TRANSNET

freight rail

Basic Assessment for the proposed Port Nolloth Lighthouse – near Port Nolloth, Northern Cape

DRAFT BASIC ASSESSMENT REPORT

DEA Reference Number: 14/12/16/3/3/1/671
NEAS Reference Number: DEA/EIA/0001379/2012

CSIR Report No.:
CSIR/CAS/EMS/ER/2013/0001/B

FEBRUARY 2013

CSIR

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BASIC ASSESSMENT FOR THE PROPOSED PORT NOLLOTH LIGHTHOUSE – NEAR PORT NOLLOTH, NORTHERN CAPE

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February 2013

Report prepared for:
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Opportunity for review:

This Draft Basic Assessment Report is released for review by stakeholders. Review comments are to be submitted by 2 April 2013 to the address below:

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SUMMARY

Transnet Freight Rail – a division of Transnet SOC Limited (hereinafter referred to as TFR) is proposing to construct and operate a new lighthouse in Port Nolloth within the Richtersveld Local Municipality (hereinafter referred to as RLM) in the Northern Cape. The new lighthouse will be constructed at a more visible and suitable position on ERF 335, and will replace an existing aluminium-lattice lighthouse on the adjacent ERF 44 which has reached the end of its working life and will need to be decommissioned. The new lighthouse will comprise of an eleven metre concrete tubular structure which will support a lantern house and will be located closer to the shoreline on the original site of the 1909 lighthouse which was demolished in the 1970's.

Transnet is a state owned company which strives to deliver integrated and efficient services to promote economic growth within South Africa. Transnet, operating as an integrated freight transport company, comprises five operating divisions and is supported by two specialist units as indicated below:

Operating Divisions:

- Transnet Freight Rail;
- Transnet Rail Engineering;
- Transnet National Ports Authority;
- Transnet Port Terminals; and
- Transnet Pipelines.

Specialist Units:

- Transnet Capital Projects; and
- Transnet Property.

In terms of the NEMA EIA Regulations 2010 (as amended), the construction of the proposed Port Nolloth Lighthouse requires a Basic Assessment (BA) process, and an application for Environmental Authorisation has been submitted to the National Department of Environmental Affairs (DEA). The DEA Reference Number 14/12/16/3/3/1/671 and NEAS Reference Number DEA / EIA / 0001379 / 2012 have been assigned to this BA application.

PROJECT DESCRIPTION

The construction of the new lighthouse will comprise the following key activities:

- Decommissioning the existing aluminium lattice lighthouse;
- Demolishing the lean-to structure on site;
- Construction of the new concrete lighthouse tower;
- Construction of a lantern house which will be supported by the concrete tower;
- Connection to an existing engine room across Beach Street *via* a 220 V underground cable.

IMPACT ASSESSMENT

Heritage:

A heritage impact assessment found that the proposed activity will have a negligible impact on all generally protected heritage in the study area. The study found that a small structure next to the new lighthouse site, an explosive magazine, is believed to have been built in the early 20th century (confirmed to exist in 1937 by aerial photography) and is the only structure of any heritage significance and as such should continue to be conserved.

It was noted that the existing aluminium lattice lighthouse is less than 60 years of age and does not require any form of heritage permit for its removal. The study also found that the existing aluminium lighthouse appears as an odd structure and does not "read" as a lighthouse to the casual observer, and is without argument one of the most un-appealing structures within the context of this country's rich lighthouse heritage. The heritage specialist (Tim Hart, ACO Associates) states that the construction of a more formal and recognizable structure within the Transnet owned enclave will better landmark the status of a light house in the Port Nolloth area and add a feature of interest to the Beach Street precinct.

The site specific impact on heritage will be the demolition of a lean-to structure affixed to the south gable of the Transnet staff quarters. However it was found that the main bungalow is of very low heritage significance, and that the demolition of the lean-to will have no negative impacts at all. The study also mentions that this structure is dubiously greater than 60 years of age and is maintained, modernized and in the opinion of the specialist not worthy of inclusion of a regional heritage register nor is it worthy of formal grading.

In terms of archaeological heritage, the heritage study states that whilst coastal shell middens are prolific around Port Nolloth, indications are that the study area is too transformed to be considered archaeologically sensitive.

Based on the above findings, the specialist has recommended that as no heritage sources will be either directly or indirectly impacted on; there is no reason why the proposed activity should not take place from a heritage perspective. The specialist has further stated that the design of the proposed lighthouse will add value and interest to the streetscape and the town at large.

Visual:

The Visual Impact Assessment report indicates that the, visual receptors in Port Nolloth include residents, surrounding farms, the Richtersveld National Park and motorists who may potentially be exposed to the constructional and operational activities associated with the new lighthouse. These receptors are explained in further detail below:

Port Nolloth residents – Exposure will be the highest for residents due to their close proximity to the proposed site. However, the study states that since residents are used to having a lighthouse in Port Nolloth, it is likely that the overall visual intrusion will be low since it will blend in well with the surroundings. It is also noted that the new lighthouse will **be more aesthetically** pleasing than the existing lattice structure in that it resembles more traditional lighthouse architecture. The proposed tower is higher and broader than the original structure and will be in a slightly different locality (35 m from the existing tower), which means that sea views of a small number of residents (particularly if they are highly exposed to the new development) will potentially be highly intruded on or obscured (while others who are currently affected by the existing lighthouse structure may now have improved views of the sea). It should also be noted that a different set of residents (although probably largely overlapping due to the small change in position of the lighthouse) may be affected by the new light at night from those affected by the current light and will have to adapt to this impact on their nightscape.

Surrounding farms – It was stated that visual intrusion for visual receptors on surrounding farms will be low since the existing lighthouse will be replaced by an aesthetically improved lighthouse.

Richtersveld National Park – The study found that these receptors are more than 5 km from the lighthouse site and are unlikely to notice the difference between the existing and new lighthouse.

Motorists – The study suggests that the proposed lighthouse is likely to be accepted as part of the coastal landscape by tourists and other motorists and visual intrusion will be low.

In addition to the visual receptors above, the following impacts were identified in the Visual Impact Assessment:

- Impact of intrusion of construction activities on sensitive viewers – It was recommended by the specialist that the following conditions be adhered to as mitigation for this impact:
  - Project developers should demarcate construction boundaries and minimise areas of surface disturbance.
  - The contractor should maintain good housekeeping on site to avoid litter and minimise waste.
  - Night lighting of the construction sites should be minimised within requirements of safety and efficiency.
  - Dust generation should be minimised as much as possible as this can also increase the visibility

of the construction phase significantly.

- Impact of intrusion of the proposed lighthouse on views of sensitive visual receptors – it was further recommended that the following mitigation measure be applied for this impact:
  - Maintenance of the lighthouse exterior is important to ensure a positive visual impact.

The visual study concluded that the new lighthouse is in essence an "upgrade" to the existing lighthouse. The fact that lighthouses are expected features of a coastline environment means that the overall visual intrusion will be of low impact and significance. Maintenance of the lighthouse exterior will ensure a positive visual impact for most visual receptors in the region, with only a partial change in views for some residents in Port Nolloth.

EAP'S RECOMMENDATION

Based on the findings of this Basic Assessment process, it is the opinion of the Environmental Assessment Practitioner, that there are no negative impacts that should constitute "fatal flaws" from an environmental perspective, and thereby necessitate substantial re-design or termination of the project. Based on the findings of this Draft Basic Assessment report and given the need and context of the proposed project, it is the opinion of the Environmental Assessment Practitioner that the benefits of the project far outweigh the negative environmental impacts.

In order to avoid and/or manage potential negative impacts, and enhance the benefits, an Environmental Management Programme (EMPr) has been compiled. This Project Specific EMPr is a dynamic document that should be updated regularly and provides clear and implementable measures for the establishment and operation of the proposed Port Nolloth Lighthouse. It is our recommendation that all the mitigation measures be implemented for the proposed project.

Provided that the specified mitigation measures are applied effectively, it is proposed that the project receive environmental authorisation in terms of the EIA Regulations promulgated under the National Environmental Management Act (NEMA).

REVIEW PROCESS

As part of the Basic Assessment process, all Interested and Affected parties are invited to provide comment on this Draft Basic Assessment Report. The report is available for public review at the Richtersveld Local Municipality and Namakwa District Municipality. An electronic version of the report is also available on the project website at:

http://www.csir.co.za/eia/Port Nolloth Lighthouse.html

The report is available for a 40-day (excluding public holidays) commenting period from the date of release. All comments and responses should be submitted to the contact below by **2 April 2013**. All comments received will be considered and included in the Final Basic Assessment Report which will be submitted to the National Department of Environmental Affairs for decision making.

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Summary of where requirements of Section 22 of the 2010 NEMA EIA Regulations (GN R 543) are provided in this Basic Assessment Report.

SECTION 22 REGULATION	YES / NO	SECTION IN BAR
1) The EAP managing an application to which this Part applies must prepare a basic assessment report in a format that may be determined by the competent authority. 2) A basic assessment report must contain all the information that is necessary for the competent authority to consider the application and to reach a decision contemplated in regulation 25, and must include -		
• details of – i. the EAP who prepared the report; and	**Yes**	Appendix H
ii. the expertise of the EAP to carry out basic assessment procedures;	**Yes**	Appendix H
• a description of the proposed activity;	**Yes**	Section A
• a description and a map of the property on which the activity is to be undertaken and the location of the activity on the property, or, if it is - i. a linear activity, a description of the route of the activity; or ii. an ocean-based activity, the coordinates within which the activity is to be undertaken;	**Yes**	Section A, Appendices A & D
• a description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;	**Yes**	Sections A & B and Appendix D
• an identification of all legislation and guidelines that have been considered in the preparation of the basic assessment report;	**Yes**	Sections A and Appendix D
• details of the public participation process conducted in terms of regulation 21(2)(a) in connection with the application, including - i. the steps that were taken to notify potentially interested and affected parties of the proposed application; ii. proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given; iii. a list of all persons, organisations and organs of state that were registered in terms of regulation 55 as interested and affected parties in relation to the application; and iv. a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	**Yes**	Appendix E
• a description of the need and desirability of the proposed activity;	**Yes**	Section A
• a description of any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity;	**Yes**	Section A

SECTION 22 REGULATION	YES / NO	SECTION IN BAR
• a description and assessment of the significance of any environmental impacts, including - i. cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity; ii. the nature of the impact; iii. the extent and duration of the impact; iv. the probability of the impact occurring; v. the degree to which the impact can be reversed; vi. the degree to which the impact may cause irreplaceable loss of resources; and vii. the degree to which the impact can be mitigated;	**Yes**	Section D & Appendix F
• any environmental management and mitigation measures proposed by the EAP;	**Yes**	Sections D & E and Appendix G
• any inputs and recommendations made by specialists to the extent that may be necessary;	**Yes**	Section D and Appendices D & G
• a draft environmental management programme containing the aspects contemplated in regulation **33**;	**Yes**	Appendix G
• a description of any assumptions, uncertainties and gaps in knowledge;	**Yes**	Appendix D
• a reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	**Yes**	Section E
• any representations, and comments received in connection with the application or the basic assessment report;	**Yes**	Appendix E
• the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants;	**Yes**	Appendix E
• any responses by the EAP to those representations, comments and views;	**Yes**	Appendix E
• any specific information required by the competent authority; and	**N/A**	
• any other matters required in terms of sections 24(4)(a) and (b) of the Act.	**N/A**	

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

	(For official use only)
File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	NO✓

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

1. PROJECT DESCRIPTION

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

1.1 INTRODUCTION AND BACKGROUND:

Transnet Freight Rail, a division of Transnet SOC Limited (hereafter referred to as TFR), proposes to construct a lighthouse on ERF 335 (Transnet owned land) in Port Nolloth, Northern Cape. The 21 digit Surveyor General code for the property is C05300100000033500000. As part of the new lighthouse construction, an existing aluminium lattice lighthouse structure on the adjacent ERF 44 (Transnet owned land) will be demolished as it has reached the end of its life span and needs to be replaced. The proposed new concrete lighthouse tower will be longer lasting and will more importantly serve as a better navigational marker for mariners, and will direct them to the port safely. The existing lighthouse on ERF 44 is 34 years of age, and replaced an earlier cast iron structure which was commissioned in 1909 and demolished in the 1970's.

