of natural heritage. This does not exclude other subsidiary activities such as tourism and mineral exploration and extraction except where strict nature reserve status is delineated. Controlled access may be permitted for tourism in these strict nature reserve areas though not all these protected areas are sign posted or controlled by physical barriers. The planned mining activities will not occur inside one of the strict nature reserve areas. Recreational fishing may take place on occasions along the beach, west of the mining licence but mining activities will in no way restrict these activities.

Figure 1:View across EPL8757 saline pan from (photograph taken in August 2022)

The area around the pans is densely lined with vehicle tracks.

5.2. Climate

Climatically the area is classified as a Hot Arid Desert (Kottek, et al., 2006). It occupies one of the most arid areas in Africa south of the Sahara, with a mean annual rainfall of below 50 mm, and the coefficient of variation in annual rainfall extremely high at >100% (Mendelssohn, et al., 2002).

Due to high evaporation rates, the average water deficit is about 2 m per year. The study area has more than 100 days of fog per year (Mendelssohn, et al., 2002), providing a crucial source of moisture for life in the Namib desert. Coastal fog is driven inland from the cold Atlantic Ocean by

the wind. Southerly, westerly and south-westerly winds are prevalent, and are usually strongest between late afternoon and early evening (Mendelsohn, et al., 2002).

The coastal wind-induced upwelling characterising the Namibian coastline is the principal physical process which shapes the marine ecology of the region. Upwelling and the consequent high nutrient supply to surface waters leads to high biological production and large fish stocks. The prevailing longshore, equatorward directed winds move nearshore surface water northwards and offshore. To balance the displaced water, cold, deeper water wells up inshore. The rate and intensity of upwelling fluctuates with seasonal variations in wind patterns.

On a global scale, the study area falls in the Afrotropical Region for all vertebrate taxa and on the regional scale, in the Namib Desert biome with a Central Desert vegetation type (Mendelssohn, et al., 2002).

Coastal biogeography places the Central Desert in the warm-temperate Namib Province which extends northwards from Lüderitz into southern Angola, in a transition zone from a temperate to a tropical fauna, and in the northern limits of the Benguela upwelling system Average annual temperatures in this desert environment are relatively low (<18°C) due to the influence of the cold Benguela Current and the South Atlantic Anticyclone (Mendelssohn, et al., 2002).

Considering this description of the climate it is not expected that the mining operations will have any significant cumulative effect on the ambient conditions with respect to the dust and the air quality conditions stemming from such conditions.

5.3. GEOLOGY & GEOMORPHOLOGY

The coastal strip topography is dominated by a virtually continuous linear sandy beach, which north of Henties Bay to the Cape Cross salt pans, is backed by low sandy cliffs. Rocky shores are limited to a few short sections of coast and a larger rocky shore at the Cape Cross peninsula. North of Cape Cross the coastal strip is covered by a ~3 m thick layer of loose sea sand, which stretches inland through a series of hummock dunes.

East of the hummock dunes the topography consists of flat saline pans of varying size, bordered by gravel plains and undulating rock outcrops. The gravel plains and rock outcrops

are intersected by a few large and many small ephemeral washes. The habitat descriptions give detailed information on the topography of the study area.

5.3.1. Geology of the area

The area forms part of the coastal plains of the Namib Dessert and comprises a portion of the Cape Cross – Uis Pegmatite Belt which has intruded Damaran-age meta-sediments and granites. Rare metal granitic pegmatites occur within this pegmatite belt and potentially within the area

beneath the cover of Namib Group alluvial sediments. There is also the potential existence of rare and precious, or base metals in marine and fluviatile placer deposits.

5.3.2. Geomorphology of the salt pan (surface water and ground water)

The salt pan is made of layers of salt and gypsum which have been formed by evaporation within a coastal lagoon of restricted sea water circulation. The water table in the pan is situated close to surface and it is in connection with the sea. Due to high permeability of the rock salt and surrounding sediments the seawater percolates into the pan and in a continuous process of leaching of the salt and new formation of salt through evaporation and crystallization, the concentration of the underground brine is found to be near saturation. (Toerien 1964)

Surface water in the form of standing sea water results from intermittent spring tides and corresponding stormy weather which breaches the beach berm. On rare occasions when flooding occurs, will the washes flow into the saline pan and fresh water floods the pan. The fresh water of lower density floats on the saltier brine of the pan and soon evaporates leaving behind the brine below.

5.3.3. Terrain

Due to the low terrain of the area anyone driving along the coastline enjoys a good view of the pan from the coastal road. There are no major relief features that hide the pan and the operations from sight.

5.4. FLORA

The data for this section was sourced from reconnaissance visit reports and it deals with terrestrial biodiversity only.

The Namib Desert harbours numerous endemic and near endemic plant and lichen species, of which many are of restricted distribution or habitat. 30% of the endemic Namibian plants occur in the Namib Desert. However, in the context of this project it is important to note that the areas of highest plant endemicity in the Namib are the Kaokoveld and the southern Namib, both regarded as major centres of endemicity in Namibia. Researchers concluded that the levels of plant endemicity are comparatively lower in the central Namib, which is not generally regarded as a ‘hotspot’ of endemics restricted to that zone.

The specialist study considered the potential impacts on the flora within the planned mining licence area, in particular within the salt pan and planned accessory works area, along the route of the brine pipeline and along the re-routed road. The habitats within the road reserve along which the brine pipeline will be laid have been disturbed and therefore only negligible flora would be impacted from this development. The re-routed road will disturb a small surface area of undisturbed gravel plain, dry watercourses and rock outcrops. Much of this road diversion was

already disturbed as most of the route lies on an old existing road. The rock outcrop habitat within the accessory works area have already been disturbed by excavations in the past few years. The gravel plain within the accessory works area is currently the least disturbed area that will be affected by the planned salt production and related activities. However, the significance of this impact will be low, for reasons that are explained in the following sub-sections.

5.4.1. Lichens

The lichen fields and biological soil crust of the Namib are vulnerable to destruction, and recovery in this extremely arid zone is slow. Often damage may therefore be regarded as permanent. In particular, lichens are fragile, taking 5 to 500 years to recover from vehicular disturbance. These are highly vulnerable to the impacts of off-road driving. The lichen fields in the central coastal area have been identified as an important plant area.

Within the proposed mining licence area lichens are found in each of the habitats to varying degrees. A greater variety and abundance of lichens were observed within the rock outcrop and gravel plain habitat. More biodiverse lichen gravel plains occur outside the proposed mining licence in areas where very little disturbance of the desert has occurred. Thereafter, the washes and hummock dunes may host lichens on gravel, rocks and plants. Lastly, the salt pans may offer some niches for lichens but rarely so. Thus, in terms of environmental importance it is the rock outcrops and gravel plains that should enjoy the most attention when considering the conservation of habitable environments for lichens

5.4.2. Floral habitats

Five habitats were identified in the project area, based on combined floral and faunal characteristics. The habitats are discussed in this section in terms of the physical characteristics of the habitat including typical plant species, the diversity of niches within that habitat and the diversity of that habitat compared to other habitats.

5.4.2.1. Rock outcrops

These ridges vary from well-developed areas with species-diverse succulent vegetation and large boulders that offer numerous microhabitats, to lower, less developed dolerite or quartz or marble ridges or outcrops. These ridges may only manifest as low, dark, gravelly areas which are forming slightly higher relief than the surrounding plains. Besides harbouring a number of endemic and protected plant species, some of restricted distribution, they very often carry well developed lichen communities as well. There are only a few rock outcrops within accessory works area that could be affected by construction and operation activities. In fact they have already been disturbed or damaged by recent and historical activities. See the section above which discusses the disturbances and see the imagery in the appendices rendering satellite imagery of the disturbances.

Characteristic species, of which many are endemic and at least one is protected, include *Euphorbia giessii, Euphorbia lignosa, Jamesbrittenia maxii, Kleinia longiflora, Heliotropium oliveranum, Eberlanzia sedoides, Pelargonium otaviense*, and *Sarcocaulon marlothii* with

Brownanthus kuntzei, Zygophyllum stapffii, Tetragonia reduplicata, Drosanthemum luederitzii, and *Arthraerua leubnitziae* dominant. *Hoodia pedicellata* occurs occasionally. Not all of these plants were found during the site visits but are possibly found on the rock outcrops within and outside the planned mining area.

The higher diversity found here can be ascribed in part to greater niche diversity as well as higher moisture levels from fog collection. These factors are also likely to account for the occurrence of disjunct species such as *Euphorbia giessii* and *Hoodia pedicellata*. Regardless of whether there may or may not be other equally diverse ridges in the central Namib these ridges are islands of high plant diversity.

5.4.2.2. Saline pan

It is characterised by fine, dark sand of an 'oily' consistency with frequent surface salt deposits outside the man-made crystallisers. A saline pan that does not receive regular inflow from the sea is almost always without any vegetation whatsoever. A saline pan that lies closer to the sea and always contain standing water, or get regular inflow, carries quite dense marginal stands of a single species, *Sarcocornia natalensis*, a low-growing halophytic succulent, as in the case of Cape Cross saline pan. It is not known how regularly the sea breeches the beach berm and fills the pan but the berm is very wide. A few *S. natalensis* plants were observed during the site visits. Additionally, no permanent surface water was observed, and none has been observed from historical satellite imagery.

Small brine ponds are visible within the pan. It is not known if these existed prior to the historical salt mining. No vegetation appears to be associated with these brine ponds.

5.4.2.3. Coastal hummocks

This hummocky habitat is restricted to a coastal belt directly inland from the littoral zone and represents the first line of terrestrial vegetation. Characteristic species are *Zygophyllum clavatum*, *Brownanthus kuntzei* and *Arthraerua leubnitziae (*pencil bush*)*, *Drosanthemum luederitzii* and *Zygophyllum stapffii* (dollar bush*)*. This habitat is generally dominated by *Z. clavatum. A. leubnitziae* is commoner where dry watercourses reach the sea.

The coastal hummock habitat opposite the saline pan is broad in comparison to the one opposite the Cape Cross saline pan.

No plant species of high conservation concern are likely to be found in this habitat. *Z. clavatum* is restricted to a narrow coastal strip but it occurs right down into South Africa and is not regarded as threatened at present. Gravel plain

By far the most represented habitat in the proposed mining licence area after the salt pan is the gravel plain, this habitat is dominated by *Arthraerua leubnitziae*, an endemic but common and relatively widespread succulent shrub. *Tetragonia reduplicata*, *Zygophyllum stapffii* and *Drosanthemum luederitzii* are occasionally present. Diversity is very low on these plains, and no species of high concern are expected to be found.

Lichen cover varies greatly, but over much of the planned mining area it is generally sparse, whereas the outer plains between the dolerite ridges carry a greater number of specimens.

5.4.2.4. Washes

A number or dry watercourses or washes run through the planned mining area. The washes constitute sandy gravels visually discernible by the more numerous *Arthraerua leubnitziae* which have established in the moister conditions. The washes that run through the dolerite ridge areas are rockier. The species composition is more varied in the latter and this habitat is expected to harbour spreading perennial succulents such as *Galenia procumbens, Psilocaulon salicornioides* and *Tetragonia reduplicata*. During the site visit, *Zygophyllum stapffii, Drosanthemum luederitzii* and *Lycium decumbens* were observed in considerable numbers. There were also annuals present, such as *Zygophyllum simplex, Senecio engleranus* and *Sesuvium sesuvioides*. No plant species of high conservation concern are expected to occur in this habitat and lichens are sparse, probably due to intermittent disturbance when the washes flow.

5.5. FAUNA

In a specialist report by Irish (2016) the greater Cape Cross area was declared to be particularly biodiverse due to the ecotonal nature of the northern and central coastal Namib desert biomes. He considered the broader Cape Cross area to be biogeographically unique. Evidence for its existence stems mostly from the species found on the sandy gravel plain, though not exclusive to this habitat only.

5.5.1. Faunal habitats

5.5.1.1. Coastal hummocks

This is a narrow, discontinuous strip of sparsely vegetated, sandy hummock dunes parallel to the beach. It is the habitat with the densest concentration of vegetation in the study area, providing shelter and food for detritivores and the predators that feed on them.

Although it occurs intermittently on long stretches of Namibian coastline, the very narrow width results in a small surface area. This makes the hummock dunes a highly restricted habitat type, meaning that taxa dependent on coastal hummocks may be considered habitat-specific, range-restricted endemic species. It is a highly sensitive habitat for invertebrates and reptiles.

Along the Namibian coast much of this habitat has already been affected by mining, infrastructure, vehicle tracks and tourism, causing cumulative damage that may endanger range-restricted taxa. It is particularly vulnerable to physical destruction caused by uncontrolled vehicle activity and sand harvesting.

Sensitivity: Very sensitive.

Excluding the proposed two bittern pipelines, this habitat should be designated a no-go area. No development should be allowed in the dune hummocks except the bittern pipelines and an access corridor to each pipeline that will allow routine maintenance to be done.

5.5.1.2. Saline pan

The saline pan habitat at EPL8757 is a shallow depression covered in a crust of gypsum and sand, devoid of vegetation and with surface salt deposits. Towards the northwest is an area of open saline water. It is a highly disturbed habitat with existing salt mines and vehicle tracks.

Saline pans occur along the length of the Namibian coastline and cannot be considered restricted per se. The vulnerability of this habitat lies in the cumulative impact along the coast, caused by salt mining, other developments and indiscriminate 4x4 driving by the public. In addition, the location of the study area in the Dorob National Park confers a high priority conservation status to the environment, even though the current levels of disturbance render a lower-than-expected sensitivity rating on the saline pan and gravel plain west of the C34.

Two vertebrate species of concern utilise the saline pan. The Chestnut-banded Plover (Near-threatened in Namibia as well as globally) is a highly specialised wader on salt pans and coastal flats, and it nests in stony areas or dry mud along the edges of salt pans. Brown Hyenas (Near Threatened globally and protected in Namibia) regularly cross saline pans from their dens inland to reach food resources on the coast.

Small, hyper-saline brine ponds that could potentially constitute a sub-habitat occur on the saline pan. These ponds were possibly created as a result of previous salt mining and it is surmised that they may be maintained by seawater that washes over the beach and into the saline pan. It is possible that brine shrimp and other hyper-saline adapted invertebrates are sustained in this putative habitat, because it is a similar environment as the brine ponds that were identified with the area.

