

Transnet National Ports Authority

an Operating Division of **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

REQUEST FOR QUOTATION (RFQ)

**THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE OF WATER
RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT
FOR A PERIOD OF TWENTY-NINE (29) MONTHS**

RFP NUMBER	: TNPA/2025/11/0004/110629/RFQ
ISSUE DATE	: 04 DECEMBER 2025
COMPULSORY BRIEFING	: 10 DECEMBER 2025
CLOSING DATE	: 23 JANUARY 2026
CLOSING TIME	: 16h00
TENDER VALIDITY PERIOD	: 12 weeks from closing date

Contents

Number	Heading
--------	---------

The Tender

Part T1: Tendering Procedures

T1.1	Tender Notice and Invitation to Tender
T1.2	Tender Data

Part T2: Returnable Documents

T2.1	List of Returnable Document
T2.2	Returnable Schedules

The Contract

Part C1: Agreements and Contract Data

C1.1	Form of Offer and Acceptance
C1.2	Contract Data (Parts 1 & 2)

Part C2: Pricing Data

C2.1	Pricing Instructions
C2.2	Activity Schedule

Part C3: Scope of Services

C3.1	Scope of Services
------	-------------------

Part C4: Site Information

C4.1	Site Information
------	------------------



T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

DESCRIPTION	THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS
TENDER DOWNLOADING	This Tender may be downloaded directly from the National Treasury eTender Publication Portal at the Transnet website at https://transnetetenders.azurewebsites.net (please use Google Chrome to access Transnet link) FREE OF CHARGE.
COMPULSORY TENDER CLARIFICATION MEETING	A Compulsory Tender Clarification Meeting will be conducted on Microsoft Teams on the 10 December 2025, at 09:00am [10 O'clock] for a period of ± 2 (two) hours. The Compulsory Tender Clarification Meeting will start punctually, and information will not be repeated for the benefit of Tenderers arriving late. TNPA/2025/11/0004/110629/RFQ Compulsory Briefing Session Meeting-Join Microsoft Teams A non-compulsory site visit/walk will take place on the 10 December 2025 at 14:00am at the following address: Pioneer Centre, San Thom Road, Port of Richards Bay, Richards Bay, 3900 Tenderers are to note: • Tenderers are required to wear safety shoes, goggles, long sleeve shirts, high visibility vests and hard hats. • Tenderers without the recommended PPE will not be allowed on the site walk. • Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing.



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

	• All forms of firearms are prohibited on Transnet properties and premises. • The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates. Certificate of Attendance in the form set out in the Returnable Schedule T2.2-01 hereto must be completed and submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or tender briefing. The Returnable Schedule T2.2-01, signed by the <i>Employer's Representative</i> will be sent to all tenderers who would have attended the Compulsory Tender Clarification Meeting. Tenderers failing to attend the compulsory tender briefing will be disqualified.
CLOSING DATE	16:00 on 23 January 2026 Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to tenders and upload their tender proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for tenderer to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a tender;
- Submit tender documents by uploading them into the system against each tender selected.



- **Tenderers are required to ensure that electronic tender submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by tenderers as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

Tenderers must ensure that the filenames of the documents intended for upload do not contain special characters, e.g. #, %, etc. The use of special characters will result in document upload failure. Only alphabetical/numerical characters may be used.

- b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.
- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable or if tenders received are non-responsive;
- 4.4. Award a contract for only a portion of the proposed Goods/Services which are reflected in the scope of this RFP;
- 4.5. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.6. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.7. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.8. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.9. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.10. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.11. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.12. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended.
- 4.13. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:

-
- *unduly high or unduly low tendered rates or amounts in the tender offer;*
 - *contract data of contract provided by the tenderer; or*
 - *the contents of the tender returnables which are to be included in the contract.*

4.14. Transnet will not accept a bid or will disqualify a bidder who submits a bid in the Transnet e-tender submission through another suppliers' profile. In other words, each bidder must register its profile using its company details and use the corresponding registered profile to log an intent to bid as well as submitting any bid;

4.15. All tenderers must not submit information relating to 3rd parties as part of their bid submission unless there is an agreement between the bidder and the 3rd party, for the bidder to submit such information, or the bidders have formed a JV/Consortiums or the information is relating to a subcontractor.

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and

Unique registration reference number.....(**Tender Data**)

Transnet urges its clients, suppliers and the general public
to report any fraud or corruption to
TIP-OFFS ANONYMOUS: 0800 003 056 OR Transnet@tip-offs.com

SECTION 1: SBD1 FORM

PART A

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF TRANSNET NATIONAL PORTS AUTHORITY, A DIVISION TRANSNET SOC LTD							
BID NUMBER:	TNPA/2025/11/0004/110629/RFQ	ISSUE DATE:	03 December 2025	CLOSING DATE:	23 January 2026	CLOSING TIME:	16:00
DESCRIPTION	THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS						
BID RESPONSE DOCUMENTS SUBMISSION							
RESPONDENTS ARE TO UPLOAD THEIR BID RESPONSE PROPOSALS ONTO THE TRANSNET SYSTEM AGAINST EACH TENDER SELECTED <i>(please refer to section 2, paragraph 3 for a detailed process on how to upload submissions):</i> https://transnetetenders.azurewebsites.net							
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO				TECHNICAL ENQUIRIES MAY BE DIRECTED TO:			
CONTACT PERSON	Sindisiwe Mveli			CONTACT PERSON	Sindisiwe Mveli		
TELEPHONE NUMBER	N/A			TELEPHONE NUMBER	N/A		
FACSIMILE NUMBER	N/A			FACSIMILE NUMBER	N/A		
E-MAIL ADDRESS	tnpatenderenquiries3@transnet.net			E-MAIL ADDRESS	tnpatenderenquiries3@transnet.net		
SUPPLIER INFORMATION							
NAME OF BIDDER							
POSTAL ADDRESS							
STREET ADDRESS							
TELEPHONE NUMBER	CODE		NUMBER				
CELLPHONE NUMBER							
FACSIMILE NUMBER	CODE		NUMBER				
E-MAIL ADDRESS							
VAT REGISTRATION NUMBER							

SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE	UNIQUE REGISTRATION REFERENCE NUMBER: MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] ☐ Yes ☐ No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED FOR PURPOSES OF COMPLIANCE WITH THE B-BBEE ACT]					
1 ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]		2 ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?		☐ Yes ☐ No [IF YES, ANSWER QUESTIONNAIRE BELOW]
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 1.3 BELOW.					

PART B
TERMS AND CONDITIONS FOR BIDDING

1. TAX COMPLIANCE REQUIREMENTS

- 1.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 1.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARSTO
ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
- 1.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS
WEBSITEWWW.SARS.GOV.ZA.
- 1.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 1.5 IN BIDS WHERE UNINCORPORATED CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY
MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 1.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD
NUMBER MUST BE PROVIDED.

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER
THE BID INVALID.**

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

(Proof of authority must be submitted e.g.
company resolution)

DATE:_____



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annexure C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts published in Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data												
C.1.1	The <i>Employer</i> is Transnet SOC Ltd (Reg No. 1990/000900/30)												
C.1.2	The tender documents issued by the <i>Employer</i> comprise: Part T: The Tender <table> <tr> <td>Part T1: Tendering procedures</td><td>T1.1 Tender notice and invitation to tender T1.2 Tender data</td></tr> <tr> <td>Part T2: Returnable documents</td><td>T2.1 List of returnable documents T2.2 Returnable schedules</td></tr> </table> Part C: The contract <table> <tr> <td>Part C1: Agreements and contract data</td><td>C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2)</td></tr> <tr> <td>Part C2: Pricing data</td><td>C2.1 Pricing Instructions C2.2 Activity Schedule</td></tr> <tr> <td>Part C3: Scope of work</td><td>C3.1 Scope</td></tr> <tr> <td>Part C4: Site information</td><td>C4.1 Site information</td></tr> </table>	Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data	Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules	Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2)	Part C2: Pricing data	C2.1 Pricing Instructions C2.2 Activity Schedule	Part C3: Scope of work	C3.1 Scope	Part C4: Site information	C4.1 Site information
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data												
Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules												
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2)												
Part C2: Pricing data	C2.1 Pricing Instructions C2.2 Activity Schedule												
Part C3: Scope of work	C3.1 Scope												
Part C4: Site information	C4.1 Site information												
C.1.4	The <i>Employer's agent</i> is: Name: Commodity Specialist Address: Sindisiwe Mwel Transnet National Ports Authority 150 Commissioner Street 3rd Floor												



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Johannesburg, 2001

Tel No.

N/A

E – mail

Tenderenquiries3@transnet.net

- C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

1. Stage One – Eligibility Criteria

1.1 Eligibility with regards to attendance at the compulsory clarification meeting:

An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7, T2.2-01. Certificate of attendance forms will only be sent to those that attended the clarification meeting. An attendance register will be used to verify attendees. Kindly note that only the entity that has tendered for and is approved on TNPA's Framework Contract is permitted to respond to this Tender.

1.2 Eligibility with regards to Professional registrations of personnel.

- a) If the tenderer fails to submit copies of professional registrations the tender will not be evaluated further. Note: All certificates will be evaluated by reference to the relevant Built Environment Professional councils' web page. Notwithstanding copies of Professional Registrations, Registrations are required to be valid on the council web site at the time of evaluation, failing which the tender will not be evaluated further.

<u>Pre-Qualification Criteria</u>	Description	Criteria
Key Personnel	Environmental Control Officer	Valid Reg. EAP registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) and a Valid Reg. <i>Pr.Sci.Nat</i> registered with the South African Council of Natural and Scientific Professions (SACNASP).
	Ecologist	Valid Reg. <i>Pr.Sci.Nat</i> registered with the South African Council of Natural and Scientific Professions (SACNASP).



1.3 Submission of a fully signed and completed Form of Offer

1.4 Submission of a completed Activity Schedule

Any tenderer that fails to meet the stipulated Eligibility criteria will be regarded as an unacceptable tender

2. Stage Two – Functionality

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is 60 points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11.3 below.

Only those tenderers who attain the minimum number of evaluation points for functionality will be eligible for further evaluation. Failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.

3. Establishment of Final Weighted Score:

Only those tenderers who pass the eligibility criteria will be evaluated further in terms of price and the applicable preference point system.

2.1 Evaluation of Price and Preference

2.2 Test for Market related pricing

- C.2.7 The arrangements for a compulsory briefing meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to tenders that will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-01 Certificate of attendance** signed off by the Employer's authorised representative.



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language**.

C.2.13.5 The *Employer's* details and identification details that are to be shown on each tender offer are as follows:

C2.15.1 Identification details:

The tender documents must be uploaded with:

- Name of Tenderer:
- Contact person and details:
- The Tender Number: TNPA/2025/11/0004/110629/RFQ
- The Tender Description: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Documents must be marked for the attention of: ***Employer's Agent: Sindisiwe Mweli***

C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

C.2.15 The closing time for submission of tender offers is:

Time: **16:00** on the **23 January 2026**

Location: The Transnet e-Tender Submission Portal: (<https://transnetetenders.azurewebsites.net>)

NO LATE TENDERS WILL BE ACCEPTED

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.
Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.
2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership in case of all EMEs and QSEs with 51% black ownership or more together with the tender;



3. Proof of registration on the Central Supplier Database;

Note: Refer to Section T2.1 for List of Returnable Documents

C3.11 Stage Two: Evaluation

2.1 Test for Responsiveness

The test for administrative and substantive will include the following:

Test for Responsiveness	RFP Reference
Whether the Bid has been lodged on time	All sections
Whether all Returnable Documents and/or schedules [where applicable] were completed and returned by the closing date and time	All sections
Verify the validity of all returnable documents	All sections
Verify if the Bid document has been duly signed by the authorised respondent	All sections
- Whether the tender contains the following: - Certificate of Attendance of compulsory briefing meeting T2.2.1 - Proof of Professional Registration in: i) Environmental Control Officer (Reg. EAP) registered with the Environmental Assessment Practitioners Association of South Africa – EAPASA and the South African Council of Natural and Scientific Professions (SACNASP) as a (<i>Pr.Sci.Nat</i>). ii) Ecologist (<i>Pr.Sci.Nat</i>) registered with the South African Council of Natural and Scientific Professions (SACNASP). - Submission of a completed and fully signed C1.1 Form of Offer - Submission of a completed C2.2 Activity Schedule	Mandatory Returnable: T2.2-01 T2.2-02

The test for responsiveness [administrative and substantive] must be passed for a Respondent's proposal to progress to Step 2.2 [Functionality] for further evaluation.

2.2 Functionality

The minimum number of evaluation points for functionality is: **60**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Functionality

The minimum number of evaluation points for functionality is: **60**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.

Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Quality Criteria	Sub-Criteria	Sub-criteria number of points	Maximum Number of Points
Evaluation Schedule: T2.2-03 Management and CV's of key person	The tenderer must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required Environmental Control Officer and Ecologist services. Submit the following documents as a minimum with your tender document:		60
	1. Management and CV's of key persons with relevant experience required in order to provide the <i>services</i> related to the scope, must include a clear indication of roles and responsibilities of each team member and certified copies of qualifications.		
	2. The CV's of assigned key persons in relation to the scope of services will be evaluated from the following: Key persons proposed for the identified posts, which shall include,		
	• Environmental Control Officer	30	
	• Ecologist	30	
Evaluation Schedule: T2.2-04 Previous Experience	Tenderers are required to demonstrate their overall experience in the delivery of Environmental Control Officer and Ecologist services over the last 10 years, and to this end shall supply a sufficiently detailed and traceable reference list with contact details of previous and existing customers and also indicate their previous experience by showing the following:		40
	• The Environmental Control Officer (ECO) has relevant experience in respect to environmental compliance monitoring in sensitive environments, including post-construction rehabilitation monitoring. A list of projects including brief description of services provided, capital value of infrastructure and client reference details must be provided.	20	



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

	The Ecologist has relevant experience in respect to botanical surveys, botanical search and rescue operations, including post-construction vegetation rehabilitation work. A list of projects including brief description of services provided, capital value of infrastructure and client reference details must be provided.	20	
	NB: Only projects where the Tenderer were involved in similar services in the last ten (10) years will be considered and reference letter(s) or completion certificate(s) must be attached as proof. A project without an appointment letter(s) or completion certificate(s) attached will not be considered for scoring.		
Total		100	100

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-03 Evaluation Schedule: Management & CV's of key personnel
- T2.2-04 Evaluation Schedule: Previous Experience

Each evaluation criterion will be assessed in terms of scores of **0, 20, 40, 60, 80 or 100**.

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

Note: Any tender not complying with the above-mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.

Stage Three – Price and Specific Goals

Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 or 90/10 preference points systems as described in the Preferential Procurement Regulations - 2022.

C.3.11.

80 points for price will be allocated where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes.

Or

90 tender evaluation points for price will be allocated where the financial value of the lowest responsive tenderer has a value above R50 million, inclusive of all applicable taxes.



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/Rfq

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Thresholds	Minimum Threshold
Technical / functionality	60 points

Evaluation Criteria	Final Weighted Scores
Price	80/90
Specific goals - Scorecard	20/10
TOTAL SCORE:	100

In terms of the conditions of the TPPP the following preference points must be awarded to a tenderer who provides the relevant required evidence for claiming points.

Selected Specific Goal	Number of points allocated. (80/20)	Number of points allocated. (90/10)
B-BBEE Status Level of Contributor 1 - 2	10.00	5.00
50% Black Youth Owned Entities	10.00	5.00
Non-compliant and/or Level 3-8 contributors	0	0

Up to 20 or 10 tender evaluation points for preference will be awarded to tenderers who complete the preferencing schedule (SBD6.1) and who are found to be eligible for the preferences claimed. Should the evidence required for any of the Specific Goals applicable in this tender not be provided, a tenderer will score zero preference points for that particular **"Specific Goal"**.

In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, the following preference points must be awarded to a bidder who provides the relevant required evidence for claiming points.

Specific Goals	Number of points (80/20 system)	Number of points (90/10 system)
B-BBEE Status Level of Contributor 1 or 2	10	5
50% Black Youth Owned Entities	10	5
Non-compliant and/or Level 3-8 contributors	00	00



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/Rfq

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

The following Table represents the evidence to be submitted for claiming preference points for applicable specific goals in a particular tender:

Specific Goals	Acceptable Evidence
B-BBEE Status Level of Contributor 1 - 2	B-BBEE Certificate / Sworn Affidavit / CIPC B-BBEE Certificate (in the case of a JV, a consolidated scorecard will be accepted) as per DTIC guidelines.
50% Black Youth Owned Entities	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Affidavit (in case of JV, a consolidated scorecard will be accepted)

The maximum points for this bid are allocated as follows:

DESCRIPTION	POINTS
Price	80/90
B-BBEE Status Level of Contributor 1- 2	20/10
Total Points for Price and Specific Goals shall not exceed	100

Note: Transnet reserves the right to carry out an independent audit of the tenderer's scorecard components at any stage from the date of close of the tenders until completion of the contract.

C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include



but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia;

the tenderer:

- Tenderer(s) is not in good standing with Transnet National Ports Authority due to a poor track record of past performance with Transnet SOC Ltd and or Transnet National Ports Authority;
- There is clear, uncontrived and/or overwhelming evidence and/or facts that the tenderer has or continues to be in breach of any of the provisions contained in the Integrity Pact (**T2.2- 17**);
- The Probity check undertaken by Transnet National Ports Authority establishes the existence of any unmitigated risks which would have a negative impact on the project;
- Unless the appointment of the tenderer would result in a negative impact on Transnet's Return on Investment;
- It is necessary to rotate Suppliers to promote opportunities for other suppliers, in circumstances where the tenderer has been awarded business previously and the award of the tender will result in inequitable allocation of business. The criteria for rotation will be where a tenderer has two or more current contracts which are not more than 80% complete;
- The tenderer or its members, directors, partners:
 - Is under restrictions as contemplated in the Integrity Pact (**T2.2- 17**),
 - Is subject to a process of restriction by Transnet or other state institution that Transnet may be aware of and there is a clear, uncontrived and/or overwhelming evidence and/or facts in relation to the alleged wrongdoing on the basis of which the restriction process has been initiated;
- in relation to the proposed contract, a due diligence exercise to validate the tenderer 's proposal that demonstrate that it possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability,



reliability, experience and reputation, expertise and the personnel, to perform the contract;

- has no legal capacity to enter into the contract;
- is insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, being wound up, has its affairs administered pursuant to a court order, has ceased or suspended their business activities, or is subject to legal proceedings in respect of any of the foregoing;
- does not comply with the legal requirements, if any, stated in the tender data; and;
- is not able to perform the contract free of conflicts of interest.

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/Rfq

DESCRIPTION OF SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

T2.1 List of Returnable Documents

2.1.1 These schedules are required for eligibility purposes:

T2.2-01 Stage One:

- **Eligibility Criteria Schedule** - Certificate of attendance at Compulsory Tender Clarification Meeting

T2.2-02 • **Eligibility Criteria Schedule** - Proof of Professional Registration

- **Submit signed and completed Form of Offer – C1.1**
- **Submit fully completed Activity Schedule - C2.2**

2.1.2 Stage Two: these schedules will be utilised for evaluation purposes:

T2.2-03 Evaluation Schedule – Management and CVs

T2.2-04 Evaluation Schedule – Previous Experience

2.1.3 Returnable Schedules:

General:

- T2.2-05 Authority to submit tender
- T2.2-06 Record of addenda to tender documents
- T2.2-07 Letter of Good Standing
- T2.2-08 Risk Elements
- T2.2-09 Capacity and ability to meet deliverables

2.1.4 Agreement and Commitment by Tenderer:

- T2.2-10 CIBD SFU ANNEX G Compulsory Questionnaire
- T2.2-11 SBD 4 (Declaration of Interest)
- T2.2-12 SBD 6.1 (Preference Point System)
- T2.2-13 RFP Declaration Form
- T2.2-14 Non-Disclosure Agreement
- T2.2-15 Certificate of Acquaintance
- T2.2-16 RFP – Breach of Law
- T2.2-17 Supplier Integrity Pact
- T2.2-18 Supplier Code of Conduct
- T2.2-19 Agreement in terms of POPIA
- T2.2-20 DPIP or FPPO



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

2.1.5 Bonds/Guarantees/Financial/Insurance:

T2.2-19 Insurance provided by the Consultant

2.2 C1.1 Offer & Acceptance

2.3 C1.2 Contract Data

2.4 C2.1 Pricing Instructions (Option A)

2.5 C2.2 Activity Schedule

T2.2-01: Eligibility Criteria Schedule: Certificate of Attendance for a Virtual Compulsory Tender Clarification Meeting

This is to certify that

(Company Name or
member of a Joint
Venture)

Represented
By:

(Name and
Surname)

Was represented at the compulsory tender clarification meeting

Held at:		
On (date)		Starting time:

Attendance of the above company/joint venture at the meeting was confirmed:

Name

Signature

**For and on Behalf of the
Employers Agent.**

Date

T2.2-02: Eligibility Criteria Schedule – Professional Registration

Notes to tenderers:

The Mandatory eligibility criteria in respect of Professional Registration is set out in the table below.

Tenderers are required to submit valid registration certificates with the relevant Council for each of the resources stated below.

Notwithstanding the certification submitted with the tender, compliance with this criteria will be determined by the actual status of registration of each resource on the relevant professional Council's webpage.

<u>Pre-Qualification Criteria</u>	Description	Criteria	Name of Personnel
Key Personnel and Qualifications	Environmental Control Officer	Valid Reg. EAP registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA). and a Valid Reg. <i>Pr.Sci.Nat</i> registered with the South African Council of Natural and Scientific Professions (SACNASP).	
	Ecologist/Botanist	Valid Registration as a <i>Pr.Sci.Nat</i> registered with the South African Council of Natural and Scientific Professions (SACNASP).	

T2.2-03: Evaluation Schedule Management & CVs of key persons (60 points)

The tenderer must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required Environmental Control Officer and Ecologist *services*.

Submit the following documents as a minimum with your tender document:

1. Management and CV's of key persons with relevant experience required in order to provide the *services* related to the scope, must include a clear indication of roles and responsibilities of each team member and certified copies of qualifications.
2. The experience of assigned key persons in relation to the scope of services will be evaluated from the following:
 - a. Relevant experience.
 - b. The qualifications, professional registration, training and skills. (proof of relevant qualifications, professional registration and training must be attached. Copies of all qualifications and certificates must be stamped and certified by a Commissioner of Oaths).
 - Key persons proposed for the identified posts, Environmental Control Officer
 - Ecologist

No.	Key Persons	Name and Surname	CV attached (Yes/No)
1	Environmental Control Officer		
2	Ecologist		

Attach the index of documentation to this schedule to substantiate your submission:

.....

.....

.....

.....

The scoring of the Management and CV's of Key Persons will be as follows:

	Environmental Control Officer: Qualifications [10]	Environmental Control Officer: Experience [20]	Ecologist: Qualifications [10]	Ecologist: Experience [20]
Score 0	The tenderer has submitted no information			
Score 20	Qualifications: Is in possession of a Certificate in Natural Sciences or Environmental Sciences/Management.	Years of experience: Has zero to less than two years ECO experience in wetland management.	Qualifications: Is in possession of a Certificate in Botany, Zoology or Ecological Sciences	Years of experience: Has zero to less than two years in Botanical Surveys and Search and Rescue operations.
Score 40	Qualifications: Is in possession of a National Diploma Qualification at NQF level 6 in Natural Sciences or Environmental Sciences/Management	Years of experience: Has two or more but less than four years ECO experience in wetland management.	Qualifications: Is in possession of a National Diploma Qualification at NQF level 6 in Botany, Zoology or Ecological Sciences.	Years of experience: Has two or more but less than three years experience in Botanical Surveys and Search and Rescue operations.
Score 60	Qualifications: Is in possession of a bachelor's degree Qualification at NQF level 7 in Natural Sciences or Environmental Sciences/Management	Years of experience: Has four or more but less than six years ECO experience in wetland management.	Qualifications: Is in possession of a bachelor's degree at NQF level 7 in Botany, Zoology or Ecological Sciences.	Years of experience: Has three or more but less than five years' experience in Botanical Surveys and Search and Rescue operations.



	Environmental Control Officer: Qualifications [10]	Environmental Control Officer: Experience [20]	Ecologist: Qualifications [10]	Ecologist: Experience [20]
Score 80	Qualifications: Is in possession of a 4-year bachelor's degree; honours degree; or Postgraduate diploma at NQF level 8 in Natural Sciences or Environmental Sciences/Management	Years of experience: Has six or more, but less than eight years ECO experience in wetland management.	Qualifications: Is in possession of a 4-year bachelor's degree; Hons degree; or Postgraduate Diploma at NQF level 8 in Botany, Zoology or Ecological Sciences.	Years of experience: Has five or more, but less than eight years' experience in Botanical Surveys and Search and Rescue operations,
Score 100	Qualifications: Is in possession of a master's degree at NQF level 9 or higher in Natural Sciences or Environmental Sciences/Management	Years of experience: Has more than eight years ECO experience, including experience in wetland management	Qualifications: Is in possession of a master's degree at NQF level 9 or higher in Botany, Zoology, or Ecological Sciences.	Years of experience: Has eight OR more years' experience in Botanical Surveys and Search and Rescue operations.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Tenderer

T2.2-04: Evaluation Schedule: Previous Experience (40 points)**Note to tenderers:**

Tenderers are required to demonstrate their overall experience in the delivery of Environmental Control Officer and Ecologist *services* over the last 10 years, and to this end shall supply a sufficiently detailed and traceable reference list with contact details of previous and existing customers and also indicate their previous experience by showing the following:

- The Environmental Control Officer (ECO) has relevant experience in respect of environmental compliance monitoring in sensitive environments, including post-construction rehabilitation monitoring. A list of projects including brief description of services provided, capital value of infrastructure and client reference details must be provided.
- The Ecologist has relevant experience in respect to botanical surveys, botanical search and rescue operations, including post-construction vegetation rehabilitation work. A list of projects including brief description of services provided, capital value of infrastructure and client reference details must be provided.

NB: Only projects where the Tenderer were involved in similar services in the last ten (10) years will be considered and appointment letter(s) or completion certificate(s) must be attached as proof. A project without an appointment letter or completion certificate attached will not be considered for scoring.

Attach the index of documentation to this schedule to substantiate your submission:

.....

.....

.....

.....

.....

.....

.....

.....

.....

The table below indicate the method of scoring that will be followed to evaluate the previous experience submitted by the Tenderer:

	List of projects with ECO experience (20)	List of projects with Ecologist experience (20)
score 0	No information provided.	
score 20	Tenderer has done one (1) to Two (2) projects in respect of environmental compliance monitoring in wetland management. The Tenderer has submitted a reference letter for one to two project(s) that meet the stipulated requirements.	Tenderer has done one (1) project in respect of botanical surveys, botanical search and rescue operations. Tenderer has submitted a reference letter for one project that meets the stipulated requirements.
score 40	Tenderer has done three (3) to four (4) projects in respect of environmental compliance monitoring in wetland management. Tenderer has submitted reference letters for three to four projects that meet the stipulated requirements.	Tenderer has done only two (2) projects in respect of botanical surveys, botanical search and rescue operations. Tenderer has submitted reference letters for two project that meets the stipulated requirements.
score 60	Tenderer has done five (5) projects in respect of environmental compliance monitoring in wetland management. Tenderer has submitted reference letters for five projects that meet the stipulated requirements.	Tenderer has done three (3) projects in respect of botanical surveys, botanical search and rescue operations. Tenderer has submitted reference letters for three project that meets the stipulated requirements.
score 80	Tenderer has done six (6) to seven (7) projects in respect of environmental compliance monitoring in sensitive environments. Tenderer has submitted reference letters for six to seven projects that meet the stipulated requirements.	Tenderer has done four (4) to five (5) projects in respect of botanical surveys, botanical search and rescue operations Tenderer has submitted reference letters for four to five projects that meets the stipulated requirements.
score 100	Tenderer has done more than eight (8) projects in respect of environmental compliance monitoring in sensitive environments. Tenderer has submitted reference letters for eight projects that meet the stipulated requirements.	Tenderer has done more than five (5) projects in respect of botanical surveys, botanical search and rescue operations. Tenderer has submitted reference letters for more than five projects that meet the stipulated requirements.

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

.....

.....

Name

Position

.....

.....

Tenderer

.....

T2.2-05: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A - COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

I, _____, chairperson of the board of directors of _____, hereby confirm that by resolution of the board taken on _____ (date), Mr/Ms _____, acting in the capacity of _____, was authorised to sign all documents in connection with this tender offer and any contract resulting from it on behalf of the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____ hereby authorise Mr/Ms _____, acting in the capacity of _____, to sign all documents in connection with the tender offer for Contract _____ and any contract resulting from it on our behalf.

Name	Address	Signature	Date

NOTE: This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms _____, an authorised signatory of the company _____, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract _____ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

I, _____, hereby confirm that I am the sole owner of the business trading as _____.

Signed	_____	Date	_____
Name	_____	Position	Sole Proprietor

T2.2-06: Record of Addenda to Tender Documents

The tenderer hereby confirms that the following communications were received from the *Employer* before the submission of this tender offer, amending the tender documents and have been taken all the Addenda into account in this tender offer:

	Date	Title or Details of Addenda
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Attach additional pages if more space is required.

T2.2-07 Letter/s of Good Standing with the Workmen’s Compensation Fund

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.
- 3.
- 4.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

T2.2-08: Risk Elements

Tenderers to identify and evaluate the potential risk elements associated with the Works and possible mitigation thereof. The risk elements and the mitigation as identified thereof by the Tenderer are to be submitted.

If No Risks are identified "No Risks" must be stated on this schedule.

Tenderers are also to evaluate any risk/s stated by the *Employer* in Contract Data Part C1, and provide possible mitigation thereof.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

Tenders to note: Notwithstanding this information, all costs related to risk elements which are at the Contractor's risk are deemed to be included in the tenderer's offered total of the Prices.

T2.2-09: Capacity and Ability to meet Delivery Schedule

Note to tenderers:

The Tenderer is required to demonstrate to the *Employer* that the tenderer has sufficient current and future capacity to carry out the work as detailed in the Works Information and that the tenderer has the capacity and plans in place to meet the required delivery schedule as required. To this end, the following must be provided by the Tenderer:

A schedule detailing the following:

- Maximum quantity of work concurrently performed by the Tenderer in the recent past in order to illustrate his potential capacity to design, fabricate and/or construct work of a similar nature;
- Current and future work on his order book, showing quantity and type of equipment;
- Quantity of work for which the Tenderer has tenders in the market or is currently tendering on;
- The work as covered in this Works Information, planned and scheduled as per the Tenderer's capacities and methods but meeting the required delivery schedule.

Index of documentation attached to this schedule:

.....
.....
.....
.....
.....
.....
.....

T2.2-10: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

Section 1: Name of enterprise: _____

Section 2: VAT registration number, if any: _____

Section 3: CIDB registration number, if any: _____

Section 4: CSD number: _____

Section 5: Particulars of sole proprietors and partners in partnerships

Name	Identity number	Personal income tax number

* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 6: Particulars of companies and close corporations

Company registration number _____

Close corporation number _____

Tax reference number: _____

Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.

Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed	_____	Date	_____
Name	_____	Position	_____
Enterprise	_____		_____
name	_____		_____

T2.2-11: Bidder's Declaration

SBD 4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state?

YES/NO

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

Signature

.....

Date

.....

Position

.....

Name of bidder

T2.2-12: Preference Point System

SBD 6.1

PREFERENCE POINTS CLAIM FORM

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the **80/20** preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
Total points for Price and B-BBEE must not exceed	100

- 1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
 - i) the B-BBBEE status level certificate issued by an authorised body or person;
 - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
 - iii) any other requirement prescribed in terms of the B-BBEE Act.

(j) **"QSE"** means a Qualifying Small Enterprise as defined by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

(k) **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

$P_{\min}$ = Comparative price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

4.1 preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4

8	2
Non-compliant contributor	0

4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency
QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at www.dti.gov.za/economic_empowerment/bee_codes.jsp.]
EME¹	Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard

4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.

4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

¹ In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMEs can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by SANAS accredited professional or agency as the Transport Sector Code has not been aligned to the generic Codes. EMEs in the Transport Sector are not allowed to provide a sworn affidavit as the generic codes are not applicable to them.

- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . = (maximum of 20 points)
- (Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

- 7.1 Will any portion of the contract be sub-contracted?

(***Tick applicable box***)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

(Tick applicable box)

YES		NO	
-----	--	----	--

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....
.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional Service provider
- ☐ Other Service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

- (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
- (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
- (f) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....

SIGNATURE(S) OF BIDDERS(S)

DATE:

T2.2-13: TENDER DECLARATION FORM

NAME OF COMPANY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this TENDER and the requirements requested from tenderers in responding to this TENDER have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below:

[Respondent to indicate if this section is not applicable]

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through Transnet Supply Chain Management (SCM) Complaints and Allegations Office process and will be subject to the Terms of Reference of SCM Complaints and Allegations Office. Transnet Supply Chain SCM Complaints and Allegations Office process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of SCM Complaints and Allegations Office without having to follow a formal court process to have such award or decision set aside.

For and on behalf of

.....

duly authorised thereto

Name:

Signature:

Date:

IMPORTANT NOTICE TO RESPONDENTS

- Transnet established the SCM Complaints and Allegations Office to investigate any material complaint in respect of any tenders regardless of the value. Should a Respondent have any material concern regarding a tender process, a complaint may be lodged with Transnet SCM Complaints and Allegations Office for further investigation.
- It is incumbent on the Respondent to familiarise himself/herself with the Terms of Reference for the Transnet SCM Complaints and Allegations Office, details of which are available for review at Transnet's website www.transnet.net.
- An official complaint form which will be shared upon receipt of a complaint should be completed and submitted, together with any supporting documentation, to groupscmcomplaints@transnet.net
- All Respondents should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a bidder on its List of Excluded Bidders.

T2.2-14 NON-DISCLOSURE AGREEMENT

[..... 2025]

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of day of 20..... by and between:

TRANSNET SOC LTD

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein, Johannesburg 2000

and

.....

(Registration No.),a private company incorporated and existing under the laws of South Africa having its principal place of business at

.....

WHEREAS

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

IT IS HEREBY AGREED

1. INTERPRETATION

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;

- 1.2 **Bid or Bid Document** (hereinafter Tender) means Transnet's Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:
- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
 - 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
 - 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or

-
- indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
- 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
- 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.
- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

3. RECORDS AND RETURN OF INFORMATION

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
 - 3.3.1 return all written Confidential Information [including all copies]; and
 - 3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

4. ANNOUNCEMENTS

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

5. DURATION

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

6. PRINCIPAL

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

7. ADEQUACY OF DAMAGES

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

8. PRIVACY AND DATA PROTECTION

- 8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.
- 8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

9. GENERAL

- 9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.
- 9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.
- 9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.
- 9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.
- 9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.
- 9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed	Date
Name	Position
Tenderer	

T2.2-15: Certificate of Acquaintance with Tender Documents

NAME OF TENDERING ENTITY:

1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any TENDER/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) geographical area where Services will be rendered [market allocation]

-
- c) methods, factors or formulas used to calculate prices;
- d) the intention or decision to submit or not to submit, a Tender;
- e) the submission of a Tender which does not meet the specifications and conditions of the TENDER; or
- f) Tendering with the intention not winning the Tender.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this TENDER relates.
8. The terms of the accompanying Tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious Tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDERER

T2.2-16: REQUEST FOR PROPOSAL – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

DATE OF BREACH:

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDERER

T2.2-17 Service Provider Integrity Pact

Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.

The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.

INTEGRITY PACT

Between

TRANSNET SOC LTD

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

PREAMBLE

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

1 OBJECTIVES

1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:

- a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
- b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

2 COMMITMENTS OF TRANSNET

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.
- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.

- a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
 - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
 - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
 - d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.
- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:
- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
 - b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in

exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.

- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.

3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.

3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:

a) Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

b) Labour

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

c) Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;

- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

d) Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

4 INDEPENDENT TENDERING

4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word “competitor” shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:

- a) has been requested to submit a Tender in response to this Tender invitation;
- b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
- c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.

4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.

4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- a) prices;
- b) geographical area where Goods or Services will be rendered [market allocation];

- c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Tender;
 - e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
 - f) tendering with the intention of not winning the Tender.
- 4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [**NPA**] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer/Service Provider /Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.
- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should

it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.

- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
- a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;

- b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
- c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
- d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;
- e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
- f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - (i) he made the statement in good faith honestly believing it to be correct; and
 - (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
- g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
- h) has litigated against Transnet in bad faith.

6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.

6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

7 PREVIOUS TRANSGRESSIONS

7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998,

which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.

- 7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/ Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

8 SANCTIONS FOR VIOLATIONS

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:

- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/ Service Provider/Contractor may continue;
- b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
- c) Recover all sums already paid by Transnet;
- d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
- e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
- f) Exclude the Tenderer/ Service Provider/Contractor from entering into any Tender with Transnet in future.

9 CONFLICTS OF INTEREST

- 9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and

- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours

to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

11 GENERAL

- 11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.
- 11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.
- 11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.
- 11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.
- 11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior

Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

I duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature

Date

T2.2-18 : Supplier Code of Conduct

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:

- Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
- Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
- Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our “Tip-offs Anonymous” Hot line to report these acts. (0800 003 056).

2. *Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.*

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

3. *Transnet’s relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.*

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.

- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

4. Conflicts of Interest

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, _____ of _____
(insert name of Director or as per Authority Resolution from Board of Directors) *(insert name of Company)*

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day _____ at _____

 Signature

T2.2-19 Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

1. PREAMBLE AND INTRODUCTION

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

2. PROTECTION OF PERSONAL INFORMATION

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":
- consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:
- Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator ishereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.

- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.
- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party , cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's s possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations .
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the



information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:

YES	
------------	--

NO	
-----------	--

2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/infoereg/>, click on contact us, click on complaints.IR@justice.gov.za

3. SOLE AGREEMENT

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at _____ on this _____ day of _____ 2021

Name: _____

Title: _____

Signature: _____

.....
(Operator)

Authorised signatory for and on behalf of who warrants that he/she is duly authorised to sign this Agreement.



AS WITNESSES:

1. Name: _____

Signature:

2. Name: _____

Signature:

T2.2-20 Domestic prominent influential persons (DPIP) or foreign prominent public officials (FPPO)

Transnet is free to procure the services of any person within or outside the Republic of South Africa in accordance with applicable legislation. Transnet shall not conduct or conclude business transactions, with any Respondents without having:

- Considered relevant governance protocols;
- Determined the DPIP or FPPO status of that counterparty; and
- Conducted a risk assessment and due diligence to assess the potential risks that may be posed by the business relationship.

As per the Transnet Domestic Prominent Influential Persons (DPIP) and Foreign Prominent Public Officials (FPPO) and Related Individuals Policy available on Transnet website <https://www.transnet.net/search/pages/results.aspx?k=FPIDP#k=DPIP>, Respondents are required to disclose any commercial relationship with a DPIP or FPPO (as defined in the Policy) by completing the following section:

The below form contains personal information as defined in the Protection of Personal Information Act, 2013 (the "Act"). By completing the form, the signatory consents to the processing of her/his personal information in accordance with the requirements of the Act. Consent cannot unreasonably be withheld.

Is the Respondent

(Complete with a "Yes" or "No")

A DPIP/FPPO

Closely
Related to a
DPIP/FPPO

Closely
Associated
to a
DPIP/FPPO

List all known business interests, in which a DPIP/FPPO may have a direct/indirect interest or significant participation or involvement.

No	Name of Entity / Business	Role in the Entity / Business (Nature of interest/ Participation)	Shareholding %	Registration Number	Status (Mark the applicable option with an X)	
					Active	Non-Active
1						
2						
3						
4						

Respondents declaring a commercial relationship with a DPIIP or FPPO are to note that Transnet is required to annually publish on its website a list of all business contracts entered into with DPIIP or FPPO. This list will include successful Respondents, if applicable.

Signed

Date

Name

Position

Tenderer

T2.2-21: Insurance provided by the *Consultant*

Clause 81.1 in NEC3 Professional Services Contract (June 2005)(amended June 2006 and April 2013) requires that the *Consultant* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Consultant* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 81.1 of the PSC)	Minimum amount stated in the Contract Data & Name of Insurance Company	Cover	Premium
Liability of the <i>Consultant</i> for claims made against him arising out of his failure to use the skill and care normally used by professionals providing services similar to the <i>services</i>	The amount stated in the Contract Data		
Liability for death of or bodily injury to a person (not an employee of the <i>Consultant</i>) or loss of or damage to property resulting from an action or failure to take action by the <i>Consultant</i>	The amount stated in the Contract Data for any one event		
Liability for death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with this contract	The greater of the amount required by the applicable law and the amount stated in the Contract Data for any one event		
(Other)			

C1.1 FORM OF OFFER & ACCEPTANCE

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR 29 MONTHS

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the NEC3 PSC Consultant under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the *Employer* by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *NEC3 PSC Consultant* in the *conditions of contract* identified in the Contract Data.



Signature(s)

Name(s)

Capacity

**for the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Consultant* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Services

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms and *conditions of contract* of the Offer agreed by the tenderer and the *Employer* during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the *Employer's Agent* (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date of award of contract. Unless the tenderer (now the *NEC3 PSC Consultant*) within five working days of the date of such receipt notifies the *Employer* in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the
Employer:**

Transnet SOC (Ltd)

Name &
signature of
witness

Date

Schedule of Deviations

NOTE:

1. To be completed by the employer prior to award of contract. This part of the offer & acceptance would not be required if the contract has been developed by negotiation between the parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the employer prior to the tender closing date is limited to those permitted in terms of the conditions of tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it

No.	Subject	Details
1		
2		
3		
4		
5		
6		

By the duly authorised representatives signing this Schedule of Deviations below, the *Employer* and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the <i>tenderer</i> :	For the <i>Employer</i>
Signature		
Name		
Capacity		
On behalf of	(Insert name and address of organisation)	Transnet SOC (Ltd)
Name & signature of witness		
Date		

C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	A: Priced contract with activity schedule
	dispute resolution Option and secondary Options	W1: Dispute resolution procedure
		X2 Changes in the law
		X7: Delay damages
		X9: Transfer of rights
		X10 <i>Employer's Agent</i>
		X11: Termination by the <i>Employer</i>
		X18: Limitation of Liability
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Professional Services Contract (June 2005) (amended June 2006 and April 2013)	
10.1	The <i>Employer</i> is (Name): Address	Transnet SOC Ltd Registered address: Transnet Corporate Centre 138 Eloff Street Braamfontein Johannesburg 2000

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ
DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

**Transnet National Ports Authority, a division
of Transnet SOC Ltd
Pioneer Centre
San Thom Road
Port of Richards Bay
3900**

Having elected its Contractual Address
for the purposes of this contract as:

11.2(9)	The <i>services</i> are	Provision of Environmental Services for the Upgrade of Water Reticulation as per Water Master Plan in the Port of Richards Bay Project for 29 Months	
11.2(10)	The following matters will be included in the Risk Register	None	
11.2(11)	The Scope is in	Part C3.1: The Scope of the Contract Document.	
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.	
13.1	The <i>language of this contract</i> is	English	
13.3	The <i>period for reply</i> is	2 (two) weeks, except if the <i>Project Manager's</i> authority to agree to increases in Prices and/or Time is exceeded and he needs to refer the application to a higher delegation of authority (DoA), then the period for reply is an additional eight (8) weeks.	
13.6	The <i>period for retention</i> is	N/A	
2	The Parties' main responsibilities	No additional data is required for this section of the conditions of contract.	
25.2			
3	Time		
31.2	The <i>starting date</i> is	16 February 2026	
11.2(3)	The <i>completion date</i> for the whole of the <i>services</i> is	29 months from the starting date or Completion of all the activities, whichever is the later.	
11.2(6)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date
		1	N/A
			N/A

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ
DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

		2		
		3		
31.1	The <i>Consultant</i> is to submit a first programme for acceptance within	2 (two) weeks of the Contract Date.		
32.2	The <i>Consultant</i> submits revised programmes at intervals no longer than	2 (two) weeks.		
4	Quality			
40.2	The quality policy statement and quality plan are provided within	2 (two) weeks of the Contract Date.		
41.1	The <i>defects date</i> is	52 (fifty-two) weeks after Completion of the whole of Services.		
5	Payment			
50.1	The <i>assessment interval</i> is on the	18 th (eighteenth) day of each successive month.		
50.3	The <i>expenses</i> stated by the <i>Employer</i> are	Item	Amount	
		Economy air fares	Charged at proven costs strictly on limits as set out in National Treasury Instructions as amended from time to time.	
		Car hire not exceeding group B	Charged at proven costs strictly on limits as set out in National Treasury Instructions as amended from time to time.	
		Accommodation	Charged at proven costs strictly on limits as set out in National Treasury Instructions as amended from time to time.	
51.1	The period within which payments are made is	Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.		
51.2	The <i>currency of this contract</i> is the	South African Rand (ZAR).		



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

51.5	The <i>interest rate</i> is	The prime lending rate of the Rand Merchant Bank of South Africa.		
6	Compensation events	No additional data required for this section of the <i>conditions of contract</i> .		
7	Rights to material	No additional data required for this section of the <i>conditions of contract</i> .		
8	Indemnity, insurance and liability			
81.1	The amounts of insurance and the periods for which the <i>Consultant</i> maintains insurance are			
	Event	Cover	Period following Completion of the whole of the <i>services</i> or earlier termination	
	failure by the <i>Consultant</i> to use the skill and care normally used by professionals providing services similar to the <i>services</i>	Professional Indemnity insurance for not less than R5 000 000.00 (Five Million Rand) in respect of each claim, without limit to the number of claims	52 Weeks	
	death of or bodily injury to a person (not an employee of the <i>Consultant</i>) or loss of or damage to property resulting from an action or failure to take action by the <i>Consultant</i>	General Third Party Liability Insurance for all amounts falling within the excess of the policy, currently R50 000.00 (Fifty Thousand Rand) each and every claim, and/or for all amounts in excess of the policy limits as detailed in the policy document or whatever the <i>Consultant</i> deems desirable in respect of each claim, without limit to the number of claims	0 Weeks	



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

	death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with this contract	The minimum limit of 0 Weeks indemnity for insurance in respect of death of or bodily injury to employees of the <i>Consultant</i> arising out of and in connection with this contract for any one event is that which is prescribed by the Compensation for Occupation Injuries and Diseases Act No. 130 of 1993 as amended.
	Motor Vehicle Liability Insurance	Comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability Indemnity for an amount of not less than R 10 000 000.00
81.1	The <i>Employer</i> provides the following insurances	Professional Indemnity insurance in respect of failure of the <i>Consultant</i> to use the skill and care normally used by Professionals providing services similar to the <i>services</i>. General Third-Party Liability cover in respect of death of or bodily injury to a person (not an employee of the <i>Consultant</i>) or loss of or damage to property resulting from an action or failure to take action by the <i>Consultant</i>
82.1	The <i>Consultant's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	<i>For all matters covered under the Employer's Professional Indemnity (PI) and General Third-Party Liability policies, the Consultant's liability will be limited to the excesses applicable under the Employer's Professional Indemnity and General Third Party Liability policies as detailed in the policy wordings. The current excesses amounts to R5 000 000.00 (Five Million Rand) PI and R50 000.00 (Fifty Thousand Rand) General Third Party Liability, respectively, each and every claim. For all matters not covered under the Employer's Professional Indemnity and General Third-Party Liability policies the Consultants liability will be limited to (to be determined at the secondary procurement stage).</i>
9	Termination	No additional data required for this section of the <i>conditions of contract</i>.

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ
DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

10	Data for main Option clause	
A	Priced contract with activity schedule	
21.3	The <i>Consultant</i> prepares forecasts of the total of the <i>expenses</i> at intervals of no longer than	4 (four) weeks.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is	Both parties will agree to an <i>Adjudicator</i> as and when a dispute arises. If the Parties cannot reach an agreement on the <i>Adjudicator</i>, the Chairman of the Association of Arbitrators (Southern Africa) will appoint an <i>Adjudicator</i>. Where Transnet has established a Framework of <i>Adjudicators</i>, appointment of an <i>Adjudicator</i> will be in terms of the Transnet Framework of <i>Adjudicators</i>.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	Arbitration
W1.4(5)	The <i>arbitration procedure</i> is	The latest edition of the South African Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	Richards Bay, South Africa
	The person or organisation who will choose an arbitrator:	
	- if the Parties cannot agree a choice or - if the <i>arbitration procedure</i> does not state who selects an arbitrator, is	The Chairman of the Association of Arbitrators (Southern Africa)
12	Data for secondary Option clauses	
X2	Changes in the law	
X2.1	The <i>law of the project</i> is	law of the Republic of South Africa.
X7	Delay damages	
X7.1	Delay damages for late Completion of the whole of the <i>services</i> are	R 200.00 per calendar day



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

X9	Transfer of rights	The <i>Employer</i> owns the <i>Consultant</i> rights over any of the material whatsoever prepared for the Services of this Contract by the <i>Consultant</i>. The <i>Consultant</i> provides on request by the <i>Employer's Agent</i>, all documentation in whatever form as required (native's, PDF's, CD's, etc) and all other material items which transfer these rights to the <i>Employer</i>.
X10	The <i>Employer's Agent</i>	
X10.1	The <i>Employer's Agent</i> is	
	Name:	Sibusiso Potwana
	Address	Transnet National Ports Authority Pioneer Centre, Port of Richards Bay Richards Bay, 3900
	The authority of the <i>Employer's Agent</i> is	Fully empowered to act on behalf of the <i>Employer</i> for the services covered by the contract.
X18	Limitation of liability	
X18.1	The <i>Consultant's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	Nil
X18.2	The <i>Consultant's</i> liability to the <i>Employer</i> for Defects that are not found until after the <i>defects date</i> is limited to:	The cost of correcting the defect (The Total of the Prices).
X18.3	The <i>end of liability date</i> is	52 (fifty-two) weeks after Completion of the whole of Services.
Z	<i>Additional conditions of contract</i>	
	The <i>additional conditions of contract</i> are	
Z1	Obligations in respect of Joint Venture Agreements	

Z1.1	Insert the additional core clause 21.5 21.5.1 In the instance that the <i>Consultant</i> is a joint venture, the <i>Consultant</i> shall provide the <i>Employer</i> with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract <i>starting date</i>. The Joint Venture agreement shall contain but not be limited to the following: • A brief description of the Contract and the Deliverables; • The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture; • The constituents' interests; • A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents; • Details of an internal dispute resolution procedure; • Written confirmation by all of the constituents: i. of their joint and several liability to the <i>Employer</i> to Provide the <i>services</i>; ii. proof of separate bank account/s in the name of the joint venture; iii. identification of the leader in the joint venture confirming the authority of the leader to bind the joint venture through the <i>Consultant's</i> representative; iv. Identification of the roles and responsibilities of the constituents to provide the <i>services</i>. • Financial requirements for the Joint Venture: i. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time; ii. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture
Z1.2	Insert additional core clause 21.6 21.6. The <i>Consultant</i> shall not alter its composition or legal status of the Joint Venture without the prior approval of the <i>Employer</i>.
Z2	Additional obligations in respect of Termination

Z2.1	The following will be included under core clause 90.1: In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and Under the second main bullet, insert the following additional bullets after the last sub-bullet: • commenced business rescue proceedings • repudiated this Contract
Z2.2	<i>Clause 90.5 is added as an additional clause</i> Where all or part of the Services are suspended for a period of six months or more either party may terminate the Contract by notifying the other.
Z3	Right Reserved by the <i>Employer</i> to Conduct Vetting through SSA
Z3.1	The <i>Employer</i> reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any <i>Consultant</i> who has access to National Key Points for the following without limitations: 1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state. 2. Secret – clearance is based on any information, which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state. 3. Top Secret – this clearance is based on information, which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.
Z4	Additional Clause Relating to the <i>Employer's</i> rights to take appropriate action



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Z4.1	The contract award is made without prejudice to any rights the <i>Employer</i> may have to take appropriate action later with regard to:	Any declared, exposed or confirmed tender rigging.
Z4.1.1		The <i>Consultant</i> further undertakes: not to give or cause any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract.
Z 4.1.2		To comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the <i>Employer</i> is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.
Z4.1.3		The <i>Consultant's</i> breach of this clause constitutes grounds for terminating the <i>Consultant's</i> obligation to Provide the Services or taking any other action as appropriate against the <i>Consultant</i> (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.
Z4.1.4		If the <i>Consultant</i> is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the <i>Employer</i> , the <i>Employer</i> shall be entitled to terminate the contract forthwith and take any other action as appropriate against the <i>Consultant</i> (including civil or criminal action).
Z4.2	The contract award is made without prejudice to any rights the <i>Employer</i> may have to take appropriate action later with regard to:	Politically Exposed Persons including any allegations with regards to State Capture.
Z4.3	The contract award is made without prejudice to any rights the <i>Employer</i> may have to take appropriate action later with regard to:	Listing by any State Entity on the National Treasury register of tender defaulters and the National Treasury register of restricted suppliers.
Z5	Protection of Personal Information Act	



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/Rfq

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Z5.1	The <i>Employer</i> and the <i>Consultant</i> are required to process information obtained for the duration of the Contract in a manner that is aligned to the Protection of Personal Information Act.
Z6	Time
Z6.1	Clause 33.2. is added as an additional clause. The <i>Employer</i> may at any time suspend part or all of the <i>services</i>. As a consequence, if the <i>Consultant</i> is required to demobilise and then remobilise its staff and equipment, the <i>Consultant</i> will be reimbursed at cost. The <i>Consultant</i> will be required to reduce and mitigate all its costs during the period of suspension and will be entitled to compensation only to the extent that it can demonstrate it has incurred costs which were not capable of being mitigated.
Z7	Compensation Events
Z7.1	Clause 61.4: The first bullet point is amended to read as follows: arises from the fault, error, negligence or default of the <i>Consultant</i> .
Z8	Limitation of liability
Z8.1	Add to core clause 82.1 and X18 For the avoidance of doubt the parties expressly agree that the total liability of the <i>Consultant</i> to the <i>Employer</i> applies jointly and severally across all organisations comprising of the <i>Consultant</i>.
Z9	Additional clauses relating to cession of rights
Z9.1	The <i>Consultant</i> shall not cede any rights under this contract without the approval of the <i>Employer</i> .
Z9.2	The <i>Employer</i> may on written notice to the <i>Consultant</i> cede and assign its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the <i>Employer</i> .
Z10	Additional clauses relating to interpretation of the law
Z10.1	Add to core clause 12.3 Any extension, concession, waiver or relaxation of any action by the Parties, the <i>Employers' Agent</i> or <i>Adjudicator</i> does not constitute a waiver of rights and does not give rise to an Estoppel or Lien, unless the Parties agree otherwise and confirm such an agreement in writing.

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

Z11 ***Employer's Step-in rights***

- | | |
|-------|--|
| Z11.1 | If the <i>Consultant</i> defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the <i>Employer's Agent</i> , the <i>Employer</i> , without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any <i>sub-consultant</i> or supplier of the <i>Consultant</i>) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the <i>Consultant</i> . |
| Z11.2 | The <i>Consultant</i> co-operates with the <i>Employer</i> and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the <i>Consultant</i> under the contract or otherwise for and/or in connection with any subsequent <i>works</i>) and generally does all things required by the <i>Employers' Agent</i> to achieve this end. |
-

C1.2 Contract Data

Part two - Data provided by the *Consultant*.

The tendering *Consultant* is advised to read both the NEC3 Professional Services Contract (April 2013) and the relevant parts of its Guidance Notes (PSC3-GN) to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 151 to 159 of the PSC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Consultant</i> is (Name): Address Tel No. Fax No.	
22.1	The <i>Consultant's key persons</i> are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience:	
Info.		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled.....
11.2(3)	The <i>completion date</i> for the whole of the <i>services</i> is	
11.2(10)	The following matters will be included in the Risk Register	

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2025/11/0004/110629/RFQ

DESCRIPTION OF THE SERVICES: THE PROVISION OF ENVIRONMENTAL SERVICES FOR THE UPGRADE WATER RETICULATION AS PER WATER MASTER PLAN IN THE PORT OF RICHARDS BAY PROJECT FOR A PERIOD OF TWENTY-NINE (29) MONTHS

11.2(13)	The <i>staff rates</i> are:	name/designation	Rate
		Project Manager	R /Hour
		Environmental Control Officer	R /Hour
		Ecologist	R /Hour

25.2	The <i>Employer</i> provides access to the following persons, places and things	access to	access date
		1	
		2	
		3	

31.1	The programme identified in the Contract Data is
------	--

50.3	The <i>expenses</i> stated by the <i>Consultant</i> are	Item	Amount
		1. Subsistence allowance	R /day
		2. Private car or MPV:	
		2.1 Engine capacity less than or equal to 1600 cc	R /km
		2.2 Engine capacity greater than 1600 cc	R /km
		3. Pick up vans and bakkies	
		3.1 Engine capacity less than or equal to 1600 cc	R /km
		3.2 Engine capacity greater than 1600 cc	R /km
		4. Other expenses:	
		4.1	

A	Priced contract with activity schedule
11.2(14)	The <i>activity schedule</i> is in
11.2(18)	The tendered total of the Prices is (in figures)
	(in words), excluding VAT

PART C2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option A	4
C2.2	Activity Schedule	6

C2.1 Pricing Instructions: Option A

1.1 The *conditions of contract*

1.2 How the contract prices work and assesses it for progress payment

Clause 11 in NEC3 Professional Services Contract (PSC), June 2005 (with amendments June 2006 and April 2013) Option A states:

- Identified 11** (14) The Activity Schedule is the *activity schedule* unless later changed in
and defined
terms 11.2 accordance with this contract.
- (15) The Price for Services Provided to Date is the total of the Prices for the activities which have been completed. A completed activity is one which is without Defects which would delay immediately following work.
- (18) The Prices are the lump sums for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

1.3 Measurement and Payment

- 1.3.1 The activity schedule provides the basis of all valuations of the Price for Services Provided to Date, payments in multiple currencies and general progress monitoring.
- 1.3.2 The amount due at each assessment date is based on activities and/or milestones completed as indicated on the activity schedule.
- 1.3.3 The activity schedule work breakdown structure provided by the *Consultant* is based on the activity schedule provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. The activity schedule work breakdown structure is compiled to the satisfaction of the *Employer* with any additions and/or amendments deemed necessary.
- 1.3.4 The *Consultant's* detailed activity schedule summates back to the activity schedule provided by the *Employer* and is in sufficient detail to monitor completion of activities related to the Accepted Programme in order that payment of completed activities may be assessed.
- 1.3.5 The Prices to include all expenses (e.g., travel, accommodation, subsistence allowance, etc.) deemed necessary for the proper execution of an activity on the Activity Schedule throughout the or (activities) duration of the contract.

- 1.3.6 The Prices are obtained from the Activity Schedule. The Prices includes for all direct and indirect costs, overheads, profits, oncosts, risks, liabilities, obligations, etc. relative to the contract; i.e. the *Consultant* shall not be reimbursed separately for any expenses (disbursements) incurred.

1.4 **Staff rates and expenses**

Staff rates:

Tendering *Consultants* are advised to consult page 30 of the NEC3 Professional Services Contract (April 2013) Guidance Notes and Flow Charts before entering staff rates into Contract Data, or below in Part C2.3.

- 1.4.1 This is because staff rates can be established in one of three ways:
- rates for named staff,
 - rates for categories of staff or
 - rates related to salaries paid to staff.
- 1.4.2 The staff rates are the Prices charged for staff and shall include for all the costs to the *Consultant*, including basic salary, any additional payments or benefits and social costs, overhead charges incurred as part of normal business operations including the cost of management, as well as payments to administrative, clerical and secretarial staff used to support professional and technical staff in general and not on a specific project only.
- 1.4.3 In addition to 1.3.2 above, the staff rates shall be derived from the total annual cost of employment of a person. The total annual cost of employment of a person is the total amount borne by the *Consultant* in respect of the employment of such a person per year, calculated at the amounts applicable to such a person at the time when the services are rendered, including basic salary, or a nominal market related salary, fringe benefits not reflected in the basic salary, including normal annual bonus; employer's contribution to medical aid; group life insurance premiums borne by the *Consultant*; the *Consultant's* contribution to a pension or provident fund; and all other benefits or allowances payable in terms of a letter of appointment, including any transportation allowance or company vehicle benefits, telephone and / or computer allowances, etc; and amounts payable in terms of an Act including, but not limited to, the Basic Conditions of Employment Act. Consequently, staff rates are to **include** for all burdens/on-costs, statutory holidays and all leave entitlements (normal leave, sick leave, family responsibility leave, maternity leave, etc.) in terms of such person's conditions of employment and/or in terms of the Basic Conditions of Employment Act.
- 1.4.4 The staff rates for salaried **technical** staff shall not exceed that payable for an appropriately **professionally qualified** staff responsible for carrying out the relevant service.
- 1.4.5 The staff rates shall include all necessary personal protective clothing, standard equipment, medicals and inductions required to Provide the Services.

1.4.6 Directors or members providing strategic guidance in planning and executing a project or performing quality management checks **shall be deemed to be included in the staff rates and shall not be paid for separately**. Payment to a director or member **not** providing strategic guidance in planning and executing a project or performing quality management checks shall be paid under another **relevant** category appropriate to the service being provided.

1.4.7 The staff rates derived from Part C2.3 excludes value added tax.

1.4.8 The staff rates for staff travelling more than 1,5 hours from their normal place to or from a jobsite (or vice versa) shall be reduced by a factor of 0.80 i.e. shall be reduced by 20%.

Expenses:

1.4.9 Expenses associated with employing a staff member in Providing the Services can be listed separately either by the *Employer* in the Contract Data provided by the *Employer* or by the *Consultant* in the Contract Data provided by the *Consultant*. Only the expenses defined in part one and part two of the Contract Data may be claimed by the *Consultant*, all other costs to the *Consultant* associated with Providing the Services must be included within the staff rates. In this regard, tendering *Consultants* are strongly urged to consult page 42 of the NEC3 Professional Services Contract (April 2013) Guidance Notes and Flow Charts as ***“only expenses stated in the Contract Data are payable in addition to the Price for Services Provided to Date”***.

1.4.10 A subsistence allowance is an amount intended to cover incidental costs incurred by reason of living away from home, such as the cost of meals, liquid refreshments, phone calls, internet access, laundry and job-related out of pocket expenses that are not paid for in terms of the contract.

1.4.11 A subsistence allowance may only be claimed in respect of each night that a staff member is away from home.

1.4.12 Travel expenses may only be claimed in respect of the cost of transportation of the *Consultant's* staff from their usual place of business to the jobsite, and return from the jobsite to *Consultant's* usual place of business.

1.4.13 All air travel shall be in economy class on a scheduled airline.

1.4.14 Accommodation means a
bed and breakfast;
guest house;
self catering; or
hotel having a star rating of 1, 2 or 3

as defined by the Tourism Grading Council of South Africa (see www.tourismgrading.co.za).

Note: A lodge, country house or 4 star or higher star rated hotel is not accommodation. Any stay in such a facility cannot be claimed as an expense.

1.4.15 Breakfast not included in accommodation is not an expense as it falls under the subsistence allowance.

1.4.16 A hired car means a motor vehicle having an engine capacity of not more than 1600cc.

1.4.17 **Note:** A hired car having an engine capacity greater than 1600cc is not a hired car and cannot be claimed as an expense.

C2.2 Activity Schedule

The *Consultant* details his Activity Schedule below or makes reference to his Activity Schedule and attaches it to this schedule.

The details given below serve as guidelines only and the *Consultant* may split or combine the activities to suit his particular methods.

The Activity Schedule is to be read in conjunction with the *Employer's* Scope of Services

The Employer's Detailed Activity Schedule is listed below:

Item No.	Activity Items	Unit	Qty	Total for Each Activity Item
1	Baseline Information Review:			
1.1	Review of Existing Project Information and all project environmental specifications	sum	1	
1.2	Compile Audit Framework	sum	1	
1.3	Develop an Audit Checklist and a report template	sum	1	
1.4	Conduct Pre-construction Site Inspection	sum	1	
1.5	Compile Pre-construction Site Inspection Report	sum	1	
2	Search and Rescue			
2.1	Conduct Search and Rescue Site inspection (to confirm presence of conservation worthy species)	sum	1	
2.2	Pre-construction Botanical Survey Report	sum	1	
2.3	Apply and obtain permits (tree removal) with DFFE for Protected and Indigenous trees in Natural Forests.	No.	2	
2.4	Verify a suitable area(s) where plants can be transplanted	sum	1	
2.5	Supervision of the relocation of plant species (as outlined by the permit conditions)	sum	1	
2.6	Translocation of rescued species to the identified nursery	Prov. Sum	Prov. Sum	
2.7	Site preparation (nursery rehabilitation) for planting rescued species	Prov. Sum	Prov. Sum	
3	Environmental Auditing:			

Item No.	Activity Items	Unit	Qty	Total for Each Activity Item
3.1	Water Monitoring			
3.1.1	Conduct Water Resource Quality Monitoring (present day values) before construction (baseline)	sum	1	
	9 x Lab Samples	No.	9	
3.1.2	Compile Water Resource Quality Report (baseline)	No.	1	
3.1.3	Conduct Weekly In-stream Water Quality Monitoring	Weeks	56	
	Provided for 9 samples SANAS accredited Lab analysis per week	No.	504	
3.1.4	Compile Weekly In-stream Water Quality Report	Weeks	56	
3.2	Monthly ECO Audits			
3.2.1	Conduct Monthly Environmental Audits (including translocated plants to evaluate success of intervention)	Months	14	
3.2.2	Compile Monthly Environmental Audit Reports	Months	14	
4	Annual Audits			
4.1	Conduct Annual Environmental Audits after construction activities	No.	3	
4.2	Compile Annual Environmental Audit Reports	No.	3	
5	Incident Management:			
5.1	Compile Incident Reports as and when required	No.	2	
6	Environmental Awareness:			
6.1	Compilation of Project-specific Induction Material	sum	1	
6.2	Conduct Environmental Inductions	sum	2	
6.3	Prepare & conduct ad-hoc Environmental Awareness Trainings with the Project Specifications	sum	2	
7	Amendments			
7.1	Environmental Management Programme (EMPR) Amendment (where applicable)	sum	1	
7.2	EA Amendment (where applicable)	sum	1	
7.3	Initiate and obtain General Authorisations (GA) with Department of Water and Sanitation (DWS) (where applicable)	sum	1	

Item No.	Activity Items	Unit	Qty	Total for Each Activity Item
8	Post Construction & Rehabilitation			
8.1	Prepare Rehabilitation Monitoring Plan	sum	1	
8.2	Conduct Quarterly Monitoring Audits (Post Rehabilitation Phase)	No.	4	
8.3	Compile Quarterly Monitoring Audit Reports (Post Rehabilitation Phase)	No.	4	
9	Close-out:			
9.1	Prepare and Conduct Close-out Inspection	sum	1	
9.2	Compile Site Close-out checklist and report	sum	1	
9.3	Botanical Close-out Report	sum	1	
10	SHE progress meetings:			
10.1	Attendance of SHE progress meetings by ECO & Ecologist, on invitation by Employer.	monthly	14	
Total of the Prices carried to the Form of Offer (Excluding VAT)				
Note: Activity 1 to 10.1 should be read in conjunction with the Scope of Work (C3) and the Works Information(C4) in order to interpret the details of each activity and to ensure the pricing is according to what is required to deliver the complete Scope of Works in accordance with the specifications.				

PART C3: SCOPE OF SERVICES

Document reference	Title	No of page
C3.1	This cover page	1
	<i>Employer's Scope of Services</i>	23
	Total number of pages	24

C3.1 EMPLOYER'S SCOPE OF SERVICES

Contents

PART C3: SCOPE OF SERVICES	1
SECTION 1	4
1. Description of the <i>Services</i>	4
1.1 Executive overview	4
1.2 Project Description.....	6
1.3 Sensitive Environments.....	8
1.4 The Scope of <i>services</i>	9
1.5 <i>Employer's</i> objectives.....	11
1.6 Interpretation and terminology	12
1.7 Review and Acceptance of Consultant Documentation.....	14
1.8 Use of <i>Consultant's</i> documentation.....	14
1.9 Health and Safety Facilities on Site.....	15
1.10 Environmental controls	15
1.11 Cooperating with and obtaining acceptance of Others	16
1.12 Publicity and progress photographs.....	16
1.13 <i>Consultant's</i> Equipment	17
1.14 Equipment provided by the <i>Employer</i>	17
1.15 <i>Employer</i> specifications.....	17
1.16 Project Activities.....	18
SECTION 2	19
2. Management and start up	19
2.1 Management meetings.....	19
2.2 Documentation control.....	20
2.3 Safety risk management.....	22
2.4 <i>Consultant's</i> Management, Supervision and Key People	22
3. Procurement.....	23
3.1 Code of Conduct	23
3.2 Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices.....	24
3.3 Conflicts of Interest	25
3.4 The <i>Consultant's</i> Invoices.....	26

3.5 People	27
4. Programming constraints.....	27
5. Appendices	28

SECTION 1

1. Description of the *Services*

This scope of *services* is for the provision of environmental services, i.e.; ECO and ECOLOGIST for Upgrade Water Reticulation as Per Water Master Plan in the Port of Richards Bay Project.

1.1 Executive overview

Transnet National Ports Authority's (TNPA) main function is to own, manage, control and administer the ports to ensure their efficient and economic functioning. Among others, TNPA must plan, provide, maintain and improve port infrastructure. TNPA must also arrange for services such as water within the ports. It within this context that the 450mm diameter Asbestos Cement (AC) pipe which has been reliably responsible for supplying water to the southern areas of the Port has exceeded its intended design lifespan. Therefore, there have been frequent leakages, leading to a noticeable increase in Non-Revenue Water (NRW). These issues have directly impacted the tenants in the Port.

In addition to these operational challenges, TNPA at the Port of Richards Bay is bound by regulatory obligations outlined in the National Water Act, 36 of 1998 (NWA), which focuses on the conservation of water resources, as well as the Environmental Conservation Act of 1989, particularly concerning the use, manufacturing, import, and export of asbestos and asbestos-containing materials.

To address both the operational challenges and regulatory compliance, TNPA initiated a comprehensive study in 2015, resulting in the development of a Water Master Plan. This study identified the need to undertake specific projects in response to the challenges and regulatory requirements. These projects include:

- Replacement of a 1.5km section of existing 450mm diameter AC pipe with 560mm diameter High Density Polyethylene (HDPE) between the Level Crossing and Tidal Bridge (see yellow shaded area in figure 1 below).
 - Construction of a 560mm Ø, HDPE, PN12.5, PE100 pipeline for a distance of approximately 1.5km.
 - Tying into the existing water pipe at Level Crossing and by the Tidal Bridges.
 - Tying existing take-offline/s.

- Providing and installing all special fittings and valves according to the engineering design.
- Replacement of a 2.5km section of existing 450mm diameter AC pipe with 560mm diameter High Density Polyethylene (HDPE) between Bayvue supply point to South Dunes Bridge (see blue shaded area in figure 1 below).
 - Construction of a 560mm Ø, HDPE, PN12.5, PE100 pipeline for approximately 2.5km.
 - Tying into the existing water meter chamber between the Bayvue Rail Yard and the Northern property boundary.
 - Jacking a 660mm Ø steel sleeve underneath the railway lines at two separate positions as per the drawings.
 - Tying into three existing take-off lines.
 - Tying into the existing by-pass recently constructed around the new truck staging area.
 - Providing and installing all special fittings and valves according to the engineering design.
 - Replacing the existing concrete pipe cradles mounted to the outside of the bridge structure (Manzamnyama Bridge) at the Southern limit to the project.
 - Replacing the existing AC pipe crossing the bridge structure with the new 560mm Ø HDPE pipe.



Figure 1: Port of Richards Bay

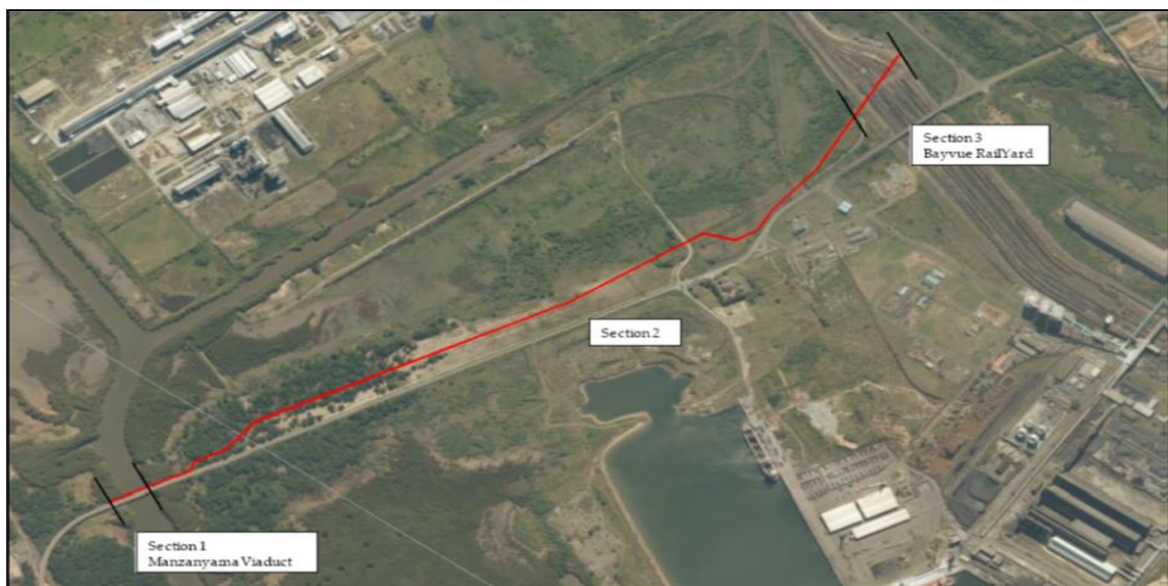
A service provider was appointed by Transnet National Port Authority (TNPA) to apply for Environmental Authorisation (EA), for the proposed replacement of critical pipe sections project from the Department of Forestry, Fisheries and the Environment (DFFE), through a Basic Assessment Process. The Environmental Authorisation (EA) was received from the DFFE on the 20th of August 2015. The EA has since been amended in 2018, 2022 and 2024, respectively.

1.2 Project Description

The existing main potable water to the Port of Richards Bay, an Asbestos Cement (AC) pipeline, is more than 35 years old and incidents of failures are increasing. This in turn is increasing the risk of significant water loss incidents and supply interruptions to various enterprises conducting business within the Port. A portion of the critical sections of the pipeline has already been upgraded, and this project will therefore involve the replacement of the following sections of the existing AC pipe with a new 560 mm High Density Polyethylene (HDPE) pipe:

1.2.1 Municipal Feed – Manzanmyama Viaduct (2,534m)

The existing main potable water feed to the Port of Richards Bay from the Municipal supply is in need of an upgrade due to the existing pipes nearing the end of their design life. TNPA has divided the upgrade from the Municipal Feed to the Manzanmyama Viaduct into three sections based on the existing dimensions and structures located along the pipeline. Each section was evaluated separately to establish the best possible solution to ensure the continued service of this line while increasing its capacity. The sections are divided as follows:



Section 1 – Proposed upgrade over the Manzanmyama Viaduct bridge

Figure 2: Sections to be replaced between the Municipal Feed and the Viaduct (Google Earth 2016)

It is proposed that the existing 450 mm AC pipe be replaced with a 560 mm HDPE pipe by demolishing the existing pipe supports and installing new stainless-steel pipe supports. To ensure continued water supply to the Port during construction, a temporary 250 mm HDPE pipe will need to be installed parallel to the new line in the emergency lane.

Section 2 – Proposed upgrade underground and railway line crossing

The existing 450 mm AC pipe will be abandoned and replaced by a 560mm HDPE pipe. The new pipe will be installed parallel to the existing pipe at an offset between 2 and 10 m. The pipe will be installed using the standard trench laying method and the micro tunnelling method for the railway line. The new pipe will ultimately terminate at a jacking pit where it will connect to a new 560mm HDPE pipe.

Section 3 – Proposed upgrade Bayvue Rail Yard crossing

The existing pipe under the railway line crossing is a 355 mm HDPE pipe. The installation of this pipe was recently completed under a separate contract to replace the previous 355 mm HDPE pipe due to its collapse. Therefore, it is proposed to construct a new 560 mm HDPE pipe parallel to the existing pipe using the micro tunnelling process. The existing 355 mm HDPE pipe will be cleaned and be used as a sleeve for cables.

1.2.2 Level Crossing – Tidal Gates (1,400m)

The existing 450 mm AC pipeline, running along the Berm Road, supplies the southern section of the Port of Richards Bay. This pipeline is more than 35 years old and incidents of failures are increasing. A portion of critical sections of this pipe running along the Tidal Gates as well as along the Manzanymyama Viaduct bridge have already been upgraded to a 560 mm HDPE pipeline, installed above ground on concrete plinths. There is a section of approximately 3 km between these upgraded sections which urgently needs to be replaced to reduce the likelihood of bursts as well as to cater for the existing and future water demands of this section of the Port. This will cover the first phase of the upgrade of this section of pipeline starting at the tie-in point at the Tidal Gates and running north-west for a length of 1,400 m to past the Railway Level Crossing

1.3 Sensitive Environments



Figure 3: Pipe section to be replaced between the Level Crossing and Tidal Gates (Google Earth 2016)

This project is within a highly sensitive environment. There are numerous specialist studies that have been prepared for this project of which the service provider needs to familiarise themselves with. These specialist studies are included as appendices in this document.

1.4 The Scope of *services*

The *Services* comprise the following:

The Environmental Authorisation (**Appendix A: Environmental Authorisations**) for the project and was obtained from the then Department of Environmental Affairs on the 20th of August 2015. The project has a General Authorisation (**Appendix B: General Authorisation**) which was obtained from the Department of Water and Sanitation (DWS) on the 14th of March 2017.

The Environmental Authorisation for the project state that the holder must appoint an independent Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to are implemented and ensure compliance with the provisions of the approved EMPr. Furthermore, the ECO will be required to monitor compliance with the conditions of a General Authorisation for the project.

The Environmental Authorisation further state that an Ecologist must be appointed to conduct a search and rescue operation of the entire development footprint to identify species of conservation concern and protected species and identify areas suitable for relocation and translocation.

The activity is thus the provision of ECO services as set out in the Environmental Authorisation and General Authorisation. In addition, the activity includes the provision of Ecologist's services to undertake measures outlined in the Vegetation Report (**Appendix E: Vegetation Report**), Environmental Management Programme (EMPr) (**Appendix D: Environmental Management Programme**) and Plant Rescue and Translocation Management Plan (**Appendix F: Plant Rescue and Translocation Management Plan**).

The following is a list of documents that form part of the scope for Environmental Services and are included as appendices of this document:

- An Environmental Authorisations (Ref: 14/12/16/3/3/1/1701), **(Appendix A)**
- The Environmental Authorisation Amendment 1 (Ref: 14/12/16/3/3/1/1701/AM1), **(Appendix A1).**
- The Environmental Authorisation Amendment 2 (Ref: 14/12/16/3/3/1/1701/AM2), **(Appendix A2).**
- The Environmental Authorisation Amendment 3 (Ref: 14/12/16/3/3/1/1701/AM3), **(Appendix A3).**
- General Authorisation in terms of section 39 of the National Water Act (36 of 1996) for water uses as defined in section 21c or section 21i for project A **(Appendix B1).**
- General Authorisation in terms of section 39 of the National Water Act, 1998 (Ref: 27/2/W12F/4/3/9) **(Appendix B2).**
- The Basic Assessment Reports (BAR) **(Appendix C).**
- Revised Environmental Management Programme (EMPr) Approval Letter (14/12/16/3/3/1/1701/MP1) **(Appendix D1).**
- The Environmental Management Programme (EMPr) **(Appendix D2).**
- Vegetation Report **(Appendix E).**
- Plant Rescue and Translocation Management Plan **(Appendix F).**
- Wetland Assessment Report **(Appendix G).**
- SOP Construction Environmental Management (SOP CEM) 009-TCC-CLO-SUS-11386, Contractor Environmental and Sustainability Specification Guidelines (CESSG) TRN-IMS-GRP-GDL-014.4 **(Appendix H)**

Consulting Team Requirements

The team must have personnel who have the following key competencies:

- Conducting Environmental Audits;
- Environmental Impact Assessment;
- Environmental Awareness Training;
- Wetland Management;
- Wetland Rehabilitation;
- Water quality monitoring;
- Botanical Surveys;
- Plant Search and Rescue;
- Plant relocation; and

- Post construction vegetation rehabilitation.

1.5 ***Employer's objectives***

The *Employer's* objective is to comply with the requirements of the Project Environmental Specifications to appoint an independent Environmental Control Officer (ECO) to monitor compliance and conduct water quality monitoring with the conditions of EA, GA, and approved Environmental Management Programmes. The *Employer* further seeks to appoint an Ecologist for the identification, removal and relocation (search and rescue) of species of conservation concern and protected plant species in terms of the requirements of condition 29 for the EA, and the plant rescue and translocation management plan.

Attention is also drawn to the specific requirements of the Environmental Authorisation (EA), ref no. 14/12/16/3/3/1/1701 and its amendments (14/12/16/3/3/1/1701/AM1, AM2 and AM3) issued under Environmental Impact Assessment regulations, 2014 (as amended), and General Authorisation (GA) issued in terms of Section 39 of the National Water Act, Act 36 of 1998 in relation to the appointment of the ECO, including:

- The applicant must appoint a suitably experienced independent Environmental Control Officer for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to in this Authorisation are implemented and to ensure compliance with the provisions of the EMPr.
- The ECO shall be appointed before commencement of any authorised activities.
- The ECO must keep record of all activities on site, problems identified, transgressions noted and a activity schedule of activities undertaken by the ECO.
- The ECO must remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.
- An Ecologist must be appointed to conduct a search and rescue operation of the entire development footprint to identify species of conservation concern and protected species and identify areas suitable for relocation and translocation
- The ECO will conduct weekly in stream water quality measurements by taking samples during construction and the following parameters shall be measured; TSS/Turbidity, DO,PH and ,EC/TDS
- Rehabilitation must be overseen by a suitably qualified SACNASP professional member (GN 509 of 2016).

1.6 Interpretation and terminology

1.6.1 Abbreviations

The following abbreviations are used in this *Scope of services*:

Abbreviation	Meaning given to the abbreviation
BAR	Basic Assessment Report
CESSG	Contractor Environmental and Sustainability Specification Guidelines
DFFE	Department of Forest Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
GA	General Authorisation
HDPE	High Density Polyethylene
PES	Project Environmental Specification
SHEQ	Safety, Health, Environment and Quality
SOP CEM	Standard Operating Procedure Construction Environmental Management
TNPA	Transnet National Port Authority

1.6.2 Interpretation of incorporated documentation

Wherever the following words or phrases are used in the listed or referenced documentation, they are interpreted in this contract as follows:

Word or phrase	Interpretation
'Transnet SOC Limited' in the context of: owner, occupier or user of the new asset; insurer of the <i>Services</i> ; paymaster (i.e. Transnet shall pay); a party to the contract.	the <i>Employer</i>
'Transnet SOC Limited' in the context of: a duty or procedure to be performed in the administration of the contract	the <i>Employer's Agent</i> or the <i>Supervisor</i> as determined by the conditions of contract
'TFR', 'TRIM', 'TP', 'TGC', 'TRE', 'TNPA' or 'TPT' in the context as operator and owner, occupier or user of the new asset	the <i>Employer</i>
'main specification' as referred to in the <i>Employer's</i> standard specifications	This <i>Scope of services</i>
accepted by (or to the satisfaction of) the <i>Employer's Agent</i> , Engineer or the Architect	accepted by the <i>Employer's Agent</i> or the <i>Supervisor</i>
a duty, procedure, decision or action of the Engineer or the Architect and or the Superintendent, client representative, Site <i>Supervisor</i>	an action of the <i>Employer's Agent</i> or the <i>Supervisor</i> depending on the context. Clause 14 of the Core Clauses determines what the actions of each are. Either may delegate in terms of Clause 14.2

1.7 Review and Acceptance of Consultant Documentation

The services of an independent third party may be engaged by the *Employer* to review the *Consultant's* reports and the *Consultant* must give the necessary co-operation and supply all the necessary information required. The cost of the review by the third party will be borne by the *Employer*.