TFR is one of five operating divisions within Transnet specialising in the transport of freight. The company also maintains an extensive rail network across South Africa which connects with other rail networks in the sub-Saharan region, with rail infrastructure representing approximately 80% of Africa's total rail network.

The CSIR Environmental Management Services (EMS) has been appointed by TFR as the independent Environmental Assessment Practitioners to undertake the Basic Assessment (BA) process for the proposed project.

1.2 EMPLOYMENT OPPORTUNITIES:

Direct and indirect employment opportunities across various skill levels will potentially be created during the construction and operation phases of the project. An estimate of the potential employment opportunities that could result from the project are presented in **Table 1** below:

Table 1: Estimated potential employment opportunities.

Project phase	Amount	Skill class			Term
		Skilled	Semi-skilled	Unskilled	
Construction (Direct Transnet)	27	1 Contract Manager	1 Site Agent & 1 Supervisor	25 Construction Workers	5 Months
Construction (Indirect Sub Contractors)	22	1 Contract Manager	2 Supervisors	30 Construction Workers	3 Months
Operation (direct)	1		1		For Lighthouse Lifespan

1.3 INFRASTRUCTURE:

A total area of approximately 792 m^2 is available on ERF 335 for the new lighthouse, of which a maximum of 36 m^2 will undergo physical alteration for the construction of the lighthouse tower. The proposed lighthouse

tower will be erected adjacent to the existing staff quarters. An existing lean-to structure on the gable wall of the staff quarters on ERF 335 will be demolished to accommodate the new lighthouse on site.

The establishment of the new lighthouse will entail the following:

1.3.1 Site clearing and preparation: The lean-to structure on site will need to be demolished to accommodate the new lighthouse tower. Since the site is fully transformed (i.e. a levelled artificial/concrete surface) no vegetation clearance will take place.

1.3.2 Civil works: The main civil works and corresponding timeframes are indicated below –

- Establish and clear site – Including demolitions of the existing lighthouse and the lean-to structure on site (approximately 3 weeks).
- Terrain Levelling – Terrain levelling will be minimal as the site is flat.
- Excavations and casting foundations for the new lighthouse tower (approximately 4 weeks).
- Placement of the concrete tower and finishes (approximately 10 weeks).
- Access and inside roads/paths – The site can be accessed directly from an existing road (Beach Road) heading south from the town of Port Nolloth, and as such no new access roads will need to be constructed.

1.3.3 Installation of lighthouse components: The key components of the lighthouse will include –

- **Concrete tower:** The new lighthouse structure will comprise a concrete tower with an internal diameter of approximately 4 m and a height of approximately 11 m. The tower will be capped with a concrete slab approximately 7 m in diameter which will in turn support the lantern house.

- **Lantern house:** The lantern house will comprise a glass fibre construction and is estimated to be 2.8 m in diameter and 2.7 m high. Access to the lantern house will be via an external door at ground level, an internal metal cat ladder and a trap door in the top slab leading into the lantern house. The lantern house will comprise a VRB 25 beacon which is a rotating beacon covering a range of between 15 to 22 nautical miles. The beacon will comprise 6 or 8 equally spaced Fresnel lenses rotating around a stationary lamp of up to 100 watts, generating 6 to 8 discrete pencil beams.

- **Staff quarters:** The new lighthouse will be constructed adjacent to existing staff quarters on site (ERF 335). These staff quarters will serve lighthouse staff during operation and maintenance periods. An existing lean-to structure attached to the current staff quarters will be demolished to accommodate the new lighthouse. The lean-to structure is approximately 6340 x 350 mm in size and comprises plastered brick walls, a concrete slab floor, a corrugated asbestos cement single pitch roof, a double door and two windows.

- **Connection to engine room:** The new lighthouse will be connected to an existing adjacent engine room located on ERF 45 (Transnet owned land), which also powers the existing lighthouse on ERF 44. Connection of the existing engine room to the new lighthouse will be via a 220 V underground cable which will supply power to the new lighthouse. There are no planned upgrades for this engine room as part of the new lighthouse construction.

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

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R.544 Item 18 (iv): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit,	The new lighthouse will be constructed within 100 m inland of the high-water mark of the sea, and will require fill material of more than 5 cubic metres for the foundation and platform areas as part of the

pebbles or rock from: (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater.	construction process. Therefore, this activity is triggered.

Note from CSIR: The original application for Environmental Authorisation submitted to the National Department of Environmental Affairs (DEA) by CSIR listed two activities which triggered the need for a Basic Assessment namely GN R.544 Item 18(iv) as indicated above; and GN R.546 Item 16(iii), (iv), iii: (cc) pertaining to a layout with a footprint greater than 10 square metres encroaching within 32 metres of a watercourse (Appendix J.4). The application followed a precautionary approach in identifying the table of listed activities as no site visits were conducted at the time. Following site visits during the project initiation phase, it was found that no watercourses occurred within 32 metres of the proposed development. Subsequently, the associated listed activity (i.e. GN R.546 Item 16(iii), (iv), iii: (cc)) has been omitted from this Draft BAR and a new application has been submitted to National DEA for the listed activity identified above.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

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

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)

The site selection process was based on the optimal location of the lighthouse in terms of marine safety i.e. there is little lateral flexibility for positioning the new light house as it fulfils an essential navigation role. In addition, the site on which the lighthouse is proposed is owned by the project developer and multi criteria site assessments reveal that no fatal flaws exist which should prevent the proposed development on site. This is therefore the only option considered further in this report.	S 29°14'59.6"	E 16°52'4.5"
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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

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

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred layout was identified following initial discussions and screening of alternatives with the engineering and navigational design teams within Transnet. . The preferred layout selection was based on an optimal location of the lighthouse from a navigational risk perspective in conjunction with minimal environmental disturbance.	S 29°14'59.6"	E 16°52'4.5"
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Marine lens rotating beacon: A rotating VRB 25 beacon will be housed in the lantern house. The beacon covers a range between 15 to 22 nautical miles and comprises between 6 and 8 equally spaced Fresnel lenses rotating around a stationary lamp of up to 100 watts which will generate 6 to 8 pencil beams emanating from the lantern house. The Fresnel lens of the beacon is designed to maximise the useful output from industry-standard marine signal lamps. The lens carousel is rotated by a direct drive electronically commutated motor which provides plenty of torque whilst only consuming 1-2 watts of energy. To ensure maximum lamp life, consistent output intensity and minimum energy consumption, the lamp voltage is regulated using Pulse-Width-Modulation. This ensures that even if the input voltage ranges from 11-20 Volts, the RMS voltage at the lamp will never exceed 12 VDC. During daylight hours, the lighthouse itself will act as a day-mark when the light of the lantern house is not reflected.
Alternative 2
Alternative 3

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

Note from CSIR: No other alternatives have been considered.

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

No other feasible alternatives exist and none are being assessed in this basic assessment report. The site, layout, design and technology options being assessed through this Basic Assessment are the only alternatives considered suitable for a project of this nature

If the project does not proceed, the site will remain unchanged and there will be no opportunities for temporary and permanent employment created through this project. In addition, mariners will be unable to safely access the port waters in the absence of a visible day-mark/lighthouse. This alternative is included as a baseline in this report, against which the project impacts are assessed.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:		Size of the activity:
Alternative A1[1] (preferred activity alternative)		36 m²
Alternative A2 (if any)		m²
Alternative A3 (if any)		m²

or, for linear activities:

Alternative:		Length of the activity:
Alternative A1 (preferred activity alternative)		m
Alternative A2 (if any)		m
Alternative A3 (if any)		m

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

Alternative:		Size of the site/servitude:
Alternative A1 (preferred activity alternative)		792 m²
Alternative A2 (if any)		m²
Alternative A3 (if any)		m²

4. SITE ACCESS

Does ready access to the site exist?	YES✓	NO
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

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

Note from CSIR: The site can be readily accessed from Beach Street (Refer to Appendix A.1 of this Draft BAR for the Locality Map depicting roads near the site). As such, no new access roads are planned.

5. LOCALITY MAP

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

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

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

- **Note from CSIR: Refer to Appendix A.1 of this Draft BAR for the Locality Map.**

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

- **Note from CSIR: Refer to Appendix A.2 of this Draft BAR for the Layout/Route Plan.**

7. SENSITIVITY MAP

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

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

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

- **Note from CSIR: Refer to Appendix A.3 of this Draft BAR for the Sensitivity Map.**

8. SITE PHOTOGRAPHS

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

- **Note from CSIR: Refer to Appendix B.1 of this Draft BAR for colour photographs from eight major compass directions, and Appendix B.2 of the Draft BAR for additional photographs of features on site.**

9. FACILITY ILLUSTRATION

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

- **Note from CSIR: Refer to Appendix C of this Draft BAR for the Facility illustrations of the lighthouse tower and site layout plan.**

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES✓	NO	Please explain
The current land use zoning according to the IDP records is residential. No rezoning is required for the activity to commence as the property for the proposed project belongs to Transnet and the activity is therefore permitted in terms of the property's existing land use rights. Furthermore, the activity is not a new development as it is a continuation of an already existing lighthouse which has reached the end of its current life span.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES✓	NO	Please explain
The proposed development promotes sustainable development; it complies with the provision of high quality infrastructural development that will contribute to marine safety; and it facilitates skills transfer through temporary and permanent job opportunities created through the construction and operational phases of the project.			
(b) Urban edge / Edge of Built environment for the area	YES✓	NO	Please explain
The site location is currently zoned as residential according to IDP records. According to the SDF (Richtersveld Municipality), the proposed development falls within a residential core of Port Nolloth which is identified for urban expansion for the prevention of urban sprawl. In addition, the proposed lighthouse is a continuation of an existing lighthouse in close proximity which has reached the end of its life span. As such, construction of the proposed lighthouse will not significantly alter the existing urban structure of the area.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO✓	Please explain
The proposed development serves as an upgrade to an already existing development. Whilst the existing lighthouse is not accounted for in the current IDP (Richtersveld Local Municipality – RLM), it will be flagged in the next report to council to allow for amendment (Please refer to meeting minutes with RLM, Appendix E). The IDP also promotes sustainable development through strategic management objectives including job creation, infrastructural development, and attracting local and international investment. The proposed development conforms to these principles. The SDF (RLM) promotes the containment of urban sprawl through densification and infilling of urban areas to maximise the use of existing infrastructure. According to the SDF, Port Nolloth comprises a primary node characterised by a high concentration of urban development and services. The proposed development conforms to the aforementioned principles as it can be viewed as an upgrade to an existing facility situated against a central residential core of Port Nolloth already identified for urban expansion.			
(d) Approved Structure Plan of the Municipality	YES✓	NO	Please explain
There is no formal approved structure plan for RLM. As a consequence, the SDF will be implemented as a forward planning policy document for urban development in the area. As indicated above, the proposed development falls within the urban edge. The Municipality can review the proposed development and flag this to council for amendment until such time an approved structure plan is in place (Please refer to meeting minutes with RLM, Appendix E).			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO✓	Please explain
The proposed development will fit into the EMF (Namakwa District) in terms of the Integrated Coastal Management Act which addresses disaster management at the coast. This project will mitigate some of these risks from a marine safety point of view. The proposed development will occur on an already existing transformed/artificial surface within a high density urban area, and as such will not compromise any of the environmental priority areas as identified in the EMF.			
(f) Any other Plans (e.g. Guide Plan)	YES✓	NO	Please explain
According to the Northern Cape Department of Environment and Nature Conservation (NDEC) annual performance plan 2012/13, the department implements and functions under several legislative mandates of which the Integrated Coastal Management Act is regarded as one of the most important legal mandate. In line with this, the proposed development will contribute to risk reduction from a marine navigation safety perspective.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES✓	NO	Please explain
Should this application be approved by DEA, the construction phase will probably only be completed during the second half of 2013. Whilst the IDP does not currently account for the proposed development, the Richtersveld municipality has indicated that the proposed development will be taken council for inclusion into the IDP			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES✓	NO	Please explain
The proposed lighthouse development will reduce risks from a marine safety point of view, thereby favouring this development from a national marine safety perspective. The proposed lighthouse would also be keeping in line with previous lighthouse developments in the area over the past few decades i.e. the construction of the previous cast iron and aluminium lattice lighthouses. Transnet identified the need for a strategically located, longer lasting concrete lighthouse which will be located further seaward from the existing aluminium lattice structure. I&AP's were mainly concerned about the visual impact of the light emanating from the lantern house and the visual intrusion of the concrete tower. The new location of the lighthouse further seaward will result in a reduced light spill from the lantern house – however this will be minimal due to a very slight difference in locality in relation to the existing lighthouse. In addition, the lantern house will be blanked off on the landward side to prevent the visual impact of the lights for those residing on land. It should however be noted that a different set of residents (although probably largely overlapping due to the small change in position of the lighthouse) may be affected by the new light at night from those affected by the current light and will have to adapt to this impact on their nightscape. In terms of visual intrusion of the tower, a Visual Impact Assessment (Appendix D) for the new lighthouse states that since residents are used to having a lighthouse in Port Nolloth it is likely that the overall visual intrusion will be low since it will blend in well with the existing environment and surroundings. It was also noted that the new lighthouse will be more aesthetically pleasing than the existing lattice structure in that it will resemble more traditional lighthouse architecture. The new tower will be slightly larger than the original structure and will be in a slightly different locality (35 m from the existing tower), which means that sea views of a small number of residents (particularly if they are highly exposed to the new development) will potentially be highly intruded on or obscured (while others who are currently affected by the existing lighthouse structure may now have improved views of the sea). > In summary the proposed development will meet a key national priority in terms reducing navigational safety risk, however, given the low levels of concern from local stakeholders/communities regarding a new light house in the area, as well as minimal visual impacts as highlighted above, it can be concluded that the project does not seem to be "inappropriate" to the Port Nolloth environment and surroundings.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES✓	NO	Please explain
The proposed development will draw on existing supplies of water and power so no new infrastructure will be required in this regard (Please refer to meeting minutes with RLM, Appendix E).			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES✓	NO	Please explain
The proposed development will draw on existing supplies of water and power so no new infrastructure and services will need to be prioritised by RLM in this regard (…Meeting minutes with RLM, Appendix E).			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO✓	Please explain
No. The project is being developed to reduce marine navigational risk whilst replacing an existing structure which has reached the end of its current life span.			