Sensitivity: Least sensitive.

5.5.1.3. Gravel plain

Most of the surface area of EPL8757 consists of this habitat but only a relatively small area of this habitat type within the envisaged mining licence area is to be affected. The gravel plain is interspersed with washes and with boulders or rock outcrops.

The gravel plain has a substrate of small pebbles, loose gravel and coarse sand. Most of the finer clastic components are deflated by strong winds. In the southern part of the study area the gravel plain habitat is a flat plain interspersed with small, shallow washes and it has a substrate of loose, fine gravel on sand. This part of the gravel plain is heavily disturbed by earth movement and multiple vehicle tracks.

The accessory works area is the only development that will be located on the gravel plain, occupying a relatively small surface area. This, together with the high level of existing disturbance, indicates a habitat of low sensitivity but there are four reasons to treat it as sensitive, especially in view of cumulative impacts along the coast:

- It could be a potential breeding site for Damara Terns breed on gravel plains
- The gravel plain is an important habitat for reptiles, providing shelter in the form of a sandy, gravelly substrate as well as stones.
- The presence of lichens on the gravelly substrate of the habitat contributes to the sensitivity rating, although the most sensitive lichen area with the greatest diversity is found outside the mining licence area.
- Invertebrates of conservation concern potentially occur here.

Sensitivity: Sensitive but of low concern, provided that activity remains within the proposed boundaries of the operational and accessory works area.

5.5.1.4. Washes

Intersecting the gravel plain are many shallow drainage lines that carry surface water after rare rainfall events and may indicate preferential flow paths where groundwater can infiltrate. They contain more vegetation than the surrounding gravel plain or rock outcrops. Perennial plants are present, and some annual species are expected to appear after rain, providing food, shelter and soil stabilisation for detritivores and burrowing animals. The preferential habitat for reptiles including the endangered Dwarf Beaked Snake and Namib Sand Snake is gravel plains and sand dunes with vegetation.

Some of the drainage lines are larger and form wide washes that originate far outside the study area. These washes will be affected by remote rainfall events. They may have some subsurface water that sustains the perennial plants present and they provide movement corridors and sustenance for larger mammals.

Sensitivity: Sensitive

5.5.1.5. Rock outcrops

This habitat occurs in the north and northeast of the envisaged ML area and consists of low, undulating hillocks and large boulder outcrops and ridges of dolerite or quartzite rock that stand as discontinuous, isolated islands within the gravel plain. Substrate contains rocks that vary in size from pebbles to large boulders.

Rocky habitat types in the Central Namib provide ample shelter to reptiles as well as invertebrates. Lichens as a primary food source play an important role in the biodiversity of the Namib. Vegetation cover is very sparse, but lichen cover is abundant and diverse, which is the main contributor to the sensitivity rating of this habitat. In addition, a range-restricted endemic gecko, *Pachydactylus maraisi*, has been recorded only in low, undulating hills with boulders.

The accessory works area, although small in surface area, will be located where some rock outcrops occur and these individual outcrops should be avoided.

Sensitivity: Very sensitive.

5.5.2. Faunal taxa

For the purposes of this report only three vertebrate taxa, namely mammals, birds and reptiles, were considered. No evidence was found that amphibians were previously recorded in or near the study area, and it is considered unlikely that any amphibians are compatible with the habitats here.

The taxa that were investigated are listed in the fauna specialist report. Species were included in the lists if they:

- are expected to occur or have been previously recorded in the study area, and
- are compatible with the habitats in the study area

The Namib lowlands is one of three landscapes in the country containing most endemics across all taxa, with reptile endemism particularly high (21-24 species). The diversity of substrates, such as sandy and gravel plains, rocky outcrops and hills contributes to this richness of endemism.

Species that are range-restricted endemics, have Threatened IUCN status, or are legally protected in Namibia, are potentially of concern.

5.5.2.1. Mammals

A total of 14 mammal species have been recorded. Five endemic mammals could occur in the study area, namely the Namibian Wing-gland Bat, Namibian Pygmy Mouse, Namib Brush-tailed Gerbil, Solitary Whistling Rat and Namib Round-eared Elephant Shrew.

The near-threatened Brown Hyena is a mammal of conservation concern. Along with birds, jackals and the wind, it plays an important role in the ocean to land transfer of nutrients to arid inland ecosystems.

The coast supports the highest concentration of Brown Hyenas in Namibia, where they scavenge on seals. One seal colony can support more than four clans and in addition, dead seals that wash up along the coast away from colonies are an important source of food for this species. Coastal Brown Hyena clans have 500 km² home ranges and have been recorded carrying carcasses up to 40 km inland from Möwe Bay.

The movement patterns of hyenas could potentially be severely affected by the project's operational activities. The crystallisers and increased human presence and activity could disrupt their access routes across the saline pan, decreasing their foraging opportunities on the coast. Increased vehicle traffic during the project's operational phase will increase the risk of collisions and may disturb their feeding patterns.

5.5.2.2. Birds

When designating a study area for avifaunal data searches, a much wider margin around the project site was selected than for other taxa because it ensures more comprehensive data coverage. Birds range widely and they utilise ephemeral or occasional resources in areas that are far from their central ranges, much more so than other taxa.

The SABAP2 pentads that were examined for this study include Cape Cross to the north. Although the site does not have the nesting and feeding resources (platforms, lagoons and wetland vegetation) that Cape Cross has, the same conservation concerns are valid here because of the mobility of birds, but most importantly, because of the potential impact that brine extraction could have on the lagoon system at Cape Cross.

The importance of the study area for birds, specifically the nearby Cape Cross wetland, cannot be overstated. Rüppell's Korhaan and Damara Tern are near endemic to Namibia with more than 75% of their populations occurring here. Only 2% of the global population of Damara Terns breed outside Namibia. Eleven more species are endemic to southern Africa. 18 of the 62 species that occur in the study area are threatened in Namibia and 12 of these are also globally threatened.

There is a Damara Tern nesting colony very close to the northern boundary of the project site. This colony is considered so important that it resulted in the specific prohibition of prospecting and mining in the area in terms of the National Policy on Prospecting and Mining in Protected areas.

Damara Tern breeding colonies are extremely sensitive to human disturbance, specifically to vehicles. At several other Damara Tern breeding sites (Caution Reef and Horses Graves in Namibia and Cape Agulhas in South Africa), a reduction in disturbance from vehicles through cable barriers and interpretive signs resulted in a significant increase in breeding populations and fledgling success.

Table 3: Conservation status of bird species

CONSERVATION STATUS	IUCN (International Union for Conservation of Nature)	NAMIBIA
Near-threatened	7	7
Vulnerable	2	6
Endangered	3	3
Critically Endangered	0	2

5.5.2.3. Reptiles

Twelve of the 16 reptile species potentially occurring in the study area (i.e. 75%) are classified as endemic or near-endemic. Of these twelve, four species (25%) are also globally endangered: Dwarf Beaked Snake, Namib Sand Snake, Palmato Gecko and Common Namib Day Gecko. Marais' Gecko, a range-restricted endemic, has been recorded only twice ever: at the gravel plain, washes and rock outcrops are preferred habitat types for most of the reptiles recorded in the area.

5.6. MARINE ECOLOGY

Marine ecosystems along the coast of the study area comprise a limited range of habitats that include:

- sandy intertidal and subtidal substrates,
- intertidal rocky shores and subtidal reefs, and
- the water body.

The benthic communities within these habitats are generally ubiquitous throughout the southern African West Coast region, being particular only to substratum type, wave exposure and/or depth zone. They consist of many hundreds of species, often displaying considerable temporal and spatial variability. The biological communities 'typical' of each of these habitats are described briefly below, focussing both on dominant, commercially important and conspicuous species, as well as potentially threatened or sensitive species, which may be affected by the proposed project.

5.6.1. Sandy Substrate Habitats and Biota

The benthic biota of soft bottom substrates constitutes invertebrates that live on (epifauna), or burrow within (infauna), the sediments, and are generally divided into megafauna (animals >10 mm), macrofauna (>1 mm) and meiofauna (<1 mm).

5.6.1.1. Intertidal Sandy Beaches

Sandy beaches are one of the most dynamic coastal environments. The composition of their faunal communities is largely dependent on the interaction of wave energy, beach slope and sand particle size, which is called beach morphodynamics.

In the area between Walvis Bay and the Kunene River, beaches make up 44% of the coastline, with the remainder comprising mixed shores (~40%) and rocky coastline (~16%).

Most beaches on the central Namibian coastline are open ocean beaches receiving continuous wave action and are classified as 'exposed' to 'very exposed' The beaches tend to be characterised by well-developed berms, and are well-drained and oxygenated.

The **supralittoral zone** is situated above the high-water spring (HWS) tide level, and receives water input only from large waves at spring high tides or through sea spray. The supralittoral is characterised by a mixture of air breathing terrestrial and semi-terrestrial fauna, often associated with and feeding on algal wrack deposited near or on the driftline. Terrestrial species include a diverse array of beetles and

arachnids and some oligochaetes, while semi-terrestrial fauna include the oniscid isopod *Tylos granulatus*, the talitrid amphipods *Africorchestia quadrispinosa* and *Talorchestia* sp., and the gamarrid amphipod *Bathyporeia* sp.

The intertidal zone, also termed the **mid-littoral zone**, has a vertical range of about 2 m. This mid-shore region is characterised by the cirolanid isopods *Pontogeloides latipes*, *Eurydice* (*longicornis*=) *kensleyi*, and *Excirolana natalensis*, the deposit-feeding polychaetes *Scolelepis squamata* and *Lumbrineis* sp., amphipods of the family Phoxocephalidae[1] and tanaids[2]. In some areas, juvenile and adult sand mussels *Donax serra* (Bivalvia, Mollusca) may also be present in considerable numbers. Donn & Cockcroft reported that at Cape Cross this bivalve contributed 75% to the total macrofaunal biomass.

The **inner turbulent zone** extends from the low water spring tide level to about -2 m depth and is characterised by highly motile specie. The bentho-planktic mysid *Gastrosaccus namibensis*, and Nemertean worms are typical of this zone.

The **transition zone** spans approximately 2-3 m depth and marks the area to which the break point might move during storms. Extreme turbulence is experienced in this zone, and as a consequence this zone typically harbours the lowest diversity on sandy beaches

Most of the macrofaunal species recorded from beaches in central Namibia are ubiquitous throughout the biogeographic province, and no rare or endangered species are known. The invertebrate communities are similar to those recorded from beaches in southern Namibia. These beaches are all characterised by a relatively depauperate invertebrate fauna, both with regard to species diversity and biomass, which is typical of high-energy west coast beaches.

5.6.1.2. Subtidal sandy habitats

With the exception of numerous studies on the benthic fauna of Walvis Bay lagoon, there is a noticeable scarcity of published information on the subtidal soft sediment biota along the rest of the central Namibian coast. In general, almost no scientific work on subtidal benthic communities has been done in the vicinity of the study area, or within the general region and no further information could be obtained.

5.6.2. Rocky habitats and biota

In common with most semi-exposed to exposed coastlines on the southern African west coast, the rocky shores that occur in the region are strongly influenced by sediments. Typically, the intertidal area of rocky shores can be divided into different zones according to height on the shore. Each zone is distinguishable by its different biological communities, which is largely a result of the different exposure times to air.

The rocky intertidal shores at Cape Cross are, however, not expected to show the typical intertidal zonation as these would be heavily impacted by the seals of the Cape Cross colony. Not only would the seals result in severe trampling of high- and mid-shore biota, but the guano run-off would be expected to have significant effects on the community structure of the shore. Studies conducted in other parts

of the world have shown that high intensity [human] trampling can result in the removal of most of the rocky intertidal assemblages, although the effects are dependent on the community present.

As in the case of sandy beach communities, most of the biota recorded from rocky shores in central Namibia are ubiquitous throughout the biogeographic province, and no rare or endangered species are known.

5.6.3. Pelagic communities

5.6.3.1. Plankton

Plankton is particularly abundant in the shelf waters off Namibia, being associated with the upwelling characteristic of the area. Plankton range from single-celled bacteria to jellyfish of 2-m diameter, and include bacterio-plankton, phytoplankton, zooplankton, and ichthyoplankton.

A study on phytoplankton in the surf zone off two beaches in the Walvis Bay and Cape Cross area showed relatively low primary production values of only 10-20 mg C/m^2/day compared to those from oceanic waters (2 g C/m^2/day). In the surf zone, diatoms and dinoflagellates are nearly equally important members of the phytoplankton, and some silicoflagellates are also present. Charateristic species belong to the genus *Gymnodinium*, *Peridinium*, *Navicula*, and *Thalassiosira*).

5.6.3.2. Fish

The surf zone and outer turbulent zone habitats of sandy beaches are considered to be important nursery habitats for marine fishes. However, the composition and abundance of the individual assemblages seem to be heavily dependent on wave exposure.

Only five species occur off exposed and very exposed beaches, these being southern mullet/harders (Liza richardsonii), white stumpnose (Rhabdosargus globiceps), False Bay klipfish (Clinus latipennis), Super klipvis (C. superciliosus) and galjoen (Dichistius capensis). Linefish species common off the central Namibian coastline include snoek (Thyrsites atun), silver kob (Argyrosomus inodorus), West Coast Steenbras (Lithognathus aureti), blacktail (Diplodus sargus), white stumpnose, Hottentot (Pachymetopon blochii) and galjoen (Dichistius capensis). From the surf zone off Langstrand beach near Walvis Bay, McLachlan recorded galjoen, West Coast steenbras, flathead mullet (Mugil cephalus), and southern mullet. Off Cape Cross only two species were recorded, these being sandsharks (Rhinobatos annulatus) and West Coast steenbras.

The Namibian pelagic stock is currently considered to be in a critical condition due to a combination of over-fishing and unfavourable environmental conditions as a result of Benguela Niños.

5.6.3.3. Turtles

Five of the eight species of turtle worldwide occur off Namibia. Turtles that are occasionally sighted off central Namibia, include the Leatherback Turtle (*Dermochelys coriacea*). Observations of Green (*Chelonia mydas*), Loggerhead (*Caretta caretta*), Hawksbill (*Eretmochelys imbricata*) and Olive Ridley (*Lepidochelys olivacea*) turtles in the area are rare.