1.8 Use of *Consultant's* documentation

The *Consultant* will grant the *Employer* a licence to use the copyright in all data presented to the *Employer* in relation to the Services for any purpose of transfer to any third party without the consent of the *Consultant*.

Any data developed by the *Consultant* shall immediately on submission to the *Employer*, become the property of the *Employer*. Such data must be submitted to the *Employer* in its original, editable format.

1.8.1 *Employer's* Site entry and security control, permits, and Site regulations

The Site is located within an operational area of the *Employer* and the *Consultant* shall ensure the safe passage of traffic to and around the Site at all times. This shall entail the provision of flagmen, protective barriers, lanterns, signs, etc. for protection, direction and control of traffic.

The *Consultant* shall organise the work to cause the least possible inconvenience to other construction activities or operations at the Site. Access for Others to adjacent areas shall be maintained at all times.

The Site is located within a designated Secure Area, and accordingly all access into the area will be through a gate with access control.

The *Consultant* shall obtain the necessary entry permits for all staff working within the area in accordance with the access control requirements of the *Employer* and shall issue each personnel member with an appropriate identification card.

All costs incurred in providing construction personnel with ID cards and access permits shall be borne by the *Consultant*.

If the working area is situated within a Customs controlled area, the *Consultant* and his people shall observe all Customs regulations.

The fullest collaboration between the *Consultant*, the *Employer's* Operations Manager and the *Employer's Agent* is essential in regard to the continued operations of the *Employer*.

Housing of the *Consultant's* people on site is not permitted.

All work on, over, under or adjacent to railway lines and near high voltage equipment shall comply with Transnet SOC Limited codes of conduct.

1.8.2 **Restrictions to access on Site: roads, walkways and barricades**

As per paragraph 1.8.1 above

1.8.3 **People restrictions on Site: hours of work, conduct and records**

The working hours shall be in accordance with the requirements of the Department of Labour or with the agreement of the relevant trade unions. This information relating to working hours shall be supplied to the *Employer's Agent* prior to commencement of the proposed working hours.

Consultant's staff shall be confined to the working area and defined access routes and shall not be allowed to be present in other areas of the *Employer*. *Consultant* staff found disobeying this instruction will be subject to disciplinary action.

The *Consultant* keeps daily records of his people engaged on the Site and Working Areas (including *Sub-Consultants*) with access to such daily records available for inspection by the *Employer's Agent* at all reasonable times.

1.9 **Health and Safety Facilities on Site**

At all times during the *Services*, the *Consultant* is responsible for the safety of all persons on the Site and on the equipment and shall have the necessary systems and procedures in place to effectively manage this.

1.10 **Environmental controls**

The *Consultant* shall perform the *Services* and all activities within the Site and Working Areas having due regard for the environment and environmental management practices. The *Consultant* complies with the Standard Operating Procedure Construction Environmental Management (SOP CEM) 009-TCC-CLO-SUS-11386, Contractor Environmental and Sustainability Specification Guidelines (CESSG) TRN-IMS-GRP-GDL-014.4 and PES in the implementation of the *Services*. These documents are included under Appendix H of this document.

1.11 Cooperating with and obtaining acceptance of Others

During the course of the contract, departments of Transnet and other *Consultants* may be working in the general area surrounding the working area. The *Consultant* must make allowance for the necessity to interface with the activities of Others, and to allow for safe access and working conditions.

At least some of the Site work may take place while the adjacent areas will be in operation. The *Consultant* shall take all necessary steps for his *Services* not to interfere with operations and to ensure that normal traffic flow of the operational terminal is not obstructed.

The success of the project depends on the effective co-operation of all *Consultants* on site, and the *Consultant*, if necessary, must discuss his programme on a day-to-day basis with the *Employer's Agent* to ensure effective co-ordination.

1.12 Publicity and progress photographs

The *Consultant* treats all information gained through his appointment on this project as strictly confidential. The *Consultant* is not allowed to prepare or present any paper, publish any article in a technical journal, or derive publicity for his business which makes any reference to any aspect of the work on this project unless the *Employer* grants special permission, in writing, for the purpose.

No photographs are to be taken unless the photographer is in possession of a camera permit issued by the TNPA Chief Security Officer, Port of Richards Bay. Photographs are to be taken for record purposes only.

The *Consultant* provides a comprehensive photographic record of the progress of the *Services* by taking photographs at weekly intervals. The initial photographs are to be taken at the start of the project, immediately prior to the commencement of any work. As far as possible each set of photographs shall be taken from the same locations as the previous set.

The areas to be photographed and the quantity of photographs in each area will be determined by the *Employer's Agent*.

Progress photographs of all manufacturing work carried out off-site are also required.

Photographs are to be submitted in JPEG format, with a minimum resolution of 1200 x 800. Each set of photographs must be accompanied by an index showing:

- Contract reference
- Photograph file reference
- Date of Photograph
- Subject matter

1.13 *Consultant's Equipment*

All Equipment supplied and used by the *Consultant* on Site shall be selected and operated in such a way that damages to all existing surfaces and services are avoided. The *Consultant* will be required to repair, at his own cost and to the satisfaction of the *Employer's Agent*, any such damage caused by him.

The *Consultant* shall keep daily records of all Equipment used on Site and the Working Areas with access to such daily records available for inspection by the *Employer's Agent* at all reasonable times.

All Equipment necessary for the survey of the *Services* shall be provided and allowed for by the *Consultant*.

1.14 Equipment provided by the *Employer*

No Equipment will be provided by the *Employer*.

1.15 *Employer specifications*

Due to the area being in operation, the appointed *Consultant* is to heed all necessary safety procedures during the execution of the services. Notification is to be given at all times for hours of work. Safety induction will be carried out before any work is started. This will take approximately 30 minutes.

The *Consultant* shall carry out all the activities as listed plus any others which are required, to fulfil all the functions necessary so that Transnet is able to comply with the requirements of the Project Environmental Specification.

1.16 Project Activities

To achieve the objectives of the activities, the Consultant shall undertake the following activities but not necessarily be limited to:

- 1.16.1 Review of Existing Project Information
- 1.16.2 Compile an Audit Framework
- 1.16.3 Prepare an Audit Checklist
- 1.16.4 Review Wetland Monitoring Plan
- 1.16.5 Conduct pre-construction Site Inspection (this site inspection to include identification of alien species present at the site)
- 1.16.6 Compile pre-construction Site Inspection Report (List of alien plant species identified and alien plant distribution map to be included in the report)
- 1.16.7 Conduct Search and Rescue Site inspection (to confirm presence of conservation worthy species)
- 1.16.8 Pre-construction Botanical Survey Report
- 1.16.9 Conduct DFFE Permit (Tree Removal) Application Process
- 1.16.10 Determine the requirement for where plants can be transplanted
- 1.16.11 Supervision of the relocation of plant species (as outlined by the permit conditions)
- 1.16.12 Conduct Water Resource Quality Monitoring (present day values) before construction
- 1.16.13 Compile Water Resource Quality Reports
- 1.16.14 Conduct weekly Water Quality Monitoring
- 1.16.15 Compile weekly Water Quality Monitoring Reports
- 1.16.16 Conduct annual Water Audits
- 1.16.17 Compile annual water Audits Reports
- 1.16.18 Conduct weekly In-stream Water Quality Monitoring
- 1.16.19 Compile weekly In-stream Water Quality Reports
- 1.16.20 Conduct monthly Environmental Audits
- 1.16.21 Compile monthly Environmental Audit Reports with dated photographs

- 1.16.22 Conduct annual Environmental Audit after construction activities
- 1.16.23 Compile annual Environmental Audit Reports
- 1.16.24 Compile Incident Reports as and when required
- 1.16.25 Compilation of Project-specific Induction Materials
- 1.16.26 Conduct Inductions
- 1.16.27 Ad-hoc Environmental Awareness Training
- 1.16.28 EMPR Amendment
- 1.16.29 EA Amendment
- 1.16.30 Compile Rehab Monitoring Plan
- 1.16.31 Undertake Quarterly Monitoring of Rehabilitation
- 1.16.32 Update Wetland Rehabilitation Plan
- 1.16.33 Wetland Rehab Works Monitoring
- 1.16.34 Conduct Wetland Rehab Close-out Audit
- 1.16.35 Compile Wetland Rehab Close-out Audit
- 1.16.36 Compile Wetland Offset Management Plan
- 1.16.37 Conduct Close-out Inspection
- 1.16.38 Compile Site Close-out Report
- 1.16.39 Compile Botanical Close-out Report
- 1.16.40 Attendance, by invitation only, to Transnet SHE meetings
- 1.16.41 Provide proof of monthly distribution of reports to authorities

SECTION 2

2. Management and start up

2.1 Management meetings

The *Consultant* shall hold regular progress meetings with the *Employer's Agent* during the initial planning and execution phase of the contract. The *Consultant* shall attend management meetings at the *Employer's Agent's* request. The *Consultant* will also attend a kick off meeting and a close-out meeting. The *Consultant* will be required to present all

relevant information including quality plans, schedules, progress reports, sub-*Consultant* management details, and health, environmental and safety issues at such meetings.

The *Consultant* shall attend monthly progress meetings and risk reduction meetings as and when called by the *Employer's Agent*.

Other meetings of a specialist nature may be convened by persons and at times and locations to suit the *Parties*, the nature and the progress of the *Services*. Records of these meetings shall be submitted to the *Employer's Agent* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instructions.

2.2 Documentation control

The *Consultant* shall submit all documentation (including correspondence and drawings) to Transnet (*Employer*) standards and to the *Employer's Agent's* requirements in accordance with the *Employer's Agent's* document control procedure. The *Consultant* shall use his own suitable document control system for the control, maintenance and handling of all relevant documentation and drawings issued to him.

The *Consultant's* documentation shall be issued to the *Employer's Agent* under cover of the *Consultant's* Transmittal Note indicating all Contract references (i.e. Project No, Contract No, etc.) as well as the *Consultant's* Project Document Number, Revision Number, Title and chronological listing of transmitted documentation.

Formats of *Consultant* data submitted is dependent on the project procedure and content and shall be specified by the *Employer's Agent*, upon the notified request of the *Consultant* i.e.:

- Both Adobe Acrobat (.pdf) and native files
- Only a native file
- Only a hard copy
- Only a .pdf file

The *Consultant* shall deliver both hard copies and electronic media copies (CD Rom) to the *Employer's Agent* at the address stated within the Contract Data.

The documentation to be submitted for review shall be submitted on or before the dates specified in the Documentation Register under cover of the *Consultant's* Transmittal Note, and the Transmittal Note must state the purpose of the submission. Documentation for different purposes must be sent on separate transmittals. The *Consultant* shall note that documentation will be rejected if this requirement is not met.

Acceptance of documentation by the *Employer's Agent* will in no way relieve the *Consultant* of his responsibility for the correctness of information, or conformance with his obligation to provide the Services. This obligation rests solely with the *Consultant*.

After review, a copy of the original reviewed/marked-up drawing/document, with the *Employer's Agent's* consolidated comments and document status marked on the *Consultant* Review Label, is scanned and the hard copy shall be returned to the *Consultant* under cover of the *Employer's Agent's* Transmittal Note for revision or re-submittal as instructed.

The code resulting from the review is as follows, i.e.: -

- Code C1 – “Proceed, No Exception Taken”
- Code C2 – “Proceed, with Exceptions as Noted, Revise and Resubmit”
- Code C3 – “Do Not Proceed, Revise as Noted and Resubmit”
- Code C4 – “Information Only – Accepted as Submitted”
- Code C5 (FN) – “Certified Final – No Further Submittal Required”
- Code C6 (AB) – “Certified As-Built – No Further Submittal Required”

The *Consultant* shall allow the *Employer's Agent* two (2) weeks to review and respond to the *Consultant's* submission of their documentation, i.e. from time of receipt to the time of despatch. However, work shall proceed without delay in the event of late return of the documentation by the *Employer's Agent* with prior notification in writing by the *Consultant*.

On receipt of the reviewed documentation the *Consultant* shall make any modifications requested/marked-up and resubmit the revised documentation to the *Employer's Agent* within 2 weeks. Queries regarding comments/changes should be addressed with the *Employer's Agent* prior to re-submittal.

All revised data shall be submitted by the *Consultant* in its entirety and shall reflect the revision control numbers and shall also indicate which documentation the revised documentation supersedes, if applicable. In the case of drawings every sheet has its own revision number and is revised as an individual document. In the case of documents all sheets under cover of one document number shall be under the same revision number and be resubmitted, even if the revision is a minor one.

2.3 Safety risk management

- Health and Safety Guidelines
- Personal Protective Equipment (PPE)

The following personal protective equipment shall be worn at the site whilst providing the Services.

- Hard hats
- Provision of Safety Glasses/Goggles whichever offers the better protection against dust entering the eyes.
- Sufficient fresh drinking water to replace body fluids and prevent dehydration.
- All persons working within Port shall wear either yellow or orange reflective vests.
- Prior to commencing with site activities, all persons shall be subjected to a Transnet Safety Induction.

The following additional Risks have been identified:

- The site conditions can be considered as dusty, unpleasant, noisy and dangerous.
- The wearing of appropriate Personal Protective Equipment is compulsory.
- Controlled entry into the *Services* to prevent entry by authorised persons.

2.4 *Consultant's* Management, Supervision and Key People

The *Consultant* shall make an adequate, experienced and stable project team available for the duration of the contract. Every effort must be exercised by the *Consultant* to minimise the replacement of project team members to ensure optimum contract management continuity and efficiency.

The *Consultant* shall provide as much evidence as possible to unequivocally demonstrate that the incumbents completely satisfy their relevant requirements.

The *Consultant* employs full time, fully qualified and experienced key persons who have been delegated sufficient authority to manage the contract efficiently for the duration of the contract, including and not limited to:

2.4.1 **Environmental Control Officer (ECO)**

The ECO should at least have a bachelor's degree Qualification or equivalent Qualification at NQF level 7 in Natural Sciences or Environmental Sciences/Management, with more than four years (>4) ECO experience in wetland management, and a valid professional registration with the Environmental Assessment Practitioners Association of South Africa (EAPASA) as an EAP and a valid registration as a Pr. Sci.Nat. with the South African Council of Natural and Scientific Professions (SACNASP) in the category Biological/Botanical/Ecological Sciences.

2.4.2 **Ecologist**

The Ecologist should at least have of a bachelor's degree or equivalent Qualification at NQF level 7 in Botany, Zoology or any Ecological Sciences related field, with more than three years' (>3) experience in Botanical Surveys and Search and Rescue operations, and a valid professional registration with the South African Council of Natural and Scientific Professions (SACNASP) as a Pr. Sci Nat.

The *Consultant* employs personnel listed above but not limited to those mentioned to perform the functions of key persons under NEC3 PSC Clause 22.1. These appointments shall have the necessary experience and be suitably qualified.

The *Consultant* provides an Organogram of all his Key People (both as required by the *Employer's* and as independently stated by the *Consultant* under Contract Data Part Two) and how such Key People communicate with the *Employer's Agent* and his delegates all as stated in the *Employer's* Scope of Services.

3. Procurement

3.1 Code of Conduct

Transnet aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Procedures Manual (PPM);

- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (B-BBEE); and
- The Anti-Corruption Act.

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

3.2 Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

3.2.1 Transnet will not participate in corrupt practices and therefore expects its suppliers to act in a similar manner.

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with and payments to our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, to:
 - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
 - Win or retain business or to influence any act or decision of any decision stakeholders involved in sourcing decisions; or
 - Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts. (0800 003 056).

3.2.2 Transnet is firmly committed to the ideas of free and competitive enterprise.

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing B-BBEE spend (fronting)

3.2.3 Transnet's relationship with suppliers requires us to clearly define requirements, exchange information and share mutual benefits.

- Generally, Suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, B-BBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

3.3 Conflicts of Interest

3.3.1 A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet.

- Doing business with family members
- Having a financial interest in another company in our industry

3.4 The *Consultant's* Invoices

When the *Employer's Agent* certifies payment (see NEC3 Clause 51.1) following an assessment date, the *Consultant* complies with the *Employer's* procedure for invoice submission.

The invoice must correspond to the *Employer's Agent's* assessment of the amount due to the *Consultant* as stated in the payment certificate.

The invoice states the following:

- Invoice addressed to Transnet Limited;
- Transnet Limited's VAT No: 4720103177;
- Invoice number;
- The *Consultant's* VAT Number; and
- The Contract number.

The invoice contains all the supporting detail.

The invoice is presented either by post or by hand delivery.

Invoices submitted by post are addressed to:

Transnet National Port Authority

Pioneer Centre Building

San Thom Road

Port of Richards Bay

3900

For the attention of the Contract Administrator, Transnet National Port Authority

Invoices submitted by hand are presented to:

Transnet National Port Authority

Pioneer Centre Building

San Thom Road

Port of Richards Bay

3900

For the attention of the Contract Administrator, Transnet National Port Authority

The invoice is presented as an original.

3.5 People

Minimum requirements of people employed on the Site

The *Consultant* shall ensure that all his people on the site work in accordance with the South African Basic Conditions of Employment Act, 75 of 1997 and the Basic Conditions of Employment Amendment Act, 11 of 2002, irrespective of being a local or overseas employee.

The *Consultant* shall ensure that all the necessary work permits are obtained and available for his overseas employees on the site.

4. Programming constraints

- a) The *Consultant* presents his first programme and all subsequently revised programmes (see PSC

Clauses 31.2 and 32.1 and 31.4 for option A & C or 31.5 Option G) in hard copy format printed in full colour in A3 size and in soft copy 'Native' format. Note that PDF soft copy versions are not acceptable.

The *Consultant* submits his Level 4 programme to the *Employer* for acceptance in the period stated in the Contract Data.

- b) The *Consultant* uses Primavera version 6 for his programme submissions. Any other mechanisms of programming shall be for the approval of the Employer's Agent.
- c) The *Consultant* shows on his programme submitted for Acceptance and all subsequently revised programmes schedules showing the critical path or paths and all necessary logic diagrams demonstrating the order and timing of the operations which the *Consultant* plans to do in order to provide the Services.
- d) The *Consultant's* programme shows duration of operations in working days.
- e) The *Consultant's* programme shows the following levels:
- Level 1 Master Schedule – defines the major operations and interfaces between research, information gathering, options development, engineering design, modelling, option costing, report writing and Completion.
 - Level 2 Project Schedule – summary schedules 'rolled up' from Level 3 Project Schedule described below

- Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. The *Employer* notifies any subsequent layouts and corresponding filters on revised programmes.
 - Level 4 Project Schedule – detailed discipline speciality level developed and maintained by the *Consultant* relating to all operations identified on the programme representing the daily activities by each discipline.
- f) The *Consultant* shows on each revised programme he submits to the *Employer* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Consultant*.
- g) The *Consultant's* weekly programme narrative report includes:
- Level 4 Project Schedule – showing two separate bars for each activity i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- h) 3-week Look ahead Schedule - showing two separate bars for each activity i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.

5. Appendices

Appendix A

- The Environmental Authorisation for the Replacement of Critical Pipe Sections within the Port of Richards Bay (Ref: 14/12/16/3/3/1/1701)
- The Environmental Authorisation Amendment 1 for the Replacement of Critical Pipe Sections within the Port of Richards Bay (Ref: 14/12/16/3/3/1/1701/AM1)
- The Environmental Authorisation Amendment 2 for the Replacement of Critical Pipe Sections within the Port of Richards Bay (Ref: 14/12/16/3/3/1/1701/AM2)
- The Environmental Authorisation Amendment 3 for the Replacement of Critical Pipe Sections within the Port of Richards Bay (Ref: 14/12/16/3/3/1/1701/AM3)

Appendix B

- General Authorisation in terms of section 39 of the National Water Act, 1998: TNPA Replacement of Bulk Waterpipe (Ref: 27/2/W12F/4/3/9)
- General Authorisation in terms of section 39 of the National Water Act (36 of 1996) for water uses as defined in section 21c or section 21i

Appendix C

- The Basic Assessment Report for the Replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal Province

Appendix D

- Revised EMPR Approval Letter (Ref: 14/12/16/3/3/1/1701/MP1)
- The Environmental Management /Programme (EMPr) for the Replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal Province, dated August 2023

Appendix E

- Vegetation Report for the TNPA Bulk Waterline, Richards Bay, KwaZulu Natal

Appendix F

- Plant Rescue and Translocation Management Plan for the TNPA Bulk Waterline, Richards Bay, KwaZulu Natal

Appendix G

- Wetland Assessment Report for the TNPA Bulk Waterline, Richards Bay, KwaZulu Natal

Appendix H

- Standard Operating Procedure Construction Environmental Management Plan 009-TCC-CLO-SUS-11386
- Contractor Environmental and Sustainability Specification Guidelines TRN-IMS-GRP-GDL-014.4



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 473 Steve Biko Road, Arcadia · PRETORIA
Tel (+ 27 12) 399 9372

DEA Reference: 14/12/16/3/3/1/1701

Enquiries: Portia Makitla

Telephone: 012-399 9411 **E-mail:** pmakitla@environment.gov.za

Mr Mbongeni Sangweni
Transnet National Ports Authority
P O Box 181
RICHARDS BAY
3900

Tel: 035 905 4654

E-mail: mbongeni.sangweni@transnet.net

PER E-MAIL / MAIL

Dear Mr Sangweni

ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998: GN R. 982/983/985: THE REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU-NATAL PROVINCE

With reference to the above application, please be advised that the Department has decided to grant authorisation. The Environmental Authorisation (EA) and reasons for the decision are attached herewith.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 14 (fourteen) days of the date of the EA, of the Department's decision in respect of your application as well as the fact that an appeal may be lodged against the decision in terms of the National Appeals Regulations, and the provisions regarding the submission of appeals as contained in the Regulations.

Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

Mr Z Hassam, Director: Appeals and Legal Review of this Department at the below mentioned addresses.

By email: appealsdirector@environment.gov.za;

By hand: Environment House
473 Steve Biko,
Arcadia,
Pretoria,

MS

By post: Private Bag X447,
Pretoria,
0001

Please note that in terms of Section 43(7) of the National Environmental Management Act, 1998, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appealsdirector@environment.gov.za.

Yours faithfully


Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Date: 10/05/2017

CC:	Mr. Keagan Kruger	ACER Africa	Tel: 035 3402715	Email: Keagan.kruger@acerafrica.co.za
	Muzi Mdamba	KZNDEDEA	Tel: 035 780 6844	Email: mdambam@kznded.gov.za

M. S



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Environmental Authorisation

In terms of regulation 25 of the Environmental Impact Assessment Regulations, 2014

Replacement of critical pipe sections within the Port of Richards Bay

uThungulu District Municipality

Authorisation register number:	<i>14/12/16/3/3/1/1701</i>
Last amended:	<i>First issue</i>
Holder of authorisation:	<i>Transnet National Ports Authority</i>
Location of activity:	<i>KWAZULU NATAL PROVINCE: Within City of uMhlathuze</i>

This environmental authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

Decision

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this environmental authorisation, that the applicant should be authorised to undertake the activities specified below.

Non-compliance with a condition of this environmental authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the EIA Regulations, 2014.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

Activities authorised

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No.107 of 1998) and the Environmental Impact Assessment Regulations, 2014 the Department hereby authorises –

TRANSNET NATIONAL PORTS AUTHORITY

(hereafter referred to as the **holder of the authorisation**)

with the following contact details –

Mr Mbongeni Sangweni
Transnet National Ports Authority
P O BOX 181
RICHARDS BAY
3900

Tel: 035 905 4654

Cell: 083 447 9244

E-mail: mbongeni.sangweni@transnet.net

to undertake the following activities (hereafter referred to as "the activity") indicated in Listing Notice 1 & 3 (GN R. 983 & 985):

Listed activities	Activity/Project description
<u>GN R.983 Item 9:</u> <i>The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water-</i> <i>(i) with an internal diameter of 0,36 metres or more; excluding where-</i> <i>(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or</i> <i>(b) where such development will occur within an urban area.</i>	The construction of a total length of 3,934 meters of pipe with an internal diameter of 560 mm
<u>GN R.983 Item 19:</u> <i>The infilling or deposition of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from;</i> <i>(i) A watercourse;</i> <i>but excluding where such infilling, depositing , dredging, excavation, removal or moving-</i> <i>(a) will occur behind a development setback;</i> <i>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or</i> <i>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</i>	The project is within an estuarine functional zone and within 100 m inland of the high water mark of the sea and construction required for the replacement the critical pipe sections will result in the moving of more than 5 cubic meters of soil, sand, shells, shell grit, pebbles or rock.
<u>GN R 983 Item 45:</u> <i>The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure-</i> <i>(i) has an internal diameter of 0,36 metres or more; or</i> <i>(ii) has a peak throughput of 120 litres per second or more; and</i> <i>(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more; excluding where such expansion-</i>	The existing Asbestos Cement pipeline is 450 mm; the proposed project aims to replace these with a 560 mm HDPE pipe. This constitutes a throughput capacity increase of more than 10 %.

Listed activities	Activity/Project description
(aa) relates to transportation of water or storm water within a road reserve; or (bb) will occur within an urban area.	
<u>GN R.985 Item 12:</u> The clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purpose undertaken with accordance with maintenance management Plan (a) In Kwazulu-Natal iv Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004. v Critical biodiversity areas as identified in systematic plans adopted by the competent authority or in bioregional plans.	The project is within an estuarine functional zone and 100 m inland of the high water mark of the sea and the construction required for the replacement the critical pipe sections will result in the clearance of more than 300 square meters of indigenous vegetation.
<u>GN R.985 Item 14:</u> The development of (xii) Infrastructure or structures with a physical footprint of 10 square meters or more: (d) In Kwazulu-Natal (vii) Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	The replacement of the critical pipe sections will have a development footprint exceeding 10 square meters, and will take place within an estuarine functional zone.

as described in the Basic Assessment Report (BAR) dated January 2017 at:

Farm Name: Portion 21 & 45 of Erf 5333

Portion 0 & 1 of Erf 16230

21 Digit SG code:

N	0	G	V	0	4	2	1	0	0	0	0	5	3	3	3	0	0	0	2	1
N	0	G	V	0	4	2	1	0	0	0	0	5	3	3	3	0	0	0	4	5
N	0	G	V	0	4	2	1	0	0	0	1	6	2	3	0	0	0	0	0	0
N	0	G	V	0	4	2	1	0	0	0	1	6	2	3	0	0	0	0	0	1

Railway alignment	Latitude	Longitude
Municipal Feed to Viaduct	28°46'52.46"S	32°01'36.12"E
	28°47'29.10"S	32°01'25.38"E
	28°48'04.55"S	32°01'05.08"E
Level Crossing to Tidal Gates	28°48'53.45"S	32°01'41.60"E
	28°49'13.86"S	32°01'54.31"E
	28°49'34.14"S	32°02'07.36"E

- for the replacement of the critical pipe sections within the Port of Richards Bay, Kwazulu-Natal Province, hereafter referred to as "the property".

The proposed project involve the replacement of the following sections of the existing AC pipe with a new 560 mm High Density Polyethylene (HDPE) pipe:

Municipal Feed – Manzanyama Viaduct (2,534 m)

The existing main potable water feed to the Port of Richards Bay from the Municipal supply is in need of an upgrade due to the existing pipes nearing the end of their design life. TNPA has divided the upgrade from the Municipal Feed to the Manzanyama Viaduct into three sections based on the existing dimensions and structures located along the pipeline.

Section 1 – Proposed upgrade over the Manzanyama Viaduct Bridge

It is proposed that the existing 450 mm AC pipe be replaced with a 560 mm HDPE pipe by demolishing the existing pipe supports and installing new stainless steel pipe supports. To ensure continued water supply to the Port during construction, a temporary 250 mm HDPE pipe will be installed parallel to the new line in the emergency lane.

Section 2 – Proposed upgrade underground and railway line crossing

The existing 450 mm AC pipe will be abandoned and replaced by a 560mm HDPE pipe. The new pipe will be installed parallel to the existing pipe at an offset between 2 and 10 m. The pipe will be installed using the standard trench laying method and the micro tunnelling method for the railway line. The new pipe will ultimately terminate at a jacking pit where it will connect to a new 560mm HDPE pipe.

Section 3 – Proposed upgrade Bayvue Rail Yard crossing

It is proposed to construct a new 560mm HDPE pipe parallel to the existing pipe using the micro tunnelling process. The existing 355mm HDPE pipe will be cleaned and used as a sleeve for cables.

Level Crossing – Tidal Gates (1,400 m)

This will cover the first phase of upgrading this section of pipeline starting at the tie-in point at the Tidal Gates and running north-west for a length of 1,400 m to past the Railway Level Crossing.

Conditions of this Environmental Authorisation

Scope of authorisation

1. The preferred Alternative A, with the section of pipeline between the tidal gates and the level crossing being above ground on concrete plinths between the tidal gates and the level crossing is approved as per the geographic coordinates above.
2. Authorisation of the activity is subject to the conditions contained in this environmental authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.
3. The holder of the authorisation is responsible for ensuring compliance with the conditions contained in this environmental authorisation. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee, consultant or person rendering a service to the holder of the authorisation.
4. The activities authorised must only be carried out at the property as described above.
5. Any changes to, or deviations from, the project description set out in this environmental authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further environmental authorisation in terms of the regulations.
6. The holder of an environmental authorisation must apply for an amendment of the environmental authorisation with the competent authority for any alienation, transfer or change of ownership rights in the property on which the activity is to take place.
7. This activity must commence within a period of five (5) years from the date of issue of this environmental authorisation. If commencement of the activity does not occur within that period, the

authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.

8. Commencement with one activity listed in terms of this environmental authorisation constitutes commencement of all authorised activities.

Notification of authorisation and right to appeal

9. The holder of the authorisation must notify every registered interested and affected party, in writing and within 14 (fourteen) calendar days of the date of this environmental authorisation, of the decision to authorise the activity.
10. The notification referred to must –
- 10.1. specify the date on which the authorisation was issued;
 - 10.2. inform the interested and affected party of the appeal procedure provided for in the National Appeal Regulations, 2014;
 - 10.3. advise the interested and affected party that a copy of the authorisation will be furnished on request; and
 - 10.4. give the reasons of the competent authority for the decision.
11. The holder of the authorisation must publish a notice –
- 11.1. informing interested and affected parties of the decision;
 - 11.2. informing interested and affected parties where the decision can be accessed; and
 - 11.3. drawing the attention of interested and affected parties to the fact that an appeal may be lodged against this decision in terms of the National Appeal Regulations, 2014.

Commencement of the activity

12. The authorised activity shall not commence until the period for the submission of appeals has lapsed as per the National Appeal Regulations, 2014 and no appeal has been lodged against the decision. In terms of section 43(7), an appeal under section 43 of the National Environmental Management Act, 1998 will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged you may not commence with the activity until such time that the appeal has been finalised.

Management of the activity

13. The Environmental Management Programme (EMPr) submitted as part of the Application for EA is hereby approved. This EMPr must be implemented and strictly adhered to.

Frequency and process of updating the EMPr

14. The EMPr must be updated where the findings of the environmental audit reports, contemplated in Condition 23 below, indicate insufficient mitigation of environmental impacts associated with the undertaking of the activity, or insufficient levels of compliance with the environmental authorisation or EMPr.
15. The updated EMPr must contain recommendations to rectify the shortcomings identified in the environmental audit report.
16. The updated EMPr must be submitted to the Department for approval together with the environmental audit report, as per Regulation 34 of GN R. 982. The updated EMPr must have been subjected to a public participation process, which process has been agreed to by the Department, prior to submission of the updated EMPr to the Department for approval.
17. In assessing whether to grant approval of an EMPr which has been updated as a result of an audit, the Department will consider the processes prescribed in Regulation 35 of GN R.982. Prior to approving an amended EMPr, the Department may request such amendments to the EMPr as it deems appropriate to ensure that the EMPr sufficiently provides for avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
18. The holder of the authorisation may apply for an amendment of an EMPr, if such amendment is required before an audit is required. The holder must notify the Department of its intention to amend the EMPr at least 60 days prior to submitting such amendments to the EMPr to the Department for approval. In assessing whether to grant such approval or not, the Department will consider the processes and requirements prescribed in Regulation 37 of GN R. 982.

Monitoring

19. The holder of the authorisation must appoint an experienced independent Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to in this

environmental authorisation are implemented and to ensure compliance with the provisions of the approved EMPr.

- 19.1. The ECO must be appointed before commencement of any authorised activities.
- 19.2. Once appointed, the name and contact details of the ECO must be submitted to the *Director: Compliance Monitoring* of the Department at Directorcompliance@environment.gov.za.
- 19.3. The ECO must keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.
- 19.4. The ECO must remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.

Recording and reporting to the Department

20. All documentation e.g. audit/monitoring/compliance reports and notifications, required to be submitted to the Department in terms of this environmental authorisation, must be submitted to the *Director: Compliance Monitoring* of the Department at Directorcompliance@environment.gov.za.
21. The holder of the environmental authorisation must, for the period during which the environmental authorisation and EMPr remain valid, ensure that project compliance with the conditions of the environmental authorisation and the EMPr are audited, and that the audit reports are submitted to the *Director: Compliance Monitoring* of the Department at Directorcompliance@environment.gov.za.
22. The frequency of auditing and of submission of the environmental audit reports must be as per the frequency indicated in the EMPr, taking into account the processes for such auditing as prescribed in Regulation 34 of GN R. 982.
23. The holder of the authorisation must, in addition, submit an environmental audit reports to the Department within 30 days of completion of the construction phase (i.e. within 30 days of site handover) and a final environmental audit report within 30 days of completion of rehabilitation activities.
24. The environmental audit reports must be compiled in accordance with appendix 7 of the EIA Regulations, 2014 and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the approved EMPr.

25. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

Notification to authorities

26. A written notification of commencement must be given to the Department no later than fourteen (14) days prior to the commencement of the activity. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence, as well as a reference number.

Operation of the activity

27. A written notification of operation must be given to the Department no later than fourteen (14) days prior to the commencement of the activity operational phase.

Site closure and decommissioning

28. Should the activity ever cease or become redundant, the holder of the authorisation must undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.

Specific conditions

29. An ecologist must be appointed to conduct a search and rescue operation of the entire development footprint to identify Species of Conservation Concern (SCC) and protected species and identify areas suitable for relocation and translocation.
30. A permit must be obtained from the relevant nature conservation agency for the removal or destruction of indigenous, protected or endangered plant or animal species.
31. Only indigenous plants of the area must be utilised for rehabilitation purposes
32. The holder of the authorisation is required to inform the Department of Agriculture, Forestry and Fisheries (DAFF) and this Department should the removal of protected species, medicinal plants and "data deficient" plant species be required.
33. The construction servitude must have minimal impact on restricted/sensitive areas, in particular the section adjacent to the Mhlathuze River and Richards Bay Nature Reserve, where a maximum width of 6 m must be applied.

34. Construction activities must take place within or as near to the existing pipe servitude as possible to avoid creating new disturbances, especially along the Berm Road adjacent to the Richards Bay Game Reserve.
35. The removal of alien invasive species along the construction footprint must occur in conjunction with the re-establishment of indigenous vegetation, including indigenous species identified during vegetation assessment.
36. An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal.
37. No effluent must be discharged into any storm water drain or furrow, whether by commission or by omission.

General

38. A copy of this environmental authorisation, the audit and compliance monitoring reports, and the approved EMP, must be made available for inspection and copying-
 - 38.1. at the site of the authorised activity;
 - 38.2. to anyone on request; and
 - 38.3. where the holder of the environmental authorisation has a website, on such publicly accessible website.
39. National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the holder of the authorisation or his/her successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the holder of the authorisation with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Date of environmental authorisation: 10/05/2017


Mr Sabelo Malaza

Chief Director: Integrated Environmental Authorisations

Department of Environmental Affairs

Annexure 1: Reasons for Decision

1. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) The information contained in the BAR dated January 2017;
- b) The comments received from interested and affected parties as included in the BAR dated January 2017;
- c) Mitigation measures as proposed in the BAR dated January 2017 and the EMPr;
- d) The information contained in the specialist studies contained within Appendix D of the BAR; and
- e) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No.107 of 1998).

2. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

- a) The findings of all the specialist studies conducted and their recommended mitigation measures.
- b) The proposed project will ensure that the Port of Richards Bay can expand and diversify from their current services and products and provide a reliable source of potable water to accommodate the day to day operational activities of TNPA and other Port stakeholders.
- c) The BAR dated January 2017 identified all legislation and guidelines that have been considered in the preparation of the BAR dated January 2017.
- d) The methodology used in assessing the potential impacts identified in the BAR dated January 2017 and the specialist studies have been adequately indicated.
- e) A sufficient public participation process was undertaken and the applicant has satisfied the minimum requirements as prescribed in the EIA Regulations, 2014 for public involvement.

3. Findings

After consideration of the information and factors listed above, the Department made the following findings -

- a) The identification and assessment of impacts are detailed in the BAR dated January 2017 and sufficient assessment of the key identified issues and impacts have been completed.
- b) The procedure followed for impact assessment is adequate for the decision-making process.
- c) The proposed mitigation of impacts identified and assessed adequately curtails the identified impacts.
- d) The information contained in the BAR dated January 2017 is accurate and credible.
- e) EMPr measures for the pre-construction, construction and rehabilitation phases of the development were proposed and included in the BAR and will be implemented to manage the identified environmental impacts during the construction phase.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the authorised activities will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the authorised activities can be mitigated to acceptable levels. The environmental authorisation is accordingly granted.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 PRETORIA 0001 Environment House 473 Steve Biko, Arcadia PRETORIA
Tel (012) 399 9372

DEA Reference: 14/12/16/3/3/1/1701/AM1

Enquiries: Ms Thabile Sangweni

Telephone: (012) 399 9409 E-mail: TSangweni@environment.gov.za

Mr Mbongeni Sangweni
Transnet National Ports Authority
PO Box 181
RICHARDS BAY
3900

Telephone Number: (035) 905 4654
Email Address: Mbongeni.Sangweni@transnet.net

PER EMAIL / MAIL

Dear Mr Sangweni

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 10 MAY 2017 FOR THE REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU-NATAL PROVINCE

The Environmental Authorisation (EA) issued for the abovementioned application by this Department on 10 May 2017, your application for amendment of the EA received by the Department on 19 February 2018 and the acknowledgement letter dated 07 March 2018, refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment Regulations, 2014 as amended, has decided to amend the EA dated 10 May 2017, as follows:

Amendment 1: Amendment to remove Condition 1 of the EA:

The following condition is hereby removed from the EA:

"The preferred Alternative A, with the section of pipeline between the tidal gates and the level crossing being above ground on concrete plinths between the tidal gates and the level crossing is approved as per the geographic coordinates above."

The applicant applied to remove Condition 1 of the EA as the assessment conducted during the basic assessment phase had focused on an underground pipeline which was assessed and selected as the preferred alternative. However, comments received from Ezemvelo KZN Wildlife (EKZNW) had recommended that the section of pipeline between the tidal gates and the level crossing be constructed above ground on concrete plinths between the tidal gates and the level crossing due to concerns of the impacts on the adjacent estuarine sanctuary area. This recommendation was subsequently authorised in the EA (Condition 1).

I CERTIFY THAT
THIS DOCUMENT, WHICH I
CERTIFY THAT I HAVE
HAB, NOT MADE TO THE ORIGINAL
HABITAT/ECOSYSTEMS
71203249
MUA NAME
MS

This proposed amendment letter must be read in conjunction with the EA dated 10 May 2017.

Your attention is drawn to Chapter 2 of Government Notice No. R.993, which prescribes the appeal procedure to be followed. Kindly include a copy of this document with the letter of notification to interested and affected parties.

Appeals must be submitted in writing in the prescribed form to:

By email: appealsdirector@environment.gov.za;

By post: Private Bag X447,
Pretoria,
0001;

Please note that in terms of section 43(7) of the National Environmental Management Act, 1998 as amended, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the

in 43(7) of the National Environmental Management Act, 1998
 end the environmental authorisation or any provision or condition
 appeal is lodged, you may not commence with the activity until
 m and for guidance on the submission of appeals, please visit

2

0.5

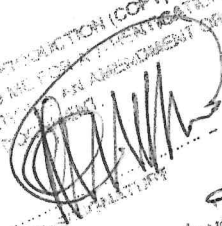
Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appealsdirector@environment.gov.za.

Yours faithfully


Mr Sabelo Malaza
Chief Director, Integrated Environmental Authorisations
Department of Environmental Affairs
Date: 16/03/2018



I HEREBY CERTIFY THAT THIS IS THE TRUE REPRODUCTION (COPI) OF THE DISC(S) DOCUMENT, WHICH WAS HANDLED TO ME FOR THE REPRODUCTION. I FURTHER CERTIFY THAT I HAVE MY OWN COPY OF THE ORIGINAL DOCUMENT, AND THAT I HAVE NOT MADE ANY CHANGES TO THE ORIGINAL DOCUMENT.


71/203219
Sabelo Malaza
Chief Director, Integrated Environmental Authorisations

FORCE MAJEURE
3rd of March

01.1



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA 0001· Environment House 473 Steve Biko Road, Arcadia· PRETORIA

DFFE Reference: 14/12/16/3/3/1/1701/AM2

Enquiries: Ms Zamalanga Langa

Telephone: (012) 399 9389 **E-mail:** ZLANGA@dffe.gov.za

Mr Sibusiso Potwana
Transnet National Port Authority
Private Bag 181
RICHARDS BAY
3900

Telephone Number: 082 323 8450

Email address: Sibusiso.Potwana@transnet.net

PER EMAIL / MAIL

Dear Mr Potwana

AMENDMENT TO ENVIRONMENTAL AUTHORISATION ISSUED ON 10 MAY 2017 FOR THE REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU NATAL PROVINCE

The Environmental Authorisation (EA) issued for the abovementioned application by this Department on 10 May 2017, the amendment issued on 16 March 2018, your application for amendment of the EA received by the Department on 28 March 2022 and the acknowledgement email dated 07 April 2022, refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment Regulations, 2014 as amended, has decided to amend the EA dated 10 May 2017 as amended, as follows

Amendment 1: Amendment to the contact person of the holder of EA:

From:

Mr Mbongeni Sangweni
Transnet National Port Authority
PO box 181
RICHARDS BAY
3900

Tel: 035 905 4654

Cell: 083 447 9244

Email: mbongeni.sangweni@transnet.net

To:

Mr Sibusiso Potwana
Transnet National Port Authority
Private Bag 181
RICHARDS BAY
3900

Tel: 035 905 4541
Cell: 082 323 8450
Email: Sibusiso.Potwana@transnet.net

Reason for amendment:

Due to changes in the organisation, Mr. Mbongeni Sangweni is no longer the Project Manager responsible for this project and Mr. Sibusiso Potwana has been appointed as the new Project Manager responsible for this project and bears the responsibility of ensuring that this project will be executed in a manner that is fully compliant to the conditions of the EA.

Amendment 2: Extension of validity period of the EA by additional two (2) years from 10 May 2022 to 10 May 2024

Condition 7 of the EA dated 10 May 2017 as amended, is thus amended as follows:

"The activity must commence within a period of seven (7) years from the date of issue of this authorisation (i.e. the authorisation lapses on 10 May 2024). If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken".

Reason for amendment:

Due to termination of the contract of the contractor in March 2021, the project was placed on hold as the contractor was having difficulties in sourcing material. Transnet is in the process of appointing a new contractor and the construction is planned to commence within the 2022/23 financial year.

This proposed amendment letter must be read in conjunction with the EA dated 10 May 2017 as amended.

In terms of the Promotion of Administrative Justice Act, 2000 (Act No 3 of 2000), you are entitled to the right to fair, lawful and reasonable administrative action; and to written reasons for administrative action that affects you negatively. Further your attention is drawn to the provisions of the Protection of Personal Information Act, 2013 (Act no. 4 of 2013) which stipulate that the Department should conduct itself in a responsible manner when collecting, processing, storing and sharing an individual or another entity's personal information by holding the Department accountable should the Department abuse or compromise your personal information in any way.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014, as amended (the EIA Regulations), you are instructed to notify all registered interested and affected parties, in writing and within fourteen (14) days of the date of the EA, of the Department's as well as the provisions regarding the submission of appeals that are contained in the Regulations.

16

Your attention is drawn to Chapter 2 of National Environmental Management Act, 1998 (Act No. 107 of 1998) National Appeal Regulations published under Government Notice R993 in Government Gazette No. 38303 dated 08 December 2014 (National Appeal Regulations, 2014), which prescribes the appeal procedure to be followed. Kindly include a copy of this document (National Appeal Regulations, 2014) with the letter of notification to interested and affected parties in this matter.

Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

The Director: Appeals and Legal Review of this Department at the below mentioned addresses.

By email: appeals@dffe.gov.za;

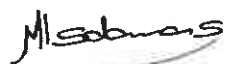
By hand: Environment House
473 Steve Biko,
Arcadia,
Pretoria,
0083; or

By post: Private Bag X447,
Pretoria,
0001;

Please note that in terms of Section 43(7) of the National Environmental Management Act, Act No. 107 of 1998, as amended, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appeals@dffe.gov.za

Yours faithfully



Ms Milicent Solomons
Acting Chief Director: Integrated Environmental Authorisations
Department of Forestry, Fisheries and the Environment
Date: 24/04/2022.



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447 PRETORIA 0001 Environment House · 473 Steve Biko Road, Arcadia· PRETORIA
Tel(+27 12) 388 8000

Enquiries: Devinagie Bendeman Telephone: 012 399 9337 E-mail: vbendeman@ddfa.gov.za

Ms. Milicent Solomons
Director, Prioritized Infrastructure Projects

Dear Mrs Solomons

APPOINTMENT AS ACTING CHIEF DIRECTOR: INTEGRATED ENVIRONMENTAL AUTHORIZATIONS FOR THE PERIOD OF 25 APRIL 2022 UNTIL 31 OCTOBER 2022

I hereby inform you that I have decided to appoint you as the Acting Chief Director: Integrated Environmental Authorizations for the period of 25 April to 31 October 2022 whilst Mr Sabelo Malaza is fulfilling his temporary reassignment function at the Forestry Branch.

All the correspondence and other documents that are usually signed by the Chief Director: Integrated Environmental Authorizations must be signed under Acting Chief Director: Integrated Environmental Authorizations during the above-mentioned period.

Your appointment in the above acting position remains subject to the provisions of the Public Service Act, 1994 (Proclamation No. 103 of 1994), as amended, the Government Employees Pension Fund Act, 1996 (Proclamation No. 21 of 1996), the regulations promulgated under these Acts and relevant circulars.

In the execution of your duties and the exercising of the powers delegated to you, you will furthermore be subjected to the provisions of the Public Finance Management Act, compliance with the Promotion of Access to Information Act, Promotion of Administrative Justice Act, the Minimum Information Security Standard, Departmental Policies and other applicable legislations with the Republic of South Africa. You are therefore advised to make yourself familiar with the provisions of these legislations and policies and the amendments thereof. (Copies of Departmental policies can be obtained from the Human Resource Office).

Please accept my heartfelt gratitude for all your assistance on behalf of the department.

Yours sincerely

Ms Devinagie Bendeman
Deputy Director-General: RCSM (Regulatory Compliance and
Sector Monitoring)

Date 20 April 2022

ACKNOWLEDGEMENT

I ACCEPT / ~~DO NOT ACCEPT~~
appointment as Acting Chief
Director: Integrated Environmental
Authorizations

Signed:

Date:

20/04/2022



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA 0001· Environment House 473 Steve Biko Road, Arcadia· PRETORIA

DFFE Reference: 14/12/16/3/3/1/1701/AM3

Enquiries: Ms. Matlhodi Mogorosi

Telephone: (012) 399 9388 **E-mail:** MMogorosi@dfpe.gov.za

Ms Nosiselo Biyana
Transnet National Ports Authority (TNPA)
PO Box 181
RICHARDS BAY
3900

Telephone Number: (011) 308 4523
Email Address: Nosiselo.Biyana@transnet.net

PER EMAIL / MAIL

Dear Ms Biyana

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 10 MAY 2017 FOR THE REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU-NATAL PROVINCE

The Environmental Authorisation (EA) issued for the abovementioned application by this Department on 10 May 2017, the first and second EA amendments issued by the Department on 16 March 2018 and 26 April 2022, respectively, your application for amendment of the EA received by the Department on 09 February 2024, the acknowledgement thereof on 15 February 2024, and the additional information received by the Department on 19 February 2024, refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment Regulations, 2014 as amended, has decided to amend the EA dated **10 May 2017** as amended, as follows:

Amendment 1: Amendment of the contact person and details of the EA holder:

From:

Mr Sibusiso Potwana
Transnet National Ports Authority (TNPA)
PO Box 181
RICHARDS BAY
3900

Telephone Number: (082) 323 8450
Email Address: Sibusiso.Potwana@transnet.net

MS

To:

Ms. Nosicelo Biyana
Transnet National Ports Authority (TNPA)
PO Box 181
RICHARDS BAY
3900

Telephone Number: (011) 308 4523
Email Address: Nosicelo.Biyana@transnet.net

The reason for the amendment is as follows:

Due to Organisational structural changes and delegations Ms. Nosicelo Biyana is the Executive Manager SHEQ Project Delivery within the Transnet National Ports Authority (TNPA). The SHEQ Executive Manager has been appointed as the new contact person on the project and will be responsible for all TNPA correspondence with the Department of Forestry Fisheries and the Environment.

Amendment 2: Extension of the validity period on page 6 of the EA by an additional three (3) years:

Condition 7 of the EA dated 10 May 2017 is amended as follows:

"7 This activity must commence within a period of ten (10) years from the date of issue of the authorisation (i.e. the EA lapses on 10 May 2027). If commencement of the activity does not occur within that period, the authorisation lapses, and a new application for environmental authorisation must be made in order for the activity to be undertaken."

The reason for the amendment is as follows:

The TNPA (EA holder) is still in the process of appointing a new contractor to complete the project, it is anticipated that the contractor will be appointed and resume the work between August/September 2024.

This proposed amendment letter must be read in conjunction with the EA dated 10 May 2017, as amended.

In terms of the Promotion of Administrative Justice Act, 2000 (Act No 3 of 2000), you are entitled to the right to fair, lawful, and reasonable administrative action; and to written reasons for administrative action that affects you negatively. Further, your attention is drawn to the provisions of the Protection of Personal Information Act, 2013 (Act no. 4 of 2013) which stipulate that the Department should conduct itself in a responsible manner when collecting, processing, storing, and sharing an individual or another entity's personal information by holding the Department accountable should the Department abuse or compromise your personal information in any way.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014, as amended (the EIA Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 14 (fourteen) days of the date of the EA, of the Department's as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) National Appeal Regulations published under Government Notice R993 in Government Gazette No. 38303 dated 08 December 2014 (National Appeal Regulations, 2014), which prescribes the appeal procedure to be followed. Kindly include a copy of this document (National Appeal Regulations, 2014) with the letter of notification to interested and affected parties in this matter.



Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

The Director: Appeals and Legal Review of this Department at the below-mentioned addresses.

By email: appeals@dffe.gov.za ;

By hand: Environment House
473 Steve Biko,
Arcadia,
Pretoria,
0083; or

By post: Private Bag X447,
Pretoria,
0001;

Please note that in terms of Section 43(7) of the National Environmental Management Act, Act No. 107 of 1998, as amended, the lodging of an appeal will suspend the environmental authorisation, or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appeals@dffe.gov.za.

Yours faithfully


Mr. Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Forestry, Fisheries and the Environment
Date: *05/03/2024*

cc:	Ms. Jacolette Adam	Exigent Engineering Consultants cc	E-mail: jacolette@exigent.co.za
	Mr Muzi Mdamba	KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs	E-mail: Muzi.Mdamba@kznedtea.gov.za
	Ms Estel Naidoo	uMhlathuze Local Municipality	E-mail: naidooe@umhlathuze.gov.za

MJS



KWAZULU NATAL PROVINCIAL OPERATIONS

Southern Life Building, 88 Joe Slovo Street, Durban, 4000 ; PO Box 1018, Durban, 4000
Mr. J. Reddy (031) 336 2702
ReddyJ@dws.gov.za 27/2/M12F/4/3/9

The Manager
Transnet National Ports Authority (TNPA)
P.O Box 181
Richards Bay
3900
Attention: Mr M. Sangweni

1. GENERAL AUTHORISATION IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998)(ACT): TRANSNET NATIONAL PORTS AUTHORITY (TNPA): REPLACEMENT OF BULK WATER PIPE

Your request to use water in terms of Section 21(c) and (i) of the National Water Act, 1998 (Act 36 of 1998), associated with the project of Replacement of bulk water pipe sections within the port of Richards bay and located within 500m of Unchanneled Valley Bottom Wetlands.

The Department has evaluated the submitted documents and has confirmed that the intended water uses in terms of Section 21(c) and (i) of the Act fall within the ambit of the General Authorisation, Government Notice No. 509 dated 27 July 2016 as published in Government Gazette 40229. The Department hereby authorises the following water uses under General Authorisation:

2. Water User: Transnet National Ports Authority (TNPA)

3. Water Use(s): Section 21(c) of the Act: Impeding or diverting the flow of water in watercourse

Section 21(i) of the Act: Altering the bed, banks or characteristics of a watercourse

3. List of Properties where Water Uses will occur

1. Portion 21 of Erf 5333
2. Portion 45 of Erf 5333
3. Portion 1 of Erf 16230

4. Water uses taking place

WR No.	Water Uses	Property Description	Landowner	Name of Water Resource	Quaternary Catchment	Purpose	Dimensions (m)	Coordinates
Wetlands								
1	S21(c) & (i)	Refer to above for the full list of properties	Transnet	Unchannelled Valley Bottom Wetland (HGM1)	W12F	Replacement of bulk water pipe sections within the port of Richards bay	Length: 2185m Width: 0.56m Height: 0.56m	Start: 28°46'52.45"S End: 32°1'36.12"E 32°01'09.28"E
2	S21(c) & (i)	Refer to above for the full list of properties	Transnet	Unchannelled Valley Bottom Wetland (HGM2)	W12F	Replacement of bulk water pipe sections within the port of Richards bay	Length: 1193m Width: 0.56m Height: 0.56m	Start: 28°47'30.37"S End: 32°1'24.43"E 32°1'5.08"E

You are required to fully comply with the conditions of a forementioned Government Notice (attached for your convenience).

Please take note that if you do not comply with the conditions of the General Authorisation, your Section (c & i) water uses will be regarded as unlawful. You may subsequently be required to apply for a water use licence in terms of the National Water Act, (Act 36 of 1998), however the issuing of such a licence cannot be guaranteed. Furthermore, failure to comply with the conditions of the General Authorisations constitutes an offence and is subject to a penalty as set out in Section 151(2) of the Act.

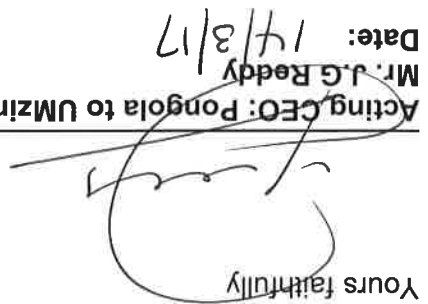
Your attention is further drawn to the following:

1. This Authorisation is valid for a period of twenty (20) years from the date of issuance.
2. The conditions of this authorisations shall be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of this activities and the authorised party shall take such measures that are necessary to bind such persons to these conditions.
3. The proposed water use activities have been Generally Authorised because the ecological risks involved are minimal.

4. The responsible person for these activities shall immediately inform the Acting CEO of Pongola-uMzimkulu Proto Catchment Management Agency of any change in the name, address and/ or premises and legal status.
5. The Department accepts no liability of any damage, loss or inconvenience of whatever nature, suffered as a result of the authorised activities.
6. This Authorisation shall not be construed as exempting the water user from compliance with any other applicable Act, Ordinance, Regulation or By-law.

This Department reserves the right to request additional measures that could be taken, which may include an application for a water use licence, should the activity be deemed to cause a significant impact to the environment.

Yours faithfully


Mr. J.G. Reddy
Date: 14/3/17

Acting CEO: Pongola to UMzimkulu Proto-CMA



DEPARTMENT OF WATER AND SANITATION

NOTICE 509 OF 2016

GENERAL AUTHORISATION IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) FOR WATER USES AS DEFINED IN SECTION 21(C) OR SECTION 21(I)

I, Anil Singh, in my capacity as the acting Director-General of the Department of Water and Sanitation, and duly authorized, do hereby issue a Notice to all persons or any category of persons to use water in terms of section 39(1) of the National Water Act, read with section 21(c) or section 21(i).



Mr Anil Singh

DIRECTOR-GENERAL (Acting)

DATE: 27/7/16

SCHEDULE

**IMPEDING OR DIVERTING THE FLOW OF WATER IN A WATERCOURSE (SECTION 21(C)),
OR ALTERING THE BED, BANKS, COURSE OR CHARACTERISTICS OF A
WATERCOURSE (SECTION 21(I)) OF THE NATIONAL WATER ACT (ACT NO. 36 OF 1998).**

Purpose of Authorisation

1. This General Authorisation replaces the need for a water user to apply for a licence in terms of the National Water Act (Act 36 of 1998) ("the Act") provided that the water use is within the limits and conditions of this General Authorisation.

Definitions

2. In this Notice any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned, with specific emphasis on the definitions for '**aquifer**', '**borehole**', '**estuary**', '**instream habitat**', '**person**', '**pollution**', '**resource quality**', '**responsible authority**', '**riparian habitat**', '**waste**', '**watercourse**', '**water resource**', and '**wetland**', unless the context indicates otherwise.

"characteristics of a watercourse" means the resource quality of a watercourse within the extent of a watercourse;

“construction” means any works undertaken to initiate or establish impeding or diverting or modifying resource quality, for the first time, including vegetation removal, site preparation and ground leveling;

“department” means the Department of Water and Sanitation (DWS);

“delineation of a wetland and riparian habitat” means delineation of wetlands and riparian habitat according to the methodology as contained in the Department of Water Affairs and Forestry, 2005 publication: A Practical Field Procedure for Delineation of Wetlands and Riparian Areas;

“diverting” means to, in any manner, cause the instream flow of water to be rerouted temporarily or permanently;

“emergency incident” means an unexpected sudden occurrence leading to a potential or serious danger to the public;

“emergency situation” means any emergency that developed that require immediate intervention for continuation of existing essential service delivery;

“extent of a watercourse” means:

- (a) The outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; and
- (b) Wetlands and pans: the delineated boundary (outer temporary zone) of any wetland or pan.

“flow-altering” means to, in any manner, alter the instream flow route, speed or quantity of water temporarily or permanently;

“impeding” means to, in any manner, hinder or obstruct the instream flow of water temporarily or permanently, but excludes the damming of flow so as to cause storage of water;

“maintenance” means any works undertaken to repair or partially replace or clean an existing structure so as to keep it in working order and so as to prevent it from having detrimental impacts on a watercourse, which works may result in the short-term (less than 30 days) disturbance or impeding or diverting or alteration of the flow of water in a watercourse; but will not result in changes to the design or size of the structure that will alter the function of the structure, and/or the hydrological functionality or integrity of the watercourse;

“pans” means any depression collecting water or that is inward draining or a flow through system with flow contributions from surface water, groundwater or interflow or combinations thereof;

“regulated area of a watercourse” for section 21(c) or (i) of the Act water uses in terms of this Notice means:

(a) The outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam;

(b) In the absence of a determined 1 in 100 year flood line or riparian area the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (*subject to compliance to section 144 of the Act*); or

(c) A 500 m radius from the delineated boundary (extent) of any wetland or pan.

“rehabilitation” means the process of reinstating natural ecological driving forces within part or the whole of a degraded watercourse to recover former or desired ecosystem structure, function, biotic composition and associated ecosystem services;

“reportable incident” means any incident, including leakages or spillages, at or near any existing structure, or that occurs during works performed at any structure, that has the potential to have a detrimental effect on surface- and/or groundwater resources, including potentially harmful effects to humans, any aquatic biota, or the resource quality, or that can cause potential damage to property, as well as any incident that can lead to or cause any contravention of any of the provisions of this Notice.

“resource quality” means the resource quality as contemplated in section 1 of the Act;

“responsible authority” means the responsible authority as contemplated in section 1 of the Act;

“river management plan” means any river management plan developed for the purposes of river or storm water management in any municipal/metropolitan area or described river section, river reach, entire river or sub quaternary catchment that considers the river in a catchment context and as approved by the Department;

“the Act” means the National Water Act, 1998 (Act No. 36 of 1998);

“water user” means any person who intends to use water in terms of section 21(c) or (i) of the Act and has the responsibility to comply with the provisions of this General Authorisation.

Exclusion from this General Authorisation

3. This General Authorisation does not apply—

(a) to the use of water in terms of section 21(c) or (i) of the Act for the rehabilitation of a wetland as contemplated in General Authorisation 1198 published in Government Gazette 32805 dated 18 December 2009,

(b) to the use of water in terms of section 21(c) or (i) of the Act within the regulated area of a watercourse where the Risk Class is Medium or High as determined by the Risk Matrix (**Appendix A**). This Risk Matrix must be completed by a suitably qualified SACNASP professional member;

(c) in instances where an application must be made for a water use license for the authorisation of any other water use as defined in section 21 of the Act that may be associated with a new activity;

(d) where storage of water results from the impeding or diverting of flow or altering the bed, banks, course or characteristics of a watercourse; and

(e) to any water use in terms of section 21(c) or (i) of the Act associated with construction, installation or maintenance of any sewerage pipelines, pipelines carrying hazardous materials and to raw water and wastewater treatment works.

Duration of General Authorisation

4. This General Authorisation is valid from the date of publication and remains effective for a period of 20 (twenty) years unless—

(a) it is replaced or amended by another general authorisation; or

(b) the period is extended for a further period by General Authorisation in the Gazette.

Area of applicability of General Authorisation

5. This General Authorisation applies throughout the Republic of South Africa to the use of water in terms of section 21(c) or (i) of the Act within the regulated area of a watercourse as defined in this General Authorisation.

Exercising water use activities in terms of section 21(c) or (i) of the Act

6. (1) A person who –
- (a) owns or lawfully occupies property registered in the Deeds office as at the date of this General Authorisation;
 - (b) lawfully occupies or uses land that is not registered or surveyed; or
 - (c) lawfully has access to land on which the use of water takes place;
- may, on that property or land –
- (i) exercise the water use activities in terms of section 21(c) or (i) of the Act as set out in **Appendix D1** subject to the conditions of this authorisation;
 - (ii) use water in terms of section 21(c) or (i) of the Act if it has a low risk class as determined through low risk class as determined through the Risk Matrix (**Appendix A**);
 - (iii) do maintenance work associated with their existing lawful water use in terms section 21(c) or (i) of the Act that has a LOW risk class as determined through the Risk Matrix (**Appendix A**);
 - (iv) conduct river and storm water management activities as contained in a river management plan (**Appendix B**);
 - (v) conduct rehabilitation of wetlands (read together with Notice 1198 published in Government Gazette 32805 dated 18 December 2009) or rivers where such rehabilitation activities has a LOW risk class as determined through the Risk Matrix (**Appendix A**); or

(vi) conduct emergency work arising from an emergency situation or incident associated with the persons' existing lawful water use, provided that all work is executed and reported in the manner prescribed in the Emergency Protocol (**Appendix C**).

(2) All State Owned Companies (SOC's), and other institutions specified in **Appendix D2** having lawful access to that property or land may on that property use water in terms of section 21(c) or (i) of the Act as specified under each of the relevant SOC's and other institution (**Appendix D2**).

(3) Any water user who used water in terms of Government Notice 1199 published in Government Gazette 32805 dated 18 December 2009 may, subject to the provisions of this General Authorisation, continue with such water use subject to the conditions of this General Authorisation.

Assessment of risk and mitigation factors

7. It is required that the following documents and associated spread sheets be used during the assessment of risk and mitigation of risks:

(a) A Practical Field Procedure for Delineation of Wetlands and Riparian Area (2005) which is available on the Department's website <http://www.dws.gov.za>, under water use authorization in terms of section 21 (c) or (i) of the Act;

(b) **Appendix A** (Excel Spreadsheet) and information regarding the method used in **Appendix A** is contained in the Department of Water and Sanitation 2015 publication: Section 21(c) and (i) water use Risk Assessment Protocol, which is available on the Department's website <http://www.dws.gov.za>, under section 21(c) and (i) water use authorization.

(c) Guideline: Assessment of activities/developments affecting wetlands, which is available on the Department's website <http://www.dws.gov.za>, under section 21 (c) and (i) water

use authorization.

(d) Guideline for the determination of buffer zones for rivers, wetlands and estuaries, which is available on the Department's website <http://www.dws.gov.za>, under water use authorization in terms of section 21 (c) and (i) of the Act.

Assistance to people with special needs

8. The necessary assistance will be given to people with:

- (a) Illiteracy;
- (b) a disability; or
- (c) any other disadvantage including historically disadvantaged individuals;

who cannot, but desire, to comply with this General Authorisation.

Conditions for impeding or diverting the flow of water or altering the bed, banks, course or characteristics of a watercourse

9. (1) The water user must ensure that:

- (a) impeding or diverting the flow or altering the bed, banks, course or characteristics of a watercourse do not detrimentally affect other water users, property, health and safety of the general public, or the resource quality;
- (b) the existing hydraulic, hydrologic, geomorphic and ecological functions of the watercourse in the vicinity of the structure is maintained or improved upon;
- (c) a full financial provision for the implementation of the management measures prescribed in this General Authorisation, including an annual financial provision for any future maintenance, monitoring, rehabilitation, or restoration works, as may be applicable; and

(d) upon written request of the responsible authority, they implement any additional management measures or monitoring programmes that may be reasonably necessary to determine potential impacts on the water resource or management measures to address such impacts.

(2) Prior to the carrying out of any works, the water user must ensure that all persons entering on-site, including contractors and casual labourers, are made fully aware of the conditions and related management measures specified in this General Authorisation.

(3) The water user must ensure that –

(a) any construction camp, storage, washing and maintenance of equipment, storage of construction materials, or chemicals, as well as any sanitation and waste management facilities –

(i) is located outside the 1 in 100 year flood line or riparian habitat of a river, spring, lake, dam or outside any drainage feeding any wetland or pan, and

(ii) is removed within 30 days after the completion of any works.

(b) The water user must ensure that the selection of a site for establishing any impeding or diverting the flow or altering the bed, banks, course or characteristics of a watercourse works:

(i) is not located on a bend in the watercourse;

(ii) avoid high gradient areas, unstable slopes, actively eroding banks, interflow zones, springs, and seeps;

(iii) avoid or minimise realignment of the course of the watercourse;

(iv) minimise the footprint of the alteration, as well as the construction footprint so as to minimise the effect on the watercourse.

(c) The water user must ensure that a maximum impact footprint around the works is established, clearly demarcated, that no vegetation is cleared or damaged beyond this

demarcation, and that equipment and machinery is only operated within the delineated impact footprint.

(d) The water user must ensure that measures are implemented to minimise the duration of disturbance and the footprint of the disturbance of the beds and banks of the watercourse.

(e) The water user must ensure that measures are implemented to prevent the transfer of biota to a site, which biota is not indigenous to the environment at that site.

(f) The water user must ensure that all works, including emergency alterations or the rectification of incidents, start upstream and proceed in a downstream direction, to ensure minimal impact on the water resource.

(g) The water user must ensure that all material excavated from the bed or banks of the watercourse are stored at a clearly demarcated location until the works have been completed, upon which the excavated material must be backfilled to the locations from where it was taken (i.e. material taken from the bed must be returned to the bed, and material taken from the banks must be returned to the banks).

(h) The water user must ensure that adequate erosion control measures are implemented at and near all alterations, including at existing structures or activities with particular attention to erosion control at steep slopes and drainage lines.

(i) The water user must ensure that alterations or hardened surfaces associated with such structures or works –

- (i) are structurally stable;
- (ii) do not induce sedimentation, erosion or flooding;
- (iii) do not cause a detrimental change in the quantity, velocity, pattern, timing, water level and assurance of flow in a watercourse;
- (iv) do not cause a detrimental change in the quality of water in the watercourse;
- (v) do not cause a detrimental change in the stability or geomorphological structure of the watercourse; and

(vi) does not create nuisance condition, or health or safety hazards.

(j) The water user must ensure that measures are implemented at alterations, including at existing structures or activities, to –

- (i) prevent detrimental changes to the breeding, nesting or feeding patterns of aquatic biota, including migratory species;
- (ii) allow for the free up and downstream movement of aquatic biota, including migratory species; and
- (iii) prevent a decline in the composition and diversity of the indigenous and endemic aquatic biota.

(k) The water user must ensure that no substance or material that can potentially cause pollution of the water resource is being used in works, including for emergency alterations or the rectification of reportable incidents.

(l) The water user must ensure that measures are taken to prevent increased turbidity, sedimentation and detrimental chemical changes to the composition of the water resource as a result of carrying out the works, including for emergency alterations or the rectification of reportable incidents.

(m) The water user must ensure that in-stream water quality is measured on a weekly basis during construction, including for emergency alterations or the rectification of reportable incidents, which measurement must be by taking samples, and by analysing the samples for pH, EC/TDS, TSS/Turbidity, and/or Dissolved Oxygen ("DO") both upstream and downstream from the works.

(n) The water user must ensure that in-stream flow, both upstream and downstream from the works, is measured on an ongoing basis by means of instruments and devices certified by the South African Bureau of Standards ("SABS"), and that such measurement commences at least one week prior to the initiation of the works, including for emergency alterations or the rectification of reportable incidents.

(o) During the carrying out of any works, the water user must take the photographs and video-recordings referred to in paragraph (p) below, on a daily basis, starting

one (1) week before the commencement of any works, including for emergency structures and the rectification of reportable incidents, and continuing for one (1) month after the completion of such works:

(p) The following videos recordings and photographs must be taken as contemplated in paragraph (o) above:

- (i) one or more photographs or video-recordings of the watercourse and its banks at least 20 meters upstream from the structure;
- (ii) one or more photographs or video-recordings of the watercourse and its banks at least 20 meters downstream from the structure; and
- (iii) two or more photographs or video-recordings of the bed and banks at the structure, one of each taken from each opposite bank.

Rehabilitation

10. (1) Rehabilitation as contemplated in paragraph 6(1)(v) above must be conducted in terms of a rehabilitation plan and the implementation of the plan must be overseen by a suitably qualified SACNASP professional member.

(2) Upon completion of the construction activities related to the water use—

- (a) a systematic rehabilitation programme must be undertaken to restore the watercourse to its condition prior to the commencement of the water use;
- (b) all disturbed areas must be re-vegetated with indigenous vegetation suitable to the area; and
- (c) active alien invasive plant control measures must be implemented to prevent invasion by exotic and alien vegetation within the disturbed area.

(3) Following the completion of any works, and during any annual inspection to determine the need for maintenance at any impeding or diverting structure, the water user must ensure that all disturbed areas are —

- (i) cleared of construction debris and other blockages;
- (ii) cleared of alien invasive vegetation;
- (iii) reshaped to free-draining and non-erosive contours, and
- (iv) re-vegetated with indigenous and endemic vegetation suitable to the area.

(4) Upon completion of any works, the water user must ensure that the hydrological functionality and integrity of the watercourse, including its bed, banks, riparian habitat and aquatic biota is equivalent to or exceeds that what existed before commencing with the works.

Monitoring and reporting

11. (1) The water user must ensure the establishment and implementation of monitoring programmes to measure the impacts on the resource quality to ensure water use remains within the parameters of paragraph 8(3)(m) to (o) and results are stored;

(2) Upon the written request of the responsible authority the water user must-

- (a) ensure the establishment of any additional monitoring programmes; and
- (b) appoint a competent person to assess the water use measurements made in

terms of this General Authorisation and submit the findings to the responsible authority for evaluation.

(3) The water user shall monitor and determine present day values for water resource quality before commencement of water uses in terms of section 21(c) or (i) of the Act.

(4) Upon completion of construction activities related to the water use, the water user must undertake an Environmental Audit annually for three years to ensure that the rehabilitation is stable, failing which, remedial action must be taken to rectify any impacts.

(5) Rehabilitation structures must be inspected regularly for the accumulation of debris, blockages, instabilities and erosion with concomitant remedial and maintenance actions.

(6) Copies of all designs, method statements, risk assessments as done according to the Risk Matrix, rehabilitation plans and any other reports required must be made available to the responsible authority when requested to do so.

Budgetary provisions

12. (1) The water user must ensure that there is a sufficient budget to complete, rehabilitate and maintain the water use as set out in this General Authorisation.

(2) The Department may at any stage of the process request proof of budgetary provisions.

Registration

13. (1) Subject to the provisions of this General Authorisation, a person who uses water as contemplated in this General Authorisation must submit the relevant registration forms to the responsible authority.

(2) Upon completion of registration, the responsible authority will provide a certificate of registration to the water user within 30 working days of the submission.

(3) On written receipt of a registration certificate from the Department, the person will be regarded as a registered water user and can only then commence with the water use as contemplated in this General Authorisation.

(4) The registration forms can be obtained from DWS Regional Offices or Catchment Management Agency office of the Department or from the Departmental website: <http://www.dws.gov.za>

Record-keeping and disclosure of information

14. (1) The water user must keep a record of all the documents referred to in paragraph 11 above for a minimum period of five years.

(2) The records referred to in this paragraph must be made available to the responsible authority upon written request.

Inspection

15. Any property in respect of which a water use has been registered in terms of this General Authorisation is subject to inspection in accordance with the relevant provisions of the Act.

Compliance by the water user

16. (1) The responsibility for complying with the provisions of this authorisation is lies with the water user.

(2) This General Authorisation is subject to the Act, any other applicable law, and regulation.

Repeal of Notices

17. This Notice replaces Government Notice 1199 published in Government Gazette 32805 dated 18 December 2009.

APPENDIX A: RISK MATRIX (Based on DWS 2015 publication: Section 21 c and I water use Risk Assessment Protocol)

Risk is determined after considering all listed control/mitigation measures. Borderline LOW/MODERATE risk scores can be manually adapted downwards up to a maximum of 25 points (from a score of 80) subject to listing of additional mitigation measures considered and listed in RED font.

					Severity								
No.	Phases	Activity	Aspect	Impact	Flow Regime		Physico & Chemical (Water Quality)		Habitat (Geomorph+Vegetation)		Biota		Severity
1		Example: Clearing of vegetation in close proximity to or in a watercourse	Creating Access roads for infrastructure	Impact posed by damage to bank. Loss of biodiversity & habitat; impeding the flow of the watercourse									

Risk being posed to "resource quality" as defined in the Act must be scored according to the Risk Rating Table for Severity. A Severity score is then generated.

Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating

Consequence, Likelihood and finally Significance scores are automatically calculated with the rest of parameters according to respective Risk Rating Tables.

Risk Rating	Confidence level	Control Measures	Borderline LOW MODERATE Rating Classes	PES AND EIS OF Watercourse

$RISK = CONSEQUENCE \times LIKELIHOOD$

$CONSEQUENCE = SEVERITY + SPATIAL SCALE + DURATION$ $LIKELIHOOD = FREQUENCY OF THE ACTIVITY + FREQUENCY OF THE IMPACT + LEGAL ISSUES + DETECTION$

ONLY LOW RISK ACTIVITIES located within the regulated area of the watercourse will qualify for a GA according to this Notice. Medium and High risk activities will require a Section 21 (c) and (i) water use licence.

RISK ASSESSMENT KEY (Based on DWS 2015 publication: Section 21 c and I water use Risk Assessment Protocol)

Negative Rating

TABLE 1- SEVERITY

How severe does the aspects impact on resource quality (flow regime, water quality, geomorphology, biota, habitat)?

Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful and/or wetland(s) involved	5
Where "or wetland(s) are involved" it means that the activity is located within the delineated boundary of any wetland. The score of 5 is only compulsory for the significance rating.	

TABLE 2 – SPATIAL SCALE

How big is the area that the aspect is impacting on?

Area specific (at impact site)	1
Whole site (entire surface right)	2
Regional / neighboring areas (downstream within quaternary catchment)	3
National (impacting beyond secondary catchment or provinces)	4
Global (impacting beyond SA boundary)	5

TABLE 3 – DURATION

How long does the aspect impact on the environment and resource quality?

One day to one month, PES, EIS and/or REC not impacted	1
One month to one year, PES, EIS and/or REC impacted but no change in status	2
One year to 10 years, PES, EIS and/or REC impacted to a lower status but can be improved over this period through mitigation	3
Life of the activity, PES, EIS and/or REC permanently lowered	4
More than life of the organisation/facility, PES and EIS scores, a E or F	5
PES and EIS (sensitivity) must be considered.	

TABLE 4 – FREQUENCY OF THE ACTIVITY

How often do you do the specific activity?

Annually or less	1
6 monthly	2
Monthly	3
Weekly	4
Daily	5

TABLE 5 – FREQUENCY OF THE INCIDENT/IMPACT

How often does the activity impact on the environment?

Almost never / almost impossible / >20%	1
Very seldom / highly unlikely / >40%	2
Infrequent / unlikely / seldom / >60%	3
Often / regularly / likely / possible / >80%	4
Daily / highly likely / definitely / >100%	5

TABLE 6 – LEGAL ISSUES

How is the activity governed by legislation?

No legislation	1
Fully covered by legislation (wetlands are legally governed)	5
Located within the regulated areas	

TABLE 7 – DETECTION

How quickly/easily can the impacts/risks of the activity be observed on the resource quality, people and property?

Immediately	1
Without much effort	2
Need some effort	3
Remote and difficult to observe	4
Covered	5

TABLE 8: RATING CLASSES

RATING	CLASS	MANAGEMENT DESCRIPTION
1 – 55	(L) Low Risk	Acceptable as is or consider requirement for mitigation. Impact to watercourses and resource quality small and easily mitigated.
56 – 169	(M) Moderate Risk	Risk and impact on watercourses are notably and require mitigation measures on a higher level, which costs more and require specialist input. Licence required.
170 – 307	(H) High Risk	Watercourses/impacts by the activity are such that they impose a long-term threat on a large scale and lowering of the Reserve. Licence required.

A low risk class must be obtained for all activities to be considered for a GA.

TABLE 9: CALCULATIONS

Consequence = Severity + Spatial Scale + Duration
Likelihood = Frequency of Activity + Frequency of Incident + Legal Issues + Detection
Significance\Risk = Consequence X Likelihood

RISK ASSESSMENT MUST BE CONDUCTED BY A SUITABLY QUALIFIED SACNASP PROFESSIONAL MEMBER AND HE/SHE MUST:

- 1) CONSIDER BOTH CONSTRUCTION AND OPERATIONAL PHASES OF PROPOSED ACTIVITIES;
- 2) CONSIDER RISKS TO RESOURCE QUALITY POST MITIGATION CONSIDERING MITIGATION MEASURES LISTED IN TABLES PROVIDED;
- 3) CONSIDER THE SENSITIVITY (ECOLOGICAL IMPORTANCE AND SENSITIVITY – EIS) AND STATUS (PRESENT ECOLOGICAL STATUS - PES) OF THE WATERCOURSE AS RECEPTOR OF RISKS POSED;
- 4) CONSIDER POSITIVE IMPACTS/RISKS REDUCTION AS A VERY LOW RISK IN THIS ASSESSMENT;
- 5) INDICATE CONFIDENCE LEVEL OF SCORES PROVIDED IN THE LAST COLUMN AS A PERCENTAGE FROM 0 - 100%;
- 6) NAME AND REGISTRATION NUMBER OF SACNASP PROFESSIONAL MEMBER MUST BE PROVIDED ON EXCELL SPREADSHEET AND MUST BE SUBMITTED WITH REGISTRATION DOCUMENTATION.

ON THE EXCELL SPREADSHEET POP-UP COMMENTS ARE AVAILABLE FOR ALL COLUMNS IN THE HEADINGS WHICH EXPLAINS THE PURPOSE OF EACH COLUMN!

APPENDIX B: Aspects that must be addressed in any RIVER MANAGEMENT PLAN as specified under paragraph 6 (1) (iv) of this Notice.

River Management Plans for storm water and river management activities MUST:

Contain information on all the river and storm water management activities in terms of section 21(c) and (i) water uses of the Act with a section addressing all relevant supporting technical information used to ensure a LOW risk will be posed to the resource quality of the watercourses and that this management plan have been submitted to the relevant regional operations or Catchment Management Agency (CMA) office for APPROVAL. The report must include, but may not be limited to:

When developing a River Management Plan:

1. Identify River Management Plan domain, preferably from a whole-catchment perspective;
2. Identify an accountable, representative body that should take unbiased custodianship of the RMP and drive its implementation;
3. Identify key stakeholders;
4. Divide the river into useful management units;
5. Identify major drivers of river disturbance and instability – human and natural, and their primary and secondary effects;
6. Complete Risk assessment as per Risk Matrix (Appendix A) for identified mitigation activities;
7. Solicit input from stakeholders on their priorities and objectives;
8. Define best practice measures for rehabilitation and maintenance implementation;
9. Design a plan for ecological monitoring which is specifically linked to the stated objectives; and
10. Develop an implementation programme and review mechanism.

Report should contain supporting technical information used to ensure the low risk to resource quality like:

- a) Impact assessment and mitigation report completed by an independent consultant as required by NEMA and NWA;
- b) All the relevant specialist reports supporting the proposed mitigation measures;
 - Specialists Reports must address the level of modification/risk posed to resource quality ie: flow regime, water quality, geomorphological processes, habitat and biota of the watercourses and contain Present Ecological state (PES) and Ecological Importance and Sensitivity (EIS) data for relevant watercourses;
- c) Environmental management plan giving effect to all actions required to mitigate impacts (What, When, Who, Where and How);
- d) Best practices applicable to these activities, where applicable;
- e) Generic designs and method statements, where applicable;
- f) Norms and standards, where available;

- g) Monitoring programme that must include "present day" conditions to be used as base line values;
- h) Monitoring, auditing and reporting programme (reports must be send on request to the region or CMA); and;
- i) Internalized controls and auditing, where applicable.

PLEASE NOTE: Any activities outside the scope of the approved plan that is required for river – or storm water management (example: building of new gabion structures to stop bank erosion) must comply to all the provisions in **paragraph 6** of this notice.

CONTINUES ON PAGE 130 - PART 2

APPENDIX C: EMERGENCY PROTOCOL as specified under paragraph 6 (1) (vi) of this Notice.**Purpose of the "Emergency Protocol"**

The purpose of this protocol is to set out the process to be followed and actions to be taken by any person to provide assurance to the DWS in ensuring emergency incidents and situations can be responded to, while at the same time ensuring compliance to the requirements of the National Water Act. Failure to comply to these requirements will be dealt with in terms of section 19 or 20 of the National Water Act (NWA)(Act 36 of 1998).

The agreement relates to situations where any person or entity is required to immediately respond by taking necessary action to an emergency situation or incident. It is noted that this does not include routine or planned maintenance or to deal with poor project planning.

Emergency Protocol:

This "Emergency Protocol" spells out what protocol needs to be followed to remedy "emergency situations and incidents". In terms of Section 67 of the National Water Act "Dispensing with certain requirements of Act" the NWA states the following:

(1) In an emergency situation, or in cases of extreme urgency involving the safety of humans or property or the protection of a water resource or the environment, the Minister may

(a) dispense with the requirements of this Act relating to prior publication or to obtaining and considering public comment before any instrument contemplated in section 158(1) is made or issued;

(b) dispense with notice periods or time limits required by or under this Act;

(c) authorise a water management institution to dispense with

(i) the requirements of this Act relating to prior publication or to obtaining and considering public comment before any instrument is made or issued; and

(ii) notice periods or time limits required by or under this Act.

(2) Anything done under subsection (1)

(a) must be withdrawn or repealed within a maximum period of two years after the emergency situation or the urgency ceases to exist; and

(b) must be mentioned in the Minister's annual report to Parliament."