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES✓	NO	Please explain
The proposed lighthouse development is keeping in with the surrounding environment. According to the Richtersveld SDF, the property is noted as residential land. In addition, the proposed lighthouse would also be keeping in line with previous lighthouse developments in the area over the past few decades i.e. the construction of the previous cast iron and aluminium lattice lighthouses. The site for the proposed lighthouse can be easily accessed from Beach Road; hence the construction of new access roads will not be required. In terms of gradient, the surface area of the site is level and is preferred for the construction of the new lighthouse as the need for extensive earthworks will be greatly reduced. The site surface also comprises an artificial (i.e. concrete) surface and will thereby minimise negative environmental impacts.			
9. Is the development the best practicable environmental option for this land/site?	YES✓	NO	Please explain
The proposed development is considered to be the best practicable environmental option for this site/land. The proposed site comprises a built environment with a transformed artificial surface. This site previously supported a cast iron lighthouse which was decommissioned in the 1970's as it had reached the end of its lifespan. As such, biophysical disturbance from an environmental point of view will be minimal as the site is already a modified built environment. In addition, the relocation of the lighthouse further seaward on the proposed site will result in reduced light spill from the lantern house for the residents on land – however this will be minimal due to a very slight difference in locality in relation to the existing lighthouse.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES✓	NO	Please explain
The proposed project is a continuation of an already existing lighthouse and will occupy an already transformed surface that previously supported the cast iron lighthouse which was demolished in the 1970's. As such the biophysical disturbance on the environment will be minimal with no environmental "fatal flaws". The relocation of the proposed lighthouse further seaward will reduce the spill of the light emanating from the lantern house for those residing on land (in relation to the existing lighthouse which is located further inland) – however this effect will be minimal due to a very slight difference in locality in relation to the existing lighthouse. The new lighthouse has the potential to add value to the surrounds and the Beach Street streetscape with proper architectural input, and will better represent the country's rich lighthouse heritage as compared to the existing "aesthetically un-appealing" aluminium structure. In addition, the proposed project will more importantly reduce risk and improve marine safety in Port Nolloth by guiding marine vessels safely to the port, and it hoped that can be used as catalyst to stimulate investment into the local economy.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO✓	Please explain
The proposed development will merely serve as a continuation of an already existing lighthouse. The current lighthouse has reached the end of its life span and needs to be replaced. As such, the proposed development will not set precedence for similar developments in Port Nolloth.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO✓	Please explain
The construction and operation of the proposed lighthouse will take place in line with relevant national specifications and standards. The proposed project will also be taking place on Transnet owned land and will not impact on the surrounding area. Based on this, no person's rights will be negatively affected.			

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO✓	Please explain
The proposed activity will fall within the urban edge of Port Nolloth as determined by the local municipality and will purely serve as a continuation of an already existing activity i.e. the operation of the existing aluminium lattice lighthouse.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO✓	Please explain
No. The project does not form part of the SIPs however it is strategically important to reduce navigational risk to vessels entering and leaving the Port.			
15. What will the benefits be to society in general and to the local communities?			Please explain
Job creation in the construction phases: approximately 49 direct and indirect employment opportunities will be created during the construction phase of the project. Only one skilled individual from Transnet will be required to operate the lighthouse. More importantly, the new lighthouse will reduce risks from a marine safety point of view. There also exists the possibility of secondary benefits to surrounding local industries e.g. accommodation requirements during construction phase, etc.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
N/A			
17. How does the project fit into the National Development Plan for 2030?			Please explain
The national development plan proposes that people enjoy a safe and active life at home, school and work. Approval of this Basic Assessment project will indirectly tie in with the safety aspect in the sense that risks will be reduced and marine safety improved for the mariners in Port Nolloth. Additionally, the potential for investment into the local economy due to a safer operational Port can be regarded as a key benefit associated with this development and does tie in the 2030 development plans in South Africa.			

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

NEMA Section 23(2): The general objective of integrated environmental management is to:	**Addressed in this Basic Assessment?**	**Description on how the objectives of IEM have been taken into account:**
(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;	Yes	Refer to question 19 below.
(b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;	Yes	This Basic Assessment report identifies, predicts and evaluates the impacts associated with the proposed development as described in section 23(2)(b).
(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;	Yes	As part of this Basic Assessment, the EAP has identified, assessed and provided mitigation measures for potential impacts (refer to Section D of this report).
(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;	Yes	Refer to Appendix E of this report.
(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and	Yes	The findings and mitigation measures of the EAP and specialists have been considered and incorporated into the Environmental Management Programme (EMPr) for this project (refer to Appendix G of this report).
(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.	Yes	A detailed EMPr has been compiled for the proposed project to ensure that potential negative impacts are minimised and potential positive impacts are enhanced (refer to Appendix G of this report).

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
The principles of NEMA have been considered in this Basic Assessment through:- ➢ Compliance with the requirements and fundamental principles derived from relevant legislation and government documents in undertaking the Basic Assessment and EMPr. ➢ Implementation of the principles of sustainable development through ensuring mitigation measures for unavoidable impacts or impacts which cannot be remedied, in order to minimize the impact. ➢ Ensuring that the successful implementation and appropriate management of this project will aid in achieving the principle of minimization of pollution and environmental degradation. ➢ Undertaking the Basic Assessment process in an inclusive and transparent manner. ➢ Making great efforts to involve interested and affected parties, stakeholders and relevant Organs of State in the process such that an informed decision regarding the project can be made by the Competent Authority.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act 107 of 1998), as amended (NEMA), and the 2010 EIA regulations published in Government Notice R544 on the 18 June 2010 Government Gazette 33306 (as amended).	These Regulations contain the relevant listed activities that were triggered, thus requiring a Basic Assessment. Section 1b of this Basic Assessment Report details the listed activities specific to the proposed project.	National Department of Environmental Affairs	18 June 2010
National Environmental Management Act (Act 107 of 1998).	The construction and operation of key components of the proposed project will require the implementation of appropriate environmental management practices.	National Department of Environmental Affairs	19 November 1998
National Heritage Resources Act (NHRA) (Act 25 of 1999).	The proposed project will require a permit from the South African Heritage Resources Agency (SAHRA) for demolishing the lean-to structure on ERF335, as the structure is dubiously older than 60 years of age.	South African Heritage Resources Agency	1999
Integrated Environmental Management (IEM) guideline series published by DEA (various documents dated from 2002 to present).	The IEM Guideline series will provide guidance on conducting and managing all phases and components of the required Basic Assessment and public participation processes, such that all associated tasks are performed in the most	National Department of Environmental Affairs	2002 - present

	suitable manner.		
National Environmental Management Waste Act (Act 59 of 2008).	General wastes will be produced mainly during the construction phase of the project and will require proper management.	National Department of Environmental Affairs	6 March 2009
National Environmental Management: Air Quality Act (Act 39 of 2004).	Demolishing and construction activities may result in the unsettling of, and temporary exposure to, dust. Appropriate dust control methods will need to be applied.	National Department of Environmental Affairs	19 February 2005

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?
If YES, what estimated quantity will be produced per month?

YES✓	NO
Approximately 31 m^3 material from excavations, demolishing the lean-to structure and decommissioning of the existing lighthouse will be produced once-off within the first month.	

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

- Excavated material will be re-used on site where possible. Excavated material that cannot be re-used will be collected by contractors and disposed off at registered landfill sites in Port Nolloth.
- Demolishing waste from removal of the lean-to structure on site will be re-used in construction where possible. Surplus demolishing waste that cannot be re-used will also be disposed off at registered landfill sites in Port Nolloth. The corrugated asbestos roof sheeting from the lean-to will be collected and disposed off at a registered hazardous landfill facility using an accredited services provider.
- The aluminium lattice structure from decommissioning of the existing lighthouse will be recycled or disposed off at a registered landfill site in Port Nolloth as applicable.

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

Excavation/demolishing material from the construction phase will be re-used on site where feasible as explained above. Surplus waste which cannot be re-used on site will be collected and disposed off at an approved waste disposal sites and/or recycling facilities as explained above.

Will the activity produce solid waste during its operational phase?
If YES, what estimated quantity will be produced per month?
How will the solid waste be disposed of (describe)?

YES	NO✓

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

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

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	NO✓

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

- **Note from CSIR: The activity will not produce solid waste during the operational phase. The construction phase will produce excavation, demolishing and domestic waste as explained above. Part of the demolishing waste in the construction phase will comprise corrugated asbestos roof sheeting from the existing lean-to structure on site which is considered hazardous. However, due to the fact that the asbestos requiring removal is once-off and falls below acceptable thresholds (i.e. approximately 0.18 m^3 at a maximum), it is not listed as a waste management activity that can have a detrimental effect on the environment in GNR 1113, 2010. It is therefore the opinion of the EAP and waste specialist consulted that this does not warrant the need for a full EIA/waste licence application. However, it has been recommended by the waste specialist that the asbestos-containing sheeting be removed in accordance with Section 21 of the Asbestos Regulations, 2001 (under the Occupational Health and Safety Act, 1993) (Refer to Appendix J.2 for electronic correspondence with the waste specialist).**

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO✓

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

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO✓
If YES, what estimated quantity will be produced per month?		
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	NO✓

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

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	NO✓

If YES, provide the particulars of the facility:

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

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

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	YES	NO✓
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

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

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

Minimal of dust may be generated from the movement of construction vehicles and from general construction related activities such as the off loading of construction material including sand and cement.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	YES	NO✓

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

e) Generation of noise

Will the activity generate noise?	YES	NO✓
If YES, is it controlled by any legislation of any sphere of government?	YES	NO✓

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

If NO, describe the noise in terms of type and level:

Noise during the construction phase:

During the construction phase, noise generated will be mainly caused by the diesel powered equipment such as the generators used for powering of equipment used for the clearing and preparation of land for laying the foundation for the tower. Noise during the construction phase will be limited to working hours (07h00 to 17h00).