The South Atlantic population of leatherback turtles is the largest in the world and Namibia is gaining recognition as a feeding area for leatherback turtles. Although they tend to avoid nearshore areas,

Leatherbacks may be encountered in the area around Walvis Bay between October and April when prevailing north wind conditions result in elevated seawater temperatures.

Leatherback Turtles are listed as "Critically Endangered" worldwide by the IUCN and are in the highest categories in terms of need for conservation in CITES (Convention on International Trade in Endangered Species), and CMS (Convention on Migratory Species). Although Namibia is not a signatory of CMS, Namibia has endorsed and signed a CMS International Memorandum of Understanding specific to the conservation of marine turtles. Namibia is thus committed to conserve these species at an international level.

5.6.3.4. Marine mammals

Marine mammals occurring off the Namibian coastline include cetaceans (whales and dolphins) and seals. The cetacean fauna of the Namibian coast comprises between 22 and 31 species. The diversity is comparatively high, reflecting the cool inshore waters of the Benguela Upwelling system and the occurrence of warmer oceanic water offshore of this.

The endemic Heaviside's Dolphin *Cephalorhynchus heavisidii* is found in the extreme nearshore region of the project area. Although considered numerous in South African waters, Heaviside's dolphins are vulnerable due to their use of human-impacted coastal habitats, the small home ranges of individuals and the restricted geographic range of the species.

The bottlenose dolphin (*Tursiops truncatus*) is found in the extreme nearshore region between Lüderitz and Cape Cross, as well as offshore of the 200 m isobath along the Namibian coastline. There has been a reduction in the population which is a serious concern and suggests that the species is under pressure in at least part of its range.

Of the southern hemisphere migratory whale species, humpback whales (*Megaptera novaeangliae*), and southern right whales (*Eubalaena australis*) have become frequent visitors to Walvis Bay during the austral winter (June to September) (Roux *et al*. 2001; Leeney in prep) and may occur in coastal waters off EPL8757.

Of the migratory cetaceans, the blue whale is listed as "Critically Endangered" and Sei and Fin whales are listed as "Endangered". Southern Right and Humpback whales are listed as "Least Concern" in the IUCN Red Data book. All whales and dolphins are given absolute protection under the Namibian Law.

The Cape Fur Seal (*Arctocephalus pusillus pusillus*) is common along the Namibian coastline, occurring at numerous breeding sites on the mainland and on nearshore islands and reefs. Cape Cross is currently the largest breeding site in Namibia and about 51,000 pups are born annually.

5.6.4. Potentially threatened marine habitats

Taking into account the characteristics of the bitterns discharge from the salt works, potential impacts are most likely to target marine ecosystems in the immediate vicinity of the discharge and beneficial uses that rely on the health of marine organisms and plants, such as recreational angling.

Certain areas of special interest that may potentially be impacted by the discharge of bitterns into the marine environment were identified. These specific areas include:

- The natural intertidal and shallow subtidal beach environments adjacent to the discharge site; and
- Recreational surf-angling.

5.7. KEY CONSERVATION AREAS

The coastline of Namibia is part of a continuum of protected areas that stretches from Southern Angola into Namaqualand in South Africa, namely the Skeleton Coast National Park, the Dorob National Park, the Namib-Naukluft National Park and the Sperrgebiet National Park.

The project falls within Dorob National Park. While tourism, sports and recreational activities are allowed in non-sensitive areas, the remainder of the park has been divided into zones, which include Damara Tern breeding sites, gravel plains, the Kuiseb Delta, Sandwich Harbour, Swakop River, Tsumas Delta, Walvis Bay Lagoon, birding areas and lichen fields. Among the areas excluded from the park are the municipal areas of Swakopmund, Walvis Bay and Hentiesbaai, the peri-urban area of Wlotzkasbaken, the Cape Cross Seal Reserve, and several farms in the Swakop River. The marine component of the park includes the Walvis Bay Lagoon Ramsar sites.

The Cape Cross Seal Reserve was proclaimed in 1968 to protect the largest of the 23 breeding colonies of Cape fur seals along the southern African West Coast. During the November/ December breeding season as many as 210,000 adult seals may gather at Cape Cross at one time. The seal reserve is located ~7 km to the north of the project area. A small lichen reserve exists to the north of the Cape Cross Seal Reserve, with a further depauperate lichen area located on the gravel plains around the site. The exposed offshore reefs at the Cape Cross promontory (northernmost point of reserve), which serve as seabird nesting areas are also protected.

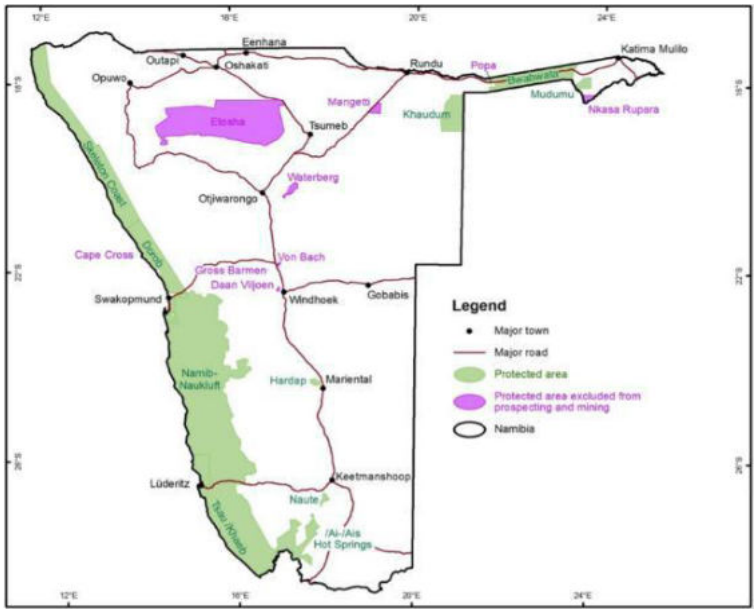
In the spatial marine biodiversity assessment undertaken for Namibia, a number of offshore and coastal areas were identified as being of high priority for place-based conservation measures. To this end, Ecologically or Biologically Significant Areas (EBSA) spanning the coastline between Angola and South Africa were proposed and inscribed under the

The principal objective of the EBSAs is identification of features of higher ecological value that may require enhanced conservation and management measures. No specific management actions have been formulated for the EBSAs at this stage.

The project area falls within the Namib Flyway EBSA, which is a highly productive area in the Benguela system that attracts large numbers of sea- and shorebirds, marine mammals, sea turtles and other fauna. It contains two marine Ramsar sites (Walvis Bay and Sandwich Harbour), six terrestrial Important Bird Areas (IBA), two proposed marine IBAs, and key spawning and nursery areas for some fish species. The Flyway EBSA is highly relevant in terms of its importance for life-history stages of species, threatened, endangered or declining species and/or habitats, and biological productivity.

Figure 3: *Map of protected areas that exclude prospecting and mining activities*

Figure 4: The project area (red rectangle (not to scale)) in relation to Ecologically or Biologically Significant Areas (EBSAs) and coastal seal and seabird colonies



5.8. ARCHAEOLOGY

A series of detailed studies over several decades has identified large concentrations of archaeological sites along the Namib Desert coast and adjacent interior. These sites contain unique evidence of human settlement in the area mainly dating to within the last 2000 years. The section of the coastline where the proposed site development is located has not been surveyed in detail.

The proposed accessory works area measures approximately 0.3km2 and lies on a gentle south-westerly slope between extensive rocky outcrops and a strip of coastal salt pans. The north-western half of the area is bisected by a number of deeply weathered dolerite dykes with decomposed grit and quartz gravel. Approximately 15% of the area is heavily disturbed as a result of previous and current earthmoving operations, and most of the remaining area is scarred by vehicle tracks.

Archaeological surveys in similar physical settings at Cape Cross and at Wlotskasbaken revealed low density stone artefact waste and marine shell middens associated with sheltered areas between dolerite outcrops. Some of these sites were also associated with the remains of small stone windbreaks, storage facilities and suspected human burials. The absence of reliable water on this section of the coast seems to have precluded sustained occupation and the sites probably relate to short expeditions from inland to exploit marine resources.

Although undisturbed, the site is considered to have negligible research value. The site does not present an impediment to the proposed accessory works development. However, if the site does not lie unavoidably in the path of the proposed activities it should be demarcated and left undisturbed.

Although the disturbance and/or destruction of archaeological sites is permanent and irreversible, this site is of negligible research value and considered of low significance.

5.9. ECONOMIC & SOCIAL ENVIRONMENT

5.9.1. The Cape Cross Area

The Cape Cross salt pan straddles the boundary between the Dorob National Park and the Cape Cross Seal Reserve. Cape Cross is a popular tourist destination for day visitors from Swakopmund and Henties Bay and visitors can stay overnight at the Cape Cross Lodge and Campsites.

The reserve offers the world's largest breeding colony of Cape Fur Seals with up to 210,000 seals present during the breeding season in November and December. The seasonal harvesting of pups and adult males is set by an annual quota system issued by the Namibian Ministry of Fisheries and Marine Resources and provides employment at the factory in Henties Bay.

In 2013, the Ministry of Environment and Tourism recorded 44,397 visitors at their Cape Cross office of whom 73% were from outside the Southern Africa Development Community and only 13% were Namibian. They travelled in over 16,000 vehicles and paid over N$3 million in park entrance fees to government.

There are many mining license holders in the Cape Cross salt pan with mining licenses, mining claims and exploration licenses. Mining Licenses are mainly issued for salt and guano production but one is for base and rare metals.

5.9.2. Henties Bay

Henties Bay is the nearest town to the identified EPL / Site and lies 36km south of the pan on the north-south coastal Main Road MR44 (also referred to as the C34 road). It is situated on the coast, at the mouth of the ephemeral Omaruru River and is surrounded by the Dorob National Park. The town grew up as a holiday destination for people seeking the outdoor life – the Dorob Park offers extensive beaches, many prime fishing spots and 4x4 routes to the Messum and Doros Craters, Brandberg West, the Ugab and the Omaruru Rivers, and to Welwitschia. The busiest periods are linked to the South African holidays of June/July, the European holidays in July/August and the local/South African holiday season in December/January.

Government facilities in the town are the municipality, the clinic, the police station, the Ministry of Fisheries and Marine Resources' permit office and the police station.

5.9.2.1. Population Dynamics

Henties Bay has three distinct areas – Henties Bay town (formal low density housing areas of middle-high income), the high density extensions of Omdel and its informal settlement area called !Oas.

In 2015, the Municipality estimated a permanent population of approximately 12,000 of which about 6,500 live in Omdel where the Municipality provides them with basic services. Approximately 5,500 people are living permanently in the formal town area, excluding holiday makers. The Municipality supplies 7,690 households with water, of which 2,100 are in the formal town and 5,100 in Omdel. Many houses in the formal area are owned by non-permanent residents who come to the town during holiday periods when the population can swell to an estimated 21,000 people.

The population has grown considerably in the last three years as a survey conducted by Urban Dynamics during 2012/13 in preparation for the Henties Bay Integrated Urban Spatial Development Framework (IUSDF), estimated a permanent population of 7,461 living in 3,714 households, with an average of about 2.3 people per household. If the municipality population estimates for 2015 are correct, the IUSDF has greatly underestimated a population growth rate of 3.36% which they predicted would result in an estimated population of 9,265 by 2017 and 14,000 people by 2033.

The survey found that approximately 25% of the residents in the formal and informal areas moved to Henties Bay after 2008, many pulled by employment opportunities in the middle-high income housing construction sector. The ratio of male-female was fairly even and the percentage of people in the working age group of 15-59 years was 60% .

Afrikaans is the most prominent language spoken in the Henties Bay area comprising 85% of the population, followed by Damara/Nama then Oshiwambo.

5.9.2.2. Housing

As with all other towns in Namibia, housing development over the past two decades focused on providing middle- and high-income housing and thus Henties Bay extensions have a projected over-supply of erven up to 2033, with approximately 1,500 developed erven and 1,800 which are undeveloped/not yet serviced.

In contrast, affordable housing for low-income households has not kept pace with demand. In Omdel, most of the 900 erven have an additional household living in a backyard construction. The survey estimated that over 800 households in Omdel currently need an erf to live on. In addition to the three formal extensions of Omdel, approximately 17% of housing is in the informal areas of !Oas where approximately 640 households lived at the time of the survey.

5.9.2.3. Education

The 2012/13 Urban Dynamics survey of over 4,000 residents, recorded that an estimated 15% had no formal education while 50% had already completed Grade 10. Residents living in the low-density areas of Henties Bay attained the highest levels of education with 64% having completed at least Grade 12 or attaining some level of tertiary education.

The only school is the Kamwandi Combined School whose learner numbers are growing annually at an increasing rate. In October 2015 it had 988 learners from Grade 0 to Grade 10 and by February 2017, 1,120 learners were enrolled. The school is in great need of more classrooms as eleven classes have to run in the afternoon which is a severe disadvantage to children in Grade 1, 2 and 3 who are tired by then. Twenty-five classes of the 31 class groups are over-sized with more than 40 learners per class. Their priority needs are 12 new classrooms, a boundary wall, ablution blocks for girls and boys, a bus shelter and additional transport. Suitable and affordable accommodation for teachers is also a challenge. It is an English medium school and offers Afrikaans and Khoi Khoi as second languages. There is one private pre-primary school.

The University of Namibia (UNAM) Sam Nujoma Campus engages between 400-500 students and lecturers on its 100ha site to the north of the town. The Centre is a full-fledged multidisciplinary research centre with the mandate to promote research and development activities in the field of Marine Science and Coastal Resources. The Department of Fisheries and Aquatic Sciences is an Academic Department within the Faculty of Agriculture and Natural Resources of the University and offers a four-year degree programme and a research based postgraduate programme.

The National Youth Service, a government youth programme, offers "civic training" at their Henties Bay facility for approximately 500 youth between the ages of 16 – 35 years. The youth get free food, free accommodation, uniforms and N$350 a month in allowances. They manage a large vegetable garden and are allowed to visit the town centre once a month.