(3) An incident is an event that requires immediate attention that might lead to potential disruption of service delivery.

Examples include the following:

Replacement of stolen or vandalised or damaged underground cables or, overhead power lines, burst pipelines, flooded or damaged bridges and /or related infrastructure, the replacement of/ or repairs to damaged infrastructure.

Described below is the process to be followed and definitions.

Process to respond to an Emergency that has a water use implication in terms of section 21 water uses of the NWA.

Definitions:

Emergency incident and situations as defined in this notice read together with section 20 and 67 of the NWA.

Protocol to be followed:

Any person that must attend to an emergency must notify the regional office or CMA about the emergency immediately and provide all required documents to the relevant region(s) within 1 month thereafter according to the specified protocol in this document. Should the incident take place over a weekend or public holiday (outside DWS working hours), the documents can be forwarded to DWS and receipt be followed-up on the day after the weekend or holiday.

- 1) **Relevant DWS regional office to be notified about the emergency incident or situation** (hereafter referred to as an Emergency) by means of an email and or 24 hour hotline of DWS. The document emailed must as a minimum contain the following information:
 - a. Date of occurrence of the emergency;
 - b. Date at which any person became aware of the emergency;
 - c. Nature of emergency;
 - d. A motivation and definition of the emergency;
 - e. Description, location and receiving environment sensitivity of the emergency;
 - f. Description of short, medium and long term actions, environmental management and rehabilitation, and emergency plan required to be taken to respond to the emergency;
 - g. Date(s) when the actions will be taken (or have taken place);
 - h. Contract details of responsible persons.
- 2) The following is a list of the required information that must be submitted to the relevant CMA or regional office of DWS within 1 month following the Emergency response to enable the regional office or CMA to determine whether the activities qualifies for a GA in terms of this Notice or whether a *post facto* licence will be required.

Tabulated list of information required to be submitted within a maximum of 1 month after the occurrence of the "Emergency":

Table of Contents

List of Appendices

List of Maps

List of Tables

1. DESCRIPTION OF Emergency situation, location, date, etc.

1.1. Motivation that situation was an emergency

2. EMERGENCY RESPONSE PROGRAMME

3. METHODOLOGY FOLLOWED

4. ENVIRONMENTAL MANAGEMENT STRATEGY

4.1 Description of risks to resource quality and mitigation measures implemented to reduce risks (This report must be based on the Risk Matrix to be completed by SACNASP registered Professional).

4.2. Environmental Impact Management + rehabilitation plan (what, where, when, who, how)

4.3. Monitoring and Review Strategy

5. RESPONSIBILITIES AND PRESCRIBED OCCUPATIONS

6. DECLARATIONS

6.1. Design Engineer

6.2. Site Manager

6.3. Environmental Practitioner / Environmental Control Officer (contact person)

List of Appendices

APPENDIX A: Design/CONSTRUCTION DRAWINGS

APPENDIX B: ENVIRONMENTAL MANAGEMENT PLAN

List of Maps

Map 1: Site location

Map 2: Location of watercourses affected

List of Tables

Table 1: Schedule of Crossings

Table 2: Programme (Start and Completion dates)

Table 3: Risk Rating Matrix (Impacts and Significance Ratings)

Table 4: Mitigation Measures

Table 5: Rehabilitation Measures

Table 4: Stormwater Management Plan

Table 6: Monitoring and Review Measures

Compliance to this Emergency Protocol does not absolve any person from complying to the requirements of any other laws and associated regulations.

APPENDIX D1: Activities that are generally authorized for any person subject only to compliance to the conditions of this Notice.

Any person	ACTIVITY
Farmers and any other land owners	Emergency river crossings for vehicles to gain access to livestock, crops or residences etc.
Any landowner	Maintenance to private roads and river crossings provided that footprint remains the same and the road is less than 4 m wide.
Any landowner	Erection of fences provided that the fence will not in any way impede or divert flow, or affect resource quality detrimentally in the short, medium to long term.

APPENDIX D2: Activities that are generally authorized for SOC's and institutions subject only to compliance to the conditions of this Notice.

SOC's, INSTITUTION or Individual	ACTIVITIES
ESKOM and other institutions	Construction of new transmission and distribution power lines, and minor maintenance of roads, river crossings, towers and substations where footprint will remain the same.
SANPARKS and provincial conservation agencies	All bridges, low water bridge crossings and pipe lines below 500 mm in diameter.
SANRAL and other provincial Departments of Transport or municipalities.	All maintenance of bridges over rivers, streams and wetlands and new construction of bridges done according to SANRAL Drainage Manual or similar norms and standards.
TRANSNET and other institutions	All 1.5 meter diameter and smaller pipe lines (<i>except pipelines excluded in terms of this Notice - paragraph 3 (e)</i>) and maintenance of railway line crossings of rivers and wetlands outside the boundary of a wetland.
Gautrain Management Agency	Maintenance of existing infrastructure and expansion to crossings of rivers within the existing servitude.
TELKOM and other communication companies	All cables crossing rivers and wetland outside delineated wetland boundary.
RAND WATER and other water boards	All raw water 1.5 meter diameter and smaller pipe lines crossings river and wetlands outside delineated wetland boundary.
Municipalities and other institutions.	Mini-scale hydropower developments with a maximum capacity of 10kW – 300kW. (<i>Read together with General notice 665 of 6 Sept 2013 General Authorisation section 21 (e) or as amended</i>) These hydropower plants will provide basic, non-grid electricity to rural communities and agricultural land and must in no way affect the flow regime, flow volume and/or water quality including temperature.

TRANSNET NATIONAL PORT AUTHORITY

THE PROPOSED REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU-NATAL DRAFT BASIC ASSESSMENT REPORT

NOVEMBER 2016



Prepared for:

Transnet National Port Authority
P O Box 181
Richards Bay
3900



Prepared by:

Acer (Africa) Environmental Consultants
P O Box 503
Mtunzini
3867



BASIC ASSESSMENT REPORT



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, 2014, 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, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. 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 in the electronic copy of the report submitted to the competent authority.

BASIC ASSESSMENT REPORT

SECTION A: ACTIVITY INFORMATION

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

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

BACKGROUND

Transnet National Ports Authority (TNPA) has recently appointed ACER (Africa) Environmental Consultants (ACER) to undertake an environmental authorisation process, via a Basic Assessment, in order to obtain Environmental Authorization (EA) from the Department of Environmental Affairs (DEA) for the proposed replacement of critical pipe sections within the Port of Richards Bay, KwaZulu-Natal. The existing main potable water to the Port of Richards Bay, an Asbestos Cement (AC) pipeline, is more than 35 years old and incidents of failures are increasing. This in turn is increasing the risk of significant water loss incidents and supply interruptions to various enterprises conducting business within the port.

PROJECT DESCRIPTION

Critical sections of this pipeline have already been upgraded, and this project will therefore involve the replacement of the following sections of the existing AC pipe with a new 560 mm High Density Polyethylene (HDPE) pipe:

Municipal Feed – Viaduct (2,534 m)

The existing main potable water feed to the Port of Richards Bay from the Municipal supply is in need of an upgrade due to the existing pipes nearing the end of their design life. TNPA has divided the upgrade from the Municipal Feed to the Viaduct into three sections based on the existing dimensions and structures located along the pipeline. Each section was evaluated separately to establish the best possible solution to ensure the continued service of this line while increasing its capacity. The sections are divided as follows:



Figure 1 Sections to be replaced between the Municipal Feed and the Manzanyama Viaduct (Google Earth 2016)

BASIC ASSESSMENT REPORT

Section 1 – Proposed upgrade over the Manzanyama viaduct bridge

It is proposed that the existing 450 mm AC pipe be replaced with a 560 mm HDPE pipe by demolishing the existing pipe supports and installing new stainless steel pipe supports. To ensure continued water supply to the Port during construction, a temporary 250 mm HDPE pipe will need to be installed parallel to the new line in the emergency lane.

Section 2 – Proposed upgrade underground and railway line crossing

The existing 450 mm AC pipe will be abandoned and replaced by a 560mm HDPE pipe. The new pipe will be installed parallel to the existing pipe at an offset between 2 and 10 m. The pipe will be installed using the standard trench laying method and the micro tunnelling method for the railway line. The new pipe will ultimately terminate at a jacking pit where it will connect to a new 560mm HDPE pipe.

Section 3 – Proposed upgrade Bayvue rail yard crossing

The existing pipe under the Bayvue rail yard is a 355 mm HDPE pipe. The installation of this pipe was recently completed under a separate contract to replace the previous 355mm HDPE pipe due its collapse. Therefore it is proposed to construct a new 560mm HDPE pipe parallel to the existing pipe using the micro tunnelling process. The existing 355mm HDPE pipe will be cleaned and used as a sleeve for cables.

Level Crossing – Tidal Gates (1,400 m)

The existing 450 mm AC pipeline, running along the Berm Road, supplies the southern section of the Port of Richards Bay. This pipeline is more than 35 years old and incidents of failures are increasing.

Critical sections of this pipe running along the Tidal Gates as well as along the Viaduct have already been upgraded to a 560 mm HDPE pipeline, installed above ground on concrete plinths. There is a section of approximately 3 km between these upgraded sections which urgently needs to be replaced to reduce the likelihood of bursts as well as to cater for the existing and future water demands of this section of the Port. This will cover the first phase of upgrading this section of pipeline starting at the tie-in point at the Tidal Gates and running north-west for a length of 1,400 m to past the Railway Level Crossing.



Figure 2 Critical section to be replaced from the Level Crossing to the Tidal Gates (Google Earth 2016)

BASIC ASSESSMENT REPORT

WORKS REQUIRED FOR REPLACEMENT OF PIPE SECTIONS

- ☐ Establish site camp.
- ☐ Setting out pipeline route.
- ☐ Site clearing and grubbing (4 m wide strip up to a depth of 150 mm).
- ☐ Removal, stockpiling and maintenance of topsoil.
- ☐ Excavation of trenches (maximum depth of 1.5 m).
- ☐ Jacking a of 660 mm steel sleeve underneath railway lines.
- ☐ Chamber excavations (1 m beyond slab footprint all round, and 1 m below binding).
- ☐ Replacing the existing concrete pipe cradles mounted to the outside of the bridge.
- ☐ Pipe laying (800 mm below FGL), bedding, backfilling and consolidating.
- ☐ Valves Chambers and Tie-in Points.
- ☐ Tying in.
- ☐ Pipeline testing.
- ☐ Installation of pipe markers.
- ☐ Final shaping, top-soiling, grassing.
- ☐ Decommissioning of old pipeline.
- ☐ Site camp de-establishment.
- ☐ Commissioning of new pipeline and Handover to TNPA.

ANCILLARY WORKS

Valve chambers

The following valves and fittings will be carefully located and designed to facilitate the operation of the system:

Air Valves

Air valves are required to release air from the pipeline during the filling process and during normal operation. These will be provided to suit the longitudinal section of the pipeline in relation to the hydraulic gradient.

Scour Valves

Scour valves are required to drain pipes of water in the event of repair work and will be installed at low points in pipelines with a diameter 0.4 to 0.6 times the diameter of the pipe being drained. An open drain with suitable erosion protection measures in place, will lead the washout water to a suitable watercourse.

Isolating Valves

Isolating valves will be installed at the three take off points. They will be installed directly after the T-piece/Y-junction on the take-off side to facilitate maintenance. Valves shall be spaced so that the total length of main included in an isolated section does not exceed a nominal 600 m.

Marker Posts

Marker posts shall be placed along the pipeline route at intervals sufficient to maintain line of sight and facilitate location of the route. Marker posts should also be placed at all pipe bends, junctions, and other features. All marker posts are to match existing posts.

Anchorage and Thrust Blocks

Anchorage and thrust blocks shall be used whenever the pipeline changes vertical or horizontal direction by more than 10°. Thrust blocks will be used where the size of the pipeline changes, at blank ends, and on steep slopes (more than 1:6).

Construction of a temporary 250mm HDPE PN16 PE100 bypass

Construction on section 1 (over the Manzanyama viaduct bridge) and section 3 (Bayvue rail yard crossing) between the municipal feed and the viaduct pose a challenge in terms of keeping the water disruptions to a minimum. Water supply may only be shut off for a maximum of 24 hours. As such, the proposed solution to avoid the construction period from affecting the Port's operational scheduling is to maintain a constant, although slightly reduced water supply to the Port by constructing a temporary 250 mm HDPE bypass.

BASIC ASSESSMENT REPORT

CONSTRUCTION METHODOLOGY

Above Ground Sections (Cradles)

Due to the smaller diameter (450 mm) of the existing above ground AC pipe sections, new pipe cradles will be required to be installed to carry the new larger (560 mm) HDPE pipe. The existing cradles will need to be demolished by a suitable method to minimize concrete and dust pollution to the water courses below. The new pipe cradles will be manufactured from galvanised or stainless steel. A hanging scaffold is required to be designed and approved to carry out the replacement over the bridge to prevent any staff from falling from heights.

Commented [VN1]: Give details of this suitable method

The existing above ground AC pipes can then be removed, the existing pipe cradles demolished, concrete made good and the new pipe cradles installed to support the new 560 mm HDPE pipe.

Trenched Sections

All trenching to be done in accordance with SANS 1200 DB and the bedding of the pipe will be as per SANS 1200 LB for flexible pipes. The existing AC pipe will not be removed from the ground. The general restriction of available work space along the route of the proposed pipeline and the soft, loose sandy in-situ material lends itself to hand excavation. The maximum required overall depth of trench excavation will be limited to 1.5 m, with a minimum cover from finished ground level to top of pipe of 800 mm.

Micro-tunnelling under Roads and Railways.

Jacking pits will be set up on either side of the road/railway crossings and a sacrificial 660 mm steel pipe will be used as the sleeve for the new butt welded 560 mm HDPE as this sleeve will withstand the loading of the railway line crossing and provide adequate support for the HDPE pipe. Stainless steel sacrificial sleeves and fittings should be considered above mild steel due to the extremely corrosive environment.

Construction camp

A construction camp will be required for the duration of the construction period to house administrative offices, construction plant and material stockpiles, fuels, storage facilities and security guard accommodation. Construction workers will not be accommodated at the construction camp. The contractor will identify the exact location and size of the construction camp prior to construction. The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. The Environmental Control Officer (ECO) will need to approve the construction camp location.

During construction, water will be sourced from the nearest municipal supply point or from an approved on site extraction point. Electricity will be supplied by Eskom. A suitable number of chemical toilets will be provided on site for the construction staff. Solid waste will be taken to the closest municipal waste transfer station.

Commented [VN2]: Municipality

Access

The majority of the alignment is accessible via existing roads within the port. Maximum use will be made of existing access roads. However, during construction, it may be necessary to construct temporary access tracks, the majority of which will fall within the construction servitude. The roads will comprise a simple single lane track immediately alongside the trench and will be cleared and roughly levelled for vehicular access. Temporary access roads will have to be identified with the assistance of, and approved by, the ECO so that they do not infringe on any sensitive areas. The temporary access tracks will be rehabilitated after the construction phase.

BASIC ASSESSMENT REPORT

PROJECT ALTERNATIVES

In terms of alternatives, the following has been considered:

Repair of existing pipeline infrastructure

This option is a reactive, tedious and temporary solution to the problem, with the risk of losing large volumes of water while leakages are being attended to. The risk of the inconvenience and interruptions to clients and business will still remain. The maintenance and repair work that will be required on the deteriorating pipeline is also an environmental and health hazard.

Continued use of the existing pipeline infrastructure

This option will result in the increased incidents of leakages and the consequential loss of a valuable and scarce resource. While at the same time continued pipe failures will result in inconvenienced clients and business interruptions.

Replacing existing critical sections of the pipeline (Preferred)

This is the preferred option in that it mitigates the risk of business interruptions, and will reduce costly maintenance repairs to the water reticulation system for the next 30 years.

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

Detailed description of listed activities associated with the project

Listed activity as described in GN R. 983, GN R. 984 and GN R.985	Description of project activity that may trigger the listed activity
GN R.983 Item 9: The development of infrastructure exceeding 1000 m in length for the bulk transportation of water; (i) With an internal diameter of 0.36 m or more.	The construction of a total length of 3,934 meters of pipe with an internal diameter of 560 mm
GN R.983 Item 19: The infilling or deposition of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from; (i) A watercourse; (v) The littoral zone, an estuary or distance of 100 m inland of the high water mark of the sea or an estuary, which ever distance is greater...	The project is within an estuarine functional zone and within 100 m inland of the high water mark of the sea and construction required for the replacement the critical pipe sections will result in the moving of more than 5 cubic meters of soil, sand, shells, shell grit, pebbles or rock.
GN R.983 Item 45: The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure: (i) Has an internal diameter of 0.36 m or more. (ii) Has a peak throughput of 120 litres per second or more. (b) where the throughput capacity of the facility of infrastructure will be increased by 10% or more.	The existing Asbestos Cement pipeline is 450 mm; the proposed project aims to replace these with a 560 mm HDPE pipe. This constitutes a throughput capacity increase of more than 10 %.

BASIC ASSESSMENT REPORT

GN R.985 Item 12: The clearance of an area of 300 square meters or more of indigenous vegetation... (a) In Kwazulu-Natal i Within the littoral active zone or 100 m inland of the high water mark of the sea or estuarine functional zone, which ever distance is greater...	The project is within an estuarine functional zone and 100 m inland of the high water mark of the sea and the construction required for the replacement the critical pipe sections will result in the clearance of more than 300 square meters of indigenous vegetation.
GN R.985 Item 14: The development of; (xii) Infrastructure or structures with a physical footprint of 10 square meters or more: (d) In Kwazulu-Natal ii In an estuarine functional zone.	The replacement of the critical pipe sections will have a development footprint exceeding 10 square meters, and will take place within an estuarine functional zone.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

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

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

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.

BASIC ASSESSMENT REPORT

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
In terms of site alternatives it is important to note that the proposed development is an upgrade of the existing infrastructure within the Port of Richards Bay. It involves replacing the critical pipe sections between the municipal feed and the viaduct (2,534 m) and between the level crossing and the tidal gates (1,400 m). All works for the proposed development will take place within the existing pipeline servitude and there will be no increase in the development footprint of the Port. In light of the above; only one site alternative has been considered in this assessment, viz. the Preferred Alternative: Preferred Alternative: The critical sections of pipe that will be replaced can be found between the following coordinates: ☐ Municipal Feed ☐ Viaduct ☐ Level Crossing ☐ Tidal Gates	28°46'52.46"S 28°48'04.55"S 28°48'53.45"S 28°49'34.14"S	32°01'36.12"E 32°01'05.08"E 32°01'41.60"E 32°02'7.36"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

In the case of linear activities:

Alternative:

Alternative S1 (preferred)

Latitude (S):

Longitude (E):

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Municipal Feed to Viaduct	
28°46'52.46"S	32°01'36.12"E
28°47'29.10"S	32°01'25.38"E
28°48'04.55"S	32°01'05.08"E

Alternative S2 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Level Crossing to Tidal Gates	
28°48'53.45"S	32°01'41.60"E
28°49'13.86"S	32°01'54.31"E
28°49'34.14"S	32°02'07.36"E

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

BASIC ASSESSMENT REPORT

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

See Appendix A for a list of coordinates taken every 250 m.

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

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
In terms of lay-out alternatives it is important to note that the proposed development is an upgrade of the existing infrastructure within the port of Richards Bay. It involves replacing the critical pipe sections between the municipal feed and the viaduct (2,534 m) and between the level crossing and the tidal gates (1,400 m). Therefore the proposed development will as far as practically possible take place within the existing pipeline servitude. Therefore, no significant increase in the footprint will take place. As such, only one lay-out alternative was considered in this Environmental Assessment, viz. the Preferred Alternative: The critical sections of pipe can be found at the following coordinates: ☐ Municipal feed ☐ Viaduct ☐ Level Crossing ☐ Tidal Gates	28°46'52.46"S 28°48'04.55"S 28°48'53.45"S 28°49'34.14"S	32°01'36.12"E 32°01'05.08"E 32°01'41.60"E 32°02'7.36"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Not applicable		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
Not applicable		

c) Technology alternatives

Alternative 1 (preferred alternative)
In terms of technology alternatives; the following considerations influenced the selection of the chosen specifications: ☐ Health, safety and environmental considerations. ☐ The footprint sizes of the proposed infrastructure. ☐ Uniformity between the existing and upgraded infrastructure. Alternative materials: The following specifications were considered in the pipeline replacement design: ☐ New 560 mm HDPE pipe. ☐ New 355 mm HDPE pipe. ☐ Steel T-Pieces and fittings, 6 mm mild steel Fusion Bonded Epoxy Coated.

BASIC ASSESSMENT REPORT

- ☐ Bends, 560 mm HDPE.
- ☐ All Flanges to SABS 1123 PN16, hot dipped galvanized.
- ☐ Stainless steel bolts and nuts grade 316.
- ☐ Galvanised steel bolts and nuts to SANS 136.
- ☐ Galvanised steel to SANS 763.
- ☐ Concrete Class 25/19.

No alternative materials were considered as the specifications considered for the proposed development will maintain uniformity as it conforms to the specifications of the existing infrastructure. This will allow TNPA to have uniform materials for the entire pipeline and it will assist in easier maintenance as well as reducing costs and limiting the need to impact on the receiving environment due to the minimal need for maintenance.

Alternative construction methods:

Alternative construction methods for pipeline construction were considered as follows:

- ☐ The first option involves the excavation of the whole pipeline trench, subsequently laying the pipes and backfilling the pipeline trench to the desired height. However, this option was discarded due to the erosion related impacts associated with leaving large sections of the pipeline trench open and exposed to the elements. Additionally, the open trench would be considered a safety hazard as small children, animals, workers on site and/or pedestrians may fall into the trench and become trapped or injured.
- ☐ The second alternative considered involves the construction of the pipelines on a progressive basis where short sections of the trench are excavated. Subsequently the pipes would be laid and then backfilled according to the engineers specifications. This construction method has a number of benefits compared to the excavation of the entire trench as it is safer and reduces the risks of erosion on site. The dig and lay method where pipes are laid length by length has been selected as the preferred alternative so that the excavated trench is not left uncovered for extended periods of time, thereby minimising the risk of soil erosion.

Alternative 2

N/A

Alternative 3

N/A

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

Alternative 1 (preferred alternative)

Alternatives considered in terms of scheduling:

The Port of Richards Bay is operational 24 hours a day and seven days a week and a reliable supply of potable water is crucial to the operational success of the Port. Therefore, construction will commence as soon as possible when Environmental Authorisation is obtained. In terms of the construction activities impacting on the operational scheduling of the Port, the implementation of the proposed development will carefully consider the following factors prior to the commencement of construction:

- ☐ Peak and off peak business hours.
- ☐ Prevailing weather conditions.

Furthermore, water supply may only be shut off for a maximum of 24 hours to limit the impact of water disruptions on the Port's operational schedule. Since two tie ins are required at different timelines in the project, there will be two shut down periods. Section 1 (over the Manzanyama viaduct bridge) and section 3 (Bayvue rail yard crossing) poses a challenge in terms of keeping water disruptions to a minimum during the construction period. As such, the proposed solution to avoid the construction activities from affecting the Port's operational scheduling is to maintain a constant, although slightly reduced water supply to the Port by constructing a temporary 250 mm HDPE bypass.

BASIC ASSESSMENT REPORT

In order to minimise the potential impacts on the Port's operational schedule, the Port Authorities will notify and liaise with all the various stakeholders on the planned shut-down to allow them to plan their operations to suit the water disruptions.

Alternatives considered in terms of design

The following basic design requirements were considered during the design phase of the pipeline replacement design:

- ☐ To avoid air pockets, the number of high and low points shall be kept to a minimum by attempting to follow the contour lines.
- ☐ To minimise the number of air-release valves, the pipeline trench depths may be varied to avoid local high and low points.
- ☐ Air valves shall be installed at summits, and scour valves at low points between summits.
- ☐ To facilitate the location of a buried pipe during maintenance, curved pipe routes should be avoided. All bends shall be marked with a post or a suitable beacon, and the pipeline lay in a straight line between bends.
- ☐ To avoid air pockets in pipelines, the slope should be greater than 0.3% (0.3 m per 100 m length), or 0.2% for large-diameter pipes (>200 mm).
- ☐ To avoid damage to pipelines during backfilling of a trench, a proper pipe-laying specification will be provided.
- ☐ The likely effect of water hammer/surge pressure is taken into account in the design of a pressure pipeline system.

Ancillary works:

Air, scour and isolation valve chambers

The following considerations were taken into account during the design phase of the valve chambers:

- ☐ Sufficient working space to allow a spanner to be used on all bolts should be provided for in chambers for isolating air and other valves.
- ☐ Venting of air-valve chambers shall allow for adequate air flow.
- ☐ Roof slabs shall be designed to allow for removal and replacement of the valve.
- ☐ Valve chambers shall, where possible, to be finished proud of the final ground level.
- ☐ Where necessary, the design should make provision for the possibility of differential settlement between the valve chamber and the pipeline.

Alternative 2

Not applicable

Alternative 3

Not applicable

BASIC ASSESSMENT REPORT

e) No-go alternative

No-development Alternative:

The no-development alternative entails TNPA leaving the current pipe infrastructure as is. This option will result in the increased incidents of leakage and the consequential loss of a valuable and scarce resource, while at the same time continued pipe failures will result in inconvenienced clients and business interruptions.

The no-go alternative is therefore undesirable as it would hinder the ability of TNPA to expand the Port's operational capacity and diversify its current services and products which is largely based on the export of coal. Furthermore the proposed development is of national importance and forms part of the Strategic Infrastructure Projects (SIP) no. 6 – Integrated municipal projects. As such, the no-go alternative would be contradicting an initiative that constitutes as national importance.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1 ¹ (preferred activity alternative)	Level Crossing - Tidal Gates (1400 m x 20 m)	Size of the activity: 28 000 m ²
Alternative A1 (preferred activity alternative)	Municipal Feed - Via Ducts (2534 m x 20 m)	50 680 m ²
Alternative A2 (if any)		
Alternative A3 (if any)		

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)	Level Crossing - Tidal Gates	Length of the activity: 1 400 m
Alternative A1 (preferred activity alternative)	Municipal Feed - Via Ducts	2 534 m
Alternative A2 (if any)		
Alternative A3 (if any)		

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

Alternative:

Alternative A1 (preferred activity alternative)	Level Crossing - Tidal Gates (1400 m x 20 m)	Size of the site/servitude: 28 000 m ²
Alternative A1 (preferred activity alternative)	Municipal Feed - Via Ducts (2534 m x 20 m)	50 680 m ²
Alternative A2 (if any)		
Alternative A3 (if any)		

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

BASIC ASSESSMENT REPORT

4. SITE ACCESS

Does ready access to the site exist?

YES

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

Describe the type of access road planned:

The proposed development is an upgrade of the existing pipe sections within the Port of Richards Bay. The pipe sections to be replaced closely follow the Harbour Arterial Road from the Municipal Feed all the way to the Tidal Gates, and there will therefore be no need for additional access roads to be built.

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

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix 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:

- 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).

See Appendix A for a copy of 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.

See Appendix A for a copy of the Layout/Route Map for the proposed development.

BASIC ASSESSMENT REPORT

7. SENSITIVITY MAP

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

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

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

See Appendix A for a copy of 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.

See Appendix B for a copy of the Site Photographs

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.

See Appendix C for a copy of the Facility Illustrations

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		Please explain
The development is an upgrade of existing infrastructure and will occur only within the boundary of the Port of Richards Bay.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
The development contributes towards the "Principle of Economic Potential" identified in the Provincial Spatial Development Framework (PSDF) which aims to improve productivity. In terms of Priority Intervention areas Richards Bay is one of the four towns that have been identified as provincial Secondary Nodes. This means Richards Bay as an urban centre with good existing economic development has the potential for growth and services to the regional economy.			
(b) Urban edge / Edge of Built environment for the area	YES		Please explain
The development is an upgrade of existing infrastructure and will occur entirely within the boundary of the Port of Richards Bay.			

BASIC ASSESSMENT REPORT

(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?).		NO	Please explain
No, it would not compromise the integrity. The IDP recognises the importance of the Port of Richards Bay and also identified an area for the expansion of the Port given its exceptional growth.			
(d) Approved Structure Plan of the Municipality	YES		Please explain
The 1996 Richards Bay Structure Plan goal is to "To provide a spatial framework, principles, policies, strategies and programmes of action which will ensure that the planning and development of the Core Area of Richards Bay will encourage on-going, and increased, economic growth in order to sustain the environmental, physical, social, economic and political well-being of all people within the jurisdiction of the Transitional Local Council (TLC)".			
The upgrading of the main potable water feed to the Port, will allow current and future business within the Port to continue without interruptions.			
(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?)		NO	Please explain
The Port Richards Bay is of strategic importance for South Africa, being one of the main thrusts for development, together with the industrial sector of the town, the expansion of these services needs careful planning and consideration of the environment.			
The Environmental Management Framework aims to achieve the objective of ensuring that the impacts of activities to the environment receive adequate consideration before decisions are made, such is being undertaken as part of this Basic Assessment process.			
(f) Any other Plans (e.g. Guide Plan)		NO	Please explain
None were identified. However it is important to note that the proposed development will comply with all applicable and relevant legislation and any other requirement or condition stipulated by DEA.			
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		Please explain
The proposed development is an upgrade of existing bulk water supply infrastructure within the Port of Richards Bay; therefore the current land use will remain unchanged.			
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		Please explain
The proposed development is an upgrade of the main potable water supply feed to the Port of Richards Bay, Current and future occupants of the Port will benefit from the improved infrastructure, and be able to conduct their economic activities without interruption. In the process, job creation will take place with the establishment of new companies within the site.			

BASIC ASSESSMENT REPORT

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		Please explain
It is important to note that the proposed development is an upgrade of the existing bulk water supply infrastructure within the port of Richards Bay. The existing main potable water to the Port of Richards Bay is more than 35 years old and incidents of failures are increasing. This in turn is increasing the risk of significant water loss incidents and supply interruptions to various enterprises conducting business within the port. The sections of pipe that are being removed will be decommissioned and replaced. No additional services will therefore be required to cater for the development.			
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		Please explain
The proposed development is an improvement of existing infrastructure and services within the Port of Richards Bay.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES		Please explain
The proposed development is of national importance and forms part of the Strategic Infrastructure Projects (SIP) no. 6 – Integrated municipal projects, which aims to achieve the following: Develop national capacity to assist the 23 least resourced districts (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure. The road maintenance programme will enhance service delivery capacity thereby impacting positively on the population. Therefore the proposed development will contribute to the national and provincial GDP.			
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		Please explain
The proposed development involves upgrading existing bulk water supply infrastructure within the Port of Richards Bay. The current land use will therefore remain unchanged.			
9. Is the development the best practicable environmental option for this land/site?	YES		Please explain
The proposed development is an upgrade of existing infrastructure, taking place within an existing servitude. Any deviations from this route will result in new disturbances to the environment and / or Port occupants.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		Please explain
The benefits of the proposed development will be the prevention of leakages and loss of potable water due to failures of the existing infrastructure. The new infrastructure will also prevent further inconvenience to clients and businesses in the Port, while making provisions for the increased supply demands of future developments within the Port. The negative impacts associated with the construction phase can be avoided/mitigated/offset through proper implementation of the Environmental Management Programme (EMPr) and the conditions set out in the Environmental Authorisation.			

BASIC ASSESSMENT REPORT

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
The proposed development is an upgrade of infrastructure which has reached the end of its design life. The upgrade will take place for the most part within the existing servitude and entirely within the Port of Richards Bay, and is therefore unlikely to set a precedent for similar activities in the area.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	Please explain
It is unlikely that any individual will be directly or indirectly negatively affected by the proposed activities, as the project involves the upgrade of existing infrastructure, for the most part within an existing servitude, and entirely within the Port of Richards Bay.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	Please explain
The development is an upgrade of existing infrastructure, which will occur for the most part within an existing servitude, and entirely within the Port of Richards Bay.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPs)?	YES		Please explain
The proposed development is of national importance and forms part of the Strategic Infrastructure Projects (SIP) no. 6 – Integrated municipal projects, which aims to develop national capacity to assist the 23 least resourced districts (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure.			
The new bulk water infrastructure will enhance the service delivery capacity thereby impacting positively on Port operations and ultimately contributing to the national and provincial GDP.			
15. What will the benefits be to society in general and to the local communities?	Please explain		
In addition to providing a reliable supply of potable water to the Port, the proposed development is expected to provide direct benefits to the local communities through temporary employment opportunities during the construction phase.			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
To ensure that the Port of Richards Bay can expand and diversify from their current services and products, it is important to ensure that there is a reliable source of potable water to accommodate the day to day operational activities of TNPA and other Port stakeholders.			
Furthermore, the project is also motivated from a risk and compliance point of view in the sense that the proposed development intends to upgrade existing bulk water supply infrastructure that is more than 35 years old. Should the infrastructure remain in its current state, instances of failure and decay can result in significant social and economic decline and in turn push back any proposed plans of development initiatives intended for the Port.			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
The proposed development contributes to the expansion of infrastructure for better commissioning of activities while at the same time creating room for employment and skills development. This project forms part of the short term Port Development plans which are in line with the National Development Plan of the country.			

BASIC ASSESSMENT REPORT

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

The general objective of integrated environmental management is to:

- 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.
- b. Identify, predict and evaluate the actual and potential impact on the environment, socioeconomic 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.
- c. Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them.
- d. Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment.
- e. Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment.
- 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.

Several specialist studies were commissioned to identify, predict and evaluate the actual and potential impact on the environment, cultural heritage, the risks and consequences and alternatives and options for mitigation of activities. Effects of construction and operation activities on the environment have received adequate consideration prior to implementation of mitigation measures and Section 23 (2b and 2c) has been achieved.

In terms of public participation, all IAPs have been engaged through circulation of newspaper adverts, background information letters, site posters, public meeting and public consultation, therefore the public have been provided with an opportunity to contribute their input on the project and Section 23 (2d and 2e) has been achieved.

Finally, a stringent site specific EMP has been compiled with the input from specialists to manage any potential impacts to acceptable levels so Section 23(2)(f) has been achieved.

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

To ensure mitigation and management of impacts the following has been carried out:

- ☐ Consulted I&AP's to assist with identification of potential impacts
- ☐ Prepared a stringent EMP to manage all potential negative impacts

In addition the following specialist studies have been commissioned to assess, evaluated and mitigate the impacts of the proposed development:

- ☐ Heritage Impact Assessment
- ☐ Vegetation Assessment
- ☐ Wetland Delineation and Functional Assessment

BASIC ASSESSMENT REPORT

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
South Africa's Constitution (Act 108 of 1996), including the Bill of Rights (Chapter 2, Section 24)	Section 24 in the Bill of Rights provides for the environmental right.	The State	1996
National Environmental Management Act (Act No. 107 of 1998), as amended (NEMA)	Overarching environmental framework legislation in South Africa.	National Department of Environmental Affairs and KZN Department of Economic Development, Tourism and Environmental Affairs	1998
NEMA EIA Regulations of 2014 published in Government Notices R982, R983, R984 and R985 in Government Gazette 38282 (as amended)	Lists activities which require authorisation in terms on NEMA and guides the various authorisation processes.	National Department of Environmental Affairs and KZN Department of Economic Development, Tourism and Environmental Affairs	2014
Integrated Environmental Management (IEM) guideline series published by DEA (various documents dated from 2002 to present)	Works in conjunction NEMA, identifies, predicts and evaluates actual and potential impacts and the risks, consequences and alternatives for mitigation of activities.	National Department of Environmental Affairs and KZN Department of Economic Development, Tourism and Environmental Affairs	2002
Integrated Coastal Management Act (No. 24 of 2008) Department of Agriculture and Environmental Affairs 2008	The port is located in a coastal area.	Ezemvelo KZN Wildlife and KZN Department of Economic Development, Tourism and Environmental Affairs	2008
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	The development will have impact on biodiversity found nearby.	Ezemvelo KZN Wildlife and KZN Department of Economic Development, Tourism and Environmental Affairs	2004
KwaZulu-Natal Nature Conservation Ordinance 15	The development might impact on protected species.	Ezemvelo KZN Wildlife and KZN Department of Economic Development, Tourism and Environmental Affairs	1974
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) Threatened or Protected Species (TOPS) Regulations	The development may have an impact on species that are listed as threatened or protected.	Ezemvelo KZN Wildlife and KZN Department of Economic Development, Tourism and Environmental Affairs	2007
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	Relates to the control of alien vegetation.	Department of Agriculture, Forestry, and Fisheries	1983
National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA)	Management of waste.	National Department of Environmental Affairs and KZN Department of	2009

BASIC ASSESSMENT REPORT

		Economic Development, Tourism and Environmental Affairs	
National Forests Act (Act No. 84 of 1998)	Conservation of forest resources.	National, Provincial and Regional Department of Agriculture Forestry and Fisheries	1998
National Water Act (Act No. 36 of 1998) (NWA)	The proposed development has impacts on wetlands and watercourses.	National, Provincial and Regional Department of Water and Sanitation	1998
National Heritage Resources Act (Act No. 25 of 1999) (NHRA)	Development footprint is greater than 0.5 Ha.	South African Heritage Resources Agency (SAHRA) and Amafa aKwaZulu-Natali	1999
Hazardous Substances Act (Act No. 15 of 1973)	Management of hazardous substances during the proposed development.	Department of Health	1973
Hazardous Substances Amendment Act (Act No. 53 of 1992)	Management of hazardous substances during the proposed development.	Department of Health	1992
National Ports Act (Act No. 12 of 2005)	The proposed development is an upgrade of existing infrastructure within the port of Richards Bay.	Transnet National Ports Authority	2005
uMhlathuze Municipality Integrated Development Plan Review	Port expansion and infrastructure development is recognised as an important future development for the city of uMhlathuze.	City of uMhlathuze Local Municipality	2016/2017
uMhlathuze Municipality's Bylaws, Policies and Programmes	Planning and environmental management.	City of uMhlathuze Local Municipality	

BASIC ASSESSMENT REPORT

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

YES	
	10 m ³

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

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

Construction solid waste will be disposed at the uThungulu Regional Landfill Site which is situated on ERF 11425 and 11425 of Richards Bay, between the R102 and N2. Access to the site can be obtained via the R34. The coordinates to the entrance of the site are as follows: 26° 46' 02.88" S / 31° 54' 55.57" E. The site will accept construction and domestic waste generated from the site; however it will not accept hazardous and medical waste.

Sections of the Asbestos pipeline that are above ground that are attached over the Manzanyama viaduct bridge, will be disposed at a Category A (HH) landfill site at either the Shongweni HH Landfill Site, Umlazi HH Landfill Site which is located in the eThekweni Municipality, or the DCLM Landfill site in KwaDukuza. In accordance with the Waste Classification and Management Regulations and Supporting Norms & Standards (Gazette No. 36784 of 23 August 2013), the generated waste will be accompanied by a Safety Data Sheet (SDS) and a Waste Manifest. Additionally, TNPA currently have a contract with an approved service provider, Dolphin Coast Landfill Management (DCLM), which is registered with the Department of Labour.

Will the activity produce solid waste during its operational phase?

	NO
--	----

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

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

Not applicable

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

Not applicable

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

Not applicable

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?

	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.

According to the Waste Act (Act No. 59 of 2008) read with the Waste Classification and Management Regulations and Supporting Norms & Standards (Gazette No. 36784 of 23 August 2013), the removal and disposal of Asbestos will not require a Waste Management Licence. However the following conditions and procedures will be implemented:

- ☐ Disposal of the Asbestos to a Class A landfill site.
- ☐ The waste will be accompanied by a manifest and safety data sheet.
- ☐ The manifest and safety data sheet and disposal certificate will be kept for 5 years for any auditing that may be conducted by the DEA.

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

	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.

BASIC ASSESSMENT REPORT

b) Liquid effluent

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

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?

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?

NO

If YES, provide the particulars of the facility:

Facility name: Not applicable

Contact

person:

Postal

address:

Postal code:

Telephone:

E-mail:

Cell:

Fax:

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

Not applicable

c) Emissions into the atmosphere

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

NO

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

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:

N/A. The only emissions likely to be generated by the proposed activities are dust as a result of earth moving activities, and emissions released by site machinery and equipment. None of the emissions likely to be generated by the proposed activity will require a licence/permit or are controlled by any legislation.

d) Waste permit

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

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

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

YES

Describe the noise in terms of type and level:

Noise associated with the proposed project will include that of construction equipment on site. Noise impacts associated with the proposed project will be temporary and short term given the short timeframe of the project. Should construction activities extend beyond normal working hours, appropriate notification methods will be exercised. Since the area is industrial, there should be no sensitive receptors i.e. schools and residences.

BASIC ASSESSMENT REPORT

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
Water required for the project will either be sourced from the City of uMhlathuze Municipality or the local water service authority, uMhlathuze Water directly.					

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:

N/A

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

YES

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

The project triggers water uses in terms of section 21 (c) and (i) of the National Water Act, 1998 (Act 36 of 1998) for which authorisation from the Department of Water and Sanitation (DWS) is required.

The section 21 (c) and (i) water uses associated with TNPA's replacement of critical pipe sections may be generally authorised in terms of GN509 of 2016:

- ☐ Section 6(2) of GN509: Transnet as a State Owned Company (SOC), having lawful access to the property, may on that property (Port of Richards Bay) use water in terms of section 21 (c) or (i) of the Act as specified under each of the relevant SOC's and other institution (Appendix D2).
- ☐ Appendix D2 states that for TRANSNET and other institutions, all 1.5 meter diameter and smaller pipelines (except pipelines excluded in terms of this Notice – paragraph 3(e)) may be generally authorised subject only to compliance to the conditions of this Notice.
- ☐ The replacement of the pipe sections to be undertaken by Transnet, will take place entirely within the Port of Richards Bay (owned by Transnet). The new pipe will have a diameter of less than 1.5 m (0.56 m), the pipes will carry potable water only, and therefore are not excluded as per Paragraph 3(e).

14. ENERGY EFFICIENCY

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

The construction methods have been developed in a way to minimise the use of any fuel based mechanical machinery and maximise the manual labour force. During operations the infrastructure will require no energy.

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

Not applicable. The proposed development will require no electricity during operations.

BASIC ASSESSMENT REPORT

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

1

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

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

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.

Property description/physical address

Province	Kwazulu-Natal
District Municipality	King Cetshwayo District Municipality
Local Municipality	City of uMhlathuze Local Municipality
Ward Number(s)	Ward 2
Farm name and number	Portion 21 of ERF 5333. Portion 45 ERF 5333. Portion 0 of ERF 16230. Portion 1 of ERF 16230.
Portion number	See above.
SG Code	N0GV04210000533300021 N0GV04210000533300045 N0GV04210001623000000 N0GV04210001623000001

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:

Industrial / Harbour

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?

NO

BASIC ASSESSMENT REPORT

1. 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
------	-------------	-------------	-------------	--------------	-------------	------------------

2. 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	X	2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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.

BASIC ASSESSMENT REPORT

4. GROUNDCOVER

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

Natural veld - good condition ^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.

5. SURFACE WATER

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

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

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

Two wetland units are located within the study area. These systems are Unchannelled Valley Bottoms that have been extensively impacted upon by previous activities on the site. The wetlands are currently quite dry, but still exhibit distinct wetland characteristics, with mottles indicating a seasonal wetland that is not permanently saturated. Both wetland systems have been heavily impacted upon by port developments, and other portions of the site appear to historically have been wetland systems which have been degraded and in filled through the deposition of dredged material from the harbour.

1. The first wetland unit is located along the north-western alignment of the pipeline between the municipal feed and the viaduct. It has been extensively impacted upon by the creation of railway lines and roads across the wetland at various points. The wetland drains from north to south, and includes a portion of swamp forest along its eastern edge. The wetland unit ends as it meets the mangrove system in the south. The system has also been severely impacted upon by the construction of the truck stop area and permit office, which appear to have been built within the wetland system. The wetland is dominated by large reed beds, with some forest along its boundary as mentioned above.
2. The second wetland unit is located adjacent to the mangrove system along the southern and eastern portion of the section between the municipal feed and the viaduct. This wetland unit appears to drain directly into the mangrove edge. This wetland is dominated by sedges, and is more permanent than the first wetland unit, with wetness still very evident during this dry period.

The section 21 (c) and (i) water uses associated with TNPA's replacement of critical pipe sections may be generally authorised in terms of GN509 of 2016, subject only to the conditions contained in section 9 of the notice.

BASIC ASSESSMENT REPORT

6. LAND USE CHARACTER OF SURROUNDING AREA

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

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)

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

A section of the proposed pipeline to be upgraded crosses underneath the TNPA railway lines. The existing pipe under the railway line crossing is a 355 mm HDPE pipe. The installation of this pipe to replace the previous 355mm HDPE pipe due it collapsing was recently completed. Therefore it is proposed the critical section of pipeline to be upgraded will be a new 560mm HDPE pipe parallel to the existing pipe.

Construction at this section will use the micro tunnelling process to minimise the impact on the surrounding railway infrastructure. The existing 355mm HDPE pipe will be cleaned and be used as a sleeve for cables. Additionally, during construction all operations on the affected area will be temporarily halted. Through consultation between TNPA and the relevant stakeholders an exact period will be identified for construction to commence on this section. Continuous supervising and implementation of the health and safety guidelines included in the EMP_r (Appendix G) will minimise the potential risk of staff working on the railway line.

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:

The pipe sections to be replaced will traverse land zoned as industrial. The new infrastructure provided by the proposed development will provide a reliable source of potable water to the Port and will therefore impact positively on future business planned and business already taking place within the Port of Richards Bay.

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:

Not applicable.

BASIC ASSESSMENT REPORT

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

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

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

See Appendix A for a copy of the Sensitivity Map.

7. CULTURAL/HISTORICAL FEATURES

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

NO

Not applicable.

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

A Heritage Impact Assessment with a Paleontological component was conducted in 2009 by Umlando: Archaeological Tourism Resources Management for the proposed expansion of the Richards Bay Port. The expansion covers a large area of approximately 13 km by 3 km, which includes the site for the critical sections of pipe that need to be replaced. The assessment included an extensive desktop analysis of historical records and previously recorded archaeological and paleontological sites and a field survey with test pits. The assessment identified nine archaeological sites of varying significance and the potential for Paleontological remains which are of high significance to be impacted upon through subsurface excavations for any new developments.

However, the proposed development is located approximately 2, 3 km south of the closest area of significance identified in the report and will therefore have no impact on these identified sites. Additionally, given the nature of the project as an upgrade of existing infrastructure and the disturbed nature of the site, no subsurface excavations in undisturbed areas will be required nor will any building older than 60 years be impacted upon as there are none within the immediate area of the site.

Nevertheless, although highly unlikely, if during earthmoving activities any heritage objects are discovered, Amafa will be contacted immediately and all development will cease until further notice.

Will any building or structure older than 60 years be affected in any way?

NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO

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

BASIC ASSESSMENT REPORT

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

According to the 2012/2017 Integrated Development Plan (IDP) for the uMhlathuze Municipality the South African unemployment rate is sitting at 25%, provincial at 22.6% and uMhlathuze's is estimated at 40%.

According to the 2011 census (StatsSA, 2011), uMhlathuze Local Municipality has a total population of 334 459. 87.7% of the people in the municipality are African Black, 7.3% are White, with the other population groups making up the rest. Levels of unemployment are 30% and unemployment amongst the youth is 40.8%. Furthermore, the 2012/2017 IDP attributes the high levels of unemployment to past social and economic injustices and that the fact that many individuals relocate from the rural communities hoping to be employed by the large manufacturing companies and are unsuccessful.

Economic profile of local municipality:

Richards Bay falls within the fastest growing provincial economies at an average rate of 4.3% per annum. The Port of Richards Bay is one of the two largest and busiest Ports in Africa creating a drive for the area to be one of the major industrial investment opportunities. The Port plays an important economic role not only for this province but for the whole of South Africa (SA). Whilst they are presently export oriented, the potential for import prospects are being contemplated. The City also functions as a district node and dominant commercial centre in the King Cetshwayo District providing greater economic opportunities for the town and hinterland (IDP, 2012/2017).

The area is the third most important in KZN in terms of economic production, contributing 16.7% to national Gross Domestic Product (GDP) whilst also the third most important primary manufacturing area in KwaZulu Natal (KZN) in terms of economic production. Manufacturing is highly specialised and export orientated, largely concentrated on basic iron and steel, paper and printing as well as food and beverages (IDP, 2012/2017).

The City of uMhlathuze is rich in mineral resources. The mining of these minerals meets all of South Africa's (S.A) demand for titanium dioxide, zircon and almost all of the country's pig iron requirements. Most of the industrial and commercial activities are vested in Richards Bay, Empangeni and Felixton (specifically the industrial development nodes of the City of uMhlathuze). The manufacturing sector employs the majority of population (IDP, 2012/2017). Manufacturing contributes 29% of the national GDP. uMhlathuze's Economy has the following components:

- ☐ Local Economic Development
- ☐ Agriculture
- ☐ Tourism
- ☐ Other sectors such as mining, construction and manufacturing"

Level of education:

According to the Stats SA (2011), uMhlathuze Local Municipality has a total population of 334 459. Of those aged 20 years and older, 42% have completed primary school, 23.5% have some secondary education, 21.2% have completed matric and 4.8% have some form of higher education. 7.5% of those aged 20 years and older have no form of schooling.

BASIC ASSESSMENT REPORT

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 39 million
What is the expected yearly income that will be generated by or as a result of the activity? The development will not generate any direct income but will allow current and future business to continue without interruptions.	
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	78 (estimated) 60 x General labours 2 x Drivers 2 x SHE Rep 4 x Safety Rep 2 x Team Leaders 6 x Plumbers 2 x Supervisors
What is the expected value of the employment opportunities during the development and construction phase?	To be confirmed once the contractor has been appointed.
What percentage of this will accrue to previously disadvantaged individuals?	Information not available at this stage.
How many permanent new employment opportunities will be created during the operational phase of the activity?	Not applicable. The proposed development is only an upgrade of existing infrastructure.
What is the expected current value of the employment opportunities during the first 10 years?	Not applicable
What percentage of this will accrue to previously disadvantaged individuals?	Not applicable

BASIC ASSESSMENT REPORT

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. 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)	In terms of the desktop analysis undertaken, the site is classified as 0.005, i.e. all biodiversity features recorded in the study area are conserved to the target amount, and there is unlikely to be a biodiversity concern with the proposed development. The Minset analysis mirrors the C-Plan data with the irreplaceable area being deemed as not requiring protection.
				N/A
				N/A

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

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	Due to the history of past disturbances in the Port, and the nature of the proposed works, as an upgrade of existing infrastructure; no natural habitat was observed within the study area.
Near Natural (includes areas with low to moderate level of alien invasive plants)	15%	There were patches of more intact natural vegetation noted outside the existing pipe servitude which have relatively high numbers of provincially protected plants.
Degraded (includes areas heavily invaded by alien plants)	65%	The majority of the proposed works will take place within or alongside the existing pipe servitude. This habitat is degraded due to a lack of veld management (burning / mowing regimes, illegal dumping of general waste and exclusion of fire) which has resulted in a severe reduction in indigenous cover and a complete loss of historical grassland, wetland and forest that would have been typical of the area.

BASIC ASSESSMENT REPORT

Transformed (includes cultivation, dams, urban, plantation, roads, etc)	20%	Approximately 20 % of the alignment for the proposed pipeline upgrade is completely transformed (rail, road, truck stop, bridge, 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 Endangered Vulnerable	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary		Coastline
	Least Threatened 100%		YES		NO

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

Vegetation on site

According to Mucina and Rutherford (2006) the vegetation type of the site is Mangrove Forest (FOa3) and Subtropical Freshwater Wetlands (AZf6). The conservation status the Subtropical Freshwater Wetlands type is considered *least threatened* with a conservation target of 24%, Mangrove Forest is considered *critically endangered* with a conservation target of 100%. A total of 150 plant species were recorded during the field survey, of which 21 were alien/ exotic. Ten (10) plant species which are protected by Provincial Legislation and Two (2) Nationally Protected trees were noted within the upgrade site. However, The majority of the site is degraded (70% alien and pioneer plant composition) due to a lack of veld management (burning / mowing regimes, exclusion of fire). The patches of more intact vegetation noted were outside of the servitude footprint for the proposed pipeline construction. Illegal dumping of general waste has further degraded the floristic composition and potential of this landscape.

Municipal Feed to Viaduct

The general vegetation across this section is dominated by alien vegetation and pioneer / primary successional vegetation species. The mangrove area next to the Manzanyama Canal is dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorhiza*). The area expected to be affected by the proposed pipeline traversing the edges of the swamp forest is dominated by the grasses *Paspalum notatum*, *Melinis repens* (both indigenous) and *Paspalum urvillei* (alien) the broad leaf vegetation is dominated by alien vegetation such as *Ricinus communis* and *Lantana camara*. The remaining portion of the pipeline passes through vegetation that is pioneer (early succession) in nature. The open areas are very sandy and are dominated by the grass *Paspalum notatum* and by herbs such as *Chrysanthemoides monilifera*, *Carpobrotus dimidiatus* and *Helichrysum kraussii*. The areas where the servitude traverses through the canopy trees are dominated by *Acacia mearnsii* and *Acacia karroo*, while the understory, apart from patches of alien vegetation such as *Lantana camara*, *Rivina humilis* and *Ipomoea purpurea* is predominantly indigenous and dominated by pioneer species such as *Grewia occidentalis*, *Psydrax obovata* and a number of *Rhoicissus* spp.

BASIC ASSESSMENT REPORT

Level Crossing to Tidal Gates

This section of pipeline follows Arterial Road adjacent to the Richards Bay Game Reserve heading to South Dunes and follows the existing servitude. If the alignment was to deviate towards the road it would compromise the road reserve and if it had to move toward the Game Reserve it would impact on the vegetation on the Reserve edge, which comprises of large thickets of the protected plant *Hibiscus tiliaceus* and below that, mangrove tree species. The servitude is generally well maintained by mowing and is easily accessible, towards the end of the alignment the pipeline passes through a thick tree canopy, again dominated by *Acacia mearnsii* and *Acacia karroo*, as well as a number of *Brachylaena discolor* individuals. At the time of this site visit (24th October 2016) the only protected species visible were *Asparagus* species with no visible protected bulbous plants. However during a site visit conducted in February 2016 a number of protected species including *Scadoxus puniceus* and *Eulophia speciosa* were recorded.

It is strongly recommended that activities take place within, or as near to the existing pipe servitude as possible, to avoid disturbance of established vegetation communities outside of the servitude. This is especially recommended along the Berm Road, adjacent to Richards Bay Game Reserve. Every effort should be made to avoid impacts on the Mangroves and the Manzanyama Canal under in the vicinity of the Viaduct.

Should the need arise for indigenous trees to be cut and/or destroyed, a DAFF permit will need to be obtained. The permit and application will need to be made and an offset for the loss of these individuals will be required, usually planting 5 individuals of the same species for each tree that will be lost. Relocation of provincially protected species will require a permit from Ezemvelo KZN Wildlife. Their removal and relocation should occur during the summer months and with due care, preferably by a qualified botanist or similarly qualified individual.

Wetlands

Two wetland units were identified within the study area. These systems are Unchannelled Valley Bottoms that appear to have been extensively impacted upon by previous activities on the site. The wetland is currently quite dry, but still shows distinct wetland characteristics, with mottles indicating that it is a seasonal wetland, and is not permanently saturated. Both wetland systems have been heavily impacted upon by encroachment, and other portions of the site appear to historically have been wetland systems, but have been degraded and in filled through the deposition of dredged material from the harbour.

1. The first wetland unit is located along the north-western alignment of the pipeline between the municipal feed and the viaduct. It has been extensively impacted upon by the creation of railway lines and roads across the wetland at various points. The wetland drains from north to south, and includes a portion of swamp forest along its eastern edge. Additionally, this wetland unit ends as it meets the mangrove system to the south. The system has also been impacted upon by the construction of the truck stop area and permitting office, which appear to have been built within the wetland system. The wetland is dominated by large reed beds, with some forest along its boundary as mentioned above.
2. The second unit is located adjacent to the mangrove system along the southern and eastern portion of the alignment between the municipal feed and the viaduct. This wetland unit appears to drain directly into the mangrove edge. This wetland is dominated by sedges, and is more permanent than first unit, with wetness still very evident during this dry period.

BASIC ASSESSMENT REPORT

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Zululand Observer (English) and Eyethu Bay Watch (isiZulu)	
Date published	5 th August 2016 – English Version 3 rd August 2016 – Zulu Version	
Site notice position	Latitude	Longitude
	Bayvue Building	
	28°47'8.84"S	32°02'3.61"E
	TNPA Permit Office	
	28°47'14.11"S	32°01'32.65"E
Date placed	5 th August 2016	

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

See Appendix E1 for a copy of the relevant newspaper adverts and onsite notices.

2. DETERMINATION OF APPROPRIATE MEASURES

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

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (e-mail address)
Mrs Sandy Camminga	Director – Richards Bay Clean Air Association.	info@rbcaa.co.za
Mr Percy Langa	RBIDZ	Percy.Langa@rbidz.co.za
Mr Jeremy Smith	Chairman – Richards Bay Ratepayers & Residents Association.	jeremy.1953@gmail.com
Mr Christa Van Der Walt	Chamber Manager - ZCBF Community Park	manager@zcci.co.za
Mr Jan Kapp	Commodore - Richards Bay Ski Boat Club	jankapp@mweb.co.za
Mr Corne Kleinschmidt	Commodore – Meerensee Boat Club	mjvermaak@worldonline.co.za
Mr Dorian Robertson	Station Commander – NSRI	roberdvi@telkom.co.za
Ms Fiona Linde	Manager – Zululand Yacht Club	manager@zyc.co.za
Mr Johan Gouws	Chairman – Bird Life	johan.gouws1@gmail.com
Mr Mike Stevens	Chairman – Zululand Kayak Club	mstevens@isat.co.za

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.

See Appendix E2 for proof that key stakeholders were notified.

BASIC ASSESSMENT REPORT

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
1. Jeffrey Maivha The Department of Agriculture, Forestry and Fisheries (DAFF). DAFF is mandated to regulate activities affecting natural forests and tree species protected in terms of the National Forests Act, 1998 (Act No. 84 of 1998). It is brought to your attention that DAFF would have concerns should this proposed additional rail line impact on natural forests occurring along the area. At this stage DAFF cannot provide detailed comment and commit as information included in the BID is insufficient. The following is requested to assist with decision-making: Vegetation Assessment Report which must clearly highlight presence /absence of natural forests and potential impacts of the project on the forests if any. Layout of the proposed development overlaid on aerial imagery Proposed mitigation measures if there is any impacts on natural forest and, Proposed alternatives. This letter does not exempt you from considering other environmental legislations. Should any further information be required please do not hesitate to contact this office.	We thank you for your comment, the information requested for decision making is presented within this report, of which a copy has been sent to DAFF for review and comment.
2. Mrs Sandy Camminga Richards Bay Clean Air Association (RBCAA). Mrs Camminga requested an update on the Application.	ACER is yet to submit the Draft Basic Assessment Report (BAR) for public review/comment. There has been a delay in the appointment of the relevant specialists, whose input is integral to the process. ACER is anticipating the specialist appointments to be finalised this week, and the Draft BAR to go out toward the end of November. Thanks for your interest and participation in the process, we look forward to your comments.

BASIC ASSESSMENT REPORT

3. 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.

See Appendix E3 for a copy of the Comments and Responses Report.

4. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	e-mail	Postal address
DEA	Lerato Mokoena	lmokoena@environment.gov.za	Private Bag X 447 Pretoria
DEA	Portia Makitta	pmakitta@environment.gov.za	Private Bag X 447 Pretoria
DEDTEA	Muzi Mdamba	MdambaM@kznded.gov.za	Private Bag X1048
DWS	Coleen Moonsamy	moonsamyc@dws.gov.za	P O Box 1018
DWS	Nompumelelo Mdlalose	MdlaloseN2@dws.gov.za	P O Box 1018
DAFF	Jeffrey Maihva	JeffreyMAI@daff.gov.za	P.O. Box 9029 Pietermaritzburg
EKZNW	Dominic Wieners	wienersd@kznwildlife.com	P O Box 13053 Pietermaritzburg
City of uMhlathuze Local Municipality	Mrs. Sharin Govender	Sharin.Govender@umhlathuze.gov.za	Private Bag X1004 Richards Bay
AMAFA aKwaZulu Natali	Weziwe Tshabalala	archaeology@amafapmb.co.za	P O Box 2685 Pietermaritzburg
King Cetshwayo District Municipality	MH Nkosi	rheedersc@uthungulu.co.za	Private Bag X1025 Richards Bay
City of uMhlathuze Municipality	NJ Sibeko	sibekoni@umhlathuze.gov.za	Private Bag X1004 Richards Bay
EKZNW	Irene Hatton	ihatton@kznwildlife.com	P O Box 13053
TNPA	Hope Lekoa	Hope.Lekoa@transnet.net	PO Box 181, Richards Bay
TNPA	Vumani Ndlovu	vumani.ndlovu2@transnet.net	PO Box 181, Richards Bay
TNPA	Lungile Nyembe	Lungile.Nyembe@transnet.net	PO Box 181, Richards Bay
Mhlathuze Water	Mthokozisi Duze	sxulu@mhlathuze.co.za	Private Bag X1047 Richards Bay
TNPA	Preston Khomo	Preston.Khomo@transnet.net	P O Box 181 Richards Bay
EKZN (R Bay Game Reserve)	Kevin Green	K.Green@kznwildlife.com	P O Box 10416 Meerensee, 3901

Commented [VN3]: Change to Mbongeni Sangweni

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

See Appendix E4 for proof that Authorities were notified.

BASIC ASSESSMENT REPORT

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

5. 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.

See Appendix E5 for the list of registered I&APs.

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

See Appendix E6 for copies of project related correspondence and meetings.

SECTION D: IMPACT ASSESSMENT

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

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

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

PLANNING AND DESIGN PHASE IMPACTS AND MITIGATIONS			
Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
PLANNING AND DESIGN PHASE	DIRECT IMPACTS ☐ No direct impacts will occur on the site during the Planning and Design Phase. However, cognisance must be taken during project planning and budgeting of the potential impacts identified and mitigation measures required for the Construction, and Operation Phases. These are documented in this Basic Assessment Report.	N/A	Measures to minimise potential impacts during the planning and design phase are contained in the EMPr (Appendix G).
	INDIRECT IMPACTS: ☐ None anticipated.	N/A	N/A
	CUMULATIVE IMPACTS: ☐ None anticipated.	N/A	N/A

BASIC ASSESSMENT REPORT

CONSTRUCTION PHASE IMPACTS AND MITIGATIONS			
Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
CONSTRUCTION PHASE	DIRECT IMPACTS		Measures to minimise potential impacts on the biophysical environment are contained in the EMPr (Appendix G).
	Biophysical Impacts:		
	❑ Disturbance and loss of vegetation during site clearance activities.	Medium (-)	
	❑ The loss of faunal habitat to the construction footprint.	Low (-)	A pre-construction walk down of the development footprint must be undertaken by a suitably qualified specialist to identify and facilitate the relocation and translocation of ecologically important species.
	❑ Potential loss of protected and rare/endangered species and/or habitats.	Medium (-)	
	❑ Disturbance and possible injury of fauna during construction.	Medium (-)	
	❑ Disturbance and loss of wetlands located near or within the development footprint.	Medium (-)	Ecologically sensitive areas must be delineated and demarcated as no-go areas prior to the commencement of construction.
	❑ Increased potential for the establishment and spread of alien invasive species.	Medium (-)	Clearance of indigenous vegetation must be minimised to the agreed and approved areas.
	❑ The degradation of soils through loss of topsoil from erosion compaction caused by the movement of heavy plant and construction traffic and contamination from concrete mixing or leaks and through hydrocarbon spills.	Low (-)	Alien plants should be controlled on site (where construction has resulted in disturbance) during construction.

BASIC ASSESSMENT REPORT

	Pollution Impacts: ❑ Generation of excess fill material from the earthworks phase of construction. ❑ Generation of solid waste during the construction phase. ❑ Onsite ablution facilities. ❑ Contamination of water resources (ground and or surface water) through accidental hydrocarbon spills in areas where machinery is operating.	Low (-) Medium (-) Low (-) Medium (-)	Pollution of the surrounding wetlands must be avoided by strict control/handling of building materials such as cement and petrochemicals. Ablution facilities must be located well away from water courses and must be emptied on a weekly basis. Refuelling and servicing of all machinery should take place off site at an approved facility. All portable machinery must be placed on drip trays to prevent the risk of hydrocarbon spills due to leakage. No contaminated runoff must be allowed to reach any water resource within or near the construction site.
--	---	---	---

BASIC ASSESSMENT REPORT

	Stormwater Impacts: ❑ Increased concentration and canalisation of flow within the wetlands. ❑ Reduction in diffuse flow and the extent of wetness within the wetland. ❑ Alteration of the vegetation communities due to decreased wetness and erosion disturbances. ❑ Reduction in the wetland's functionality and health. ❑ Increased potential for soil erosion caused by compaction and increased hard and exposed surfaces. ❑ Sedimentation of surrounding water bodies and wetland caused by increased run-off. ❑ Possible pollution of water resources from contaminated run-off.	Low (-) Low (-) Low (-) Low (-) Low (-) Low (-) Low (-)	Soil erosion control structures such as temporary soil berms, mitre drains, sandbags, silt fences or rock bolsters should be used to control runoff and sedimentation where necessary, particularly on steep slopes; during the rainy seasons and where vegetation has been cleared. The topsoil from the development footprint should be stripped off and stockpiled for use in site rehabilitation. Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected clearing activities should be put on hold. After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Stormwater impacts must be mitigated according to the standard engineering practices and the specifications in the in the EMPr (Appendix G).
--	--	--	--

BASIC ASSESSMENT REPORT

	Nuisance Impacts: ❑ Increased dust generation from exposed surfaces and construction activities. ❑ Noise generated by construction activities such as earthmoving machinery, may cause a nuisance to neighbours and Port users. ❑ Traffic congestion caused by construction/delivery vehicles ❑ Possible disturbances to service infrastructure (ablutions, electricity and water) during the construction period.	Low (-) Low (-) Low (-) Low (-)	Dust suppression techniques must be utilised (e.g. regular wetting of access roads and working areas). TNPA must notify South Dunes Lease Site neighbouring landowners when construction will commence. A traffic specialist must draw up a traffic management plan to be implemented prior to the construction phase. Temporary nuisance impacts must be mitigated according to standard engineering practice and the specifications in the EMPr attached in Appendix G.
	Potential health and safety risks: ❑ Injuries to workers during the construction activities. ❑ Harm to construction workers by dangerous wild animals, e.g. snakes, hippo's or bees. ❑ Road accidents caused by increased vehicular traffic to and from the site. ❑ Safety risks posed by open trenches to people and animals.	Low (-) Low (-) Low (-) Low (-)	Environmental and safety inductions must be provided to all staff before they are permitted on the construction site. Dangerous sites (e.g. operational railway tracks) must be cordoned off and no public access allowed. Speed limits and other signage must be instituted as required. Contractors must have emergency telephone numbers on site. A health and safety file is to be kept on site and all incidents must be recorded and reported to the designated safety officer by the Contractor.

BASIC ASSESSMENT REPORT

	Socio-economic Impacts: ☐ Creation of employment opportunities for the surrounding communities during construction. ☐ Socio-economic benefits associated with the procurement of goods and services locally.	High (+) High (+)	Where possible, use should be made of local labour and SMEs to promote skills development and employment.
	Impacts on Cultural Heritage Resources: ☐ Although unlikely, the possibility exists for paleontological artefacts and/or cultural heritage resources to be impacted on during the excavation and construction of the various infrastructure components.	Low (-)	Should any paleontological artefacts or heritage resources be encountered during construction, the Contractor is to stop work immediately and follow the steps outlined in the EMPr (Appendix G).
	INDIRECT IMPACTS: ☐ None identified	N/A	The indirect impacts resulting from the construction phase can be mitigated to acceptable levels through proper implementation of the approved EMPr (Appendix G).
	CUMULATIVE IMPACTS: ☐ During construction the proposed development may have a negative impact on the economic activities of the Port and the smaller services within the immediate area such as suppliers and potential lessees of commercial property.	Low (-)	The cumulative impacts resulting from the construction phase can be mitigated to acceptable levels through proper implementation of the approved EMPr (Appendix G).

BASIC ASSESSMENT REPORT

OPERATIONAL PHASE IMPACTS AND MITIGATIONS			
Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
PLANNING AND DESIGN PHASE	DIRECT IMPACTS		Measures to minimise potential impacts during the operational phase of the pipeline are contained in the EMPr (Appendix G).
	☐ Improved and reliable supply of potable water.	High (+)	
	☐ Potential for soil erosion caused by increased stormwater run-off from the servitude, scouring of the pipeline during testing, maintenance and operation and leaks or bursts in the pipeline are unlikely risks if the infrastructure is designed and built properly.	Low (-)	
	☐ Alien invasive plant species often colonise road verges due to their disturbed nature. Once colonised, these species spread to adjacent areas.	Medium (-)	
	INDIRECT IMPACTS:		
	☐ Improve operations for the occupants, therefore contributing to economic growth the region.	High (+)	N/A
	CUMULATIVE IMPACTS:		
	☐ None anticipated.	N/A	N/A

BASIC ASSESSMENT REPORT

DECOMMISSIONING PHASE IMPACTS AND MITIGATIONS			
Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
PLANNING AND DESIGN PHASE	DIRECT IMPACTS ☐ It is not envisaged that the pipeline will ever be decommissioned and/or closed. It is thus not valid to assess impacts related to decommissioning.	N/A	N/A
	INDIRECT IMPACTS: ☐ None anticipated.	N/A	N/A
	CUMULATIVE IMPACTS: ☐ None anticipated.	N/A	N/A

BASIC ASSESSMENT REPORT

NO-GO OPTION			
Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
No-Go Option	DIRECT IMPACTS		
	❑ Increased potential for failures in the identified critical sections of pipeline. ❑ Interruptions to Port business operations due to failures and leakages. ❑ Loss of potable water, a valuable resource. ❑ No disturbance or loss of to vegetation/wetlands on site. ❑ No disturbance or injury to fauna on site.	High (-) High (-) High (-) Medium (+) Medium (+)	N/A
	INDIRECT IMPACTS:		
	❑ Hindered growth in the liquid and dry bulk sectors.	High (-)	N/A
	CUMULATIVE IMPACTS:		
	❑ None anticipated.	N/A	N/A

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

See Appendix F for a copy of the Impact Assessment Criteria and the Impacts associated with the project.

BASIC ASSESSMENT REPORT

2. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

No fatal flaws have been identified in this assessment of the proposed replacement of critical sections of pipeline within the Port of Richards Bay. Provided the proposed mitigation measures are implemented and the conditions of the EMPr are adhered to at all times, no significantly high, long-term negative impacts on the environment are anticipated. Additionally, overall, the project is anticipated to have direct and indirect benefits for the regional economy and the national GDP during its operational phase.

The most significant negative impacts that will occur during the construction phase are related to the biophysical environment, including, the clearing of natural vegetation, loss of faunal habitat, degradation of soils, soil erosion, the spread and establishment of alien invasive plant species, disturbance of wetlands, and the sedimentation of nearby water bodies. Other negative, temporary construction impacts are likely to occur but are anticipated to be of low significance, provided the recommended mitigation measures are implemented. These include the potential pollution of water resources, potential health and safety risks related to on-site injuries and/or injuries caused by road accidents, potential nuisance impacts from construction workers and noise from heavy machinery and plant and possible disturbances or interruptions to Port operations during the construction period.

The operational phase of the project will have mainly positive impacts such as the reduced risk of business interruptions, incidents of leakages and the consequential loss of a valuable and scarce resource. Potential negative include, the loss of indigenous vegetation, the spread of alien invasive species, soil erosion caused by increased stormwater run-off from the servitude, scouring of the pipeline during testing, maintenance and operation and leaks or bursts in the pipeline. However, if the infrastructure is designed and built properly and the conditions of the EMPr are implemented successfully, these impacts are unlikely.

This document was produced following a Basic Assessment Process and involved stakeholder consultation to identify issues and concerns. An evaluation of the results of the specialist studies, as well as proposed mitigation measures, has shown that with proper implementation of the recommended mitigation measures no significant environmental impacts are anticipated for the construction and operation of the new water infrastructure within the Port of Richards Bay.

Alternative B

Not applicable.

Alternative C

Not applicable.

BASIC ASSESSMENT REPORT

No-go alternative (compulsory)

The no-go alternative entails TNPA leaving the current pipe infrastructure as is. This option will result in the increased incidents of leakage and the consequential loss of water, a valuable and increasingly scarce resource. While at the same time continued pipe failures will result in inconvenienced clients and business interruptions.

There are two potentially positive impacts associated with the no-go alternative, namely; no disturbance or loss of vegetation and wetlands and no disturbance or impact to fauna on site. However, implementing and adhering to the conditions of the EMPr will ensure with high confidence that the natural environment will not be adversely affected by the proposed development.

Furthermore, negative impacts that can be expected from the no-go alternative include; Increased potential for failures in the identified critical sections of pipeline, interruptions to Port business operations due to failures and leakages and loss of potable water, a valuable resource. With high degree of confidence, the impacts will negatively affect the regional economy.

BASIC ASSESSMENT REPORT

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

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).

Not applicable

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.

PRE-CONSTRUCTION

Prior to the undertaking of any construction activities TNPA must ensure the following has been undertaken:

- ☐ A suitably qualified ecologist must be appointed to conduct a search and rescue operation of the entire development footprint. The main objective of the search and rescue must be to:
 - Identify plant or tree species that should be relocated.
 - Identify areas suitable for relocation and translocation of animals and plant species.
 - Facilitate the relocation and translocation of animals and plant species.
- ☐ All sensitive areas, as identified in this Report must be delineated and demarcated as No-Go areas.
- ☐ No construction activities must take place within the regulated area of a water resource without the appropriate water use authorisation being granted by the Department of Water and Sanitation.
- ☐ TNPA must obtain all necessary permits and licences for the relocation and removal of protected species.
- ☐ Transnet environmental management procedures must be aligned with the EMPr and be implemented during all phases of the project.

CONSTRUCTION PHASE

- ☐ The development must take place in the location depicted on the site plan.
- ☐ All relevant environmental legislation and regulations must be complied with at all times.
- ☐ TNPA Safety, Health and Environment policy and regulations must be complied with at all times.
- ☐ An independent Environmental Compliance Officer must be appointed to ensure compliance with the approved EMPr and the conditions of the Environmental Authorisation.
- ☐ It is strongly recommended that project activities take place within or as near to the existing pipe servitude as possible to avoid creating new disturbances, especially along the Berm Road adjacent to the Richards Bay Game Reserve.
- ☐ To reduce the erosion risks on site during the construction phase, stormwater and erosion control measures must be implemented by the contractor to ensure that the erosion and sedimentation of wetlands and water bodies do not occur during the establishment phase. Additionally, the recommended stormwater and erosion control measures include in the EMPr (Appendix G) should be implemented.

REHABILITATION PHASE

- ☐ Progressive rehabilitation of the construction footprint must occur in line with the specifications of the EMPr.
- ☐ The removal of alien invasive species must occur in conjunction with the re-establishment of indigenous vegetation, including indigenous species identified during vegetation assessment.
- ☐ TNPA should compensate the destruction of indigenous tree species with the planting 5 individuals of the same species for each tree that will be lost.

BASIC ASSESSMENT REPORT

Is an EMPr attached?

YES

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.

See Appendix H for the CV's of the persons that compiled the BAR and the EAPs declaration.

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.

See Appendix I for the relevant specialist declarations.

Mr Giles John Churchill

NAME OF EAP

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



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA ·0001· Environment House ·473 Steve Biko Road, Arcadia· PRETORIA

DFFE Reference: 14/12/16/3/3/1/1701/MP1

Enquiries: Ms Bathandwa Ncube

Telephone: (012) 399 9368 E-mail: BNcube@dfpe.gov.za

Mr Sibusiso Potwana
Transnet National Ports Authority (TNPA)
PO Box 181
RICHARDS BAY
3900

Telephone Number: (035) 905 4541
Cell phone Number: (082) 323 8450
Email Address: Sibusiso.Potwana@transnet.net

PER EMAIL / MAIL

Dear Mr Potwana

APPROVAL OF THE REVISED ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE ENVIRONMENTAL AUTHORISATION DATED 10 MAY 2017 FOR THE PROPOSED REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU-NATAL PROVINCE

The Environmental Authorisation (EA) issued on 10 May 2017, final revised Environmental Management Programme (EMPr) dated August 2023 (Revision 2) and received by the Department on 22 August 2023, refer. The final revised EMPr was submitted to update the EMPr to include the TNPA EO roles and responsibilities to ensure compliance during the construction and operational phase of the proposed development.

This Department has evaluated the final revised EMPr for the abovementioned development and has found that the revised EMPr is sufficient and complies with the requirements of Appendix 4 of the EIA regulations, 2014, as amended. The final amended EMPr is hereby **approved**. This EMPr approval must be read in conjunction with the conditions contained within the abovementioned EA dated 10 May 2017, as amended. This EMPr may be amended from time to time as and when the need arises. For future amendments to this EMPr, your attention is drawn to the processes as outlined in the EIA Regulations, 2014, as amended. Changes to the approved EMPr must be submitted in accordance with the EIA Regulations applicable at the time.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Forestry, Fisheries and the Environment
Date: 20/09/2023

cc:	Ms J Adam	Exigent Engineering Consultants cc	E-mail: jacolette@exigent.co.za
	Mr M Mdamba	KZN DEDTEA	Email: Muziwandile.Mdaba@kznedtea.gov.za
	Ms N Khumalo	City of uMhlathuze Local Municipality	Email: KhumaloNM2@umhlathuze.gov.za

MS

August 2023

FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME

for

THE PROPOSED REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT OF RICHARDS BAY, KWAZULU- NATAL.



Compiled for



P O Box 181 Richards Bay 3900

035 905 4541

Sibusiso.Potwana@transnet.net

Compiled by



PO Box 9514, Richards Bay, 3900

082 852 6417

jacolette@exigent.co.za

Details of EAP who prepared the Environmental Management Programme.

Revision 1

Compiled by ACER (Africa) Environmental Consultants in January 2017

NAME	HIGHEST QUALIFICATION	PROFESSIONAL AFFILIATIONS	EXPERIENCE IN ENVIRONMENTAL MANAGEMENT
Dr. Rolf-Dieter Heinsohn	PhD	• South African Association of Botanists • International Association of Impact Assessment (South African Chapter) • South African Institute of Ecologists and Environmental Scientists • Certified Environmental Practitioner with the Interim Certification Board of South Africa • Certified with the South African Council for Natural Scientific Professions (400442/04)	25 years
Mr. Giles Churchill	MSc	• International Association of Impact Assessment (South African Chapter)	10 Years
Mr. Keagan Kruger	BSc	• International Association of Impact Assessment (South African Chapter)	3.5 years

Revision 2

Compiled by Exigent Engineering Consultants in August 2023

NAME	HIGHEST QUALIFICATION	PROFESSIONAL AFFILIATIONS	EXPERIENCE IN ENVIRONMENTAL MANAGEMENT
Siphehile Nkomo (Author)	BSc Hons	• Environmental Assessment Practitioner (2021/3615)	4 years
Jacquette Adam (reviewer)	MSc LLM (Environmental Law)	• Environmental Assessment Practitioner (2019/1040) • Certified with the South African Council for Natural Scientific Professions (400088/02)	23 years

Experience of Exigent as a company

Since the Environmental Business Unit of Exigent Engineering Consultants was established in 2002, we have gained extensive experience in impact assessments. We have been involved in a wide variety of Environmental impact assessments. Our foundation is built upon ecological principles with wide ranging expertise in environmental management and assessment processes. Our experience includes amongst others large scale mixed-use housing developments, road upgrades, canal constructions, weirs, broiler farms, golf estates, airport developments, railway lines, pipelines, etc.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 2

REPORT CHANGES

The following changes were made between the Draft Environmental Management Programme (EMPr) submission and this Final EMPr submission.