Noise during the operation phase:

No additional noise will be generated from the operation of the proposed lighthouse tower. Noise will be produced from an already existing nautophone on site which does not fall under the scope of this application. The developer was advised that this existing nautophone should be strategically relocated i.e. further seaward and in front of the proposed lighthouse tower such that the new tower can potentially act as a barrier thereby reducing the transfer of sound waves inland and maximising the effect for mariners at sea.

13. WATER USE

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

Municipal✓	*Water board*	*Groundwater*	*River, stream, dam or lake*	*Other*	*The activity will not use water*
Tapped water currently available and supplied on site will be used for drinking purposes for construction					

workers and washing of the concrete mixing equipment. The tapped water will also be used for mixing of concrete. Any wastewater that will be generated will be stored and removed from site after construction.					

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES / NO✓

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

14. ENERGY EFFICIENCY

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

During the construction phase:
Generators will provide energy to power the equipment required for the clearing and preparation of the site for laying the tower foundations. The contractor will be advised to simultaneously transport all construction materials to site where possible, and to collect waste material simultaneously with other activities to reduce the amount of fuel usage for such transportation.

During the operation phase:
The new lighthouse will be powered through connection to an existing engine room powered by generators. This is currently regarded as an efficient energy source as energy consumption is limited to the time that the lighthouse is operated and switched off during non-operational times.

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

None of the planned activities can be directly linked to design measures for alternative energy sources during the construction and operation phases of the project. The nature of the project requires lighting of an appropriate strength to satisfy its legal requirements of providing sufficient lighting to mariners entering or leaving the Port. As such no alternate lightning has been proposed or evaluated.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES✓ | NO

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

- **Note from CSIR: A heritage impact study was conducted by Timothy Hart of ACO Associates which informed the Cultural/Historical features of this section. Refer to Appendix D.1 for the full specialist study on heritage. Remaining parts of Section B pertaining to biophysical surroundings were completed by the EAP, following a field visit on site.**

Property description/physical address:		
	Province	Northern Cape
	District Municipality	Namakwa District Municipality
	Local Municipality	Richtersveld Local Municipality
	Ward Number(s)	3
	Farm name and number	N/A – The proposed project falls within Transnet owned land.
	Portion number	ERF 335
	SG Code	C05300100000033500000

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

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

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

Is a change of land-use or a consent use application required? YES | NO✓

➢ GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat✓	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

➢ LOCATION IN LANDSCAPE

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

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills			
2.2 Plateau		2.5 Open valley		2.8 Dune			
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront		✓	

➢ GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	YES	NO✓	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO✓	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO✓	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO✓	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO✓	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO✓	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO✓	YES	NO	YES	NO
An area sensitive to erosion	YES	NO✓	YES	NO	YES	NO

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

➢ GROUNDCOVER

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

Natural veld - good condition[E]	**Natural veld with scattered aliens[E]**	**Natural veld with heavy alien infestation[E]**	**Veld dominated by alien species[E]**	**Gardens**
Sport field	**Cultivated land**	**Paved surface✓**	**Building or other structure✓**	**Bare soil**

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

➢ SURFACE WATER

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

Perennial River	YES	NO✓	UNSURE
Non-Perennial River	YES	NO✓	UNSURE
Permanent Wetland	YES	NO✓	UNSURE
Seasonal Wetland	YES	NO✓	UNSURE
Artificial Wetland	YES	NO✓	UNSURE
Estuarine / Lagoonal wetland	YES	NO✓	UNSURE

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

➢ LAND USE CHARACTER OF SURROUNDING AREA

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

Natural area✓	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre✓	Filling station [H]
Medium density residential✓	School✓	Landfill or waste treatment site
High density residential✓	Tertiary education facility	Plantation
Informal residential[A]	Church✓	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland

Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building✓
Office/consulting room✓	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities✓	Archaeological site✓
Quarry, sand or borrow pit	Golf course	Other land uses (describe): Magistrates Court✓

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

N/A

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

N/A

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

N/A

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

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO✓
Core area of a protected area?	YES	NO✓
Buffer area of a protected area?	YES	NO✓
Planned expansion area of an existing protected area?	YES	NO✓
Existing offset area associated with a previous Environmental Authorisation?	YES	NO✓
Buffer area of the SKA?	YES	NO✓

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

➢ CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES✓	NO
	Uncertain	

Explosives booth near the site which was confirmed to have been built in the early 20th century (confirmed to exist in 1937 by aerial photography), and a lean-to structure on site which is dubiously older than 60 years of age.

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

The findings of the heritage specialist investigation revealed that the lean-to structure on site was never one of the early buildings of Port Nolloth (i.e. established in 1860 onwards), but was built into its current form after 1955 with subsequent upgrades and modifications. The structure is of low heritage significance and not unique. The proposed demolition of the lean-to to make way for the new light house will not affect the status of this building.

The magazine adjacent to the staff building (i.e. the explosives booth) is the only structure of any heritage significance and as such should continue to be conserved.

No negative impacts will be experienced, however a positive gain for the area will result in that the simple traditional design of the proposed lighthouse will add value and interest to the streetscape and the town at large.

No other mitigation measures are recommended, the proposed development activity is therefore supported.

Please refer to Appendix D.1 for the full Heritage specialist study report.

Will any building or structure older than 60 years be affected in any way?	YES✓	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES✓	NO

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

- **Note from CSIR: The heritage specialist study has confirmed that the lean-to structure which will be demolished is dubiously older than 60 years and of low heritage significance. Nonetheless, the specialist has submitted an application to the Northern Cape Provincial Heritage Resources Authority (NCPHRA) for removal of the structure. Refer to Appendix J.3 of this Draft BAR for proof of submission of the application.**

➢ SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

The Census carried out in 2001 specified that the Richtersveld Local Municipality (RLM) contained a total population of 10 125, whilst the Community Survey carried out in 2007 estimated a total population of 14 613 (Statistics SA, 2008). This indicates a 30.7% increase from 2001 to 2007. In terms of population groups, the total population calculated during the 2007 Community Survey consisted of 7.77 % Black, 81.93 % Coloured, 10.22 % White, and 0.08 % Indian or Asian (Statistics SA, 2008).

The results of the 2007 Community Survey indicates that approximately 5 615 people are employed and 1 469 people are unemployed, which represents 38.43 % and 10.05 % of the total RLM population respectively (Statistics SA, 2008). Approximately 20.23 % of the total RLM population is considered to be economically inactive. **Figure 1** below illustrates the employment levels in the RLM.

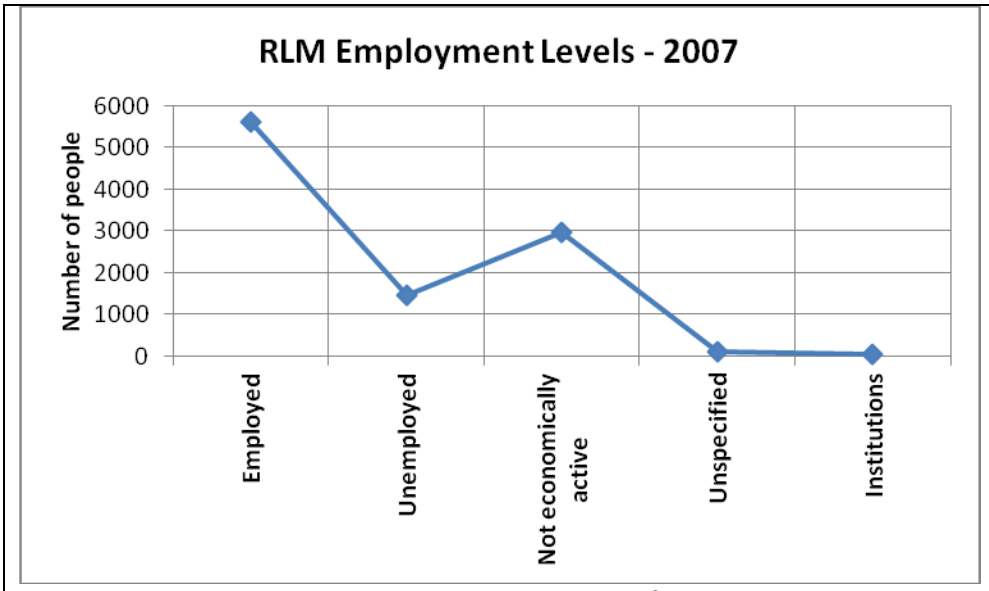

Figure 1: Employment levels in the RLM (Data Source: Statistics SA, 2008).

Economic profile of the local municipality:

The RLM economy is characterised by the following:

- An economy which is dependent on two economic sectors namely mining and fishing and mari-culture.
- Mining which constitutes the most dominant economic sector is becoming less productive and resulting in downscaling of several mining companies in the area, and subsequent decline in the local economy.
- Promising growth through nature-based tourism in the Municipality, where most of the tourism market is dominated by 4x4 visitors to the Richtersveld National Park (RNP).
- High levels of poverty and unemployment (especially due to downscaling of mines), and low levels of education.
- An increasing population in rural towns due to downscaling of the mines and there are few other established industries that are providing work opportunities for this rural population.
- Poor infrastructure and lack of water which acts as a constraint to Port Nolloth's expansion.
- Majority of the population that are involved in unskilled labour with skilled profession generally below the 5% mark.

In terms of the income levels of the RLM population aged between 15 and 65 years, approximately 3 926 people have no form of income, whilst 14 people fall within the highest income bracket (R 204 801 or more) as illustrated in **Figure 2** below (Statistic SA, 2008 (2007 Community Survey)). Comparatively, 1 486 people earn between R 801 and R 1 600. It can be derived from **Figure 2** below that a large amount of the population aged between 15 and 65 earn within the lower income brackets.

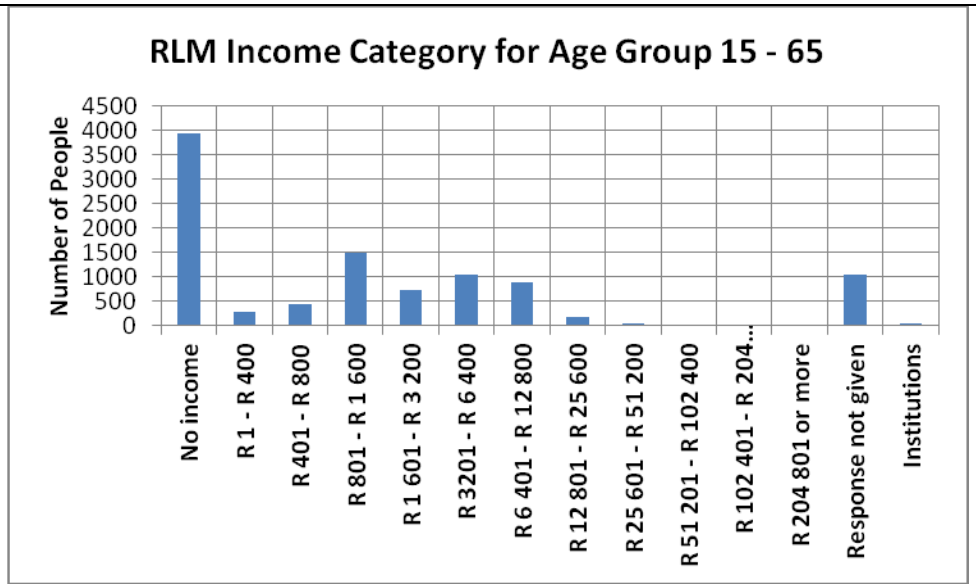

Figure 2: Income Category in the RLM (Data Source: Statistics SA, 2008).