5.9.2.4. Health

Henties Bay has a number of private doctors, a frail care centre, a medical centre, a clinic and pharmacies. The Henties Bay government clinic is run by two registered nurses and two enrolled nurses; the government doctor rarely visits. Very sick patients are referred to the hospital in Swakopmund but there is no government ambulance available, so people have to arrange their own private transport. Lifelink Emergency Rescue Services offers a private sector paramedic service. Common diseases recorded to date in 2015 at the clinic were acute respiratory infections, muscular skeletal & diseases, skin diseases and diarrhoea which is likely to be poor hygiene related.

5.9.2.5. The Local Economy

The Henties Bay central business district is well structured, compact and easily accessible from most of the existing residential neighbourhoods. The Municipality has 160 registered businesses of which the majority are in the formal retail sector, 12% are industrial and 7% are office-based. Industries include a fish factory, a seal factory, garages, brick-making, wood-working using wood from the Congo and a 10-machine sewing enterprise. In the agricultural sector there is a chicken hatchery. The 2012/13 survey found that most of the informal businesses sold food and alcohol while 14% offered specialised activities such as vehicle repairs, hair braiding and barber shops.

Over 60 local fishermen are members of the Hanganeni Artisanal Fishing Association which gives them access to the Association's vehicle to access fishing points further up and down the coast. Fishermen are required to have valid permits to fish barbel, snoek, shark, kabeljou, steenbras, blacktail, galeon and rock lobster, some of which are seasonal. During the six days prior to interview, members caught kabeljou valued at over N$8,000 which contributes to the salaries of its 13 employees.

The 2012/13 survey found that in both the formal and informal areas of Omdel, the majority of workers were unqualified and the unemployment rate was 18% in Omdel (formal) and 23% in !Oas. The most common occupations were in the service, retail and trade industries, with domestic work being important in !Oas and Omdel. Nearly half of the residents of the survey (46%) were classified as economically inactive – being pensioners, homemakers and students.

The average earning capacity was relatively low with just over half (54%) of all residents in the whole town earning in a range between N$600 to N$6,000 per month. Almost half the households in !Oas

earned less than N$1,000 per month, compared to a quarter of households in Omdel. In the formal Henties Bay area, nearly three quarters of households earned more than N$6,000/month. When household consumption patterns were analysed for the whole town, approximately 60% of households had low economic power (N$300 – N$4000/month) while only 12% of households had over N$10,481 to spend monthly.

The low spending power of the majority of households influences the type of housing they can afford to buy and the ability of the town to support local economic activities.

5.9.2.6. The Town's Future Development Framework

Henties Bay's IUSDF recommended that the MR44 is shifted eastwards to allow for residential growth on the seaward side while industrial development supported by smallholdings will expand on the eastern side. This road construction has recently been completed and includes a by-pass for Henties Bay. In addition to the current undeveloped erven, the IUSDF plans for the development of a further 1,473 service erven which will create over 2,000 housing opportunities by 2033.

5.9.3. The Economics of Salt

5.9.3.1. Global Overview

Salt is a large volume, low priced bulk commodity that is produced and traded internationally. In 2019, global salt production is estimated to have been 293Mt produced by over 110 countries, with China, the USA and India dominating production. Approximately 40% of the salt is produced by evaporating seawater or inland brines while 34% is brine extracted from solution mining; just over a quarter of global production is from the mining of rock salt.

Marketable salt is derived from both brine and rock salt mining, but these techniques require large amounts of energy in order to recrystallize the salt.

The use of salt is dominated by the chemical production industry which accounts for about 60% of global demand. Salt is converted mainly into chlorine, caustic soda (sodium hydroxide) and soda ash (sodium carbonate) which are key basic inorganic chemicals for the chemical industry. The food and food processing industry accounts for about 20% and this includes meat processing, canning, other food processing, baking and dairy products. The remaining 20% of salt demand is for road de-icing, water treatment, tanning, animal feed, production of cooling brines and many other, smaller applications.

Salt production is very responsive to demand caused by winter weather conditions as de-icing salt accounts for up to 43% of the consumption in the USA and up to 30% in Europe. The demand for salt is forecast to rise by about 3% per year, particularly in the chemical sector, with the main growth in China and India.

5.9.3.2. Salt Production in Namibia

Currently, salt production in Namibia is dominated by Walvis Bay Salt Holdings which recently completed expansion to produce approximately 1Mt/annum through an additional seawater intake and feeder pipe and additional ponds, resulting in a total footprint of 4,500ha.1million tons of salt per year.

This amounts to about 88% of the national production while the Salt Company of Swakopmund produced around 120,000t in 2018.

Salt production at Walvis Bay began in 1964 and has grown to be the largest solar evaporation salt facility in sub-Saharan Africa. Salt & Chemicals produces the raw salt while its sister company Walvis Bay Salt Refiners (WBSR) further processes and markets the final product through Namport. Its biggest market is South Africa, with growth in demand from Nigeria and some other West African countries. With the increasing demand for salt, Salt and Chemicals is expanding production.

This current project at EPL8757 will supplement the salt projects in the Coastal Belt.

5.10. TRAFFIC SAFETY

5.10.1. Safety Concerns on Salt Roads

The absence of a permanent surfacing precludes the use of road markings. The lack of road markings are typically indicated using the **'W339 GENERAL WARNING'** with a sub plate **'SALT ROAD NO ROAD MARKINGS'**.

The surface of the salt road becomes very slippery in wet conditions. The most critical information that is conveyed by road markings is no passing zones. In their absence, road sign R214 (NO PASSING) is used.

6. IMPACT ASSESSMENT

The purpose of this section is to assess and identify the most pertinent environmental impacts by describing certain quantifiable aspects of these impacts and to provide possible mitigation measures to minimise the magnitude of the impacts or to avoid them. Impacts would be expected from the various activities pertaining to the project (in all project phases), i.e. the planned construction, mining of salt, conveyance of brine and diversion of the coastal road and associated activities.

The impact assessment of the aspects listed in the Terms of Reference and listed again below, was carried out using an adaptation of the environmental impact assessment method described by Hacking (2001).

- Flora
- Fauna
- Marine Ecology
- Archaeology
- Socio-economic
- Traffic safety

Table 4: Impact assessment methodology adapted from the Hacking Method

PART A: DEFINITION AND CRITERI		
Definition of SIGNIFICANCE		**Significance = consequence x probability**
Definition of CONSEQUENCE		**Consequence is a function of severity, spatial extent and duration**
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	**H**	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	**L**	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.

Criteria for ranking the SPATIAL SCALE of impacts	**L**	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE					
SEVERITY = L					
DURATION	Long term	**H**	**Medium**	**Medium**	**Medium**
	Medium term	**M**	**Low**	**Low**	**Medium**
	Short term	**L**	**Low**	**Low**	**Medium**
SEVERITY = M					
DURATION	Long term	**H**	**Medium**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	**High**
	Short term	**L**	**Low**	**Medium**	**Medium**
SEVERITY = H					
DURATION	Long term	**H**	**High**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	**High**
	Short term	**L**	**Medium**	**Medium**	**High**
			L	**M**	**H**
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
			SPATIAL SCALE		

PART C: DETERMINING SIGNIFICANCE					
PROBABILITY (of exposure to impacts)	Definite/ Continuous	**H**	**Medium**	**Medium**	**High**
	Possible/ frequent	**M**	**Medium**	**Medium**	**High**
	Unlikely/ seldom	**L**	**Low**	**Low**	**Medium**
			L	**M**	**H**
			CONSEQUENCE		

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	**Decision guideline**
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

6.1. IMPACT ASSESSMENT: FLORA

Table 5: Impact assessment of mining activities on floral ecology, biodiversity and habitat alteration within the planned mining area.

Impact	**Mining activities may affect the ecology and biodiversity of flora directly or through habitat alteration within the planned mining area.**
Description	Solar salt production bears the risk of impacting the diversity of species within the various habitats by reducing population numbers of certain species within the planned mining area. The salt pan only supports few

	species of halophilic plants along its western boundary. Pressures on the population can potentially lead to a reduction of the numbers within an area causing the species to no longer exist within that area. Should a species be endemic to that same area then the risk of extinction is high. This is not the case for any of the habitats at EPL8757. Habitats can be severely altered potentially changing the type of habitat or leading to the removal of micro habitats. This could reduce plant populations locally but not significantly affect biodiversity. A specialist flora study was commissioned for the EIA of the project. Site visits together with reference to studies carried out elsewhere in the area reveal that the habitat and the flora present in the area are not endemic to the planned mining area but are either common throughout the Central Namib Desert or if restricted in distribution or to particular micro habitats, they do occur outside the planned mining area. The rock outcrop habitat and gravel plain habitat within the planned mining area are more diverse both in terms of niches and species compared to the other three habitats. The coastal hummocks, a relatively small habitat type along the shoreline of the Namib desert is particularly important from a biogeographical perspective. The rocky outcrops offer the most diverse habitat for microhabitat variety. The next habitat of note is the area of the gravel plain where high number of lichens and different lichen species occur. Any major alteration or destruction of these three habitats would rate the impact as severe with respect to flora species' population losses. The washes and salt pan habitats are least sensitive and are considered of little concern from a biodiversity perspective. It is important to note here that the habitats that will be developed on the most are the salt pan and gravel plain habitat. The former has been disturbed over many decades by previous salt production. The latter will be affected on an area that had been disturbed many decades ago but which has naturally rehabilitated resulting in plants re-establishing themselves. Ecological functioning can be disturbed as plant populations of species are reduced, affecting the availability of food, shelter and building material for faunal species. Reduction in the populations reduces the amount of seed needed to sustain the long-term regeneration of the plant populations.		
Impact	Negative		
Phases	Phases during which mining activities may impact the ecology and biodiversity are highlighted below; The significance assessment was carried out on the operational phase which represents a long-term risk emanating from the project.		
Construction Phase	**Operational Phase**	**Decommissioning Phase**	**Post Closure**

Severity	Moderate / measurable deterioration. Noticeable loss of resources.					
Duration	Permanent. Beyond closure. Long term.					
Spatial Scale	Localised - Within the site boundary (Mining Licence Area)					
Probability	Possible/frequent					
Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence Probability of**	**Significance**
Unmitigated	**M**	**H**	**L**	**M**	**M**	**M**
Significance of Consequence	The salt production activities will potentially alter the pre-existing habitats. Topsoil/rock/gravel, plants and lichens will be removed during construction of the processing plant and access roads.					
Prevention	Not possible; at least some specimens of the most common taxa found in the planned mining area will be removed during construction activities.					
Recommended Mitigation Action	The spatial extent of the crystallisers should be kept to within the saline pan area as planned. The two planned bittern discharge structures that will cross the coastal hummock habitat should be reduced to one pipeline only. After construction, plants must be able to re-establish themselves above the submerged pipeline in order to allow free movement of organisms along the north south axis. The accessory works area for the processing plant, product stockpiling, workshops and offices must be allocated to the planned area only and any rocky outcrops within this predominantly gravel plain habitat must not be removed or constructed upon. The planning of the mine accessory works area layout must endeavour to reduce the footprint to a minimum without compromising the realistic needs of the business operation and making decisions that will safeguard against indiscriminate habitat alteration. Awareness training for personnel must focus on: ➢ Training of all personnel to limit the habitat alteration during the construction and operational phases of the mine ➢ Teach knowledge and understanding of the plants and lichens and their ecology The following basic rules must be adhered too: ➢ No littering ➢ Drive only on existing tracks as per Dorob National Park rules.					
Rehabilitation	Rehabilitation at mine closure could be applied to the accessory works areas as defined in the project description in this flora assessment. The following aspects should be considered when finalising the mine closure plan: ➢ The infrastructure removal and landscaping of the accessory works area to make it aesthetically pleasing.					

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**
Significance of Consequence	If the mitigation is followed through to rehabilitation, then the resultant significance of the consequence could be insignificant. It will not have a negative influence on the decision to grant environmental clearance.					
Confidence Level	A well designed and well implemented construction, operational and rehabilitation programme will provide the necessary confidence that the area of altered habitats would be minimised (reduced footprint) and will be rehabilitated at mine closure.					

Table 6: Impact assessment of the construction and operation of the brine pipeline

Impact	**Brine pipeline construction, operation and decommissioning may affect the ecology or biodiversity of flora directly or through habitat alteration along the planned route.**		
Description	Through the construction, operation and decommissioning of the brine pipeline there is potential for impacting the diversity of species within the various habitats by reducing population numbers of certain species along the planned brine pipeline route. Pressures on the population numbers can potentially lead to a reduction of a population within an area causing the species to no longer exist within that area. Ecological functioning can be disturbed as populations of plant and lichen species are reduced, affecting the availability of food, shelter and building material for faunal species. Reduction in the populations reduces the amount of seed needed to sustain the long-term regeneration of the plant populations. These potential impacts are not foreseen to occur as the pipeline will be constructed within the existing road reserve.		
Impact	Negative		
Phases	Phases during which the brine pipeline construction and brine conveyance activities may impact the ecology and biodiversity are highlighted below; The significance assessment was carried out on the operational phase which represents a long-term impact.		
Construction Phase	**Operational Phase**	**Decommissioning Phase**	**Post Closure**
Severity	Moderate / measurable deterioration. Noticeable loss of resources.		
Duration	Reversible over time (natural reseeding and revegetation). Life of the project.		