Changes to this Report:

Amendments to this version of the Final EMPr have been underlined for easy recognition. This EMPr has been compiled as per Appendix 4 of the EIA Regulations 2014 as amended.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 3

TABLE OF CONTENTS

1.	INTRODUCTION.....	12
1.1	Background	12
1.2	Project Description.....	12
1.2.1	Municipal Feed – Viaduct (2,534m)	12
1.2.1.1	Section 1 – Proposed upgrade over the Manzanyama viaduct bridge	14
1.2.1.2	Section 2 – Proposed upgrade underground and railway line crossing	14
1.2.1.3	Section 3 – Proposed upgrade Bayvue rail yard crossing	14
1.2.2	Level Crossing – Tidal Gates (1,400m)	14
1.3	Sensitive Environments	16
1.3.1	Protected Areas	16
1.3.2	Vegetation	16
1.3.2.1	Municipal Feed to Manzanyama Viaduct	16
1.3.2.2	Level Crossing to Tidal Gates.....	17
1.3.3	Wetlands and estuarine habitats.....	17
1.3.3.1	Wetland 1	17
1.3.3.2	Wetland 2	17
1.4	Objective and Scope of the Environmental Management Programme	17
2.	ENVIRONMENTAL PRINCIPLES AND LEGAL REQUIREMENTS	18
2.1	Environmental Principles	18
2.2	Environmental standards	18
2.2.1	Air quality guidelines.....	18
2.2.2	Noise control regulations	19
2.2.3	Storage of hazardous substance	19
2.2.4	Health and safety of work team	19
2.3	Environmental Legal Requirements (Norms and Standards, Licences, Approvals and Permits)	19
2.3.1	Environmental Impact Assessment Regulations, 2014 (GNR982 of December 2014)	19
2.3.2	Heritage Resource Permits.....	20

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 4

2.3.3	National Water Act, 1998 (Act No. 36 of 1998)	21
2.4	Environment Conservation Act 73 of 1989	21
2.5	National Forests Act, 1998 (Act 84 of 1998)	22
2.6	Natal Nature Conservation Ordinance (Ordinance 15 of 1974)	22
2.7	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).....	22
2.7.1	The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	23
2.7.2	Other Applicable Legislation	23
3.	ADMINISTRATION AND REGULATION OF ENVIRONMENTAL OBLIGATIONS.....	24
3.1	Organisational Structure	24
3.2	Roles and Responsibilities.....	25
3.2.1	Employer Transnet National Ports Authority (TNPA)	25
3.2.2	Project Manager and Construction Manager	26
3.2.3	Environmental Manager and Environmental Control Officer (ECO)	27
3.2.4	Contractor.....	29
3.2.5	Environmental officer	29
3.3	Compliance Monitoring, Reporting and Record Keeping	30
3.3.1	Compliance Monitoring	30
3.3.2	Design Phase	30
3.3.3	Construction Phase	30
3.3.3.1	Construction Site Layout Plan.....	30
3.3.3.2	Method Statements.....	31
3.3.3.3	Site Handover	31
3.3.3.4	Site Inspections and Meetings	31
3.3.3.5	Practical Completion.....	32
3.3.3.6	Final Completion and Environmental Performance Certificate.....	32
3.3.3.7	Independent Environmental Auditing	32
3.3.4	Non-Compliance and Remedial Action	32
3.3.5	Non-compliance.....	33
3.3.6	Regulatory Authorities' Site Inspections	33
3.3.7	Record Keeping	34

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 5

3.4	Environmental Awareness Training	34
3.5	Emergency Preparedness and Reporting.....	35
3.6	Liaison with Interested and Affected Parties	36
3.7	Review and Updating of the EMPr.....	36
4.	DESIGN PHASE.....	36
4.1	Technical design.....	36
4.2	Erosion Control and Drainage.....	37
4.3	Protection of Sensitive Ecosystems and Habitats	37
4.4	Stockpile Areas.....	38
4.5	Spoil Areas	38
4.6	Construction Site	39
4.6.1	Construction Site Layout Plan.....	39
4.6.2	Construction Camps	40
4.7	Access/Haul Roads	40
4.8	Disturbance to Port Tenants and Service Providers	41
4.9	Aesthetics	41
5.	PRE-CONSTRUCTION PHASE	41
5.1	Construction Site Layout Plan.....	42
5.2	Construction Preparation	42
5.3	Acquisition of Permits and Licences	43
6.	CONSTRUCTION PHASE.....	43
6.1	Site Establishment.....	43
6.1.1	Demarcation of the Site	43
6.1.2	Site clearance	44
6.1.3	Protection of Sensitive Habitats	44
6.1.3.1	Protection of Water Resources	46
6.1.3.2	Protection of Fauna	47
6.1.4	Protection of Cultural Heritage Resources	47
6.1.5	Topsoil Conservation	47
6.1.6	De-bushing and de-stumping.....	48

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 6

6.2	Site Infrastructure	48
6.2.1	Structures	48
6.2.2	Services	49
6.2.2.1	Water	49
6.2.2.2	Sanitation and Ablution Facilities	49
6.2.2.3	Power supply	49
6.2.3	Batching Sites.....	50
6.2.4	Construction Camp, Lay-Down Areas and Material Storage Yards	50
6.2.5	Storm Water Control	50
6.2.6	Roads and Access.....	51
6.3	Implements and Equipment	52
6.4	Site Management.....	52
6.4.1	Solid Waste	52
6.4.2	Liquid Waste	53
6.4.3	Hazardous Waste	53
6.4.4	Pollution Control	53
6.4.5	Air Quality	55
6.4.6	Noise Control	55
6.4.7	Fire Control	55
6.4.8	Health and Safety	56
6.4.9	Safety and Security.....	56
6.5	Earthworks.....	57
6.5.1	Excavations and Trenches	57
6.5.2	Shaping and Trimming.....	57
6.6	Stockpiles, Storage and Handling.....	58
6.6.1	Topsoil	58
6.6.2	Spoil.....	58
6.6.3	Vehicles and Equipment	59
6.6.4	Fuel.....	60
6.6.5	Hazardous Substances.....	60

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 7

6.7	Water Use.....	61
6.8	Erosion Control.....	61
6.9	Weed and Invader Plant Control.....	63
6.10	Nuisance Control.....	63
7.	REHABILITATION PHASE.....	64
7.1	General Specifications.....	64
7.2	Removal of Structures and Infrastructure.....	65
7.3	Stockpiles, Inert Waste and Rubble.....	65
7.4	Hazardous Waste and Pollution Control.....	65
7.5	Final Shaping.....	65
7.6	Topsoil Replacement and Soil Amelioration.....	66
7.7	Ripping and Scarifying.....	67
7.8	Reinstatement of wetland areas and watercourses.....	67
7.9	Planting.....	67
7.10	Grassing.....	68
7.11	Weed and Invader Plant Control.....	68
7.12	Monitoring of Rehabilitated Areas.....	68
8.	OPERATIONS PHASE.....	69
8.1	Operational Site.....	69
8.2	Maintenance of Water Supply Infrastructure.....	69
8.3	Alien Invasive Species Control.....	70
8.4	Access Roads.....	70
8.5	Soil Erosion and Storm Water Control.....	70
8.6	Waste Management and Pollution Control.....	71
8.7	Protection of Fauna and Flora.....	71
8.8	Emergency Preparedness.....	71
8.9	Monitoring.....	71
8.10	Liaison with Interested and Affected Parties.....	72
8.11	Registers.....	72

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 8

LIST OF FIGURES

Figure 1 Sections to be replaced between the Municipal Feed and the Viaduct.....	13
Figure 2 Pipe section to be replaced between the Level Crossing and Tidal Gates	15
Figure 3-1 Organisational organogram for construction: communication/reporting.....	25

LIST OF TABLES

Table 1 Detailed description of listed activities associated with the project.	20
---	----

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 9

LIST OF APPENDIXES

Appendix A	Competent Authority and Exigent Correspondence
Appendix B	Details and Expertise of EAP
Appendix C	Sensitivity Map
Appendix D	PPP
Appendix D1	List of Interested and Affected Parties
Appendix D2	Newspaper advert
Appendix D3	Emails sent
Appendix D4	Comments received
Appendix D5	Comments and Response Report
Appendix E	Management Plans
Appendix E1	Re-vegetation and Rehabilitation Plan
Appendix E2	Stormwater Management Plan
Appendix E3	Erosion and Soil Management Plan
Appendix E4	Alien Invasive Plant Management Plan
Appendix E5	Transportation and Traffic Management Plan
Appendix E6	Plant Resue and Translocation Management Plan
Appendix F	Approved EMPr

Acronyms and Abbreviations

AC	Asbestos Cement
Amafa	Amafa aKwaZulu-Natali
BAR	Basic Assessment Report
CM	Construction Manager
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
GA	General Authorisation
GN	Government Notice
HDPE	High Density Polyethylene
I&APs	Interested and Affected Parties
KZN	KwaZulu-Natal
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
NWA	National Water Act
OHSA	Occupational Health and Safety Act
PVC	Polyvinyl Chloride
SABS	South African Bureau of Standards
SAHRA	South African Heritage Resources Agency
TNPA	Transnet National Ports Authority
WULA	Water Use Licence Application

1. INTRODUCTION

1.1 Background

Transnet National Ports Authority (TNPA) previously appointed ACER (Africa) Environmental Consultants (ACER) to undertake an environmental authorisation process, via a Basic Assessment, in order to obtain Environmental Authorisation (EA) from the Department of Forestry, Fisheries and the Environment (DFFE) for the proposed replacement of critical pipe sections within the Port of Richards Bay, KwaZulu-Natal. The existing main potable water to the Port of Richards Bay, an Asbestos Cement (AC) pipeline, is more than 35 years old and incidents of failures are increasing. This in turn is increasing the risk of significant water loss incidents and supply interruptions to various enterprises conducting business within the Port.

1.2 Project Description

Critical sections of the pipeline have already been upgraded, and this project will therefore involve the replacement of the following sections of the existing AC pipe with a new 560 mm High Density Polyethylene (HDPE) pipe:

1.2.1 Municipal Feed – Viaduct (2,534m)

The existing main potable water feed to the Port of Richards Bay from the Municipal supply is in need of an upgrade due to the existing pipes nearing the end of their design life. TNPA has divided the upgrade from the Municipal Feed to the Viaduct into three sections based on the existing dimensions and structures located along the pipeline. Each section was evaluated separately to establish the best possible solution to ensure the continued service of this line while increasing its capacity. The sections are divided as follows:

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 12

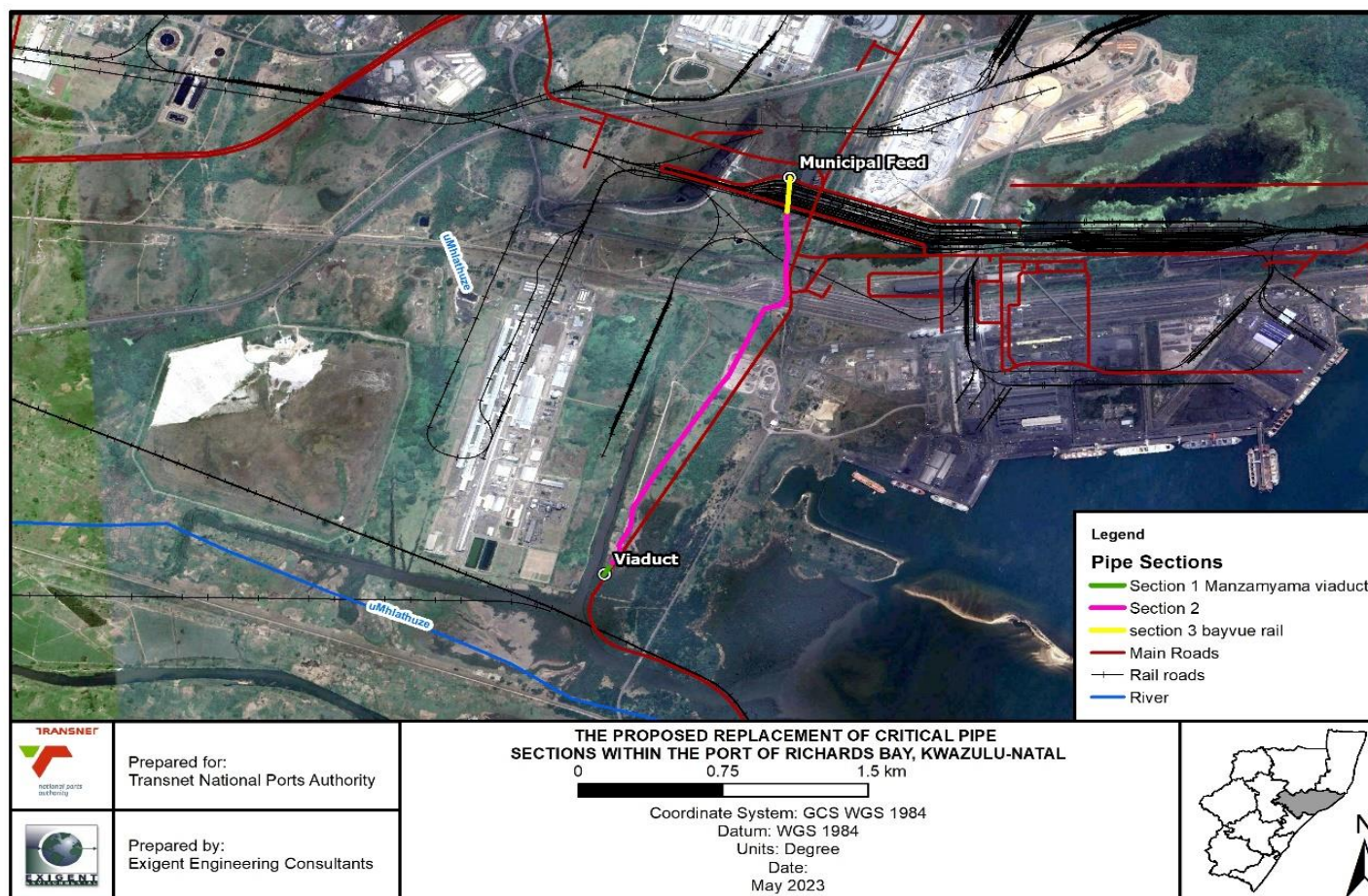


Figure 1 Sections to be replaced between the Municipal Feed and the Viaduct

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 13

1.2.1.1 Section 1 – Proposed upgrade over the Manzanyama viaduct bridge

It is proposed that the existing 450 mm AC pipe be replaced with a 560 mm HDPE pipe by demolishing the existing pipe supports and installing new stainless-steel pipe supports. To ensure continued water supply to the Port during construction, a temporary 250 mm HDPE pipe will need to be installed parallel to the new line in the emergency lane.

1.2.1.2 Section 2 – Proposed upgrade underground and railway line crossing

The existing 450 mm AC pipe will be abandoned and replaced by a 560mm HDPE pipe. The new pipe will be installed parallel to the existing pipe at an offset between 2 and 10 m. The pipe will be installed using the standard trench laying method and the micro tunnelling method for the railway line. The new pipe will ultimately terminate at a jacking pit where it will connect to a new 560mm HDPE pipe.

1.2.1.3 Section 3 – Proposed upgrade Bayvue rail yard crossing

The existing pipe under the railway line crossing is a 355 mm HDPE pipe. The installation of this pipe was recently completed under a separate contract to replace the previous 355 mm HDPE pipe due to its collapse. Therefore, it is proposed to construct a new 560 mm HDPE pipe parallel to the existing pipe using the micro tunnelling process. The existing 355 mm HDPE pipe will be cleaned and be used as a sleeve for cables.

1.2.2 Level Crossing – Tidal Gates (1,400m)

The existing 450 mm AC pipeline, running along the Berm Road, supplies the southern section of the Port of Richards Bay. This pipeline is more than 35 years old and incidents of failures are increasing.

Critical sections of this pipe running along the Tidal Gates as well as along the viaduct have already been upgraded to a 560 mm HDPE pipeline, installed above ground on concrete plinths. There is a section of approximately 3 km between these upgraded sections which urgently needs to be replaced to reduce the likelihood of bursts as well as to cater for the existing and future water demands of this section of the Port. This will cover the first phase of the upgrade of this section of pipeline starting at the tie-in point at the Tidal Gates and running north-west for a length of 1,400 m to past the railway level crossing.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 14

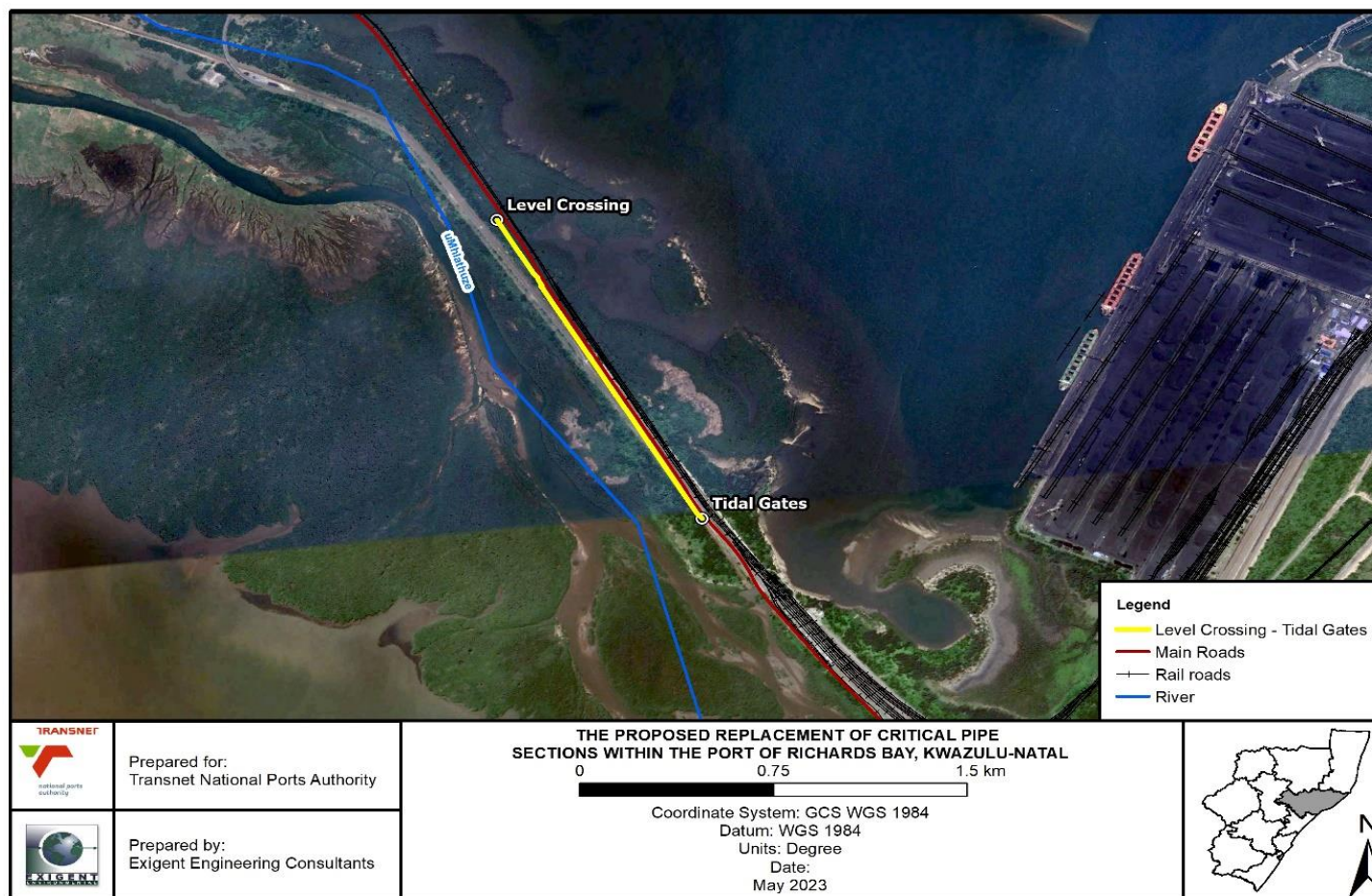


Figure 2 Pipe section to be replaced between the Level Crossing and Tidal Gates

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 15

1.3 Sensitive Environments

1.3.1 Protected Areas

Two conservation areas are found in close proximity to the study area: The **Richards Bay Sanctuary and the Echwebeni Site of Conservation Significance**. These two nature reserves contain primary (untransformed) plant communities and ecosystems and, therefore, provide prime foraging, roosting and breeding habitat for many fauna species. Plant and animal populations from these two areas generally act as source populations, which supply the surrounding ecosystems with surplus plant seeds and dispersing animal populations.

The Echwebeni Site of Conservation Significance is not likely to be impacted upon at all by the proposed project activities. The Richards Bay Sanctuary however, will be directly impacted by the critical pipe section to be replaced along the Berm Road between the Level Crossing and the Tidal Gates. Recommendations and mitigations to limit the impacts and to protect the integrity of this sensitive environment are provided in Section 6.1.3

1.3.2 Vegetation

According to Mucina and Rutherford (2006) the site falls within the Mangrove Forest (FOa3) and Fresh water wetlands (AZf6) vegetation type. In terms of the conservation status of these vegetation types, the freshwater vegetation type is considered Least Threatened with a conservation target of 24% and the Mangrove Forest vegetation type Critically Endangered with a conservation status of 100%. A total of 150 plant species were recorded during the field survey, of which 21 were alien/ exotic. Ten (10) plant species which are protected by Provincial Legislation and Two (2) Nationally Protected trees were noted within the upgrade site. However, the majority of the site is degraded (70% alien and pioneer plant composition) due to a lack of veld management (burning / mowing regimes, exclusion of fire). The patches of more intact vegetation noted were outside of the servitude footprint for the proposed pipeline construction. Illegal dumping of general waste has further degraded the floristic composition and potential of this landscape.

1.3.2.1 Municipal Feed to Manzanyama Viaduct

Sensitive vegetation across this section includes the mangrove area next to the Manzanyama Canal is dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorhiza*). The remaining portion of the pipeline passes through vegetation that is pioneer in nature. The open areas are very sandy and are dominated by the grass *Paspalum notatum* and by herbs such as *Chrysanthemoides monilifera*, *Carpobrotus dimidiatus* and *Helichrysum kraussii*.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 16

1.3.2.2 Level Crossing to Tidal Gates

This section of pipeline follows the Harbour Arterial Road adjacent to the Richards Bay Sanctuary heading to South Dunes and follows the existing servitude. The Sanctuary edge comprises of large thickets of the protected plant *Hibiscus tiliaceus* and below that, mangrove tree species.

1.3.3 Wetlands and estuarine habitats

Two wetland units were identified within the study area. These systems are Unchanneled Valley Bottom Wetlands that appear to have been extensively impacted upon by previous activities on the site.

1.3.3.1 Wetland 1

The first wetland unit is located along the north-western alignment of the pipeline between the Municipal Feed and the Manzamnyama Viaduct. It has been extensively impacted upon by the creation of railway lines and roads across the wetland at various points. The wetland drains from north to south and includes a portion of swamp forest along its eastern edge. Additionally, this wetland unit ends as it meets the mangrove system to the south. The system has also been impacted upon by the construction of the Truckstop area and permitting office, which appear to have been built within the wetland system. The wetland is dominated by large reed beds, with some forest along its boundary as mentioned above.

1.3.3.2 Wetland 2

The second wetland unit is located adjacent to the mangrove system along the southern and eastern portion of the alignment between the Municipal Feed and the Manzamnyama Viaduct. This wetland unit appears to drain directly into the mangrove edge. This wetland is dominated by sedges, and is more permanent than the first wetland unit, with wetness still very evident during this dry period.

The section 21 (c) and (i) water uses associated with TNPA's replacement of critical pipe sections may be generally authorised in terms of GN509 of 2016, subject only to the conditions contained in section 9 of the notice.

1.4 Objective and Scope of the Environmental Management Programme

This EMPr covers the principles, responsibilities and requirements applicable in order to implement effective environmental management during the design, pre-construction, construction and rehabilitation phases of the proposed replacement of critical pipe sections within the Port of Richards Bay.

In addition, the EMPr does the following:

- Assigns roles and responsibilities to the parties charged with implementation.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 17

- Sets out environmental specifications that are applicable to the project and its associated activities, and provides guidance in order to achieve these environmental specifications.
- Defines corrective actions, which must be taken in the event of non-compliance with the environmental specifications of this EMPr.
- Specifies requirements and procedures for monitoring, auditing and reporting.
- Specifies requirements and procedures for record keeping.
- Makes provision for the fulfilment of other relevant legal requirements pertaining to the environment.

2. ENVIRONMENTAL PRINCIPLES AND LEGAL REQUIREMENTS

2.1 Environmental Principles

The following principles must be considered by all parties at all times during all phases of the project:

- The environment is considered to be composed of both biophysical and social components.
- Construction is a disruptive activity and all due consideration must be given to the environment, including the social environment, to minimise the impact during the execution of a project.
- Minimisation of areas disturbed by construction activities (i.e. the footprint of the construction area) must minimise many of the construction related environmental impacts of the project and reduce rehabilitation requirements and costs.
- As minimum requirements, all relevant standards relating to international, national, provincial and local legislation, as applicable, shall be adhered to. This includes requirements relating to waste emissions (e.g. hazardous, airborne, liquid and solid), waste disposal practices, noise regulations, road traffic ordinances, protected species, etc.
- Every effort must be made to minimise, reclaim and/or recycle “waste” material.
- Every effort must be made to apply the best practicable environmental option.

2.2 Environmental standards

All applicable environmental standards contained within the environmental legislation shall be adhered to without derogating from the generality of the above and without limitation, at the time of compiling this EMPr, the following environmental guidelines and standards are highlighted. The list is intended to serve as a guideline only and is not exhaustive.

2.2.1 Air quality guidelines

In terms of air quality, the Contractor will be required to describe how effective dust control measures will be achieved during the construction phase.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 18

2.2.2 Noise control regulations

No provincial Noise Control Regulations have been promulgated in KwaZulu-Natal. Therefore, the national Noise Control Regulations of the Environment Conservation Act, 1989 (Act No. 73 of 1989), Government Notice (GN) 154 of Government Gazette 13717 of 10 January 1992, apply.

2.2.3 Storage of hazardous substance

Hazardous substances must be stored and handled in accordance with the appropriate legislation and standards which must include the Hazardous Substances Act, the Occupational Health and Safety Act, relevant associated Regulations, and applicable South African Bureau of Standards (SABS) and international standards.

2.2.4 Health and safety of work team

Construction Regulations (2003) published under the Occupational Health And Safety Act, 1993 (Act No. 85 of 1993) apply to construction activities including “the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work”. A “health and safety plan” which addresses hazards identified, and includes safe work procedures to mitigate, reduce or control the hazards identified, is required under this Act. A risk assessment must also be undertaken by an appropriately qualified person(s) and the Contractor shall ensure that all employees under his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

2.3 Environmental Legal Requirements (Norms and Standards, Licences, Approvals and Permits)

A number of laws and regulations apply to the protection and conservation of the environment. It is the responsibility of the employer to ensure that the necessary permits, approvals and licences are obtained prior to commencement of construction.

2.3.1 Environmental Impact Assessment Regulations, 2014 (GNR982 of December 2014)

The Environmental Impact Assessment (EIA) regulations under National Environmental Management Act (NEMA) list activities for which environmental authorisation is required before construction can commence in sensitive areas as outlined below.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 19

Table 1 Detailed description of listed activities associated with the project.

Listed activity as described in GN R. 983, GN R. 984 and GN R.985	Description of project activity that may trigger the listed activity
GN R.983 Item 9: The development of infrastructure exceeding 1000 m in length for the bulk transportation of water; (i) With an internal diameter of 0.36 m or more.	The construction of a total length of 3,934 meters of pipe with an internal diameter of 560 mm
GN R.983 Item 19: The infilling or deposition of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from; (ii) A watercourse; (iii) The littoral zone, an estuary or distance of 100 m inland of the high water mark of the sea or an estuary, whichever distance is greater...	The project is within an estuarine functional zone and within 100 m inland of the high water mark of the sea and construction required for the replacement the critical pipe sections will result in the moving of more than 5 cubic meters of soil, sand, shells, shell grit, pebbles or rock.
GN R.983 Item 45: The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure: (iv) Has an internal diameter of 0.36 m or more. (v) Has a peak throughput of 120 litres per second or more. (b) where the throughput capacity of the facility of infrastructure will be increased by 10% or more.	The existing Asbestos Cement pipeline is 450 mm, the proposed project aims to replace these with a 560 mm HDPE pipe. This constitutes a throughput capacity increase of more than 10 %.
GN R.985 Item 12: The clearance of an area of 300 square meters or more of indigenous vegetation... (a) In KwaZulu-Natal i Within the littoral active zone or 100 m inland of the high water mark of the sea or estuarine functional zone, whichever distance is greater...	The project is within an estuarine functional zone and 100 m inland of the high water mark of the sea and the construction required for the replacement the critical pipe sections will result in the clearance of more than 300 square meters of indigenous vegetation.
GN R.985 Item 14: The development of; (vi) Infrastructure or structures with a physical footprint of 10 square meters or more: (d) In KwaZulu-Natal ii In an estuarine functional zone.	The replacement of the critical pipe sections will have a development footprint exceeding 10 square meters, and will take place within an estuarine functional zone.

2.3.2 Heritage Resource Permits

The National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA) aims to promote an integrated system for the identification, assessment and management of the heritage resources of South Africa. Furthermore, it established the South African Heritage Resources Agency (SAHRA) to implement the Act.

KwaZulu-Natal has promulgated its own legislation, the KwaZulu-Natal Heritage Act, 2008 (Act 4 of 2008) which contains similar provisions to those of the NHRA, although it establishes a provincial body, Amafa

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 20

aKwaZulu-Natali (Amafa) as the relevant heritage authority for the protection and management of heritage resources in KwaZulu-Natal. By means of a Memorandum of Understanding, Amafa acts as the agent for the national agency (SAHRA) in the province.

The primary objective of the KZN Heritage Act is the care, maintenance, repair and management, as well as the protection, of all forms of historically and culturally important sites, including, for example, public monuments and archaeological sites, important cultural objects and traditional burial sites.

Should heritage resources occur on the properties to be developed, an application for their destruction, recording and/or removal will be submitted to Amafa. Additionally, if, during construction, archaeological or paleontological objects or material or a meteorite is discovered, the find must immediately be reported to Amafa. No person must, without a permit, destroy damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite.

2.3.3 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act, 1998 (Act 36 of 1998) (NWA) has various sections of relevance to the proposed development. The Department of Water and Sanitation (DWS) is the responsible authority with regard to matters affecting water resource management, including water quality. Added to this, certain provincial and local authority powers also influence the regulation of water resources, including agriculture, the environment, health services, nature conservation, pollution control, regional planning and development, soil conservation and water and sanitation services.

The development or modification of wetlands in any form are governed by conditions provided in Chapter 4, Part 1 of the Act which sets out general principles for regulating water use.

In general, water use must be licensed unless:

- It is listed in Schedule 1 of the Act.
- Is an existing lawful water use.
- It is permissible under a general authorisation.
- A responsible authority waives the need for a license.

As development or modifications of watercourses or wetlands are not included in Schedule 1, however, the section 21 (c) and (i) water uses must be generally authorised in terms of GN509 of 2016, subject only to the conditions contained in section 9 of the notice.

2.4 Environment Conservation Act 73 of 1989

The primary objective of the Environment Conservation Act, 1989 (Act 73 of 1989) (ECA) is to provide for the effective protection and controlled utilisation of the environment. In terms of Section 20 of the ECA,

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 21

all wastes generated from the construction and operational phases of a development must only be disposed at licensed waste disposal sites.

Cognisance must also be taken of the relevant provincial legislation given that controlling authority and regulations pertaining to litter in terms of ECA (Sections 19, 19A and 24A) have been delegated to provinces.

2.5 National Forests Act, 1998 (Act 84 of 1998)

PROTECTED TREES (NATIONAL PROTECTION)

In terms of the National Forests Act, 1998 (Act 84 of 1998), trees in natural forests or protected tree species (as listed in Government Gazette Notice 1012 of 27 August 2004) must not be cut, disturbed, damaged, destroyed and their products must not be possessed, collected, removed, transported, exported, donated, purchased or sold, except under licence granted by the, DFFE. A licence application must be submitted to DFFE to cut/destroy *Hibiscus tiliaceus* and to prune several *Avicenna marina*.

2.6 Natal Nature Conservation Ordinance (Ordinance 15 of 1974)

PROTECTED SPECIES (PROVINCIAL PROTECTION)

Certain indigenous plant and animal species in KwaZulu-Natal are provided with special protection under KwaZulu-Natal nature conservation legislation. A number of these species were identified within the construction footprint and a permit application must be submitted to EKZNW for their removal, destruction or translocation.

2.7 Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)

Control of Invasive Plants and Declared Weeds Declared weeds or invader plants are defined by the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) as follows:

- **Category 1: Declared weeds.** These species must be eradicated from all areas and are only permitted with written permission from the Executive Officer (as defined by the Act) or in the case of a formally approved biological control reserve.
- **Category 2: Invader plants.** These species are only permitted in specially demarcated areas and must be eradicated in all areas, except where permission has been granted. These species are not permitted to grow within 50 m of the 1:50 flood line.
- **Category 3:** These plants shall not occur on any land or inland water surface other than in biological control reserves. No land user shall allow Category 3 plants to occur within 30 metres of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 22

In terms of Government Notice No R 1048, the following regulations are applicable with regards to the control of invasive plants and declared weeds:

- It is illegal to have declared weed species or invasive alien vegetation on one's property.
- Steps must be taken immediately to eradicate them by using the methods prescribed in the regulations, viz:
- Uprooting and burning.
- The application of a suitable chemical weed killer (herbicide).
- Any other method of permanent eradication.
- One must not uproot or remove such plants and dump or discard them elsewhere to re-grow or allow their seeds to be spread or to be blown onto other properties.
- If TNPA does not comply with requirements above, a person must be found guilty of a criminal offence.

Alien invasive plants are to be removed and controlled in the cleared construction areas and other areas disturbed by construction.

2.7.1 The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

Aims to minimise the consumption of natural resources, avoid and minimise the generation of waste, reduce, re-use, recycle and recover waste whenever possible, treat and safely dispose of waste as a last resort and prevent pollution and ecological degradation.

Waste produced by the activities will be disposed at an authorised waste management facility, thus, no permitting or licensing will be required.

2.7.2 Other Applicable Legislation

This list is intended to serve as a guideline only and is not exhaustive:

- Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965).
- The Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996).
- Environment Conservation Act, 1989 (Act No. 73 of 1989).
- National Environmental Management Act, 1998 (Act No. 107 of 1998).
- National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004).
- National Environment Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Waste Act (Act No.59 of 2008).
- National Water Act, 1998 (Act No. 36 of 1998).

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 23

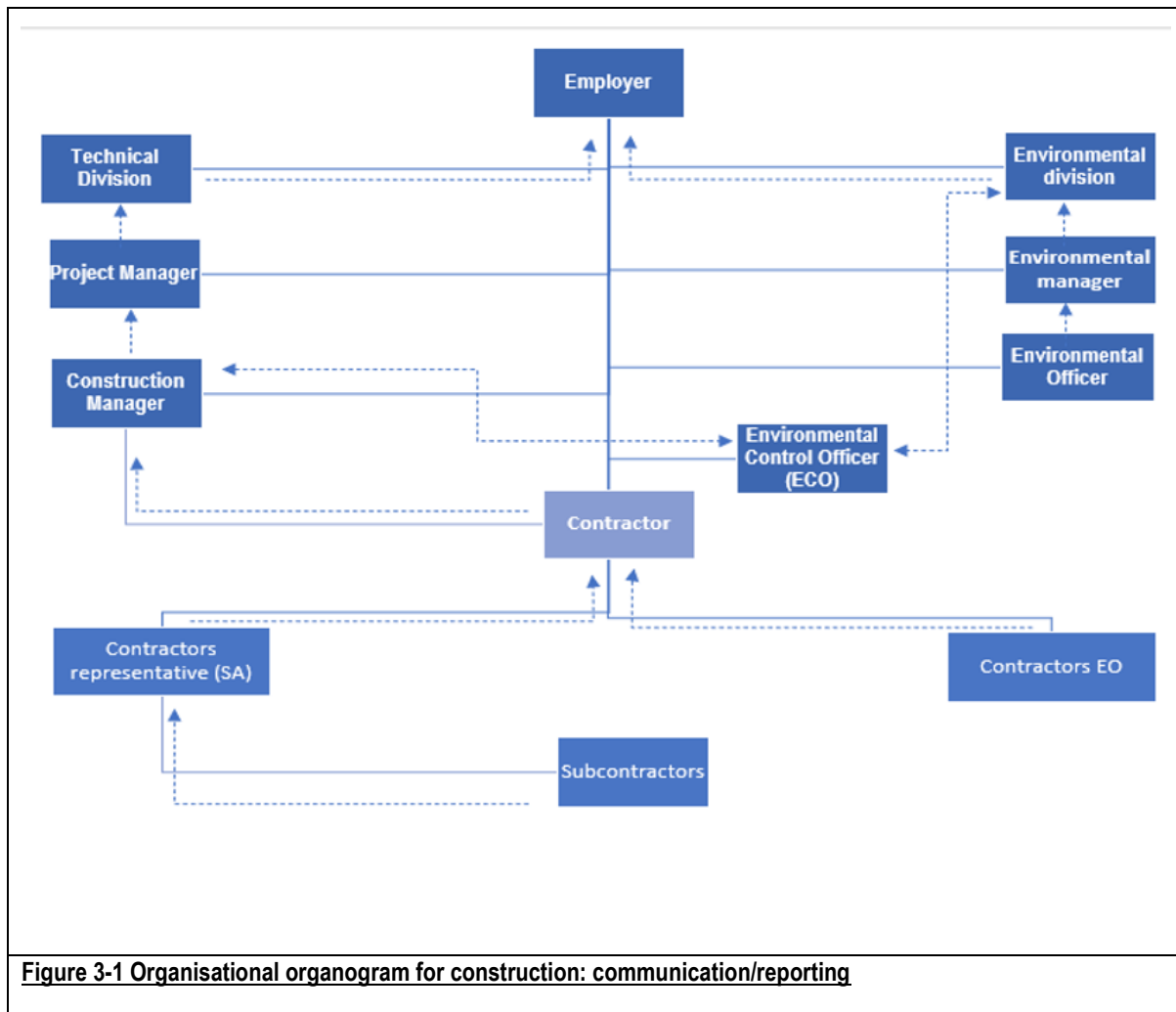
- National Heritage Resources Act, 1999 (Act No. 25 of 1999).
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998).
- Hazardous Substances Act, 1973 (Act No. 15 of 1973).
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- KwaZulu-Natal Heritage Act, 2008 (Act No. 4 of 2008).
- Local Government Ordinances and Bylaws.

3. ADMINISTRATION AND REGULATION OF ENVIRONMENTAL OBLIGATIONS

3.1 Organisational Structure

An organisational structure for the construction phase of the project is illustrated in figure. Communication and reporting lines related to the EMPr (including instructions, directives and information) shall be channelled according to the organisational structure implemented by the employer.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 24



3.2 Roles and Responsibilities

The roles and responsibilities that are assigned to the various parties listed below are for all phases of the project.

3.2.1 Employer Transnet National Ports Authority (TNPA)

TNPA is responsible for ensuring that the conditions within the EMPr are met. The employer is responsible for the following:

- Implementation of the EMPr.
- Submission of any substantial changes, updates or amendments to the EMPr to DDFE for approval.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 25

- Ensuring that the provisions of the EMPr are binding on all Contractors operating on the site during the life of the project, including a performance-based requirement in all contract documents.
- Ensuring that weekly site inspection by the TNPA Environmental officer and monthly environmental site inspections and audit reports by the ECO are compiled during construction to establish how well the Contractor is complying with the EMPr.
- Ensuring that compliance/non-compliance records are kept in good order and made available on request by the authorities.
- Complying with all applicable environmental legislation, regulations and guidelines, and ensuring that Contractors undertake responsibility to do the same.
- Being committed to the principles contained within NEMA, including the prevention of pollution and sustainable development.

3.2.2 Project Manager and Construction Manager

The Project Manager represents the employer and co-ordinates all aspects of the project, including project co-ordination, design and construction. The Construction Manager (CM) is the Project Managers representative on site. The Project Manager is ultimately responsible for ensuring, on behalf of the employer that the provisions of the EMPr are complied with. The Project Manager, assisted by the CM on site, is responsible for the following:

- Ensuring that the provisions of the EMPr are binding on all Contractors operating on the site during the construction of the project and that a performance-based requirement is included in all contracts.
- Including the approved EMPr as part of the contract documents.
- Ensuring that the Contractor(s) and Sub-contractor(s) are conversant with the requirements of the EMPr and that all members of staff on site have attended an environmental awareness training course presented by the ECO.
- Compiling preliminary construction site layout plans prior to construction commencing.
- Approving final construction site layout plans in conjunction with the Environmental Manager.
- Ensuring that the Contractor(s) complies with the EMPr and, if not, ensure that the Contractor(s) bears the costs of damages/compensation resulting from non-compliance with the EMPr.
- If necessary, on the recommendation of the Environmental Manager or ECO, instruct the Contractor(s) to suspend any or all works on site, if the Contractor(s) or his/her Sub-contractors/suppliers fail to comply with the EMPr.
- Ensuring that the Contractor(s) conduct all activities in a manner that minimises disturbance to the project area, and Port tenants and forwards complaints and queries by members of the public at the site office, to the CM.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 26

- Liaison with stakeholders including TNPA, Port tenants, utility providers, and relevant authorities. This must be done in association with the Contractor (and the ECO where necessary).
- Ensuring that a register of complaints and queries by members of the public is maintained at the site office and the actions taken in response to these complaints.
- Liaising directly with the Environmental Manager in terms of environmental issues and maintaining close channels of communication with the Environmental Manager regarding foreseeable activities that must require environmental input.
- On behalf of the employer, reviewing any substantial changes, updates or amendments to the EMPr prior to its submission to the DFFE for approval.
- On behalf of the employer, ensuring that the Environmental Manager keeps the compliance/non-compliance records in good order and makes them available on request to the authorities.
- Ensuring that all EMPr-related instructions from the CM to the Contractor are recorded in the site diary.
- Having available on request a copy of the EMPr at the construction site at all times and ensuring that all staff, Contractors and Sub-contractors are familiar with or made aware of the contents of the EMPr.
- Complying with all applicable environmental legislation, regulations and guidelines, and ensuring that Contractors undertake responsibility to do the same.
- Ensuring that an environmental performance certificate is obtained from the Environmental Manager prior to awarding the certificate of completion to the contractor(s).

3.2.3 Environmental Manager and Environmental Control Officer (ECO)

The Environmental Manager is responsible for managing and co-ordinating environmental obligations and shall advise the Project Manager, the employer and Contractors on all environmental management matters relating to the project. This includes providing input during all phases of construction (including design), monitoring environmental performance of Contractors during construction and ensuring that all environmental specifications and EMPr requirements are met at all times.

The Environmental Manager is responsible for the following:

- Co-ordinating all matters relating to the environmental management of the project.
- Being fully conversant with the EMPr and all relevant environmental legislation, guidelines and standards.
- Assisting the employer, the Project Manager, the CM and the Contractor(s) with EMPr compliance and all environmental legislation related to the project.
- Liaising with the relevant authorities with respect to licences, approvals, authorisations, permits, agreements etc., in collaboration with the Project Manager and Contractor(s) where required.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 27

- Ensuring that all authorisations, licences and permits required in terms of the applicable legislation have been obtained.
- Liaising closely with and reporting any breaches of EMPr implementation and the relevant legislation to the Project Manager
- Attending project meetings and reporting and advising as necessary on environmental matters.
- Reviewing and updating the EMPr in relation to specific requests, non-compliances or changes in the legislation and obtaining the necessary input from the Project Manager.
- Providing input into construction site layout plans.
- Obtaining environmental specialist input as required.
- On behalf of the employer and upon direction of the Project Manager, informing DFFE of non-compliance of any of the conditions of the EMPr within a reasonable period.
- Providing the Project Manager with an environmental performance certificate at the end of a Contract confirming that all environmental specifications applicable to the Contractor have been met.
- With assistance of the ECO, reviewing training programmes, construction site layout plans, method statements and specifications and advising as necessary.

The ECO is the Environmental Manager's representative on site and is responsible for the following:

- Assisting with enforcing environmental specifications on site via the CM.
- Conducting fortnightly site visits to monitor and verify compliance with the EMPr.
- Keeping records of compliance/non-compliance.
- Producing a monthly environmental compliance report. A summary of the monthly environmental compliance reports must be included in the quarterly audit reports submitted to DFFE.
- Identifying and assessing previously unforeseen, actual or potential impacts of the project on the environment.
- Bringing any environmental concerns to the attention of the Project Manager.
- Recommending to the CM that the Contractor suspend any or all works on site if the third parties who carry out all or part of the Contractor's obligations fail to comply with the environmental specifications.
- Advising on the rectification of any pollution, contamination or damage to the project site, rights of way and adjacent land.
- Reviewing and approving construction method statements with input from the Environmental Manager, Project Manager and CM, where necessary, in order to ensure that the environmental specifications contained within this EMPr are adhered to.
- Attending site meetings (scheduled and ad hoc).
- Keeping accurate and detailed records of all EMPr related activities on site.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 28

- Recording complaints or queries from I&APs and actions taken to address complaints. Copies of all interactions and correspondence shall be kept as part of record keeping.
- Maintaining a photographic record of construction activities and construction progress.
- Checking that a copy of the EMPr is available on site.
- Ensuring that the CM and Contractor(s) are made aware of all applicable changes to the EMPr.

3.2.4 Contractor

The Contractor is the successful tenderer, appointed by the employer to undertake the project. It is the responsibility of the Contractor to ensure that he or an appointed advisor is well versed in environmental matters to efficiently carry out the requirements of the EMPr. The Contractor is responsible for the following:

- The implementation of the applicable environmental specifications in accordance with the requirements of this EMPr.
- Obtain written permission from TNPA for use of a suitable site for erection of the construction camp, material storage yards, stores and stockpile areas.
- Appoint a Community Liaison Officer to assist with procurement of labour.
- Liaise with stakeholders, including Port tenants, utility providers, neighbours, and relevant authorities. This must be done in association with the Project Manager and ECO.
- Ensure that a register of complaints and queries by members of the public is maintained at the site office and the actions taken in response to these complaints.
- Ensure that all third parties who carry out all or part of the Contractor's obligations comply with the requirements and provisions of this EMPr.
- Be responsible for the timeous procurement of all applicable approvals, authorisations, licences and permits required for a particular activity that is part of the Contract.
- Report any non-compliance to the CM and ECO within 12 hours of the event occurring.
- Report any non-compliance event that constitutes an emergency immediately and in line with the protocol applicable to that particular emergency event.
- With the ECO, present an environmental awareness training course to all sub-contractors and employees.
- Ensure that all sub-contractors and employees attend the environmental awareness training course.
- Ensure that a copy of the EMPr is available at the construction site at all times.

3.2.5 Environmental officer

- Ensure that environmental issues receive adequate attention in the site induction training.
- Prepare Risk Reports.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 29

- Prepare and conduct environmental awareness training, as and when required (e.g. posters, tool box talks, signage).
- Generate an inspection checklist prior to the project commencement.
- Review and approve site layout plan.
- Conduct weekly observation & inspection of all workplaces based on the approved inspection checklist.
- Monitor the Contractor's compliance.
- Report on environmental incidents.
- Management of the complaints register.

3.3 Compliance Monitoring, Reporting and Record Keeping

3.3.1 Compliance Monitoring

During the various construction phases (design, pre-construction, construction and rehabilitation), the Environmental Manager, with assistance from the ECO, will monitor the overall compliance of the conditions of authorisation and mitigation measures outlined in the EMPr by all parties concerned.

3.3.2 Design Phase

During the design phase, the Environmental Manager will meet with the Project Manager to highlight design needs as specified in the EMPr. On completion of the design, relevant information will be reviewed by the Environmental Manager to ensure that the design demonstrates compliance with environmental requirements. The Project Manager will also provide preliminary construction site layout plans to the Environmental Manager for review.

3.3.3 Construction Phase

3.3.3.1 Construction Site Layout Plan

Prior to construction, the Project Manager, with input from the Environmental Manager and ECO, must approve the construction site layout plan prepared by the Contractor showing the positions and extent of all permanent and temporary site structures and infrastructure. The Project Manager is responsible for the co-ordination of construction site layout plans should there be overlap between multiple Contractors on site.

The earlier this information is provided to the Project Manager and ECO, the less likelihood of delays to construction and the less likelihood of unforeseen environmental impacts occurring during construction.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 30

3.3.3.2 Method Statements

Prior to construction, the CM and ECO will agree which activities require a written method statement. Where relevant, the Contractor must submit a written method statement, which must include the following:

- The type of construction activity.
- Locality where the activity will take place.
- Identification of impacts that might result from the activity.
- Identification of activities or aspects that may cause an impact.
- Methodology and/or specifications for impact prevention for each activity or aspect.
- Methodology and/or specifications for impact containment for each activity or aspect.
- Emergency/disaster incident and reaction procedures.
- Treatment and continued maintenance of impacted environment.

The ECO must review the construction method statements to ensure that the environmental specifications contained within this EMPr are adhered to.

3.3.3.3 Site Handover

The ECO will attend the site handover meeting, where the EMPr will form part of the agenda. The construction site layout plan is a key component of site handover and must be finalised before site handover can be completed. The approved plan must be attached to the site handover meeting minutes. Amendments to this plan must be discussed and approved at subsequent site meetings.

3.3.3.4 Site Inspections and Meetings

The Environmental Officer(EO) is responsible for conducting fortnightly site inspections and the Environmental Control Officer (ECO) is responsible for conducting monthly site visit to monitor and verify compliance with the EMPr. The EO will compile a site inspection checklist, to be forwarded to the construction manager and Contractor for their attention and records. The checklists will also be included as an appendix to the monthly audit report to be submitted to DFFE.

Anything of an environmental nature that arises in between the fortnightly audits must be recorded in the site diary and recorded in written correspondence to the ECO. If required, the ECO must conduct a site visit to address the matter and must report the matter in an addendum to the site inspection checklist.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 31

3.3.3.5 Practical Completion

The ECO must attend the practical completion inspections. Outstanding environmental matters requiring attention must be provided to the CM for inclusion in the snag list, which is attached to the practical completion certificate.

3.3.3.6 Final Completion and Environmental Performance Certificate

Once the environmental items on the snag list have been addressed to the satisfaction of the ECO, the Environmental Manager will provide an environmental audit report confirming that the environmental specifications applicable to the Contractor(s) has been met. This report will be submitted to the Project Manager prior to the final certificate of completion being issued.

3.3.3.7 Independent Environmental Auditing

Periodic auditing of environmental compliance by an independent auditor must be required and is also advisable as best environmental practice. As discussed with DFFE, they must undertake periodic site audits to confirm the findings of the monthly audit reports submitted to them by the ECO.

3.3.4 Non-Compliance and Remedial Action

Matters of non-compliance by any parties must be reported to DFFE within a reasonable period. This must be discussed with DFFE. Failure to comply with these conditions of authorisation will, under Section 22(4) of the Environment Conservation Act, 1989 (Act No. 73 of 1989), render it invalid and the applicant liable to legal action under Section 29 of the said Act.

The Contractor(s) and their Sub-contractors are deemed not to have complied with the EMPr if:

- There is evidence of contravention of the EMPr specifications within the boundaries of the construction site, site extensions and haul/access roads.
- There is contravention of the EMPr specifications that relate to activities outside the boundaries of the construction site.
- Construction activities take place outside demarcated areas.
- Environmental damage ensues due to negligence or intent.
- Failure to comply with corrective or other instructions issued by the Project Manager within a specific time period.

Where the ECO identifies non-compliance by the Contractors and Sub-contractors, it will be discussed at the monthly site visits (when identified) and remedial actions and timeframes specified. The ECO must

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 32

record these incidents of non-compliance, the remedial actions and timeframes in the site inspection checklist. The CM must also record the relevant instructions for the Contractor(s) in the site diary.

If the specified remedial action has not been carried out by the Contractor(s) within the period stipulated, the non-compliance must be dealt with as follows:

- Where non-compliance has resulted in environmental damage to the site which cannot be rectified by the remedial action specified by the ECO, or the Contractor(s) has failed to carry out the remedial work within the prescribed time limit (or permitted extension thereof), the ECO shall convene a meeting between the construction manager and the Contractor. Appropriate remedial work shall also be discussed and agreed.
- In determining appropriate remedial action, the Environmental Manager and Project Manager shall consult with DFFE and, where necessary, obtain specialist input.
- The Project Manager shall issue an instruction to the Contractor to procure execution of the remedial work as agreed between the parties, and the Contractor shall be obliged to procure such remedial work within the prescribed period to the satisfaction of the Project Manager.
- Failure by the Contractor to comply with an instruction from the Project Manager to procure the carrying out of the required remedial work shall constitute a material breach of the Contract.
- Where the employer has taken action to procure the remediation of such consequences it shall be entitled to recover from the Contractor the full cost of remediation.

Incidents of non-compliance, the remedial actions and timeframes must be recorded in the site inspection checklist and the site diary. Fines, applied at the discretion of the Project Manager (with input from the Environmental Manager) must be applied in addition to any remedial costs incurred as a result of non-compliance. The Project Manager will inform the Contractor of the contravention and the amount of the fine and will deduct the amount from monies due under the Contract.

3.3.5 Non-compliance

Any avoidable non-compliance with the EMP, Site-Specific Addendum, Environmental Authorisation or applicable regulations shall be considered sufficient grounds for the project Manager to issue an instruction to the contractor. The project manager will issue an instruction to the contractor to conduct remedial work and ensure that remedial action is undertaken.

3.3.6 Regulatory Authorities' Site Inspections

DFFE, and other relevant authorities, e.g, EKZNW, DWS and DEDTEA may conduct site inspections as desired.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 33

3.3.7 Record Keeping

The Environmental Manager and ECO must ensure that all documentation related to the EMPr is filed and made available on request to the authorities. The following documents are relevant:

- Environmental Authorisation.
- Environmental Management Programme.
- Fortnightly site inspection checklists.
- Monthly compliance reports.
- Design documents and drawings.
- Method statements.
- Communication and correspondence.
- Environmental awareness training programme.
- Environmental incident and accident reports.
- Emergency preparedness and response plans.
- Complaints register.
- Environmental performance certificates.

3.4 Environmental Awareness Training

A copy of the EA and the approved EMPr shall be available at the construction site at all times and all staff; Contractors and Sub-contractors shall be familiar with or be made aware of the contents of both the EA and EMPr.

The ECO must prepare and present an environmental awareness training programme to the Contractor, Sub-contractors and employees in English and isiZulu.

The environmental awareness training programme must include the following:

- The importance of compliance with all environmental policies, procedures, plans and systems.
- Understanding the importance of, and the reasons why, the environment must be protected.
- Basic awareness and understanding of the key environmental features of the work site and environs, particularly sensitive habitats.
- The significant environmental impacts, actual or potential, as a result of their work activities.
- The mitigation measures required to be implemented when carrying out their work activities.
- The environmental benefits of positive environmental performance.
- The various roles and responsibilities in achieving compliance with the environmental policy and procedures, including emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 34

- Health and safety awareness.

The Contractor must ensure that its Sub-contractors and employees (and any other third parties) attend the course. At the discretion of the ECO and Environmental Manager, employees involved in events of non-compliance must be given further relevant training by the ECO.

A record of the environmental awareness training programme must be kept by the ECO and CM.

3.5 Emergency Preparedness and Reporting

The Contractor must compile and maintain environmental emergency procedures to ensure that there will be an appropriate response to unexpected or accidental actions or incidents that will cause environmental impacts. The CM must be familiar with these procedures and be responsible for the co-ordination thereof should there be multiple contractors on site simultaneously.

Emergencies are defined as serious cases of the following incidents, which cannot be dealt with according to the standard specifications contained in Sections 4 - 8, and include:

- Accidental discharges to water and land.
- Accidents involving members of the public.
- Accidental exposure of employees to hazardous substances.
- Accidental veld or forest fires.
- Accidental spillage of hazardous substances.
- Injurious encounters with dangerous animals.
- Natural disasters (e.g. flooding).

These plans must include:

- Emergency organisation (manpower) and responsibilities, accountability and liability.

A list of key personnel.

- Details of emergency services applicable to the various areas along the route (e.g. the fire department, ambulance services, spill clean-up services, etc.).
- Internal and external communication plans, including prescribed reporting procedures where required by legislation.
- Actions to be taken in the event of different types of emergencies.
- Incident recording, progress reporting and remediation measures required to be implemented.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.
- Training plans, testing exercises and schedules for effectiveness.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 35

In compiling the emergency plans, the Contractor shall comply with the emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), the National Environmental Management Act, 1998 (Act No. 107 of 1998), the National Water Act, 1998 (Act No. 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) as amended and/or any other relevant legislation.

3.6 Liaison with Interested and Affected Parties

Liaison with I&APs is to be co-ordinated by the Project Manager and the Contractor. This shall include liaison with Port Tenants and Users, utility providers, neighbours, and relevant authorities.

Complaints or queries received from I&APs and actions taken to address complaints shall be addressed in writing (with copies forwarded to the Environmental Manager and ECO). Copies of all interactions and correspondence shall be kept as part of record keeping by the Environmental Manager and ECO.

3.7 Review and Updating of the EMPr

The EMPr is a living document and must be reviewed and updated in response to new or changing technical information, environmental conditions, legislation and policy, and environmental best practice. Substantial changes must be approved by DFFE.

Sections 4 to 8 contain the environmental specifications required for each of the stages, viz. design, pre-construction, construction, rehabilitation and operation. These sections are deliberately repetitive, as in many cases, an environmental aspect requires attention at more than one stage of the project cycle.

4. DESIGN PHASE

Various environmental management considerations must be dealt with prior to construction by the Project Manager, ECO and/or the Contractor. Responsible parties are indicated in the sections below.

4.1 Technical design

Environmental sensitivities identified during the EIA process must be communicated to the Project Manager by the relevant Environmental Assessment Practitioner (EAP) so that, where applicable, project specific mitigation measures must be incorporated into the technical designs.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 36

4.2 Erosion Control and Drainage

- Technical design and planned construction methods must build in measures to prevent soil erosion associated with construction, with particular attention given to the sensitive areas, as described in Section 1.3, and other areas of high erosion potential.
- In determining the location of the construction camp, stockpile areas, material storage yards as well as any required new access roads (if required), areas of high erosion potential must be avoided.
- The design must allow for the ground conditions encountered, including adequate allowance for settlement of embankments and drainage layers.
- Technical design and planned construction methods must build in measures to avoid soil compaction associated with construction.
- Drainage systems must be kept as natural as possible. Natural drainage must be retained, and normal flow ensured at all times.
- Runoff must not be canalised or concentrated in areas where sheet flow may occur, or where highly erodible soils occur.
- Erosion or scouring of any watercourses resulting from construction must be prevented.
- Alteration of groundwater movement patterns must be prevented. To this end, design and planned construction techniques to provide for subsurface water movement are to be implemented.
- No excavation of alternative channels to re-route any drainage line must be done (to avoid unnecessary erosion).
- Design must include measures such as drainage layer, well pointing, shoring and concrete encasement of the pipeline in sensitive areas.
- Excavation must be selective to ensure that the topsoil is placed back on top.
- Concrete encasement and other pipe protection measures will be used where the structural integrity of the pipe is compromised.
- Shoring must occur where excavation is in loose sand.

Refer to Section 6.8 for further detail regarding erosion control and drainage considerations.

4.3 Protection of Sensitive Ecosystems and Habitats

Prior to construction commencing, the project area must be inspected by the ECO to identify the following:

- Protected trees must be avoided as far as possible.
- Protected plant species that must be avoided as far as possible (in the event that a protected plant species needs to be removed, the Contractor must obtain ECO agreement and the necessary licence from DFFE/EKZNW for its removal).

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 37

- Identify and mark large, established, indigenous trees that must not be removed.
- Suitable sites for the relocation of suitable sensitive plant material to be removed and trees to be transplanted (Appendix E6).
- Areas outside the construction site for off-site mitigation replanting (where relocation is not possible), such as the sections of the existing servitude that will be decommissioned.
- Identify, delineate, photograph and clearly mark wetlands 1 and 2, the swamp forest, mangroves, and the extent of the construction footprint along the Richards Bay Sanctuary.
- Where necessary, appoint a suitably qualified ecologist to provide assistance with the above-mentioned tasks.
- The Project Manager, in consultation with the Environmental Manager and ECO, must prepare a programme to remove alien invasive plants on site during the construction period.
- The construction servitude must not be wider than 20 metres.
- Watercourse and wetland protection measures must be put in place.
- The development must, as far as practically possible, take place in or as near to the existing servitude as possible to avoid disturbance of established vegetation communities outside of the servitude, especially when construction takes place along the alignment adjacent to Richards Bay Sanctuary.
- Every effort must be made to prevent impact on the Mangroves and the Manzanyama Canal next to the viaduct bridge.

Refer to Section 6.1.3 for further detail regarding the protection of sensitive environments.

4.4 Stockpile Areas

- Where possible, stockpile areas must be identified and approved by the Project Manager and ECO during the design phase.
- Where possible, stockpile areas must be located within the construction site.
- Environmentally sensitive and no-go areas must be avoided.
- If the stockpile area is located closer than 50 m from an identified wetland or watercourse, erosion prevention measures must be designed and implemented.
- As far as possible, existing roads must be used to access stockpile areas.

Refer to Section 6.6 for further detail regarding stockpiling.

4.5 Spoil Areas

- The Contractor must dispose of excess trench excavation material and construction rubble.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 38

- Where possible, spoil sites must be identified and approved during the design phase. In determining the appropriate location of spoil areas, cognisance must be taken of sensitive and no-go areas.
- The reinstated site must be used as a spoil area for excess trench excavation material provided that the net increase in ground level is less than 200 mm. The reinstated servitude must be lightly compacted and made free draining.
- Excess trench material must also be used to replace unsuitable local material (e.g., bedding for pipes).
- Spoil areas must not negatively affect surface drainage and must not alter the topography to the extent that they become visually intrusive.
- Spoil areas must be re-vegetated and rehabilitated after construction.

Refer to Section 6.6.2 for further detail regarding spoil.

4.6 Construction Site

4.6.1 Construction Site Layout Plan

A construction site layout plan must be compiled during the design phase by the Project Manager, with assistance from the Environmental Manager. The plan must show the positions and extent of the known permanent and temporary site structures and infrastructure as listed below (as applicable). Additional items and amendments to this plan must be made during the pre-construction phase.

- Site access (including entry and exit points).
- Roads and haul/access routes.
- Buildings and structures.
- Material storage yards.
- Site office.
- Security requirements (including temporary and permanent fencing, and lighting) and accommodation areas for security staff.
- Gates and fences.
- Concrete batching areas.
- Essential services (permanent and temporary water, electricity and sewage).
- Sanitation (including the treatment/removal of sewage).
- Construction materials storage areas including the storage of fuels.
- Vehicle and equipment storage areas.
- Wash bays.
- Storm water control measures.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 39

- Borrow areas (if required).
- Excavations.
- Stockpile/lay-down areas.
- Spoil areas.
- Waste management including waste storage and disposal sites.
- Areas where vegetation will need to be cleared.
- Features and plants to be conserved.

4.6.2 Construction Camps

The following must be designed for with regard to the construction camps:

- In determining the location and layout of these areas, cognisance must be taken of sensitive and no-go areas. The construction camp and material storage yards must be located in areas that will have minimal environmental impact and least disturbance to the Port tenants and service providers.
- The construction camp and material storage yards must be sited within previously disturbed areas, but must not be located within 50 m of identified ecologically sensitive areas such as watercourses, drainage lines or wetland areas.
- No staff accommodation is allowed on site, except for security/emergency personnel.
- Strict stock control systems must be enforced in storage areas.
- The construction camp must be fenced.

4.7 Access/Haul Roads

- The design phase must make provision for the utilisation of existing roads in the area (as far as possible).
- The design phase must make provision for the establishment of required temporary haul/access roads within the boundaries of the construction site. Where roads are required outside the construction site, sensitive and no-go areas must be avoided.
- The final design must detail all access/haul roads outside the construction site.
- Any clearing for access or haul roads, both within, and where necessary, outside the construction site can only be undertaken once the necessary permission from TNPA has been obtained.

Refer to Section 6.2.6 for further detail regarding roads and access.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 40

4.8 Disturbance to Port Tenants and Service Providers

- The minimum disruption to services must be maintained at all times.
- The design must address the disturbance of access to affected Port Tenants during the construction phase, and must make provisions for maintaining access, adequate notice of access closures and alternative routing if required.
- The accommodation of services, e.g. Telkom, Eskom and other utilities must be incorporated into the design with full liaison with the relevant utility companies regarding safety requirements for work within or crossing utility servitudes.
- Direct liaison is required between the design engineers and the relevant organs of state in order to identify exact positions, to negotiate permission to cross servitudes and/or services infrastructure and to identify optimal ways to minimise disruption and interruptions to services.
- Dust control management practices and procedures must be defined during the design phase to ensure the effective suppression of dust during construction.
- Design must include mitigation measures in order to ensure construction noise levels are within permitted levels.
- Sufficient notice to the affected Port tenants must be provided by the Project Manager in consultation with the Environmental Manager and ECO, before construction commences. Information regarding the expected types of construction activities must be supplied.

Refer to Section 6.10 for further detail regarding Nuisance control.

4.9 Aesthetics

During design, the overall aesthetics of the project must be considered, with a view to minimise any potential negative impacts and/or to improve the visual aesthetics of the local environment

5. PRE-CONSTRUCTION PHASE

The pre-construction phase refers to the period following final project planning and the tender phase, leading up to, but not including, the establishment on site by the appointed Contractor. These items must be the responsibility of the Contractor or the Project Manager. Input and assistance must be obtained, where necessary, from the Environmental Manager and ECO.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 41

5.1 Construction Site Layout Plan

A construction site layout plan must be compiled during the design phase by the Project Manager, with assistance from the Environmental Manager. The plan must show the positions and extent of the known permanent and temporary site structures and infrastructure as listed below (as applicable):

- Site access (including entry and exit points).
- Roads and haul/access routes.
- Buildings and structures.
- Material storage yards.
- Site office.
- Security requirements (including temporary and permanent fencing, and lighting) and accommodation areas for security staff.
- Gates and fences.
- Essential services (permanent and temporary water, electricity and sewage).
- Sanitation (including the treatment/removal of sewage).
- Vehicle and equipment storage areas.
- Wash bays.
- Storm water control measures.
- Excavations and trenches.
- Stockpile/lay-down areas.
- Spoil areas.
- Waste management including waste storage and disposal sites.
- Areas where vegetation will need to be cleared.
- Features and plants to be conserved.

5.2 Construction Preparation

- The Contractor must ensure that any required written permission from TNPA for use of land for the construction camp, material storage yards, stores and stockpile areas has been obtained.
- The ECO must take detailed, colour photographs of the site before any clearing can commence.
- The Contractor must ensure that he/she is familiar with the following prior to construction commencing:
 - Sensitive areas.
 - Mitigation measures.
 - Large, established, indigenous trees that must not be removed.
 - Wetlands and watercourses likely to be intersected by the project.
- Sanitation arrangements must be made to the satisfaction of the Environmental Manager, the ECO, and the local authorities, and be compliant with all applicable legal requirements.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 42

- The Contractor must ensure that the Project Manager and Environmental Manager are given timeous notice of the intention to commence construction.

5.3 Acquisition of Permits and Licences

Applicable permits and licences must be obtained prior to construction, as per section 2.3.

6. CONSTRUCTION PHASE

The construction phase refers to the period of the project during which construction activities are carried out. This section of the EMPr outlines those general environmental specifications that are required to be implemented by the Contractor during construction. Where applicable, approval, assistance and/or guidance must be sought from the Project Manager, CM, Environmental Manager and the ECO.

6.1 Site Establishment

When establishing the site, the environmental objective is to minimise the footprint of disturbance and to minimise the extent of soil erosion, loss of vegetation and the potential for pollution of soils and water resources.

The site must be established in accordance with the approved construction site layout plan, prior to the commencement of construction. Any relaxation or modification of the construction site layout plan must be approved by the Project Manager and ECO.

6.1.1 Demarcation of the Site

The extent of the construction site, including working areas, must be clearly demarcated and no movement or work outside these areas is permitted.

The Contractor must:

- Identify and demarcate the extent of the construction site as indicated on the approved construction site layout plan using barrier tape or another method as approved by the Project Manager and ECO.
- Minimise the extent of the construction site footprint as much as possible.
- Ensure that the main site camp is completely fenced and has controlled security access.
- Identify and demarcate sensitive sites in collaboration with the ECO. This may require perimeter fencing or steel droppers with barrier tape.
- Maintain site demarcations in position until the cessation of construction works and ensure that no personnel or construction materials move outside the designated site.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 43

- Ensure that the site is not used for any other purpose other than for the carrying out of construction activities.
- Ensure that no natural features are painted or permanently marked. Marking for surveying and other purposes must be done using pegs, beacons or rope and droppers.
- Ensure that security lighting from the construction camp does not unduly disrupt any Port tenants or other Port users.

6.1.2 Site clearance

- Detailed, colour photographs shall be taken of the proposed site before any clearing can commence. These records are to be kept by the ECO to aid in the rehabilitation of the site.
- Prior to site clearance, the ECO must be informed, with 14 days notice, in order to identify and demarcate any indigenous trees or plants, nesting sites or heritage sites that required protection or translocation.
- Areas of the construction site requiring clearance shall only be cleared immediately prior to construction activities commencing, i.e. at the last practicable stage.
- Clearance of indigenous vegetation must be kept to an absolute minimum.
- No indigenous trees or shrubs must be felled, lopped, pruned or removed without the prior permission of the ECO. De-bushing and de-stumping are dealt with in section 6.1.6 of this document.
- Topsoil is to be stripped, together with grass, groundcover and sedges, from all areas where permanent or temporary structures and access roads are to be constructed. Conservation and handling of topsoil is to be in terms of this document (Section 6.1.5).

Wood obtained from clearing and grubbing operations remains the property of the Authority and must be stacked at sites designated by the ECO. The Contractor shall be required to remove from site and dispose of any wood at a designated site for vegetation disposal, should this be required.

6.1.3 Protection of Sensitive Habitats

- The Contractor must ensure that the necessary rescue and translocation of plants and animals be undertaken prior to the commencement of construction.
- The width of the initial clearance for the construction pipeline servitude must be minimised to reduce impact on sensitive habitats and the loss of indigenous vegetation.
- The removal of indigenous vegetation must be kept to a minimum by minimising the construction footprint and by confining areas for structures, services, stockpiling, new temporary access roads, etc, to existing disturbed areas or areas within the construction servitude.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 44

- Protected trees must be avoided as far as possible. However, in the event of avoidance being impossible, the Contractor must obtain ECO agreement for the removal. The ECO must identify these trees, in consultation with a suitably qualified botanist, before the commencement of construction.
- As far as possible, indigenous plants or natural features must not be disturbed, defaced, destroyed or removed. The Contractor will be held liable for the replacement of any indigenous plant or natural feature that is removed or damaged by the Contractor's negligence or mismanagement.
- Should the ECO confirm that clearing of indigenous vegetation is unavoidable, plant material must be transplanted where practical and possible or compensated at a ratio of 3:1 plants of the same species lost.
- Where possible, the clearance of indigenous forest must be mitigated by replanting elsewhere in the area with appropriate locally indigenous species.
- The method of excavation must be selected to minimise interference with indigenous forest to be retained on either side of the servitude, i.e. manual labour must be utilised for pipelaying in sensitive areas (large excavation construction equipment can cause considerable damage to trees outside of the construction footprint if working in a narrow corridor flanked by tall trees either side).
- No material storage or laydown is permitted under trees.
- Vehicle and pedestrian traffic outside the construction area must be avoided.
- It is recommended that no cement mixing take place on site. Ready mix concrete must be used instead.
- Contaminated water must be contained & disposed of offsite at an approved landfill.
- If oil spills occur the contaminated soil must be disposed of at an approved landfill site.
- No impacts on quality of surface and ground water must be allowed.
- Chemical toilets shall not be placed on steep areas and areas with intact vegetation. Exact location of toilets to be approved with the Project Manager and ECO prior to construction and must be located at least 50 meters away from wetlands and/or watercourses.
- Topsoil and subsoil seepage shall be protected from contamination
- To prevent storm water damage, the increase in storm water run-off resulting from clearing activities must be estimated and a drainage system assessed accordingly. A stormwater management plan must be submitted for approval. Serious financial and environmental impacts can be caused by unmanaged storm water.
- The extent of dewatering measures in poorly drained areas must be finalised by the designer in discussion with the geotechnical representative as deemed necessary during the construction programme (and are subject to approval under a Water Use License Application (WULA) from DWS).
- The time that stripped areas are left open to exposure must be minimised wherever possible.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 45

- Care must be taken to ensure that lead times are not excessive. The stripping of vegetation directly preceding activities on site greatly reduce the risk of erosion.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site.
- Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set up phase i.e. topsoil is to be conserved while providing access to the site and setting up the camp.
- No impediment to the natural water flow other than approved erosion control works is permitted.
- Stormwater runoff must be appropriately channelled and discharged in a safe manner thus reducing environmental impacts to the vegetation and aquatic communities.
- Solid waste is to be stored onsite in an appropriate manner until it can be disposed at the nearest identified waste fill site
- Material spoiling shall not take place on site. Any excavated materials for the pipeline shall be taken out of the watercourse immediately.
- Location for spoiling of excavated material shall be confirmed with the Project Manager and ECO prior to construction.
- Contractor is to exercise strict care in the disposal of construction waste, with proof of disposal at an approved site provided after off-loading each waste load and this logged/registered within the environmental file that must be maintained at the contractor's camp for the duration of construction.

6.1.3.1 Protection of Water Resources

- The ECO and Contractor must ensure that all watercourses likely to be affected by the project have been identified, delineated, photographed and clearly marked by the ECO prior to any construction work on the pipeline route.
- The Contractor must not cause any physical damage to any aspect of a watercourse, other than that necessary to complete the works as specified and in accordance with the accepted method statement.
- Short lengths of concrete encasement must be utilised to avoid erosion of the pipe fill material.
- The Contractor must repair the existing drainage systems and augment these where applicable with additional drainage or increased capacity so as to accommodate normal, as well as flood conditions.
- The Contractor must ensure that uncovered soil and stockpiles are not eroded and material washed away.
- The Contractor must not alter the flow of water, i.e. it must not be stopped, disconnected, diverted, ponded, or caused to become stagnant.
- Timing of trenching and pipe laying near watercourses must be during the low flow season to minimise increased sedimentation and turbidity.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 46

- The Contractor must avoid the unnecessary compaction and impacts on sensitive wetland and riparian soils.
- No construction materials must be stockpiled in any wetland and riparian areas.
- Replanting of wetland and riparian vegetation must be undertaken immediately after surface reinstatement is complete.
- Where possible, plants must be replanted in wetland and riparian areas from which they were removed.
- The pre-construction profile of the watercourse must be returned to one similar to before construction.
- Wetlands must have no created “ridge or channel” features present to ensure that no depressions remain, which could act as channels for preferential water flow thereby affecting the hydrological regime of the wetland.

6.1.3.2 Protection of Fauna

- Wild animals must not be fed, handled, removed, hunted, snared, captured, injured or killed or otherwise interfered with.
- The Contractor must ensure that the construction area is kept clean, tidy and free of litter/rubbish that would attract animal pests.
- The Contractor must not use any pesticides, unless approved by the ECO.
- Where trenches pose a safety risk to animals, the Contractor must ensure that they are adequately cordoned off.
- The ECO, in consultation with the Contractor, must report problem or injured wild animals to EKZNW.

6.1.4 Protection of Cultural Heritage Resources

If a cultural heritage artefact on site is uncovered, work in the immediate vicinity must be stopped immediately. The Contractor must take reasonable precautions to prevent any person from removing or damaging any such article and must immediately inform the Environmental Manager of such a discovery. Amafa aKwaZulu-Natali, the provincial heritage authority of KwaZulu-Natal must be contacted so that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work must only resume once clearance is given in writing by Amafa aKwaZulu-Natali.

6.1.5 Topsoil Conservation

- Ahead of all construction, the topsoil layer must be stripped from all areas to be cleared, excavated, compacted or otherwise disturbed.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 47

- In the absence of a recognisable topsoil layer, the upper most 300 mm of soil must be stripped.
- The topsoil must be stockpiled separately from overburden material (subsoil and rocky material).
- Construction works must be co-ordinated to limit unnecessarily prolonged exposure of stripped areas and stockpiles.
- Vegetation and soil must be retained in position for as long as possible, removing it immediately ahead of construction/earthworks in that area.
- Herbaceous vegetation, along with overlying grass and other fine organic matter must be stripped and stockpiled.
- The stockpile height of topsoil must not exceed 2 m unless approved by the ECO.
- The stripped topsoil must be stored at an approved location and in an approved manner for later reuse in the rehabilitation process.
- Topsoil stripped from different sites must be stockpiled separately, as re-application during rehabilitation must preferably be site specific.
- Topsoil obtained from different sites must not be mixed.

6.1.6 De-bushing and de-stumping

- Prior to any disturbance/stockpiling and clearing of natural vegetation and soil (either within the construction servitude, working footprint or at designated or instructed areas outside the construction servitude), the Contractor must submit a method statement to the Project Manager for approval (in line with the approved construction site layout plan (Sections 4.6.1 and 6.1). The plan must contain reference points (e.g. chainage) of the areas to be disturbed for easy identification at a later stage.
- The Contractor must obtain permission from the ECO to proceed with debushing as this needs to be carefully co-ordinated with specified plant rescue and the DFFE/EKZNW permit requirements⁵ (Section 2.2).
- The Contractor must only debush specified areas as indicated on the approved construction site layout plan (Sections 4.6.1 and 6.1).
- Remaining plant material and stumps must be disposed as solid waste or left on site to decompose naturally as advised by the ECO.
- De-stumping must only be carried out in consultation with the ECO

6.2 Site Infrastructure

6.2.1 Structures

- All buildings and structures, including offices, workshops, stores, etc. must be located as per the approved construction site layout plan.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 48

- Only security and emergency personnel must be housed on the construction site. Accommodation for other construction staff must be located in suitable venues off site.
- On site accommodation for security and emergency personnel must be securely fenced. These fences must remain in position for the duration of construction.
- Essential services must be provided and maintained in a functional state and not overloaded. Defects and inadequacies must be rectified immediately.

6.2.2 Services

6.2.2.1 Water

- No water must be abstracted from any surface or ground water resources without prior permission from TNPA, and the relevant authorisation from DWS.
- Water for construction purposes must be obtained from an approved service provider and agreed to by TNPA and the ECO.

6.2.2.2 Sanitation and Ablution Facilities

- The Contractor's intended methods for waste management and waste minimisation must be implemented at the outset of the contract and approved by the Project Manager.
- Adequate sanitation facilities⁶ in the form of portable serviced toilets must be provided and maintained for male and female workers along the entire route of the project.
- Portable toilets must be adequately secured to prevent them from blowing over and provided with locks and doors.
- The facilities must be placed outside areas susceptible to flooding.
- Grey water must not be discharged via French drains or directly into the surrounding environment.

6.2.2.3 Power supply

- The power supply to be used is to be approved by the Project Manager and ECO.
- If generators are to be used, establish generators, motors and stored fuel on a hardened, bunded surface and ensure any associated pollution is controlled (Section 6.4.4).
- Noise from generators must be controlled (Section 6.4.6).

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 49

6.2.3 Batching Sites

- Locate the batching activity in an area of low environmental sensitivity to be identified and approved by the ECO.
- Clear topsoil from the batching site and stockpile for later rehabilitation purposes.
- Cement must not be mixed directly on the ground, but rather on a protective sheet or board.
- Protect the batching plant on the up-slope side by an earth berm or sandbag system to deflect clean surface runoff away from the plant.
- Contain the batching plant on the down-slope side by a trench and earth berm or sandbag system to control contaminated runoff and construction water emanating from within the plant.
- Effluent from concrete batch plants must be treated in a designated sedimentation (sludge) dam to the legally required standards to prevent surface and groundwater pollution.
- Ensure that measures are in place to prevent the overflow of sludge dams during heavy rains and storm conditions.
- Ensure screening and containment are in place to prevent wind-blown contamination associated with bulk cement silos, loading and batching.

6.2.4 Construction Camp, Lay-Down Areas and Material Storage Yards

- The construction camp will house administrative offices, construction plant, material stockpiles, fuels, storage facilities and security guard accommodation.
- No construction workers must be accommodated at the construction camp.
- All material storage yards, storage areas and material lay-down sites must be located within predetermined zones as per the approved construction site layout plan.
- Additional areas required by the Contractor for material storage yards, lay-down and storage must be approved by the Project Manager with input from the ECO, in the form of an amended construction site layout plan indicating the extent and anticipated utilisation of the storage and lay-down areas.
- The construction camp, material storage yards and lay-down areas must be kept secure and neat at all times with appropriate access control measures employed during construction.
- Security lighting must be positioned so that it does not pose a nuisance to neighbouring properties or a danger to road users.

6.2.5 Storm Water Control

- Appropriate drainage measures must be taken to ensure that excessive run-off, and as a result, soil erosion, does not occur from the construction site.
- Where directed by the ECO, embankments must be grassed to minimise erosion.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 50

- Storm water diversions must be constructed above the construction campsite to direct run-off away from the site.
- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected clearing activities must be put on hold. In this regard, the contractor must be aware of weather forecasts.
- If possible, construction activities must be scheduled to minimise the duration of exposure of bare soils on site, especially steep slopes. The full extent of works shall NOT be stripped of vegetation prior to commencing other activities.
- A row of silt fences and sandbags must be established along the wetland buffer edge prior to construction commencing. These silt fences and sandbags must be regularly checked and maintained and must only be removed once vegetation has successfully colonised the embankments.
- Any steep or large embankments expected to be exposed during the 'rainy' months must either be armoured with fascine like structures/silt fences or grassed immediately with strip sods established at regular intervals (50-100 cm) down the bank with hydro-seeding between the strip sods.
- Where the bare surface of platforms slope towards the edge of an embankment, silt fences and sandbags must be established along the crest of the embankment. If preferential flow routes on the sloped site occur, these flow routes must be intercepted with a series of sandbags.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area.
- It is important that all of the above-listed mitigation measures are costed for in the construction phase financial planning and budget so that the contractor and/or developer cannot give financial budget constraints as reasons for non-compliance. Proof of financial provision of these mitigation measures must be submitted to the ECO prior to construction commencing.

6.2.6 Roads and Access

- As far as possible, existing roads must be used for access/haulage purposes, as per the construction site layout plan.
- Adequate vehicle turning areas must be allowed for.
- Alternative temporary access routes must be provided where construction will obstruct existing access.
- Routes through sensitive areas must be avoided wherever possible.
- Speed limits appropriate to the type and condition of road must be enforced at all times.
- Safe pedestrian access and crossing must be provided where necessary.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 51

- All access routes and roads must be adequately maintained in order to minimise erosion, undue surface damage and pollution.
- Topsoil (and other material) that has accumulated inside drains of roadways must be regularly removed to keep these open and functional.
- Gravel or cement spillage must be cleared immediately (both within and outside the construction site).
- Damage to public or private roads caused by the Contractor during the construction phase must be repaired immediately to the same or a better state.
- No off-road driving is permitted outside of the demarcated construction area or in sensitive areas.
- Traffic disruptions along roads must be minimised and controlled.

6.3 Implements and Equipment

- Mobile plant and equipment which is appropriate to the task must be utilised in order to minimise the impact on and extent of damage to the environment.
- Should the ECO at any time determine that the method, mobile plant or equipment utilised by the Contractor is unsuitable for the task at hand, or unnecessarily detrimental to the environment, then he/she must specify the use of a suitable alternative.

6.4 Site Management

6.4.1 Solid Waste

- The Contractor must ensure that personnel make use of the litter bins provided and that the construction site and the construction camp are kept tidy and litter-free at all times.
- All domestic waste must be collected in litter bins.
- Litter bins must be equipped with a closing mechanism to prevent their contents from blowing out and scavengers from getting in.
- Litter bins must be emptied weekly (or as required before they reach capacity).
- Domestic waste must be taken to a licensed landfill site. Waste must be transported responsibly, avoiding waste spills en-route.
- Where necessary, a storage area must be dedicated on site for the collection of construction waste.
- No solid waste must be burned or buried on site or disposed by any other method.
- Where feasible, wastepaper, glass and metal waste must be collected separately and arranged for collection by recycling contractors.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 52

6.4.2 Liquid Waste

- Portable toilets must be regularly emptied and serviced by an approved service provider.
- The Contractor is entirely responsible for enforcing their use and for maintaining all toilets in a clean, orderly and sanitary condition to the satisfaction of the ECO.
- Sewage must be disposed at a licensed wastewater treatment site and may under no circumstances be dumped in the bush or buried.

6.4.3 Hazardous Waste

- Compliance with all national, regional and local legislation must be ensured with regard to the storage, handling and disposal of hydrocarbons, chemicals, solvents and any other harmful and hazardous substances and materials.
- Hazardous waste must be stored as indicated on the approved construction site layout plan.
- Drip trays must be used where dispensing mechanisms or stored receptacles may leak.
- No spillage of hazardous products must be allowed on site. Special care must be taken to avoid contamination of surface or groundwater.
- Under no circumstances shall the spoiling of hazardous products on site be allowed.
- Waste oils and batteries must be retained for recycling by the supplier, wherever possible.
- Used oil and lubricants must be collected in a holding tank and disposed at a registered hazardous waste disposal site.
- Hazardous waste not earmarked for reuse, recycling or resale must be disposed at a registered hazardous waste disposal site.
- The repair and/or maintenance of vehicles and equipment's on site are not permitted.

6.4.4 Pollution Control

- The storage for any substance, which causes or is likely to cause pollution must not be located within a horizontal distance of 100 m of a watercourse, drainage line or identified wetland.
- Waste or foreign material must not be dumped into any watercourses or wetland areas.
- Watercourses and wetland areas must not be used for swimming, bathing, or the cleaning of clothing, tools or equipment.
- The discharge of water containing polluting matter or visible suspended materials, fines and sediments directly into drainage lines or wetlands must be prevented.
- Unpolluted water/runoff must be deflected away from any dirty area.
- Where necessary, turbid water pumped from excavations within watercourses must be passed through a sand filter or settling pond before being released back into the watercourse. Discharge of this water must be in a controlled manner, and no erosion may result.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 53

- No storm water must enter any drainage installation for the reception, conveyance, storage and/or treatment of sewage.
- Special care during rainy periods must be taken to prevent the contents of sumps and drip trays from overflowing.
- Before any water is permitted to enter natural water resources, the quality of the water must comply with the South African Water Quality Guidelines (Department of Water Affairs and Forestry, 1996) and the Standard Requirements for Effluent and Waste Water⁸.
- Watercourses must be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials, etc.
- The Contractor must ensure that an emergency preparedness plan is in place for implementation in the case of a spill or substances that can be harmful to an individual or the receiving environment.
- The Contractor must ensure that accidental oil or fuel spills or leakages (other than those classed as emergency) are immediately contained and cleaned up.
- Oil or fuel spills must not be hosed into a storm water drain or sewer, or into the surrounding natural environment.
- Small oil or fuel spills must be cleaned with an approved absorbent material, such as 'Drizit' or 'Spill-sorb'.
- Oil or fuel spills must be contained in water using an approved oil absorbent fibre.
- Soil contaminated by oil or fuel must be treated using one of the following approved methods, as per instruction of the ECO:
- The soil to the depth of the contamination must be removed and disposed of at a registered hazardous waste disposal site.
- The soil to the depth of the contamination must be removed and regenerated using approved bio-remediation methods.
- All on-site operations that involve the use of cement and concrete must be carefully controlled.
- Cement and concrete mixing must be limited to single sites, where possible.
- Plastic trays or liners must be used when mixing cement and concrete (cement and concrete must not be mixed directly on the ground).
- All visible remains of excess cement and concrete must be disposed of after the completion of tasks. Solid waste concrete must be treated as inert construction rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste.
- Water and slurry from cement and concrete mixing operations must be contained and directed into a settlement pond or sludge dam for later disposal.
- Trucks delivering concrete must be washed only within designated wash bays equipped with runoff containment and infrastructure to direct wastewater into a settlement pond or sludge dam for later disposal. Trucks must deliver bags and aggregate along existing access roads/tracks.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 54

6.4.5 Air Quality

- Dust-suppression techniques (e.g. the use of water spray vehicles) must be employed on all exposed surfaces during periods of high wind. Potential methods include:
- Remove only limited vegetation to accommodate construction activities.
- Spray unpaved roads and construction areas, including stockpiles and spoil, with water routinely throughout construction to contain dust.
- All surfaced public roads shall be cleaned within 50 metres of points of ingress and egress in order that mud and dust on the road surface is minimised.
- Implement traffic control measures to limit vehicle entrained dust from unpaved roads (e.g. by limiting construction vehicle speeds and by restricting traffic volumes).
- Re-vegetate verges and cuttings once all construction is complete, and when the lay down area/construction camp is vacated.
- Vehicles emitting black smoke and fumes must be repaired and maintained.
- No burning of waste material shall be allowed anywhere on site.