Figure 3 below illustrates the occupation categories for the RLM population aged between 15 and 65 years old based on the 2007 Community Survey. Derived from **Figure 3**, it is clear that the majority of the economically active population within identified categories contain elementary occupations (a total of 6.57 %). On the other hand, 0.29 % of the total economically active population have occupations related to institutions, which represents the minimum.

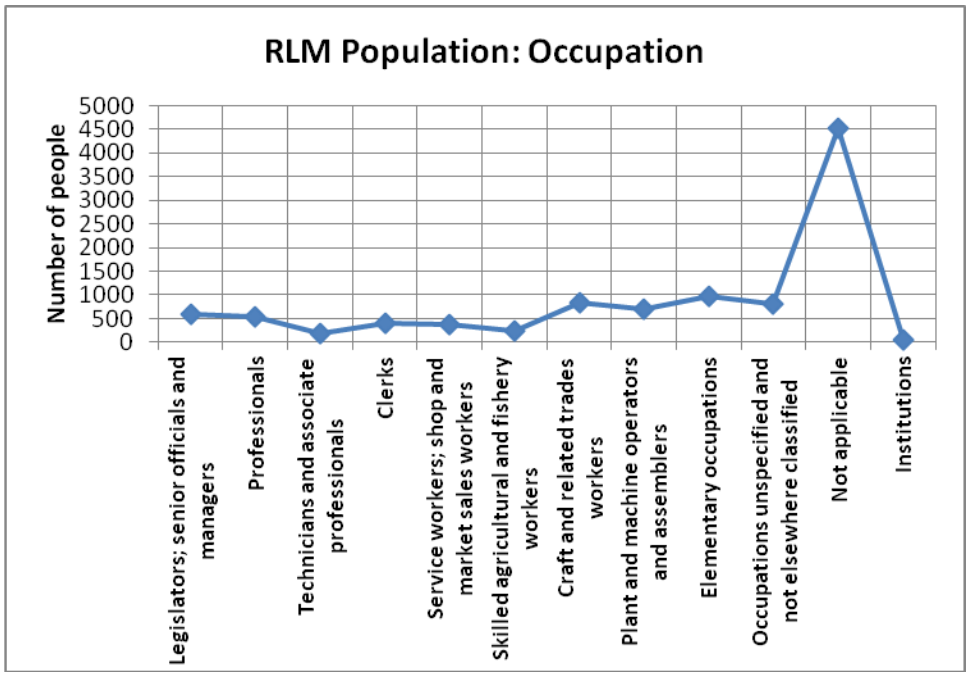

Figure 3: Occupation Categories of the RLM Population (Data Source: Statistics SA, 2008).

Figure 4 below indicates the main industrial and economic sectors that the economically active population are employed within based on the 2007 Community Survey. From the identified sectors, the Mining and Quarrying Sector employs the highest number of people, whilst none of the RLM population is involved in the Electricity, Gas and Water supply Sector. The Institutions Sector employs the second lowest number of people.

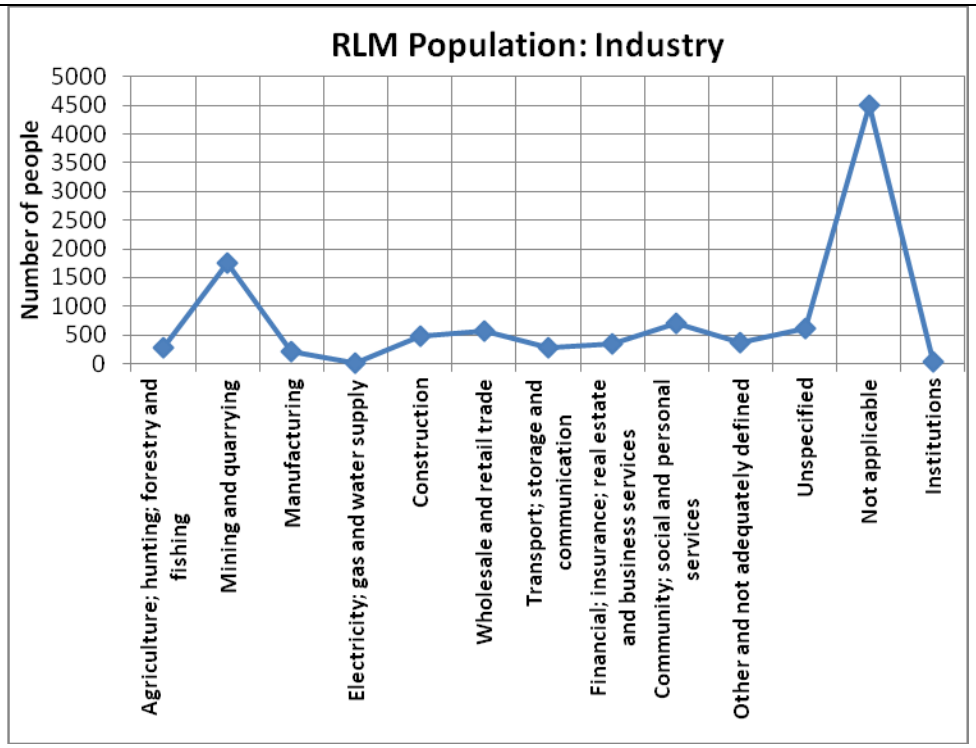

Figure 4: Industry Sectors of the RLM Population (Data Source: Statistics SA, 2008).

Level of education:

The 2007 Community Survey assessed the level of education for the RLM and approximately 6.5 % of the total population obtained a Grade 12 without a university exemption, and 0.7 % obtained Grade 12 with a university exemption (Statistics SA, 2008) (refer to **Table 2** below). Approximately 6.7 % of the total population acquired some form of higher education such as certificates, diplomas and degrees. In addition, 3.5 % of the total population received no schooling (Statistics SA, 2008).

Table 2: Level of education of the RLM Population (Data Source: Statistics SA, 2008).

Level of Education in RLM	Number of people	as % of total pop. in RLM
Grade 0	214	1.5
Grade 1/sub A (completed or in process)	317	2.2
Grade 2/sub B	452	3.1
Grade 3/standard 1	422	2.9
Grade 4/standard 2	473	3.2
Grade 5/standard 3	786	5.4
Grade 6/standard 4	1030	7.0
Grade 7/standard 5	1757	12.0
Grade 8/standard 6/form 1	1656	11.3
Grade 9/standard 7/form 2	979	6.7
Grade 10/standard 8/form 3/NTC I	1111	7.6
Grade 11/standard 9/form 4/NTC II	954	6.5
Attained grade 12; out of class but not completed grade 12	585	4.0
Grade 12/Std 10/NTC III (without university exemption)	955	6.5
Grade 12/Std 10 (with university exemption)	102	0.7
Certificate with less than grade 12	65	0.4
Diploma with less than grade 12	144	1.0
Certificate with grade 12	381	2.6
Diploma with grade 12	89	0.6
Bachelor's degree	0	0.0
BTech	14	0.1
Post graduate diploma	274	1.9
Honour's degree	14	0.1
Higher degree (masters/PhD)	0	0.0
No schooling	508	3.5
Out of scope (children under 5 years of age)	1269	8.7
Unspecified	16	0.1
Institutions	47	0.3

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Approximately R 3.5 million	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	YES✓	NO
Is the activity a public amenity?	YES	NO✓
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Approximately 49 employment opportunities across various skill classes	
What is the expected value of the employment opportunities during the development and construction phase?	Approximately R 628 000 through direct employment, and R 704 000 through indirect employment	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown but in line with Transnet policies in place.	

How many permanent new employment opportunities will be created during the operational phase of the activity?	1 skilled permanent position
What is the expected current value of the employment opportunities during the first 10 years?	Unknown at this stage.
What percentage of this will accrue to previously disadvantaged individuals?	Unknown but in line with Transnet policies in place.

➢ BIODIVERSITY

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR) ✓	

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed✓ (includes cultivation,	100 %	Site condition comprises a full modified concrete/artificial surface with concrete buildings.

dams, urban, plantation, roads, etc)		

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

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

- **Note from CSIR: The proposed site for the new lighthouse is completely transformed (i.e. comprises an artificial concrete surface). As such, no vegetation and/or aquatic systems occur on site.**

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

The project site is fully transformed and comprises an artificial (concrete) surface with no vegetation and/or aquatic systems present on site.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Die Plattelander	
Date published	31 August 2012	
Site notice position	**Latitude**	**Longitude**
	S 29°14'59.78"	E 16°52'5.27"
Date placed	03 October 2012	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

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

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

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

Note from CSIR: Proof of key stakeholders receiving written notification of the proposed project, in the form of registered mail receipts and e-mail delivery reports, can be found in Appendix E.2 of this Draft BAR.

Prior to the commencement of the process and placing the adverts and site notices noted in Section 1 above, an initial database of I&APs was developed for the Basic Assessment Process. This was supplemented with input from the Environmental Assessment Practitioner (CSIR) and the applicant (Transnet). This initial database included 39 registered I&APs. A copy of the database, indicating interaction with I&APs is included as Appendix E5 of this report. The 39 registered I&APs includes affected organs of state and authorities. All I&APs on the database were sent written notification of the Basic Assessment Process, via Letter 1 dated 28 August 2012 (published in both English and Afrikaans as the latter comprises an important language for the residents of Port Nolloth), which also included a comment form and a Background Information Document on the project. Additionally, copies of this correspondence were also placed on the project website http://www.csir.co.za/eia/Port_Nolloth_Lighthouse.html. Appendix E2 contains a copy of the correspondence sent to I&APs. A copy of the personalised letters sent to all 39 registered I&APs on the database can be provided upon request.

In terms of the electronic database, I&AP details are being captured and automatically updated as and when information is distributed to or received from I&APs. This ongoing and up-to-date record of communication is an important component of the public participation process. It must be noted that while not required by the regulations, those I&APs proactively identified at the outset of the Basic Assessment Process will remain on the project database throughout the EIA process and will be kept informed of all opportunities to comment and will only be removed from the database by request.

The current database for the Draft Basic Assessment Report release includes 50 registered I&APs, please see copy attached as Appendix E5. The database provides, where feasible, the contact number or email address for I&APs. The database also indicates at what stage of the process correspondence has been sent to a specific I&AP and records when comments are received from I&APs. In this manner a record of the interaction and communication with I&APs is maintained throughout the public participation process. A copy of all correspondence sent to I&APs (mailed or emailed) is kept on file for record purposes.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Potential impacts on heritage structures	• The "explosives booth" near the proposed site is the only structure of high heritage value and will continue to be conserved. • The existing lighthouse is 34 years old and does not require a permit for its removal. • An application for the demolition of the lean-to structure has been submitted as it is dubiously older than 60 years. However, this structure is of low heritage value. • A Heritage Impact Assessment has found that the study area is too transformed to be considered archaeologically sensitive.
Public participation concerns	• All necessary measures were undertaken to inform surrounding landowners of the proposed project. • Should authorisation be granted, the CSIR will place a newspaper advert prior to commencement of construction activities. • Research showed that "Die Plattelander" was the only newspaper in the region which covered a large distribution range that also covered the town of Port Nolloth. Suggestions on additional/other local newspapers in the areas were welcomed.
Potential noise impacts	• There are no planned upgrades on the existing engine room as this does not form part of the application. Consequently, the engine room will not be sound-proofed. • There are no upgrades or constructions that ties in with the nautophone as part of this Basic Assessment process. However, the CSIR has advised Transnet to consider relocating the nautophone as part of their ongoing management practices to minimise the noise impacts for people residing on the landward side. The CSIR also believes that the construction of the concrete tower adjacent to the existing nautophone will assist in absorbing some of the sound reverberations thereby further reducing noise impacts.
Potential visual impacts	• Overall, sea views of certain residents will be enhanced and sea views of certain residents will be

Summary of main issues raised by I&APs	Summary of response from EAP
	reduced by the construction of the new lighthouse and removal of the existing lighthouse. • Lights on the landward side of the lighthouse will be blanked off to reduce visual impacts for residents. In addition, the proposed lighthouse will be constructed closer to the shoreline as compared to the existing lighthouse which will ensure that the light "spill" emanating from the new lighthouse will be confined more towards the sea. However, this effect will not be significant in relation to the existing lighthouse as the proposed new lighthouse will be in close proximity to the existing lighthouse.
Potential impacts on protected trees and plant species	• As the site is located within a high density urban area and was previously the location of the 1909 cast iron lighthouse, no trees or vegetation will be disturbed by construction activities as the site is fully transformed i.e. concrete/tarred surfaces.
Potential waste impacts	• Due to the limited quantity of asbestos requiring removal (i.e. 0.18 cubic metres maximum)) from the lean-to structure, this does not trigger the need for a waste licence application process as it is once-off and well below the legislated thresholds. Asbestos will instead be removed and disposed off in accordance with Section 21 of the Asbestos Regulations, 2001 (under the Occupational Health and Safety Act, 1993) (Refer to Appendix J.2 for electronic correspondence with the waste specialist consulted).
Socio-economic impacts	• There will be local employment opportunities mainly in the construction phase of the project. However, the final numbers will be confirmed upon completion of the Basic Assessment process and if positive environmental authorisation is obtained.
Water supply impacts	• The new lighthouse will draw on existing supplies of water and power. No impacts are associated with water supply for the proposed project.