Spatial Scale		Localised - Within the site boundary (along Brine Pipeline)				
Probability		Possible/frequent				
StatusMitigation	**Severity**	**Duration**	**ScaleSpatial**	**Consequence**	**OccurrenceofProbability**	**Significance**
Unmitigated	**L**	**H**	**L**	**M**	**M**	**M**
Significance of Consequence		The construction activities will not alter the pre-existing habitats provided the boundary of the road reserve is not breached. Mitigation may be necessary & rehabilitation may be necessary				
Prevention		This is possible as no disturbance to pristine habitats is expected and the boundary of the road reserve will not need to be breached.				
Recommended Mitigation Action		The pipeline should be built on the edge of the road reserve as this land has already been disturbed. The pipeline could lay on the surface of the ground or on small concrete plinths. The pipeline with act as a barrier for vehicular movement east of the road. During operations the pipeline needs to be inspected to ensure that any potential leaking of the pipes can be rectified timeously. Though the groundwater in the washes is brackish and many inland pans precipitate salt after evaporation, the potential leaking of the pipeline should be eliminated as far as possible so as to minimise any deleterious effect of hypersaline brine on the plants in the vicinity of any brine leaks. Covering the pipeline along its entire length with gypcrete or desert gravel will not only hide the presence of the pipeline, it will potentially provide a small barrier for trapping seeds which could potentially germinate. Although this may not be favourable for maintaining a uniform structure in the long term it will have some potential re-establishment of any benefit for vegetation removed during the pipeline's construction. A negative aspect of creating a mound is that vehicle owners may be more easily tempted to breach the mound and thereby possibly damage the pipeline. An exposed pipeline could be a deterrent from entering the Dorob National Park except along designated roads or tracks. Awareness training for personnel must focus on: ➢ Training all personnel to limit the habitat alteration during the construction and operational phases of the pipeline ➢ Teach knowledge and understanding of the plants and lichens and their ecology				

Table 7: Impact assessment of the construction and operation of the planned new section of road – EPL8757

Impact	**Construction and operation of the new section of coastal road decommissioning may affect the ecology or biodiversity of flora directly or through habitat alteration along the planned route.**		
Description	Through the construction and operation of the new section of coastal road there is potential for impacting the biodiversity of species within the various habitats by reducing population numbers of certain species along the planned route. This new route for the C34 coastal road constitutes an upgrade of an existing road. Pressures on the plant population numbers can potentially lead to a reduction of a population within an area causing the species to no longer exist within that area. Should a species be endemic to that same area then the risk of extinction is high. Habitats can be severely altered potentially changing the type of habitat or leading to the removal of micro habitats. These hypothetical conditions will not manifest as the new planned route follows an existing road where earthworks through the rock outcrop habitats occurred in the past. Ecological functioning can be disturbed as populations of species are reduced, affecting the availability of food, shelter and building material for faunal species. Reduction in the populations reduces the amount of seed needed to sustain the long-term regeneration of the plant populations. For this project this is unlikely to occur as the new road route follows a pre-existing route that has already been disturbed.		
Impact	Negative		
Phases	Phases during which the new road construction and operational activities may impact the ecology and biodiversity are highlighted below; The significance assessment was carried out on the operational phase which represents a long term impact. The closure of the road is unlikely.		
Construction Phase	**Operational Phase**	**Decommissioning Phase**	**Post Closure**
Severity	Moderate / measurable deterioration. Noticeable loss of resources.		
Duration	Permanent. Beyond closure. Long term.		
Spatial Scale	Localised - Within the site boundary (Along Brine Pipeline)		
Probability	Possible/frequent		

Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Probability Of**	**Significance**

Unmitigated	**L**	**L**	**L**	**L**	**M**	**M**
Significance of Consequence		The construction activities will not alter the habitats that previously existed as the new road route has already been disturbed. A cautionary approach by the construction team will ensure the boundaries of the existing road route are not breached. This is the Mitigating measure that needs to be practiced together with rehabilitation of new tracks established during the construction phase.				
Prevention		This may not be possible as at least a few plant and lichen specimens of the most common taxa may be removed during construction activities.				
Recommended Mitigation Action		The new road should be built in such a way that it disturbs no more of the rocky outcrops and washes than what is neccessary. Due to the fact that much of the preparatory civil works have been completed already by other parties the completion of the new road will not add additional disturbed areas to the overall footprint. Awareness training for personnel must focus on: ➢ Training all personnel to limit the habitat alteration during the construction and operational phases of the road ➢ Teach knowledge and understanding of the flora and its ecology The following basic rules must be adhered too: ➢ No littering ➢ Driving only on existing roads (national roads and roads created by the mine inside the gravel mining area				
Rehabilitation		Rehabilitation of the new road will not be necessary in the foreseeable future as the road will be permanent and will be maintained even after the mine was to ever close.				
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence		If the mitigation hierarchy is followed through to operations and since little additional disturbance to habitats will occur to complete the construction of the road then the resultant significance of the consequence would be insignificant. It will not influence the decision.				
Confidence Level		A well designed and well implemented construction and operational programme will provide the necessary confidence that the altered habitats would be minimised (reduced footprint).				

6.2. IMPACT ASSESSMENT: FAUNA

Table 8: Impact assessment of mining activities on habitats, animals and ecology

Impact	**Direct and indirect loss of habitats and organisms; disturbance of ecological processes**					
Description	Causes of the impact include: • The clearing of land. • Excavation and operation of crystallisers. • Footprint of the processing plant and accessory works. • Impingement on strict nature reserve part of the Dorob National Park • Vehicle and people access. • Disturbance from increased vehicle and people access. • Human behaviour: collection of animals or plants, and sanitation practices.					
Impact	Negative					
Phases	Phases during which mining activities may impact the ecology and biodiversity are highlighted below.					
Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**			
Severity	Measurable deterioration and noticeable loss of resources					
Duration	Permanent loss of habitat and disturbance of ecology					
Spatial Scale	Within site boundary					
Probability	Definite, continuous impact					
StatusMitigation	**Severity**	**Duration**	**ScaleSpatial**	**Consequence**	**OccurrenceofProbability**	**Significance**
Unmitigated	**M**	**H**	**L**	**M**	**H**	**M**
Significance of Consequence	• Crystallisers cause long-term damage to saline pan. Since about more than 50% of the planned area for crystallisers is already disturbed, the damage will be limited in extent. • Death of slow-moving animals and dormant invertebrates in the gravel plain. • Death of animals when struck by vehicles and machinery. • Loss of shelter for reptiles mainly, and also ground-dwelling mammals in rock outcrop, gravel plain and washes habitats. • Loss of vegetation on the gravel plain and in washes causes loss of herbivores, which results in loss of food species for reptiles.					

Prevention	Not possible.
Recommended Mitigation Action	1. Limit the footprint of the crystallisers and accessory works to the currently planned size and location (i.e. saline pan and gravel plain west of new road diversion, allow only two access points through coastal hummocks and allow one linear route only through rock outcrop areas with no other rock outcrops to be disturbed); 2. Do not expand to the east/northeast of the planned diversion road or planned accessory works area. 3. No entry signs to ensure that the coastal hummocks, rock outcrops and washes are inaccessible to both staff and the public. This is the Park requirement for Mining Areas and are to be erected where existing tracks pass through the ML area from the coastal road to the beach. 4. Ensure that the coastal hummocks are accessible only for maintenance of the bittern pipelines. 5. Provide sufficient ablution facilities and train staff and contractor staff about indiscriminate defecating. 6. A survey of the breeding Damara Terns is required for the areas previously surveyed and mapped. This will provide a baseline prior to the expansion of the works in the southern sector of the salt pan.
Rehabilitation	

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Mitigated	**L**	**H**	**L**	**M**	**L**	**L**

Significance of Consequence	Significance of the impact can be mitigated by following proposed measures and a professionally designed rehabilitation plan.
Confidence Level	High. Assiduous implementation of the mitigation measures proposed by all the specialists, as well as strict adherence to a rehabilitation plan, will reduce the footprint and severity of the impact.

Table 9: Impact assessment of new road on habitat and organisms

Impact		**Direct and indirect loss of animals, as well as destruction and/or disturbance of habitat**				
Description		Once the new road is completed the old stretch of C34 will be used by the salt mine vehicles only. The road runs through the gravel plain in an area containing washes and rock outcrop habitats. The new road is being built on an existing dirt road where there is already disturbance along the linear servitude.				
Impact		Negative				
Phases		The road will be a permanent structure and it is highly unlikely that it will be closed, thus decommissioning and post closure phases are not applicable. Phases during which mining activities may impact the ecology and biodiversity are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.				
Construction phase		**Operational phase**		**Decommissioning phase**		**Post closure**
Severity		Measurable deterioration and noticeable loss of resources				
Duration		Permanent and beyond closure of project				
Spatial Scale		Beyond site boundary, but on already existing dirt road				
Probability		Frequent exposure to impact				
Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence of Probability**	**Significance**
Unmitigated	**M**	**H**	**L**	**M**	**M**	**M**
Significance of		During construction: vehicle and heavy machinery activity, clearing land, laying down material, laydown areas, soil disruption, human presence. These construction activities cause disturbance to the soil and topography, are considered severe even though it is linear, and thus limited, in spatial extent. Changes in water runoff patterns and contamination from runoff could cause decline in habitat quality. Barrier effect on rats, mice and gerbils, as well as reptiles.				

Consequence	Irreversible destruction of lichens, causing decline in food sources for animals. Roadkill - animal mortality increases. Brown hyenas are particularly prone to roadkill. The new road will relocate the existing C34, moving existing traffic and impacts to the new location and not changing the risk to hyenas. On the old stretch of C34 however, the salt mine will result in traffic of heavy machinery. Increased access to highly sensitive habitats (rocky outcrops and washes northeast of new road) for the 4x4 driving public

Prevention	Not possible.					
Recommended Mitigation Action	During construction, keep disturbance within the designated footprint of the road and verges. After construction, start rehabilitation by levelling and removing construction material as soon as the disturbance has ceased. Put effective barriers along new road and C34 to prevent vehicle access to the washes and rocky outcrops, while not affecting the movement patterns of hyenas, jackals and springbok. Impacts are likely to be of medium to low significance due to the level of current disturbance.					
Rehabilitation	Road will likely be permanent.					
Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence of Probability**	**Significance**
Mitigated	**L**	**M**	**L**	**L**	**L**	**L**
Significance of Consequence	Significance is low, mainly because of the existing level of disturbance, but also if mitigation measures are strictly implemented.					
Confidence Level	High.					

6.3. IMPACT ASSESSMENT: MARINE ECOLOGY

6.3.1. The marine impact assessments

Table 10: Impact assessment of increased salinity

Impact	**Impacts of elevated salinity on the physiological functioning of marine organisms**
Description	Some cumulative impacts may be anticipated as the bitterns discharge for the Salt Works. Discharges will, however, will be sporadic and dilution and dispersal in the

	turbulent surf zone will be rapid.					
Impact	Negative					
Phases	Phases during which mining activities may impact marine ecology are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.					
Construction phase	**Operational phase**		**Decommissioning phase**		**Post closure**	
Severity	Minor deterioration					
Duration	Short-term; for the duration of the discharge					
Spatial Scale	Site specific					
Probability	Unlikely (beyond the sacrificial zone)					
Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence of Probability**	**Significance**
Unmitigated	**M**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	Any effects on marine biota would be fully reversible.					
Prevention	Not possible.					
Recommended Mitigation Action	Little or no mitigation necessary					
Rehabilitation	None					
Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence of Probability**	**Significance**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	Low. Impacts will be ephemeral as bitterns will only be periodically released.					
Confidence Level	High					

Table 11: Impact assessment of elevated temperature

Impact	Impacts of elevated temperature on the physiological functioning of marine organisms		
Description	Having been stored in a relatively shallow holding pond, the discharged bitterns can be expected to, at times, have a higher temperature than the receiving waters. Temperature elevations are not expected to exceed 28°C in the bitterns brine. No cumulative impacts are anticipated, as discharges will be sporadic and biota are adapted to short-term temperature fluctuations.		
Impact	Negative		
Phases	Phases during which mining activities may impact marine ecology are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.		
Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Unmitigated	**L**	**L**	**L**	**L**	**L**	**L**

Severity	Minor deterioration
Duration	Short-term; for the duration of the discharge
Spatial Scale	Site specific
Probability	Unlikely (beyond the sacrificial zone)
Significance of Consequence	The effects of elevated temperature on marine communities is considered to be of low severity and any effects would remain highly localised and persist over the very short-term only in the turbulent surf zone. Impacts will be ephemeral as bitterns will only be periodically released.
Prevention	Not possible.
Recommended Mitigation Action	No mitigation necessary
Rehabilitation	None

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	Any effects on marine biota would be fully reversible.					
Confidence Level	High.					

Table 12: Impact assessment of ionic imbalance

Impact	**Impacts of ionic imbalances in the bitterns on the physiological functioning of marine organisms**		
Description	As most aquatic animals spent a great deal of metabolic energy regulating water and ions, any changes in the concentration or composition of ions in the external medium, particularly over longer periods, can result in chronic stress to the animal, which in turn can affect biological functions such as growth and reproduction. Potassium is the most toxic ion to marine organisms, but at the concentrations expected in the undiluted bitterns, magnesium and bromide are likely also to reach sub-lethal or lethal levels.		
Impact	Negative		
Phases	Phases during which mining activities may impact marine ecology are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.		
Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**
Severity	Medium severity but effects will likely remain highly localised		
Duration	Short-term; for the duration of the discharge		
Spatial Scale	Site specific		
Probability	Unlikely (beyond the sacrificial zone)		

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Unmitigated	**M**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	The effects of an ionic imbalance in the discharged bitterns on marine communities is considered to be of medium severity but effects will likely remain highly localised as dilution and dispersion of the bitterns in the surf zone will be rapid. Impacts will be ephemeral as bitterns will only be periodically released.					
Prevention	Not possible.					
Recommended Mitigation Action	Little or no mitigation necessary. Discharge of the bitterns onto the beach and into the surf zone would ensure rapid dilution of the effluent with toxic effects of ionic imbalances limited to the sacrificial zone and only for as long as the effluent is discharged.					
Rehabilitation	None					

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	Any effects on marine biota would be fully reversible.					
Confidence Level	High					

Table 16. Impact assessment of nutrient enrichment

Impact	**Impacts of nutrient enrichment in the surf zone following release of bitterns**
Description	Bitterns are nutrient-rich and when discharged into the surf zone this nutrient enrichment will likely result in a localised increase in phytoplankton productivity. Should they occur, plankton blooms would be ephemeral only, but are likely to temporarily attract higher order consumers to the vicinity of the bitterns discharge. Subsequent deposition and bacterial decomposition of the excess

	organic matter can result in the depletion of dissolved oxygen (particularly in the bottom waters and in the sediments). Whereas this may lead to localised anoxia in the sediments in the immediate vicinity of the discharge, the turbulent conditions in the surf zone, and medium to coarse beach sediments in the area will ensure rapid flushing of the impacted area and any effects are likely to be of short duration only.
Impact	Negative/Positive
Phases	Phases during which mining activities may impact marine ecology are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.
Construction phase	**Operational phase** / **Decommissioning phase** / **Post closure**
Severity	Minor deterioration
Duration	Short-term; for the duration of the discharge
Spatial Scale	Site specific
Probability	Possible

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Unmitigated	**L**	**L**	**L**	**L**	**L**	**L**

Significance of Consequence	Discharges at both locations will, however, will be sporadic and dilution and dispersal in the turbulent surf zone will be rapid. The effects of nutrient enrichment in the surf zone as a consequence of the discharge of bitterns is considered to be of low severity. Impacts will persist over short-term only and may be positive in that the resulting phytoplankton blooms may serve as a temporary food source for surf zone fish.
Prevention	Not possible.
Recommended Mitigation Action	Little or no mitigation necessary.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance

Mitigated	**L**	**L**	**L**	**L**	**L**	**L**
Significance of Consequence	Low					
Confidence Level	High					

6.3.2. Mitigation Measures

Even though all potential marine ecology impacts resulting from the bitterns' disposal were assessed to be of low significance, the following mitigation measures and management actions are proposed and are applicable to all the impacts.