6.4.6 Noise Control

- Compliance with the legislation in respect of noise is mandatory.
- Noisy activities must take place during normal working hours.
- Adjacent residents must be notified of after-hours construction work and of any other activity that is likely to cause a nuisance.
- If noise levels at the boundaries of the site exceed 7dB above ambient levels, then the local health authorities must be informed.
- Noise suppression measures must be applied to all construction equipment.
- Construction equipment must be kept in good working order and, where appropriate, fitted with silencers.
- Community complaints with regard to noise generation must be responded to, taking reasonable action to ameliorate the impact.

6.4.7 Fire Control

- Adequate precautions must be taken to ensure that fires are not started as a result of construction. The Contractor will be held liable for any damage to property adjoining the site as a result of any fire caused by one of his employees.
- The Contractor must agree to a fire reporting and extinguishing protocol with TNPA.
- The Contractor must compensate affected Port tenant or user for any loss due to fire resulting from the contract.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 55

- The construction camp must be equipped with adequate firefighting equipment (this includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type, irrespective of the site).
- Immediate steps must be taken to extinguish any fire, which may break out on the construction site.
- No open fires are permitted anywhere on site.
- Fuel or chemicals must not be stored under trees.
- Gas and liquid fuel must not be stored in the same storage area.
- Smoking must not be permitted within 3 m of any fuel or chemical storage area, or refuelling area.
-

6.4.8 Health and Safety

- Adhere to the requirements of the Occupational Health and Safety Act (OHSA), and associated Construction Regulations.
- Ensure that emergency numbers and first aid supplies are always easily accessible.
- Obey speed limits and travel more slowly where conditions dictate.
- Ensure that operators and drivers limit their potential to endanger humans and animals at all times, by observing strict safety precautions.
-

6.4.9 Safety and Security

Where relevant, implement security measures to:

- Prevent access by people with criminal intent.
 - Prevent dangerous animals entering the site.
 - Comply with the relevant provisions under the Occupational Health and Safety Act, and associated Construction Regulations.
- Inform staff of the risk of contraction, the symptoms thereof, and the steps for prevention and treatment of the following:
- HIV/AIDS.
 - Malaria.
 - Tick bite fever.
 - Heat stroke.
 - Cholera (Guidelines for cholera are available from the Department of Environmental Health, Pietermaritzburg).

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 56

6.5 Earthworks

6.5.1 Excavations and Trenches

- Excavations must be undertaken carefully, incorporating appropriate drainage.
- For significant trees identified by the ECO, trenching must be outside the drip line of the tree as specified by the ECO.
- The pipeline must be constructed with the dig and lay method where pipes are laid length by length. Excavate and backfill trenches on a progressive basis.
- The Contractor must not have more than 500 m of trench open at any one time.
- Excavations must not stand open for longer than two days, where possible (maximum of four days). Excavations must preferably be opened and closed on the same day.
- If de-watering is required where the water table is high, the trench must only be open for one day.
- Where trenches pose a risk to human or animal safety, they must be adequately cordoned off to prevent accidents.
- Wild animals that are found trapped in excavations must be assisted provided there is no risk to workers' safety. Should there be a danger to workers or the animal is injured, the matter must be reported to EKZNW as soon as possible.
- Excavation must be programmed to take place once the required materials are on site. This facilitates the immediate laying of services and/or construction of subsurface infrastructure and minimises open trench time.

6.5.2 Shaping and Trimming

- The Contractor must execute bulk (shaping) and fine (trimming) earthworks according to the design (aimed at the prevention of soil erosion, of efficient storm water control, of the eventual reestablishment of vegetation and of ultimately achieving aesthetically acceptable landscapes).
- The shaping and trimming operations must be planned to allow for topsoil application: final trimmed levels must make provision for the specified depth of reapplied topsoil.
- Trimmed surfaces must be left slightly rough to facilitate topsoil binding for the natural establishment of vegetation.
- Where machine operations are not practicable, trimming must be carried out using hand tools.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 57

6.6 Stockpiles, Storage and Handling

6.6.1 Topsoil

- If temporary stockpiling is required, stockpiles must be positioned as indicated on the approved construction site layout plan.
- Any additional topsoil stockpile areas required by the Contractor must be approved by the ECO, in the form of an amended construction site layout plan indicating the position and extent thereof.
- Topsoil is to be kept separate from subsoil and handled twice only – once to strip and stockpile, and once to replace and level.
- Topsoil stockpiles must be positioned on the higher side of a disturbed area, and above a 1:50 year flood line wherever possible.
- Stockpile height must not exceed 2 m unless approved by the ECO.
- All topsoil must be stored in such a way and in such a place that it will not cause the damming up of water, erosion gullies, or wash away itself.
- Topsoil must be stockpiled in windrows parallel to the excavation.
- Near watercourses or wetland areas, topsoil must be stockpiled above the riverine zone.
- Topsoil must not be stockpiled in drainage lines.
- Topsoil must not be stockpiled in sensitive areas.
- Topsoil must be stockpiled in a suitable form in order to minimise visual impact.
- Topsoil stockpiles must be protected from erosion by wind and water.
- Topsoil must not be compacted in any way during storage.
- Exotic/invasive plants and broad leaf weeds that emerge on topsoil stockpiles must be removed.
- If topsoil is to be stockpiled for extended periods, especially during the wet season, the ECO must recommend one of the following measures:
 - The stockpiles must be re-vegetated with indigenous grasses as indicated by the ECO.
 - The stockpiles must be covered with protective material, such as hessian mats.
- Topsoil must not be buried, mixed with spoil (excavated subsoil), rubble or building material, or subjected to compaction or contamination by vehicles or construction equipment. This will render the topsoil unsuitable for use during rehabilitation.
- The Contractor will be held liable for the replacement of any topsoil rendered unsuitable for use during rehabilitation, for reasons due to his negligence or mismanagement on site.

6.6.2 Spoil

- A photographic record (before construction and after rehabilitation) must be kept of all spoil sites for monitoring purposes.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 58

- The reinstated construction site, used as a spoil area for excess trench excavation material, must only have a net increase in ground level of less than 200 mm. The reinstated site must be lightly compacted and made free draining.
- Excess trench material must also be used to replace unsuitable local material (e.g. bedding for pipes).
- The allocated burial site (approved by the Construction manager and ECO) must be used for construction rubble.
- Spoil areas must not negatively affect surface drainage, and they must not alter the topography to the extent that they become visually intrusive.
- Dumping of material over embankments is not permitted.
- The use of spoil sites for the disposal of hazardous or toxic wastes is not permitted.
- No spoil site must be located within 500 m of any watercourse or in sensitive areas.
- Spoil must be positioned on the higher side of a disturbed area, and above a 1:20 year flood line wherever possible.
- Spoil must be stored in such a way and in such a place that it will not cause the damming up of water, erosion gullies, or wash away itself.
- No slopes steeper than 1(V):3(H) are allowed.
- Coarser material must be buried beneath the finer material, and all permanent spoil overlaid with a layer of 200 mm topsoil.
- If required, additional spoil storage areas required by the Contractor must be approved by the ECO, in the form of an amended construction site layout plan. The following information is required for approval:
 - The location, description and access to proposed sites.
 - The quantity of material to be spoiled.
 - The type of material to be spoiled.
 - The proposed method of spoiling.
 - A proposal for the reinstatement and rehabilitation plan, including the final profile.
 - Written approval from TNPA/relevant authority that material can be spoiled on the land in question, subject to conditions.
 - Spoil areas must be re-vegetated and rehabilitated after the construction phase.

6.6.3 Vehicles and Equipment

- Vehicles used during construction must have the minimum impact on the environment and other road users.
- Vehicles, construction equipment and equipment must be checked regularly to ensure that none have leaks or cause spills of oil, diesel, grease or hydraulic fluid. Problematic vehicles, construction equipment or equipment must be sent for repair or removed from site immediately.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 59

- Drip trays must be provided for any construction equipment that will be in position for longer than one day. Drip trays are to be water tight and must be emptied regularly and before rain events. The contents of drip trays are to be treated as hazardous waste.
- All the necessary handling and safety equipment for vehicles, construction equipment and equipment must be provided by the Contractor and used or worn by staff.
-

6.6.4 Fuel

- Fuel stores must be positioned as indicated on the approved construction site layout plan.
- Fuel depots must not be located within a horizontal distance of 100 m of a watercourse, drainage line or identified wetland.
- In the event the contractor has a diesel tank on site at the construction camp, the diesel tank must be on a stand, within a bunded area, with a metal drip tray under the dispensing hose. The dispensing hose must have a control pump with a valve, tap, hose and funnel.
- An impervious layer (paving or PVC sheeting with a layer of sand) must be provided adjacent to the diesel tank upon which vehicles must park during refuelling. This will help to accommodate fuel spills during refuelling.
- All spills (within the bund and dispensing area) must be directed to a collection sump.
- Spills and the contents of the sump must be treated as hazardous waste.
- All the necessary handling and safety equipment for fuels must be provided by the Contractor and used or worn by staff.

6.6.5 Hazardous Substances

- Compliance with all national, regional and local legislation must be ensured with regard to the storage, transport and use of harmful and hazardous substances and materials.
- The Contractor must provide a register of hazardous substances to be used on site and must provide proof to the Project Manager that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials must be clearly displayed on the storage facility or containment structure.
- The Contractor must provide the Project Manager with details of the preventative measures that are proposed to be installed in order to mitigate against pollution of the surrounding environment from leaks or spillages. This must include the emergency procedures to be implemented in the event of misuse or spillage of substances that will negatively impact on an individual or the environment.
- Hazardous substance stores must be positioned as indicated on the approved construction site layout plan, in areas not threatening human life or the environment.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 60

- Hazardous substances must only be stored under controlled conditions (in a secured, appointed area that is fenced, has restricted entry, has weatherproof facilities, and is underlain by a bunded concrete slab to protect against soil and water pollution).
- Controlled loading/unloading areas must be provided which are underlain by an impervious paving or Polyvinyl chloride (PVC) sheet to protect against soil and water pollution.
- Personnel handling hazardous substances must have been educated in terms of the correct handling, use and disposal thereof.
- Empty containers in which hazardous substances were kept must be treated as hazardous waste.
- The responsibility for spill treatment lies with the Contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to the CM. The ECO must assess the situation in consultation with the CM and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/water must be determined by the Environmental Manager in consultation with the Project Manager. Areas cleared of hazardous waste must be re-vegetated according to the Environmental Manager's instructions.
- Should the spill be serious and constitute an emergency, the emergency procedure must be applied.
- Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice must be sought for treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Environmental Manager. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input.

6.7 Water Use

- Water must not be wasted (e.g. leaks must be repaired).
- Where possible, water must be recycled on the construction site.

6.8 Erosion Control

- All areas susceptible to erosion must be protected to ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and construction area.
- Natural trees, shrubbery and grass species must be retained, wherever possible.
- Vehicular or pedestrian access must not be permitted into areas beyond the demarcated boundary of the construction area.
- Only light equipment must be used for access and deliveries into areas of unstable soils, in areas where erosion is evident, and at watercourse embankments.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 61

- In sensitive areas, measures such as a drainage layer, well pointing, shoring and concrete encasement of the pipeline where the pipeline crosses watercourses, must be taken.
- Shoring must occur where excavation is in loose sand and/or swamp areas.
- Erosion donga crossings must be addressed as watercourse crossings, applying soil erosion control and bank stabilisation procedures as specified by the ECO.
- Erosion problems must be repaired on a progressive basis throughout the contract.
- Slopes steeper than 1(V):3(H), or slopes where the soils are by nature dispersive or sandy, must be stabilised (in consultation with the ECO). One or more of the following methods may be required:
 - Topsoil covered with a geotextile¹⁰, plus a specified grass seed mixture¹¹.
 - A 50:50 by volume rock: topsoil mix 200 mm thick, plus specified grass seed mixture¹².
 - Logging or stepping (logs placed in continuous lines following the contours).
 - Earth or rock-pack cut-off berms¹³.
 - Benches (sand bags).
 - Packed branches.
 - Ripping and/or scarifying along the contours.
 - Storm water berms.
- Slopes of watercourse diversions must be protected with one or more of the following (in consultation with the ECO):
 - Sandbags.
 - Reno mattresses.
 - Plastic liners and/or coarse rock (undersize riprap).
- During the course of construction, the ECO must identify additional slopes in need of stabilisation and will specify actions in terms of the most appropriate approved method and technology.
- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected clearing activities must be put on hold. In this regard, the contractor must be aware of weather forecasts.
- If possible, construction activities must be scheduled to minimise the duration of exposure of bare soils on site, especially steep slopes. The full extent of works shall NOT be stripped of vegetation prior to commencing other activities.
- A row of silt fences and sandbags must be established along the wetland buffer edge prior to construction commencing. These silt fences and sandbags must be regularly checked and maintained and must only be removed once vegetation has successfully colonised the embankments.
- Any steep or large embankments expected to be exposed during the 'rainy' months must either be armoured with fascine like structures/silt fences or grassed immediately with strip sods established at regular intervals (50-100 cm) down the bank with hydro-seeding between the strip sods.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 62

- Where the bare surface of platforms slope towards the edge of an embankment, silt fences and sandbags must be established along the crest of the embankment. If preferential flow routes on the sloped site occur, these flow routes must be intercepted with a series of sandbags.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area.
- It is important that all of the above-listed mitigation measures are costed in the construction phase financial planning and budget so that the contractor and/or developer cannot give financial budget constraints as reasons for non-compliance. Proof of financial provision of these mitigation measures must be submitted to the ECO prior to construction commencing.

6.9 Weed and Invader Plant Control

- The Contractor is responsible for the control of weeds and invader plants within the construction area for the duration of the construction phase.
- This control involves killing the plants present, killing the seedlings, which emerge, and establishing and managing an alternative plant cover to limit re-growth and re-invasion. Weeds and invader plants will be controlled in the manner prescribed for that category by the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (as amended) or in terms of Working for Water guidelines.
- The ECO must identify alien plants (terrestrial and aquatic species) that must be removed by the Contractor.
- The ECO must monitor all sites disturbed by construction activities for colonisation by weeds, exotics or invasive plants, and be controlled by the Contractor as they emerge.
- Removed vegetation must be disposed at a DWS approved waste disposal facility.
- Only properly trained people must handle and make use of chemical herbicides. Workers must wear protective clothing when applying the herbicides.
- Spraying must not take place in windy conditions, when the herbicide can drift onto healthy indigenous plants.
- The use of herbicides is not permitted within identified sensitive areas. The removal of weeds and invader plants within these areas must be undertaken by hand.
- Affected areas must be reinstated and rehabilitated as soon as practically possible.

6.10 Nuisance Control

- Disruptions to other Port tenants must be minimised and managed.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 63

- Private property, access roads and other existing services on and in the vicinity of the construction site must be treated with respect and protected against damage.
- The Contractor must bear the cost of the repair of damage as a result of the Contractor's operations on site.
- On-going liaison with affected Port tenants, service providers and other parties must be undertaken to minimise disruption and interruptions to services.
- Sufficient prior notice must be provided to any affected Port tenants, service providers and/or other parties of the disruption of access.
- Construction activities must be restricted to within the construction site.
- The movement of construction workers must be confined, as far as possible, to the construction area.
- Access points must be clearly demarcated with barrier tape and signage.
- The trench must be back-filled and rehabilitated as soon as the pipe has been replaced on a progressive basis.

7. REHABILITATION PHASE

The concept of progressive rehabilitation is to be implemented throughout the life of the project. As soon as work in one area is complete the rehabilitation of that site is to commence. This will involve returning the condition of the disturbed areas to a state that they were in before the project began, or better. The Project Manager will be responsible for the monitoring of rehabilitation.

Unless specified otherwise, the Contractor shall be held responsible for the re-establishment of vegetation within the construction site boundaries for all areas disturbed during construction.

7.1 General Specifications

- The principle of progressive reinstatement must be followed wherever possible. This includes the reinstatement of disturbed areas on an ongoing basis, immediately after the specified construction activities for that area are concluded.
- As soon as a section of pipeline is finished and a construction site or material storage yard vacated, the disturbed areas must be rehabilitated by landscaping, levelling, topsoil dressing, alien plant eradication and vegetation establishment, including the planting of replacement trees where trees have had to be removed.
- Erosion control measures must be implemented, and the effectiveness thereof must be monitored and corrected where necessary. Environmental damage due to the failure of erosion control measures must be rehabilitated to a state agreed with DFFE.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 64

7.2 Removal of Structures and Infrastructure

- All construction plant, equipment, signage, storage containers, temporary fencing and gates, temporary services, fixtures, foundations and any other temporary construction infrastructure must be cleared from the construction site.
- Access roads utilised during construction (which are not earmarked for closure and rehabilitation) must be returned to a usable state and/or a state no worse than prior to construction.
- Unless otherwise directed by the Project Manager, all temporary access and haul roads earmarked for closure must be ripped, scarified, top soiled and seeded.

7.3 Stockpiles, Inert Waste and Rubble

- All stockpiles and surplus material must be transported to an approved location off site.
- After the stockpiled material has been removed, the site must be re-instated and rehabilitated.
- The site must be cleared of all inert waste and rubble, including surplus rock and foundations.
- Excess spoil and inert rubble must be transported to waste sites as approved by the Project Manager and ECO.
- All domestic waste must be removed and disposed at a registered waste disposal site.

7.4 Hazardous Waste and Pollution Control

- All fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps must be removed from site.
- Pollution containment structures must be removed from site.
- All sanitation infrastructure and wastewater disposal systems must be removed from site.

7.5 Final Shaping

- All excavations must be backfilled with in situ material.
- All dangerous excavations must be made safe by backfilling and grading as required.
- The reinstated construction site must be graded to ensure free flow of run-off and to prevent damming of water.
- Slopes must not be steeper than 1(V):3(H). The slopes must mimic the natural slopes and topography of the surrounding environment.
- The backfilling of excavations must be programmed so that subsoil is deposited first, followed by topsoil. The layers must be compacted as part of final shaping.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 65

- Backfilled areas must be monitored for subsidence (as the backfill settles) and depressions filled using available material.
- All disturbed areas must be shaped to blend in with the surrounding landscape.
- No excavated material or stockpiles must be left on site and all material remaining after backfilling must be smoothed over to blend in with the surrounding landscape.
- The site must be monitored for signs of erosion and remedial action taken where there are problems.

7.6 Topsoil Replacement and Soil Amelioration

- Topsoil must be replaced prior to the rainy season or any expected wet weather conditions.
- Stockpiled topsoil must be replaced and redistributed, together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the construction site, including temporary access routes and roads.
- Topsoil must be replaced to the original depth (i.e. as much as was removed prior to construction).
- Topsoil must be replaced in the same area from where it was stripped. If there is insufficient topsoil available from a particular soil zone to produce the minimum specified depth, topsoil of similar quality must be brought from other areas¹⁴ (this must be approved by the ECO).
- Topsoil suspected to be contaminated with the seed of alien vegetation must not be used.
- Imported topsoil must be sprayed with specified herbicides (approved by the ECO).
- Topsoil not utilised must be shaped in an acceptable manner to blend in with the local surrounding area.
- After topsoil placement is complete, available stripped vegetation must be spread randomly by hand over the topsoiled area.
- In the event that no topsoil is available on site prior to construction, and thus no topsoil is available for rehabilitation, the following ameliorative action must be undertaken (in consultation with the ECO):
 - The soil to a depth of 200 mm must be sampled in all areas allocated for grass planting and the samples sent for soil analysis to determine the type of fertiliser and rate thereof to be applied.
 - The necessary soil ameliorants as indicated by soil tests must be added to and worked into the soil.
 - After the application of fertilisers, a waiting period of six to eight weeks is required prior to the execution of planting and/or grassing.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 66

7.7 Ripping and Scarifying

- Following the application of topsoil, all areas must be ripped and/or scarified to facilitate mixing of the upper most layers. The ECO will specify whether ripping and/or scarifying is necessary.
- All disturbed and compacted areas of the construction site must be ripped and/or scarified, including the site offices, stockpile areas, temporary access routes and roads.
- Ripping and/or scarifying must be done along the contour to prevent the creation of down-slope channels.
- Ripping and/or scarifying must be done at 300 mm intervals (not more than 400 mm intervals).
- Ripping and/or scarifying must not be done under wet conditions (the soil will not break up).

7.8 Reinstatement of wetland areas and watercourses

Where watercourses or wetlands have been affected by construction activities:

- Ensure that watercourse banks are returned to their original profile.
- The surface reinstatement of wetland areas is to ensure that no depressions remain that could act as channels for preferential water flow (thereby affecting the hydrological regime of the wetland).
- The Contractor shall preserve all riparian and wetland vegetation for use in rehabilitation of those environments. This vegetation is to be kept moist at all times. It is to be placed in the shade and covered with moistened hessian cloth until replanting, which is to be undertaken immediately after surface reinstatement is complete.
- Plants are to be, as nearly as possible, replanted in areas from which they were removed.

7.9 Planting

- All planting work must be undertaken by a suitably qualified Contractor.
- The sourcing of seed or other plant material used for vegetation establishment must be from within 50 km radius of the site and within the bio-climatic region.
- The reinstatement of disturbed areas with locally indigenous herbaceous vegetation must be conducted progressively.
- In moist areas, re-vegetation must include hygrophilous grassland or reed bed, and in dry areas indigenous runner grasses must be used.
- The use of fertilisers must be carefully controlled by the ECO. No fertiliser must be used in the re-vegetation process near watercourses or wetlands areas.
- If possible, reseeding and replanting must occur just prior to or during the wet season. If planting and reseeding occurs in a dry period, it may be necessary to irrigate plants to ensure their successful establishment.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 67

7.10 Grassing

- Grassing must be undertaken by a suitably qualified Contractor.
- Affected areas must be grassed using the method specified on the plant plans.
- Affected areas must be trimmed to be grassed to the required level.
- Sodding must be done at any time of the year, but seeding must be done during summer when the germination rate is better.
- Hydro-seeding with a winter mix will only be specified where regrassing is urgent and cannot wait for the summer.
- Within terrestrial, non-wetland areas, indigenous runner grasses must be used, such as *Stenotaphrum secundatum*, *Dactyloctenium australe* and *Cynodon dactylon*. Exotic invasive grasses, such as Kikuyu (*Pennisetum clandestinum*) must not be used.
- In wet areas, hygrophilous grassland or reed bed must be encouraged as the final vegetation cover depending on the degree of local wetness (temporary/seasonal/permanent wetland).

7.11 Weed and Invader Plant Control

- The Contractor is responsible for the control of weeds and invader plants within the construction site for the duration of the rehabilitation phase.
- The control involves killing the plants present, killing the seedlings, which emerge, and establishing and managing an alternative plant cover to limit re-growth and re-invasion. Weeds and invader plants will be controlled in the manner prescribed for that category by the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (as amended) or in terms of Working for Water guidelines.
- Removed vegetation must be disposed at a licensed waste disposal facility.
- Only properly trained people must handle and make use of chemical herbicides. Workers must wear protective clothing when applying the herbicides.
- Spraying must not take place in windy conditions, when the herbicide can drift onto healthy indigenous plants.
- The use of herbicides is not permitted within identified sensitive areas. The removal of weeds and invader plants within these areas must be undertaken by hand.
- Affected areas must be reinstated and rehabilitated as soon as practically possible.

7.12 Monitoring of Rehabilitated Areas

- Upon completion of all work, the ECO and Construction Manager must survey all rehabilitated areas to ensure compliance with specifications.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 68

- A monitoring and alien weed control programme must be implemented (by the employer) for a minimum of one year to ensure no nick-point erosion develops in disturbed soils, wetland vegetation is re-established and that alien weeds are controlled.
- A photographic record must be maintained.
- Monitoring must be done quarterly each year, for the minimum of one year, or until the rehabilitated areas are well established.
- Alien weed control and soil erosion will be the main items that require monitoring.

8. OPERATIONS PHASE

The operations phase refers to the period of the project during which the project will be in operation. This section of the EMP outlines general environmental specifications that are required to be implemented by the employer.

8.1 Operational Site

- The employer must identify and demarcate the extent of the operational servitude and its access points and indicate these on an operational site layout plan.
- No movement or work outside the servitude is permitted other than activities involving gaining access to the site along approved access roads/tracks.
- Any areas disturbed outside of the operational servitude by the employer, its staff or visitors will be subject to reinstatement and rehabilitation at the employer's cost.

8.2 Maintenance of Water Supply Infrastructure

- The operational servitude must not be used for any purpose other than for the proper carrying out of operational activities.
- A regular monitoring and maintenance program must be developed.
- Permission must be obtained from TNPA prior to going on site.
- During maintenance activities, there must be minimal disruption to affected Port tenants, neighbours or any other operational services within the Port.
- Operations staff must not create excess dust or noise during operational activities.
- On-going liaison with affected Port tenants, service providers and other parties must be undertaken to minimise disruption and interruptions to services.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 69

8.3 Alien Invasive Species Control

- The employer is responsible for the control of weeds and invader plants. The employer must monitor all sites disturbed by operational activities for colonisation by weeds, exotics or invasive plants, and these are to be controlled as they emerge.
- The control involves killing the plants present, killing the seedlings which emerge, and establishing and managing an alternative plant cover to limit re-growth and re-invasion.
- Weeds and invader plants will be controlled in the manner prescribed for that category by the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) or in terms of Working for Water guidelines.
- Removed vegetation must be disposed at a licensed waste disposal facility.
- Only properly trained people must handle and make use of chemical herbicides and workers must wear protective clothing when applying the herbicides.
- Spraying must not take place in windy conditions, when the herbicide may drift onto healthy indigenous plants.

8.4 Access Roads

- The project site must be accessed using existing roads.
- No private access roads other than those required directly for operational purposes must be used.
- Speed limits, appropriate to road conditions and the vehicle driven, are to be observed at all times.
- Damage or erosion to access roads incurred as a result of operational activities must be rectified by the employer.
- Access roads must be adequately maintained in order to minimise erosion and undue surface damage. Runoff from roads must be managed to avoid erosion and pollution problems. Responsibility for the general maintenance of access roads must be clearly defined and understood between the relevant parties.

8.5 Soil Erosion and Storm Water Control

- Soils must be monitored for signs of erosion at regular intervals. Upon identification of a potential erosion problem, measures are to be put in place to prevent further soil loss.
- Particular attention must be paid to areas around scour valves.
- Runoff must not be canalised or concentrated in areas where sheet flow may occur, or where highly erodible soils occur.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 70

- Storm water drainage measures must be implemented where necessary to control runoff, prevent soil erosion and sedimentation of water bodies.

8.6 Waste Management and Pollution Control

- No litter or any other debris shall be left on site after the completion of monitoring or maintenance activities.
- Watercourses and rivers must be protected and maintained free of any pollution as a result of operational activities.

8.7 Protection of Fauna and Flora

- Fauna and flora within the operational servitude and surrounding environment must not be disturbed unnecessarily.
- Sensitive indigenous vegetation must be avoided, where possible, by operations staff.

8.8 Emergency Preparedness

The employer must compile and maintain environmental emergency procedures to ensure that there will be an appropriate response to emergency incidents that will cause environmental impacts, such as:

- Accidental discharges to water and land due to burst pipes or storage facilities.
- Accidental veld or forest fires.

The employer must report any incidents to the authorities and undertake remedial actions as required in terms of Section 28 of NEMA.

8.9 Monitoring

- A monitoring programme, as well as a service and maintenance schedule, must be put in place to monitor the project for any infrastructural problems, e.g. cracks, leaks.
- The monitoring and maintenance programme must include the following:
 - A regular maintenance schedule to maintain the water supply infrastructure.
 - A monitoring schedule for alien invasive plant species.
 - A regular monitoring schedule for damage to access roads.
 - A monitoring schedule for soil erosion.
 - Written records of monitoring programmes are to be maintained.
 - A photographic record must be maintained.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 71

8.10 Liaison with Interested and Affected Parties

Liaison with stakeholders, including Port tenants and their representatives, is to be undertaken by TNPA as required and as appropriate. This must include liaison with Port tenants and users, utility providers, neighbours, and relevant authorities. Complaints or queries received from stakeholders and actions taken to address complaints must be addressed in writing. Copies of all interactions and correspondence shall be kept as part of record keeping.

8.11 Registers

The employer must have registers for the following:

- Emergency procedures.
- Environmental incidents.
- Complaints and actions taken.

Proposed replacement of Critical Pipe Sections within the Port of Richards Bay, KwaZulu-Natal.	Exigent Engineering Consultants CC
Environmental Management Programme	Page 72



TRANSNET PORT AUTHORITY
TNPA BULK WATER PIPELINE, RICHARDS BAY,
KWAZULU-NATAL

VEGETATION REPORT

ISSUE DATE: OCTOBER 2016
REVISION NO.: 1
PROJECT NO.: 13642

SPECIALIST REPORT DETAILS

This report has been prepared as per the requirements of Section 32 of Government Notice No. R. 983 dated December 2014 (Environmental Impact Assessment Regulations) under sections 24(5), 24M and 44 of the National Environmental Management Act, 1998 (Act 107 of 1998).

I, declare that this report has been prepared independently of any influence or prejudice as may be specified by the Department Economic Development, Tourism and Environmental Affairs (EDTEA).

Signed: *L Scott-Shaw*

Date: 25-10-2016

Date:	October 2016
Document Title:	TNPA Bulk Water Pipeline, Richards Bay, KwaZulu-Natal
Authors:	Liandra Scott-Shaw
Revision Number:	1
Checked by:	Michelle Nevette
Approved:	Isabel Johnson
Signature:	
For:	Transnet
"COPYRIGHT IS VESTED IN SIVEST IN TERMS OF THE COPYRIGHT ACT (ACT 98 OF 1978) AND NO USE OR REPRODUCTION OR DUPLICATION THEREOF MAY OCCUR WITHOUT THE WRITTEN CONSENT OF THE AUTHOR"	

TNPA BULK WATER PIPELINE, RICHARDS BAY, KWAZULU-NATAL

VEGETATION REPORT

Contents	Page
1. INTRODUCTION	1
2. PROJECT DESCRIPTION & MOTIVATION	2
3. REGULATIONS GOVERNING THIS REPORT & LEGISLATION.....	2
3.1 National Environmental Management Act, Act No. 107 of 1998 (NEMA).....	3
3.2 NATIONAL FORESTS ACT (ACT NO. 84 OF 1998).....	4
3.3 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO. 10 OF 2004)	4
3.4 CONSERVATION OF AGRICULTURAL RESOURCES (ACT NO. 43 OF 1983) AS AMENDED IN 2001	4
3.5 PERMIT / LICENCE REQUIREMENTS.....	5
4. SAMPLING METHODOLOGY	5
4.1 Vegetation Sampling	5
4.2 Conservation Importance Assessment	6
5. DESKTOP ASSESSMENT	7
5.1 Ezemvelo KZN wildlife C-Plan & SEA Database	8
5.1.1 Irreplaceability Analysis	8
5.1.2 Critical Biodiversity Areas	9
5.1.3 Ecological Support Areas	10
5.1.4 Landscape Corridors	10
5.1.5 Local Corridors	10
5.1.6 SEA, C-Plan and CBA Biodiversity Features / Species within Project Area	10
5.2 Bio Resource Units (BRU)	12
5.3 Bioresource Unit within the project.....	12
5.3.1 Za 8 – Richards Bay	12
5.4 Environmental Potential Atlas	13
5.4.1 ENPAT Data for the project area.....	14
5.5 Vegetation Assessment	14
5.5.1 Mucina and Rutherford's Vegetation Assessment	14
5.5.2 KwaZulu – Natal Vegetation Types (KZN VT)	2
5.6 National Freshwater Ecosystem Priority Areas (NFEPA)	3

5.6.1	FEPA wetlands and / or rivers onsite	4
6.	VEGETATION ON SITE.....	4
6.1	General Vegetation Overview of the site	4
6.2	Biodiversity Assessment	8
6.2.1	Biodiversity noteworthiness	9
6.2.2	Functional Integrity and Sustainability.....	9
7.	SUMMARY OF FINDINGS.....	10
8.	RECOMMENDATIONS AND CONCLUSIONS.....	11
9.	REFERENCES.....	13

Contents Page

Figure 1: Aerial Map of the Area	1
Figure 2: Locality Map of the Area	2
Figure 3: CBA Map of the Area.....	12
Figure 4: Mucina and Rutherford Vegetation Map of the Area	1
Figure 5: The mangrove areas are dominated by white mangrove (<i>Avicennia marina</i>) interspersed with black mangrove (<i>Bruguiera gymnorhiza</i>).	5
Figure 6: Grasses <i>Paspalum notatum</i> , <i>Melinis repens</i> (both indigenous) and <i>Paspalum urvillei</i> (alien) dominate the servitude along with alien vegetation such as <i>Ricinus communis</i> and <i>Lantana camara</i> . .	6
Figure 7: <i>Chrysanthemoides monilifera</i> , <i>Carpobrotus dimidiatus</i> and <i>Helichrysum kraussii</i>	6
Figure 8: The canopy trees are dominated by <i>Acacia mearnsii</i> and <i>Acacia karroo</i>	7
Figure 9: Alien vegetation such as <i>Lantana camara</i> , <i>Rivina humilis</i> and <i>Ipomoea purpurea</i>	7
Figure 10: The reserve edge comprises of large thickets of the protected plant <i>Hibiscus tiliaceus</i>	8

Contents Page

Table 1. Biodiversity maintenance services score sheet (Template and Description)	6
Table 2. Rating Scale for Biodiversity Maintenance services based on Assessment scores.....	7
Table 3. Summary of CBA Categories (from Ezemvelo KZN Wildlife, Biodiversity Spatial Planning Terms).....	9
Table 4. SEA Data taken from Ezemvelo KZN Wildlife	11
Table 5. Minset / C-Plan Data taken from Ezemvelo KZN Wildlife	11
Table 6 Climate Table for Richards Bay	13
Table 7. Biodiversity noteworthiness of the vegetation within the first 1430m	9
Table 8. Biodiversity noteworthiness of the vegetation within the first 2470m	9
Table 9. Future Integrity and viability of the vegetation within the first 1430m	10
Table 10. Future Integrity and viability of the vegetation within the first 1430m	10

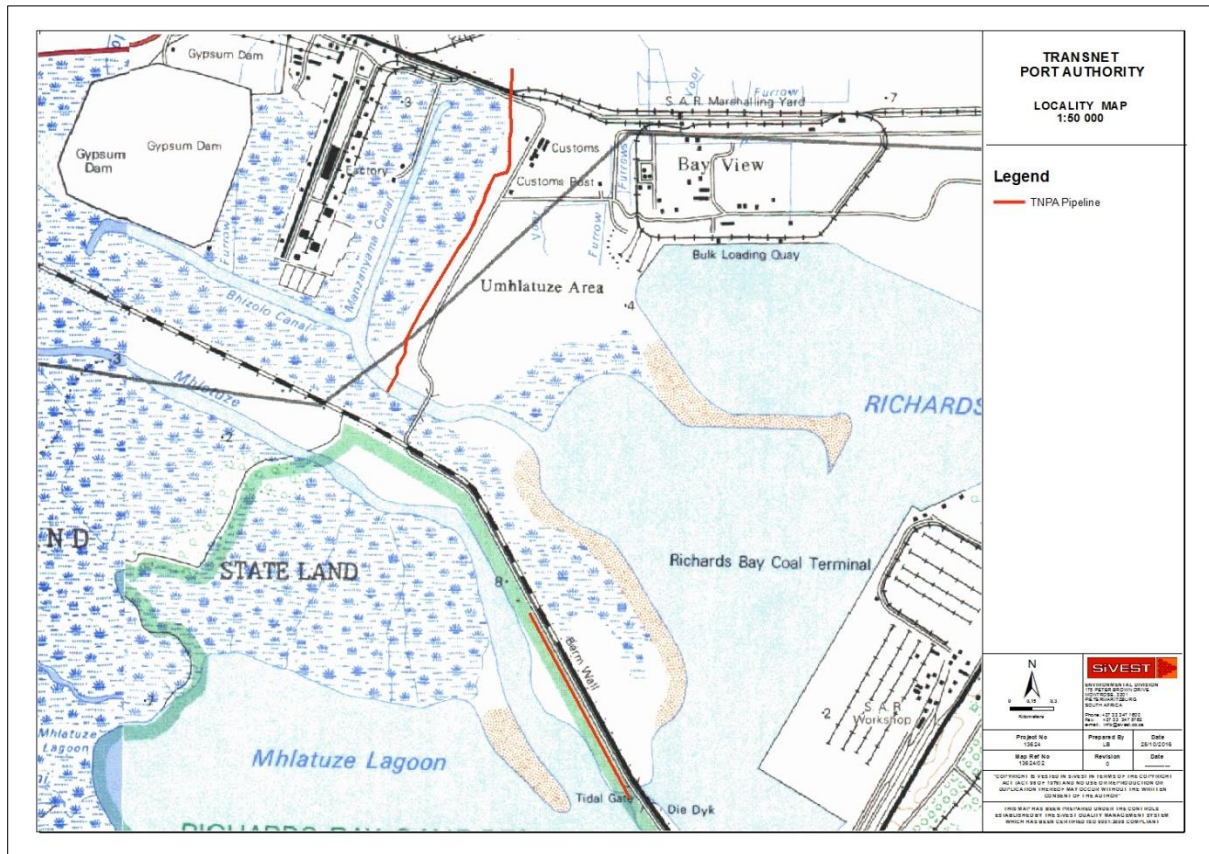


Figure 2: Locality Map of the Area

2. PROJECT DESCRIPTION & MOTIVATION

Transnet National Ports Authority (TNPA) requires the undertaking of a vegetation assessment to determine the ecological status of the 4km servitude where the proposed upgrade of the Asbestos Cement potable water pipeline will be placed within the Harbour West area of the TNPA. The pipeline is more than 35 years old and experiences failure incidences that result in significant water loss and supply interruptions to a number of businesses at the port.

3. REGULATIONS GOVERNING THIS REPORT & LEGISLATION

Further to the Terms of Reference, the following protocol is extracted from the National Environmental Management Act, Act 108 of 1998 (NEMA) as amended in 2014. The relevant Section is included below for your ease of reference:

Specialist reports and reports on specialised processes

- (1) *An applicant or the EAP managing an application may appoint a person who is independent to carry out a specialist study or specialised process.*

- (2) *The Person referred to in sub-regulation (1) must comply with the requirements of Regulation 17.*
- (3) *A specialist report or a report on a specialised process prepared in terms of these Regulations must contain –*
- (a) *details of –*
- (i) *the person who prepared the report; and*
 - (ii) *the expertise of that person to carry out the specialist study or specialised process;*
- (b) *a declaration that the person is independent in a form as may be specified by the competent authority;*
- (c) *an indication of the scope of, and the purpose for which, the report was prepared;*
- (d) *a description of the methodology adopted in preparing the report or carrying out the specialised process;*
- (e) *a description of any assumptions made and any uncertainties or gaps in knowledge;*
- (f) *a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment;*
- (g) *recommendations in respect of any mitigation measures that should be considered by the applicant and the competent authority;*
- (h) *a description of any consultation process that was undertaken during the course of carrying out the study;*
- (i) *a summary and copies of any comments that were received during any consultation process; and*
- (j) *any other information requested by the competent authority.*

In addition there are various Sections of the legislation that would be applicable to the proposed development and / or the land as it currently is.

3.1 National Environmental Management Act, Act No. 107 of 1998 (NEMA)

NEMA requires, *inter alia*, that:

“Development must be socially, environmentally, and economically sustainable”,

“Disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.”

“A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”,

NEMA also states that;

“The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage.”

3.2 NATIONAL FORESTS ACT (ACT NO. 84 OF 1998)

According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that;

“No person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.”

Any disturbance, removal, pruning or transplanting of these species would require a licence from the administrators of the National Forests Act, who are an extension of the Department of Agriculture, Forestry and Fisheries (DAFF) based in Pietermaritzburg.

3.3 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO. 10 OF 2004)

In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
- Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity.
- Limit further loss of biodiversity and conserve endangered ecosystems.

3.4 CONSERVATION OF AGRICULTURAL RESOURCES (ACT NO. 43 OF 1983) AS AMENDED IN 2001

Declared Weeds and Invaders in South Africa are categorised according to one of the following categories:

Category 1 *plants: are prohibited and must be controlled.*

Category 2 *plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.*

Category 3 *plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the flood line of watercourses and wetlands.*

3.5 PERMIT / LICENCE REQUIREMENTS

In terms of the National Forests Act, 1998 (Act No. 84 of 1998) and Government Notice 1339 of 6 August 1976 (promulgated under the Forest Act, 1984 (Act No. 122 of 1984) for protected tree species), the removal, relocation or pruning of any protected plants will require a license.

Protected indigenous plants in general are controlled under the relevant provincial Ordinances or Acts dealing with nature conservation. In KZN the relevant statute is the 1974 Provincial Nature Conservation Ordinance. In terms of this Ordinance, a permit must be obtained from *Ezemvelo KZN Wildlife* to remove or destroy any plants listed in the Ordinance. However, the list for Specially Protected Species in KwaZulu-Natal was (1974) has become very difficult to interpret and to apply to the plant species recorded during vegetation surveys. This is because of major taxonomic changes in the petaloid monocots. It must be noted that this list is in urgent need of an update. Therefore subjective decisions regarding a species protection status have to be taken which may not always be in agreement with the 1974 Ordinance.

4. SAMPLING METHODOLOGY

4.1 Vegetation Sampling

A random vegetation sampling technique and “hotspot¹” assessment technique was utilised, which focused the sampling effort on areas with natural vegetation or where the vegetation was dominated by indigenous species (i.e. not comprising a large proportion of alien invasive plant species). Individual plant species observed during the assessment were recorded to give an indication of species diversity and the overall species assemblage.

Please note that the intensity of the sampling procedure is prescribed by budgetary constraints. The sampling procedure proposed for this study is satisfactory for providing a general overview and rapid assessment of the plant diversity and assemblages that occur on site. This methodology allows sufficient information to be gathered to make the necessary inferences as to the ecological state of the receiving environment and to assess the possible impacts that may be imparted as a result of the proposed activities.

¹ Hotspot in this context refers to areas in the landscape, such as rocky outcrops and wetlands that supply refugia to plant species that would otherwise not exist in said landscape due to disturbance.

4.2 Conservation Importance Assessment

Within the context of this vegetation assessment, conservation importance is broadly defined as the importance of the encountered vegetation communities (vegetation fragment) as a whole, in terms of the role these areas will fulfil in the preservation and maintenance of biodiversity in the local area. Biodiversity maintenance / importance are a function of the specific biodiversity attributes and noteworthiness of the vegetation communities in question and the biotic integrity and future viability of these features.

The biodiversity noteworthiness of the system is a function of the following:

- species richness/diversity;
- rarity of the system;
- conservation status of the system;
- habitat (real or potential) for Red Data Species; and
- presence of unique and/or special features,

The integrity and future viability of the system is a function of the following:

- Extent of buffer around the system;
- Connectivity of system to other natural areas in the landscape;
- Level of alteration to indigenous vegetation communities within the system;
- Level of invasive and pioneer species encroachment system; and
- Presence of hazardous and/or obstructive boundaries to fauna.

The scores for each function of biodiversity maintenance were determined according to the scoring system shown in **Table 1** below. The scores were totaled and averaged to determine the biodiversity maintenance services score. Thereafter, the overall scores were rated according to the rating scale in **Table 2** below.

Table 1. Biodiversity maintenance services score sheet (Template and Description)

Biodiversity Noteworthiness	Scores				
	0	1	2	3	4
Diversity	Low	Med-Low	Medium	Med-High	High
Rarity	Low	Med-Low	Medium	Med-High	High
Conservation Status	Least Concern	Near- Threatened	Vulnerable	Endangered	Critically Endangered
Red Data	No	-	-	-	Yes
Uniqueness / Special features	None	Med-Low	Medium	Med-High	High

Integrity & Future Viability	0	1	2	3	4
Buffer	Low	Med-Low	Medium	Med-High	High
Connectivity	Low	Med-Low	Medium	Med-High	High
Alteration	>50%	25-50%	5-25%	1-5%	<1%
Invasive/pioneers	>50%	25-50%	5-25%	1-5%	<1%
Size	<1 ha	1 – 2 ha	3 - 10 ha	10 – 15 ha	>15 ha

Table 2. Rating Scale for Biodiversity Maintenance services based on Assessment scores

Score:	0-0.8	0.9-1.6	1.7-2.4	2.5-3.2	3.3-4.0
Rating of the likely extent to which a service is being performed	Low	Moderately Low	Intermediate	Moderately High	High

5. DESKTOP ASSESSMENT

One of the major advantages that technology has provided is the access to information. As a result of this and the ongoing pursuance of environmental knowledge, databases which can be interrogated to provide general information regarding the site have been developed.

This information in turn potentially records what may occur on the site and the sites value from a regional / provincial perspective in terms of conservation and biodiversity.

The caveat here is that the majority of these databases are created at a landscape level. In addition, the factors which are often utilised to determine many of the outputs are related to abiotic characteristics, such as;

- Rainfall;
- Temperature;
- Soil types;
- Underlying geology, and;
- Elevation and aspect.

The result, therefore, is the development of a database that provides a high level assessment of the area, which requires substantial ground-truthing to illustrate the various components that comprise the landscape. The field survey may highlight areas of conservation significance and biodiversity richness as well as provide information regarding the *status quo*; and what consequences or concerns may be generated as a result of a proposed development.

A number of databases have been interrogated in the process of undertaking the Desktop Analysis. A summary of the methodology utilised for the generation of each of the databases are included below:

5.1 Ezemvelo KZN wildlife C-Plan & SEA Database

The C-Plan is a systematic conservation-planning package that runs with the GIS software ArcGIS, and which analyses biodiversity features and landscape units. C-Plan is used to identify a national reserve system that will satisfy specified conservation targets for biodiversity features (**Ezemvelo KZN Wildlife, 2010**). Biodiversity features can be land classes or species, and targets are set within area units either for land classes, or as numbers of occurrences of species for species locality data sets (**Ezemvelo KZN Wildlife, 2010**). These units or measurements are used as surrogates for un-sampled data. The C-Plan is an effective conservation tool when determining priority areas at a regional level and is being used in South Africa to identify areas of high conservation value. The SEA (**Goodman, 2004**) modelled the distribution of a selection of 255 red data and endemic species that have the potential to occur in the area.

5.1.1 Irreplaceability Analysis

The following is referenced from **Goodman (2004)**:

The first product of the conservation planning analysis in C-Plan is irreplaceability map of the planning area, in this case the province of KwaZulu-Natal. This map is divided into grid cells called 'Planning Units'.

Each planning unit has associated with it an 'Irreplaceability Value', which is a reflection of the planning units' importance with respect to the conservation of biodiversity. Irreplaceability reflects the planning unit's ability to meet set 'targets' for selected biodiversity 'features'. The irreplaceability value is scaled between 0 and 1.

Irreplaceability value – 0. Where a planning unit has an irreplaceability value of 0, all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site.

Irreplaceability value – 1. These planning units are referred to as totally irreplaceable and the conservation of the features within them is critical to meet conservation targets. (EIA very definitely required and depending on the nature of the proposal unlikely to be granted).

Irreplaceability value > 0 but < 1. Some of these planning units are still required to meet biodiversity conservation targets. If the value is high (e.g. 0.9) then most units are required (few options available for alternative choices). If the value is low, then many options are available for meeting the biodiversity targets. (EIA required and depending on the nature of the proposed development, permission could be granted)."

The irreplaceability units have been optimised further to create various subcategories called *Critical Biodiversity Areas* and *Ecological Support Areas* (Ezemvelo KZN Wildlife, 2014).

5.1.2 Critical Biodiversity Areas

Critical Biodiversity Areas (CBAs) can be divided into two subcategories, namely *Irreplaceable* and *Optimal*. Each of these can in turn be subdivided into additional subcategories (Table 3). The CBA categories are based on the optimised outputs derived using systematic conservation planning software, with the Planning Units (PU) identified representing the localities for which the conservation targets for one or more of the biodiversity features contained within can be achieved.

The distribution of the biodiversity features is not always applicable to the entire extent of the PU, but is more often than not confined to a specific niche habitat e.g. a forest or wetland reflected as a portion of the PU in question. In such cases, development could be considered within the PU if special mitigation measures are put in place to safeguard this feature(s) and if the nature of the development is commensurate with the conservation objectives. Obviously this is dependent on a site by site, case by case basis.

Using C-Plan, areas are identified through the MINSET analysis process and reflect the negotiable sites with an Irreplaceability score of less than 0.8. Within the C-Plan MINSET analysis this does not mean they are of a lower biodiversity value. It simply means more options are available for the safeguarding of sensitive or important features over and above the required conservation targets (e.g. 30% of a certain vegetation type remains and the conservation target is 25%). The determination of the spatial locality of these PU's is driven primarily by the Decision Support Layers.

Table 3. Summary of CBA Categories (from Ezemvelo KZN Wildlife, Biodiversity Spatial Planning Terms).

Category	C-Plan	MARXAN	Expert Input/ Desktop	Biodiversity Sector and Regional Plans
CBA: Irreplaceable (SCA)	Irreplaceability = 1	No equivalent		CBA: Irreplaceable
CBA: High Irreplaceable(SCA)	Irreplaceability Score ≥ 0.8 and < 1.0	Selection frequency value = 80% –100%		CBA: Irreplaceable
CBA: Irreplaceable Expert Input			Expert input	CBA: Irreplaceable
CBA: Irreplaceable Linkage			Desktop and expert input	CBA: Irreplaceable
CBA: Optimal (SCA)	Irreplaceability Score > 0 and < 0.8	"Best" solution from MARXAN runs less the identified CBA High Irreplaceability areas		CBA: Optimal
CBA: Optimal, High Degradation	Irreplaceability Score > 0 and < 0.8	"Best" solution from MARXAN runs less the identified CBA High Irreplaceability areas	Field Assessment	CBA: Optimal
CBA: Optimal Low Degradation	Irreplaceability Score > 0 and < 0.8	"Best" solution from MARXAN runs less the identified CBA High Irreplaceability areas	Field Assessment	CBA: Optimal
CBA: Optimal Expert Input			Expert input	CBA: Optimal

5.1.3 Ecological Support Areas

Ecological Support Areas (ESAs) are required to support and sustain the ecological functioning of Critical Biodiversity Areas (CBAs). For terrestrial and aquatic environments, these areas are functional but are not necessarily pristine natural areas. They are required to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the CBAs, and contribute significantly to the maintenance of Ecological Infrastructure² (EI).

5.1.4 Landscape Corridors

A series of bio-geographic corridors were created in KZN to facilitate evolutionary, ecological and climate change processes to create a linked landscape for the conservation of species in a fragmented landscape.

5.1.5 Local Corridors

Corridors were developed at a district scale to create fine scale links within the landscape that facilitate ecological processes and ensure persistence of critical biodiversity features.

5.1.6 SEA, C-Plan and CBA Biodiversity Features / Species within Project Area

In terms of the desktop analysis undertaken, the site is classified as 0.005, i.e. all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site. The Minset analysis mirrors the C-Plan data with the irreplaceable area being deemed as not requiring protection.

There are several features present within the footprint which are considered to be of environmental significance and conservation importance. These features have been generated as a result of running the SEA data. These are included in Error! Reference source not found. below.

² A term referring to areas in the landscape which provide significant Ecosystem Services which contribute positively to the economy and human welfare. Examples include 'Flood mitigation' and 'Good Water Quality' (provided both by wetlands and well maintained water catchments). Ecological infrastructure is the stock of functioning ecosystems that provides a flow of essential system services to human communities – services such as the provision of fresh water, climate regulation and soil formation. Ecological infrastructure includes features such as healthy mountain catchments, rivers, wetlands, and nodes and corridors of natural grassland habitat which together form a network of interconnected structural elements within the landscape. If this ecological infrastructure is degraded or lost, the flow of ecosystem services will diminish and ecosystems will become vulnerable to shocks and disturbances, such as the impacts of climate change, unsustainable land use change and natural disasters like floods and droughts. It is important to note that when ecological infrastructure is degraded or fails, the direct monetary cost to society and government is often very high. Ecological infrastructure is, therefore, the nature-based equivalent of hard infrastructure, and is just as important for providing the vital services that underpin social development and economic activity.

In terms of the Minset/ C-Plan data generated, through the physical characteristics that are present on site, the species have been identified as potentially present on the site, and these groups are wholly significant in terms of conservation significance or parts thereof. Error! Reference source not found. below identifies which species are significant

Table 4. SEA Data taken from Ezemvelo KZN Wildlife

YES	NO
Wetlands	Protected Plants
Birds	Medicinal Plants
Invertebrates	Grasslands
Mammals	
Forests	
Frogs	
Reptiles	

Table 5. Minset / C-Plan Data taken from Ezemvelo KZN Wildlife

SPECIES NAME	TYPE
<i>Teriomima zuluana</i>	Butterfly
<i>Whitea coniceps</i>	Grasshopper
<i>Parepistaurus eburlineatus</i>	Grasshopper
<i>Orthopporoides corrugatus</i>	Millipede

The CBA data (**Figure 3**) indicates that the site is largely CBA Irreplaceable, however during the ground truthing exercise it was found to be very disturbed and made up of pioneer and alien vegetation with a few protected plant species interspersed.

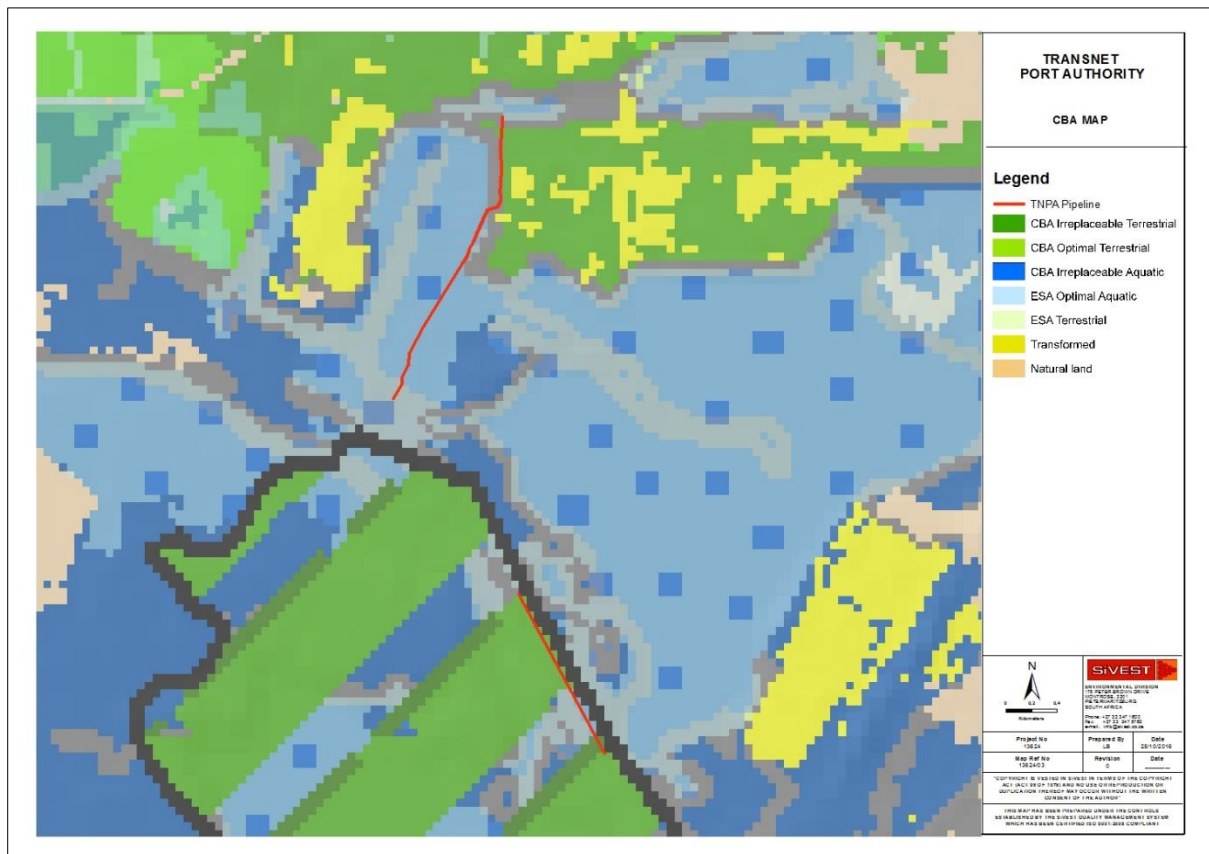


Figure 3: CBA Map of the Area

5.2 Bio Resource Units (BRU)

A Bioresource Unit is a demarcated area in which the environmental conditions such as soil, vegetation, climate and, to a lesser degree, terrain form, are sufficiently similar to permit uniform recommendations of land use and farm practices to be made, to assess the magnitude of crop yields that can be achieved, to provide a framework in which an adaptive research programme can be carried out, and to enable land users to make correct decisions (**Camp, K.G.T. 1998**).

The environmental factors defined in a BRU should give an indication of habitat suitability for both plant and animal species. On the other hand, knowing the habitat requirements of any particular species, it should be possible to map locations suitable for such species. There are 590 BRUs in KwaZulu-Natal.

5.3 Bioresource Unit within the project

5.3.1 Za 8 – Richards Bay

The vegetation pattern is comprised of bushland and swamp.

The rainfall average is 786 mm per year. The mean temperature is 21.1 °C and the climate rating is C1, which has low limitation on crop growing. There is no frost hazard and the erosion rating for the site is 4.2, which translates to a high risk of erosion (Error! Reference source not found.).

There are 3 perennial rivers identified for this BRU. Please note there are a number of drainage lines, non-perennial streams and wetlands that are not captured at the coarse level at which this data has been defined.

Table 6 Climate Table for Richards Bay

	Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RAINFALL													
Median rainfall (mm)	981	116	119	123	83	58	38	41	45	63	81	98	111
Mean rainfall (mm)	1209	120	134	163	105	84	70	63	61	81	75	87	106
TEMPERATURE													
Average (degrees C)	21.1	24	24	22	20	17.7	17.2	18	20	22	22	24	24
Minimum (degrees C)	16.3	20	20	19	17	14.9	12.1	12	13	15	15	16	19
Maximum (degrees C)	25.8	29	28.8	28	26	25	23	23	24	24	24	25.1	26
SUNSHINE													
Hours/day (Oct-Mar)	6.4												
Mean annual (hours)	6.9												

5.4 Environmental Potential Atlas

The following is referenced from the Department of Environmental Affairs and Tourism (2007): The Environmental Potential Atlas (ENPAT) developed from a single map of Gauteng to a complete spatial data set of the entire South Africa.

ENPAT was updated in July 2001 and is used by the National Department of Environmental Affairs and Tourism and various provincial environmental management departments as a decision-making tool in the process of environmental impact assessments. ENPAT includes the decision-making parameters such as: high-risk development category indications and potential impacts are linked to the 1:250 000 spatial databases on national and provincial level.

The main purpose of ENPAT is to proactively indicate potential conflicts between development proposals and critical or sensitive environments. ENPAT can also be used for development planning since it indicates the environment's potential for development.

ENPAT consists of two distinct, parallel sets of information: natural or environmental characteristics, and social-economic factors. The environmental character maps depict geology, land types, soils, vegetation, and hydrology. The socio-economic factors consist of land cover, cadastral aspects and infrastructure, land use and culture.

These two sets of information are combined and assessed in terms of their potential or latent environmental sensitivity. Sensitivity is assigned based on the ability of a resource to absorb change or impact. A value of **0** indicates a **low sensitivity** - thus a high ability to accept change and a value of **1** indicates a **high sensitivity**, or a low ability to accept change. Areas of low sensitivity are thus available or suitable for development.

5.4.1 ENPAT Data for the project area

The ENPAT data provides the following information about the soils and geology for the site:

The geology of the site is comprised of alluvium, which is not sensitive to disturbance and development. However the soils are of moderate to poor drainage and present an erosion hazard if not managed correctly (Department of Environmental Affairs and Tourism 2007).

5.5 Vegetation Assessment

5.5.1 Mucina and Rutherford's Vegetation Assessment

Mucina and Rutherford present an up-to-date and comprehensive overview of the vegetation of South Africa and the two small neighbouring countries of Lesotho and Swaziland. This account is based on vegetation survey using appropriate tools of contemporary vegetation mapping and vegetation description. They aimed at drawing a new vegetation map that depicts the complexity and macro-scale ecology and reflects the level of knowledge of the vegetation of the region. This is an extensive account of the vegetation of a complex and biologically intriguing part of the world, offering not only insights into structure and dynamics of the vegetation cover, but containing a wealth of base-line data for further vegetation- ecological, biogeographical, and conservation-oriented studies. The map and the descriptive account of the vegetation of South Africa, Lesotho and Swaziland offers a powerful decision-making tool for conservationists, land and resource planners, and politicians as well as the interested public at large. KwaZulu-Natal (KZN) province is rich in natural diversity. In terms of vegetation, the site falls within the Indian Ocean Coastal Belt.

In terms of the vegetation on site, the general classification is made at a very coarse scale, i.e. low resolution and falls within the Mangrove Forest (FOa3) vegetation type and Fresh water wetlands (AZf6).

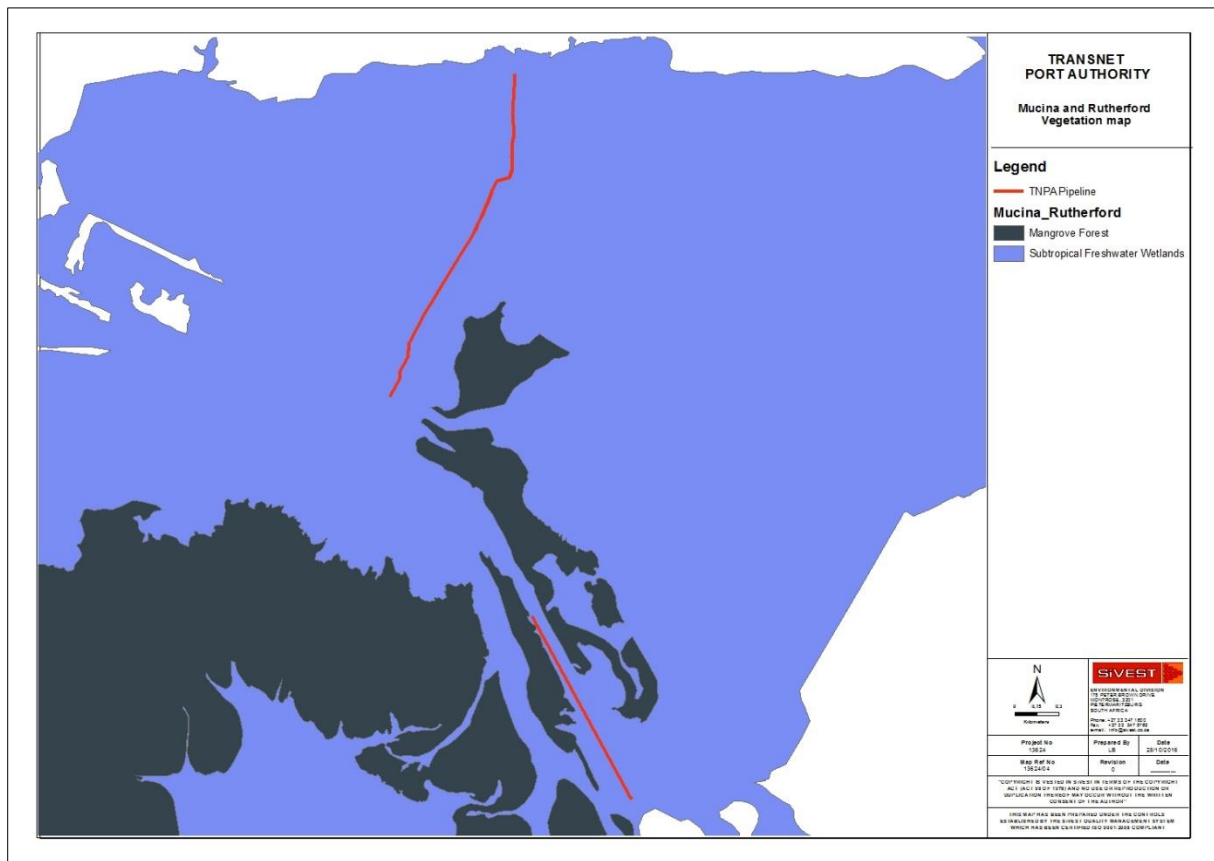


Figure 4: Mucina and Rutherford Vegetation Map of the Area

Mangrove Forest (FOa3)

Distribution

KwaZulu-Natal and Eastern Cape Provinces: Coastal lagoons and estuaries of Transkei as far south as Kobonqaba Estuary—the highest latitude with extant mangroves in the world (Moll & Werger 1978, Ward & Bunyard 1992) as far north as KwaZulu-Natal/Mozambique border (Kosi Bay estuary) and beyond to Mozambique and further northwards to tropical East Africa. At very low altitudes around sea level.

Conservation

The vegetation type is considered **Critically Endangered**, with a conservation target of 100%. About 72% statutorily conserved in Greater St Lucia Wetland Park, Richards Bay, Beachwood Mangroves and Umlalazi Nature Reserves. Much of the original extent of mangrove was lost in South Africa through harbour development (Richards Bay and Durban), clearing for development (Durban) or they became degraded through unfavourable agricultural practices upstream of the rivers feeding into the estuaries.

Indicative Plant Species

Species-poor and often monospecific, low and dense forests of mangroves (and fringing thickets of *Hibiscus tiliaceus* and *Acrostichum aureum*) in tidal zones of coastal lagoons and estuaries.

Important Taxa

Small Trees: *Avicennia marina* (d), *Bruguiera gymnorhiza* (d), *Ceriops tagal*, *Lumnitzera racemosa*, *Rhizophora mucronata*, *Xylocarpus granatum*.

Tall Shrub: *Hibiscus tiliaceus* (d).

Geophytic Herb: *Acrostichum aureum* (d).

Subtropical Freshwater Wetlands (AZf6).

Distribution

This vegetation unit occurs on flat topography supporting low beds dominated by reeds, sedges and rushes, water-logged meadows or hillslope seepage wetlands. It occurs in the Limpopo, North-West, Gauteng, Mpumalanga, KwaZulu-Natal and Eastern Cape Provinces as well as in neighbouring Swaziland.

Conservation

The vegetation type is considered **Least Threatened**, with a conservation target of 24%. Some 40-50% is conserved in the Greater St Lucia Wetland Park, Kruger National Park, Ndumo Game Reserve, Tembe Elephant Park, Nylsvley. Approximately 4% has been transformed (largely by cultivation), but the pressure of local grazing and urban sprawl will result in the demise of many subtropical freshwater habitats. Disturbance leads to invasion of alien plants such as *Lantana camara*, *Chromolaena discolor* and *Melia azedarach* (on the edges of the rivers) and aquatic weeds such as *Eichhornia capensis*, *Pistia stratiotes* and *Salvinia molesta* (in waterbodies).

5.5.2 KwaZulu – Natal Vegetation Types (KZN VT)

The KZN VT was created to provide an accurate representation of the historical extent of the vegetation types present in KZN with the most current available information. A key issue of concern is our current lack of knowledge regarding the historical extents of both our wetland and forest biomes. Almost all vegetation mapping conducted currently only displays the current extent of the feature in question. As such, no true understanding as to rates of loss and or minimum required habitat areas required to ensure persistence can be accurately determined. This issue further influences our understanding of the grassland/savannah/bushland matrix within which these features reside. The KZN VT map has

undergone several changes since the publication of the Mucina and Rutherford (2006) national vegetation types.

Ezemvelo KZN Wildlife has, in association with various government departments, NGOs, Working Groups and Forums, municipalities and parastatals, refined the KZN VT to develop an accurate representation of the extent of the vegetation types present. As a result of the finer scale mapping and classification, KZN VT map has in some cases identified new vegetation types and or subtypes within the vegetation types identified at national level. These changes have been peer reviewed and adopted by the National Vegetation Committee, and have been incorporated into the revised South African Vegetation map. At this time there has been no revision of the Mucina and Rutherford (2006) national vegetation types for this area, thus the Mucina and Rutherford (2006) national vegetation types, CB 1 and AZf 6 stands.

5.6 National Freshwater Ecosystem Priority Areas (NFEPA)

NFEPA was a three-year partnership project between South African National Biodiversity Institute (SANBI), CSIR, Water Research Commission (WRC), Department of Environmental Affairs (DEA), Department of Water Affairs (DWA), Worldwide Fund for Nature (WWF), South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks) (**Van Deventer et al. 2010**). NFEPA map products provide strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting sustainable use of water resources. These strategic spatial priorities are known as Freshwater Ecosystem Priority Areas, or FEPAs.

FEPA maps and supporting information form part of a comprehensive approach to sustainable and equitable development of South Africa's scarce water resources. They provide a single, nationally consistent information source for incorporating freshwater ecosystem and biodiversity goals into 2 planning and decision-making processes. For integrated water resource management, the maps provide guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act No. 36 of 1998; RSA, 1998a). FEPA maps are therefore directly applicable to the National Water Act, feeding into Catchment Management Strategies, classification of water resources, reserve determination, and the setting and monitoring of resource quality objectives. FEPA maps are also directly relevant to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004; RSA, 2004) (hereafter referred to as the Biodiversity Act), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act. FEPA maps support the implementation of the National Environmental Management: Protected Areas Act (Act No. 57 of 2003; RSA, 2003) (hereafter referred to as the Protected Areas Act) by informing the expansion of the protected area network. They also inform a variety of other policies and legislation that affect the management and conservation of freshwater ecosystems, including at the municipal level.

FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. FEPAs were determined through a process of systematic biodiversity planning

and were identified using a range of criteria for conserving ecosystems and associated biodiversity of rivers, wetlands and estuaries.

FEPAs are often tributaries and wetlands that support hard-working large rivers, and are an essential part of an equitable and sustainable water resource strategy. FEPAs need to stay in a good condition to manage and conserve freshwater ecosystems, and to protect water resources for human use. This does not mean that FEPAs need to be fenced off from human use, but rather that they should be supported by good planning, decision-making and management to ensure that human use does not impact on the condition of the ecosystem. The current and recommended condition for all river FEPAs is A or B ecological category. Wetland FEPAs that are currently in a condition lower than A or B should be rehabilitated to the best attainable ecological condition.

5.6.1 FEPA wetlands and / or rivers onsite

There are no FEPA Rivers on site but there are Subtropical Freshwater Wetlands.

6. VEGETATION ON SITE

6.1 General Vegetation Overview of the site

The pipeline upgrade is split into two sections, one is approximately 1430m in length and the second is 2470m in length. A total of 150 plant species were recorded during the field survey, of which 21 were alien/ exotic. Ten (10) plant species which are protected by Provincial Legislation and Two (2) Nationally Protected trees were noted within the upgrade site. The plant species that fall under the protection of the KwaZulu-Natal Nature Conservation Management Act are listed below (Please see **Appendix A** for the complete species list).

Provincially protected

- *Aristea abyssinica*
- *Asparagus falcatus* var. *tenuifolius*
- *Asparagus setaceus*
- *Crocosmia aurea*
- *Eulophia speciosa*
- *Hibiscus tiliaceus* subsp. *tiliaceus*
- *Hypoxis angustifolia* var. *angustifolia*
- *Ornithogalum tenuifolium* subsp. *tenuifolium*
- *Scadoxus puniceus*
- *Zantedeschia aethiopica*

Nationally protected

- *Bruguiera gymnorhiza*
- *Brachylaena discolor*

The first section of pipeline, approximately the first 200m crosses the railway tracks, thereafter it traverses the edge of the swamp forest behind the truck stop, along the boundary fence of permit office before it crosses the road and into degraded secondary grass/ scrubland that was historically subtropical freshwater wetland. This section of proposed pipeline alignment on the most part follows the existing pipeline servitude, which is well maintained by mowing, at times it deviates up to 50m away from the existing servitude and into thicker pioneer vegetation until it reaches the bridge. The second section of proposed pipeline appears to follow the existing servitude.

The general vegetation across the site is dominated by alien vegetation and pioneer / primary successional vegetation species. The mangrove area next to the river is dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorhiza*) (**Figure 5**) (please see **Appendix A** for complete species list with protected and alien vegetation highlighted).



Figure 5: The mangrove areas are dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorhiza*).

The area expected to be affected by the proposed pipeline traversing the edges of the swamp forest is dominated by the grasses *Paspalum notatum*, *Melinis repens* (both indigenous) and *Paspalum urvillei* (alien) the broad leaf vegetation is dominated by alien vegetation such as *Ricinus communis* and

Lantana camara (**Figure 6**). There were a number of forbs within the grassland included in the species list, but none that are protected by Provincial or National legislation.



Figure 6: Grasses *Paspalum notatum*, *Melinis repens* (both indigenous) and *Paspalum urvillei* (alien) dominate the servitude along with alien vegetation such as *Ricinus communis* and *Lantana camara*.

The remaining portion of the pipeline that traverses the Harbour West site, east of the Arterial Road, passes through vegetation that is pioneer in nature. The open areas are very sandy and are dominated by the grass *Paspalum notatum* and by herbs such as *Chrysanthemoides monilifera*, *Carpobrotus dimidiatus* and *Helichrysum kraussii* (**Figure 7**). The areas where the servitude traverses through the canopy trees are dominated by *Acacia mearnsii* and *Acacia karroo* (**Figure 8**), while the understory, apart from patches of alien vegetation such as *Lantana camara*, *Rivina humilis* and *Ipomoea purpurea* (**Figure 9**) is predominantly indigenous and dominated by pioneer species such as *Grewia occidentalis*, *Psydrax obovata* and a number of *Rhoicissus* spp.



Figure 7: *Carpobrotus dimidiatus*, *Chrysanthemoides monilifera*, and *Helichrysum kraussii*.



Figure 8: The canopy trees are dominated by *Acacia mearnsii* and *Acacia karroo*



Figure 9: Alien vegetation such as *Lantana camara*, *Rivina humilis* and *Ipomoea purpurea*.

The remaining 2470m that traverses the arterial road adjacent to the Richards Bay Game Reserve heading to South Dunes, follows the existing servitude. If the alignment was to deviate towards the road it would compromise the road reserve and if it had to move toward the Game Reserve it would impact on the vegetation within the reserve. The reserve edge comprises of large thickets of the protected plant *Hibiscus tiliaceus* and below that, mangrove tree species. The servitude is generally well maintained by mowing and is easily accessible, towards the end of the alignment the pipeline traverses under a thick tree canopy, again dominated by *Acacia mearnsii* and *Acacia karroo*, as well as a number of individuals of *Brachylaena discolor*.



Figure 10: The reserve edge comprises of large thickets of the protected plant *Hibiscus tiliaceus*.

At the time of this site visit, 24th October 2016, the only protected species visible were *Asparagus* species with no visible protected bulbous plants., However during a site visit conducted in February 2016 a number of protected species including *Scadoxus puniceus* and *Eulophia speciosa* were recorded.

6.2 Biodiversity Assessment

In terms of assessing the impacts of a proposed development on the receiving environment, it is important that the current state of the environment is assessed and the level at which it functions currently is considered and recorded.

Bearing this in mind that we have developed an assessment matrix which assists in determining the current biodiversity and conservation value of the various landscape (vegetation types) that were encountered during the field survey.

In addition we need to consider the biodiversity noteworthiness of the receiving environment (i.e. does the environment hold any rare species, protected species and unique landscape features) as well as the functional integrity and future sustainability of the vegetation types in the immediate vicinity of the Pipeline Upgrade. The final condition score is calculated by adding the Biodiversity noteworthiness score

with the Functional Integrity and Sustainability score. It must be noted that the two scores are weighted 50%:50% respectively.

6.2.1 Biodiversity noteworthiness

In terms of the vegetation classifications that were identified from the aerial photography and ground-truthed on site, the following assessment was made in terms of the noteworthiness of the vegetation that occurs along the proposed development footprint. The development footprint has been split in two and thus will be assessed as such.

Table 7. Biodiversity noteworthiness of the vegetation within the first 1430m

Biodiversity Noteworthiness	Scores				
	0	1	2	3	4
Diversity			✓		
Rarity	✓				
Conservation Status	✓				
Red Data Species	✓				
Uniqueness / Special features			✓		
OVERALL VALUE	Total Score/number of categories is 4 / 5= 0.8				

Table 8. Biodiversity noteworthiness of the vegetation within the second 2470m

Biodiversity Noteworthiness	Scores				
	0	1	2	3	4
Diversity				✓	
Rarity					✓
Conservation Status					✓
Red Data Species					✓
Uniqueness / Special features					✓
OVERALL VALUE	Total Score/number of categories is 19 / 5= 3.8				

The biodiversity noteworthiness of the vegetation on site are as follows:

The first portion of the alignment scored **0.8** (Low Biodiversity) and the second portion scored **3.8** (High Biodiversity).

Overall the average biodiversity score is for the alignment is **2.3**, this is deemed to be of **Intermediate** noteworthiness.

6.2.2 Functional Integrity and Sustainability

The functional Integrity and sustainability speaks to the impact of the proposed activity on the receiving environment and the likelihood that it will be of significance and whether there are significant mitigation and or amelioration measures that are required to be put in place to ensure that the impacts are manageable and will not prove deleterious to the vegetation type as a whole, which falls within the current proposed area of disturbance.

Table 9. Future Integrity and viability of the vegetation within the first 1430m

Integrity & Future Viability	Scores				
	0	1	2	3	4
Buffer		✓			
Connectivity		✓			
Alteration	✓				
Invasive/pioneers	✓				
Size	✓				
OVERALL VALUE	Total Score/number of categories is 2 / 5= 0.4				

Table 10. Future Integrity and viability of the vegetation within the second 2470m

Integrity & Future Viability	Scores				
	0	1	2	3	4
Buffer			✓		
Connectivity			✓		
Alteration	✓				
Invasive/pioneers	✓				
Size	✓				
OVERALL VALUE	Total Score/number of categories is 4 / 5= 0.8				

The future integrity and viability value of the vegetation on site are as follows

The first portion of the alignment scored **0.4** (Low Integrity and Viability) and the second portion scored **0.8** (Low Integrity and Viability).

Overall the average biodiversity score is for the alignment is **0.6**, this is deemed to be of **Low** Integrity and Viability.

The final condition score of the entire site is **1.45** which indicates that the site is functioning at a **Moderately Low** level.

The vegetation along the second portion of the pipeline elevates the score due to its proximity to the Richards Bay Game Reserve, which affords connectivity and buffers for the plant communities along that portion of the alignment.

The overall area has been subjected to major modification, illegal dumping and lack of fire/ mowing management has resulted in the severe reduction in indigenous cover and complete loss of historical grassland, wetland and forest that would have been typical of the area.

7. SUMMARY OF FINDINGS

Having undertaken the assessment of the proposed development footprint the following findings were noted.

- The majority of the site is degraded (70% alien and pioneer plant composition) due to a lack of veld management (burning / mowing regimes, exclusion of fire);

- The patches of more intact vegetation noted were outside of the servitude footprint for the proposed pipeline construction.
- Illegal dumping of general waste has further degraded the floristic composition and potential of this landscape.
- Although the current species assemblage recorded across the site is indicative of relatively degraded vegetation, there are some small areas which have relatively high numbers of provincially protected plants within the bush clumps adjacent to the servitude. These plants will need to be relocated by a qualified botanist or similar if the pipeline deviates from the existing servitude.

8. RECOMMENDATIONS AND CONCLUSIONS

The site is considered to be degraded based on the presence and abundance of alien and pioneer species as well as permanent modification due to ill-placed construction. The species that occur within the site are primarily alien and indigenous pioneer forms, considered to be secondary successional communities.

It is important to mention that additional species may have been overlooked during our field survey due to the plant life history characteristics exhibited by certain plant species. Some species may not have emerged due to the time of the year, the amount of rainfall or requisite temperature (heat units) to force emergence. However, it is our opinion that the vegetation that was recorded provides enough information for the specialist to make inferences and extrapolations as to its quality and the likely impacts associated with a development of this nature.

It is strongly recommended that development takes place in or as near to the existing servitude as possible to avoid disturbance of established vegetation communities outside of the servitude, especially when construction takes place along the alignment adjacent to Richards Bay Game Reserve. Every effort should be made to prevent impact on the Mangroves and the river next to the bridge and should the need arise for indigenous trees to be cut and / or destroyed, a DAFF permit will need to be obtained. The permit and application will need to be made and an offset for the loss of these individuals will be required, usually planting 5 individuals of the same species for each tree that will be lost.

If relocation of some of the provincially protected species is required, a permit for their removal will need to be obtained from Ezemvelo KZN Wildlife. Their removal and relocation should occur during the summer months and with due care, preferably by a qualified botanist or similarly qualified individual. The plants should be relocated into areas with the same aspect, soil conditions and elevation to ensure that the relocations are successful. In addition, the plants should be placed into good-sized holes that are at least twice the size of underground organs. It is very important for survival for underground organs not to be damaged and for plants to be watered for a period of time. Except for the bulbous species, this is recommended for every second day for a month, but would need to increase if underground organs are damaged. The bulbous species would not need to be watered, as the bulb will ensure persistence

until rains fall. These bulbs are able to withstand a relatively high level of disturbance, given their survival strategy of storing the required reserve resources in the bulb. These species will likely re-generate following their excavation and replacement. However, if the current layout is adhered to, it is unlikely that any trees will need to be removed. Any applicable approvals/permits/consents/licenses relating to the environment should be in place prior to any site clearing and development. Good housekeeping and management of the construction impacts will ensure no or very limited impact on the environment.

In conclusion we would support the proposed pipeline upgrade should all the recommendations be implemented. The Port will benefit significantly from having a reliable potable water supply.

