

BRIEF TO SERVICE PROVIDER



For Financial Year (2023/24)

CONDITION ASSESSMENT OF RETAINING STRUCTURES (TANKER BERTH)

1. PURPOSE

The purpose of this document is to provide a suitably detailed and sufficient brief to the Professional Service Provider to conduct a condition assessment of Tanker Berth at the Port of East London.

2. EXECUTIVE SUMMARY

The Port of East London is situated at the mouth of the Buffalo River in the Eastern Cape. The port primarily handles industrial and agricultural cargoes that serve the hinterland. The East Bank handles containers and Break-Bulk Cargo while the West Bank handles Dry Bulk, Automotives, and Liquid Bulk.

Tanker Berth is used to handle Liquid Bulk, including diesel, jet fuel, and petroleum. The berth was constructed before the 1950's with a Gravity Wall structure consisting of mass concrete blocks. The structure has been in service without any capacity re-evaluation or structural strengthening since.

The purpose of this report is thus to outline the scope of services/works and deliverables that Transnet National Ports Authority (TNPA) will require of a Professional Service Provider with the relevant

experience and expertise to conduct a structural condition assessment of Tanker Berth. The Professional Service Provider must have an Engineering Council of South Africa (ECSA) accredited, professionally registered Lead, for the execution of the Works.

Figure 1 below depicts the location of Tanker Berth within the Port of East London.



Figure 1: Locality Map of the Port of East London and Tanker Berth

3. PROBLEM STATEMENT

Tanker Berth was constructed by the 1950's and is an integral resource to the Port of East London's operations, ensuring the transport of liquid bulk into the surrounding hinterland. The berth has been in service ever since, without any capacity re-evaluation or structural strengthening. This condition assessment thus aims at investigating the structural integrity of the berth to inform future plans for the port of East London.

4. OVERVIEW OF THE SCOPE OF WORKS

4.1 Structural Condition Assessment

The appointed Professional Service Provider is expected to:

- a) Analyse the quay structure and supporting information in order to provide an estimation of the age of the existing structure and an estimation of the remaining service life of the structure.
- b) Conduct a structural analysis assessment to establish the current structural integrity of the super and sub-structures. This assessment shall be in the form of:
 - Visual diving inspections aided by non-destructive and laboratory testing, and
 - Software analysis of the berthing structure.
- c) Conduct comprehensive tests on the super and sub-structures to establish the important parameters that affect the structural integrity (To be achieved through non-destructive and laboratory tests). As part of his proposal, the Professional Service Provider shall submit the type and number of tests in order to fulfil the project objectives. The tests shall include, but not limited to, concrete core drilling and testing, chloride content assessment, and concrete strength tests. The contractor shall make the site good upon test completion. The comprehensive tests are to give an indication of the condition of the structural condition of the structure.
- d) Provide a detailed recommendation of the remedial work for the identified structural defects identified.

- e) Scope out and directly contacts specialist services such as diving inspections and material testing. The diving inspections to include the inspection of the foundation conditions, undermining, quay stability, and foundation protection (scour).
- f) Review existing diving inspection reports and multi-beam surveys and indicate areas of concern to be improved upon and investigated further.

4.2 Site Investigation

The appointed Professional Service Provider is expected to undertake Site Investigation in the following manner:

- a) The Professional Service Provider shall carry out a comprehensive visual inspection to ascertain the as-built nature of the berth. The visual inspection shall cover 100% of the structure.
- b) The Professional Service Provider shall exercise reasonable diligence and take active and personal interest in the planning and carrying out of the inspection of the berth. The Professional Service Provider shall be responsible for capturing the as-built information of the structure using but not limited to an underwater CCTV visual survey and a series of trial pits exposing critical areas of the buried parts of the structure or other means to undertake inspections of the structure which have not been mentioned.
- c) The Professional Service Provider shall identify and prepare terms of reference for specialist studies to further investigate areas of concern.

4.3 Laboratory Testing

All laboratory testing is expected to be executed in accordance with the below:

- a) All laboratory testing shall be carried out in accordance with industry best practices and shall conform to the latest edition of the relevant standards. As part of the proposal, the Professional Service Provider shall submit the type and number of laboratory tests proposed to fulfil the site investigation objectives. This information shall be submitted in a tabular form in a Table of Quantities.