Essential mitigation measures include:

- Establish only a single discharge point, i.e. a single bitterns' outlet only (i.e. either the northern OR the southern option, but not both) thereby restricting the impact footprint;
- Monitoring of bitterns' density and ionic concentrations composition prior to release onto beach;
- Monitoring of discharge volumes and discharge rates on release of bitterns;
- Positioning of the discharge point as far down the beach as possible (e.g. through a flexible end section of the pipeline);
- Discharge of bitterns at half-tide or higher during the ebbing tide only to maximise the effects of dilution;
- Reporting of any mortalities of marine life in the vicinity of the bitterns' outlet as a direct consequence of the discharge;

Best Practice mitigation measures include:

- Discharge the bitterns during the 2 ebbing high tides of the spring tide event which occurs twice a month (high tides during neap tide will not reach up the beach enough to dilute the discharged bitterns);
- Undertaking a hydrodynamic modelling study of the bitterns' discharge (should consequences be reported necessitating verification) to establish the extent of the sacrificial zone and confirm the predictions of this ecological assessment.

6.3.3. General recommendations from the marine assessment

Due to the potential detrimental environmental effects associated with the discharge of high volumes of bitterns, many of the large evaporative salt works around the world have investigated alternative uses for the bitterns. Solar evaporation of bittern is, however, much slower than the salt precipitation stage and results in the crystallization of a complex and varying mixture of halite, sylvite, and double salts of potassium, sodium, and magnesium. The recovery of marketable products from the bittern salt crops becomes difficult and often inefficient due to the need for further processing.

Nonetheless, the crystallization and processing of bitterns and the subsequent application of the products in other industries is receiving widespread attention (Kokihama *et al*. 1993; CORDIS 1997; Davis 1999; Davis 2006). For example, bromine (Br_2) can be recovered following treatment of bittern by electrodialysis (Yalçin *et al*. 1997). Crystallization of bitterns has been used for the recovery of high purity epsomite, bischofite and sylvite (Fernândez-Lozano 1973; De Medeiros Rocha *et al*. 2012), magnesium chloride-Hexahydrate for use as a dust suppressant and de-icing product (Jadhav 1983; Madbouly, 2004; De Medeiros Rocha *et al*. 2012), and potash with the co-production of Epsom salt and ammonium sulphate yielding a K-N-S compound fertilizer (Aral *et al*. 2004; Ghara *et al*. 2014).

Furthermore, the enriched magnesium content and the high ionic strength of bitterns contribute to their effectiveness as a coagulant, and when added to wastewater alkalized with lime or caustic soda, liquid bittern have been found to successfully remove suspended solids and faecal coliform bacteria (Ayoub *et al*. 2000) and heavy metals (cadmium, chromium, lead, mercury, zinc, arsenic, copper, and nickel) (Ayoub *et al*. 2001).

As the volumes of bitterns produced by the saltworks will not be at the same scale as those utilized for the recovery of products described above, the project cannot provide the economy of scale to consider maximising the use for the salts remaining in the bitterns (e.g. for use as fertilizers) in preference to discharge to the marine environment. Furthermore, as the bitterns' composition will not be typical of that obtained from solar evaporative saltworks, and all the potential impacts to the marine ecology resulting from their disposal were assessed to be of low significance, the implementation of costly mitigation measures is unwarranted.

6.3.4. Environmental Acceptability and Impact Statement

In view of any future discharge of bitterns into the marine environment Salt needs to record and monitor the bitterns' disposal. With the implementation of the recommendations, and appropriate mitigation measures advanced in this report, and the EIA for the proposed project, there is no reason why the proposed bitterns discharge should not proceed.

6.4. IMPACT ASSESSMENT: ARCHAEOLOGY

Table 13: Impact assessment on an archaeological site

Impact	**The accessory works may cause physical disturbance or destruction of an archaeological site**
Description	A systematic foot survey of the proposed accessory works area revealed a single archaeological site close to the north-western margin of the area in an area of low-lying ground on the leeward side of a weathered dolerite dyke. The site consisted of seven dispersed stone features probably representing windbreaks and storage facilities covering an area of approximately 300m^2. There were no artefacts or other archaeological remains visible on the surface. The stone

	features are similar to those found in the vicinity of Cape Cross and Wlotzkasbaken. Although the stone features appear to be undisturbed, the site lies on the edge of a large excavated pit with associated spoil heaps. The site is also crossed by a disused vehicle track. Although undisturbed, Site 371 is considered to have negligible research value.
Impact	Negative
Phases	Phases during which mining activities may impact the archaeology are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.

Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**

Severity	Irreplaceable loss of resources
Duration	Permanent, irreversible
Spatial Scale	Localised
Probability	

Status Mitigation	**Severity**	**Duration**	**Scale Spatial**	**Consequence**	**Occurrence of Probability**	**Significance**
Unmitigated	**M**	**H**	**L**	**M**	**M**	**L**

Significance of Consequence	Disturbance and/or destruction of the site would entail permanent and irreversible loss of archaeological material evidence, but the site is of negligible research value.
Prevention	n/a
Recommended Mitigation Action	If the site does not lie unavoidably in the path of the proposed activities it should be demarcated and left undisturbed.
Rehabilitation	None

StatusMitigation	**Severity**	**Duration**	**ScaleSpatial**	**Consequence**	**OccurrenceofProbability**	**Significance**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Significance of Consequence	Low, it will not have an influence on the decision.
Confidence Level	High

6.5. IMPACT ASSESSMENT: SOCIO-ECONOMIC

Table 14: Impact Assessment of Employment Creation and Skills Development

Impact	**Employment Creation and Skills Development**		
Description	Once an Environmental Clearance Certificate and a mining licence have been granted, the proponent intends to start constructing the re-crystalliser beds on top of the pan surface and construct the processing plant in the accessory works area at EPL8757 The EPL8757 Salt project could provide skills development, employment opportunities and a build-up of work experience for some of the residents of Henties Bay who have a minimum of Grade 10. Mining is planned for daylight hours whilst processing is planned to use 12 hour shifts, 24 hours/day and 7 days/week. The routine nature of much of the work and these long working hours will require stringent processing safety standards and human resources retention initiatives. These long hours will be tough on maintaining quality family life, whether male or female, and will be even longer if there is additional travelling time home at the end of 12 hour shifts. Some of the truck drivers may come from or want to live in Swakopmund or Walvis Bay where the larger towns can offer better schools and recreation benefits although the cost of housing is likely to be higher. Recruitment from Henties Bay will carry a more significant positive local impact compared to recruitment from Swakopmund or Walvis Bay, where there are more employment opportunities.		
Impact	Positive		
Phases			
Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**
Constructing the mine	Mining	Dismantling	Loss of jobs
Severity	Considerable improvement		
Duration	The duration of employment creation is ranked high to correspond with the long life of mine and to acknowledge that work experience builds human capacity for a lifetime and can contribute to the nation's sustainable development beyond the life of project.		
Spatial Scale	The spatial scale is high as people will be employed from across the region and possibly nationally.		
Probability	Definite; The probability of these impacts occurring is high – the salt facility will need significant numbers of semi-skilled labour		

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Unmitigated	**H+**	**H**	**H**	**H**	**H**	**H+**
Significance of Consequence	The consequence of these positive impacts is high due to their high intensity, their widespread nature and long duration. The significance of these positive impacts is high because the consequence and probability of the impacts occurring are both high.					
Prevention	If the project does not go ahead then the positive impacts will not be realised.					
Recommended Mitigation Action	The enhancement objective is to maximise employment and skills development opportunities, giving preference to people from Henties Bay and then from the rest of the Erongo Region, thus enhancing increase the positive significance of the impacts even further. The mitigation objective is to reduce potential negative impacts brought about by in-migration to Henties Bay if there was national recruitment. 1. Establish short, intensive training programmes for machine and truck operators and other required skills, during construction of the re-crystallisers and processing plant, to enable people in Henties Bay to take up the majority of low and semi-skilled jobs in the operations phase; 2. Give priority to recruiting from Omdel and Omdel informal residents where 34% and 30% of the population respectively have Grade 10 and above. This will make an even greater impact on improving livelihoods amongst the poorest communities, which will be greatly appreciated by government and local stakeholders. 3. Give preference for the selection of women for training and recruitment and will develop a human resource policy which supports women to perform well in the workplace while balancing their other duties in the family and community; Give preference during the lifespan of the project to support government's priority to focus recruitment and corporate social responsibility on the most deprived constituencies in the region to address poverty, inequality and exclusion. 4. Adhere to the Namibian Chamber of Mines Mining Charter, which states that mining companies must invest at least 2% of their annual gross payrolls every year in developing the skills of Historically Disadvantaged Namibians (HDN) employees and other HDNs; 5. Ensure that employees, and those of its mining and plant contractors, are paid market related wages, with housing allowances that can promote home ownership and contributions to pension contributions and medical aid; 6. Adhere to the International Finance Corporation's Performance Standard Two					

	on labour and working conditions and "recognise that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers".

planning	The loss of employment, should the project close, will have a long-term negative impact. However, reliable and experienced machine and truck operators have transferable skills which are sought after by other employers. An unexpected closure could lead to a sudden loss of jobs. To mitigate this situation and mine closure the proponent should:- 1. Encourage and enable employees to diversify and upgrade skills so they benefit from being able to offer labour flexibility and productivity throughout the lifetime of the project and particularly should it close; 2. Ensure that the facility closure plan is understood by the workforce and guarantees final salary pay-outs and pension transfers. 3. As part of its CSR programme, offer training on personal financial management to all employees so they are better able to adapt to changes in their circumstances; 4. Ensure skills upgrading during employment is documented and accredited where possible so skills are recognised with future employers.

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Mitigated	**H+**	**H**	**H**	**H**	**H**	**H++**
Significance of Consequence	High					
Confidence Level	I am confident the significance will increase if a cumulative impact is realised, namely, that EPL8757 project operate at the maximum intentioned extent.					

The proposed salt production facility will contribute towards the achievement of NDP5 in creating value-addition to Namibia's raw materials and in creating jobs. Many positive impacts can be enhanced with careful management, and mitigation measures have been proposed which will reduce negative impacts.

The project will make a long-term contribution to the local, regional and national economy as operations could continue for many decades. It is recommended that mine and processing staff live permanently in Henties Bay and commute daily to the salt works; Shift staff could make use of the accommodation on site; This accommodation would be ideal for employees who do not have direct family who are dependent on them on a daily basis. These aspects

will maximise benefits to the local economy and to employees' families. Worker's salaries and benefits package must encourage home ownership which will help improve the housing stock. It is recommended that haulage truck operators should live in all three coastal towns to maximise the continuous flow of trucks yet enable the drivers to maintain a stable family life. Unsafe overtaking of these very heavy haulage trucks on the coastal road where fog, undulating roads with poor road signage, may result in more road accidents. This important safety concern was assessed in the transport studies for this and other salt projects.

Mining in the salt pan, tourism and restricted access conservation areas have co-existed for many years. There is a risk that increases in mining rates, processing and haulage may impact
on the wider area's sense of place. This needs to be carefully monitored and if negative impacts are too significant, mitigation measures may be needed such as a moratorium on night-time activities. The proponent must take the lead in engaging with local stakeholders to maximise synergies which will benefit all parties in the area.

Overall, salt mining will bring much needed, stable, socio-economic benefits to the local communities.

6.6. IMPACT ASSESSMENT: ROAD SAFETY

Table 15: Impact assessment of vehicles crossing the road

Impact	**Horizontal alignment: Salt works vehicular movement crossing the existing road**		
Description	Operations with accompanying Salt Works vehicular movements across the existing main road, will increase the risk of 3rd party accidents.		
Impact	Negative		
Phases	Phases during which mining activities may impact road safety are highlighted below. The significance assessment was carried out on the operational phase which represents a long-term impact.		
Construction phase	**Operational phase**	**Decommissioning phase**	**Post closure**
Severity	Substantial		
Duration	Permanent		
Spatial Scale	Local		
Probability	Possible		

Status Mitigation	Severity	Duration	Scale Spatial	Consequence	Occurrence of Probability	Significance
Unmitigated	**H**	**H**	**L**	**H**	**M**	**H**
Significance of Consequence	High					
Prevention	Possible					
Recommended Mitigation Action	By re-routing the section of the main road, which is currently located between the crystalliser ponds and the proposed processing area, with the appropriate minimum design standards, this risk is reduced substantially though the significance is still medium. However, this is an improvement and so the re-routing should be seriously considered as the best mitigation. In addition to the horizontal alignment improvements the introduction of a wider intersection will reduce the impact further to a low significant outcome. Once the proposed new deviation alignment is designed below), minimum design standards should be applied					

Design Elements	Desirable Standard	Applied Standard
Horizontal Alignment:		
Design speed	100 km/h	100 km/h

A new proposed T-Junction must be constructed on the re-routed section of the road for access to and from the site. Slip lanes must be provided at the junction for the passing of through vehicles, to facilitate acceleration and deceleration of turning vehicles.

The location of the proposed junction will be affected by the sight distances. The minimum sight distance for 100km/h is 300m in both directions. The extent of the impact can only be finalised with a detail design based on a detail survey.

7. ENVIRONMENTAL MANAGEMENT PLAN

The Draft EMP has incorporated the recommended mitigation, rehabilitation measures and recommended monitoring that the specialists have provided.

Monitoring of the environmental issues concerned should take place throughout the construction, operational and decommissioning phases. It is recommended that internal audits be carried out every 6 months to check compliance with the EMP. The company should ensure that all the proposed mitigation measures are being complied with and no substantial impact on the environment occurs. Any problems or faults must be brought to the attention of the management team of Frampton Investment CC in order to discuss ways to improve the systems in place. A bi-annual report needs to be drafted and submitted to MEFT every 6 months.