4. COMMENTS AND RESPONSE REPORT

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

Note from CSIR: The Comments and Response Report is attached as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

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

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

Note from CSIR: Proof of Authorities and Organs of State receiving written notification of the proposed project, in the form of registered mail receipts and e-mail delivery reports, can be found in Appendix E.4/E.2 of this Draft BAR.

Prior to the commencement of the process and placing the adverts and site notices noted in Section 1 above, an initial database of I&APs was developed for the Basic Assessment Process. This was supplemented with input from the EIA Project Managers (CSIR) and the applicant (Transnet). This initial database included 27 organs of state or potentially affected authorities. A copy of the database, indicating interaction with organs of state or potentially affected authorities is included as Appendix E5 of this report. These registered authorities and organs of state were sent written notification of the Basic Assessment Process, via Letter 1 dated 28 August 2012, which included a comment form and a Background Information Document on the project. Copies of this correspondence were placed on the project website http://www.csir.co.za/eia/Port Nolloth Lighthouse.html. Appendix E2 contains a copy of the correspondence sent. A copy of the personalised letters is kept on file and can be provided upon request.

Key authorities (Richtersveld Local Municipality, Namakwa District Municipality, Northern Cape Department of Environment and Nature Conservation and SAHRA Northern Cape) and interested landowners were then consulted telephonically and in one-on-one consultation sessions during subsequent site visits. The notes from these meetings are included as Appendix E6 and the comments raised at this meeting are included in the Comments and Response Report attached as Appendix E3. Furthermore, the project database has been updated to include additional authorities and organs of state showing interest in the project. Thus, the project database for the release of the Draft Basic Assessment Report now includes 33 organs of state or potentially affected authorities.

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

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

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

Note from CSIR: The following summarises the public participation process prior to the release of the Draft Basic Assessment Report for I&AP Review:

Identification and Notification to I&APs and Affected Organs of State

- **Advertisement to Register Interest - Die Plattelander (English & Afrikaans), 31 August 2012;**
- **Site notice boards - placed on site in English & Afrikaans;**
- **Notice to Surrounding Landowners - a database of I&APs is included in Appendix E5. Written notification was provided to all I&APs and Affected Organs of State on the project database via Letter 1, which included a Background Information Document on the project and a comment form;**
- **Database Development and Maintenance - One mechanism to identify I&APs is through media advertisements. However, as noted above a proactive approach was adopted towards the identification of I&APs and currently 50 I&APs are registered on the database, including affected organs of state and authorities. A copy of the database is included in Appendix E5 of this report. The database indicates when information is sent to or received from I&APs. A copy of all correspondence sent to I&APs is kept on file and can be provided upon request;**
- **Meetings held – as noted in Section 5 above, meetings were held with key authorities, organs of state and interested landowners at the time. Notes from the meetings held are included in Appendix E6 and the issues raised at this meeting have also been included in the Comments and Response Report as Appendix E3; and**
- **Availability of Information – all project information has been made available on an easily accessible the website: http://www.csir.co.za/eia/Port Nolloth Lighthouse.html. In addition to this, hard copies of correspondence were mailed to surrounding landowners, as deemed appropriate.**

Copies of all communication to I&APs up to the release of the Draft Basic Assessment Report for the 40 day review period are attached as Appendix E2 of this Report.

Review of the Draft Basic Assessment Report (current stage in the process)

At the time of the release of the Draft Basic Assessment Report there were 50 I&APs registered on the project database. All I&APs will be notified in writing, via Letter 2, of the 40 day review period for the Draft Basic Assessment Report. Included with this correspondence will be an executive summary of the Draft BAR and a comment form. The Draft BAR will also be made available on the website: http://www.csir.co.za/eia/Port Nolloth Lighthouse.html and copies of the report will be available for review at the Richtersveld Local Municipality and Namakwa District Municipality.

Copies of all comments received on the Draft BAR and proof of correspondence will be included in Final BAR prior to submission to National DEA for decision making.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

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

PLANNING AND DESIGN

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	Direct impacts: There are no direct impacts anticipated. All planning and design activities are done off site.		
	Indirect impacts: None.		
	Cumulative impacts: None.		

CONSTRUCTION

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Site clearing for the proposed lighthouse – including the demolitions of: ➢ Lean-to structure on ERF 335; and ➢ Existing Aluminium Lattice Lighthouse on ERF 44.	***Direct impacts:***		
	Loss of archaeological heritage resources: ➢ Demolishing/removal of a lean-to structure on site to accommodate the new lighthouse.	Medium	➢ No proposed mitigation. Removal of the lean-to structure cannot be avoided as there is little lateral flexibility for the establishment of the new lighthouse in line with the navigational requirements. A Heritage Impact Assessment has confirmed that the lean-to structure is dubiously older than 60 years and of low heritage significance, and that the proposed lighthouse will add value and interest to the streetscape and the town at large. Nonetheless, a permit application for the removal of this structure has been submitted to the Northern Cape Provincial Heritage Resources Agency (NCPHRA).
	Runoff and erosion: ➢ Increased rainfall runoff and subsequent erosion once the site for the new lighthouse is cleared. This impact will be minimal owing to the limited spatial extent of the site/project.	Low	➢ Protect surrounding areas susceptible to erosion using mulch or a suitable alternative (i.e. straw, erosion control mats etc.). ➢ Care must be taken to control stormwater runoff – implement the stormwater and erosion management plans (Appendix G).
	Waste:	Medium	➢ General waste bins must be made available

Activity	Impact summary	Significance	Proposed mitigation
	➢ Generation of domestic and demolishing waste including sewage from temporary construction toilets. ➢ Generation of building rubble and corrugated asbestos roofing waste from the lean-to structure. ➢ Aluminium waste from decommissioning of the existing lighthouse.		for employees to use throughout the project site. General waste must be disposed off at an approved waste disposal facility and evidence of correct disposal must be kept. ➢ Building rubble and metal waste must be used, where possible, in construction – if this is not possible these must be disposed off at an appropriate site. All temporary soil stockpiles, litter, metal waste and rubble must be removed on completion of construction activities without dumping in surrounding open areas. ➢ Demolition of the asbestos-containing sheeting must be undertaken in accordance with Section 21 of the Asbestos Regulations, 2001 (under the Occupational Health and Safety Act, 1993). . Records of all waste being taken off site must be recorded and kept as evidence. ➢ Contractors must be responsible for the maintenance of sewage waste from on site chemical toilets. Should any spills occur, the material must be cleaned up immediately and disposed off appropriately. Chemical toilets on site during the construction activities must be cleaned and maintained on a weekly basis to minimise the potential of odours on site.
	Soil contamination: ➢ Possible soil contamination during site clearing activities through diesel, petrol and contaminant spills from construction vehicles/equipment.	Medium	➢ Ensure vehicles are serviced regularly and are in good working condition. ➢ Implement good housekeeping including containment and immediate clean-up of any spillages, collection of chemical/oil wastes,

Activity	Impact summary	Significance	Proposed mitigation
			and disposal at an appropriate hazardous waste facility. ➢ Prevent, minimize, and control of the spills of hazardous waste by: • Providing adequate secondary containment for fuel storage and for the temporary storage of other fluids (e.g. lubricating oils, hydraulic fluids). • Using impervious surfaces for refuelling areas and other fluid transfer areas. • Training workers on the correct transfer and handling of fuels and chemicals and the response to spills. • Providing portable spill containment and clean-up equipment on site and training in the equipment deployment.
	Air quality: ➢ Dust production and pollution (exhaust fumes) from construction equipment and vehicles.	Medium	➢ It is recommended that water be sprayed on the access roads. ➢ There should be strict speed limits on access roads with dusty surfaces in order to prevent dust liberation into the atmosphere.
	Noise: ➢ Noise impacts as a result of diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks.	Medium	➢ All construction activities should be undertaken in accordance with daylight working hours between 07:00 and 17:00 on weekdays and 07:30 and 13:00 on Saturdays, with no construction activities taking place on Sundays and public holidays. ➢ All earth-moving vehicles and equipment must be serviced regularly to ensure proper functioning. ➢ A complaints register must be made available so that any complaints can be

Activity	Impact summary	Significance	Proposed mitigation
			logged and reported to the responsible person on site. ➢ Operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No 85 of 1993).
	Job creation: ➢ Creation of employment and business opportunities.	Low	➢ Maximise local economic opportunities by appointing local labour forces and training this staff. ➢ Before the construction phase TFR should meet representatives from Richtersveld Local Municipality and establish the existence of a skills database for the area. If such a database exists, it should be made available to TFR/the contractors. ➢ TFR should develop a database of local companies, specifically previously disadvantaged companies which could serve as potential service providers prior to the tender process for construction contractors. These companies should be notified of the tender process and invited to bid on project-related activities for the proposed lighthouse.
	Indirect impacts:		
	Public safety: ➢ Impacts on public safety especially due to increased movement of construction vehicles.	Medium	➢ Inform members of the public of construction activities to limit disturbance/interference. ➢ Consult local communities regarding the location of construction camps, access and hauling routes and other likely disturbance during construction. ➢ Undertake construction activities during daylight hours and not on Sundays and public holidays.

Activity	Impact summary	Significance	Proposed mitigation
	Secondary benefits to community: ➢ Secondary industries may benefit from this development through accommodation for construction workers, transport of workers to and from the site, and support services such as concrete and building material suppliers.	Medium	➢ None.
	Road damage: ➢ Damage to roads through movement of construction vehicles.	Medium	➢ Construction vehicles must follow strict speed limits on all access roads (40 km/hr in residential areas). ➢ The contractor/proponent must ensure the repair of any damaged roads caused by the movement of construction vehicles.
	Cumulative impacts:		
	Job creation: ➢ Increased job potential in the region through the development activities.	Low	➢ None.
	Air quality: ➢ Increased dust and air pollution from construction activities in conjunction with port related activities and vehicle movement in the vicinity.	Medium	➢ No further mitigation measures can be applied – apply mitigation measures for air quality as above.
	Waste: ➢ Increased waste material on site and at landfills.	Medium	➢ No new mitigation measures – apply mitigation measures for waste generation as above.
Excavations for: ➢ Lighthouse foundation; and ➢ A 220 V underground cable extending from the engine room on ERF 45 to the proposed lighthouse on ERF 335.	***Direct impacts:***		
	Loss of archaeological heritage resources: ➢ Destruction and disturbance of palaeontological/ archaeological occurrences buried beneath the surface during excavations.	Low	➢ A heritage impact assessment has confirmed that the study area is too transformed to be considered archaeologically sensitive. ➢ Nonetheless, any palaeontological/ archaeological heritage uncovered during the construction must result in stopping construction activities and immediately reporting the findings to the SAHRA APM

Activity	Impact summary	Significance	Proposed mitigation
			Unit (Katie Smuts/Colette Scheermeyer 021 462 4502). ➢ Any major bedrock excavations should be examined at regular intervals for fossil material by the Environmental Control Officer during the construction phase.
	Runoff and erosion: ➢ Increased runoff and erosion from excavations for the lighthouse foundation and cabling to the engine room. The spatial extent of the exposed soil surface will be minimal owing to the limited development footprint. ➢ Erosion of soil stockpiles.	Medium	➢ Keep exposed soil surfaces covered with mulch, straw, erosion control mats or any other means until plant cover is established or the surface covered by artificial means (e.g. concrete/tarring) as applicable. ➢ Implement the stormwater management plan (Appendix G). ➢ Erosion damage to soil stockpiles must be prevented with soil conservation measures such as plastic sheeting, tarpaulins if applicable.
	Waste: ➢ Generation of domestic waste including sewage from temporary construction toilets.	Medium	➢ General waste bins must be made available for employees to use throughout the project site. General waste must be disposed off at an approved waste disposal facility and evidence of correct disposal must be kept. ➢ In the case of sewage waste from on site chemical toilets, contractors will be responsible for the maintenance of these. Should any spills occur, the material must be cleaned up immediately and disposed off appropriately. Chemical toilets on site during the construction activities must be cleaned and maintained on a weekly basis to minimise the potential of odours on site.
	Soil contamination: ➢ Possible soil contamination during	Medium	➢ Ensure vehicles are serviced regularly and are in good working condition.