5. DELIVERABLES

The main deliverables regarding the Works listed under Section 4 are as follows:

- a) Detailed Structural condition Assessment Report outlining the findings from the structural condition assessment, visual inspections, the software analysis, and laboratory testing of the structure. The report must encompass well-defined, labelled pictures, software data sheets and the result sheets from material sample tests that explicitly illustrate the condition of the structures. The tests shall consist of but not limited to concrete core drilling, chloride content assessment, and concrete strength tests. These visual representations, accompanied by comprehensive software-generated data sheets, will provide a clear and detailed overview of the structural conditions. In addition to that the report must include a section on the detailed methodology of repairs for all types of identified structural damages inclusive of the technical specifications and cost estimations for repairs. All documents are to be submitted in both PDF and native formats.
- b) Conduct a formal presentation of the findings to the TNPA project team and Senior Management.
- c) Provide Skills Transfer services to at least one (1) TNPA Civil Engineer over the period of the project duration in the following activities as a minimum:
 - Condition Assessment of Marine Structures
 - Structural Loading Analysis
 - Engineering Software
 - Laboratory Testing.

6. DATA PROVIDED BY THE CLIENT

The Client shall provide information as required or requested to further their understanding of the work required. Required information regarding the site locations, which is in the client's possession, will be made available to the Professional Service Provider. The Project Manager will also be available to assist where required.

Furthermore, the Professional Service Provider must comply to the following regulations, Acts, and Engineering Standards:

- a) Construction Regulations 11 of the Occupational Health and Safety Act.
- b) The Assets Maintenance Principles and Procedures, Asset Maintenance Version 4.0 October 2011.
- c) National Ports Act (Act No. 12 of 2005 as amended).
- d) SANS 5865 the drilling, preparation, and testing for compressive strength of cores taken from hardened concrete.
- e) SANS 50250 Respiratory Equipment - Open-circuit self-contained compressed air diving apparatus -Requirements, testing, marking.
- f) SANS 1200 series of Standardised Specification for Civil Engineering Construction.
- g) Existing Diving Inspection Reports as per the Chief Engineers Annual Inspections.
- h) Latest Multi-beam Surveys available.
- i) Commercial Diving Regulations (2022).
- j) Inshore code of practice for commercial diving.

7. EMPLOYER'S OBJECTIVES

The outcome of the condition assessment are as follows:

- a) Assess the structural integrity of the berth to determine its operational viability and ensure its continued functionality amidst ongoing commercial shipping traffic.
- b) Establish a safe working environment for employees by ensuring that the infrastructure meets high safety and quality standards, prioritizing the well-being of all personnel.
- c) Cater to future demands by implementing necessary upgrades and improvements to Tanker Berth, thereby enhancing its capacity to accommodate evolving shipping requirements.
- d) Complete the project in a timely manner, minimizing disruptions to ongoing terminal operations while adhering to the highest safety and quality standards throughout the execution phase.

Furthermore, any risks associated with possible delays should be highlighted and the impact flagged as part of the outcomes to ensure that the Client is aware, and decision-making is made timeously.

8. PRESENTATION OF KEY DELIVERABLES

Upon the completion of the work stated under Section 6 of this report, the Professional Service Provider is required to inform the TNPA Project Team so that the required deliverables may be reviewed. The Professional Service Provider will allow for snags to be identified and amended. Upon satisfactory requirements being met as stipulated by the client, the project will then be closed. It is also expected that the Professional Service Provider and Project Manager remain in communication to assess the project progress and ensure alignment.

9. SITE WORK

9.1 Health and Safety

All health and safety matters associated with the Works shall be dealt with in accordance with Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) and the Transnet National Ports Authority Health and Safety Specifications contained in Annexure B to this Works Information.

The Professional Service Provider shall prepare, implement, and administer the Professional Service Provider's Health and Safety Management Plan (CHSMP). The Health and Safety Management Plan must provide a systematic method of managing hazards and implementing control measures.