9. REFERENCES

1. **Camp, K.G.T. (1998).** The Bioresource Units of KwaZulu-Natal. Cedara Report N/A/95/32. KZN Department of Agriculture. Pietermaritzburg.
2. **Department of Environmental Affairs and Tourism (DWAF). (2001).** Environmental Potential Atlas for South Africa. Source: www.environment.gov.za/enviro-info/enpat.htm.
3. **Ezemvelo KZN Wildlife (2003).** KZN Natural Heritage Sites 2003. Unpublished GIS Coverage [kznnhs03_wll], Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife, P.O. Box 13053, Cascades, Pietermaritzburg, 3202.
4. **Ezemvelo KZN Wildlife (2010).** Macro Ecological Corridors, Version 3. . Unpublished GIS Coverage [kzncor05v310_wll], Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife, P. O. Box 13053, Cascades, Pietermaritzburg, 3202.
5. **Ezemvelo KZN Wildlife (2010).** Terrestrial Systematic Conservation Plan: Minimum Selection Surface (MINSET). Unpublished GIS Coverage [tscp_minset_dist_2010_wll.zip], Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife, P. O. Box 13053, Cascades, Pietermaritzburg, 3202.
6. **Ezemvelo KZN Wildlife (2011).** EKZNW Protected Area Boundaries 2011. Unpublished GIS Coverage [kznpabnd11], Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife, P. O. Box 13053, Cascades, Pietermaritzburg, 3202.
7. **Ezemvelo KZN Wildlife (2014).** KZN Biodiversity Spatial Planning Terms and Processes, Version 3. Unpublished Report, Biodiversity Spatial Planning and Information Division, Ezemvelo KZN Wildlife, P. O. Box 13053, Cascades, Pietermaritzburg, 3202.
8. **Goodman, P.S. (ed) (2000).** Determining the conservation value of land in KwaZulu-Natal. Biodiversity Conservation Planning Division, *Ezemvelo* KZN Wildlife, P.O. Box 13053, Cascades, Pietermaritzburg, 3202.
9. **International Union for Conservation of Nature (IUCN) (2014).** The IUCN Red List of Threatened Species. Version 2014.1.
10. **Mucina, L., Rutherford, M.C. & Powrie, L.W. (eds) (2007).** Vegetation Map of South Africa, Lesotho and Swaziland, Edition 2, 1:1 000 000 scale sheet maps. South African National Biodiversity Institute, Pretoria. ISBN 978-1-919976-42-6.
11. **Pooley, E. (1997)** A complete field guide to trees of Natal, Zululand and Transkei. Natal Flora Publications Trust. Durban, South Africa.
12. **Pooley, E. (1998).** A field guide to wildflowers of KwaZulu-Natal and the eastern region. Natal Flora Publications Trust. Durban, South Africa.
13. **Scott-Shaw, C.R. (1999).** Rare and threatened plants of KZN and neighbouring regions – a plant red data book. Pietermaritzburg Biodiversity Division, Pietermaritzburg.
14. **Scott-Shaw, C.R. and Escott, B.J. (Eds) (2011).** KwaZulu-Natal Provincial Pre-Transformation Vegetation Type Map – 2011. Unpublished GIS Coverage [kznveg05v2_1_11_wll.zip], Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife, P. O. Box 13053, Cascades, Pietermaritzburg,
15. **South African National Biodiversity Institute (SANBI) (2014).** National Assessment: Red List of South African Plants version 2014.1
16. **South African National Biodiversity Institute (SANBI) (2004).** National Spatial Biodiversity Assessment: Ecosystem status of vegetation types derived from the new vegetation map of South Africa.

17. **South African National Biodiversity Institute Plants of southern Africa:** an online checklist
3. <http://posa.sanbi.org>
18. **Styles, D. (2014).** Personal Communication.
19. **van Oudtshoorn, F. (1992)** Guide to grasses of South Africa. Briza Publications, Arcadia, South Africa.



APPENDIX A: SPECIES LIST

The alien species are in red font

The protected species are in bold

	Species name	Common name	Status	Growth form
1	<i>Abrus laevigatus</i> E.Mey.		Indigenous	Creeper
2	<i>Abrus precatorius</i> L. subsp. <i>africanus</i> Verdc.		Indigenous	Herb
3	<i>Abutilon grantii</i> A.Meeuse		Indigenous	Herb
4	<i>Acacia karroo</i> Hayne	Sweet thorn	Indigenous	Tree
5	<i>Acacia robusta</i> Burch. subsp. <i>robusta</i>	Splendid acacia	Indigenous	Tree
6	<i>Agrostis stolonifera</i> L	Creeping bent grass	Indigenous	Grass
7	<i>Andropogon gayanus</i> Kunth	Snow flake grass	Indigenous	Grass
8	<i>Aneilema aequinoctiale</i> (P.Beauv.) Loudon	Blue Stem	Indigenous	Creeper
9	<i>Aristea abyssinica</i> Pax		Protected	Bulb
10	<i>Aristida junciformis</i> Trin. & Rupr.	Gongoni	Indigenous	Grass
11	<i>Asparagus falcatus</i> L. var. <i>ternifolius</i> (Baker) Jessop		Protected	Climber
12	<i>Asparagus setaceus</i> (Kunth) Jessop		Protected	Climber
13	<i>Asystasia gangetica</i> (L.) T.Anderson subsp. <i>micrantha</i> (Nees) Ensermu	Creeping Foxglove	Indigenous	Herb
14	<i>Avicennia marina</i> (Forssk.) Vierh. var. <i>marina</i>	White mangrove	Indigenous	Tree
15	<i>Barleria meyeriana</i> Nees	Meyer's bushviolet	Indigenous	Herb
16	<i>Berkheya speciosa</i> (DC.) O.Hoffm. subsp. <i>speciosa</i> .		Indigenous	Herb

	Species name	Common name	Status	Growth form
17	<i>Bidens pilosa</i> L.	Black jack	Alien	Herb
18	<i>Brachylaena discolor</i> DC	Silver oak	Indigenous	Tree
19	<i>Bridelia micrantha</i> (Hochst.) Baill.	Mitzeerie	Indigenous	Tree
20	<i>Bruguiera gymnorhiza</i> (L.) Lam.	Black mangrove	Protected	Tree
21	<i>Bulbostylis hispidula</i> (Vahl) R.W. Haines		Indigenous	Sedge
22	<i>Canna indica</i> L.	Canna	Alien	Herb
23	<i>Canthium inerme</i> (L.f.) Kuntze	Turkey berry	Indigenous	Tree
24	<i>Carissa bispinosa</i> (Eckl.) A.DC.	Natal plum	Indigenous	Tree
25	<i>Carpobrotus dimidiatus</i> (Haw.) L.Bolus	Natal sour fig	Indigenous	Herb
26	<i>Catharanthus roseus</i> (L.) G.Don	Madagascar rosy periwinkle	Alien	Herb
27	<i>Centella asiatica</i> (L.) Urban	Gotu Kola	indigenous	Herb
28	<i>Chaenostoma floribundum</i> Benth.		Indigenous	Herb
29	<i>Chamaecrista mimosoides</i> (L.)	Dwarf cassia	Indigenous	Herb
30	<i>Chamaecrista plumosa</i> E.Mey. var. <i>plumosa</i> .		Indigenous	Herb
31	<i>Cheilanthes viridis</i> (Forssk.) Sw. var. <i>viridis</i>		Indigenous	Fern
32	<i>Chloris gayana</i> Kunth	Rhodes grass	Indigenous	Grass
33	<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Trifid weed	Alien	Herb
34	<i>Cissampelos mucronata</i> A.Rich.		Indigenous	Climber
35	<i>Cnestis polyphylla</i> Lam.	Itch-Pod	Indigenous	Creeper
36	<i>Commelina africana</i> L.	Yellow wandering jew	Indigenous	Herb
37	<i>Commelina erecta</i> L.	Slender day flower	Indigenous	Herb
38	<i>Conostomium natalense</i> var. <i>natalense</i> Bremek.	Wild Pentas	Indigenous	Herb
39	<i>Crocasmia aurea</i> (Pappe ex Hook.) Planch.	Falling Stars	Protected	Bulb
40	<i>Crotalaria macrocarpa</i> E.Mey. subsp. <i>macrocarpa</i> .	Rattlebox	Indigenous	Herb
41	<i>Crotalaria natalensis</i> Baker f.	Rattlebox	Indigenous	Herb
42	<i>Cuscuta campestris</i> Yunck.		Indigenous	Herb
43	<i>Cyanotis speciosa</i> (L.f.) Hassk.		Indigenous	Herb

	Species name	Common name	Status	Growth form
44	<i>Cymbopogon validus</i> (Stapf) Stapf ex Burtt Davy	Giant Turpentine Grass	Indigenous	Grass
45	<i>Cynanchum obtusifolium</i> L.f.	Natal Dog-wort	Indigenous	Climber
46	<i>Cyperus obtusiflorus</i> Vahl var. <i>obtusiflorus</i>		Indigenous	Sedge
47	<i>Cyperus papyrus</i> L.		Indigenous	Sedge
48	<i>Cyperus rotundus</i> L. subsp. <i>rotundus</i>	Purple Nut Sedge	Indigenous	Sedge
49	<i>Cyperus rupestris</i> Kunth var. <i>rupestris</i>		Indigenous	Sedge
50	<i>Dactyloctenium australe</i> Steud.	Sweet Smother Grass	Indigenous	Grass
51	<i>Dalbergia armata</i> E.Mey.	Hluhluwe climber	Indigenous	Climber
52	<i>Desmodium incanum</i> DC.		Indigenous	Herb
53	<i>Desmodium setigerum</i> (E.Mey.) Benth. ex Harv.	Sweet hearts	Alien	Herb
54	<i>Dicliptera clinopodia</i> Nees		Indigenous	Herb
55	<i>Digitaria eriantha</i> Steud	Pongola grass	Indigenous	Grass
56	<i>Diheteropogon amplexans</i> (Nees) Clayton var. <i>amplexans</i>		Indigenous	Grass
57	<i>Eragrostis ciliaris</i> (L.) R.Br.	Woolly Love Grass	Indigenous	Grass
58	<i>Eragrostis superba</i> Peyr.		Indigenous	Grass
59	<i>Eriosema psoraleoides</i> (Lam.) G.Don x <i>E. salignum</i> E.Mey.		Indigenous	Herb
60	<i>Ethulia conyzoides</i> L.f. subsp. <i>conyzoides</i>		Indigenous	Herb
61	<i>Eulophia speciosa</i> (R.Br. ex Lindl.) Bolus		Protected	Bulb
62	<i>Fimbristylis complanata</i> (Retz.) Link		Indigenous	Sedge
63	<i>Fimbristylis obtusifolia</i> (Lam.) Kunth		Indigenous	Sedge
64	<i>Gazania rigens</i> (Burm.f.) Roessler		Indigenous	Herb
65	<i>Gnidia kraussiana</i> Meisn. var. <i>kraussiana</i>	Yellow heads	Indigenous	Herb
66	<i>Gomphocarpus physocarpus</i> E.Mey.	Milkweed	Indigenous	Herb
67	<i>Grewia occidentalis</i> L.		Indigenous	Tree
68	<i>Gymnosporia nemorosa</i> (Eckl. & Zeyh.) Szyszyl.	Spike-thorn	Indigenous	Tree
69	<i>Helichrysum aureonitens</i> Sch.Bip.	Golden everlasting	Indigenous	Herb
70	<i>Helichrysum aureum</i> (Houtt.) Merr. var. <i>aureum</i>		Indigenous	Herb

	Species name	Common name	Status	Growth form
71	<i>Helichrysum auriceps</i> Hilliard		Indigenous	Herb
72	<i>Helichrysum kraussii</i> Sch.Bip.		Indigenous	Herb
73	<i>Hewittia</i> sp.		Indigenous	Herb
74	<i>Hibiscus aethiopicus</i> L. var. <i>aethiopicus</i>	Common Dwarf Wild Hibiscus	Indigenous	Herb
75	<i>Hibiscus surattensis</i> L.		Indigenous	Herb
76	<i>Hibiscus tiliaceus</i> L. subsp. <i>tiliaceus</i>	Coast hibiscus	Protected	Shrub
77	<i>Hibiscus trionum</i> L.	Bladder hibiscus	Alien	Creeper
78	<i>Hydrocotyle bonariensis</i> Lam.		Alien	Herb
79	<i>Hypoxis angustifolia</i> Lam. var. <i>angustifolia</i>		Protected	Herb
80	<i>Imperata cylindrica</i> (L.) Raeusch.	Cotton wool grass	Indigenous	Grass
81	<i>Indigofera dimidiata</i> Vogel ex Walp.	Trifoliate Indigofera	Indigenous	Herb
82	<i>Indigofera velutina</i> E.Mey.		Indigenous	Herb
83	<i>Ipomoea alba</i> L.	Moon flower	Alien	Herb
84	<i>Ipomoea cairica</i> (L.) Sweet var. <i>cairica</i>	Coast Morning Glory	Alien	Creeper
85	<i>Ipomoea purpurea</i> (L.) Roth	Common Morning Glory	Alien	Creeper
86	<i>Ischaemum fasciculatum</i> Brongn.		Indigenous	Grass
87	<i>Juncus kraussii</i> Hochst.		Indigenous	Sedge
88	<i>Justicia flava</i> (Vahl) Vahl		Indigenous	Herb
89	<i>Justicia protracta</i> (Nees) T.Anderson subsp. <i>protracta</i>		Indigenous	Herb
90	<i>Lablab purpureus</i> (L.) Sweet		Indigenous	Herb
91	<i>Lactuca indica</i> L.	Wild lettuce	Indigenous	Herb
92	<i>Lantana camara</i> L.	Tick berry	Alien	Shrub
93	<i>Laportea peduncularis</i> (Wedd.)		Indigenous	Herb
94	<i>Lobelia coronopifolia</i> L.	Wild Lobelia	Indigenous	Herb
95	<i>Ludwigia octovalvis</i> (Jacq.) P.H.Raven	Raven primrose willow	Indigenous	Herb
96	<i>Melinis repens</i> (Willd.) Zizka subsp. <i>repens</i>	Natal grass	Indigenous	Grass
97	<i>Microsorium scolopendria</i> (Burm.f.) Copel.	Wart Ferns	Indigenous	Fern

	Species name	Common name	Status	Growth form
98	<i>Momordica foetida</i> Schumach.		Indigenous	Climber
99	<i>Monocymbium cerasiiforme</i> (Nees) Stapf		Indigenous	Grass
100	<i>Monopsis stellarioides</i> (C.Presl) Urb. subsp. <i>stellarioides</i>		Indigenous	Herb
101	<i>Nidorella auriculata</i> DC.		Indigenous	Herb
102	<i>Oldenlandia herbacea</i> (L.) Roxb. var. <i>herbacea</i>		Indigenous	Herb
103	<i>Ornithogalum tenuifolium</i> F.Delaroche subsp. <i>tenuifolium</i>	Grass Chink	Protected	Bulb
104	<i>Osteospermum monilifera</i> (L) T. Norl	Tick berry	Indigenous	Shrub
105	<i>Oxalis corniculata</i> L.	Creeping woodsorrel	Alien	Herb
106	<i>Oxygonum dregeanum</i> Meisn. subsp. <i>dregeanum</i>		Indigenous	Herb
107	<i>Panicum maximum</i> Jacq.	Mexican panicgrass	Alien	Grass
108	<i>Paspalum urvillei</i> Steud.	Vaseys Grass	Alien	Grass
109	<i>Passiflora subpeltata</i> Ortega	White passionflower	Alien	Climber
110	<i>Pavetta bowkeri</i> Harv.	Kei White Bauhinia	Indigenous	Tree
111	<i>Pavetta lanceolata</i> Eckl.	Weeping Brides bush	Indigenous	Tree
112	<i>Pavonia burchellii</i> (DC.) R.A.Dyer	Dainty Pavonia	Indigenous	Herb
113	<i>Pentanisia prunelloides</i> (Klotzsch ex Eckl. & Zeyh.) Walp. subsp. <i>prunelloides</i>		Indigenous	Herb
114	<i>Phoenix reclinata</i> Jacq.	Date Palm	Indigenous	Palm
115	<i>Phragmites australis</i> (Cav.) Steud.	Reed Grass	Indigenous	Grass
116	<i>Pisonia aculeata</i> L.	Four o'clock flower	Alien	Herb
117	<i>Psychotria capensis</i> (Eckl.) Vatke subsp. <i>capensis</i>	Black bird-berry	Indigenous	Tree
118	<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	Bracken fern	Alien	Fern
119	<i>Pycneus</i> sp.		Indigenous	Sedge
120	<i>Ranunculus multifidus</i> Forssk.	African Buttercup	Indigenous	Herb
121	<i>Rhinacanthus gracilis</i> Klotzsch var. <i>gracilis</i>		Indigenous	Herb
122	<i>Rubia cordifolia</i> L. subsp. <i>conotricha</i> (Gand.) Verdc.		Indigenous	Herb
123	<i>Scabiosa columbaria</i> L.	Pink Mist	Indigenous	Herb
124	<i>Scadoxus puniceus</i> (L.) Friis & Nordal	Snake lily	Protected	Bulb

	Species name	Common name	Status	Growth form
125	<i>Schinus terebinthifolius</i> Raddi	Brazilian pepper tree	Alien	Tree
126	<i>Searsia chirindensis</i> (Baker f.) Moffett	Red currant	Indigenous	Tree
127	<i>Searsia discolor</i> (E.Mey. ex Sond.) Moffett	Grassveld currant	Indigenous	Tree
128	<i>Searsia nebulosa</i> (Schönland) Moffett	Coastal currant	Indigenous	Climber
129	<i>Senecio deltoideus</i> Less	Canary creeper	Indigenous	Creeper
130	<i>Senecio madagascariensis</i> Poir.	Madagascar ragwort	Indigenous	Herb
131	<i>Senecio tamoides</i> DC.	Canary creeper	Indigenous	Herb
132	<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	Bristle Grass	Indigenous	Grass
133	<i>Sida cordifolia</i> L. subsp. <i>Cordifolia</i>	Spider leg	Indigenous	Herb
134	<i>Smilax anceps</i> Willd.	Leg-ripper	Indigenous	Creeper
135	<i>Solanum campylacanthum</i> Hochst. ex A.Rich. subsp. <i>panduriforme</i> (Drège ex Dunal) J.Samuels	Poison Apple	Indigenous	Herb
136	<i>Strelitzia nicolai</i> Regel & Körn.	Wild banana	Indigenous	Tree
137	<i>Strychnos madagascariensis</i> Poir.	Black monkey orange	Indigenous	Tree
138	<i>Strychnos spinosa</i> Lam. subsp. <i>spinosa</i>	Spiny Monkey Apple	Indigenous	Tree
139	<i>Syzygium cordatum</i> Hochst. ex C.Krauss subsp. <i>cordatum</i>	Umdoni	Indigenous	Tree
140	<i>Tagetes minuta</i> L.	Southern cone marigold	Alien	Herb
141	<i>Tephrosia grandiflora</i> (Aiton) Pers.	Pink Pea Bush	Indigenous	Herb
142	<i>Teucrium kraussii</i> Codd		Indigenous	Herb
143	<i>Trema orientalis</i> (L.) Blume	Pigeon wood	Indigenous	Tree
144	<i>Typha capensis</i> (Rohrb.) N.E.Br.	Bulrush	Indigenous	Sedge
145	<i>Uvaria caffra</i> E.Mey. ex Sond.		Indigenous	Creeper
146	<i>Verbena bonariensis</i> L.	Purpletop vervain	Alien	Herb
147	<i>Vigna unguiculata</i> (L.) Walp.	Cow Pea	Indigenous	Herb
148	<i>Wahlenbergia grandiflora</i> Brehmer.		Indigenous	Herb
149	<i>Zantedeschia aethiopica</i> (L.) Spreng.	Arum Lillie	Protected	Bulb
150	<i>Zehneria scabra</i> (L.f.) Sond		Indigenous	Creeper

APPENDIX F

PLANT RESCUE AND TRANSLOCATION MANAGEMENT PLAN

FOR THE PROPOSED

**REPLACEMENT OF CRITICAL PIPE SECTIONS WITHIN THE PORT
OF RICHARDS BAY, KWAZULU-NATAL**

January 2017

Prepared For:

Transnet National Ports Authority
P O Box 181
Richards Bay
3900



Prepared By:

Acer (Africa) Environmental Consultants
P O Box 503
Mtunzini
3867



TABLE OF CONTENTS

TABLE OF CONTENTS ii

1.	PURPOSE	1
2.	SCOPE	1
3.	IDENTIFICATION OF SPECIES OF CONSERVATION CONCERN	1
3.1	Vegetation on Site	1
3.1.1	Municipal Feed to Viaduct	1
3.1.2	Level Crossing to Tidal Gates	2
3.2	Protected Plant Species	2
3.3	Mitigation and Avoidance Options	3
4.	PLANT RESCUE AND PROTECTION PLAN	3
4.1	Preconstruction	3
4.2	Construction	3
4.3	Operation	4
4.4	Reporting and Monitoring Requirements	4
5.	TRANSLOCATION GUIDELINES	4
6.	PLANTING AND GRASSING GUIDELINES	5
6.1	Transplanting	5
6.2	Plants sourced from nurseries	6
6.3	Seeds and seedlings	6
6.4	Grassing	7
6.4.1	Sods	7
6.4.2	Runners	7
6.4.3	Hand seeding	7
6.4.4	Hydroseeding	8
APPENDIX 1		9
	SPECIES FOUND ONSITE	9

1. PURPOSE

The purpose of the Plant Rescue and Translocation Management Plan is to implement avoidance and mitigation measures to reduce the impact of the proposed replacement of critical pipe sections within the Port of Richards Bay on the listed and protected plant species and their habitats. The plan overlaps to some degree with the Erosion and Soil Management Plan and the Re-vegetation and Rehabilitation Management Plan, but for successful implementation, it is imperative that this plan is at all times used in conjunction with the other plans mentioned.

The aims of the Management Plan are to provide:

- ❑ Protocols for the rescue of protected and endangered vegetation across the project area.
- ❑ Guidelines for the translocation of suitable plant specimens.
- ❑ Guidelines on implementation and post-implementation tasks.

2. SCOPE

This Management Plan acts as a guideline to be applied by all contractors involved on the project. It needs to be an evolving guideline that must be updated or adapted as progress is made in terms of the rescue and translocation of important plant species within the project area, and successes and failures of procedures identified.

The objectives of the Management Plan are:

- ❑ To preserve and translocate all protected plant species, as best possible, to suitable natural habitats on site.
- ❑ Actively aid the improvement of indigenous biodiversity within and around the site.
- ❑ Improving the ecosystem function of natural landscapes and their associated vegetation.

3. IDENTIFICATION OF SPECIES OF CONSERVATION CONCERN

3.1 Vegetation on Site

According to Mucina and Rutherford (2006) the vegetation type of the site is Mangrove Forest (FOa3) and Subtropical Freshwater Wetlands (AZf6). The conservation status the Subtropical Freshwater Wetlands type is considered *least threatened* with a conservation target of 24%, Mangrove Forest is considered *critically endangered* with a conservation target of 100%. A total of 150 plant species were recorded during the field survey, of which 21 were alien/exotic. The majority of the site is degraded (70% alien and pioneer plant composition) due to a lack of veld management (burning / mowing regimes, exclusion of fire). The patches of more intact vegetation noted were outside of the servitude footprint for the proposed pipeline construction. Illegal dumping of general waste has further degraded the floristic composition and potential of this landscape.

3.1.1 Municipal Feed to Viaduct

The general vegetation across this section is dominated by alien vegetation and pioneer / primary successional vegetation species. The mangrove area next to the Manzanyama Canal is dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorhiza*). The area expected to be affected by the proposed pipeline traversing the edges

of the swamp forest is dominated by the grasses *Paspalum notatum*, *Melinis repens* (both indigenous) and *Paspalum urvillei* (alien) the broad leaf vegetation is dominated by alien vegetation such as *Ricinus communis* and *Lantana camara*. The remaining portion of the pipeline passes through vegetation that is pioneer (early succession) in nature. The open areas are very sandy and are dominated by the grass *Paspalum notatum* and by herbs such as *Chrysanthemoides monilifera*, *Carpobrotus dimidiatus* and *Helichrysum kraussii*. The areas where the servitude traverses through the canopy trees are dominated by *Acacia mearnsii* and *Acacia karroo*, while the understory, apart from patches of alien vegetation such as *Lantana camara*, *Rivina humilis* and *Ipomoea purpurea* is predominantly indigenous and dominated by pioneer species such as *Grewia occidentalis*, *Psydrax obovata* and a number of *Rhoicissus* spp.

3.1.2 Level Crossing to Tidal Gates

This section of pipeline follows Arterial Road adjacent to the Richards Bay Game Reserve heading to South Dunes and follows the existing servitude. If the alignment was to deviate towards the road it would compromise the road reserve and if it had to move toward the Game Reserve it would impact on the vegetation on the Reserve edge, which comprises of large thickets of the protected plant *Hibiscus tiliaceus* and below that, mangrove tree species. The servitude is generally well maintained by mowing and is easily accessible, towards the end of the alignment the pipeline passes through a thick tree canopy, again dominated by *Acacia mearnsii* and *Acacia karroo*, as well as a number of *Brachylaena discolor* individuals. At the time of this site visit (24th October 2016) the only protected species visible were *Asparagus* species with no visible protected bulbous plants. However during a site visit conducted in February 2016 a number of protected species including *Scadoxus puniceus* and *Eulophia speciosa* were recorded.

3.2 Protected Plant Species

Ten (10) plant species which are protected by Provincial Legislation and Two (2) Nationally Protected trees were noted within the upgrade site:

PROVINCIALY PROTECTED	NATIONALLY PROTECTED
☐ <i>Aristea abyssinica</i> ☐ <i>Asparagus falcatus</i> var. <i>tenuifolius</i> ☐ <i>Asparagus setaceus</i> ☐ <i>Crocasmia aurea</i> ☐ <i>Eulophia speciosa</i> ☐ <i>Hibiscus tiliaceus</i> subsp. <i>tiliaceus</i> ☐ <i>Hypoxis angustifolia</i> var. <i>angustifolia</i> ☐ <i>Ornithogalum tenuifolium</i> subsp. <i>tenuifolium</i> ☐ <i>Scadoxus puniceus</i> ☐ <i>Zantedeschia aethiopica</i>	☐ <i>Bruguiera gymnorhiza</i> ☐ <i>Brachylaena discolor</i>

Table 1 Protected plant species found within the study area

A comprehensive list of the species of flora found on the site during the assessment is provided in Appendix 1 (Including alien invasives and specially protected species).

3.3 Mitigation and Avoidance Options

Ideally, the development should strive to avoid impacts on protected plant species. Due to various constraints, this may not always be possible and some impact on protected plant species may be inevitable. Where protected plant species fall within the development footprint and avoidance is not possible, it may be possible to translocate the affected individual plant specimens to a suitable area outside of the development footprint (depending on the size of the specimen). Not all species are suitable for translocation as only certain plants are able to survive the disturbances associated with translocation. Suitable candidates for translocation include most geophytes and succulents. Although there are exceptions, the majority of woody species do not survive translocation well. In these cases, propagules must be collected for reinstatement purposes.

4. PLANT RESCUE AND PROTECTION PLAN

4.1 Preconstruction

Before construction commences at the site, the following actions should be taken:

- ❑ Identification of all listed species which may occur within the site. As the scope for changing layouts is limited once the final layout has been submitted, a preliminary walk-through of the final layout should be conducted to assess the presence of listed plant species within the development footprint and the layout adjusted as necessary to avoid affecting significant populations of species of conservation concern. Such a walk-through should be conducted at a favourable time of year when the probability of recognizing species of conservation concern is high.
- ❑ Walk-through of the final development footprint by a suitably qualified botanist/ecologist to locate and identify all listed and protected species which fall within the development footprint. Following the walk-through a walk-through report must be provided which identifies areas where minor deviations to roads and other infrastructure can be made to avoid sensitive areas and important populations of listed species. The report should also contain a full list of localities where listed species occur within the development footprint and the number of affected individuals in each instance.
- ❑ A search and rescue operation must be undertaken to translocate protected species within the development footprint, which cannot be avoided. Affected plant specimens should be translocated to a similar habitat outside of the development footprint and marked for monitoring purposes.
- ❑ All plants requiring translocation must be translocated following the translocation guidelines outlined in section 5 below.

4.2 Construction

- ❑ During construction, the ECO must monitor vegetation clearing at the site. Any deviations from the approved plans which will result in the removal of vegetation from additional areas should first be checked for protected species by the ECO. Any protected species present which are able to survive translocation should be translocated to a safe site.
- ❑ The ECO must translocate any listed species observed within the development footprint that were missed during the preconstruction vegetation walk-through.
- ❑ No plant species are permitted to be collected or removed by the contractor without prior approval from the ECO.
- ❑ The ECO should carefully monitor construction activities in sensitive habitats such as near rivers and wetlands to ensure that impacts to these areas are minimized.

4.3 Operation

- ☐ Access to the site should be strictly controlled and all personnel entering or leaving the site should be required to sign in and out at a security checkpoint.
- ☐ The collecting of plants or their parts should be strictly forbidden.

4.4 Reporting and Monitoring Requirements

The following reporting and monitoring requirements must be implemented as part of this management plan:

- ☐ Preconstruction walk-through report detailing the location and distribution of all listed and protected species. This should include a walk-through of all infrastructure including all new access roads and buildings. The report should include recommendations of route adjustments where necessary, as well as provide a full accounting of how many individuals of each listed species will be impacted by the development.
- ☐ Monitoring during construction by the ECO to ensure that listed species and sensitive habitats are avoided (findings by the ECO must be included in the audit reports submitted to the proponent and the relevant authorities).
- ☐ Post construction monitoring of plants translocated during search and rescue must be undertaken to evaluate the success of the intervention. Monitoring for one year post-transplanting should be sufficient to gauge success. Monitoring of the site during operation should occur annually during the summer months.

5. TRANSLOCATION GUIDELINES

Bulbs and grassland plants usually transplant easily, providing it is done with some care. Place plants well outside of the construction footprint, in a full sun position in ground of similar wetness/dryness to the area they were removed from:

- ☐ Dig bulb/root out carefully, by starting far enough away from the bulb/root not to damage it (e.g. by slicing the bulb with a spade).
- ☐ Keep some soil with the bulb and associated roots during the process.
- ☐ Pour a small amount of water in an empty plastic bag. Shake the bag to wet the inside.
- ☐ Place dug out bulbs/herbs in the bag.
- ☐ Do not fill the bag more than halfway with bulbs.
- ☐ Close the opening of bag and roll top to keep in moisture. Keep bag out of direct sunlight and in the shade.
- ☐ Re-plant on the same day (e.g. dig out plants in the morning and re-plant in afternoon).
- ☐ Dig hole big enough to accommodate bulb/roots.
- ☐ Cover with soil and press down lightly to ensure that there are no air pockets around the bulb. Take care to cover with soil up to the same level as it was before.
- ☐ Water immediately to settle the bulbs.
- ☐ After planting, watering requirements will vary with weather conditions. The contractor is responsible for maintaining moisture levels necessary for healthy growth (as a guideline, water every day for the first 2 weeks, and then 3 times a week until established). When watering, take care not to damage the soil structure by using an excessive force of water.
- ☐ The contractor must show the ECO the area to which the bulbs were translocated so that the ECO can monitor their progress.

6. PLANTING AND GRASSING GUIDELINES

6.1 Transplanting

Bulbs and grassland plants usually transplant easily, providing it is done with some care. Place plants well outside of the construction footprint, in a full sun position in ground of similar wetness/dryness to the area they were removed from:

- ❑ Where possible, transplant trees and shrubs during the winter (between April and September). Transplant deciduous trees, before the new growth appears.
- ❑ Prune back the plants to limit transpiration and spray foliage with an evapo-transpiration retardant liquid if they are evergreen.
- ❑ Aloes and bulbous plants may be transplanted at any time of the year.
- ❑ Trees to be transplanted must be carefully removed from the soil so as to retain as large a rootball as practically possible. Use the tree's driplines as an indicator: the larger the tree the larger the rootball (and subsequently the planting hole).
- ❑ Minimise disturbance of the soil and the remaining roots in the rootball during the lifting, moving and or transportation of all species.
- ❑ Wrap the rootball in Hessian or in plastic sheeting to retain the soil and keep it moist.
- ❑ Unless otherwise specified by the ECO, excavate square holes of 800 mm x 800 mm x 800 mm on average for trees and 500 mm x 500 mm x 500 mm on average for shrubs.
- ❑ If impenetrable shale, rock, clay or a high water table is encountered, making the above hole sizes impossible, then seek advice from the ECO.
- ❑ Where local soil has poor drainage, broken rock (approx. 75 mm in diameter) must be placed to a depth of 150 mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture.
- ❑ Backfill planting holes with excavated material/approved topsoil, thoroughly mixed with weed free manure or compost (per volume about one quarter of the plant hole). Approval from the ECO should be obtained for the application of fertiliser (e.g. 2:3:2 fertiliser) and/or pesticides (e.g. ant and termite poison) where required.
- ❑ Plant trees and shrubs so that their stems or trunks are at the same depth as in their original position.
- ❑ Orientate trees and shrubs in the same direction as in their original position.
- ❑ Plant aloes and bulbs in similar soil conditions and to the same depth as in their original position.
- ❑ Stake all trees using three weather resistant wooden or steel stakes anchored firmly into the ground. Two of the three stakes are to be located on the windward side of the plant. Galvanised wire binding, 3 mm thick, covered with a 20 mm diameter plastic hosepipe must be tied tightly to the stakes, half to two thirds the height of the tree above the ground and looped around the trunk of the tree.
- ❑ Place stakes at least 500 mm apart and away from the stem and roots of the tree, so as not to damage the tree or its roots. This distance will depend upon the size of the tree planted and must be approved by the ECO before staking.
- ❑ Where necessary, protect newly planted trees against wind, and wild animals by means of fencing or sacking, as specified by the ECO.
- ❑ Water transplanted trees and shrubs as required until the plants are able to survive independently (i.e. depending on the rainfall).
- ❑ A raised circular 200 mm high subsoil berm, placed 500 mm (shrubs) to 750 mm (trees) from the plant's stem must be provided for the watering. Do not simply leave the excavated plant hole partially backfilled for this purpose – the berm must be raised above the natural soil level.
- ❑ Water aloes and bulbs once directly after transplanting to settle the soil.
- ❑ Remove stakes and wire binds over time as required, as plants become established.

6.2 Plants sourced from nurseries

- ❑ Plant all trees, shrubs and individual plants in positions as indicated on the plant plans or as indicated by the ECO.
- ❑ Planting should preferably be done during the rainy season.
- ❑ Unless otherwise specified by the ECO, excavate square holes of 800 mm x 800 mm x 800 mm on average for trees and 500 mm x 500 mm x 500 mm on average for shrubs.
- ❑ If impenetrable shale, rock, clay or a high water table is encountered, making the above hole sizes impossible, then seek advice from the ECO.
- ❑ Where local soil has poor drainage, broken rock (approx. 75 mm in diameter) must be placed to a depth of 150 mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture.
- ❑ Backfill planting holes with excavated material/approved topsoil, thoroughly mixed with weed free manure or compost (per volume about one quarter of the plant hole). Approval from the ECO should be obtained for the application of fertilizer (e.g. 2:3:2 fertiliser) and/or pesticides (e.g. ant and termite poison) where required.
- ❑ As much of the soil from container plants as possible must be retained around the roots of the plant during planting.
- ❑ The plant must be planted into the specified hole size with the approved soil, compost and fertiliser mix used to refill the plant hole and must cover all the roots and be well firmed down to a level equal to that of the surrounding in situ material.
- ❑ After planting, each plant must be well watered, adding more soil upon settlement if necessary.
- ❑ Add mulch to the surface area of the bermed basin.
- ❑ Stake all trees using three weather resistant wooden or steel stakes anchored firmly into the ground. Two of the three stakes are to be located on the windward side of the plant. Galvanised wire binding, 3 mm thick, covered with a 20 mm diameter plastic hosepipe must be tied tightly to the stakes, half to two thirds the height of the tree above the ground and looped around the trunk of the tree.
- ❑ Place stakes at least 500 mm apart and away from the stem and roots of the tree, so as not to damage the tree or its roots. This distance will depend upon the size of the tree planted and must be approved by the ECO before staking.
- ❑ Where necessary, protect newly planted trees against wind and wild animals by means of fencing or sacking, as specified by the ECO.
- ❑ Thoroughly water plants as required until the plants are able to survive independently (i.e. depending on the rainfall).
- ❑ A raised circular 200 mm high subsoil berm, placed 500 mm (shrubs) to 750 mm (trees) from the plant's stem must be provided for the watering. Do not simply leave the excavated plant hole partially backfilled for this purpose – the berm must be raised above the natural soil level.
- ❑ Water aloes and bulbs once directly after transplanting to settle the soil.
- ❑ Remove stakes and wire binds over time as required, as plants become established.

6.3 Seeds and seedlings

- ❑ All planting work is to be undertaken by a suitably qualified Contractor, making use of the appropriate equipment.
- ❑ An alternative to harvesting seeds and germinating these is to uproot small seedlings between 40 mm to 100 mm high from an area of mature forest undergrowth where there are many. Best results are obtained immediately after heavy rain.
- ❑ Tree seedling material should be fresh and of local origin. Resist using plants from far afield as they may not be best suited to local climatic or soil conditions.

- ❑ Small seedlings are likely to transplant more successfully than large ones. These should be potted and kept under nursery conditions until they are large enough to plant out.

6.4 Grassing

6.4.1 Sods

Sodding is defined as the laying of grass sods.

- ❑ The soil should be uniformly wet to a depth of at least 150 mm before planting of grass sods.
- ❑ Protect sods against drying out: Keep these moist from the time of harvesting until final placement.
- ❑ Rake or spike the area to give a loose surface to a depth of 100 mm.
- ❑ Lay the first row of sods in a straight line, starting at the bottom of a slope, where possible.
- ❑ Place the next row of sods in the same way, tightly against the bottom row with the joints staggered, until the full area is covered with sods.
- ❑ Tightly butt sods together, taking care not to stretch or overlap sods.
- ❑ Where a good fit cannot be obtained, the intervening spaces may be filled with parts of sods or topsoil.
- ❑ On steep slopes the sods must be secured using timber stakes of at least 300 mm in length.
- ❑ After planting, water sods to prevent drying out.
- ❑ Irrigate as required until the grass is able to survive independently (i.e. depending on the rainfall).

6.4.2 Runners

- ❑ Plant grass runners evenly by hand or by mechanical means at a rate of at least 400 runners per hectare (i.e. at 250 mm centres).
- ❑ Use only fresh runners, avoiding grass runners that have been allowed to dry out.
- ❑ Rake or spike the area to give a loose surface to a depth of 100 mm.
- ❑ The soil should be uniformly wet to a depth of at least 150 mm before planting of grass runners.
- ❑ After planting, runners must be given copious amounts of water and, when sufficiently dry, must be rolled with a light agricultural roller and re-watered.
- ❑ Irrigate as required until the grass is able to survive independently (i.e. depending on the rainfall).

6.4.3 Hand seeding

- ❑ All seed supplied should be labelled in accordance with the Government Seed Act, 1961 (Act No. 20 of 1961).
- ❑ The soil should be loose and uniformly wet to a depth specified by the ECO, before any seeding commences.
- ❑ Halve the seed and fertiliser mixture as specified and apply evenly in two immediate successive applications perpendicular to each other.
- ❑ The seeded area must be raked over after seed application and well watered.
- ❑ Irrigate as required until the grass is able to survive independently (i.e. depending on the rainfall).

6.4.4 Hydroseeding

- ❑ Hydroseeding entails adding a specified seed mix to a slurry containing water and other approved materials to enhance plant growth potential. This mixture is applied by means of a spraying device onto the prepared ground areas to be seeded.
- ❑ All seed supplied should be labelled in accordance with the Government Seed Act, 1961 (Act No. 20 of 1961).
- ❑ The soil should be loose and uniformly wet to a depth specified by the ECO, before any seeding commences.
- ❑ Add the specified seed mix and necessary fertiliser to the required amount of water and apply using an approved hydroseeding machine.
- ❑ Unless otherwise specified, the rate of application of the slurry will not be less than 30 cubic metres per hectare and will be applied in such a manner as to ensure even distribution of seed and fertiliser throughout.
- ❑ Additional ingredients to be added to the slurry may be specified.
- ❑ In certain cases, the specification may require that mulch be applied by hand to the area to be hydroseeded, prior to hydroseeding.
- ❑ If possible, keep the seedbed moist after hydroseeding, to ensure good germination.
- ❑ Irrigate as required until the grass is able to survive independently (i.e. depending on the rainfall).

APPENDIX 1
SPECIES FOUND ONSITE

	SPECIES NAME	COMMON NAME	STATUS	GROWTH FORM
1	<i>Abrus laevigatus</i> E.Mey.		Indigenous	Creeper
2	<i>Abrus precatorius</i> L. subsp. <i>africanus</i> Verdc.		Indigenous	Herb
3	<i>Abutilon grantii</i> A.Meeuse		Indigenous	Herb
4	<i>Acacia karroo</i> Hayne	Sweet thorn	Indigenous	Tree
5	<i>Acacia robusta</i> Burch. subsp. <i>robusta</i>	Splendid acacia	Indigenous	Tree
6	<i>Agrostis stolonifera</i> L	Creeping bent grass	Indigenous	Grass
7	<i>Andropogon gayanus</i> Kunth	Snow flake grass	Indigenous	Grass
8	<i>Aneilema aequinoctiale</i> (P.Beauv.) Loudon	Blue Stem	Indigenous	Creeper
9	<i>Aristea abyssinica</i> Pax		Protected	Bulb
10	<i>Aristida junciformis</i> Trin. & Rupr.	Gongoni	Indigenous	Grass
11	<i>Asparagus falcatus</i> L. var. <i>ternifolius</i> (Baker) Jessop		Protected	Climber
12	<i>Asparagus setaceus</i> (Kunth) Jessop		Protected	Climber
13	<i>Asystasia gangetica</i> (L.) T.Anderson subsp. <i>micrantha</i> (Nees) Ensermu	Creeping Foxglove	Indigenous	Herb
14	<i>Avicennia marina</i> (Forssk.) Vierh. var. <i>marina</i>	White mangrove	Indigenous	Tree
15	<i>Barleria meyeriana</i> Nees	Meyer's bushviolet	Indigenous	Herb
16	<i>Berkheya speciosa</i> (DC.) O.Hoffm. subsp. <i>speciosa</i> .		Indigenous	Herb
17	<i>Bidens pilosa</i> L.	Black jack	Alien	Herb
18	<i>Brachylaena discolor</i> DC	Silver oak	Indigenous	Tree
19	<i>Bridelia micrantha</i> (Hochst.) Baill.	Mitzeerie	Indigenous	Tree
20	<i>Bruguiera gymnorhiza</i> (L.) Lam.	Black mangrove	Protected	Tree
21	<i>Bulbostylis hispidula</i> (Vahl) R.W. Haines		Indigenous	Sedge
22	<i>Canna indica</i> L.	Canna	Alien	Herb
23	<i>Canthium inerme</i> (L.f.) Kuntze	Turkey berry	Indigenous	Tree
24	<i>Carissa bispinosa</i> (Eckl.) A.DC.	Natal plum	Indigenous	Tree
25	<i>Carpobrotus dimidiatus</i> (Haw.) L.Bolus	Natal sour fig	Indigenous	Herb
26	<i>Catharanthus roseus</i> (L.) G.Don	Madagascar rosy periwinkle	Alien	Herb
27	<i>Centella asiatica</i> (L.) Urban	Gotu Kola	indigenous	Herb
28	<i>Chaenostoma floribundum</i> Benth.		Indigenous	Herb
29	<i>Chamaecrista mimosoides</i> (L.)	Dwarf cassia	Indigenous	Herb
30	<i>Chamaecrista plumosa</i> E.Mey. var. <i>plumosa</i> .		Indigenous	Herb
31	<i>Cheilanthes viridis</i> (Forssk.) Sw. var. <i>viridis</i>		Indigenous	Fern
32	<i>Chloris gayana</i> Kunth	Rhodes grass	Indigenous	Grass
33	<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Trifid weed	Alien	Herb
34	<i>Cissampelos mucronata</i> A.Rich.		Indigenous	Climber
35	<i>Cnestis polyphylla</i> Lam.	Itch-Pod	Indigenous	Creeper
36	<i>Commelina africana</i> L.	Yellow wandering jew	Indigenous	Herb
37	<i>Commelina erecta</i> L.	Slender day flower	Indigenous	Herb

38	<i>Conostomium natalense</i> var. <i>natalense</i> Bremek.	Wild Pentas	Indigenous	Herb
39	<i>Crocasmia aurea</i> (Pappe ex Hook.) Planch.	Falling Stars	Protected	Bulb
40	<i>Crotalaria macrocarpa</i> E.Mey. subsp. <i>macrocarpa</i> .	Rattlebox	Indigenous	Herb
41	<i>Crotalaria natalensis</i> Baker f.	Rattlebox	Indigenous	Herb
42	<i>Cuscuta campestris</i> Yunck.		Indigenous	Herb
43	<i>Cyanotis speciosa</i> (L.f.) Hassk.		Indigenous	Herb
44	<i>Cymbopogon validus</i> (Stapf) Stapf ex Burt Davy	Giant Turpentine Grass	Indigenous	Grass
45	<i>Cynanchum obtusifolium</i> L.f.	Natal Dog-wort	Indigenous	Climber
46	<i>Cyperus obtusiflorus</i> Vahl var. <i>obtusiflorus</i>		Indigenous	Sedge
47	<i>Cyperus papyrus</i> L.		Indigenous	Sedge
48	<i>Cyperus rotundus</i> L. subsp. <i>rotundus</i>	Purple Nut Sedge	Indigenous	Sedge
49	<i>Cyperus rupestris</i> Kunth var. <i>rupestris</i>		Indigenous	Sedge
50	<i>Dactyloctenium australe</i> Steud.	Sweet Smother Grass	Indigenous	Grass
51	<i>Dalbergia armata</i> E.Mey.	Hluhluwe climber	Indigenous	Climber
52	<i>Desmodium incanum</i> DC.		Indigenous	Herb
53	<i>Desmodium setigerum</i> (E.Mey.) Benth. ex Harv.	Sweet hearts	Alien	Herb
54	<i>Dicliptera clinopodia</i> Nees		Indigenous	Herb
55	<i>Digitaria eriantha</i> Steud	Pongola grass	Indigenous	Grass
56	<i>Diheteropogon amplexans</i> (Nees) Clayton var. <i>amplexans</i>		Indigenous	Grass
57	<i>Eragrostis ciliaris</i> (L.) R.Br.	Woolly Love Grass	Indigenous	Grass
58	<i>Eragrostis superba</i> Peyr.		Indigenous	Grass
59	<i>Eriosema psoraleoides</i> (Lam.) G.Don x <i>E. salignum</i> E.Mey.		Indigenous	Herb
60	<i>Ethulia conyzoides</i> L.f. subsp. <i>conyzoides</i>		Indigenous	Herb
61	<i>Eulophia speciosa</i> (R.Br. ex Lindl.) Bolus		Protected	Bulb
62	<i>Fimbristylis complanata</i> (Retz.) Link		Indigenous	Sedge
63	<i>Fimbristylis obtusifolia</i> (Lam.) Kunth		Indigenous	Sedge
64	<i>Gazania rigens</i> (Burm.f.) Roessler		Indigenous	Herb
65	<i>Gnidia kraussiana</i> Meisn. var. <i>kraussiana</i>	Yellow heads	Indigenous	Herb
66	<i>Gomphocarpus physocarpus</i> E.Mey.	Milkweed	Indigenous	Herb
67	<i>Grewia occidentalis</i> L.		Indigenous	Tree
68	<i>Gymnosporia nemorosa</i> (Eckl. & Zeyh.) Szyszyl.	Spike-thorn	Indigenous	Tree
69	<i>Helichrysum aureonitens</i> Sch.Bip.	Golden everlasting	Indigenous	Herb
70	<i>Helichrysum aureum</i> (Houtt.) Merr. var. <i>aureum</i>		Indigenous	Herb
71	<i>Helichrysum auriceps</i> Hilliard		Indigenous	Herb
72	<i>Helichrysum kraussii</i> Sch.Bip.		Indigenous	Herb
73	<i>Hewittia</i> sp.		Indigenous	Herb
74	<i>Hibiscus aethiopicus</i> L. var. <i>aethiopicus</i>	Common Dwarf Wild Hibiscus	Indigenous	Herb

75	<i>Hibiscus surattensis</i> L.		Indigenous	Herb
76	<i>Hibiscus tiliaceus</i> L. subsp. <i>tiliaceus</i>	Coast hibiscus	Protected	Shrub
77	<i>Hibiscus trionum</i> L.	Bladder hibiscus	Alien	Creeper
78	<i>Hydrocotyle bonariensis</i> Lam.		Alien	Herb
79	<i>Hypoxis angustifolia</i> Lam. var. <i>angustifolia</i>		Protected	Herb
80	<i>Imperata cylindrica</i> (L.) Raeusch.	Cotton wool grass	Indigenous	Grass
81	<i>Indigofera dimidiata</i> Vogel ex Walp.	Trifoliate Indigofera	Indigenous	Herb
82	<i>Indigofera velutina</i> E.Mey.		Indigenous	Herb
83	<i>Ipomoea alba</i> L.	Moon flower	Alien	Herb
84	<i>Ipomoea cairica</i> (L.) Sweet var. <i>cairica</i>	Coast Morning Glory	Alien	Creeper
85	<i>Ipomoea purpurea</i> (L.) Roth	Common Morning Glory	Alien	Creeper
86	<i>Ischaemum fasciculatum</i> Brongn.		Indigenous	Grass
87	<i>Juncus kraussii</i> Hochst.		Indigenous	Sedge
88	<i>Justicia flava</i> (Vahl) Vahl		Indigenous	Herb
89	<i>Justicia protracta</i> (Nees) T.Anderson subsp. <i>protracta</i>		Indigenous	Herb
90	<i>Lablab purpureus</i> (L.) Sweet		Indigenous	Herb
91	<i>Lactuca indica</i> L.	Wild lettuce	Indigenous	Herb
92	<i>Lantana camara</i> L.	Tick berry	Alien	Shrub
93	<i>Laportea peduncularis</i> (Wedd.)		Indigenous	Herb
94	<i>Lobelia coronopifolia</i> L.	Wild Lobelia	Indigenous	Herb
95	<i>Ludwigia octovalvis</i> (Jacq.) P.H.Raven	Raven primrose willow	Indigenous	Herb
96	<i>Melinis repens</i> (Willd.) Zizka subsp. <i>repens</i>	Natal grass	Indigenous	Grass
97	<i>Microsorium scolopendria</i> (Burm.f.) Copel.	Wart Ferns	Indigenous	Fern
98	<i>Momordica foetida</i> Schumach.		Indigenous	Climber
99	<i>Monocymbium ceresiiforme</i> (Nees) Stapf		Indigenous	Grass
100	<i>Monopsis stellarioides</i> (C.Presl) Urb. subsp. <i>stellarioides</i>		Indigenous	Herb
101	<i>Nidorella auriculata</i> DC.		Indigenous	Herb
102	<i>Oldenlandia herbacea</i> (L.) Roxb. var. <i>herbacea</i>		Indigenous	Herb
103	<i>Ornithogalum tenuifolium</i> F.Delaroche subsp. <i>tenuifolium</i>	Grass Chink	Protected	Bulb
104	<i>Osteospermum monilifera</i> (L) T. Norl	Tick berry	Indigenous	Shrub
105	<i>Oxalis corniculata</i> L.	Creeping woodsorrel	Alien	Herb
106	<i>Oxygonum dregeanum</i> Meisn. subsp. <i>dregeanum</i>		Indigenous	Herb
107	<i>Panicum maximum</i> Jacq.	Mexican panicgrass	Alien	Grass
108	<i>Paspalum urvillei</i> Steud.	Vaseys Grass	Alien	Grass
109	<i>Passiflora subpeltata</i> Ortega	White passionflower	Alien	Climber
110	<i>Pavetta bowkeri</i> Harv.	Kei White Bauhinia	Indigenous	Tree
111	<i>Pavetta lanceolata</i> Eckl.	Weeping Brides bush	Indigenous	Tree

112	<i>Pavonia burchellii</i> (DC.) R.A.Dyer	Dainty Pavonia	Indigenous	Herb
113	<i>Pentanisia prunelloides</i> (Klotzsch ex Eckl. & Zeyh.) Walp. subsp. <i>prunelloides</i>		Indigenous	Herb
114	<i>Phoenix reclinata</i> Jacq.	Date Palm	Indigenous	Palm
115	<i>Phragmites australis</i> (Cav.) Steud.	Reed Grass	Indigenous	Grass
116	<i>Pisonia aculeata</i> L.	Four o'clock flower	Alien	Herb
117	<i>Psychotria capensis</i> (Eckl.) Vatke subsp. <i>capensis</i>	Black bird-berry	Indigenous	Tree
118	<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	Bracken fern	Alien	Fern
119	<i>Pycnus</i> sp.		Indigenous	Sedge
120	<i>Ranunculus multifidus</i> Forssk.	African Buttercup	Indigenous	Herb
121	<i>Rhinacanthus gracilis</i> Klotzsch var. <i>gracilis</i>		Indigenous	Herb
122	<i>Rubia cordifolia</i> L. subsp. <i>conotracha</i> (Gand.) Verdc.		Indigenous	Herb
123	<i>Scabiosa columbaria</i> L.	Pink Mist	Indigenous	Herb
124	<i>Scadoxus puniceus</i> (L.) Friis & Nordal	Snake lily	Protected	Bulb
125	<i>Schinus terebinthifolius</i> Raddi	Brazilian pepper tree	Alien	Tree
126	<i>Searsia chirindensis</i> (Baker f.) Moffett	Red currant	Indigenous	Tree
127	<i>Searsia discolor</i> (E.Mey. ex Sond.) Moffett	Grassveld currant	Indigenous	Tree
128	<i>Searsia nebulosa</i> (Schönland) Moffett	Coastal currant	Indigenous	Climber
129	<i>Senecio deltoideus</i> Less	Canary creeper	Indigenous	Creeper
130	<i>Senecio madagascariensis</i> Poir.	Madagascar ragwort	Indigenous	Herb
131	<i>Senecio tamoides</i> DC.	Canary creeper	Indigenous	Herb
132	<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	Bristle Grass	Indigenous	Grass
133	<i>Sida cordifolia</i> L. subsp. <i>Cordifolia</i>	Spider leg	Indigenous	Herb
134	<i>Smilax anceps</i> Willd.	Leg-ripper	Indigenous	Creeper
135	<i>Solanum campylacanthum</i> Hochst. ex A.Rich. subsp. <i>panduriforme</i> (Drège ex Dunal) J.Samuels	Poison Apple	Indigenous	Herb
136	<i>Strelitzia nicolai</i> Regel & Körn.	Wild banana	Indigenous	Tree
137	<i>Strychnos madagascariensis</i> Poir.	Black monkey orange	Indigenous	Tree
138	<i>Strychnos spinosa</i> Lam. subsp. <i>spinosa</i>	Spiny Monkey Apple	Indigenous	Tree
139	<i>Syzygium cordatum</i> Hochst. ex C.Krauss subsp. <i>cordatum</i>	Umdoni	Indigenous	Tree
140	<i>Tagetes minuta</i> L.	Southern cone marigold	Alien	Herb
141	<i>Tephrosia grandiflora</i> (Aiton) Pers.	Pink Pea Bush	Indigenous	Herb
142	<i>Teucrium kraussii</i> Codd		Indigenous	Herb
143	<i>Trema orientalis</i> (L.) Blume	Pigeon wood	Indigenous	Tree
144	<i>Typha capensis</i> (Rohrb.) N.E.Br.	Bulrush	Indigenous	Sedge
145	<i>Uvaria caffra</i> E.Mey. ex Sond.		Indigenous	Creeper
146	<i>Verbena bonariensis</i> L.	Purpletop vervain	Alien	Herb

147	<i>Vigna unguiculata</i> (L.) Walp.	Cow Pea	Indigenous	Herb
148	<i>Wahlenbergia grandiflora</i> Brehmer.		Indigenous	Herb
149	<i>Zantedeschia aethiopica</i> (L.) Spreng.	Arum Lillie	Protected	Bulb
150	<i>Zehneria scabra</i> (L.f.) Sond		Indigenous	Creeper



TRANSNET NATIONAL PORTS AUTHORITY

TNPA BULK WATER PIPELINE, RICHARDS BAY, KWAZULU-NATAL

Wetland Assessment Report

Issue date: October 2016

Revision No.: 1.0

Project No.: 13642

SPECIALIST REPORT DETAILS

This report has been prepared as per the requirements of Section 32 of Government Notice No. R. 983 dated December 2014 (Environmental Impact Assessment Regulations) under sections 24(5), 24M and 44 of the National Environmental Management Act, 1998 (Act 107 of 1998).

I, declare that this report has been prepared independently of any influence or prejudice as may be specified by the Department Economic Development, Tourism and Environmental Affairs (EDTEA).

Date: 28-10-2016

Date:	October 2016
Document Title:	TNPA Bulk Water Pipeline, Richards Bay, KwaZulu-Natal: Wetland Assessment Report
Author:	Stephen Burton
Signature:	
Revision Number:	# 1.0
Checked by:	Michelle Nevette
Approved:	Greg Mullins
Signature:	
For:	Transnet National Ports Authority
<i>"COPYRIGHT IS VESTED IN SiVEST IN TERMS OF THE COPYRIGHT ACT (ACT 98 OF 1978) AND NO USE OR REPRODUCTION OR DUPLICATION THEREOF MAY OCCUR WITHOUT THE WRITTEN CONSENT OF THE AUTHOR"</i>	

TRANSNET NATIONAL PORTS AUTHORITY

TNPA BULK WATER PIPELINE, RICHARDS BAY, KWAZULU-NATAL

WETLAND ASSESSMENT REPORT

Contents	Page
1 INTRODUCTION.....	1
2 TERMS OF REFERENCE.....	1
3 PROJECT OVERVIEW AND LOCAL SETTING	2
4 CONCEPTUAL FRAMEWORK.....	4
4.1 WETLAND DELINEATION	4
4.2 WETLAND CLASSIFICATION.....	6
4.3 WETLAND HEALTH ASSESSMENT	8
4.4 WETLAND ECOSYSTEM SERVICES ASSESSMENT	9
5 METHODS	9
5.1 WETLAND DELINEATION	9
5.2 WETLAND CLASSIFICATION.....	10
5.3 WETLAND HEALTH DESCRIPTION AND PRESENT ECOLOGICAL STATUS (PES)	10
5.4 WETLAND ECOSYSTEM SERVICES ASSESSMENT	12
5.5 WETLAND ECOLOGICAL IMPORTANCE AND SENSITIVITY (EIS).....	13
6 RESULTS AND DISCUSSION: WETLAND DELINEATION, CLASSIFICATION AND DESCRIPTION.....	15
6.1 ASSUMPTIONS AND IMPORTANT NOTES	15
6.2 WETLAND UNITS	15
6.3 WETLAND DELINEATION DESCRIPTIONS	15
7 RESULTS: WETLAND HEALTH (PES).....	20
8 RESULTS: WETLAND ECO-SERVICES AND IMPORTANCE.....	21
8.1 WETLAND ECOSYSTEM SERVICES.....	21
8.2 WETLAND EIS SCORES.....	21
9 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES	22
9.1 STORMWATER RUNOFF IMPACTS	22
9.1.1 Construction phase impacts	22
9.1.2 Operational phase impacts.....	23
9.2 GENERAL RECOMMENDATIONS	24
10 CONCLUSION AND RECOMMENDATIONS.....	24
11 REFERENCES.....	26

LIST OF TABLES

Table 1: Relationship between degree of wetness (wetland zone), soil-physio-chemistry and vegetation (after Kotze et al, 1994).....	5
Table 2: Table of the wetland functions included in WET-EcoServices (Kotze et al., 2009)	9
Table 3: Impact scores and categories of Present State used by WET-Health for describing the integrity of wetlands (Source: Macfarlane et al., 2009)	12
Table 4: Ranking scale for wetland services based on WET-EcoServices scores	12
Table 5: Wetland and catchment size rating categories.....	13
Table 6: Ranking scale for the Wetland: catchment size ratio scores	13
Table 7: Ranking scale for the importance of the surface water and water quality enhancement services.....	13
Table 8: Ranking scale for the importance of carbon storage services	13
Table 9: EIS Score sheet (after DWAF, 1999)	14
Table 10: Environmental Importance and Sensitivity categories for biotic and habitat determinants (after DWAF, 1999)	14
Table 11: Present hydrological, geomorphic and vegetation state for the HGM units	20
Table 12: WET-Health Score.....	20
Table 13: EIS Scores for the assessed wetland units	21
Table 14: Impact Assessment of Stormwater Impacts (during Construction) before Mitigation	22
Table 15: Impact Assessment of Stormwater Impacts (during Construction) after Mitigation	23

LIST OF FIGURES

Figure 1: Overview Map	3
Figure 2: Cross section through a wetland, indicating how the soil wetness and vegetation indicators change along a gradient of decreasing wetness, from the middle to the edge of the wetland. (Reproduced from Kotze (1996), DWAF Guidelines)	6
Figure 3: Soil from a depth of 40-50 cm showing wetland indicators.....	16
Figure 4: Numerous paths and roads have been cut into the wetland system and have thus caused extensive fragmentation of the system.	17
Figure 5: Ecotone between wetland and mangrove system.....	17
Figure 6: Sedge dominated wetland adjacent to the mangrove system.	18
Figure 7: Wetland delineation aerial map.	19

TRANSNET NATIONAL PORTS AUTHORITY

TNPA BULK WATER PIPELINE, RICHARDS BAY, KWAZULU-NATAL

WETLAND ASSESSMENT REPORT

1 INTRODUCTION

SiVEST Environmental Division has been appointed by **Transnet National Ports Authority (TNPA)**, to undertake a Wetland Functional Assessment for the Asbestos Cement pipeline upgrade (indicated in red on the maps below) at Port of Richard's Bay Harbour West Area.

2 TERMS OF REFERENCE

The terms of reference of this assessment are to:

- Delineate the outer temporary boundary of the wetland units within 500m the project site;
- Provide a functional assessment of the wetland units delineated as above;

Further to the Terms of Reference, the following protocol is extracted from the National Environmental Management Act, Act 108 of 1998 (NEMA) as amended in 2014. The relevant Section is included below for your ease of reference:

Specialist reports and reports on specialised processes

- (1) An applicant or the EAP managing an application may appoint a person who is independent to carry out a specialist study or specialised process.*
- (2) /the Person referred to in sub-regulation (1) must comply with the requirements of Regulation 17.*
- (3) A specialist report or a report on a specialised process prepared in terms of these Regulations must contain –*
 - (a) details of –*
 - (i) the person who prepared the report; and*
 - (ii) the expertise of that person to carry out the specialist study or specialised process;*
 - (b) a declaration that the person is independent in a form as may be specified by the competent authority;*
 - (c) an indication of the scope of, and the purpose for which, the report was prepared;*
 - (d) a description of the methodology adopted in preparing the report or carrying out the specialised process;*
 - (e) a description of any assumptions made and any uncertainties or gaps in knowledge;*
 - (f) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment;*

- (g) recommendations in respect of any mitigation measures that should be considered by the applicant and the competent authority;*
- (h) a description of any consultation process that was undertaken during the course of carrying out the study;*
- (i) a summary and copies of any comments that were received during any consultation process; and*
- (j) any other information requested by the competent authority.*

3 PROJECT OVERVIEW AND LOCAL SETTING

TNPA require the undertaking of a Wetland Functional Assessment, to determine the current ecological status of the wetlands that may be affected by the upgrading of the potable water pipeline. Some areas have been highly transformed however still host important vegetation and faunal communities and species, as well as sensitive wetland environments.

The study site is located within Richards Bay Port, Kwazulu-Natal and is currently dominated by alien vegetation and large mangrove systems (see **Figure 1** below). The site appears to have been used for the dumping of dredged sand in the past, and has a major road and railway lines crossing it in numerous places. Additionally, the site has a patch of swamp forest along the eastern boundary of HGM 1, and a large patch of mangroves in the southern and eastern portion of the site.



Figure 1: Overview Map

4 CONCEPTUAL FRAMEWORK

4.1 Wetland Delineation

Wetlands are defined as those areas that have water on the surface or within the root zone for long enough periods throughout the year to allow for the development of anaerobic soil conditions that favour the growth and regeneration of hydrophytic vegetation (plants adapted to saturated and anaerobic soil conditions).

In terms of **Section 1** of the National Water Act (Act No. 36 of 1998), wetlands are legally defined as:

(1)...land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

Soils characterised by prolonged anaerobic soil conditions are referred to as hydric or hydromorphic soils. Hydric soils develop and occur under anaerobic conditions and are characterised by the chemical reduction of common soil minerals (e.g. iron and manganese) under saturated conditions that results in the gleying (loss of mineral colours) of the soil matrix and under temporarily and seasonally saturated conditions, the formation of mottles, which are mineral oxide precipitates of formerly reduced minerals that precipitate out of solution during the drying of the soil in the dry season. These soil wetness features are referred to as redoximorphic features. Wetland delineations are based primarily on the presence of soil wetness indicators/redoximorphic features. These features must occur within 50 cm of the surface soil profile for an area to be considered a wetland (**Collins, 2005**).

Typical redoximorphic features are (**Collins, 2005**):

- A reduced matrix - occurs when the iron and manganese in soils are reduced and the soils appears grey/pale (colour appears washed out).
- Redox depletions - the “grey” (low chroma) bodies within the soil where Fe-Mn oxides have been stripped out, or where both Fe-Mn oxides and clay have been stripped. Iron depletions and clay depletions can occur. These can occur as:
 - Iron depletions - low chroma bodies with clay contents similar to that of the adjacent matrix. Iron depletions are often referred to as grey mottles.
 - Clay depletions - low chroma bodies containing less iron, manganese and clay than the adjacent soil matrix.
- Redox concentrations - Accumulation of iron and manganese oxides. These can occur as:
 - Nodules - firm, irregular shaped bodies that are uniform when broken.
 - Concretions - harder, regular shaped bodies;
 - Mottles - soft bodies of varying size, mostly within the matrix, with variable shape appearing as blotches or spots of high chroma colours;
 - Pore linings - zones of accumulation that may be either coatings on a pore surface, or impregnations of the matrix adjacent to the pore. They are recognized as high chroma

colours that follow the route of plant roots, and are also referred to as oxidised rhizospheres.

It is important to note that there are normally three wetness or saturation zones to every wetland; namely, the permanent zone, the seasonal zone and the temporary zone. Each zone is based on the degree and duration of inundation and saturation of the soils.

The permanent zone usually reflects soils that indicate inundation and/or saturation cycles that last more or less throughout the year, whilst the seasonal zone may only reflect soils that indicate inundation and/or saturation cycles for a significant period during the rainy season.

The temporary zone reflects soils that indicate the shortest period(s) of inundation/saturation that are long enough, under normal circumstances, for the formation of hydromorphic soils and the growth of wetland vegetation (DWAF, 2005). The diagnostic criteria for the identification of the three wetness zones are summarised in **Table 1** below.

Table 1: Relationship between degree of wetness (wetland zone), soil-physio-chemistry and vegetation (after Kotze et al, 1994)

	Degree of wetness		
	Temporary	Seasonal	Permanent / Semi-permanent
Soil Depth (0cm –10cm)	Matrix chroma: 1-3 Few / no mottles Low / intermediate OM Non-sulphuric	Matrix chroma: 0-2 Many mottles Intermediate OM Seldom sulphuric	Matrix chroma: 0-1 Few / no mottles High OM Often sulphuric
Soil Depth (40cm – 50cm)	Few / many mottles Matrix chroma: 0-2	Many mottles Matrix chroma: 0-2	No / few mottles Matrix chroma: 0-1
Vegetation	Predominantly grass species	Predominantly sedges and grasses	Predominantly reeds and sedges

Vegetation distribution within wetlands is very closely linked to the flooding regime. Terrestrial plants are not tolerant of flooding and saturation within the root zone for periods long enough to cause anaerobic conditions, and are thus found on higher ground. The distribution of wetland plants is related to their tolerance of different flooding conditions, and their distribution within a system can be used as an indication of the wetness of an area.

Wetland plants are divided into 5 categories based on their expected frequency of occurrence in wetlands. These groups are:

- **Obligate Wetland Plants** - occur almost always in wetlands under natural conditions (>99% of occurrences);
- **Facultative Wetland Plants** - usually occur in wetlands but can occasionally be found on dry land (67-99% of occurrences);
- **Facultative Plants** - equally likely to grow in wetlands and non-wetlands (34-66% of occurrences);
- **Facultative Upland/Dry-land Plants** - usually occur outside of wetlands but occasionally found in wetlands (1-34% of occurrences); and

- **Obligate Upland/Dry-land Plants** - occur almost always outside of wetlands under natural conditions (<1% of occurrences).

Typically, indicators of soil wetness based on soil morphology correspond closely with vegetation distribution, since hydrology affects soils and vegetation in systematic and predictable ways. However, in systems where the hydrological regime has been modified due to human activities, vegetation distribution will not vary systematically with soil morphology. The response of vegetation to alteration of hydrological conditions is rapid (months/years), whereas the response of soil morphology to such alteration is slow (centuries). Therefore, the lowering of the water table or reduction of surface flows, may lead to rapid establishment of terrestrial vegetation, whereas the soil morphology will retain indicators of wetness for a lengthy period.

For this reason, soil morphology forms the basis of wetland delineation nationally, following international protocols, mainly because it provides a long-term indication of the “natural” hydrological regime. However, it is important to note that where soil wetness indicators cannot be used to identify the current hydrological conditions either through extensive disturbance or through certain soil types that do not retain clear redoximorphic features, the terrain and vegetation indicators will have to be used.

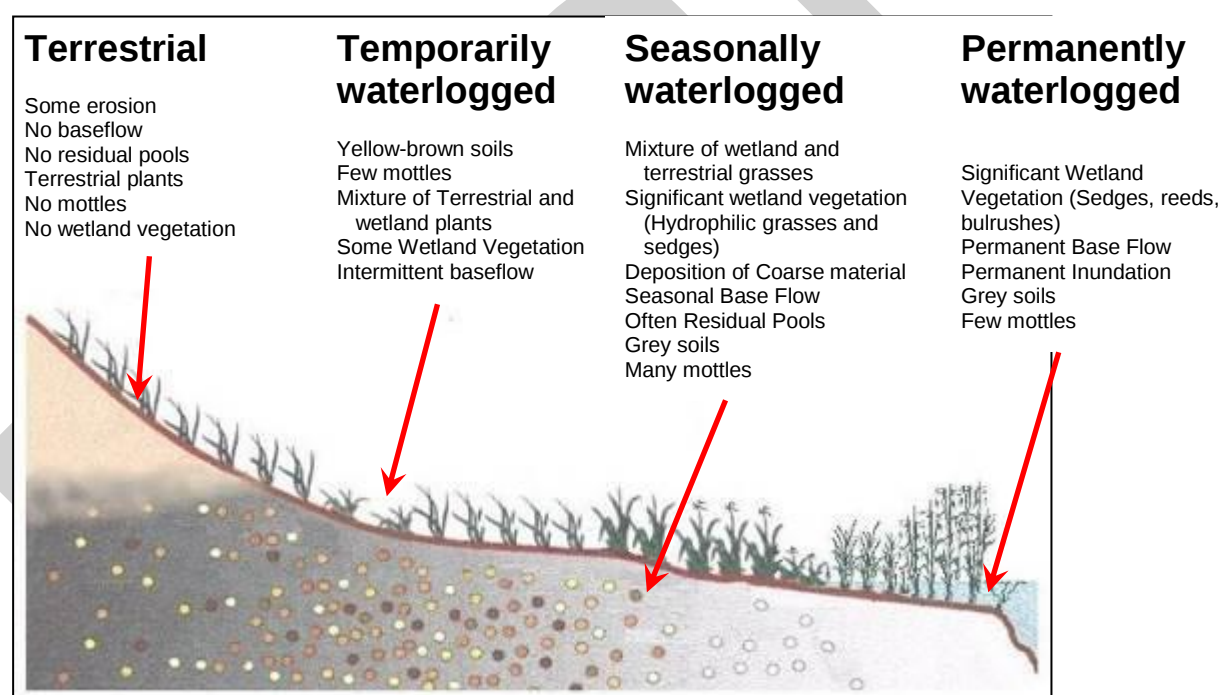


Figure 2: Cross section through a wetland, indicating how the soil wetness and vegetation indicators change along a gradient of decreasing wetness, from the middle to the edge of the wetland. (Reproduced from Kotze (1996), DWAF Guidelines)

4.2 Wetland Classification

Any features meeting the criteria above within the study area will be delineated and classified using the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems hereafter referred to as the “Classification System” (Ollis et. al., 2013). A summary of Levels 1 to 4 of the classification system are discussed further below.

Inland wetland systems (non-coastal) are ecosystems that have no existing connection to the ocean which are inundated or saturated with water, either permanently or periodically (Ollis et. al., 2013). Inland wetland systems were divided into four levels by the Freshwater Consulting Group in 2009 and revised in 2013. Level 1 describes the connectivity of the system to the ocean, level 2 the regional setting (eco-region), level 3 the landscape setting, level 4A the hydro-geomorphic (HGM) type and level 4B the longitudinal zonation.

The level 3 classification has been divided into four landscape units. These are:

- a) **Slope** – located on the side of a mountain, hill or valley that is steeper than lowland or upland floodplain zones.
- b) **Valley Floor** – gently sloping lowest surface of a valley, excluding mountain headwater zones.
- c) **Plain** – extensive area of low relief. Different from valley floors in that they do not lie between two side slopes, characteristic of lowland or upland floodplains.
- d) **Bench** (hilltop/saddle/shelf) - an area of mostly level or nearly level high ground, including hilltops/crests, saddles and shelves/terraces/ledges.

Level 4 HGM types (which is commonly used to describe a specific wetland type) have been divided into 8 units. These are described as follows:

- **Channel** (river, including the banks) - an open conduit with clearly defined margins that (i) continuously or periodically contains flowing water. Dominant water sources include concentrated surface flow from upstream channels and tributaries, diffuse surface flow or interflow, and/or groundwater flow.
- **Channelled valley-bottom wetland** - a mostly flat valley-bottom wetland dissected by and typically elevated above a channel (see channel). Dominant water inputs to these areas are typically from the channel, either as surface flow resulting from overtopping of the channel bank/s or as interflow, or from adjacent valley-side slopes (as overland flow or interflow).
- **Unchannelled valley-bottom wetland** - a mostly flat valley-bottom wetland area without a major channel running through it, characterised by an absence of distinct channel banks and the prevalence of diffuse flows, even during and after high rainfall events.
- **Floodplain wetland** - the mostly flat or gently sloping wetland area adjacent to and formed by a Lowland or Upland Floodplain river, and subject to periodic inundation by overtopping of the channel bank.
- **Depression** - a landform with closed elevation contours that increases in depth from the perimeter to a central area of greatest depth, and within which water typically accumulates. Dominant water sources are precipitation, ground water discharge, interflow and (diffuse or concentrated) overland flow.
- **Flat** - a near-level wetland area (i.e. with little or no relief) with little or no gradient, situated on a plain or a bench in terms of landscape setting. The primary source of water is precipitation.
- **Hillslope seep** - a wetland area located on (gentle to steep) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope.

- **Valley head seep** - a gently-sloping, typically concave wetland area located on a valley floor at the head of a drainage line, with water inputs mainly from subsurface flow.

Any of the above mentioned wetland forms may occur within the study area. The types of wetlands identified by the study are addressed later in the report.

4.3 Wetland Health Assessment

For the purposes of this study, wetland health is defined as a measure of the deviation of a wetland from its natural or reference condition (**Macfarlane et al., 2009**) and is designed to provide a rapid assessment of the present ecological status of a wetland.

The health of a wetland from an ecological perspective is generally dependent on the hydrological and geomorphological health of the wetland as well as the state of the vegetation, and these three components are intimately linked. Thus, when describing wetland health, it is beneficial to discuss the hydrological, geomorphological and ecological health of the wetland separately and then explain how these three components are linked.

In South Africa, the WET-Health tool (**Macfarlane et al., 2009**) has been developed to assess wetland health. WET-Health assesses the impacts of human activities on three components of wetland health; hydrology, geomorphology and vegetation. These components are assessed separately to produce three scores which indicate how much the wetland deviates from the natural reference condition.

WET-Health uses a method that calculates the magnitude of an impact of an activity as the product of the extent of the impact and the intensity of the impact. The magnitude of impact scores for different activities is combined in a structured way to produce an overall magnitude of impact score for hydrology, geomorphology and vegetation.

4.4 Wetland Ecosystem Services Assessment

Wetlands are among the most globally threatened and important ecosystems, providing a number of important ecosystem goods and services to society (Millennium Ecosystem Assessment, 2005). **Table 3** below lists the common direct and indirect ecosystem goods and services typically provided by South African wetlands.

Table 2: Table of the wetland functions included in WET-EcoServices (Kotze et al., 2009)

Ecosystem services supplied by wetlands	Indirect benefits	Hydro-geochemical benefits	Flood attenuation	
			Stream flow regulation	
			Water quality enhancement benefits	Sediment trapping
				Phosphate assimilation
				Nitrate assimilation
				Toxicant assimilation
				Erosion control
		Carbon storage		
	Biodiversity maintenance			
	Direct benefits	Provision of water for human use		
		Provision of harvestable resources ²		
		Provision of cultivated foods		
		Cultural significance		
		Tourism and recreation		
		Education and research		

² Many different resources may be derived from wetlands, including the following:

- Grazing for livestock;
- Plants for crafts and construction;
- Food, with fish being particularly important; and
- Medicines

In environmental decision making worldwide it has become important to determine the level and importance of the Goods and Services provided by individual ecosystems under threat; in order to evaluate the importance of said systems to society. Within the South African context the WET-EcoServices tool developed by **Kotze et al. (2009)** has been designed to rapidly assess the ecosystem services of individual wetlands in South Africa.

WET-EcoServices assesses a wide range of ecosystem services based on a range of wetland characteristics that are likely to affect the extent to which the wetland modifies flow and alters biogeochemical processes. The assessment is undertaken by determining the likely "effectiveness" or ability of a wetland to deliver an ecosystem service as well as providing a measure of the extent to which the wetland is delivering an ecosystem service referred to as "opportunity".

5 METHODS

5.1 Wetland Delineation

The outer temporary boundaries of the wetlands onsite were delineated using the method contained within the DWAF guideline 'A practical field procedure for the identification and delineation of wetlands and riparian areas' (**DWAF, 2005**). This guideline document stipulates

that consideration be given to four specific wetland indicators required to determine the outer edge of the temporary boundary of a wetland.

These indicators are:

- **Terrain Unit** - identify those parts of the landscape where wetlands are most likely to occur e.g. valley bottoms and low lying areas.
- **Soil Form** - identify the soil forms associated with prolonged and frequent saturation.
- **Soil Wetness** - identify the soil morphological "signatures" that develop in soils characterised by prolonged and frequent saturation.
- **Vegetation** - identify the presence of 'hydrophylic and hydrophytic vegetation associated with frequently saturated soils.

In practice, the soil wetness indicator is the most important indicator for determining the outer boundary of wetlands and the other three indicators are better used in a confirmatory role. This is mainly due to the fact that soil wetness indicators remain in wetland soils, even if they are degraded or desiccated, thereby providing an indication of the natural extent of wetlands.

In this study the presence of soil wetness indicators within the top 50 cm of the soil profile were utilised to delineate the outer temporary wetland boundary. The vegetation indicator was used to supplement the findings.

Soil sampling was carried out along transects across the valley bottom and low-lying areas onsite. At each sample point, soil was sampled at 0-10 cm and 40-50 cm. The value and chroma were recorded for each sample according to the 7.5YR Munsell Soil Colour Chart, as well as the degree and colour of mottling. Vegetation sampling was carried out in a 5m radius surrounding each of the soil sample sites.

A conventional handheld Global Positioning System (GPS) was used to record the location of the soil sampling points along each transect. The GPS points were then imported into ArcGIS 10 and the outer temporary wetland boundary along each transect determined. The boundary points were then combined to form a single continuous boundary using contour information, aerial photography and knowledge on the hydraulic conductivity of the soils. The GPS is expected to be accurate up to 3 metres.

5.2 Wetland Classification

Any features meeting this criteria within the study area were delineated and classified using the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems hereafter referred to as the "Classification System" (Ollis et. al., 2013). This was achieved by observing the topographical and geomorphic setting, and the general hydrology of the wetland units.

5.3 Wetland Health Description and Present Ecological Status (PES)

The current (pre-development) and post-development health of the affected wetland systems was determined using the *WET-Health* tool developed by **Macfarlane et al. (2009)**. A Level 1 assessment was utilised in accordance with the requirements set out by DWA.

Firstly, the wetland identified onsite was classified into individual hydro-geomorphic units as per the proposed National Wetland Classification System (**SANBI, 2009**). Thereafter, specific information required to be entered into the predesigned Level 1 WET-Health spread sheet was gathered during the site visit and desktop analysis using ArcView GIS 10.

Once all the required information was entered into the spread sheet, the magnitude of the all the impacts on the hydrological, geomorphological and vegetation health of the wetland was calculated. The WET-Health tool scores wetland health for each component of health on a scale of 0 (no discernible modifications) to 10 (critically impacted), which is subsequently translated into one of six PES Categories ranging from A to F, with A representing completely unmodified and F representing modifications that have reached a critical level (**Macfarlane et al., 2009**) (**Table 3**).

Changes in hydrology are evaluated by assessing:

- (i) changes to water input volumes and pattern (effects on the alteration of the wetland's catchment), and
- (ii) changes to water distribution and retention patterns of water passing through the wetland (effects of onsite alterations) (**Macfarlane et al., 2009**).

Water inputs to a wetland from the catchment are considered in terms of the quantity of water inputs and the size of the flood peaks which are combined to provide an indication of the impacts of catchment activities on wetland water inputs.

Present geomorphic state is assessed by evaluating:

- (i) Activities and impacts which are known to commonly influence geomorphic process (i.e. activities that alter geomorphic processes), and
- (ii) Direct on-site impacts which provide clues to changes to geomorphic processes (indicators of geomorphic change) (**Macfarlane et al., 2009**).

Present vegetation state is assessed by evaluating the degree to which current vegetation composition has deviated from the perceived natural or reference condition (**Macfarlane et al., 2009**). The assessment of the deviation is based on what '*should not be there*' rather than on the composition of indigenous plants that '*should be there*' (**Macfarlane et al., 2009**). The evaluation is simplified by defining '*disturbance classes*' which represent areas of similar vegetation characteristics and disturbance history (**Macfarlane et al., 2009**).

The overall health was determined by combining the three health scores into one health value. This is calculated from the formula that weighs hydrology higher than geomorphology and vegetation where the hydrology score is multiplied by 3 while the other scores are multiplied by 2 and the sum of the three is divided by 7. The anticipated trajectory of change in hydrological, geomorphological and ecological health is then calculated.

Table 3: Impact scores and categories of Present State used by WET-Health for describing the integrity of wetlands (Source: Macfarlane et al., 2009)

Description	Impact Score Range	PES Category
Unmodified , natural.	0-0.9	A
Largely natural with few modifications. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place.	1-1.9	B
Moderately modified . A moderate change in ecosystem processes and loss of natural habitats has taken place but the natural habitat remains predominantly intact.	2-3.9	C
Largely modified . A large change in ecosystem processes and loss of natural habitat and biota and has occurred.	4-5.9	D
Seriously modified . The change in ecosystem processes and loss of natural habitat and biota is great but some remaining natural habitat features are still recognizable.	6-7.9	E
Critically modified . Modifications have reached a critical level and the ecosystem processes have been modified completely with an almost complete loss of natural habitat and biota.	8-10	F

5.4 Wetland Ecosystem Services Assessment

The current (pre-development) and post-development value of the affected wetland units was determined using the *WET-EcoServices* tool developed by **Kotze et al. (2009)**. Specific information required to be entered into the predesigned *WET-EcoServices* spread sheet was gathered during the field visit and during a desktop analysis using ArcView GIS 10. Once all the required information was entered into the spread sheet, the effectiveness, opportunity and overall functional scores for each the ecosystem services provided by the wetland units was generated. Each overall functional score was then rated according to the rating scale in **Table 5** below.

Table 4: Ranking scale for wetland services based on WET-EcoServices scores

Score	0-0.8	0.9-1.6	1.7-2.4	2.5-3.2	3.3-4.0
Level at which a service is being provided	Low	Moderately Low	Intermediate	Moderately High	High

Thereafter, the overall functional scores were contextualised in light of the size of the wetland and the wetland's catchment to provide an indication of the importance of the wetland systems.