8. CONCLUSION

The potential impacts of the construction and operational phases on the environment were assessed for the salt production and processing within the mining licence, the construction and operation of the brine pipeline, transport related impacts and the construction of the new section of coastal road. The existing disturbed areas within the mining licence area, along the new road route and within the road reserve of the coastal road along which the brine pipeline extends, were also taken into consideration during the assessment. The existence of these disturbed areas moderated the severity, consequence and significance of the impact even without the consideration of mitigating measures that might decrease the significance.

Due to the long-term sustainability of salt production, it is unlikely that the mine would ever need to close. Fluctuations in market demand may affect the mine from time to time. Should the mining project have to be closed permanently then rehabilitation of the mining area would need to be undertaken. A mine closure plan should take into consideration the recommended measures highlighted in the assessment section of this report.

The EAP deems the project to be acceptable considering the input of the specialists and the low significance of the impacts provided the necessary mitigation measures, ongoing rehabilitation measures and monitoring are all implemented.

ANNEXURES 1: List of consulted Stakeholders

NAME	INSTITUTION	CONTACTS
Ms. Anja Kreiner	Environmental Officer for MFMR & Coastal Management Committee	0644101000
	Ministry of Works & Transport (Swakopmund Regional Office)	
Lazarus	Owner - Frampton Investment	0812266882
	Henties Bay Municipality	064 502 000
Chief Regional Officer - Erongo Region (Regional Government)	Erongo Regional Office - Local Government	0644105700

ANNEXURES 2: Newspaper tear sheets of EIA Adverts

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NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: THE PROPOSED PROSPECTING & EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTING LICENCE (EPL) NO. 8507 LOCATED NORTHWEST OF OKANGWATI, IN THE KUNENE REGION.

Under the Environmental Management Act No. 7 of 2007 and its 2012 EIA Regulations, the proposed prospecting and exploration activities on EPL 8507 require an Environmental Clearance Certificate (ECC) from the Department of Environmental Affairs and Forestry (DEA) before commencement.

The public is hereby notified that an application for an ECC will be submitted to the Environmental Commissioner.

Brief Project Description: The environmental scoping process will identify potential positive and negative impacts stemming from the proposed exploration activities on EPL 8507. The targeted commodity on the EPL is **Precious Stones.**

Proponent: Codebreak Investments (Pty) Ltd

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as Interested and Affected Parties in order to comment/raise concerns or receive further information on the Environmental Assessment process.

Public Consultation meeting details will be communicated with all the registered I&APs

Registration requests and comments should be forwarded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on **7 October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 61 259 530

Excel Dynamic Solutions (Pty) Ltd

NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: THE PROPOSED SMALL-SCALE MINING ACTIVITIES ON THE MINING CLAIMS (MCs) No. 68167 – 68176 LOCATED EAST AND SOUTHEAST OF KHORIXAS; KUNENE REGION.

Under the Environmental Management Act, No. 7 of 2007, and its 2012 Environmental Impact Assessment (EIA) Regulations, an Environmental Clearance Certificate (ECC) Application will be submitted to the Environmental Commissioner. The project is a listed activity that cannot be undertaken without an ECC from the Department of Environmental Affairs and Forestry (DEAF).

Project Type & Location: The proposed small-scale mining activity of **Base & Rare Metals and Semi-precious Stone** on MCs No 68167 – 68176.

The 197.321-hectare (ha) MCs are located about 6 km East and Southeast of Khorixas in the Kunene Region. The MCs covers Farm Navarre No.383.

Proponent: Muriel's Investments CC.

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as Interested and Affected Parties (I&APs), to comment/raise concerns or receive further information on the Environmental Assessment process.

Public consultation meeting details will be communicated with all the registered I&APs in due course.

Registration requests and comments should be forwarded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on **7th October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 (0) 61 259 530

Excel Dynamic Solutions (Pty) Ltd

NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: PROPOSED SMALL-SCALE MINING ACTIVITIES ON MINING CLAIMS (MCs) NO. 69840 - 69843 LOCATED NORTHWEST OF OKOMBAHE, ERONGO REGION, NAMIBIA

Under the Environmental Management Act No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations, an Environmental Clearance Certificate (ECC) application will be submitted to the Environmental commissioner. The project is among listed activities that cannot be undertaken without an ECC from the Department of Environmental Affairs and Forestry (DEAF).

Project Type & Location: The proposed small scale mining activities of **Base & Rare Metals, Industrial Minerals, Precious Metals and Semi-Precious Stones** on the Mining Claims (MCs) No. 69840 - 69843. The MCs cover a total area of 69.9733-hectare (ha) and is located about 11 km NorthWest of Okombahe, Erongo Region.

Proponent: Siegfried Steyn Hengari

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as interested and Affected Parties (I&APs) in order to comment/raise concerns or receive further information on the Environmental Assessment process.

Public consultation meeting details will be communicated with all the registered I&APs in due course.

Registration requests and comments should be for warded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on the **07 October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 (0) 61 259 530

Excel Dynamic Solutions (Pty) Ltd

NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: THE PROPOSED EXPLORATION ACTIVITIES ON THE EXCLUSIVE PROSPECTING LICENCE (EPL) No. 8508 LOCATED WEST OF KAMANJAB IN THE KUNENE REGION.

Under the Environmental Management Act No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations, an Environmental Clearance Certificate (ECC) Application will be submitted to the Environmental Commissioner. The project is a listed activity that cannot be undertaken without an ECC from the Department of Environmental Affairs and Forestry (DEAF).

Project Type & Location: The proposed prospecting & exploration of **Base & Rare Metals, Dimension Stone, Industrial Minerals and Precious Metals** on EPL 8508.

The 19 593.1404 hectare (ha) EPL is located about 39 km West of Kamanjab in the Kunene Region. The EPL covers Farm Condor No. 617, Farm Bruno No. 614, Farm Emmanuel No. 613, Farm No. 612, Farm Deo Volento No. 610, Farm Omborde No. 616 and Farm Atlanta No. 618.

Proponent: Codebreak Investments (Pty) Ltd

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as Interested and Affected Parties (I&APs), in order to comment/raise concerns or receive further information on the Environmental Assessment process.

Public consultation meeting details will be communicated with all the registered I&APs in due course.

Registration requests and comments should be forwarded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on **7th October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 (0) 61 259 530

Excel Dynamic Solutions (Pty) Ltd

NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: THE PROPOSED EXCLUSIVE PROSPECTING LICENSCE (EPL) No. EPL 8506 LOCATED NORTHEAST OF UIS IN THE ERONGO REGION

Under the Environmental Management Act No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations, an Environmental Clearance Certificate (ECC) Application will be submitted to the Environmental Commissioner. The project is a listed activity that cannot be undertaken without an ECC from the Department of Environmental Affairs and Forestry (DEAF).

Project Type & Location: The proposed prospecting & exploration of **Base & Rare Metals, Dimension Stone, Industrial Minerals and Precious Metals** on EPL 8506.

The 15 342.8769 hectare (ha) EPL is located about 20 km Northeast of Uis in the Erongo Region. The EPL covers the Otjohorongo and Okombahe Reserve.

Proponent: Codebreak Investments (Pty) Ltd

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as Interested and Affected Parties (I&APs), in order to comment/raise concerns or receive further information on the Environmental Assessment process.

Public consultation meeting details will be communicated with all the registered I&APs in due course.

Registration requests and comments should be forwarded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on **7th October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 (0) 61 259 530

Excel Dynamic Solutions (Pty) Ltd

NOTICE OF ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR: PROPOSED SMALL-SCALE MINING ACTIVITIES ON MINING CLAIMS (MCs) NO. 68157- 68166 LOCATED EAST OF KHORIXAS, KUNENE REGION, NAMIBIA

Under the Environmental Management Act No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations, an Environmental Clearance Certificate (ECC) application will be submitted to the Environmental commissioner. The project is among listed activities that cannot be undertaken without an ECC from the Department of Environmental Affairs and Forestry (DEAF).

Project Type & Location: The proposed small scale mining activities of **Base & Rare Metals, Precious Stones and Semi-Precious Stones** on the Mining Claims (MCs) No. 68157 - 68166.

The MCs cover a total area of 205.0421-hectare (ha) and is located about 5 km East of Khorixas, Kunene Region.

Proponent: Gonzales Mining Investments CC

Environmental Consultant: Excel Dynamic Solutions (Pty) Ltd

Members of the public are invited to register as Interested and Affected Parties (I&APs) in order to comment/raise concerns or receive further information on the Environmental Assessment process.

Public consultation meeting details will be communicated with all the registered I&APs in due course.

Registration requests and comments should be for warded to Excel Dynamic Solutions (Pty) Ltd on the contact details below, before or on the **07 October 2022.**

Contact: Ms. Aili Iipinge
Email: public@edsnamibia.com
Tel: + 264 (0) 61 259 530

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ENVIRONMENTAL CLEARANCE NOTICE

Public Participation Notice in terms of Regulation No. 29, Section 21 under the Environmental Management Act (Act No. 7 of 2007)

Exclusive Prospecting License: 8757, 70km north West of Henties Bay, Erongo Region
Proposed Development: Salt Mining,
Proponent: Private
EAP: Erongo Consulting Group
Competent Authority: Ministry of Mines & Energy, Namibia
Reviewer: Ministry of Environment, Forestry & Tourism

As salt manufacturing and mining processes continue to evolve, the industry refines and improves its environmental performance to benefit the working environment, local communities and the environment in general. As such, the proposed development may not be undertaken without an Environmental Clearance Certificate (ECC) as enshrined in the Environmental Management Act (Act 7 of 2007) and its Regulations. Interested and Affected Parties (I&APs) are hereby invited to register and participate in the public consultation process to give input, comments, and opinions, in writing not later than the **6th of September 2022.**

- **Erongo Consulting Group**
- **+264818786676**
- **Email: info@erongoconsultinggroup.com**

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- 5 years working experience

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- Namibian Citizen or eligible to work in Namibia.

Should you meet the above-mentioned requirements, kindly submit your CV and all certified supporting documents to the Human Resource Department, Ondangwa Private Hospital, P.O. Box 4027 Ondangwa, or forward them via e-mail to: **recruitment@oph.com.na**

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REQUIREMENTS
- A recognised 3-year teaching qualification in the relevant subject/ position
- For secondary teachers, an ability to teach up to advanced subsidiary a MUST.
- At least 3 years experience or more.
- Must be a Namibian citizen or permanent resident.
- Only certified copies with CV will be accepted.

Applications to be forwarded to:
The Director
Wendy Private School
P.O Box 2958, Ondangwa

- Those who have already applied, no need to re- apply.

NB: NO E-MAILED APPLICATION WILL BE ACCEPTED

Closing date: 30 September 2022

Enquiries:
081 263 1558
081 436 9383

HEILONGJIANG LONGYUAN ENGINEERING NAMIBIA (PROPRIETARY) LIMITED

We are looking for a laboratory manager or laboratory assistant with the following requirements:

The candidate must have worked in road project laboratory for more than 6 years, and have a very good understanding of colto, sans and TMH,

Must have a very good operating level of fill, SSG, subbase, concrete, culvert, asphalt and computer operation, and understand all relevant experiments of road construction.

contact email:
sqdzh666@gmail.com

CLOSING DATE:
23 September 2022

Draft Environmental Impact Assessment Report - Onshore Salt Mining on EPL 8757, 36 Km North West Of Henties Bay, Erongo Region, Namibia

CLASSIFIEDS

Tel: (061) 208 0800/44 Fax: (061) 220 584 Email: classifieds@nepc.com.na

Services

Goods

CLASSIFIEDS

Rates and Deadlines

• To avoid disappointment of an advertisement not appearing on the date you wish, please book timeously • Classifieds smalls and notices: 12:00, two working days prior to placing • Cancellations and alterations: 16:00, two days before date of publication in writing only

Notices (VAT inclusive)
Legal Notice N$460.00
Lost Land Title N$402.50
Liquor License N$402.50
Name Change N$402.50
Birthdays from N$200.00
Death Notices from N$200.00
Tombstone Unveiling from N$200.00
Thank You Messages from N$200.00

Terms and Conditions Apply.

Property

For Sale

ERF FOR SALE
at Omdel ext 2 Henties Bay, size 779sq, price is negotiable.
Contact: 0811222091 or 0812792365.

TWAHAFA REAL ESTATES

KHOMASDAL:
4 bedrooms, 3 bathrooms, Erf size 450sqm
N$ 1 599 000 cost incl
GRYSBLOCK:
Double storey, 2 bedrooms, 2 bathroom flat
N$ 680 000 cost incl
0816534437

Hospitality

Offered

MSC HOTEL OTJIWARONGO

FOR AFFORDABLE
Conferences, Workshops, Social events, B&B, Swimming pool, DStv, Wifi, fridge, Aircon, en-suite, secure parking, family room

3 MONTHS SPECIAL
Stay 3 days or more and get 1 day free 4 Private Guests only

Single Rooms From N$380
Double Rooms From N$480
Single Executive From N$580
Executive Double From N$680

EMAIL admin@mschotel.com or danny@mwch.com.na
Call +264 816454694, +264 81 148 1404 or 067-304320

BOOK ONLINE www.mschotel.com

Notice

Legal Notice

"PUBLIC NOTICE ENVIRONMENTAL IMPACT ASSESSMENT

Stubenrauch Planning Consultants (SPC) hereby give notice to all potentially Interested and Affected Parties (I&APs) that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

PROJECT DETAILS:
- Subdivision of the Remainder of the Farm Grootfontein Townlands No. 814 into Portions A to O and Remainder;
- Rezoning of Portions A to E from "Undetermined" to "Institutional";
- Reservation of Portions N to O as "Street";
- Inclusion of the rezonings in the next Zoning Scheme to be prepared for Grootfontein.