Activity	Impact summary	Significance	Proposed mitigation
	excavation activities through diesel, petrol and contaminant spills from construction vehicles/equipment.		➢ Implement good housekeeping including containment and immediate clean-up of any spillages, collection of chemical/oil wastes, and disposal at an appropriate hazardous waste facility. ➢ Prevent, minimize, and control of the spills of hazardous waste by: • Providing adequate secondary containment for fuel storage and for the temporary storage of other fluids (e.g. lubricating oils, hydraulic fluids). • Using impervious surfaces for refuelling areas and other fluid transfer areas. • Training workers on the correct transfer and handling of fuels and chemicals and the response to spills. • Providing portable spill containment and clean-up equipment on site and training in the equipment deployment.
	Air quality: ➢ Reduction in local air quality through dust production and pollution from construction equipment and vehicles during excavations.	Medium	➢ Vehicles must only be permitted in demarcated areas or on existing roads. ➢ It is recommended that water be sprayed on the access roads. ➢ There should be strict speed limits on access roads with dusty surfaces in order to prevent dust liberation into the atmosphere.
	Noise: ➢ Noise impacts as a result of diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks.	Medium	➢ All construction activities should be undertaken in accordance with daylight working hours between 07:00 and 17:00 on weekdays and 07:30 and 13:00 on Saturdays, with no construction activities taking place on Sundays and public holidays.

Activity	Impact summary	Significance	Proposed mitigation
			➢ All earth-moving vehicles and equipment must be serviced regularly to ensure proper functioning. ➢ A complaints register must be made available so that any complaints can be logged and reported to the responsible person on site. ➢ Operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No 85 of 1993).
	Road damage: ➢ Damage to roads through excavation activities on Beach Road for the underground 220 V cable.	High	➢ The contractor/proponent must ensure the proper repair of any damaged roads caused by excavations in the construction phase.
	Indirect impacts:		
	Road damage: ➢ Road damage due to construction vehicle movement.	Medium	➢ Construction vehicles must follow strict speed limits on access roads. ➢ The contractor/proponent must ensure the repair of any damaged roads caused by the movement of construction vehicles.
	Cumulative impacts:		
	Air quality: ➢ Increased dust and air pollution from construction activities in conjunction with port related activities and vehicle movement in the vicinity.	Medium	➢ No further mitigation measures can be applied – apply mitigation measures for air quality as above.
Construction of concrete lighthouse tower, lantern house, underground cabling and commissioning.	***Direct impacts:***		
	Noise: ➢ Noise impacts as a result of diesel powered equipment such as the generators used for powering equipment and activities associated with the hauling of construction trucks and placement of	Medium	➢ All construction activities should be undertaken in accordance with daylight working hours between 07:00 and 17:00 on weekdays and 07:30 and 13:00 on Saturdays, with no construction activities taking place on Sundays and public

Activity	Impact summary	Significance	Proposed mitigation
	the new tower (i.e. cranes).		holidays. ➢ All earth-moving vehicles and equipment must be serviced regularly to ensure proper functioning. ➢ A complaints register must be made available so that any complaints can be logged and reported to the responsible person on site. ➢ Operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No 85 of 1993).
	Visual: ➢ Construction operations and equipment and vehicles could pose a visual intrusion on existing views of sensitive visual receptors in the region.	Medium	➢ Project developers should demarcate construction boundaries to minimise areas of surface disturbance. ➢ The contractor should maintain good housekeeping on site to avoid litter and minimise waste. ➢ Rehabilitation of temporarily cleaned areas should start as soon as possible. ➢ Control measures such as mulch should be spread over soil disturbances to aid rehabilitation and dust suppression. ➢ Night lighting of the construction site should be minimised within the requirements of safety and efficiency.
	Air quality: ➢ Reduction in local air quality through dust production and pollution from construction equipment and vehicles during placement of the tower.	Medium	➢ Vehicles must only be permitted in demarcated areas or on existing roads. ➢ It is recommended that water be sprayed on the access roads.

Activity	Impact summary	Significance	Proposed mitigation
			➢ There should be strict speed limits on access roads with dusty surfaces in order to prevent dust liberation into the atmosphere.
	Indirect impacts:		
	Road damage: ➢ Road damage due to construction vehicle movement.	Medium	➢ Construction vehicles must follow strict speed limits on all access roads. ➢ The contractor/proponent must ensure the repair of any damaged roads caused by the movement of construction vehicles.
	Cumulative impacts:		
	Air quality: ➢ Increased dust and air pollution from construction activities in conjunction with port related activities and vehicle movement in the vicinity.	Medium	➢ No further mitigation measures can be applied – apply mitigation measures for air quality as above.

OPERATION

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Operation of lighthouse.	***Direct impacts:***		
	Visual: ➢ Intrusion of a concrete lighthouse on views of sensitive visual receptors. ➢ Effects of the lighthouse on the nightscape of the region.	Medium	➢ Maintenance of the lighthouse exterior which will subsequently allow for an improved sense of place for Port Nolloth in general. ➢ In terms of the nightscape, residents in the region will most likely be used to this effect based on the existing lighthouse. In addition, the new lighthouse will be located closer seaward, thereby disturbing the "spill" of the light beams for those residing on land – as compared to the existing lighthouse located further inland to this location.
	Economics: ➢ The operation of the lighthouse will provide one permanent post.	Low	➢ None. ➢ The position will be filled by an existing competent person within Transnet trained in lighthouse

Activity	Impact summary	Significance	Proposed mitigation
			operational requirements.
	Secondary effects: ➢ Future development of Port activities. ➢ Improved safety for mariners.	High	➢ None.
	Indirect impacts:		
	Aesthetics and heritage value: ➢ The new tower will be more aesthetically pleasing and will contribute to the country's rich lighthouse heritage.	Medium	➢ Architectural design input and proper maintenance of the new lighthouse will contribute significantly in terms of aesthetics and potential heritage value of the lighthouse.
	Cumulative impacts:		
	None.		
Use of vehicle during maintenance of lighthouse.	***Direct impacts:***		
	Health and Safety: ➢ When maintenance is required, operators should be aware that specialised equipment (e.g. cranes) might be needed, and work could be performed at high heights.	Medium	➢ Workers must have undergone necessary safety training. ➢ Guidelines must be in place to deal with emergencies such as someone being hurt during maintenance work on the tower. ➢ Workers must be equipped with Personal Protective Equipment (PPE).
	Indirect impacts:		
	Road damage: ➢ Through use of maintenance vehicles.	Low	➢ All maintenance staff must make use of existing roads and follow designated speed limits.
	Cumulative impacts:		
	None.		

DECOMMISSIONING AND CLOSURE

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Disassemble lighthouse according to regulatory requirements.	***Direct impacts:***		
	Job creation: ➢ Creation of employment for decommissioning activities e.g. demolitions. ➢ The social impacts associated with the final	Low	➢ For decommissioning activities, maximise local economic opportunities by appointing local labour forces and training this staff.

Activity	Impact summary	Significance	Proposed mitigation
	decommissioned lighthouse are likely to be limited owing to the small number of permanent employees affected.		
	Waste: ➢ Generation of domestic and demolishing waste including sewage from temporary toilets.	Medium	➢ General waste bins must be made available for employees to use throughout the project site. General waste must be disposed off at an approved waste disposal facility and evidence of correct disposal must be kept. ➢ All temporary soil stockpiles, litter and rubble must be removed on completion of decommissioning activities without dumping in surrounding open areas. ➢ Hazardous waste must be removed and disposed off in a registered landfill site and the activities must be undertaken by an accredited services provider. Records of all waste being taken off site must be recorded and kept as evidence. ➢ In the case of sewage waste from on site chemical toilets, contractors will be responsible for the maintenance of these. Should any spills occur, the material must be cleaned up immediately and disposed off appropriately. Chemical toilets on site during decommissioning activities must be cleaned and maintained on a weekly basis to minimise the potential of odours on site.
	Noise: ➢ Noise impacts as a result of diesel powered equipment such as the generators used for powering equipment and activities associated with the operation of construction vehicles.	Medium	➢ All decommissioning activities should be undertaken in accordance with daylight working hours between 07:00 and 17:00 on weekdays and 07:30 and 13:00 on Saturdays, with no activities taking place on Sundays and public holidays. ➢ All construction vehicles and equipment must be serviced regularly to ensure proper functioning. ➢ Operations should meet the noise standard

Activity	Impact summary	Significance	Proposed mitigation
			requirements of the Occupational Health and Safety Act (Act No 85 of 1993).
	Air quality: ➢ Reduction in local air quality through dust production and pollution from construction equipment and vehicles during decommissioning activities.	Medium	➢ Vehicles must only be permitted in demarcated areas or on existing roads. ➢ It is recommended that water be sprayed on the access roads. ➢ There should be strict speed limits on access roads with dusty surfaces in order to prevent dust liberation into the atmosphere.
	Soil contamination: ➢ Possible soil contamination during decommissioning activities through diesel, petrol and contaminant spills from construction vehicles/equipment.	Medium	➢ Ensure vehicles are serviced regularly and are in good working condition. ➢ Implement good housekeeping including containment and immediate clean-up of any spillages, collection of chemical/oil wastes, and disposal at an appropriate hazardous waste facility. ➢ Prevent, minimize, and control of the spills of hazardous waste by: • Providing adequate secondary containment for fuel storage and for the temporary storage of other fluids (e.g. lubricating oils, hydraulic fluids). • Using impervious surfaces for refuelling areas and other fluid transfer areas. • Training workers on the correct transfer and handling of fuels and chemicals and the response to spills. • Providing portable spill containment and clean-up equipment on site and training in the equipment deployment.
	Indirect impacts:		
	None.		
	Cumulative impacts:		

Activity	Impact summary	Significance	Proposed mitigation
	None.		
No-go option			
Construction, operation and decommissioning phases of the lighthouse.	***Direct impacts:***		
	Should this project not go ahead, none of the negative impacts mentioned above will occur. However, none of the potential benefits, especially those associated with improved marine safety, infrastructural development and socio-economic advantages will also not be realised.		
	Indirect impacts:		
	None.		
	Cumulative impacts:		
	From a socio-economic perspective, the existing lighthouse will pose a safety risk as it has reached the end of its lifespan. In addition, should the new lighthouse not be erected, there will be negative implications from a marine safety point of view with a possible loss of future development opportunities in the region.		