The overall importance of the surface water management and water quality enhancement services was determined by combining the *WET-EcoServices* 'level of service' score with the size of the wetland and its catchment. The individual size of the wetland units and their catchments are rated separately on a scale of 1-5 (**Table 6**) and averaged to provide a wetland: catchment size ratio (**Table 7**). The wetland: catchment size rating is then combined with the 'level of service' rating to provide an overall importance rating (**Table 8**). The carbon storage score is considered independent of catchment size and therefore only combined with wetland size (**Table 9**). The biodiversity maintenance score is considered

independent of wetland and catchment size. Thus, for biodiversity, the WET-EcoServices score is considered to give a true reflection of the importance score.

Table 5: Wetland and catchment size rating categories

Score	Rating	Wetland Size	Catchment Size
1	Small	<1ha	<10ha
2	Medium-Small	1-5ha	10-100ha
3	Medium	5-10ha	100-1000ha
4	Medium-Large	10-20ha	1000-10000ha
5	Large	>20ha	>100 000ha

Table 6: Ranking scale for the Wetland: catchment size ratio scores

		Catchment Size				
		Low (1)	Moderately -low (2)	Intermediate (3)	Moderately-high (4)	High (5)
Wetland Size	Small (1)	1	1.5	2	2.5	3
	Medium-small (2)	1.5	2	2.5	3	3.5
	Moderate (3)	2	2.5	3	3.5	4
	Medium-large (4)	2.5	3	3.5	4	4.5
	Large (5)	3	3.5	4	4.5	5

Table 7: Ranking scale for the importance of the surface water and water quality enhancement services

Score	2-3	3.5-5	5.5-6.5	7-8.5	9-10
Importance Ratings	Low	Moderately Low	Intermediate	Moderately High	High

Table 8: Ranking scale for the importance of carbon storage services

Score	1-1.5	1.6-2.5	2.6-3.4	3.5-4.4	4.5-5
Importance Ratings	Low	Moderately Low	Intermediate	Moderately High	High

5.5 Wetland Ecological Importance and Sensitivity (EIS)

The *ecological importance* of a water resource is an expression of its importance to the maintenance of ecological diversity and functioning on local and wider scales (DWAF, 1999). While the *ecological sensitivity* refers to a system's ability to resist disturbance and its capability to recover from disturbance once it has occurred (DWAF, 1999). The ecological importance and sensitivity (EIS) can be calculated according to the determinants listed in **Table 10** below and attributing a score¹ to each. Once calculated the EIS category (EISC) can be determined (**Table 11**). The category ranges from A to D, with A being Very High and D being Low/Marginal.

¹ **Score guideline:** Very high = 4; High = 3; Moderate = 2; Marginal/Low = 1; None = 0

Confidence rating: Very high confidence = 4; High confidence = 3; Moderate confidence = 2; Marginal/low confidence = 1

Table 9: EIS Score sheet (after DWAF, 1999)

Determinant	Score	Confidence
<i>Primary Determinants</i>		
1. Rare & Endangered Species		
2. Populations of Unique Species		
3. Species/taxon Richness		
4. Diversity of Habitat Types or Features		
5. Migration route/breeding and feeding site for wetland species		
6. Sensitivity to Changes in the Natural Hydrological Regime		
7. Sensitivity to Water Quality Changes		
8. Flood Storage, Energy Dissipation & Particulate/Element Removal		
<i>Modifying Determinants</i>		
9. Protected Status		
10. Ecological Integrity		
TOTAL		
MEDIAN		
OVERALL ECOLOGICAL SENSITIVITY AND IMPORTANCE		

Table 10: Environmental Importance and Sensitivity categories for biotic and habitat determinants (after DWAF, 1999)

Ecological Importance and Sensitivity Category (EIS)	Range of Median	Recommended Ecological Management Class
<i>Very high</i> Wetlands that are considered ecologically important and sensitive on a national or even international level.	>3 and ≤4	A
<i>High</i> Wetlands that are considered to be ecologically important and sensitive.	>2 and ≤3	B
<i>Moderate</i> Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale.	>1 and ≤2	C
<i>Low/marginal</i> Wetlands that are not ecologically important and sensitive at any scale.	>0 and ≤1	D

6 RESULTS AND DISCUSSION: WETLAND DELINEATION, CLASSIFICATION AND DESCRIPTION

6.1 Assumptions and Important Notes

This study has focused on the delineation of wetlands and wetland boundaries for the Harbour West area of Richards Bay Port. A full delineation and mapping of all wetlands in the wider area has thus not been undertaken.

Large portions of the site have been transformed by anthropogenic activities (road creation, disturbance etc.), as such secondary wetland indicators, at times, guided the delineation of the current wetland boundaries.

6.2 Wetland Units

A wetland delineation assessment was undertaken for the Harbour West area of Richards Bay Port and an initial desktop identification of potentially wet areas indicated a potential large wetland system along the northern boundary of the site. A map of the final wetland delineation is provided in **Figure 7**.

Two (2) wetland units are located within the study site and both are classified as Unchannelled Valley Bottom wetlands

6.3 Wetland Delineation Descriptions

Two HGM units were identified and these system are Unchannelled Valley Bottoms that appear to have been extensively impacted upon by previous activities on the site. The wetland is currently quite dry, but still shows distinct wetland characteristics, with mottles indicating that it is a seasonal wetland, and is not permanently saturated (see **Figure 3** below).



Figure 3: Soil from a depth of 40-50 cm showing wetland indicators.

HGM unit 1 has been extensively impacted upon by the creation of railway lines and roads across the wetland at various points (see **Figure 4** below). The wetland drains from north to south, and includes a portion of swamp forest along its eastern edge. Additionally, this wetland unit ends as it meets the mangrove system to the south (see **Figure 5** below). The system has also been impacted upon by the construction of the truckstop area and permitting office, which appear to have been built within the wetland system. The wetland is dominated by large reed beds, with some forest along its boundary as mentioned above.



Figure 4: Numerous paths and roads have been cut into the wetland system and have thus caused extensive fragmentation of the system.



Figure 5: Ecotone between wetland and mangrove system.

HGM unit 2 is adjacent to the mangrove system along the southern and eastern portion of the site, and appears to drain directly into the mangrove edge (see **Figure 6** below). This wetland is dominated by sedges, and is more permanent than HGM unit 1, with wetness still very evident during this dry period.



Figure 6: Sedge dominated wetland adjacent to the mangrove system.

Both wetland system have been heavily impacted upon by encroachment, and other portions of the site appear to historically have been wetland system, but have been degraded and in filled through the deposition of dredged material from the harbour.

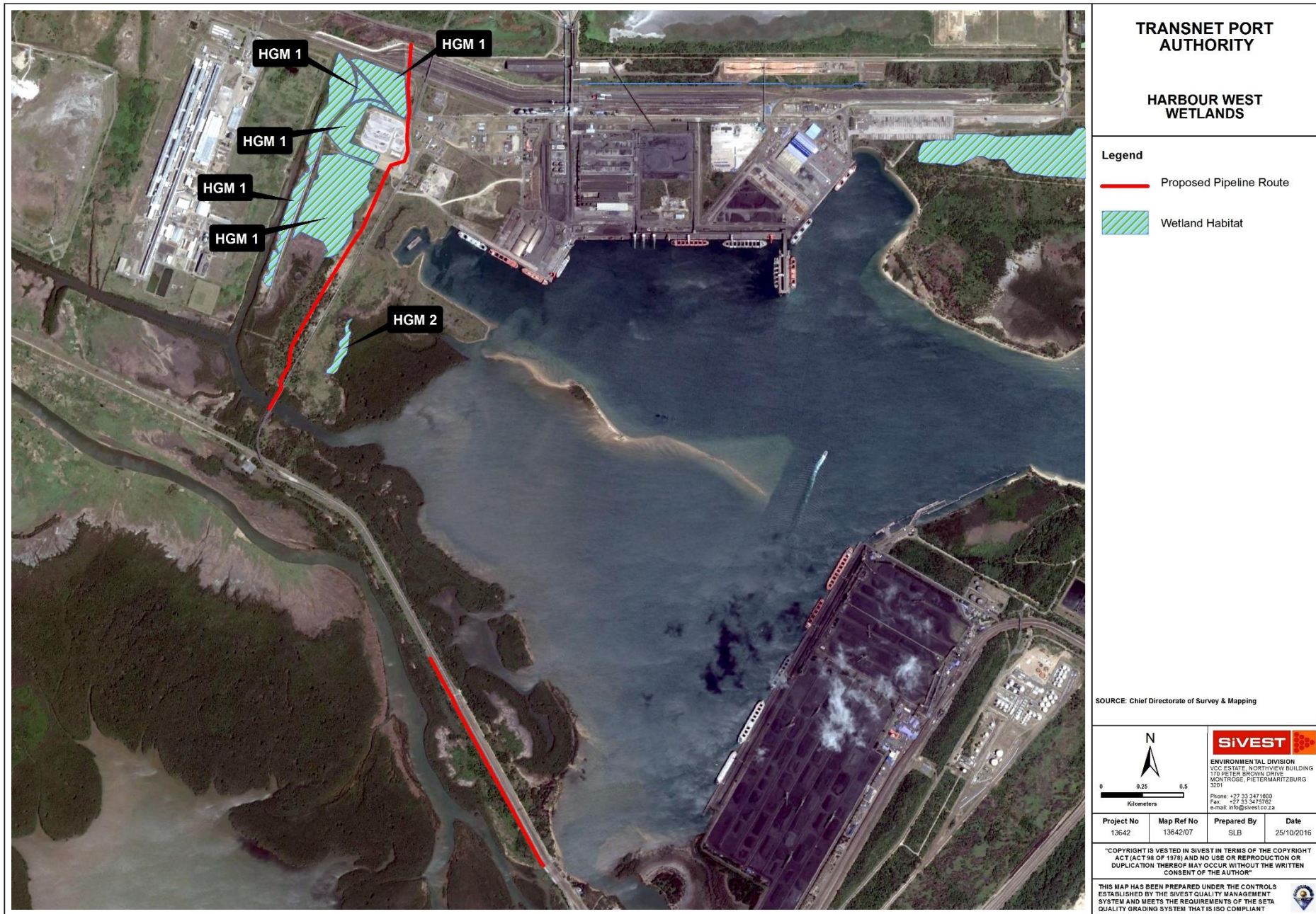


Figure 7: Wetland delineation aerial map.

7 RESULTS: WETLAND HEALTH (PES)

In order to predict the potential impacts that a particular activity will have on a wetland system, it is important to first obtain a clear understanding of the current baseline health of the affected wetland.

Thereafter, the effect of potential impacts i.e. the degree of change in a system, can be more scientifically and pragmatically assessed. A summary of the present hydrological, geomorphic and vegetation states and associated impacts are tabularised below:

Table 11: Present hydrological, geomorphic and vegetation state for the HGM units

Unit	Present Hydrological State and Associated Impacts	Present Geomorphic State and Associated Impacts	Present Vegetation State and Associated Impacts
1	The units hydrological regime is relatively intact, with large scale impacts moderately prevalent.	- Increase in sediment yield due to disturbance in the wetland is moderate - Incision, erosion and excavations have all impacted on the wetland's health	- Removal of indigenous vegetation by livestock - Alien species infestation (low prevalence)
2	The units hydrological regime is relatively intact, with large scale impacts moderately prevalent.	- Increase in sediment yield due to disturbance in the wetland is moderate - Incision, erosion and excavations have all impacted on the wetland's health	- Removal of indigenous vegetation by livestock - Alien species infestation (low prevalence)

The formal health assessment of the wetland units within 500m of the project site indicates that the wetland units are **moderately modified** resulting from past and current land uses and activities. A summary of the Present Ecological Status (PES) based on results from the WET-Health Tool is provided in **Table 12** below.

Table 12: WET-Health Score

Unit	MODULE			Combined Impact Score	PES Category
	Hydrology Impact Score and Class	Geomorphology Impact Score and Class	Vegetation Impact Score and Class		
1	3.6 (C)	3.8 (C)	2.3 (C)	3.28	C (Moderately Modified)
2	3.4 (C)	2.6 (C)	2.1 (C)	2.80	C (Moderately Modified)

8 RESULTS: WETLAND ECO-SERVICES AND IMPORTANCE

An understanding of a wetland's health does not necessarily give an indication of the wetland's value, although health and value are inextricably linked. For this reason, it is important to undertake an assessment of the importance of the ecosystem services provided by a wetland unit to gain an understanding of the conservation value of said wetland unit.

8.1 Wetland Ecosystem Services

The wetland units were assessed as being of **moderately high** to **intermediate** importance in terms of ecosystem service provision. The ability of the wetlands to trap additional sediment is of high importance, while its tourism and cultural services are of low importance. The wetlands ability to attenuate floods and stream flow are generally considered of intermediate importance. Similarly, the ability of the wetlands to store carbon, and maintain biodiversity is of intermediate importance. The phosphate, Nitrate and toxicant removal ability is of moderately high importance.

8.2 Wetland EIS Scores

During the site visit, minimal faunal activity was noted, however the wetlands within the harbour region are a haven for a number of threatened bird species and the possibility of wetland faunal and avi-faunal species being present at different times of the day and season is high. The confidence levels for the assessment were generally moderate. The EIS score, based on the **DWAF (1999)** scoring method, are summarised in **Table 13**, below. The assessed units both fall into an EIS **Category B**, which corresponds to a High importance and sensitivity in terms of the wetland.

Table 13: EIS Scores for the assessed wetland units

PRIMARY DETERMINANTS	HGM UNIT 1		HGM UNIT 2	
	Score	Confidence	Score	Confidence
1. Rare & Endangered Species	0	2	0	2
2. Populations of Unique Species	3	2	3	2
3. Species/taxon Richness	2	3	2	3
4. Diversity of Habitat Types or Features	2	3	2	3
5. Migration route/breeding and feeding site for wetland species	3	3	3	3
6. Sensitivity to Changes in the Natural Hydrological Regime	3	3	3	3
7. Sensitivity to Water Quality Changes	3	3	3	3
8. Flood Storage, Energy Dissipation & Particulate/Element Removal	2	3	2	3
MODIFYING DETERMINANTS				
9. Protected Status	3	4	3	4
10. Ecological Integrity	2	3	2	3
TOTAL	23	29	23	29
MEDIAN	2.5	3	2.5	3
OVERALL ECOLOGICAL SENSITIVITY AND IMPORTANCE	B		B	

9 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

The following potential impacts and mitigations are predicted based on the layout for the proposed project.

9.1 Stormwater Runoff Impacts

9.1.1 Construction phase impacts

During the construction phase, portions of the catchment supplementing the wetland units will be cleared for construction. The removal of the current vegetation will temporarily increase surface runoff throughout the cleared site and increase the erosion potential of the soils on site. If stormwater runoff and erosion control measures are not implemented during the construction phase, the exposure of the bare soils to the elements will likely lead to the erosion of the soils on site. This is especially true during heavy rainfall events, which will encourage the formation of rills and dongas -thus concentrating flow down-slope. The concentration of runoff down-slope within rills and dongas will increase the likelihood of the erosion and/or sedimentation of the wetlands.

The negative effects of erosion and scouring on the wetlands will include; increased concentration and canalisation of flow within the wetlands, the reduction in diffuse flow and the extent of wetness within the wetland, the alteration of the vegetation communities due to decreased wetness and erosion disturbances and ultimately the reduction in the wetland's functionality and health. In addition to erosion within the wetland, sediment plumes/fans are likely to impinge on the wetland area if no erosion and stormwater control measures are implemented. The unnatural sedimentation of the wetland area will disturb the in wetland vegetation and encourage the proliferation of pioneers and alien invasive species ultimately reducing the health and functionality of the wetland.

Table 14. Impact Assessment of Stormwater Impacts (during Construction) before Mitigation

Criteria	Description	Score
Extent	The stormwater impacts are likely to have a Local impact, as the catchments found with the proposed development property feed directly into a system that enters Richards Bay Harbour.	2
Duration	The construction phase stormwater impacts are likely to be medium-term.	2
Intensity	Given the nature of the wetlands on site, it is likely that the intensity of excess stormwater entering these systems will be moderate.	2
Probability of Occurrence	There is a high probability that construction will lead to stormwater impacts during construction.	3
Significance of Impact	The impact of construction phase stormwater on site is likely to have a high negative impact.	-9

Recommended mitigation measures:

To reduce the erosion risks on site during the construction phase, stormwater and erosion control measures must be implemented by the contractor to ensure that the erosion and sedimentation of the

wetlands and streams do not occur during the establishment phase. The recommended stormwater and erosion control measures include:

- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected clearing activities should be put on hold. In this regard, the contractor must be aware of weather forecasts.
- If possible, construction activities should be scheduled to minimise the duration of exposure of bare soils on site, especially steep slopes. The full extent of works shall NOT be stripped of vegetation prior to commencing other activities.
- A row of silt fences and sandbags must be established along the wetland buffer edge prior to construction commencing. These silt fences and sandbags must be regularly checked and maintained and should only be removed once vegetation has successfully colonised the embankments.
- Any steep or large embankments expected to be exposed during the 'rainy' months should either be armoured with fascine like structures/silt fences or grassed immediately with strip sods established at regular intervals (50-100 cm) down the bank with hydro-seeding between the strip sods.
- Where the bare surface of platforms slope towards the edge of an embankment, silt fences and sandbags must be established along the crest of the embankment. If preferential flow routes on the sloped site occur, these flow routes must be intercepted with a series of sandbags.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area.
- It is important that all of the above-listed mitigation measures are costed for in the construction phase financial planning and budget so that the contractor and/or developer cannot give financial budget constraints as reasons for non-compliance. Proof of financial provision of these mitigation measures must be submitted to the ECO prior to construction commencing.

Table 15. Impact Assessment of Stormwater Impacts (during Construction) after Mitigation

Criteria	Description	Score
Extent	The stormwater impacts are likely to have a site impact.	1
Duration	The construction phase stormwater impacts are likely to be short-term should mitigation be instituted correctly.	1
Intensity	Mitigation of stormwater impacts should reduce the intensity to a moderate level.	2
Probability of Occurrence	It is improbable that construction will lead to stormwater impacts during construction, should mitigation measures be implemented.	1
Significance of Impact	Should mitigation measures be implemented correctly, the impact of the stormwater during construction on site is likely to have a low negative impact.	-5

9.1.2 Operational phase impacts

The pipeline is expected to have no impact during the operational phase if rehabilitation of the site is undertaken correctly.

9.2 General Recommendations

Further to the above specific recommendations related to the specific impact of stormwater control, the following general recommendations are suggested:

- It is recommended that no cement mixing take place on site. Ready mix concrete should be used instead.
- Contaminated water must be contained & disposed of offsite at an approved landfill.
- If oil spills occur the contaminated soil should be disposed of at an approved landfill site.
- No impacts on quality of surface and ground water should be allowed.
- Chemical toilets shall not be placed on steep areas and areas with intact vegetation. Exact location of toilets to be approved with the Engineer and ECO prior to construction and must be located at least 50 meters away from watercourses.
- Topsoil and subsoil seepage shall be protected from contamination
- To prevent storm water damage, the increase in storm water run-off resulting from clearing activities must be estimated and a drainage system assessed accordingly. A drainage plan must be submitted for approval and must include the location and design criteria of any temporary stream crossings (siting, proposed measures etc.). Serious financial and environmental impacts can be caused by unmanaged storm water.
- The extent of dewatering measures in poorly drained areas must be finalised by the designer in discussion with the geotechnical representative as deemed necessary during the construction programme (and are subject to approval under a WULA from DWS).
- The time that stripped areas are left open to exposure should be minimised wherever possible.
- Care should be taken to ensure that lead times are not excessive. The stripping of vegetation directly preceding activities on site greatly reduce the risk of erosion.
- Wind screening and stormwater control should be undertaken to prevent soil loss from the site.
- Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set up phase i.e. topsoil is to be conserved while providing access to the site and setting up the camp.
- No impediment to the natural water flow other than approved erosion control works is permitted.
- Stormwater runoff must be appropriately channeled and discharged in a safe manner thus reducing environmental impacts to the vegetation and aquatic communities.
- Solid waste is to be stored onsite in an appropriate manner until it can be disposed of at the nearest identified waste fill site
- Material spoiling shall not take place on site. Any excavated materials for the pipeline shall be taken out of the watercourse immediately.
- Location for spoiling of excavated material shall be confirmed with the Engineer and ECO prior to construction.
- Contractor is to exercise strict care in the disposal of construction waste, with proof of disposal at an approved site provided after off-loading each waste load and this logged/registered within the environmental file that must be maintained at the contractor's camp for the duration of construction.

10 CONCLUSION AND RECOMMENDATIONS

SiVEST were appointed by Transnet National Ports Authority to undertake a specialist wetland assessment for the proposed potable water pipeline that will run through the Harbour West Site within Richards Bay Port, KwaZulu-Natal.

An examination of the study area from a desktop perspective indicated the potential presence of extensive wetland habitat along the western boundary of the site. On-site investigation of this area found a seasonal unchannelled valley bottom wetland that has been historically impacted upon by infilling and fragmentation, but is still reasonably healthy, and has high value considering the current state of wetlands within the harbour, and the use of the site by various bird species.

The specialist notes that the proposed pipeline will not impact the wetland directly, but is planned to run in close proximity to HGM unit 1 in some areas. A number of recommendations are outlined above to mitigate any impacts that construction is likely to impart on the wetlands on site.

The construction of the pipeline in close proximity to the wetland area requires Environmental Authorisation from the relevant Competent Authority. An application for a water use licence will also need to be sought from the Department of Water Affairs.

11 REFERENCES

- Coetzee, M. A. S. 1995. Water Pollution in South Africa: It's Impacts on Wetland Biota; In Cowan, G. I. (ed). *Wetlands of South Africa*. Department of Environmental Affairs and Tourism (DEAT), Pretoria. .
- Collins, N. B. 2005. Wetlands: The basics and some more. Free State Department of Tourism, Environmental and Economic Affairs.
- Department of Environmental Affairs and Tourism. 2001. *Environmental Potential Atlas for South Africa*.
- DWAF (2005). 'A practical field procedure for the identification and delineation of wetlands and riparian areas'.
- Fey, M. (2010). Soils of South Africa. Cambridge University Press.
- Kotze, D., Marneweck, G., Batchelor, A., Lindley, D. and Collins, N. 2009. WET-EcoServices: A technique for rapidly assessing ecosystem services provided by wetlands. *Wetland Management Series*. Water Research Commission Report TT 339/09.
- Macfarlane, D., Kotze, D., Ellery, W., Walters, D., Koopman, V., Goodman, P. and Goge, M. 2009. WET-Health: A technique for rapidly assessing wetland health. *Wetland Management Series*. Water Research Commission Report TT 340/09.
- Mucina, L. and Rutherford, M. C. (eds) 2006. The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia 19*. South African National Biodiversity Institute, Pretoria.
- Ollis, D.J., Snaddon, C.D., Job, N.M. & Mbona, N. 2013. Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. *SANBI Biodiversity Series 22*. South African National Biodiversity Institute, Pretoria.
- SANBI (2009). Further Development of a Proposed National Wetland Classification System for South Africa. Primary Project Report. Prepared by the Freshwater Consulting Group (FCG) for the South African National Biodiversity Institute (SANBI).
- Soil Classification Working Group. 1991. Soil Classification: a taxonomic system for South Africa. ARC-Institute for Soil, Climate and Water, Pretoria.



SIVEST

VCC Estate, North View Building,
170 Peter Brown Drive, Montrose, Pietermaritzburg, 3201
PO Box 707, Msunduzi, 3231
South Africa

Tel + 27 33 347 1600

Fax +27 33 347 5762

Email info@sivest.co.za

www.sivest.co.za

Contact Person: Stephen Burton
Cell No.: 083 795 2804
Email: stephenb@sivest.co.za

CONTRACTOR ENVIRONMENTAL AND SUSTAINABILITY SPECIFICATION GUIDELINES

Document number	TRN-IMS-GRP-GDL-014.4
Version number	3.0
Classification	Unclassified
Effective date	01 October 2023
Review date	30 September 2028

SUMMARY VERSION CONTROL

VERSION NO.	NATURE OF AMENDMENT	PAGE NO.	DATE REVISED
3.0	- Addition of reference documents (section 3) - Inclusion of additional definitions - Removal of DEA and replacing it with DFFE - Removal of Transnet EO and replacing with Transnet Environmental Resource (PER) - Inclusion of additional abbreviations - Inclusion of minimum environmental requirements for construction (section 5) - Inclusion of details of site inspections/audits (table 1) - Inclusion of Records Management	6-7 7-10 11 12 12-23 23 45	June 2023

Note: Only latest amendments and/or additions are reflected in italics in the body of the document.

DOCUMENTATION SIGN-OFF SHEET

I, the undersigned hereby approve this procedure.

ROLE	CAPACITY/ FUNCTION	SIGNATURE	DATE
Process Owner:	Senior Specialist: Environmental Risk and Compliance		01/10/2023
Accepts document for adequacy and practicability. Comments:			
Approval Committee:	GM: Corporate Sustainability		01/10/2023
Approves document for use. Comments:			

Type text here

TABLE OF CONTENTS

1. PURPOSE	6
2. APPLICABILITY	6
3. REFERENCE DOCUMENTS	6
4. DEFINITIONS AND ABBREVIATIONS	7
4.1 Definitions	7
4.2 Abbreviations.....	11
5. MINIMUM ENVIRONMENTAL REQUIREMENTS FOR CONSTRUCTION.....	13
5.1 Tender Documents	13
5.2 Project Environmental Specification (PES)	13
5.3 Contractor's Environmental Policy	13
5.4 Contractor's Environmental Management Plan (EMP)	14
5.5 Contractor's Environmental Officer (EO)	16
5.6 Management of Sub-Contractors.....	16
5.7 Pre Site Access Environmental Governance	16
5.8 Safety Data Sheets.....	18
5.9 Environmental Induction	18
5.10 Environmental Method Statements.....	19
5.11 Environmental Occurrences (Incidents)	20
5.12 Environmental Non-Conformances (Defects)	21
5.13 Community Grievances (Public Complaints)	22
5.14 Environmental Inspections and Audits.....	22
5.15 Contractor's Environmental Performance	24
5.16 Site Planning and Establishment	24
5.16.1 Site Layout Plan.....	24
5.16.2 Identification and Establishment of Suitable Access Routes/Roads.....	25
5.16.3 Demarcation of Site Limits	25
5.16.4 Eating Areas	25
5.16.5 Liquid Waste Management.....	25
5.17 Sewage and Sanitation	26
5.18 Waste Management	26
5.19 Workshops, equipment maintenance and storage	31
5.20 Vehicle and Equipment Refueling	31
5.20.1 Stationary/Designated Refueling	31
5.20.2 Mobile Refueling	31

5.21	Spill Response	32
5.22	Spray Painting and Sandblasting	33
5.23	Dust Management	34
5.24	Storm Water and Dewatering Management	35
5.25	Erosion Control	36
5.26	Noise Management	36
5.27	Protection of Heritage Resources	37
5.27.1	Archaeological Sites	37
5.27.2	Graves	37
5.28	Fire Prevention	37
5.29	Water Protection and Management	38
5.30	Protection of Fauna and the collection of firewood	38
5.31	Environmental Awareness Training	39
5.32	Handling and Batching of Concrete and Cement	40
5.33	Stockpiling, Soil Management and Protection of Flora	41
5.34	Traffic Management	42
5.35	Transportation of Materials	42
5.36	Borrow Pits and Quarries	43
5.37	Social and Labour Issues	43
5.38	Energy Management	44
5.39	Handling, Storage and Management of Hazardous Substances	44
5.40	Housekeeping	45
5.41	Rehabilitation	45
5.42	Documentation and Records Management	45
6.	RECORDS	46
7.	ANNEXURES	46

1. PURPOSE

This document describes the minimum requirements for environmental management to which Contractors must comply. This document must be read in conjunction with the Transnet Construction Environmental Management Standard Operating Procedure (CEM SOP).

In this document, unless the context clearly indicates otherwise:

- Words importing any one gender shall include the other gender;
- The singular shall include the plural and vice versa; and
- Any reference in this document to legislation or subordinate legislation is to such legislation or subordinate legislation at the date of promulgation thereof and as amended and/or re-enacted from time to time.

2. APPLICABILITY

This standard applies to Contractors that work on site under the authority of Transnet SOC Ltd.

3. REFERENCE DOCUMENTS

Name	Applicable Section
Constitution of South Africa, Act 108 of 1996	Section 24
National Environmental Management Act, 107 of 1998	Section 2 National Environmental Management Principles
National Water Act, 36 of 1998	Section 164, Permissible Water Use
National Environmental Management: Waste Act, 58 of 2008	Part 1 15 (1) (i) and (2) Part 6 26 (10) (a) and (b) Schedule 3, Defined Wastes Category A: Hazardous Wastes Part 8: Contaminated Land
Environment Conservation Act, 73 of 1989	Section 20
Occupational Health and Safety Act, 85 of 1993	Asbestos Regulations, 2001

Name	Applicable Section
	Government Notice R155 in Government Gazette 23108 of February 2002 General Safety Regulations-Reg. 2 (2) PPE
GNR 326, 7 April 2017 as amended, EIA Regulations	Chapter 15, Appendix 4
Transnet Environmental Risk Management strategy and Framework	2015:42
Environmental Management Systems ISO 14001: 2015	Clause 5, 6, 7, 8, 9 and 10

4. DEFINITIONS AND ABBREVIATIONS

4.1 Definitions

Compliance	Meeting of all the organization's regulatory requirements
Conformance	The action or fact of conforming to this standard and other internal Transnet policies, procedures, guidelines and best practice.
Construction Environmental Management Standard Operating Procedure	Is a document which is used to define how environmental management will be practiced on any construction site under the management of Transnet to ensure that the environment is considered, negative impacts avoided or minimized, and positive impacts are enhanced.
Contractor	The Principal Contractor as engaged by Transnet for infrastructure construction operations, including all sub-contractors appointed by the main contractor of his own volition for the execution of parts of the construction operations; and any other contractor from time to time engaged by Transnet directly in connection with any part of the construction operations which is not a nominated sub-contractor to the Principal Contractor.

Contractor Environmental and Sustainability Specification Guidelines	A set of minimum environmental standards for all Transnet SOC Ltd-managed construction sites.
Environmental Aspect	Element of an organization's activities or products or services that interacts or can interact with the environment.
Environmental Impact	Change to the environment whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.
Environmental Risk	The product of the likelihood and severity of an unforeseen occurrence/incident/aspect and the impact it would have, if realised, on the environment.
Fauna	A group of animals specific to a certain region or time period.
Flora	A group of plants specific to a certain region or time period.
General waste	Waste that does not pose an immediate hazard or threat to health or to the environment; and includes:- (a) domestic waste; (b) building and demolition waste; (c) business waste; (d) inert waste;
Indigenous vegetation	Plants that naturally occur in an area.
Liquid waste	Waste that appear in liquid form such as used oil, grease and/or contaminated water or waste water.

Method statement	A document that describes how the Contractor will apply environmental management measures associated with a particular activity during construction.
Monitoring	Determining the status of a system, a process or an activity
Natural Vegetation	All existing species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on the site.
Responsible Authority	A Responsible Authority, according to the National Water Act 36 of 1998, relates to specific power or authority in respect of water uses that is assigned by the Minister to a Catchment Management Agency or to a Regional Office.
Rehabilitation	Refers to measures that must be put in place to restore the site to its pre-construction or enhanced state, subsequent to construction taking place.
Scope of Work	The construction work for which the Contractor has been appointed in terms of the Contract with Transnet.
Sensitive area	Any area that is denoted as sensitive by this Specification due to its particular attributes, which could include the presence of rare or endangered vegetation, the presence of heritage resources (e.g. archaeological artefact or graves), the presence of a unique natural feature, the presence of a watercourse or water body, the presence of sensitive social receptors etc. As a minimum, habitats that fall under this definition include: mountain catchments, Ramsar wetland sites, coastal shores, estuaries and endangered ecosystems.
Solid waste	All solid waste, including construction debris, chemical waste, excess cement/ concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

Spoil	Excavated material which is unsuitable for re-use as material in the Works or any other use; or is material which is surplus to the requirements of the Works.
Sub -Contractor	is a person or organisation who has a contract with the contractor to: Construct or install part of the contractor's work. Provide a service necessary to provide the works; or Supply plant and materials which the person or organisation has wholly or partly designed specifically for the works.
Temporary Storage	A once-off storage of waste for a period not exceeding 90 days.
Topsoil	Means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility appearance, structure, agricultural potential, fertility and composition of the soil.
Waste	Any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes. Waste or a portion of waste ceases to be a waste only once the waste is, or has been re-used, recycled or recovered.
Wastewater	means water containing waste, or water that has been in contact with waste material
Watercourse	Refers to - a river or spring; a natural channel in which water flows regularly or intermittently;

a wetland, lake or dam into which, or from which, water flows;
and

any collection of water gazetted by the National Water Act, 36 of 1998 as a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

Wetland

Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

4.2 Abbreviations

Acronym	Meaning In Full
CEM SOP	Construction Environmental Management Standard Operating Procedure
CM	Construction Manager
CV	Curriculum Vitae
DEFF	Department of Environment, Forestry and Fisheries
EA	Environmental Authorisation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
CESSG	Contractor Environmental and Sustainability Specification Guidelines
EO	Environmental Officer

Acronym	Meaning In Full
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EGF	Environmental Governance Framework
NEMA	National Environmental Management Act 107 of 1998
NEM:BA	National Environmental Management: Biodiversity Act 10 of 2004
NWA	National Water Act 36 of 1998
PER	Project Environmental Resource
PES	Project Environmental Specification
PM	Project Manager
SAHRA	South African Heritage Resource Agency
SDS	Safety Data Sheet
SHEQ	Safety, Health, Environment and Quality
TRANSNET	Transnet SOC Ltd

5. MINIMUM ENVIRONMENTAL REQUIREMENTS FOR CONSTRUCTION

5.1 Tender Documents

Any construction-related tender issued to the market must include:

- Transnet Integrated Management System Policy Statement;
- The Transnet Construction Environmental Management Standard Operating Procedure (CEM SOP);
- The Contractor Environmental & Sustainability Specification Guideline; and
- The Project Environmental Specification (PES).

Any construction-related tender must be recommended for issue by the Transnet Project Environmental Resource/s before it is released to the market.

5.2 Project Environmental Specification (PES)

Must incorporate all relevant recommendations of the Environmental Impact Assessment (EIA) and other environmental studies for the project and the relevant conditions of the EA and/or other applicable environmental permit(s) and licence(s), and the Transnet Operating Division's Environmental Management requirements (where applicable) into an environmental performance specification for implementation during the construction phase of the project.

The PES need not be a separate document; however it can be in a format of an appendix/addendum making reference to environmental authorisation(s), permit(s) or licence(s) applicable to the project. In cases where the project does not trigger any of the NEMA listed activities or any permit(s)/licence(s); the PES may be compiled to prescribe additional environmental management measures over and above the measures stipulated in the MERC.

5.3 Contractor's Environmental Policy

The Contractor's Environmental Policy must be signed and dated by Top Management.

The content of the Contractor's Environmental Policy must:

- be appropriate to the purpose and context of the Contractor's organization, including the nature, scale and environmental impacts of its activities, products and services;
- provide a framework for setting environmental objectives;
- include a commitment to the protection of the environment, including prevention of pollution and other specific commitment(s) relevant to the context of the Contractor's organization;
- include a commitment to fulfil compliance obligations; and
- include a commitment to continual improvement of the Contractor's environmental management system to enhance environmental performance

5.4 Contractor's Environmental Management Plan (EMP)

The Contractor's EMP must include:

- the name of the person who compiled the EMP;
- the expertise of the person who compiled the EMP, including a CV;
- a description of the Contractor's scope of work;
- a detailed description of the environmental aspects related to the Contractor's scope of work;
- a map at an appropriate scale which depicts all construction activities including associated structures, and infrastructure and environmental sensitivities affected by the construction footprint , as well as no go-areas and associated buffers;
 - The map must include the following:
 - an accurate indication of the project site position as well as the positions of the alternative sites, if any;
 - road names or numbers of all the major roads as well as the roads that provide access to the site(s)
 - a north arrow;
 - a legend;
 - the prevailing wind direction;
 - site sensitivities, including but not limited to vegetation, wetlands, watercourses, heritage sites, critical biodiversity area/s, World Heritage Site, etc. and it must be overlaid by the study area; and

- GPS co-ordinates (Indicate the position of the proposed activity with the latitude and longitude at the centre point for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should be to at least three decimal places. The projection that must be used in all cases is the WGS-84 spheroid in a national or local projection).
- a description of the impacts and risks that need to be avoided, managed and mitigated during the execution of the Contractor's scope of work including (as relevant);
 - planning and design;
 - pre-construction activities;
 - construction activities;
 - rehabilitation; and
 - operation of Transnet assets.
- a description and identification of impact management outcomes required for the identified aspects;
- a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated above will be achieved, and must, where applicable, include actions to:
 - avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
 - comply with any prescribed environmental management standards or practices; and
 - comply with any applicable local, provincial and national legislation.
- the method of monitoring the implementation of the impact management actions contemplated above;
- the frequency of monitoring the implementation of the impact management actions contemplated above;
- an indication of the persons who will be responsible for the implementation of the impact management actions;
- the timeframe within which the impact management actions contemplated above must be implemented;
- the mechanism for monitoring compliance with the impact management actions contemplated above;

- a program for reporting on compliance, taking into account the requirements of this document;
- an environmental awareness plan describing the manner in which:
 - the Contractor intends to inform his employees of any environmental risk which may result from his scope of work; and
 - risks must be dealt with in order to avoid pollution or the degradation of the environment.
- any specific information that may be required by Transnet.

5.5 Contractor's Environmental Officer (EO)

The Contractor's EO should have relevant environmental qualifications and experience required for the project. The level of qualifications and experience must be in line with the complexity of the Contractor's scope of work coupled with the sensitivity of the site. The level of competency will be determined by Transnet during tender.

5.6 Management of Sub-Contractors

The Contractor must ensure that all his sub-contractors comply with this document in so far as it relates to their specific scope of work or services.

5.7 Pre-Site Access Environmental Governance

The Contractor must appoint the EO recommended in his tender proposal. Should the EO no longer be available, the Contractor must submit a CV of an alternative EO with similar or better qualifications and experience for approval by the Transnet PM and PER. The same principle will apply if the Contractor's EO is replaced for whatever reason at any stage. No construction may take place without a duly appointed Contractor's EO.

The Contractor must provide his EO with all environmental documents provided by Transnet during tender and submitted as a part of the Contractor's proposal.

The Contractor must obtain the contact details of the responsible Transnet PER and Transnet PER and provide these details to his EO.

The Contractor's EO must develop an appropriate environmental file for approval by the Transnet PER, including but not necessarily limited to (the environmental file must always be available and up to date on the construction site):

- Documents from the tender as described above.
- His CV.
- An organogram indicating reporting lines of all Contractor's staff (with names included).
- Contact Information for: the overall responsible person acting on behalf of the Contractor to execute the construction works; Contractor's Construction Manager (CM); Contractor's EO; and all relevant emergency personnel.
- A list of the Contractor's plant and equipment indicating a description of the plant/equipment, its fuel capacity, any hazardous components (oils, greases etc.), individual service/maintenance cycles and noise levels.
- A list of hazardous substances to be used during construction indicating: official substance name from Material Safety Data Sheets (MSDS)/ Safety Data Sheet (SDS); quantity on site; storage method; transport method to site; and period to be used on site. All substances listed must have MSDS/ SDS on site in the environmental file.

The MSDS/ SDS should contain the following minimum requirements:

- Section 1: Product and company name
- Section 2: Hazard identification
- Section 3: Composition/information on ingredients
- Section 4: First aid measures
- Section 5: Fire fighting measures
- Section 6: Accidental release measure
- Section 7: Handling storage
- Section 8: Exposure controls/personal protection
- Section 9: Physical and chemical properties
- Section 10: Stability and reactivity
- Section 11: Toxicological Information
- Section 12: Ecological Information
- Section 13: Disposal Consideration

- Section 14: Transportation
- Section 15: Regulatory Information
- Section 16: Other Information
- Photographic pre-construction report that details the site before any activities commence.
- Site Layout Plan indicating but not necessarily limited to,: access roads, site offices, material laydown areas, stockpile areas and parking areas, waste and effluent storage and handling facilities, entire construction footprint, no-go-areas, sewage and sanitary facilities. The plan must be appropriately drawn on a computer and must be clearly visible and properly scaled.
- A site establishment method statement (minimum requirements for method statements are described below in this document).
- Environmental Induction Material to be used to educate site staff and visitors (minimum requirements for environmental induction are described below in this document).
- An activity-based environmental risk assessment.

The Contractor's EO must submit the environmental file for acceptance to the Transnet PER.

The Contractor must obtain a Site Access Certificate from the Transnet PM before accessing the site.

5.8 Safety Data Sheets

Each hazardous substance used on site must have a valid SDS. The SDS must comply with the requirements of the Occupational Health and Safety Act, 85 of 1993.

5.9 Environmental Induction

The Contractor will ensure that all management, foremen and the general workforce, as well as all sub-contractors, suppliers and visitors to site have attended the Transnet Environmental Induction Programme prior to commencing any work on site. Where new personnel commence work on site during the construction period, the Contractor will ensure that these personnel also undergo the Transnet Environmental Induction Programme and are made aware of the environmental specifications on site.

The Contractor must ensure that all of his personnel understand the requirements of the CEM SOP; MERC; EA, EMPr, relevant permits and licences and PES as relevant to their scope of work.

5.10 Environmental Method Statements

- Environmental Method Statements as identified by the Transnet PER based on the Contractor's activity-based environmental risk assessment will be written submissions by the Contractor to the Transnet CM and PER describing:
- The proposed activity, setting out the plant, equipment, materials, labour and method the Contractor proposes using to carry out an activity;
- The environmental management of site conditions – waste management, housekeeping, site establishment etc;
- Transportation of the equipment to and from site;
- How the equipment/ material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Description of potential positive and negative environmental impacts and how they will be managed;
- Conformance/ non-conformance with this document and any other statutory and best practice standards;
- Monitoring and reporting requirements;
- Records Management; and
- Any other information deemed necessary by the Transnet CM and Transnet PER as well as ECO where applicable.

The Environmental Method Statements will enable the potential positive and negative environmental impacts associated with the proposed construction activity to be identified and mitigation measures put in place. All method statements must be signed by the Contractor, Transnet CM and PER, with the addition of the ECO on authorized projects, thereby indicating that the works will be carried out according to the methodology described therein.

Activities may only commence once the Environmental Method Statements have been approved by the Transnet CM, Transnet PER and ECO (where relevant). In some instances, local authorities may also need to approve the method statements. This will be highlighted in the Project Environmental Specification, where applicable.

All changes to the original Environmental Method Statements must be approved by the Transnet PER and Transnet CM prior to implementation.

To enable timely approvals, the environmental method statements will be submitted to the Transnet CM and Transnet PER for review two (2) weeks prior to the intended date of commencement of the activity, or as directed by the Transnet Project Manager/CM.

Emergency construction activity Environmental Method Statements may also be required. The activities requiring Environmental Method Statements cannot commence if they have not been approved by the CM and PER or ECO.

NOTE: No advice, approval of method statements or any other form of communication from Transnet will be construed as an acceptance by Transnet of any obligation that indemnifies the Contractor from achieving any required level of performance. Further, there is no acceptance of liability by Transnet which may result from the Contractor failing to comply with the specifications, i.e. the Contractor remains responsible for achieving the required performance levels.

5.11 Environmental Occurrences (Incidents)

The Transnet PER shall provide the Contractor with the procedure to follow in managing environmental occurrences during pre-site access governance.

The Contractor shall follow the procedure provided to him by the Transnet PER and maintain required records thereof.

In the event of an environmental occurrence, the Contractor must, as soon as is reasonably practicable:

- classify an environmental occurrence in line with the Transnet Environmental Management Occurrence process flow;

- take all reasonable measures to contain and minimise the effects of the occurrence, including its effects on the environment and any risks posed by the occurrence to the health, safety and property of persons;
- undertake cleanup procedures;
- remedy the effects of the occurrence; and
- assess the immediate and long-term effects of the occurrence on the environment and public health

5.12 Environmental Non-Conformances (Defects)

Environmental Non-Conformances shall be handled as per the terms and conditions of the Contract.

The Transnet PER shall provide the Contractor with the procedure to follow in managing environmental non-conformances during pre-site access governance.

The Contractor shall follow the procedure provided to him by the Transnet PER and maintain required records thereof.

The Transnet Project Manager shall ensure that all Non-conformances are appropriately closed out within the timeframe specified in the Non-Conformance Report.

Any environmental non-conformance will be dealt with similarly to a Defect as defined in the Contract. A defect is due to non-compliance with the Works Information and it is the responsibility of the Contractor to correct the defect in order to ensure that the work takes place in accordance with the Works Information. Similarly, non-conformance/non-compliance with any other permit or licence will be regarded as a non-conformance with the Works Information. The Contractor is responsible for rectifying any defect (non-conformance) as defined above promptly.

The Contractor's EO shall be responsible to search for and identify non-conformances with the environmental specifications at inspection intervals agreed to with the Transnet PER. The Transnet PER shall also undertake such inspections on a monthly basis. If such monthly inspections indicate that any part of the Contractor's work is non-conformant with the environmental requirements, the Transnet PER shall advise the Transnet PM to issue a Defects Notification to the Contractor accordingly. The Contractor shall correct the non-

conformance (defect) within the timeframes specified in the report and notification and submit proof of such correction to the Transnet PER.

The Transnet PER shall not recommend that a Site Closure Certificate be issued to the Contractor if any non-conformances have not been properly closed out. In such an event, the Transnet Project Manager may also make use of any reasonable contractual means to rectify the non-conformance(s) as allowed by the Contract (retention moneys etc.).

5.13 Community Grievances (Public Complaints)

The Transnet PER shall provide the Contractor with the procedure to follow in managing community grievances during pre-site access governance.

The Contractor shall follow the procedure provided to him by the Transnet PER and maintain required records thereof.

5.14 Environmental Inspections and Audits

Environmental inspections and audits may be conducted using five basic techniques:

- Interviews with Contractor's staff including Sub-contractors and suppliers;
- Document review;
- Observations;
- Monitoring; and
- Measurement and verification.

Table 1 sets out the areas and aspects of the construction site that will be inspected or audited, the frequency of such inspections/audits, the inspector/auditor and the inspected party/auditee. It should be noted that the list is not exhaustive and that each site will have specific issues that will need to be inspected/audited.

Table 1: Details on Environmental Inspections/Audits (where Transnet is the Inspected Party/Auditee, respective Contractors must give full cooperation).

Place	Inspector/Auditor	Inspected Party/Auditee	Inspection/audit frequency
Construction Site	Contractor's Environmental Officer	Contractor	Daily/Weekly Inspection
Project (including all construction sites).	Transnet Project Environmental Resource/Project Environmental Manager	Contractor	Monthly Inspection
Project (including all construction sites)	Transnet Environmental Specialist: Assurance	Transnet Project Environmental Resource	As stipulated on the annual audit plan
Project (as defined in Environmental Authorisation)	Environmental Control Officer	Transnet (represented by Transnet Environmental Resource)	As stipulated in the Environmental Authorisation
Project (as defined in Water Use Authorisation)	Independent Auditor	Transnet (represented by Transnet Environmental Resource)	As stipulated in the Water Use Authorisation

The Contractor's EO will be required to conduct inspections of all work areas for which the Contractor is responsible, at intervals agreed to with the Transnet PER. Monitoring shall

be conducted as per the Contractor's approved EMP and all required records shall be maintained by the Contractor.

The Transnet PER will be required to conduct inspections of all work areas for which the Contractor is responsible on a monthly basis or at intervals agreed to with the Transnet Project Environmental Manager. Monitoring shall be conducted as per the Project Environmental Specification. The Inspection Checklist to be used shall be approved by the Transnet PER prior to each inspection.

5.15 Contractor's Environmental Performance

The Transnet PER will explain how the Contractor's performance will be scored during pre-site access governance to the Contractor's EO. The standard/minimum requirement for all environmental inspections will be 90%.

5.16 Site Planning and Establishment

The Contractor shall establish his construction camps, offices, workshops, eating areas and any other facilities on the site in a manner that does not adversely affect the environment. These facilities must not be sited in close proximity to sensitive areas; the buffer to be determined by the ecological requirements of the fauna/flora found on-site.

The site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles be located as far away as possible from any watercourse.

5.16.1 Site Layout Plan

The Site Layout Plan must as a minimum include but not limited to:

- Detailed layout of the construction works areas including access roads, site offices, material laydown areas, temporary stockpile areas and parking areas;
- Detailed locality and layout of all waste storage and handling facilities for litter, kitchen refuse and workshop-derived effluent;
- Proposed areas for the stockpiling of topsoil and excavated spoil material;
- Demarcation of the construction footprint including areas not to be disturbed by the development;

- Location of sewage and sanitary facilities at the site offices and staff accommodation at all localities where there will be a concentration of labour.

Any changes to the location of the facilities and site activities as per the approved site layout plan shall be re-submitted to the Transnet CM and Transnet PER for approval prior to implementation.

The Contractor may be required to submit a separate layout plan dealing only with his site camp. If so this will be specified in the PES.

5.16.2 Identification and Establishment of Suitable Access Routes/Roads

Existing access routes to the construction/works areas must be used as far as possible. The building of access roads must be restricted to prevent unnecessary disturbance of the surrounding environment. Access tracks must be maintained in a good condition at all times during construction to minimize erosion and dust generation.

5.16.3 Demarcation of Site Limits

Prior to the commencement of construction, the site must be clearly demarcated by means of visible barriers. Vegetation within the demarcated zone may be cleared only upon obtaining approval from the Transnet PER. No activities are allowed outside of the approved footprint on the Site Layout Plan.

5.16.4 Eating Areas

The Contractor is responsible for providing adequate eating facilities within the works area to ensure that workers do not leave the site to eat during working hours. Refuse bags/bins must be provided at all established eating areas and when full it should be disposed of appropriately.

5.16.5 Liquid Waste Management

Liquid waste water from site shall be stored on-site in a properly designed and constructed system, situated so as not to adversely affect water courses. Only domestic type wastewater, i.e. toilet, shower, basin, kitchen water shall be allowed to enter the designated system.

5.17 Sewage and Sanitation

The Contractor is responsible for providing adequate sanitary facilities including toilets, toilet paper, wash basins etc. to all workers on site and for enforcing the proper use of these facilities.

Toilet facilities shall be serviced regularly and the waste material generated from these facilities shall be disposed of at a registered waste water treatment works/macerator and relevant permits for transportation of waste and proof of servicing and disposal shall be maintained.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on site, and away from sensitive areas. Use of open areas (i.e. the veld) is not allowed. For projects of high mobility a mobile toilet facility shall be made available by the Contractor.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. Toilets must not be placed in areas susceptible to flooding and high winds. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such facilities in a clean, orderly and hygienic condition to the satisfaction of the Transnet CM.

5.18 Waste Management

Waste shall be grouped into “**general**” or “**hazardous**”, depending on its characteristics. The classification shall determine handling methods and the ultimate disposal of material.

General waste which is likely to be generated on site during construction include but not limited to the following:

- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel;
- Uncontaminated construction debris such as used wood and scrap metal; and
- Uncontaminated soil and non-hazardous rubble from excavation or demolition.

The Contractor shall classify all waste expected to be generated during the construction period. Examples of typical construction waste which could be expected on the site and how they should be classified are indicated in the following table:

TABLE 2: EXAMPLE OF CONSTRUCTION WASTE CLASSIFICATION

Waste	Classification	
	Hazardous	General
Aerosol containers	X	
Batteries, light bulbs, circuit boards, etc.	X	X
Clean soil		X
Construction debris contaminated by oil or organic compounds	X	
Domestic waste		X
Empty drums (depends on prior use)	X	X
Empty paint and coating containers		X
Explosive waste	X	
PCB waste	X	
Rubble (not contaminated by oil or organic compounds)		X
Waste Cable		X
Waste plastic		X
Waste paint and/or solvent	X	
Waste oil	X	
Waste concrete		X
Waste cement powder	x	
Waste empty cement bags (must be thoroughly decanted)		x
Waste containing fibrous asbestos	X	
Waste timber		X
Sewerage sludge	X	
Scrap metal		X

Waste	Classification	
	Hazardous	General
Chemically-derived sanitary waste	X	

Waste will be managed in accordance with the Waste Management Hierarchy depicted in Figure 1 below:

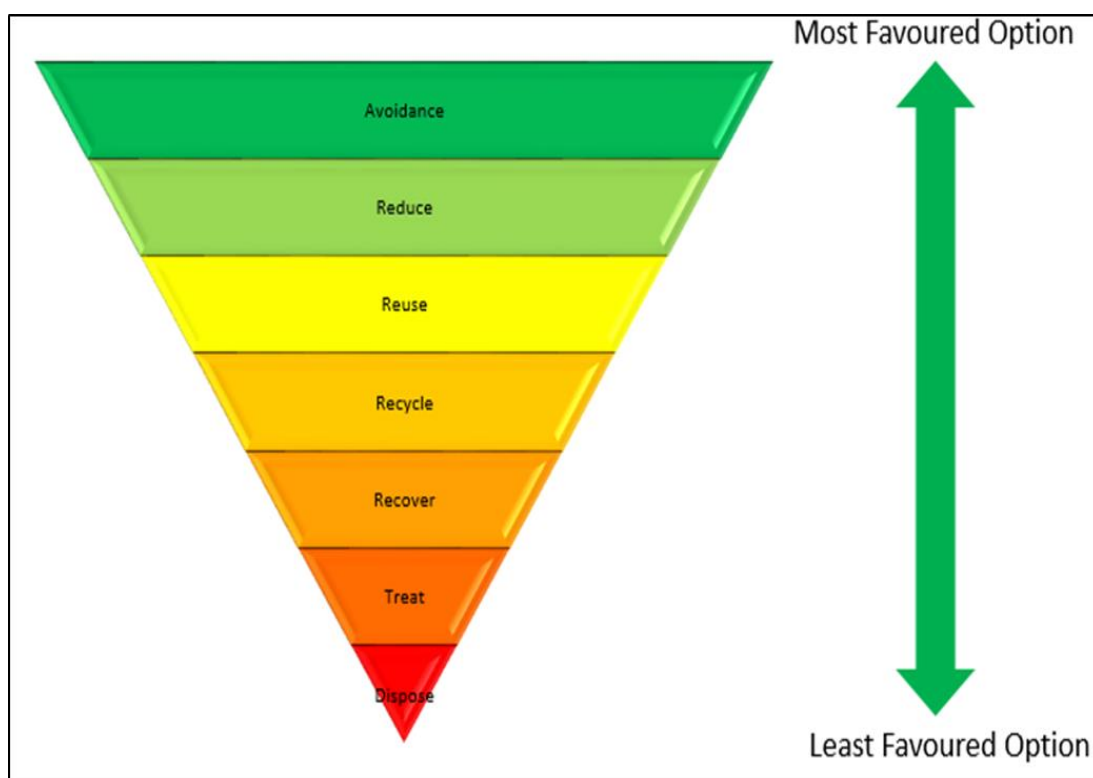


FIGURE 1: THE WASTE MANAGEMENT HIERARCHY

(Transnet Environmental Risk Management strategy and Framework, 2015:42)

- 1. Avoidance/Prevention:** using goods in a manner that minimises their waste components
- 2. Reduction/Minimisation:** reduction of the quantity and toxicity of waste generated during construction
- 3. Re-use:** removing an article from a waste stream for use in a similar or different purpose without changing its form or properties

- 4. Recycling:** separating articles from a waste stream and processing them as products or raw materials
- 5. Recovery:** reclaiming particular components or materials, or using the waste as a fuel
- 6. Treatment:** processing of waste by changing its form or properties in order to reduce toxicity and quantity
- 7. Disposal:** burial, deposit, discharge, abandoning or release of waste

The Contractor is responsible for the removal of all waste generated from site. The Contractor shall ensure that all waste is removed to appropriate licensed waste management facilities. (For the identification of an appropriate facility, the following source may be utilized: <http://sawic.environment.gov.za/>).

The Contractor shall manage **GENERAL WASTE** that is anticipated to be generated by operations as follows:

- Notify waste hauler when container is full so that it can be removed and replaced with an empty container/skip;
- No littering is allowed on site. In the event where staff mobility is high, refuse bags will be made available by the Contractor;
- Provide documented evidence of proper disposal of waste (Waste Disposal Certificate)

The Contractor shall recycle **GENERAL WASTE** (as far as practically possible) that is anticipated to be generated by its operations as follows:

- Obtain and label recycling containers for the following (whichever relevant) and locate them at secure designated locations on site:
 - Office Waste;
 - Aluminium;
 - Steel;
 - Glass;
 - Ferrous Metals;

- Non Ferrous Metals; and
- Waste Timber
- Establish recycled material collection schedule;
- Arrange for full bins to be hauled away;
- Spent batteries, circuit boards, and bulbs, while non-hazardous, require separate storage, special collection and handling; and
- No burning, burying or dumping of waste of any kind will be permitted.

The Contractor shall manage **HAZARDOUS WASTE** anticipated to be generated by his operations as follows:

- Obtain and provide an acceptable container with correct and visible classification label;
- Place hazardous waste material in allocated container;
- Inspect the container on a regular basis as per the Contractor's EMP;
- Track the accumulation time for the waste, haul the full container to the registered hazardous disposal site;
- Notify the waste hauler when container is full so that it can be removed and replaced with an empty container/skip; and
- Provide documented evidence of proper waste disposal of the waste (Waste Disposal Certificate).

The Contractor shall maintain the following waste records for submission to the Transnet PER on request:

- Date of waste management activity;
- Activity Type (reuse, recycle, recover, treat, dispose);
- Description (e.g. contaminated soil, medical waste, tyres, plastic, domestic waste etc.)
- Classification (General/Hazardous);
- Estimated Quantity in kilograms
- Disposal Site Name and Reference Number (where relevant);
- Method of Transport; and
- Signed Collection or Disposal Records

5.19 Workshops, equipment maintenance and storage

All vehicles and equipment must be kept in good working order to maximise efficiency and minimise pollution. Maintenance, including washing and refueling of plant on site must be done at designated locations approved on the Site Layout Plan. The Contractor must ensure that no contamination of soil or vegetation occurs around workshops and plant maintenance facilities.

All machinery servicing areas must be bunded. Stationary plant that leak harmful substances shall not be permitted on site. Washing of equipment should be restricted to urgent maintenance requirements only. Adequate wastewater collection facilities must be provided and the wastewater should be disposed of appropriately in accordance with its waste classification.

5.20 Vehicle and Equipment Refueling

5.20.1 Stationary/Designated Refuelling

No vehicles or machines shall be serviced or refueled on site except at designated servicing or refueling locations included on the approved Site Layout Plan.

The Contractor shall provide details of his refueling activities in his EMP or Refueling Method Statement. Facility design shall comply with the regulations of the National Water Act, (Act 36 of 1998), the Hazardous Substances Act, (Act 15 of 1973), the Environmental Conservation Act, (Act 73 of 1989), National Environmental Management Act, (Act 107 of 1998), and the Occupational Health and Safety Act, (Act 85 of 1993), mainly the Construction - and Hazardous Chemical Substances Regulations.

5.20.2 Mobile Refuelling

In certain circumstances, the refueling of vehicles or equipment in a designated area is not a viable/practicable option and refueling has to be done from a tank, truck, bowser or container moved around on site. In such circumstances, the Contractor may request approval from the Transnet CM to conduct mobile refueling subject to the following control measures:

- Secondary containment equipment shall be in place. This equipment shall be sized to contain the most likely volume of fuel that could be spilt during transfer.

- Absorbent pads or drip trays are to be placed around the fuel inlet prior to dispensing.
- Mobile refueling units are to be operated by a designated competent person.
- The transfer of fuel must be stopped prior to overflowing. Fuel tanks or refueling equipment on vehicles may only be filled to 90% carrying capacity.
- Mobile fuelling equipment must be stored in areas where they are not susceptible to collisions.
- Mobile refueling operations shall not take place within 30 meters of any watercourses or 7.5 meter from other structures, property lines, public ways or combustible storage.

All mobile refueling tanks are to be properly labelled and fire extinguishers with valid service dates shall be located near the fuel storage areas. These extinguishers must be of a suitable type and size.

5.21 Spill Response

The Contractor shall have adequate spill response materials/equipment on site which must be aligned with the volumes of hazardous substances used on site and the risk of pollution to sensitive environmental features.

The Contractor shall have an approved Spill Response Plan, either in his EMP or in the form of a method statement approved by the Transnet CM and Transnet PER.

The Contractor shall instruct construction personnel on the following spill prevention and containment responsibilities:

- All plants to be inspected daily to ensure that they are in good condition;
- Immediately repair all leaks of hydrocarbons or chemicals;
- Take all reasonable measures to prevent spills or leaks;
- Do not allow sumps receiving oil or oily water to overflow;
- Prevent storm water runoff from contamination by leaking or spilled drums of oil or chemicals; and
- Do not discharge oil or contaminants into storm water or sewer systems.

If a spill occurs on land, the Contractor must:

- Immediately stop or reduce the spill;

- Contain the spill;
- Recover the spilled product;
- Remediate the site;
- Implement actions necessary to prevent the spill from contaminating groundwater or off-site surface water; and
- Manage the contaminated material in accordance with Waste Management requirements in this document.

Any spill to water has the potential to disperse quickly, therefore, the spill must be contained immediately using appropriate containment equipment.

If a spill to water occurs, the Contractor must:

- Take immediate action to stop or reduce the spill and contain it;
- Notify the appropriate on-site authorities;
- Implement actions necessary to prevent the spread of the contamination by deploying appropriate absorbent material;
- Recover the spilled product; and
- Manage the contaminated material in accordance with Waste Management requirements in this document. Water samples to be taken downstream from where the spill took place to trace the extent of pollution.

All spills must be recorded as occurrences and managed in accordance with the requirements for Occurrences in this document.

5.22 Spray Painting and Sandblasting

Spray painting and sandblasting must be kept to a minimum. All painting must, as far as practicable, be done before equipment and material is brought on site. Touch-up painting is to be done by hand painting or as per the approved EMP or Method Statement.

The relevant Contractor will inform his EO when and where spray painting or sandblasting will be carried out prior to commencement of work. The Contractor's EO will monitor these activities to ensure that adequate measures are taken to prevent contamination.

Sand may only be acquired from approved commercial sources and in instances where sand is collected from the natural surrounds, such collection must be approved by the Transnet PER.

If the area is in confined or high (elevated) areas, a protection plan must be issued for approval by the Transnet PER.

5.23 Dust Management

The usage of water for dust management will be minimized as far as practically possible. Discretion must be applied in this regard especially relating to drought conditions. Only water from approved sources may be used. Dust control measures must be approved by the Transnet PER prior to commencement of the Works.

The following minimum dust management practices must be implemented on site:

- Vehicles must be operated within speed limits, where no speed limit has been specified, the limit shall be 40km/h;
- Haulage distances must be minimized as far as reasonable practicable;
- Where water suppression is insufficient or impractical, environmentally friendly soil stabilizers must be used;
- Stockpiles and open areas that may cause dust must be stabilized and vegetated where required;
- Dust suppression measures must be implemented on inactive construction areas. (An inactive construction site is one on which construction will not occur for a month or more);
- Disturbance of natural vegetation must be minimized to reduce potential erosion, runoff, and air-borne dust;
- Material in transit must be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage or creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin;

5.24 Storm Water and Dewatering Management

Apart from runoff from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads, etc., and contaminants during construction may include hydrocarbons from fuels and lubricants, sewerage from employee ablutions and excess fertilizer from rehabilitated areas, etc.

Discharges to controlled waters such as the sea, rivers, and groundwater or to sewerage systems are controlled under South African Water Legislation. The following specific measures are required:

- Temporary drainage must be established and maintained on site during the construction period until permanent drainage is in place. Secondary drainage that prevents erosion must be provided, where necessary.
- Contractors must employ good housekeeping in their areas to prevent contamination of drainage water.
- Stagnant water shall be cleared at a frequency approved by the Transnet PER.
- Any surface water flows off-site must be approved by the Transnet PER. Where necessary, silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no runoff from the site except at points where silt traps are provided. The Contractor shall be responsible for checking and maintaining all silt traps for the duration of the project.
- The removal from groundwater is defined as a water-use under the National Water Act 36 of 1998. Therefore, it must be ensured that the project has been authorised by the Responsible Authority to remove and discharge groundwater prior to dewatering taking place. If applicable, the Contractor shall be responsible for collection, management, and containment within the site boundaries of all dewatering from all general site preparation activities.
- On-site drainage shall be accomplished in accordance with a plan approved by a suitably qualified civil engineer.

5.25 Erosion Control

Erosion control measures will be designed, implemented, and properly maintained in accordance with best management practices which will include, but not limited to the following:

- Activities must be scheduled to minimise the extent of disturbance of an area at any one time;
- Re-vegetation must be implemented as early as feasible;
- Construction traffic must be properly managed and controlled;
- Areas must be graded to the extent feasible at drainage ditches;
- Loose soil will be compacted as soon as possible after excavation, grading, or filling;
- Silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary berms or swales, small sedimentation basins must be used;
- The transport of sediment must be minimised;
- An erosion and sedimentation control plan must be developed, approved by the Transnet PER and communicated to staff; and
- The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls.

5.26 Noise Management

- The following specific measures are required:
- Keep all equipment in good working order;
- Operate equipment within its specification and capacity and don't overload machines;
- Apply regular maintenance, particularly with regards to lubrication;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Relevant stakeholders shall be notified of any excessive noise-generating activities that could affect them;
- Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, SANS 10103:2004 or the latest at the time, so that it will not produce excessive or undesirable noise when released;

- All the Contractor's equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, SANS 10103:2004 or the latest at the time, for construction plant noise generation
- Contractor's vehicles shall comply with the Road Traffic Act, (Act 29 of 1989) when any such vehicle is operated on a public road.
- If on-site noise control is not effective, protect the victims of noise by ensuring that all noise-related occupational health provisions are met. (Occupational Health and Safety Act, (Act 85 of 1993).

5.27 Protection of Heritage Resources

5.27.1 Archaeological Sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Transnet CM and Transnet PER of such a discovery. The South African Heritage Resources Agency (SAHRA) or relevant Authority is to be contacted and will appoint an Archaeologist to investigate the find. Work may only resume once clearance is given in writing by the Archaeologist.

5.27.2 Graves

If a grave is uncovered on site, or discovered before the commencement of work, all work in the immediate vicinity of the grave shall be stopped and the Transnet CM and PER informed of the discovery. The South African Heritage Resources Agency (SAHRA) or relevant Authority should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the SAHRA, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

5.28 Fire Prevention

Fires shall only be allowed in facilities or equipment specially constructed for this purpose.

A firebreak shall be cleared and maintained around the perimeter of the camp and office sites where and when necessary. In cases where construction is taking place in a Critical Biodiversity Area as listed under NEM:BA; it must be ensured that the requirement of a firebreak is screened against the NEMA Listing Notice 3 to confirm legislative requirements.

All conditions incorporated in the requirements of the Occupational Health and Safety Act shall be implemented.

5.29 Water Protection and Management

No water shall be abstracted from any water course (stream, river, or dam) without the expressed permission of the Transnet CM and Transnet PER. Such permission shall only be granted once it can be shown that the water is safe for use, that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water and Sanitation in accordance with the requirements of the National Water Act (Act 36 of 1998).

Water for human consumption shall be available at the site offices and at other convenient locations on site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction site.

Method Statement(s) must be prepared by the Contractor for the various water uses. The Contractor shall keep a record of the quantities of water used on-site during construction (including use by sub-contractors), irrespective of the purpose of use.

5.30 Protection of Fauna and the collection of firewood

On no account shall any hunting or fishing activity of any kind be allowed. This includes the setting of traps, or the killing of any animal caught in construction works.

On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous discovered on site. If such an animal is discovered on site, an appropriately skilled person should be summoned to remove the creature from the site. Consideration should be given to selection and nomination of such a person prior to site establishment. If no-one is available, training should be provided to at least two site staff members.

The Contractor shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

5.31 Environmental Awareness Training

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed which must be defined in the relevant Method Statement to be prepared by the Contractor.

Objectives of environmental awareness training are:

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources.
- Regulatory compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in regional and local regulations.
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the Contractor's EO for a solution.
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability.

All individuals on the Project construction site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The Contractor shall present environmental awareness programmes on a weekly/bi-monthly basis (depending on project requirements) and keep record of all the environmental related training of the personnel.

5.32 Handling and Batching of Concrete and Cement

Concrete batching shall only be conducted in demarcated areas which have been approved by the Transnet CM and Transnet PER.

Such areas shall be fitted with a containment facility for the collection of cement-laden water. This facility shall be bunded and have an impermeable surface protection so as to prevent soil and groundwater contamination. Drainage of the collection facility will be separated from any infrastructure that contains clean surface runoff.

The batching facility will not be placed in areas prone to floods or the generation of stagnant water. Access to the facility will be controlled so as to minimise potential environmental impacts. Hand mixing of cement and concrete shall be done on mortarboards and/or within the bunded area with impermeable surface or concrete slab. Bulk and bagged cement and concrete additives will be stored in an appropriate facility at least 10m away from any watercourses, gullies and drains.

Waste water collected in the containment facility shall be left to evaporate. The Contractor shall monitor water levels to prevent overflows from the facility. It is acknowledged that all waste water will evaporate; it must be ensured that the remaining water can be pumped into sealed drums for temporary storage and must be disposed of as liquid hazardous waste at an authorised hazardous waste management facility.

All concrete washing equipment, such as shovels, mixer drums, concrete chutes, etc. shall be done within the approved washout facility. Water used for washing shall be restricted as far as practically possible.

Ready-mix concrete trucks are not allowed to wash out anywhere other than in an area designated and approved by the Transnet CM and PER for this purpose.

The Contractor shall periodically clean out hardened concrete from the wash-out facility or concrete mixer, which can either be reused or disposed of as per accepted waste management procedures.

Empty cement and bags, if temporarily stored on site, must be collected and stored in weatherproof containers. Used cement bags may not be used for any other purpose and

must be disposed of on a regular basis in accordance with the Contractor's solid waste management system.

Sand and aggregates containing cement will be kept damp to prevent the generation of dust.

Concrete and cement or any solid waste materials containing concrete and cement will be disposed of at a relevant registered disposal facility and SDCs kept on the file. Where disposal facilities for general waste are utilised, written consent from the relevant municipality must be obtained by the Contractor and filed in the Green file.

5.33 Stockpiling, Soil Management and Protection of Flora

The Contractor shall measure the extent of all areas cleared for construction purposes and keep this figure updated. Sensitive areas shall be cordoned off and avoided in this regard.

Stockpiling may only take place in designated areas indicated on the approved site layout plan. Any area to be used for stockpiling or material laydown shall be stripped of all topsoil.

Clearance of vegetation shall be restricted to that which is required to facilitate the execution of the works. Vegetation clearance shall occur in a planned manner, and cleared areas shall be stabilised as soon as possible when and where necessary. The detail of vegetation clearing shall be subject to the Transnet CM's approval and shall occur in consultation with the Transnet PER.

Stockpiles must be positioned in areas sheltered from the wind and rain to prevent erosion and dispersion of loose materials. Stockpiled soil shall be protected by adequate erosion-control measures. Soil stockpiles shall be located away from drainage lines, watercourses and areas of temporary inundation. Stockpiles containing topsoil shall not exceed 2m in height unless otherwise permitted by Transnet.

Topsoil shall be stockpiled separately from other materials and prevented from movement. Excavated subsoil, where not contaminated, must be used for backfilling, if possible, and topsoil for landscaping and rehabilitation of disturbed areas. Where topsoil

has become mixed with subsoil or is not up to the original standard, fertiliser or new topsoil shall be provided by the Contractor.

No vegetation located outside the construction site shall be destroyed or damaged. As far as is reasonably practicable, existing roads must be used for access to the site. Before site clearance takes place, vegetation surveys must be conducted and protected species identified.

No protected plant species shall be removed without written consent from the relevant authorities. The development of new embankments or fill areas must be undertaken in consultation with the Transnet PER.

No dumping of solid waste or refuse shall be allowed within or adjacent to areas of natural vegetation.

The Contractor shall identify and eradicate all declared alien and invasive plant species occurring on site.

5.34 Traffic Management

Vehicles usage is permitted only on access roads. Vehicles should only be parked within designated parking areas as demarcated on the site layout plan.

Turning of vehicles should only take place within a clearly demarcated "turn area" located within the approved construction footprint.

The Contractor must co-ordinate the loading and offloading of material during the construction phase so as to ensure that vehicular movement is in one direction only at any one time and that side-tracks are not created on the site.

5.35 Transportation of Materials

The Contractor is responsible for ensuring that all suppliers and delivery drivers are aware of procedures and restrictions (e.g. no-go areas) in terms of the SOP CM and this Specification. Material must be appropriately secured to ensure safe passage between destinations during transportation. Loads must have appropriate cover, where ADTs are not utilised, to prevent spillage from the vehicles. The Contractor will be held responsible for any clean-up resulting from the failure to properly secure transported materials.

5.36 Borrow Pits and Quarries

The Contractor shall ensure that suppliers of rock and sand raw materials are in possession of the required permit/license and keep record of the quantity of material supplied.

The Contractor will not make direct use of any borrow pits and quarries unless the borrow pit has a valid permit, he has obtained written approval from the Transnet CM and Method Statement has been submitted and approved. The Method Statement will provide the detailed description of the location of the borrow pits and/or quarries and the procedures that will be followed to adhere to any pertinent national or local legislation (e.g. mineral extraction, rehabilitation, safety and noise levels).

5.37 Social and Labour Issues

The criteria for and selection of labourers, sub-contractors and suppliers for the project shall demonstrate preference for the local community and shall be aligned with the criteria set by Transnet SOC Ltd in appointing the Contractor. The Contractor shall keep records of the identity of all staff.

Under no circumstances shall the Contractors engage in formal discussions with landowners without prior consent by the Transnet CM.

No activity on private property shall be allowed without written consent by the relevant landowner and Transnet CM/Transnet PER.

Any damage to private property caused by the Contractor during the construction period, shall be repaired to the satisfaction of the Transnet CM, the Transnet PER and the landowner.

The Contractor shall keep record of any complaint raised during the construction period relating to the Contractor's activities.

No job-seekers shall be allowed on site and signs reflecting such shall be displayed on the notice boards.

5.38 Energy Management

The Contractor shall measure and keep updated records of the following:

- Electricity consumption (to be measured in Kilowatt Hours)
- Fuel consumption (to be measured in liters)

5.39 Handling, Storage and Management of Hazardous Substances

All hazardous materials/substances shall be stored in a secured, designated area that is fenced, bunded and has restricted entry.

All storage shall take place using suitable containers to the approval of the Transnet CM and PER.

All hazardous liquids shall be located in a secure, demarcated area and an adequate bund wall (110% of the total volume stored) shall be provided. The floor and wall of the bund area shall be impervious to prevent infiltration of any spilled/leaked liquids into the soil.

No spillages or accumulated stormwater within this bunded area will be allowed to be flushed from the bund into the surrounding area.

Hazard signs indicating the nature and volume of the stored materials shall be displayed on the storage facility or containment structure.

Weigh bills of hazardous substances shall be sourced from suppliers and kept on site for inspection by the Transnet PER.

The Contractor must provide a method statement detailing the hazardous substances that are to be used during construction, as well as the storage, handling and disposal procedures for each substance. Emergency procedures in the event of misuse or spillage that might negatively affect the environment must be specified.

Information on each hazardous substance will be available to all persons on site in the form of MSDS/SDS. Training and education about the proper use, handling, and disposal of the material will be provided to all workers handling the material.

The Contractor's EO must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.

5.40 Housekeeping

The Contractor must ensure proper housekeeping of the site for the duration of the project. If practical the contractor shall amongst construction personnel, assign one to be responsible for good housekeeping

Materials shall be stored in a neat and tidy manner in designated areas as per the approved site layout plan.

5.41 Rehabilitation

Contractors shall rehabilitate the entire site upon completion of work. Where applicable, rehabilitation must be in line with the measures outlined in the Project Environmental Specification. A rehabilitation plan will be submitted to the Transnet CM and PER for approval at least six weeks before project completion. The following, but not limited are critical issues to be included in the rehabilitation plan:

- Details of soil preparation procedures including proposed fertilisers or other chemicals being considered for use;
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified Botanist/Horticulturist should be sought in developing this list;
- Procedures for watering the planted areas (frequency of watering, methodology proposed etc.);
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring rehabilitation as being successful); and
- Procedures for the prevention of the establishment and spread of alien invasive species.

5.42 Documentation and Records Management

The Contractor's EO will complete and maintain copies of all documents and records and ensure that these documents and records are kept up to date.

The Contractor's EO will submit these documents to the Transnet PER on a frequency as agreed to with the Transnet PER, except where documents have remained unchanged in which case written notification to this effect must be provided to the Transnet PER. The Contractor's EO must ensure that electronic copies of these documents are saved on the Transnet system.

Once the construction activities have been completed and the Transnet PER has conducted a site closure inspection and notified the Contractor that site closure will be granted, all documents described above must be handed over to Transnet after which a Site Closure Certificate will be issued by the Transnet Project Manager.

NOTE: All documents/records are to be retained, within the Transnet Document Control System, for a period of 10 years. In the event of environmental documentation/record being lost before receiving a Site Closure Certificate, the Contractor will be penalised according to the specifications laid down in the Contract.

6. RECORDS

Refer to CEM SOP.

7. ANNEXURES

None.

STANDARD OPERATING PROCEDURE

CONSTRUCTION ENVIRONMENTAL MANAGEMENT

Document number	009-TCC-CLO-SUS-11386
Version number	1.0
Classification	Unclassified
Effective date	01 October 2023
Review date	30 September 2028

[illegible]

DOCUMENTATION SIGN-OFF SHEET

I, the undersigned hereby approve this procedure.

ROLE	CAPACITY/ FUNCTION	SIGNATURE	DATE
Process Owner:	Senior Specialist: Environmental Compliance and Permitting		01/10/2023
Accepts document for adequacy and practicability. Comments:			
Sponsor:	General Manager: Corporate Sustainability		01/10/2023
Approves document for use. Comments:			

Table of Contents

1. PURPOSE	6
2. APPLICABILITY	6
3. REFERENCE DOCUMENTS	7
4. DEFINITIONS AND ABBREVIATIONS	9
4.1 DEFINITIONS.....	9
4.2 ABBREVIATIONS	12
5. ACCOUNTABILITY, RESPONSIBILITY AND AUTHORITY	14
5.1 Transnet Procurement Department	14
5.2 Transnet Project Manager (PM).....	14
5.3 Transnet Project Environmental Resource	14
5.4 Transnet Construction Manager (CM).....	16
5.6 Environmental Control Officer	17
5.7 Contractor's Environmental Officer	17
5.8 The Contractor	20
5.9 Reporting Lines	20
6. STANDARD OPERATING PROCEDURE	21
6.1 Tender Stage (prior to Contract Award)	21
6.2 Construction Stage (prior to Site Access).....	22
6.3 Construction Stage (post Site Access).....	23
6.4 Post Construction.....	26
7. RECORDS	26
8. ANNEXURES.....	29
8.1 List of Construction Environmental Management Templates, Forms	29
and Guidelines	29
8.2 009-TCC-CLO-SUS-TMP-11386.22 - Construction Environmental Management File Index..	29
Annexure 8.1 List of Construction Environmental Management Templates, Forms and	
Guidelines	30
Annexure 8.2 Construction Environmental Management File Index	32

Annexure 8.3 Construction Environmental Management Process Flow	35
---	----

1. PURPOSE

- 1.1** The purpose of this Standard Operating Procedure (SOP) is to define how environmental management will be practiced on any construction project under the management of Transnet to ensure that the environment is considered, negative impacts avoided or minimized, and positive impacts are optimized and/or enhanced throughout the lifecycle of the asset.
- 1.2** It further defines environmental management responsibilities for key stakeholders involved in the construction management process.
- 1.3** It must be read in conjunction with the Contractor Environmental and Sustainability Specification Guidelines (CESSG) and the Project Environmental Specification (PES) relevant to the project.
- 1.4** In this document, unless the context clearly indicates otherwise:
- Words importing any one gender shall include the other gender.
 - The singular shall include the plural and vice versa; and
 - Any reference in this document to legislation or subordinate legislation is to such legislation or subordinate legislation at the date of promulgation thereof and as amended and/or re-enacted from time to time.

2. APPLICABILITY

- 2.1** The SOP applies to any construction project under the management of Transnet SOC Ltd or its Construction Agent.

3. REFERENCE DOCUMENTS

Name	Applicable Section
Constitution of South Africa, Act 108 of 1996	Section 24 (a) right to an environment that is not harmful to health or wellbeing Section 24(b) (i) right to have environment protected for current and future generations through legislation and measures that prevents pollution and ecological degradation.
Capital Governance and Assurance Policy	Entire document
Capital Governance and Assurance Framework	Entire document
Capital governance and Assurance Manual	Entire document.
PLP Manual – Execution	Entire document
National Environmental Management Act, 107 of 1998	Section 2 National Environmental Management Principles (4) (viii), (e), (h), (j) and (p).
National Water Act, 36 of 1998	Section 164, Permissible Water Use Section 19
National Environmental Management: Waste Act, 58 of 2008	Part 1 15 (1) (i) and (2) Part 6 26 (10) (a) and (b) Scheduled 3, Defined Wastes Category B: Hazardous Wastes Part 8: Contaminated Land
Environment Conservation Act, 73 of 1989	Section 20
Occupational Health and Safety Act, 85 of 1993	Asbestos Regulations, 2001 Government Notice R155 in Government Gazette 23108 of February 2002

Name	Applicable Section
	General Safety Regulations-Reg. 2 (2) PPE
GNR 326, 7 April 2017 as amended, EIA Regulations	Chapter 15
Integrated Management System – Policy Statement Procedure (TRN-IMS-GRP-PROC-002)	Whole document
Integrated Management System – Competency, Awareness and Training Procedure	Whole document
Integrated Management System¹ – Document, Data and Record Management Procedure (TRN-IMS-GRP-PROC-010)	Whole document
Integrated Management System – Occurrence and Non-Conformance Management Procedure (TRN-IMS-GRP-PROC-013)	Whole document
Transnet Environmental Risk Management Strategy and Framework	2015:42
Environmental Management Systems ISO 14001: 2015	Clause 5, 6, 7, 8, 9 and 10

¹ Management of certain documents, data and records will be in accordance with NEC3 – Engineering and Construction Contract prescripts

4. DEFINITIONS AND ABBREVIATIONS

4.1 DEFINITIONS

Compliance	The action or fact of complying with legislation or regulations.
Conformance	The action or fact of conforming to this standard and other internal Transnet policies, procedures, guidelines and best practice.
Contractor	The Principal Contractor as engaged by Transnet for infrastructure construction operations, including all sub-contractors appointed by the main contractor of his own volition for the execution of parts of the construction operations; and any other contractor from time to time engaged by Transnet directly in connection with any part of the construction operations which is not a nominated sub-contractor to the Principal Contractor.
Contractor Environmental and Sustainability Specification Guidelines (CESSG)	A set of minimum environmental standards for all Transnet SOC Ltd-managed construction sites.
Corrective Action	It is generally a reactive process used to address problems after they have occurred. Corrective action may be triggered by a variety of events, e.g. Non-conformance to documented procedures and work instructions, non-conformances raised through internal audits, unacceptable monitoring and measurement results, internal & external SHEQ complaints, etc.
Emergency	Sudden unforeseen event needing immediate or prompt action.