The Professional Service Provider must prepare and submit the occupational Health & Safety file to the Project Manager for acceptance. The Project Manager will then submit the occupational health & safety file to the TNPA Legal & Compliance Department for approval before the commencement of the works.

Pre-employment medical examinations as well as exit medicals will be required. Proof of medical certificates of fitness from a registered Diving Medical Practitioner (DMP) must be submitted. The DMP is required to be registered with the South African Undersea and Hyperbaric Medical Association (SAUHMA) and to upload/issue the respective certificate is via SAUHMA. The Professional Service Provider must have a DMP on call.

The Professional Service Provider ensures that its Sub-Contractors comply with the requirements of the Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) and Commercial Diving Regulations, 2022.

The Professional Service Provider performs the works and all diving activities within the Site and Working Areas in accordance with the Professional Service Provider's Health and Safety Management Plan (CHSMP).

The Professional Service Provider must either have a recompression chamber onsite or provide proof of a written agreement as well as an evacuation plan to a chamber that is within 2 Hours' drive (or have a helicopter/evacuation arrangement to the nearest decompression chamber of the diving site) as per **Regulation 21**.

9.2 Underwater Work

Diving Regulations

The Professional Service Provider shall comply with the Commercial Diving Regulations, 2022 as set out in the Occupational Health and Safety Act, Act 85 (1993) or the latest revisions thereof, and shall make allowance in his Tender Prices, therefore.

Diving Operations

The Professional Service Provider is to register and be issued with a Port User License from the Clients Harbour Master and Customer Relations Manager (CRM). A diving permit shall be obtained from the Harbour Master and CRM who shall be given adequate notice of times when diving operations are to be commenced in order that shipping may be warned. Clearance to dive must be obtained before every dive from Port Control and Port Control notified at the end of every diving operation. Such permit shall be presented to the Harbour Master for cancellation on completion of diving. Whilst TNPA's pilot and the master of any ship in the vicinity will be warned of such diving operations, this will not absolve the Professional Service Provider from ensuring the safety of his divers and diving operation at all times.

Safety of Diving Operations

The Professional Service Provider is warned of the effect of the wash of ships or tugs on divers, and if necessary, shall cease diving work during adjacent shipping movements.

The recognised signals and VHF communications are to be followed at all times when diving is in progress and the Professional Service Provider is to ensure the safety of all diving operations to the satisfaction of the Diving Supervisor.

The Professional Service Provider shall provide:

- a) Diving medical Certifications that are aligned to the Commercial Diving Regulations.
- b) Commercial diving registration/s for divers as well as contractor with the Department of employment and labour.
- c) Diving Notifications to the Department of Employment and Labour.
- d) Submit a Safety file and comply with all TNPA SHERQ Requirements.
- e) Method statement detailing the extent of how the diving operation and related works will take place. The Clients Diving Supervisor will also inspect the site before the commencement of works.

9.3 Professional Service Providers Equipment

The below details the requirements regarding the Professional Service Providers Equipment:

- a) The Professional Service Provider keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the Project Manager at all reasonable times.
- b) All Equipment used by the Professional Service Provider on site shall be properly maintained and certified in date and fit for use by an approved technician and operated as per its design for use.
- c) All vehicles on public roads shall be roadworthy, with the necessary licences and safety requirements. A checklist/register shall be implemented which lists the operators' qualifications and medical records.
- d) The Professional Service Provider shall submit a comprehensive list of Equipment, intended for use on this contract.
- e) The use of all such Equipment shall be subject to approval by the Project Manager, though such approval shall not relieve the Professional Service Provider of any of their responsibilities under the contract.
- f) All equipment/craft(s) used for the Works shall be certified by TNPA Diving Supervisor and SHERQ Department.

10. PRELIMINARY MILESTONES

The bidder should be aware of the following preliminary milestones as listed in Table 1.

Table 1: Preliminary Milestones

Milestone Description	Timeline
Submission of SHE File	Within 2 weeks from the date of acceptance of the contract.
Commencement of work	Within 1 week from the date of acceptance and approval of SHE File.
Completion of work	Within 8 weeks from the date of acceptance and approval of SHE File.

11. SIGNATORIES

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