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

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

APPROACH TO THE BASIC ASSESSMENT

1) METHODOLOGY OF IMPACT ASSESSMENT

According to the DEA IEM Series guideline on "Impact significance" (2002), there are a number of quantitative and qualitative methods that can be used to identify the significance of impacts resulting from a development. The process of determining impact significance should ideally involve a process of determining the acceptability of a predicted impact to society. Making this process explicit and open to public comment and input would be an improvement of the EIA/BA process. The CSIR's approach to determining significance is generally as follows:

- Use of expert opinion by the specialists ("professional judgement"), based on their experience, analysis, and use of existing guidelines and strategic planning documents and conservation mapping (e.g. SANBI biodiversity databases),
- Review of specialist assessment by all stakeholders including authorities such as nature conservation officials, as part of the report review process (i.e. if a nature conservation official disagreed with the significance rating, then we could negotiate the rating),
- Our approach is more a qualitative approach - we do not have a formal matrix calculation of Significance as is sometimes done.

2) SPECIALIST CRITERIA FOR IMPACT ASSESSMENT

The following methodology has been provided by CSIR to all specialists, for incorporation into specialist EIA/BA assessments:

Assessment of potential impacts

The assessment of impact significance should be based on the following conventions:

Nature of Impact - this reviews the type of effect that a proposed activity will have on the environment and should include "what will be affected and how?"

Spatial Extent - this should indicate whether the impact will be:

- Site specific;
- Local (<2 km from site);
- Regional (within 30 km of site);
- National.

Duration - The timeframe during which (lifetime of) the impact will be experienced:

- Temporary (less than 1 year);
- Short term (1 to 6 years);
- Medium term (6 to 15 years);
- Long term (the impact will cease after the operational life of the activity);
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Intensity - here it should be established whether the impact is destructive or innocuous and should be described as either:

- High (severe alteration of natural systems, patterns or processes such that they temporarily or permanently cease);
- Medium (notable alteration of natural systems, patterns or processes; where the environment continues to function but in a modified manner);
- Low (negligible or no alteration of natural systems, patterns or processes); be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making).

Probability - this considers the likelihood of the impact occurring and should be described as:

- Improbable (little or no chance of occurring);
- Probable (<50% chance of occurring);
- Highly probable (50 – 90% chance of occurring);
- Definite (>90% chance of occurring).

Reversibility - this considers the degree to which the adverse environmental impacts are reversible or irreversible. For example, an impact will be described as low should the impact have little chance of being rectified to correct environmental impacts. On the other hand, an impact such as the nuisance factor caused by noise impacts from wind turbines can be considered to be highly reversible at the end of the project lifespan. The assessment of the reversibility of potential impacts will be based on the following terms:

- High - impacts on the environment at the end of the operational life cycle are highly reversible
- Moderate - impacts on the environment at the end of the operational life cycle are reasonably reversible
- Low - impacts on the environment at the end of the operational life cycle are slightly reversible
- Non-reversible - impacts on the environment at the end of the operational life cycle are not reversible and are consequently permanent.

Irreplaceability - this reviews the extent to which an environmental resource is replaceable or irreplaceable. For example, if the proposed project will be undertaken on land that is already transformed and degraded, this will yield a low irreplaceability score; however, should a proposed development destroy unique wetland systems for example, these may be considered irreplaceable and thus be described as high. The assessment of the degree to which the impact causes irreplaceable loss of resources will be based on the following terms:

- High irreplaceability of resources (this is the least favourable assessment for the environment.)
- Moderate irreplaceability of resources
- Low irreplaceability of resources
- Resources are replaceable (this is the most favourable assessment for the environment.)

The status of the impacts and degree of confidence with respect to the assessment of the significance is stated as follows:

Status of the impact: A description as to whether the impact will be:

- Positive (environment overall benefits from impact),
- Negative (environment overall adversely affected), or
- Neutral (environment overall not affected).

Degree of confidence in predictions: The degree of confidence in the predictions, based on the availability of information and specialist knowledge. This should be assessed as:

- High,
- Medium, or
- Low.

Based on the above considerations, the specialist must provide an overall evaluation of the significance of the potential impact, which should be described as follows:

- **Low to very low:** (the impact may result in minor alterations of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated).
- **Medium:** (the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated).
- **High:** Where it could have a "no-go" implication for the project unless mitigation or re-design is practically achievable.

Furthermore, the following must be considered:
- Impacts should be described both before and after the proposed mitigation and management measures have been implemented.
- All impacts should be evaluated for both the construction, operations and decommissioning phases of the project, where relevant.
- The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region, if relevant.

Management Actions:
- Where negative impacts are identified, mitigatory measures will be identified to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated.
- Where positive impacts are identified, augmentation measures will be identified to potentially enhance these.
- Quantifiable standards for measuring and monitoring mitigatory measures and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.

Monitoring:
Specialists should recommend monitoring requirements to assess the effectiveness of mitigation actions, indicating what actions are required, by whom, and the timing and frequency thereof.

Cumulative Impact:
Consideration is given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts are evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

Mitigation:
The objective of mitigation is to firstly avoid and minimise impacts where possible and where these cannot be completely avoided, to compensate for the negative impacts of the development on the receiving environment and to maximise re-vegetation and rehabilitation of disturbed areas. For each impact identified, appropriate mitigation measures to reduce or otherwise avoid the potentially negative impacts are suggested. All impacts are assessed without mitigation and with the mitigation measures as suggested appropriately implemented.

3) ASSESSMENT OF CUMULATIVE IMPACTS FROM THE ESTABLISHMENT OF SIMILAR PROJECTS IN THE LARGER AREA

According to investigations undertaken, there are no similar developments within a 2 km radius of the project area.

4) ASSUMPTIONS, UNCERTAINTIES AND GAPS IN INFORMATION/KNOWLEDGE

- **Heritage Impact Assessment:**

The assumptions and limitations of the study are summarised below:

- This study has been carried out without a specific site inspection as Tim Hart (heritage specialist) is familiar with Port Nolloth, the site and its context due to a long history of working in the area.
- Historical aerial photography was of indifferent quality.

- **Visual Impact Assessment:**

The assumptions and limitations of the study are summarised below:

Spatial data used for the visibility analysis originate from different sources and scales. Inaccuracies and errors are therefore inevitable. Every effort was made to minimize their effect on the assessment.

Assumptions, uncertainties and gaps in compiling this Draft BAR include:

- Assumption: apart from this proposed lighthouse project, there are no other lighthouse facilities in the Richtersveld Local Municipality. All information provided by the proponent is correct.
- Uncertainty: The disposal facilities with available capacity from the project still need to be indicated by the local and district municipalities.
- Gap: local and provincial legislation did not explicitly make mention of lighthouse projects.

Alternative A (preferred alternative)

This section provides a summary of the Basic Assessment and conclusions drawn from the specialist studies for the proposed TFR Port Nolloth Lighthouse project.

Heritage Impact Assessment:

Construction of the new lighthouse involved decommissioning of the existing aluminium lattice lighthouse as well as part of an existing building on site which may have been of heritage significance – therefore the impact of demolishing these structures had to be assessed through the Heritage Impact Assessment.

In terms of archaeological heritage, the study states that whilst coastal shell middens are prolific around Port Nolloth, indications are that the study area is too transformed to be considered archaeologically sensitive.

A desktop assessment revealed that the existing aluminium lattice lighthouse is less than 60 years of age and did not require any form of heritage permit for its removal. The study also stated that the existing aluminium lighthouse expresses itself as a utilitarian and somewhat odd structure does not "read" as a lighthouse to the casual observer, and is without argument one of the most un-appealing structures within the context of this country's rich lighthouse heritage. The study further notes that the construction of a more formal and recognizable structure within the Transnet owned enclave better landmark status and add a feature of interest to the Beach Street precinct.

In terms of the lean-to structure that will need to be removed for the construction of the new lighthouse, the study found that this feature is of very low heritage significance, and that its demolition will have no negative impacts at all. The study also mentions that this structure is dubiously greater than 60 years of age and is maintained, modernized and in the opinion of the specialist not worthy of inclusion of a regional heritage register nor is it worthy of formal grading.

Table 3 below illustrates a summary of the number of direct and cumulative impacts identified in the Heritage Impact Assessment.

Table 3. Summary of the Heritage Impact Assessment

		Significance Before Mitigation				Significance After Mitigation		
	Total Impacts	Low	Medium	Medium	High	Low	Medium	High
Direct Impacts - Construction Phase	1	0	1	0	0	1	0	0
Total Impacts	1							

As illustrated in **Table 3** above, the impact identified specifically pertains to the destruction of the lean-to structure on site through the demolishing activities for the new lighthouse. This impact is predicted to be of low intensity with a permanent duration and high probability. This impact is considered to be replaceable and reversible. Significant impacts on heritage during the operational and decommissioning phases of the proposed project are not anticipated.

The impact is considered to be of low (positive) significance after mitigation. It is the opinion of the specialist that the proposed lighthouse will add value to the surrounds and the Beach Street streetscape and represent a significant positive impact.

Visual Impact Assessment:

The Visual Impact Assessment assessed the significance of potential visual impacts of the proposed lighthouse during its construction and operation in relation to visual intrusion of the project activities on sensitive viewers.

The following impacts were identified in the Visual Impact Assessment:

- Impact of intrusion of construction activities on sensitive viewers; and
- Impact of intrusion of the proposed lighthouse on views of sensitive visual receptors.

Table 4 below indicates a summary of the number of direct impacts identified in the Visual Impact Assessment.

Table 4. Summary of the Visual Impact Assessment

		Significance Before Mitigation			Significance After Mitigation		
	Total Impacts	Low	Medium	High	Low	Medium	High
Direct Impacts - Construction Phase	1	0	1	0	1	0	0
Direct Impacts - Operational Phase	1	0	1	0	0	1	0
Total Impacts	2						

The visual impact during the construction phase was assessed to be mainly of high intensity as a number of highly sensitive viewers will be affected, low irreplaceability due to the temporary nature of construction activities, and high reversibility. During the operational phase, the visual impact of the lighthouse tower was rated with a medium intensity since a small number of highly sensitive visual receptors may be highly affected, high reversibility as the structure can be completely removed from

view, and medium irreplaceability since whilst some viewers may have their sea views altered, the intrusion will be low for most sensitive visual receptors. It is clear from **Table 4** above that no impacts were assessed as being of high significance after mitigation. All impacts were assessed to be of **low** to **medium significance** after mitigation.

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

Should this project not go ahead, none of the negative impacts mentioned in this report will occur. However, none of the potential benefits, especially those associated with improved marine safety, infrastructural development and socio-economic advantages will also not be realised.

SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES✓	NO

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

N/A

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

No major impacts that prevent the proposed lighthouse from being authorised have been identified in this report. A project specific Environmental Management Programme (EMPr) has been compiled and is included in Appendix G of this Draft Basic Assessment Report. The mitigation measures necessary to ensure that the project is planned, constructed, operated and decommissioned in an environmentally responsible manner are listed in this project specific EMPr. The EMPr is a dynamic document that should be updated regularly and provides clear and implementable measures for the establishment and operation of the landside structures and infrastructure.

Listed below are some of the main recommendations that should be considered (in addition to those in the EMPr and Draft BAR) in the opinion of the EAP:

- Prior to the commencement of construction/demolishing activities, it is essential that all permits required to demolish structures of heritage value identified in the Heritage Impact Assessment (Appendix D.1), are obtained from the relevant Authorities.
- Archaeological and palaeontological mitigation measures stipulated within this Draft BAR must be implemented during the construction phase. The contact details for SAHRA and NCPHRA should be included in relevant documents/specifications provided to the Contractor, to ensure that these authorities are contacted timeously in the event of archaeological sites and/or fossils being found during construction.
- Employment should be sourced locally as far as possible.

Is an EMPr attached?	YES✓	NO

The EMPr must be attached as Appendix G.

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

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

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

Ismail Banoo (EAPSA Certified)

NAME OF EAP

13 February 2013

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

- Appendix A: Maps
- Appendix B: Photographs
- Appendix C: Facility illustration(s)
- Appendix D: Specialist reports (including terms of reference)
- Appendix E: Public Participation
- Appendix F: Impact Assessment
- Appendix G: Environmental Management Programme (EMPr)
- Appendix H: Details of EAP and expertise
- Appendix I: Specialist's declaration of interest
- Appendix J: Additional Information