Environment	Surroundings in which the Contractor operates, including air, water, land, natural resources, flora, fauna, humans and their interrelations.
Environmental Aspect	Element of an organization's activities or products or services that interacts or can interact with the environment
Environmental Authorisation (EA)	Environmental Authorisation is the authorisation granted by a competent authority of a listed activity or specified activity in terms of National Environmental Management Act 107 of 1998 (as amended).
Environmental Impact	Change to the environment whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects
Environmental Management Plan (EMP)	A plan generated by the Contractor describing the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof.
Environmental Management Programme (EMPr)	A programme that has been approved by the Competent Authority in terms of NEMA, 107 of 1998 stipulating information on any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified
Environmental Risk	The product of the likelihood and severity of an unforeseen occurrence/incident/aspect and the impact it would have, if realised, on the environment

Incident/Occurrence	An undesired event occurring at work that results in physical harm to a person or death, or damage to the environment, plant and/or equipment, and/or loss of production.
Non-conformance	An action or situation that does not conform to Transnet's SHEQ standards, procedures or legislative requirement(s) and that can be, or lead to, an unacceptable SHEQ incident.
Non-compliance	Contravention to environmental legislative requirements.
Project Environmental Specification (PES)	Describes standards specific to a particular project. Variations and additions to the MESC are set out in this PES. These would include the EA issued to the project or elements generally drawn from the EA or permits for that project or from specific requirements set by the Transnet Operating Divisions. The PES may also require a more stringent standard to that described in the MESC if required by the EA or a particular industry code to which Transnet subscribes including any environmental constraints at a construction site.
Sub -Contractor	A person or organisation who has a contract with the contractor to - Construct or install part of the contractors work. - Provide a service necessary to provide the works; or - Supply plant and materials which the person or organisation has wholly or partly designed specifically for the works.

4.2 ABBREVIATIONS

Acronym	Meaning in Full
CESSG	Contractor Environmental and Sustainability Specification Guidelines
CM	Construction Manager
CV	Curriculum Vitae
CEM	Construction Environmental Management
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECO	Environmental Control Officer
EO	Environmental Officer
EMI	Environmental Management Inspectorate
NCR	Non-conformance Report
NEMA	National Environmental Management Act 107 of 1998 (as amended)
PER	Project Environmental Resource
PES	Project Environmental Specification
PLP	Project Life-cycle Process
PM	Project Manager

Acronym	Meaning in Full
SAHRA	South African Heritage Resources Agency
SOP	Standard Operating Procedure
SHEQ	Safety, Health, Environment and Quality
Transnet	Transnet SOC Ltd

5. ACCOUNTABILITY, RESPONSIBILITY AND AUTHORITY

5.1 Transnet Procurement Department

5.1.1 Ensures that this SOP (and relevant associated environmental specifications) is included in any construction-related request whether open market, quotation or confinement process.

5.1.2 The Procurement Department shall further ensure that the relevant environmental personnel are consulted during tender review, tender evaluation and contract award.

5. Transnet Project Manager (PM)

5.2.1 Takes overall accountability for the project including ensuring that this SOP is implemented by all relevant stakeholders.

5.2.2 The specific tasks during construction will include:

- Appointment of the Transnet Environmental Resource/s;
- Certifying site access to the Contractor;
- Giving instructions to the Contractor on recommendation from the Transnet Environmental Resource/s (e.g. defects, non-conformances etc.); and
- Certifying site closure to the Contractor.

5.3 Transnet Project Environmental Resource

5.3.1 The Transnet Project Environmental Resource (PER) will be responsible for ensuring that this SOP and associated specifications or requirements are complied with. The Transnet PER will report functionally to the relevant PM.

5.3.2 The specific tasks will include:

- Preparation of the PES;
- Tender evaluation, development of environmental criteria and adjudication thereof;
- Liaison with the relevant environmental Competent Authorities;

- Review and approve site layout plan including any subsequent revisions thereof;
- Environmental Induction of Contractor's staff;
- Generate an inspection checklist prior to construction commencement;
- Review and Sign off Method Statements prepared by Contractor;
- Prepare environmental monitoring protocols/checklists to be used during construction;
- Prepare monthly conformance audit reports, including sign-off on Monthly Inspection Reports;
- Conduct monthly observation & inspections of all work places based on the approved inspection checklist;
- Audit conformance to Method Statements;
- Monitor the Contractor's compliance with this SOP and any other environmental requirements relevant to the site;
- Develop an Audit Finding and Close out Register that documents all audit findings, close out actions and the time frame allowed for in order to close the finding/s;
- Ensure that all environmental monitoring programmes (sampling, measuring, recording etc. when specified) are carried out according to protocols and schedules;
- Measurement of completed work (e.g. areas top soiled, re-vegetated, stabilised etc.);
- Attendance at scheduled SHE meetings, as and when required, and project coordination meetings;
- Ensure that site documentation (permits, licenses, EA, EMP, SOP-CEM, method statements, audit reports, waste disposal slips etc.) related to environmental management is maintained on the relevant Document Control System;
- Inspect and report on environmental incidents and check corrective action;
- Keep a photographic record of all environmental incidents;

- Environmental incident management as required by Transnet policies and procedures;
- Implementation of environmental-related actions arising out of the minutes from scheduled meetings;
- Management of complaints register;
- Conduct any environmental incident investigations;
- Coordinate and/or facilitate any environmental monitoring programmes e.g. EMI Inspections, ECO Audits, Transnet Environmental Assurance Audits etc.
- Collate information received, including monitoring results into a monthly report that is supported with photographic records to the Transnet CM and Transnet PM showing progress against targets; and
- Report environmental performance of the project on a monthly basis through relevant governance channels.

5.3.3 The tasks stipulated above may be conducted by one or more Project Environmental Resource, depending on the scale, complexity and sensitivity of the environment. Discretion to be taken by the Environment Lead within the area of control of the project site.

5.4 Transnet Construction Manager (CM)

5.4.1 The Transnet Construction Manager (CM) has overall responsibility for environmental management on site and reports to the Transnet PM. The Transnet CM is supported by the Transnet PER.

5.4.2 The specific tasks during the construction stage will include:

- Reviewing the monthly reports compiled by the Transnet PER;
- Approving method statements prepared by the Contractor;
- Communicating directly with the Contractor on environmental issues observed on-site; and
- Escalating any relevant environmental matters to the Transnet PM.

5.6 Environmental Control Officer

5.6.1 The Environmental Control Officer is an independent person legally appointed to monitor compliance of construction related activities with the conditions of the Environmental Authorisation. The ECO fulfils an autonomous role and submits reports to the Competent Authority at timeframes specified in the Environmental Authorisation.

5.6.2 The Environmental Control Officer will conduct the following tasks:

- Monitors compliance to the conditions of the EA, Environmental Management Programme (EMPr) and can include permits and licences applicable to a project;
- Attends project meetings as and when required;
- Conducts audits at a frequency stipulated on the EA/EMPr; and
- Compiles audit reports and submits them to relevant authorities.

5.7 Contractor's Environmental Officer

5.7.1 The Contractor's Environmental Officer (EO) must ensure implementation of the requirements of this SOP on site.

5.7.2 The Contractor's EO will liaise with the Transnet PER on site. It will be the responsibility of the Contractor's EO to ensure that all work is conducted according to the approved Method Statements and that the Contractor team's roles and responsibilities as set out in this document are fulfilled.

5.7.3 The Contractor EO's tasks will include:

- Developing an appropriate environmental file for approval by the Transnet PER prior to site access, including but not necessarily limited to (the environmental file must always be available and up to date on the construction site):
 - All environmental documents provided by Transnet in the tender e.g. policies, SOPs, standards, environmental approvals;

- Contractors commitments to comply with this SOP and associated documents as signed during tender;
- The Contractor's EMP;
- His/her CV;
- An organogram indicating reporting lines of all Contractor's staff (with names included);
- Contact Information for: the overall responsible person acting on behalf of the Contractor to execute the construction works; Contractor's CM; Contractor's EO; all relevant emergency personnel;
- A list of the Contractor's plant and equipment indicating a description of the plant/equipment, its fuel capacity, any hazardous components (oils, greases etc.), individual service/maintenance cycles and noise levels;
- A list of hazardous substances to be used during construction indicating: official substance name from Material Safety Data Sheet (MSDS); quantity on site; storage method; transport method to site; period to be used on site (all substances listed must have an MSDS on site in the environmental file);
- Site Layout Plan indicating but not necessarily limited to, access roads, site offices, material laydown areas, stockpile areas and parking areas, waste and effluent storage and handling facilities, entire construction footprint, no-go-areas, sewage and sanitary facilities. The plan must be appropriately drawn on a computer and must be clearly visible and properly scaled;
- A site establishment method statement (for more details on what method statements should entail the Contractor must refer to the Minimum Requirements for Construction Environmental Management)
- Conducting an activity-based environmental risk assessment based on the Contractor's scope of work;
- Agreeing on an appropriate inspection schedule with the Transnet PER (either daily or weekly);

- Ensuring that all required Contractor staff attends the environmental induction to be given by the Transnet PER (any Contractor's staff, sub-contractors or visitors to site must subsequently be inducted by the Contractor's EO);
- Inspection of the work area(s) as per schedule or authorised through written instruction by Transnet PER;
- Preparing activity-based Method Statements that indicate how environmental risks will be managed on site OR ensuring that the necessary environmental information is included in the Contractor's method statements (all method statements must be maintained in the Contractor's Environmental File);
- Identify local, provincial and national environmental legislation that applies to the Contractor's activities;
- Conduct ongoing Environmental Awareness Training of the Contractor's site personnel;
- Reporting, investigating and recording of any environmental incidents caused by the Contractor or due to the Contractor's activities, including their sub-contractors and visitors;
- Close out of environmental incidents;
- Attendance at all SHE meetings and induction programmes, and toolbox talks where required
- Monitor Waste Management;
- Monitor Water Management;
- Monitor Energy Management;
- Ensure that environmental signage and barriers are correctly placed;
- Taking required corrective action within specified time frame and close out of non-conformances; and
- Maintain site documentation related to environmental management on site.

5.7.4 The Contractor's EO will be expected to submit reports to the Transnet PER on a daily/weekly basis.

5.8 The Contractor

- 5.8.1 The Contractor shall comply with the requirements of this SOP and abide by the Transnet PM's instructions regarding the implementation of this SOP.
- 5.8.2 The Contractor must confirm that he will conform to the requirements of this SOP and any other documents provided to him by Transnet during tender.
- 5.8.3 The Contractor must recommend a suitably qualified, competent person to fulfill the role of the Contractor's EO at tender and if accepted by Transnet this person must be appointed when the Contract is awarded for the duration of construction. Should this person be replaced for whatever reason, the Contractor shall ensure that a person of similar qualification and competency is appointed in his/her place before the previous incumbent vacates his/her position.
- 5.8.4 The Contractor must obtain any relevant environmental approvals required by his activities that have not been obtained by Transnet e.g. permits for the destruction of protected plant species; grave relocation permits etc.
- 5.8.5 The Contractor shall have overall accountability for environmental compliance on site and will be held liable for any non-compliance with environmental statutes or non-conformances with this SOP due to his negligence.

5.9 Reporting Lines

- 5.9.1 The organisational structure identifies and defines the responsibilities and authority of the various entities involved in the project. All instructions and official communications regarding environmental matters will follow the organisational structure shown in Figure 1.
- 5.9.2 All instructions that relate to the SOP will still be given to the Contractor via the Transnet PM. In an emergency situation, however, the Transnet PER may give an instruction directly to the Contractor. Environmental Management of the site will be an item on the agenda of the monthly site meetings, and the Transnet PER will attend these meetings on request by the contractor. If at any time the Transnet

PM is uncertain in any way with respect to an environmentally related issue or specification in the SOP, he will consult with the Transnet PER .

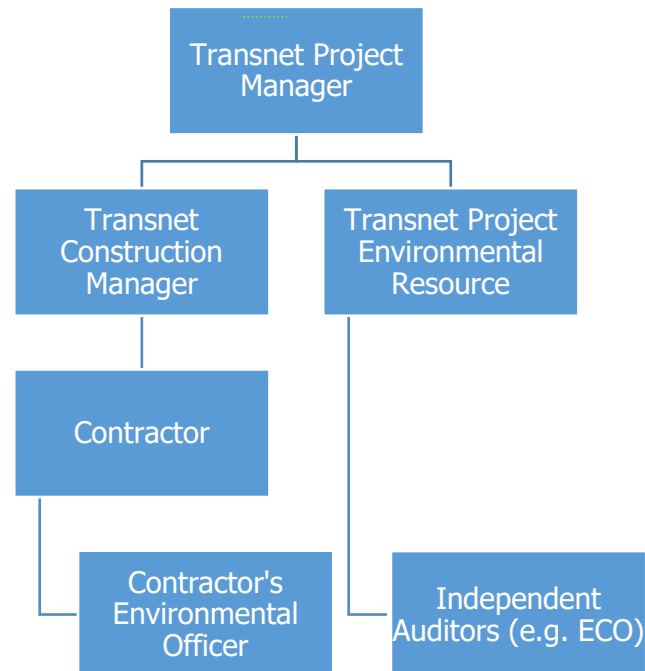


Figure 1: Typical Transnet Organogram for Construction Environmental Management²

6. STANDARD OPERATING PROCEDURE

6.1 Tender Stage (prior to Contract Award)

- The Transnet PM appoints or assign a Project Environmental Resource/s³.
- The Transnet PER requests the draft tender from the Transnet Procurement Department
- Transnet Procurement routes the draft tender to the Transnet PER

² Structure dependent on OD own structure and organizational operating model

³ Project complexity will determine the final environmental management structure on the project.

- The Transnet PER ensures the tender includes all relevant environmental documents and signs the routing slip.
- The Transnet Procurement Department issues the tender to prospective Contractor(s).
- The Contractor submits his bid which MUST include: a commitment to conform to this SOP signed by the duly delegated person; recommendation of a suitably qualified, competent person to fulfill the role of the Contractor's EO; Environmental Policy; and EMP
- After submission the Transnet Procurement Department will invite the Transnet PER to evaluate tender submissions (environmental section);
- The Transnet PER evaluates the prospective Contractor's environmental submission.
- The Contract is awarded to the successful bidder.

6.2 Construction Stage (prior to Site Access)

- The Contractor appoints the Contractor's Environmental Officer (EO) accepted by Transnet SOC Ltd.
- The Contractor provides his EO with all documents submitted during tender, including but not necessarily limited to:
 - All environmental documents provided by Transnet in the tender e.g. policies, SOPs, standards, environmental approvals etc;
 - commitment to conform to this SOP; and
 - The EMP.
- The Contractor's EO conducts an activity-based environmental risk assessment;
- The Contractor's EO develops an appropriate environmental file for approval by the Transnet PER, including but not necessarily limited to all the documents specified in Section 5.7 above (the environmental file must always be available and up to date on the construction site);
- The Contractor's EO submits the environmental file for acceptance to the Transnet PER;

- Once accepted, the Transnet PER recommends that site access be granted to the Transnet PM; and
- The Transnet PM issues the Contractor with a Site Access Certificate

6.3 Construction Stage (post Site Access)

- The Transnet PER inducts all Contractor's staff on the environmental requirements of the site;
- The Transnet PER has an inception meeting with the Contractor's EO on site where the following is agreed:
 - The contents of the contractor's environmental file (in addition to what was approved prior to granting site access). This will include but not necessarily be limited to: a list of interested and affected parties that may be impacted by construction e.g. surrounding landowners, nearby communities etc.; energy consumption information; water use information; environmental induction and awareness information; activity-based environmental method statements; complaints records; record of external communications; environmental incident reports; minutes of contractors environmental meetings.
 - The composition of the Project Environmental Specification (PES) and how it will be implemented. This will include but may not necessarily be limited to: Environmental Approvals (e.g. Environmental Authorisations, Water Use Licenses, Waste Management Licences, Atmospheric Emissions Licences etc.); Environmental Management Programmes/Plans approved by external parties/authorities; and any third party auditors/monitoring specialists (e.g. Environmental Control Officers; Independent Auditors; Transnet Environmental Assurance Specialists; Water Quality Monitoring experts etc.) that have a bearing on the contractor's scope of work.
 - The frequency of inspections to be conducted by the Contractor's EO (e.g. daily, weekly etc.)
 - The frequency of inspections to be conducted by the Transnet PER (e.g. daily, weekly and/or monthly). Notwithstanding that the frequency of

Transnet PER inspections will be agreed, the Contractor may never refuse the Transnet PER

- The format used and elements to be checked during Contractor's inspections
 - Reporting frequency and requirements
 - The process to be followed in handling Environmental Occurrences and – Non-conformances
- **Note:** All the aforementioned agreements will be formalized in the form of minutes which the Transnet - and Contractor's EO must sign and must subsequently be approved by the Transnet Project Environmental Resource.
 - The Transnet PER reviews the Contractor's activity-based environmental risk assessment and instructs the Contractor's EO to submit activity-based method statements for construction activities that may pose an environmental risk (for more details on what method statements should entail the Contractor must refer to the Minimum Environmental Requirements for Construction). Only once a method statement has been approved by the Transnet PER and Transnet CM and ECO (where relevant) may the Contractor execute the relevant activity.
 - The Contractor's EO submits the method statements to the Transnet PER for approval (these must also be approved by the Transnet CM);
 - The Transnet PER compiles a site audit checklist (covering all environmental compliance and conformance requirements) for approval by the Transnet Project Environmental Manager
 - Whilst the Contractor executes the work in terms of the requirements of the Contract, the Contractor's EO and Transnet PER execute their monitoring functions as per this SOP and other monitoring stakeholders/auditors as per the PES.
 - The Transnet PER shall submit monthly reports to the Transnet CM and PM indicating the following:
 - Date of the inspection(s);
 - Details and expertise of the Transnet PER;

- Scope and purpose for which the report was prepared;
- Description of the methodology used during the inspection and report compilation;
- Compliance and/or conformance status of all relevant/individual elements as per the inspection checklist culminating in an overall compliance/conformance percentage for the project;
- Assumptions;
- Description of consultation processes undertaken during the inspection(s) with a summary and associated records of such consultations;
- Environmental incidents and non-conformances;
- Photos of pertinent construction and environmental matters that occurred on site;
- Water abstracted/withdrawn during the month (in kiloliters) as well as an indication of the source;
- Water recycled and/or reused during the month (in kiloliters);
- Waste water discharged (in kiloliters);
- Waste (both general and hazardous) disposed (in tonnages) with an indication of waste type;
- Waste recycled (in tonnages);
- Alien invasive species eradicated (in hectares);
- Number of listed species safely relocated;
- Environmental Fines, Non-Compliances or Directives issues by authorities;
- Any NEMA Section 30 or NWA Section 19 incidents;
- Environmental Grievances;
- Rehabilitated Land (in hectares);
- Number of graves and/or heritage artifacts moved;
- Energy consumption for the project [Electricity(kWh); Gas (GJ); Oil(l); Diesel(l); Petrol(l); LPG(GJ)];
- Status of previous findings and/or observations; and
- Recommendations for improvement.

6.4 Post Construction

- The Contractor's EO submits a rehabilitation and site closure method statement for approval by the Transnet PER and Transnet CM.
- Once approved, the Contractor implements the rehabilitation method statement accordingly.
- The Contractor's EO submits a site close-out report for acceptance by the Transnet PER and CM.
- Post rehabilitation, the Transnet PER conducts a site closure inspection to ensure all requirements of the rehabilitation method statement have been met.
- Once rehabilitation has been accepted by the Transnet PER, the Contractor's EO sends the Transnet PER a copy of the entire environmental file (original to be handed over to Transnet as per document handover requirements of the Contract).
- On receipt of the environmental file, the Transnet PER recommends that a site closure certificate can be issued to the Transnet PM.
- The Transnet PM issues the Contractor with a Site Closure Certificate.

7. RECORDS

7.1 The responsibility for maintaining all records required by this SOP shall rest with the Contractor's EO; Transnet PER as specified below:

Record	Maintained By
1. Transnet PER Appointment Letter	Transnet PER
2. Signed Tender Routing Slip	Transnet PER
3. Contractor's Confirmation to conform to this CEM SOP	Transnet PER; Contractor's EO
4. Recommendation of Contractor's EO	Transnet PER

Record	Maintained By
5. Contractor's Environmental Policy	Transnet PER; Contractor's EO
6. Contractor's Environmental Management Plan	Transnet PER; Contractor's EO
7. Tender Evaluation Records from Transnet PER	Transnet PER
8. Contract	Transnet PER
9. Contractor EO's Appointment Letter and CV	Transnet PER
10. Activity-Based Environmental Risk Assessment	Transnet PER; Contractor's EO
11. Contractor's Organogram	Transnet PER; Contractor's EO
12. Contractor's Contact Information	Transnet PER; Contractor's EO
13. List of Contractor's Plant and Equipment	Contractor's EO
14. List of Hazardous Substances used by Contractor	Contractor's EO
15. Material Safety Data Sheets	Contractor's EO
16. Site Layout Plan	Transnet PER; Contractor's EO
17. Site Establishment Method Statement	Transnet PER; Contractor's EO
18. Minutes of Transnet PER – Contractor's EO Inception Meeting	Transnet PER; Contractor's EO
19. Environmental Induction Attendance Register (including material used during induction)	Transnet PER; Contractor's EO
20. Activity-based Method Statements	Transnet PER; Contractor's EO

Record	Maintained By
21. Contractor's Inspection Reports	Transnet PER; Contractor's EO
22. Transnet PER Inspection Reports	Transnet PER
23. List of Local, Provincial and National Environmental legislation applicable to the site	Contractor's EO
24. Environmental Awareness Attendance Registers (including material used)	Contractor's EO
25. Environmental Incident Reports	Transnet PER; Contractor's EO
26. Minutes of SHE Meetings	Transnet PER; Contractor's EO
27. Waste Records	Transnet PER; Contractor's EO
28. Water Records	Transnet PER; Contractor's EO
29. Energy Records	Transnet PER; Contractor's EO
30. Non-Conformance Records	Transnet PER; Contractor's EO
31. Approval of Contractor's Environmental File	Transnet PER
32. Site Access Certificate	Transnet PER
33. Approved Transnet PER Checklist	Transnet PER
34. Transnet Monthly PER Reports	Transnet PER
35. Rehabilitation Method Statement	Transnet PER; Contractor's EO
36. Contractor's Site Close-Out Report	Transnet PER; Contractor's EO
37. Transnet PER Site Closure Report	Transnet PER
38. Contractor's Environmental File Handover Transmittal	Transnet PER; Contractor's EO
39. Site Closure Certificate	Transnet PER

8. ANNEXURES

8.1 List of Construction Environmental Management Templates, Forms and Guidelines

8.2 009-TCC-CLO-SUS-TMP-11386.22 - Construction Environmental Management File Index

8.3 009-TCC-CLO-SUS-TMP-11386.23 - *Construction Environmental Management Process Flow*

Annexure 8.1 List of Construction Environmental Management Templates, Forms and Guidelines

No	Item Description	Document No
1.	Construction Environmental Management File Index	009-TCC-CLO-SUS-TMP-11386.1
2.	Project Environmental Specification (PES)	009-TCC-CLO-SUS-TMP-11386.2
3.	Declaration of Understanding (Signed)	009-TCC-CLO-SUS-TMP-11386.3
4.	Contractor's Information	009-TCC-CLO-SUS-TMP-11386.4
5.	Appointment of Contractors EO and Declaration of Understanding (Including CV and Job Profile)	009-TCC-CLO-SUS-TMP-11386.5
6.	Schedule of Contractor's Construction Plant and Equipment	009-TCC-CLO-SUS-TMP-11386.6
7.	Hazardous Substances Register	009-TCC-CLO-SUS-TMP-11386.7
8.	Emergency Contacts Register	009-TCC-CLO-SUS-TMP-11386.8
9.	Energy Consumption Register	009-TCC-CLO-SUS-TMP-11386.9
10.	Water Usage Register	009-TCC-CLO-SUS-TMP-11386.10
11.	Project Start-Up Checklist	009-TCC-CLO-SUS-TMP-11386.11
12.	Site Access Certificate	009-TCC-CLO-SUS-TMP-11386.12
13.	Method Statement Register	009-TCC-CLO-SUS-TMP-11386.13
14.	Method Statements	009-TCC-CLO-SUS-TMP-11386.14
15.	Waste Disposal Register	009-TCC-CLO-SUS-TMP-11386.15
16.	Daily Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.16
17.	Weekly Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.17
18.	Monthly Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.18

No	Item Description	Document No
19.	Public Complaints Register	009-TCC-CLO-SUS-TMP-11386.19
20.	Application for Exemption	009-TCC-CLO-SUS-TMP-11386.20
21.	Site Closure Certificate	009-TCC-CLO-SUS-TMP-11386.21
22.	Contractor's Environmental Management File Handover	009-TCC-CLO-SUS-TMP-11386.22
23.	Basic Environmental Rules for Visitors	009-TCC-CLO-SUS-GDL-11386.23
24.	Basic Environmental Rules for Contractors	009-TCC-CLO-SUS-GDL-11386.24
25.	Basic Site Procedure	009-TCC-CLO-SUS-GDL-11386.25
26.	Contractor Environmental and Sustainability Specification Guidelines (CESSG)	TRN-IMS-GRP-GDL-014.04

Annexure 8.2 Construction Environmental Management File Index

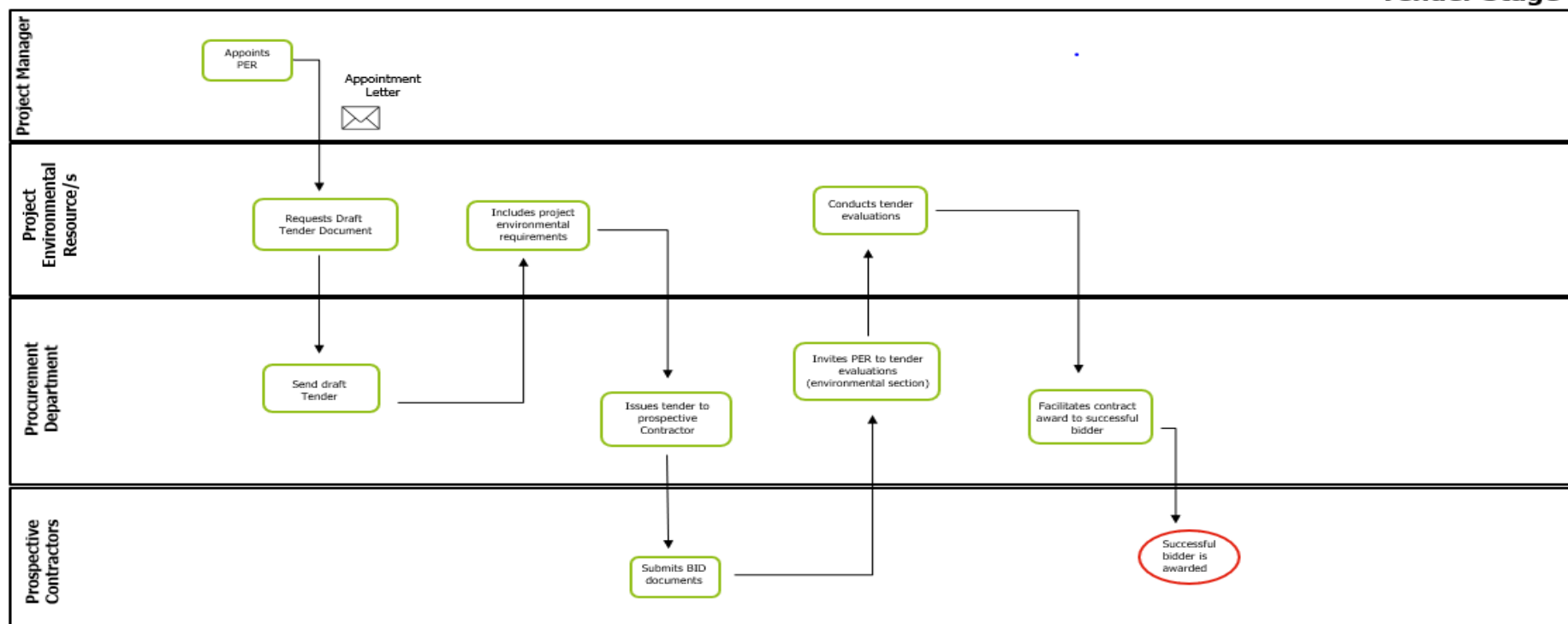
No	Item Description	Document No
1	Transnet Integrated management System (TIMS) Policy Statement	-
2.1	Standard Operating Procedure (SOP) - Construction Environmental Management (CEM)	009-TCC-CLO-SUS-11386
2.2	Environmental and Sustainability Specification Guidelines	TRN-IMS-GRP-GDL-014.04
3	Project Environmental Specification (PES)	009-TCC-CLO-SUS-TMP-11386.2
4	Declaration of Understanding (Signed)	009-TCC-CLO-SUS-TMP-11386.3
5.1	Contractor's Information	009-TCC-CLO-SUS-TMP-11386.4
5.2	Contractor's Environmental Policy	-
5.3	Contractor's Organogram	-
5.4	Contractor's Environmental Management Plan	-
5.5	Appointment of Contractors EO and Declaration of Understanding (Including CV and Job Profile)	009-TCC-CLO-SUS-TMP-11386.5
6	Schedule of Contractor's Construction Plant and Equipment	009-TCC-CLO-SUS-TMP-11386.6
7	Hazardous Substances Register	009-TCC-CLO-SUS-TMP-11386.7
8	Emergency Contacts Register	009-TCC-CLO-SUS-TMP-11386.8
9	Energy Consumption Register	009-TCC-CLO-SUS-TMP-11386.9
10	Water Usage Register	009-TCC-CLO-SUS-TMP-11386.10
11	Training Attendance Register	TIMS Procedure
12	Project Start-Up Checklist	009-TCC-CLO-SUS-TMP-11386.11
13	Site Access Certificate	009-TCC-CLO-SUS-TMP-11386.12
14	Method Statement Register	009-TCC-CLO-SUS-TMP-11386.13

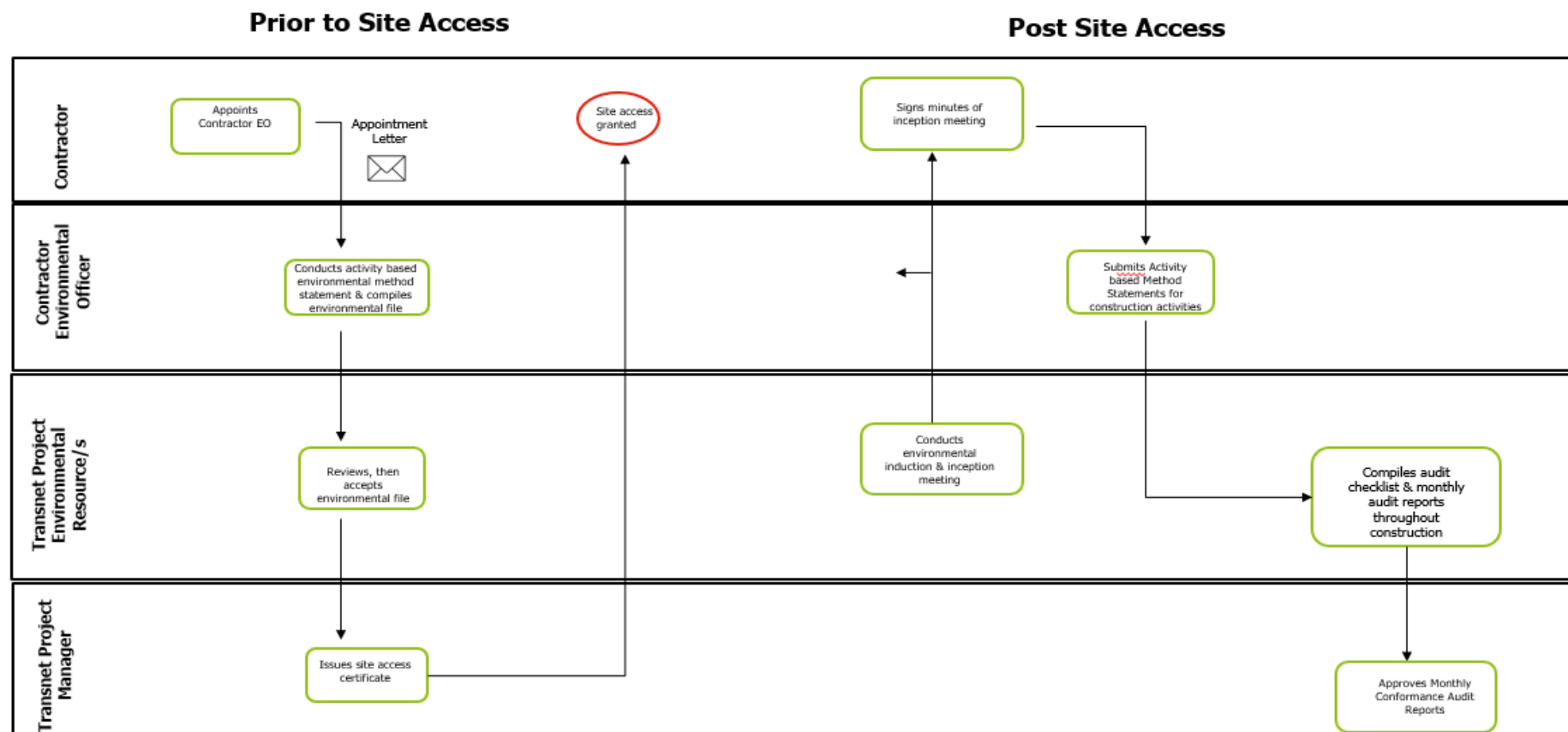
No	Item Description	Document No
15	Method Statements	009-TCC-CLO-SUS-TMP-11386.14
16	Waste Disposal Register	009-TCC-CLO-SUS-TMP-11386.15
17.1	Daily Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.16
17.2	Weekly Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.17
17.3	Monthly Inspection Checklist	009-TCC-CLO-SUS-TMP-11386.18
17.4	Environmental Inspection Findings Close-out Register	TIMS Procedure
18	Public Complaints Register	009-TCC-CLO-SUS-TMP-11386.19
19	Occurrence Register	TIMS Procedure
20	Transnet Occurrence Notification Report	TIMS Procedure
21.1	Environmental Occurrence Technical Form	TIMS Procedure
21.2	On-site Investigation Form – Incident Commander Report	TIMS Procedure
21.3	Investigation Form Report for Level 3 & 4 Occurrences	TIMS Procedure
21.4	Incident Commander Appointment Letter	TIMS Procedure
22	Non-Conformance Register	TIMS Procedure
23	Non-Conformance Report Form	TIMS Procedure
24	Non-Compliance Stop Certificate	TIMS Procedure
25	Application for Exemption	009-TCC-CLO-SUS-TMP-11386.20
26.1	Site Closure Inspection Form	TIMS Procedure
26.2	Site Closure Certificate	009-TCC-CLO-SUS-TMP-11386.21
26	Contractor's Environmental Management File Handover	009-TCC-CLO-SUS-TMP-11386.22

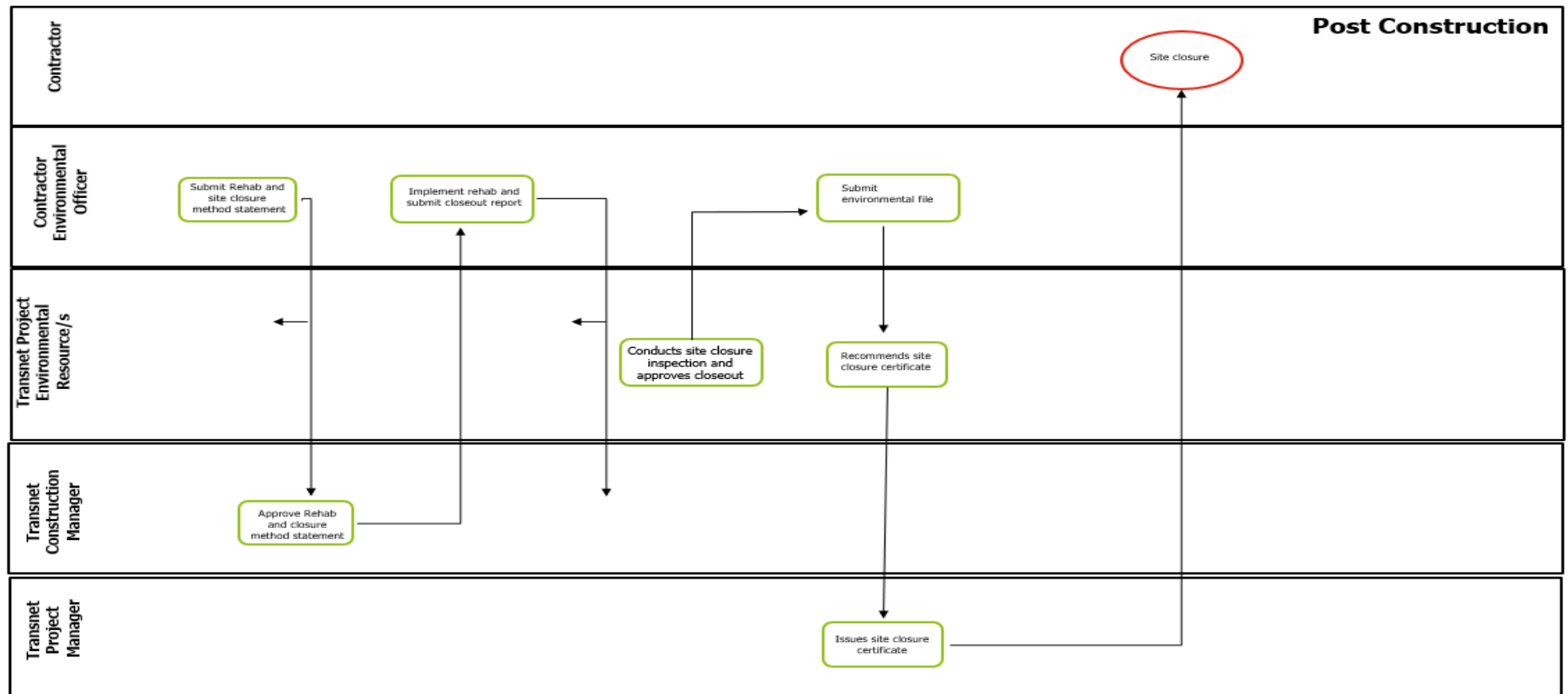
No	Item Description	Document No
27.1	Basic Environmental Rules for Visitors	009-TCC-CLO-SUS-GDL-11386.23
27.2	Basic Environmental Rules for Contractors	009-TCC-CLO-SUS-GDL-11386.24
27.3	Basic Site Procedure	009-TCC-CLO-SUS-GDL-11386.25

Annexure 8.3 Construction Environmental Management Process Flow

Tender Stage







PART C4: SITE INFORMATION

Document Reference	Title	No of pages
C4	This cover / index sheet	1
	Site Information	2 - 4
	Total number of pages	5

PART C4: SITE INFORMATION

Core clause 11.2(16) states

"Site Information" is information which,

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in."

In the Contract Data, reference has been made to this Part C4 of the contract for the location of Site Information.

1. DESCRIPTION OF THE SITE AND ITS SURROUNDINGS

1.1 General Description

The site is Transnet National Ports Authority (TNPA) Port of Richards Bay in the province of KwaZulu-Natal, South Africa. The site location is within Richards Bay Harbour as indicated in figure 1 below. Access to the Port of Richards Bay and the site is from existing public road networks through the access-controlled security gates, i.e. Main/Bayvue, East and West/RBCT. Access shall be subject to the Transnet National Ports Authority security requirements and regulations, which states that "access should be obtained for all the *Consultant's* personnel at Permit Office located at Sizakala Truck Staging Facility". Due to security requirements, some sections of the site may be fenced with access control due operational and security reasons. Therefore, prior arrangement to access these areas must be made with the *Project Manager*.

The site is located within the Port of Richards Bay as per Locality Plan below.

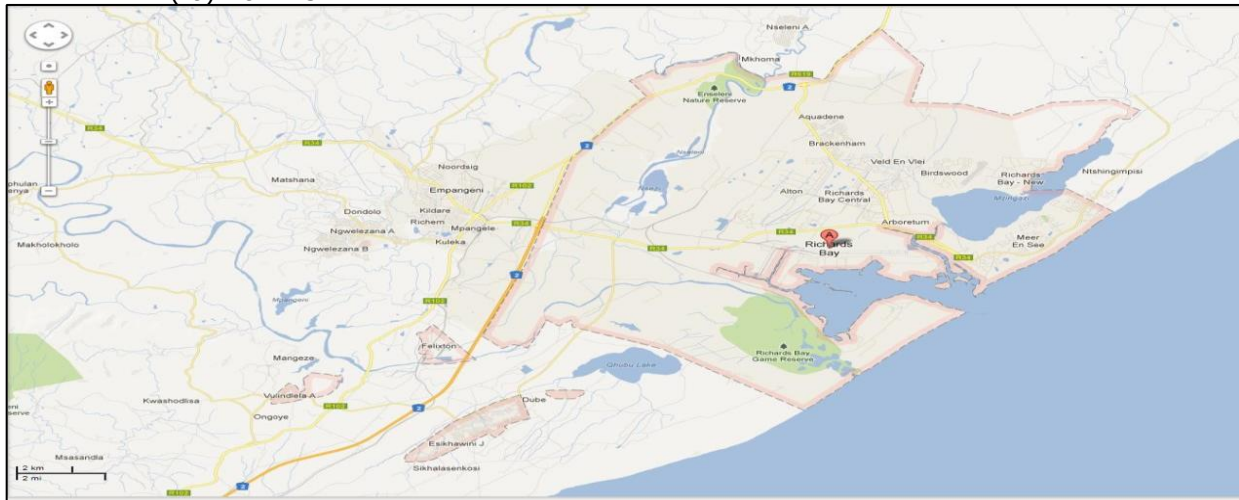


Figure 1: Locality Plan for the location of Port of Richards Bay

Table 1: Site Coordinates

Description	Latitude	Longitude
Port of Richards Bay	28°47'3.77"S	32° 2'13.31"E

Detailed information on the Port layout can be thoroughly viewed on the works information Part C3 of the submission by *Employer*.

Prospective *Consultant* shall attend the compulsory briefing session to acquaint themselves with the nature of the services, the condition under which the service is to be performed, the means of access to site, any limitations or other authorities and all matters that may influence or affect the *Consultant*.

1.2 Access Limitations

The following are TNPA Port of Richards Bay access requirements:

a) Induction

Persons to undertake any site work (e.g., site inspections, construction work) at TNPA Port of Richards Bay must be inducted. No persons may undertake any work on the site until they undergo a mandatory induction. All TNPA Port of Richards Bay rules, regulations, and procedures in connection to health, safety and environment are presented during the induction.

b) Access Permit Controls

Access cards are available on request at no fee. The following will be required in order to grant access cards:

- i. A proof of induction, i.e., a copy of the attendance register.
- ii. A formal request in a form of a signed letter on a company letterhead indicating:
 - The reason for request, i.e., 'company' contracted to 'TNPA Port of Richards Bay' to render 'services' for the 'mentioned project'.
 - The list of persons, with their ID numbers, to be issued with access cards.
 - The approximate period of access to be granted expressed in months or years if more than 12 months.
- iii. Copies of certified Identity Document / Card for each individual who need access card.

Persons without access cards will be required to report to the Registration Office each time they visit the port in order to be granted access to the TNPA Port of Richardsbay. Persons are required to always have their permits together with IDs to access the Port. NB: TNPA Security Personnel conducts random verifications and persons found without access cards and IDs will be removed from the Port.

c) Working Hours

Normal working hours: 07:30 to 16:30, Monday to Friday, excluding public holidays. Working hours maybe varied on mutual agreement between the TNPA *Project Manager* / Official and the *Consultant*.

d) Health and Safety

The *Consultant* shall ensure that safe and proper access to all Port facilities is maintained.

1.3 Existing buildings, structures, and plant & machinery on the Site

The *Consultant* shall be made aware of Port stakeholders utilising roads within the Port hence precautional measures and proper planning shall be conducted prior commencement of work to avoid limited road disruption to several operational areas within the Port.

1.4 Underground Services

The *Project Manager* requires the *Consultant* to carry out the existing underground services investigation as part of the contract where applicable within the Project Site before designing and executing the assigned works. The *Project Manager* shall furnish to the *Consultant* drawings showing the demarcated site to be investigated. Some services may not be indicated on the drawings and the *Consultant* is required to exercise care not to damage these services.

The work area has optic fiber cables that supply the port and the town of Richards Bay, the *Consultant* must exercise due care and attention in carrying out any excavation work where applicable to avoid damage or disruption to existing services. The *Consultant* must accordingly consult the *Project Manager* prior to undertaking any excavation work.

Any damages to existing port services due to negligence or recklessness of *Consultant* will be for the *Consultant's* account.

1.5 Subsoil information

In excavations deeper than 400mm it can be expected that the trench/embankment walls must become unstable and caving-in could occur. Tenderers are to take this into account in their tendered rates and are to allow for any measures to be taken to safeguard the excavations including shoring where required to ensure safety at all times.

A perched water table could develop especially in excavations deeper than 400mm and during wet conditions due to groundwater backup from the seaside. Although unlikely, pumping water out of excavations and keeping excavations free from water may be required under wet conditions and tenderers are to allow for this in their tendered rates.

“HOW TO” GUIDE FOR BIDDERS

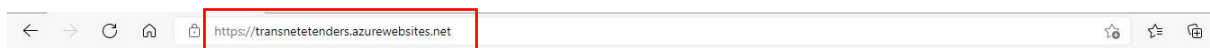
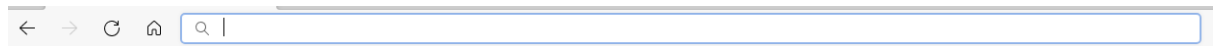
REGISTER ON ETENDER PORTAL

ACCESS TENDERS

NB: Do not wait for the last minute to register or to bid for a tender. Ensure you complete your process at least 1 day (24hours) before the closing date

Go to Google Chrome 

In the address bar type: <https://transnetetenders.azurewebsites.net>



https://transnetetender.b2clogin.com/transnetetender.onmicrosoft.com/b2c_1_signupsignin/oauth2/v2.0/authorize?client



Sign in with your email address

[Forgot your password?](#)

[Sign in](#)

[Don't have an account? → Sign up now](#)

If not already registered, click on Sign up now.

Ensure that the email you use to sign in is the same as the email that you received from the tender invite on the email, otherwise you will not see the tender

Cancel


Email Address

Send verification code

New Password

Confirm New Password

Given Name

Organization Name

Surname

Central Supplier Database Number

Company Registration Number

Country/Region

Country/Region

Secondary Email Address

State/Province

Street Address

Postal Code

Display Name

Create

Complete all fields, before selecting “Send verification code” and confirm that all information is correct.

VERY IMPORTANT: Each field needs to be completed and not to be left blank

If you do not have a central Supplier Database number, enter the same company registration number in that field.

Send verification code

After completing all fields, select "Send verification code". The code will be sent to your email.

< Cancel



Verification code has been sent to your inbox. Please copy it to the input box below.

abc@gmail.com

Verification Code

Copy the code as received on the email and paste it in the Verification code field
Then click on Verify code

Verify code

Send new code

[Forgot your password?](#)

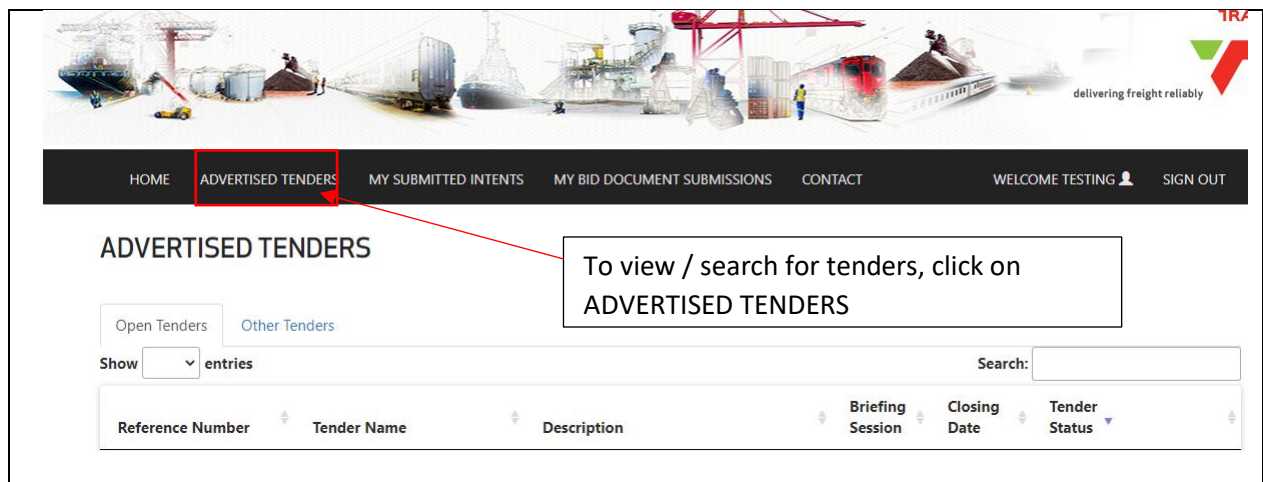
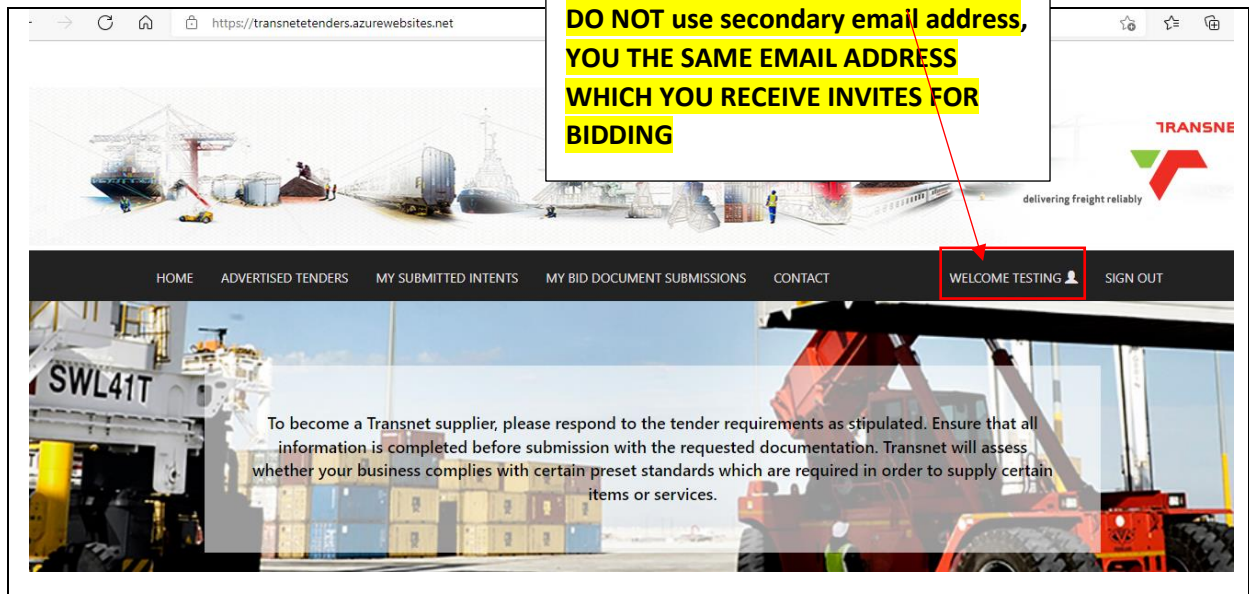
Sign in

Don't have an account? [Sign up now](#)

Then click on Sign in

Once registered and signed in, the home screen will have “WELCOME (Registered user)”

DO NOT use secondary email address, YOU THE SAME EMAIL ADDRESS WHICH YOU RECEIVE INVITES FOR BIDDING



To view / search for tenders, click on ADVERTISED TENDERS

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ - Message (HTML)

File Message Help Tell me what you want to do

Delete Archive Reply Reply All Forward Share to Teams ATM signed To Manager Team Email Move Tags Editing Read Aloud Translate Zoom Send to OneNote Viva Insights

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ

SRV-TCC-Etender
To noreply@transnet.net

This message was sent with Low importance.

Dear Suppliers,
You have been invited to bid and respond to the following tender:

Name Of Tender : TE22-SRX-1FG-02068
Description : STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Number : TE/2022/04/0697/RFQ

Access to this tender will be granted by using this email when you sign up/sign in. To access the tender information

Kind Regards,
Transnet eTenders

When a bidder receives an email to quote, the bidder needs to register with the email address of the recipient that received the email. If already registered, sign in.

NOTE: The details on this email is intended for guidance only and not to be used on the live system

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

ADVERTISED TENDERS

Open Tenders Other Tenders

Show entries Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TCC/2021/11/0031/RFQ	For the supply and installation of an air compressor	For the supply and installation of an air compressor for indoor shooting range that operates the laser system and supply air to air guns utilised during training and conduct maintenance on air supply system and hoses.		12/10/2021 12:00:00 PM	Closed	View Details
TFR/2021/12/0014/RFQ	ELECTRICAL MATERIAL (CABLES)	SUPPLY AND DELIVERY OF ELECTRICAL MATERIAL (CABLES) FOR A ONCE OFF PERIOD		12/13/2021 4:00:00 PM	Closed	View Details
TFR/2021/12/0017/RFQ	CRAC_JHB_36509.	FOR THE SUPPLY AND DELIVERY OF HIGH BACK CHAIRS FOR CTC OFFICES IN CENTRAL, EASTERN AND WESTERN REGIONS, FOR A ONCE OFF PERIOD.		12/14/2021 10:00:00 AM	Closed	View Details
TFR/2021/12/0015/RFQ	CRAC-JHB-36313	FOR THE SUPPLY AND DELIVERY OF VARIOUS CLAMPS, TERMINAL LUGS, DROPPER CLIPS AND		1/13/2022 12:00:00	Closed	View Details

When signed in, select "ADVERTISED TENDERS".

To manually search and change the view from Closed to Open, click twice on arrow next to "Tender Status". The arrow pointing down will change to blue and open tenders will be displayed.

HOME
ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING
SIGN OUT

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0450/RFQ	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE-062101802 VALVE; TYPE: L-1 LOAD DETECTOR, MEDIA FOR WHICH DESIGNED: WAGONS AIRBRAKE, CONNECTION TYPE: FLANGE, SPECIAL FEATURES: BLUE, WITHOUT PIPE BRACKET; SIMILAR ITEM: 062004338		4/8/2022 10:00:00 AM	Open	View Details
TE/2022/04/0494/RFQ	GEAR OIL	OIL, GEAR TYPE SYNTHETIC BRAND NAME MOBILGEAR SHC SERIES GRADE SCH 6800 VISCOSITY RATING 220 TO 320 FLASH POINT 234 DEG C COLOR ORANGE CONTAINER TYPE SACHET 250 G CONTAINER CAPACITY 14 KG FOR USE ON: 39-200 GM, 15E AND 19E LOCOMOTIVES		4/8/2022 10:00:00 AM	Open	View Details
TE/2022/04/0495/RFQ	SUPPLY OF CORROSION (NALCOOL) - APPROVED	ITEM NUMBER - 077807563 INHIBITOR, CORROSION; TYPE: COOL-C18, COLOR: RED,		4/8/2022 10:00:00	Open	View Details

HOME
ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING
SIGN OUT

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search: TE/2022/04/0697/RFQ

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	Open	View Details

To search for a specific tender, the tender number, tender name or description can be used for searching.

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search: TE22-SRX-1FG-02068

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00	Open	View Details

When the tender has been identified, click on "View Details"

When the “View Details” has been selected, the following screen will be displayed where the attachments can be viewed or downloaded.

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

TENDER DETAILS

Tender Details

Tender Reference Number	TE/2022/04/0697/RFQ
Name Of Tender	TE22-SRX-1FG-02068
Description	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Type	RFQ
Contact Person	Charl du Preez Transnet Engineering SLR
Contact Person Email Address	Charl.duPreez@transnet.net
Date Published	4/7/2022 3:51:47 PM
Closing Date	4/13/2022 10:00:00 AM
Briefing Date And Time	
Briefing Details	
Location Of Service	Coaches, Salt River

Briefing Session
Closing Date
4/13/2022 10:00:00 AM
Attachments

2.14 Standard Terms and Conditions of Contract f

2.18 Supplier Integrity Pact_April 2020_v1.pdf

2.19 Non Disclosure Agreement_April 2020_v1.pdf

2.9 Request for Quotations TE22-SRX-1FG-02068,

Log An Intent To Bid

If interested to bid, on the same page there's an option to select: **Log an Intent to Bid**. Once selected, an option will appear to “**Submit Intent**” or “**Cancel**”. Click on **Submit Intent**

Tender Details

Tender Reference Number	TE/2022/04/0697/RFQ
Name Of Tender	TE22-SRX-1FG-02068
Description	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Type	RFQ
Contact Person	Charl du Preez Transnet Engineering SLR
Contact Person Email Address	Charl.duPreez@transnet.net
Date Published	4/7/2022 3:51:47 PM
Closing Date	4/13/2022 10:00:00 AM
Briefing Date And Time	
Briefing Details	
Location Of Service	Coaches, Salt River
Name Of Institution	TE
Tender Category	Goods
Tender Status	Open

Briefing Session
Closing Date
4/13/2022 10:00:00 AM
Attachments

2.14 Standard Terms and Conditions of Contract f

2.18 Supplier Integrity Pact_April 2020_v1.pdf

2.19 Non Disclosure Agreement_April 2020_v1.pdf

2.9 Request for Quotations TE22-SRX-1FG-02068,

Log An Intent To Bid

Submit Intent Cancel

Tender Details

Tender Reference Number

Name Of Tender

Description

Tender Type RFQ

Contact Person Charl du Preez Transnet Engineering SLR

Contact Person Email Address Charl.duPreez@transnet.net

Date Published 4/7/2022 3:51:47 PM

Closing Date 4/13/2022 10:00:00 AM

Briefing Date And Time

Briefing Details

Location Of Service

Name Of Institution

Tender Category

Tender Status

Intent to Bid

Your request to log an intent to bid has been successfully submitted.

Close

When the "Submit Intent" is selected, a message will appear to indicate that the request was successfully submitted. Click on close and wait for the next screen.

Briefing Session

Closing Date 4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract for
- 2.18 Supplier Integrity Pact_April 2020_v1.pdf
- 2.19 Non Disclosure Agreement_April 2020_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068.pdf

Log An Intent To Bid

☒

Submit Intent **Cancel**



delivering freight reliably

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

MY SUBMISSION INTENTS

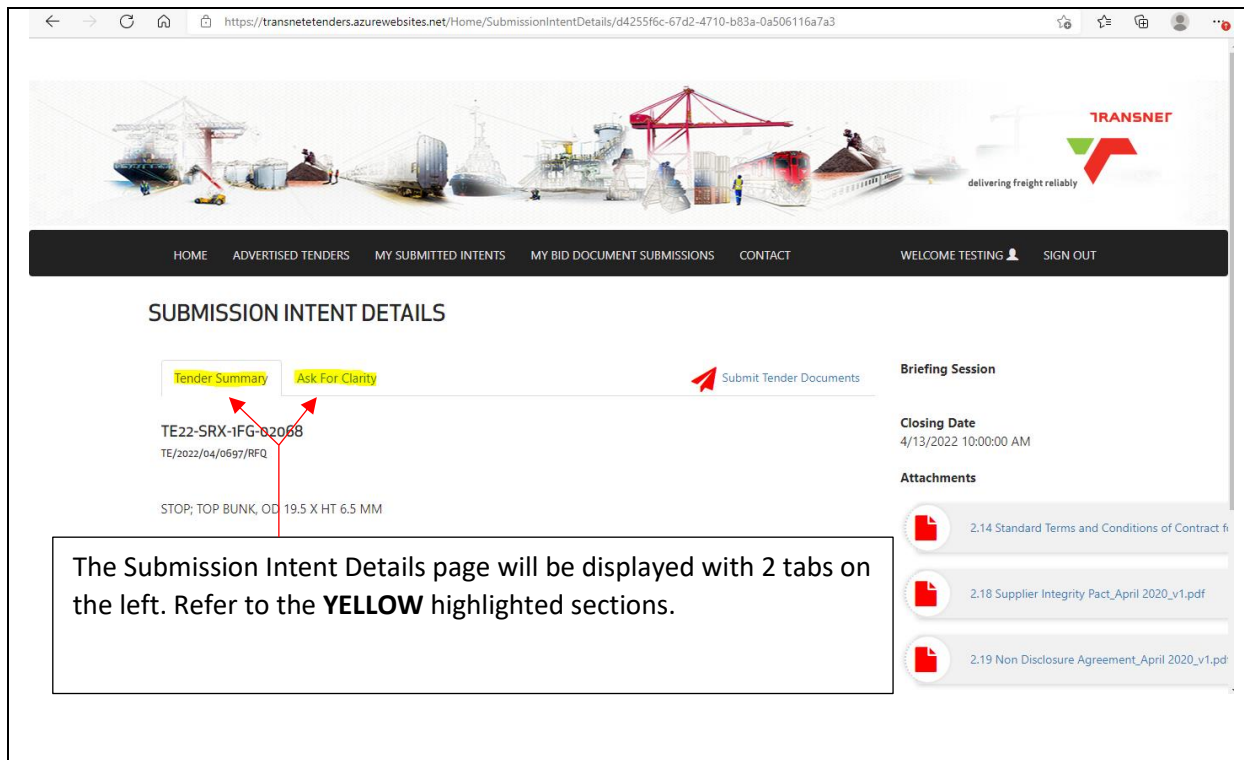
Show 10 entries

Tender Reference Number	Name	Description Of Tender	Briefing Session Date	Closing Date	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	View Details

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen should be updated and load the "MY SUBMITTED INTENTS". To proceed to capturing your bid documents, click on "View Details"



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

SUBMISSION INTENT DETAILS

Tender Summary **Ask For Clarity** [Submit Tender Documents](#)

TE22-SRX-1FG-02068
TE/2022/04/0697/RFQ

STOP, TOP BUNK, OD 19.5 X HT 6.5 MM

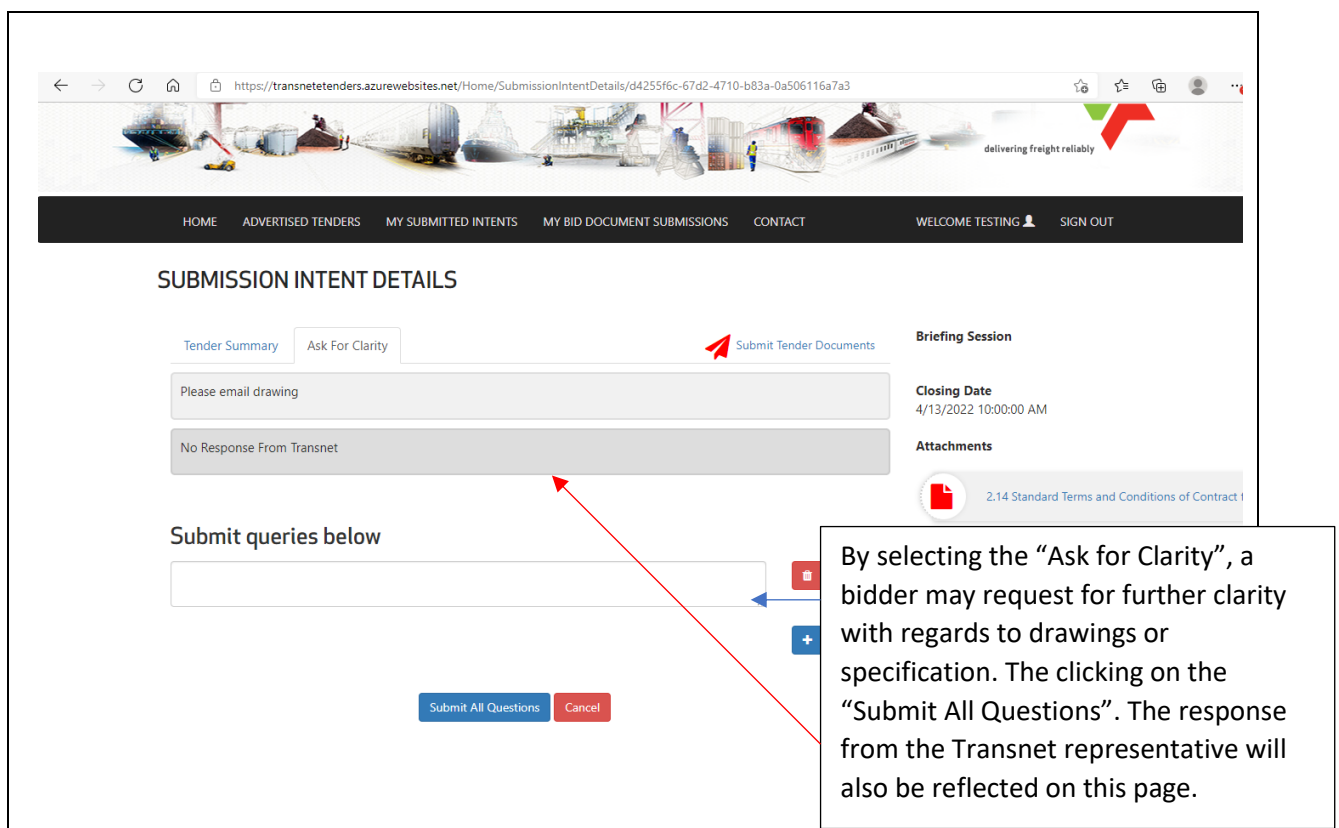
Briefing Session

Closing Date
4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract fi
- 2.18 Supplier Integrity Pact_April 2020_v1.pdf
- 2.19 Non Disclosure Agreement_April 2020_v1.pdf

The Submission Intent Details page will be displayed with 2 tabs on the left. Refer to the **YELLOW** highlighted sections.



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

SUBMISSION INTENT DETAILS

Tender Summary **Ask For Clarity** [Submit Tender Documents](#)

Please email drawing

No Response From Transnet

Submit queries below

[Submit All Questions](#) [Cancel](#)

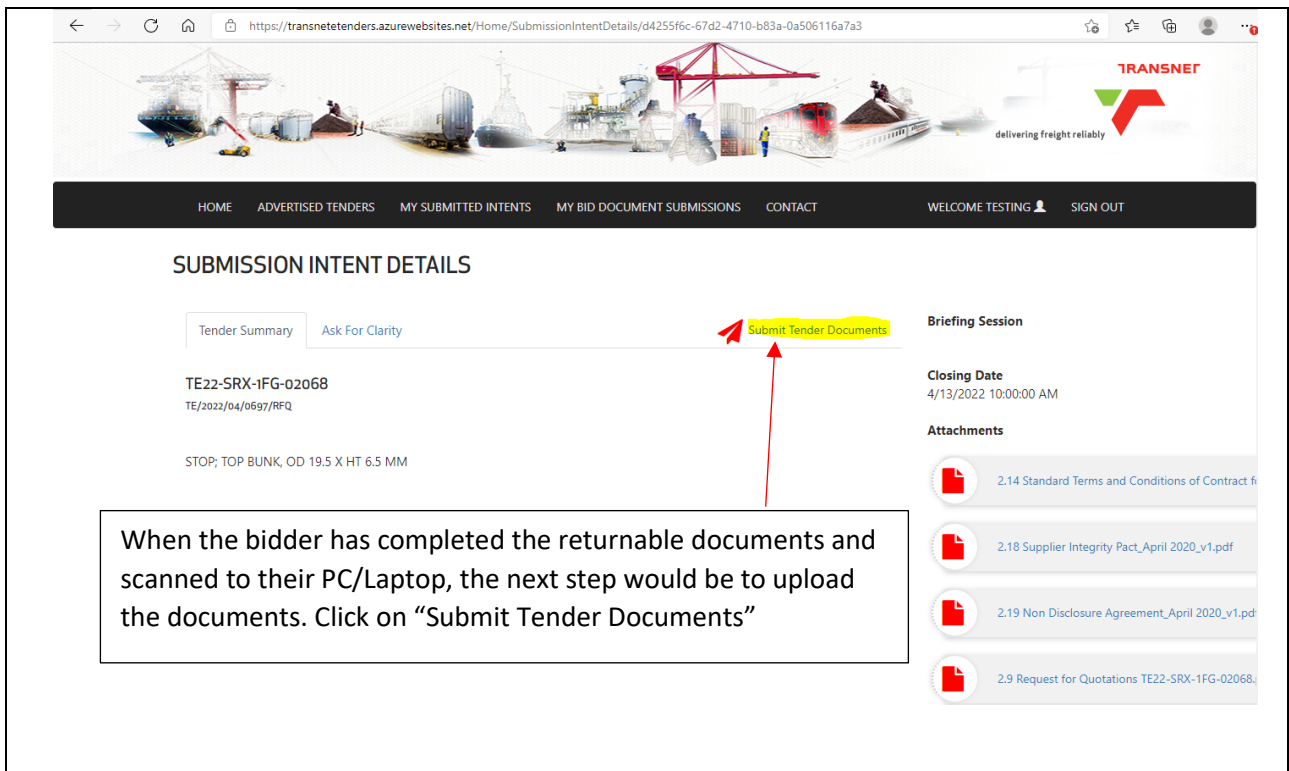
Briefing Session

Closing Date
4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract 1

By selecting the "Ask for Clarity", a bidder may request for further clarity with regards to drawings or specification. The clicking on the "Submit All Questions". The response from the Transnet representative will also be reflected on this page.



Submission Intent Details

Tender Summary Ask For Clarity **Submit Tender Documents**

TE22-SRX-1FG-02068
TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

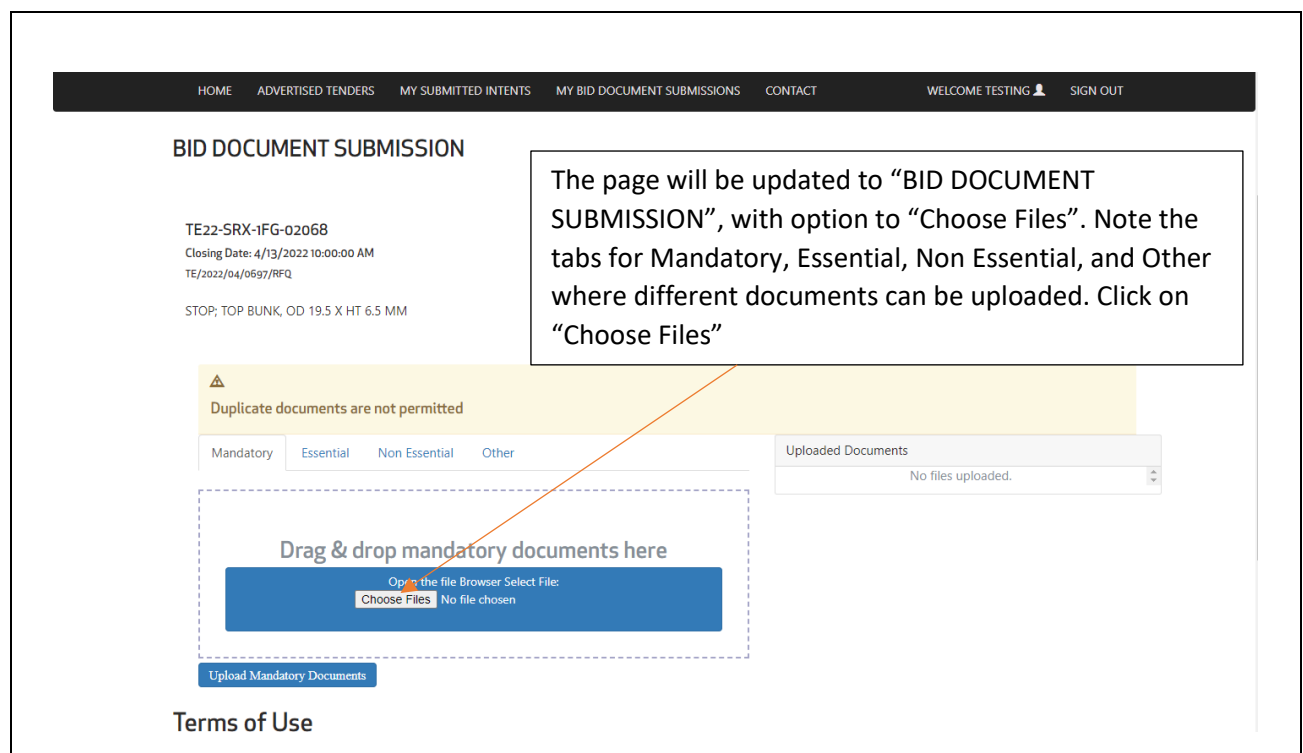
When the bidder has completed the returnable documents and scanned to their PC/Laptop, the next step would be to upload the documents. Click on “Submit Tender Documents”

Briefing Session

Closing Date
4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract f
- 2.18 Supplier Integrity Pact_April 2020_v1.pdf
- 2.19 Non Disclosure Agreement_April 2020_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068.



BID DOCUMENT SUBMISSION

TE22-SRX-1FG-02068
Closing Date: 4/13/2022 10:00:00 AM
TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

The page will be updated to “BID DOCUMENT SUBMISSION”, with option to “Choose Files”. Note the tabs for Mandatory, Essential, Non Essential, and Other where different documents can be uploaded. Click on “Choose Files”

Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Uploaded Documents
No files uploaded.

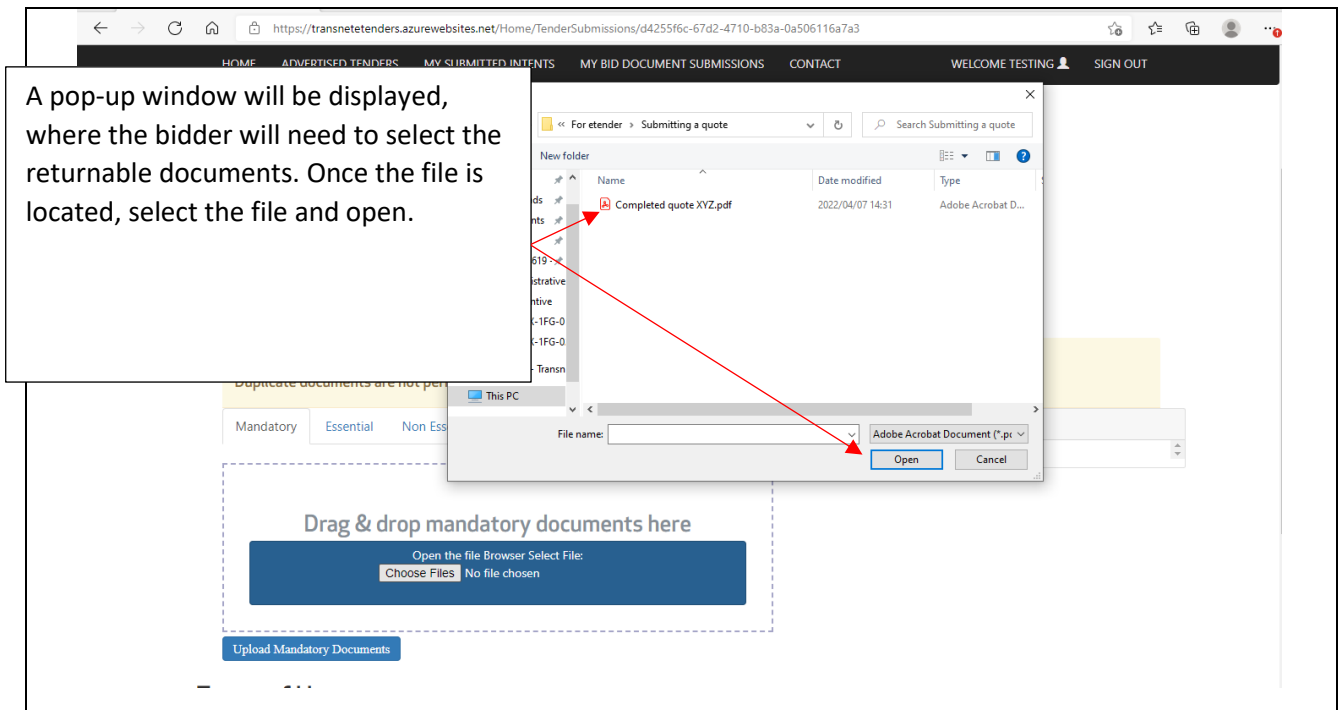
Drag & drop mandatory documents here

Open the file Browser Select File:
Choose Files No file chosen

Upload Mandatory Documents

Terms of Use

A pop-up window will be displayed, where the bidder will need to select the returnable documents. Once the file is located, select the file and open.



For etender > Submitting a quote

Search Submitting a quote

Name Date modified Type

Completed quote XYZ.pdf 2022/04/07 14:31 Adobe Acrobat D...

File name: Adobe Acrobat Document (*.pdf)

Open Cancel

Drag & drop mandatory documents here

Open the file Browser Select File:

Choose Files No file chosen

Upload Mandatory Documents

BID DOCUMENT SUBMISSION

TE22-SRX-IFG-02068

Closing Date: 4/13/2022 10:00:00 AM

TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Drag & drop mandatory documents here

Open the file Browser Select File:

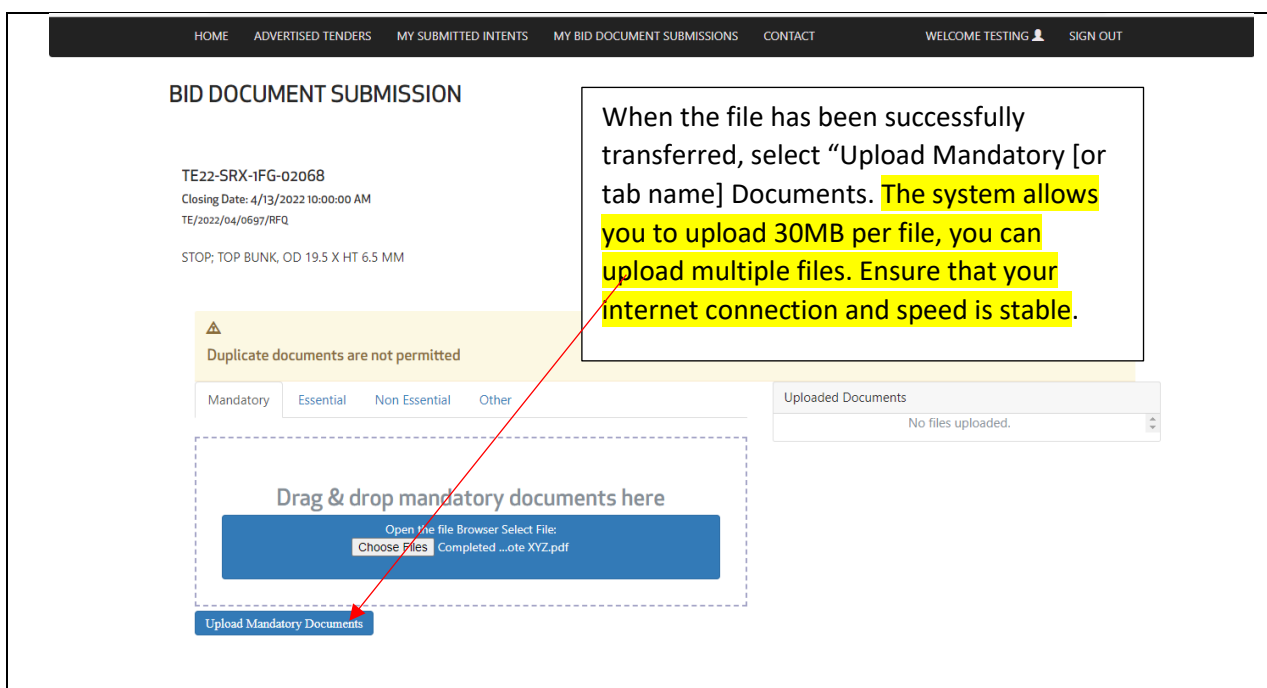
Choose Files Completed ...ote XYZ.pdf

Upload Mandatory Documents

Uploaded Documents

No files uploaded.

When the file has been successfully transferred, select "Upload Mandatory [or tab name] Documents. The system allows you to upload 30MB per file, you can upload multiple files. Ensure that your internet connection and speed is stable.



The "Uploaded Documents" section will be updated to confirm that the document was uploaded, then click on "Submit Bid"

TE/2022/04/0697/RFQ
STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

⚠ Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Drag & drop mandatory documents here

Open the file Browser Select File:
Choose Files No file chosen

Upload Mandatory Documents

Uploaded Documents

Completed quote XYZ.pdf - Document Type: Mandatory Documents

Delete

Terms of Use

Information provided by the bidder through this portal constitute a binding bid submission/response and a commitment to deliver Transnet requirements. Kindly note that the system automatically ranks the outcome of the evaluation of price and BBBEE scoring based on the information provided. Pricing and BBBEE information provided is the responsibility of the bidder to ensure correctness and Transnet will only consider your latest submission made before the closing date.

← Back

→ Submit Bid

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS **MY BID DOCUMENT SUBMISSIONS** CONTACT WELCOME TESTING SIGN OUT

MY BID DOCUMENT SUBMISSIONS

Show 10 entries Search:

Tender Reference Number	Name	Date Submitted	Company Name	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	4/8/2022 8:59:06 AM	Transnet Engineering	View Details

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen will progress to "MY BID DOCUMENT SUBMISSION", where the "View Details" can be selected to confirm that all required information is submitted correctly.

Annexure B

Standard Conditions of Tender

C.1 General

C.1.1 Actions

C.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

C.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

C.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

C.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

C.1.3 Interpretation

C.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

C.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

a) **conflict of interest** means any situation in which:

- i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;
- ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
- iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee.

b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;

- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;

C.1.4 Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

- a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
- b) funds are no longer available to cover the total envisaged expenditure; or
- c) no acceptable tenders are received.
- d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised

C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

C.1.6.2 Competitive negotiation procedure

C.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

C.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their tender offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

C.1.6.2.4 The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

C.1.6.3.2 Option 2

C.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

C.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

C.2 Tenderer's obligations

C.2.1 Eligibility

C.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

C.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

C.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

C.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

C.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

C.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

C.2.10 Pricing the tender offer

C.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.

C.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.

C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

C.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

C.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

C.2.12.2 Accept that an alternative tender offer must be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

C.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

C.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

C.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

C.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

C.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

C.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

C.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

C.2.15 Closing time

C.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

C.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

C.2.16 Tender offer validity

C.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

C.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

C.2.16.4 Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

C.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: *Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.*

C.2.18 Provide other material

C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment.

Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

C.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

C.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

C.2.20 Submit securities, bonds and policies

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

C.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

C.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within twenty-eight (28) days after the expiry of the validity period stated in the tender data.

C.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

C.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

C.3.4 Opening of tender submissions

C.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

C.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where

applicable, the total of his prices, number of points claimed for its BBEE status level and time for completion for the main tender offer only.

C.3.4.3 Make available the record outlined in C.3.4.2 to all interested persons upon request.

C.3.5 Two-envelope system

C.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

C.3.5.2 Evaluate functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

C.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

C.3.8 Test for responsiveness

C.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

C.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

C.3.9 Arithmetical errors, omissions and discrepancies

C.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

C.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for:

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - (i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - (ii) the summation of the prices.

C.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

C.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.

Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.
----------------	--

The activities associated with evaluating tender offers are as follows:

- a) Open and record tender offers received
- b) Determine whether or not tender offers are complete
- c) Determine whether or not tender offers are responsive
- d) Evaluate tender offers
- e) Determine if there are any grounds for disqualification
- f) Determine acceptability of preferred tenderer
- g) Prepare a tender evaluation report
- h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

C.3.13 Acceptance of tender offer

Accept the tender offer; if in the opinion of the employer, it does not present any risk and only if the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement;
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract;
- c) has the legal capacity to enter into the contract;
- d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing;
- e) complies with the legal requirements, if any, stated in the tender data; and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents and
- c) other revisions agreed between the employer and the successful tenderer.

C.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

C.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

C.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.