The proponent intends to make provision for various land uses that will cater to the needs of the present and future urban population of Grootfontein. This will be achieved through the creation of thirteen (13) mixed land use portions north of the Grootfontein town; on the Remainder of the Farm Grootfontein Townlands No. 814.
The Proponent: Grootfontein Municipality
Environmental Assessment Practitioner (EAP): Stubenrauch Planning Consultants (SPC)
REGISTRATION OF I&APs AND SUBMISSION OF COMMENTS:
In line with Namibia's Environmental Management Act (No. 7 of 2007) and EIA regulations (GN 30 of 6 February 2012), all I&APs are hereby invited to register and submit their comments, concerns or questions in writing via Email: **bronwynn@spc.com.na;** Fax: 061 25 21 57 or Tel: 061 25 11 89 **on or before 5 October 2022."**

NOTICE OF LOST LAND TITLE NO.: EXT 1 NO. 169
Notice is hereby given that we, **James Henry Green**, intent to apply for a certified copy of:
CERTAIN: **Erf No. 169 Ext. 1**
MEASURING: **460 (Four Six Zero) Square Meters**
SITUATE: **Rehoboth**
DATED: **7 September 2012**
THE PROPERTY OF: **James Henry Green**
All persons who object to the issue of such copy are hereby required to lodge their objections with the Registrar within three weeks from the last publication of this notice.
Dated at **Rehoboth** this **13 September 2022.**
Signature of Applicant
P O Box 8007
Windhoek
Tel No.: 0814836630

REPUBLIC OF NAMIBIA
MINISTRY OF INDUSTRIALISATION AND TRADE, LIQUOR ACT, 1998
NOTICE OF APPLICATION TO A COMMITTEE IN TERMS OF THE LIQUOR ACT, 1998
(regulations 14, 26 & 33)
Notice is given that an application in terms of the Liquor Act, 1998, particulars of which appear below, will be made to the Regional Liquor Licensing Committee, Region: **KHOMAS**
1. Name and postal address of applicant:
HAININGA JELEMIA
2. Name of business or proposed Business to which applicant relates
JELEMIA HAININGA T/A KAWE SHEBEEN
3. Address/Location of premises to which Application relates:
EPANDULO STREET, ERF NO. 2555, OKURYANGAVA WINDHOEK
4. Nature and details of application:
SHEBEEN LIQUOR LICENCE
5. Clerk of the court with whom Application will be lodged:
CLERK OF THE MAGISTRATE COURT, DISTRICT WINDHOEK
6. Date on which application will be Lodged: **10-28 SEPTEMBER 2022**
7 Date of meeting of Committee at Which application will be heard:
9 NOVEMBER 2022
Any objection or written submission in terms of section 28 of the Act in relation to the applicant must be sent or delivered to the Secretary of the Committee to reach the Secretary not less than 21 days before the date of the meeting of the Committee at which the application will be heard.

REPUBLIC OF NAMIBIA
MINISTRY OF INDUSTRIALISATION AND TRADE, LIQUOR ACT, 1998
NOTICE OF APPLICATION TO A COMMITTEE IN TERMS OF THE LIQUOR ACT, 1998
(regulations 14, 26 & 33)
Notice is given that an application in terms of the Liquor Act, 1998, particulars of which appear below, will be made to the Regional Liquor Licensing Committee, Region: **ZAMBEZI**
1. Name and postal address of applicant. **JONAS RUBEN ATUTALA**
2. Name of business or proposed Business to which applicant relates
SUN CITY BAR
3. Address/Location of premises to which Application relates:
DAIRY COMPOUND, KATIMA MULILO
4. Nature and details of application:
SPECIALLIQUOR LICENCE
5. Clerk of the court with whom Application will be lodged:
KATIMA MULILO MAGISTRATE
6. Date on which application will be Lodged: **14 SEPTEMBER 2022**
7 Date of meeting of Committee at Which application will be heard:
12 OCTOBER 2022
Any objection or written submission in terms of section 28 of the Act in relation to the applicant must be sent or delivered to the Secretary of the Committee to reach the Secretary not less than 21 days before the date of the meeting of the Committee at which the application will be heard.

• CHANGE OF SURNAME • THE ALIENS ACT, 1937
NOTICE OF INTENTION OF CHANGE OF SURNAME
I,(1) **JOSEPH AMADHILA** residing at **OMALYADHILA UUKOLONKADHI, NAMIBIA** and carrying on business / employed a (2) **STUDENT** intend applying to the Minister of Home Affairs for authority under section 9 of the Aliens Act, 1937, to assume the surname **AMADHILA** for the reasons that (3) **THE PREVIOUS SURNAME WAS WRONG, INSTEAD OF AMADHILA, THEY WROTE ABRAHAM WHICH IS MY FATHER'S NAME.** I previously bore the name(s) (4) **N/A** I intend also applying for authority to change the surname of my wife and minor child(ren) (5) **ABRAHAM KRISTOFFINA SELMA NELAGO** to **AMADHILA.** Any person who objects to **AMADHILA** my/our assumption of the said surname of **AMADHILA** should as soon as my be lodge his/her objection, in writing, with a statement of his/her reasons therefor, with the magistrate of

WINDHOEK
08 SEPTEMBER 2022

IN THE HIGH COURT OF NAMIBIA
(Main Division)
CASE NO: HC-MD-CIV-ACT-CON-2020/04759
In the matter between:
DEVELOPMENT BANK OF NAMIBIA LIMITED
PLAINTIFF
and
AFRICA CIVIL ENGINEERING CLOSED CORPORATION
FIRST DEFENDANT
PETRUS HASHOTULI POMBILI KAPULA
SECOND DEFENDANT
NOTICE OF SALE IN EXECUTION
ASALEINEXECUTION will be held by public auction on **THURSDAY the 29TH of SEPTEMBER 2022** at the **AUCOR PROSPERITA, ERF RE 49 c/o MICHELLE MCLEAN and PLATINUM STR** at **10H00,** during which there will be a sale in execution as a result of an attachment made on the 15 JULY 2022 under a Writ of Execution issued on the 19 July 2022 by the above-named **DEVELOPMENT BANK OF NAMIBIA (Execution Creditor)** against **AFRICA CIVIL ENGINEERING CLOSED CORPORATION (First Execution Debtor)** and **PETRUS HASHOTULI POMBILI KAPULA (Second Execution Debtor):**
1 X POLO VIVO WITH THE REGISTRATION NUMBER N 495-495 W
1 X SILVER AMAROK TDI
2 X COMPACTOR
TERMS: **"VOETSTOOTS"** - CASH TO THE HIGHEST BIDDER
Dated at WINDHOEK this **12TH** day of **SEPTEMBER 2022.**

APPOLOS SHIMAKELENI LAWYERS
LEGAL PRACTITIONER FOR PLAINTIFF, UNIT A, TRIFT PLACE, TRIFT STREET WINDHOEK (D2/20/A/AL)

TO: **THE REGISTRAR**
HIGH COURT OF NAMIBIA
WINDHOEK

REPUBLIC OF NAMIBIA
MINISTRY OF INDUSTRIALISATION AND TRADE, LIQUOR ACT, 1998
NOTICE OF APPLICATION TO A COMMITTEE IN TERMS OF THE LIQUOR ACT, 1998
(regulations 14, 26 & 33)
Notice is given that an application in terms of the Liquor Act, 1998, particulars of which appear below, will be made to the Regional Liquor Licensing Committee, Region: **ZAMBEZI**
1. Name and postal address of applicant. **JONAS RUBEN ATUTALA**
2. Name of business or proposed Business to which applicant relates
SUN CITY SHEBEEN
3. Address/Location of premises to which Application relates:
DAIRY COMPOUND, KATIMA MULILO
4. Nature and details of application:
SHEBEEN LIQUOR LICENCE
5. Clerk of the court with whom Application will be lodged:
KATIMA MULILO MAGISTRATE
6. Date on which application will be lodged: **14 SEPTEMBER 2022**
7 Date of meeting of Committee at Which application will be heard:
12 OCTOBER 2022
Any objection or written submission in terms of section 28 of the Act in relation to the applicant must be sent or delivered to the Secretary of the Committee to reach the Secretary not less than 21 days before the date of the meeting of the Committee at which the application will be heard.

EMPLOYMENT WANTED
A 34 year old male, looking for any driving or construction job. I have Code C driving license with GP Certificate of Conduct. Basic First Aid, Occupational Health and Safety, Motor grader, Excavator, Bulldozer, forklift, Hydraulic Mobile Crane Certificates.
Anywhere in Namibia. Contact: 0814024325

• CHANGE OF SURNAME • THE ALIENS ACT, 1937
NOTICE OF INTENTION OF CHANGE OF SURNAME
I,(1) **JOSEPH AMADHILA** residing at **OMALYADHILA UUKOLONKADHI, NAMIBIA** and carrying on business / employed a (2) **LEARNER** intend applying to the Minister of Home Affairs for authority under section 9 of the Aliens Act, 1937, to assume the surname **AMADHILA** for the reasons that (3) **THE PREVIOUS SURNAME WAS WRONG, INSTEAD OF AMADHILA, THEY WROTE JOSEPH WHICH IS MY NAME.** I previously bore the name(s) (4) **N/A** I intend also applying for authority to change the surname of my wife and minor child(ren) (5) **JOSEPH VENESER HERTHA NEMUNO** to **AMADHILA.** Any person who objects to **AMADHILA** my/our assumption of the said surname of **AMADHILA** should as soon as my be lodge his/her objection, in writing, with a statement of his/her reasons therefor, with the magistrate of

WINDHOEK
08 SEPTEMBER 2022

REPUBLIC OF NAMIBIA
MINISTRY OF INDUSTRIALISATION AND TRADE, LIQUOR ACT, 1998
NOTICE OF APPLICATION TO A COMMITTEE IN TERMS OF THE LIQUOR ACT, 1998
(regulations 14, 26 & 33)
Notice is given that an application in terms of the Liquor Act, 1998, particulars of which appear below, will be made to the Regional Liquor Licensing Committee, Region: **OSHANA**
1. Name and postal address of applicant. **ALBERTO HAUFIKU SIZARIO, PO BOX 1497, ONDANGWA**
2. Name of business or proposed Business to which applicant relates
ONDOBE YA SHUUSHE BAR
3. Address/Location of premises to which Application relates:
INDANGUNGU
4. Nature and details of application:
SPECIAL LIQUOR LICENCE
5. Clerk of the court with whom Application will be lodged:
ONDANGWA MAGISTRATE COURT
6. Date on which application will be Lodged:
19-30 SEPTEMBER 2022
7 Date of meeting of Committee at Which application will be heard:
09 NOVEMBER 2022
Any objection or written submission in terms of section 28 of the Act in relation to the applicant must be sent or delivered to the Secretary of the Committee to reach the Secretary not less than 21 days before the date of the meeting of the Committee at which the application will be heard.

Employment

Offered

LIBERTY HERITAGE SCHOOL

TEACHING APPLICATIONS FOR 2023

Qualified Class Teacher for Grade 5 – 1 Post

Minimum Requirements:
1. BETD or Bachelor's Degree in Education.
2. Have a minimum of two years teaching experience
3. Well spoken and written English

Submit the following certified documents:
1. Written application
2. Curriculum Vitae
3. Certified copies of qualifications and academic results.
4. Copy of citizenship/ residential status

Preferences will be given to Namibian Citizens or Permanent Residents

Enquiries:
Epafras Shilombuelwa
P.O.Box 3338 Ongwediva
Tel: 065 231 067/ 081203318 9/ 0813566329
E-mail:
liberty.heritage@yahoo.com

Physical Address: Erf 4672, Valombola, Ongwediva

Closing Date: 23 September 2022

Employment

Offered

ERONGO CONSULTING GROUP

ERONGO CONSULTING GROUP
"Balancing Growth with Resilience"

ENVIRONMENTAL CLEARANCE NOTICE

Public Participation Notice in terms of Regulation No. 29, Section 21 under the Environmental Management Act (Act No. 7 of 2007)

Exclusive Prospecting License:
8757, 70km north West of Henties Bay, Erongo Region
Proposed Development:
Salt Mining,
Proponent: Private
EAP: Erongo Consulting Group
Competent Authority:
Ministry of Mines & Energy, Namibia
Reviewer: Ministry of Environment, Forestry & Tourism

As salt manufacturing and mining processes continue to evolve, the industry refines and improves its environmental performance to benefit the working environment, local communities and the environment in general. As such, the proposed development may not be undertaken without an Environmental Clearance Certificate (ECC) as enshrined in the Environmental Management Act (Act 7 of 2007) and its Regulations. Interested and Affected Parties (I&APs) are hereby invited to register and participate in the public consultation process to give input, comments, and opinions, in writing not later than the **30th of September 2022.**
- **Erongo Consulting Group**
- **+264818786676**
- **Email: info@erongoconsultinggroup.com**

Planning & Consulting | Commissioning & Operations | Project Delivery | Energy | Research Environmental Sciences | Sustainability & Resilience | DRR | Trainings | SHEQ | Waste Management | Advisory Services

Employment

Offered

RUNDU PRIVATE HOSPITAL

Vacancy for Rundu Private Hospital

Gynaecologist
- Bachelors Degree of Science (MBChB)
- 5 years working experience

Internal Medicine Specialist (Physician)
- Bachelors Degree of Science (MBChB)
- FCP (SA)
- 5 years working experience

Vacancy for ICU Nurse
- Diploma/Degree in Nursing with 3 or more years' experience
- Post Graduate Diploma in Critical Care Nursing
- An advantage will be a certificate in BLS, ACLS, ATLS, and PALS

Vacancy for Theatre Scrub Nurse
- Diploma/Degree in Nursing with 3 or more years' experience
- Post Graduate Diploma in Operating Room Nursing Science

Must be registered with the Health Professional Council of Namibia

If you meet the requirements send your CV and relevant documents to hr@runduprivatehospital.com

Closing Date: 30 September 2022

ONDANGWA PRIVATE HOSPITAL

Ondangwa Private Hospital is an equal opportunity employer and invites a proactive, professional, caring, ethical people to apply for the following positions:

POSITION: REGISTERED NURSE (GENERAL)
POSITION: REGISTERED NURSE (SCRUB NURSE)

REQUIREMENTS:
- Appropriate Qualification as a Registered Nurse.
- Minimum 3 years' experience within a Clinical environment
- Registered with the Health Professions Councils of Namibia.
- Namibian Citizen or eligible to work in Namibia.

Should you meet the above-mentioned requirements, kindly submit your CV and all certified supporting documents to the Human Resource Department, Ondangwa Private Hospital, P.O. Box 4027 Ondangwa, or forward them via e-mail to: **recruitment@oph.com.na**

Closing Date: 23 September 2022