



## Nafasi Water

### Technical Purchase Specification (TPS)

**PROJECT NO** WO2027  
**PROJECT** TCTA CB – DIESEL TANK REPAIRS  
**LOCATION** GERMISTON, SOUTH AFRICA  
**CLIENT** NAFASI WATER  
**PACKAGE NO** WO2027-000-B70-0005  
**DOCUMENT NO** WO2027-000-B73-0005.01 00

#### REVISION RECORD SHEET

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### **LIST OF ABBREVIATIONS AND ACRONYMS**

HDG	Hot Dip Galvanised
ER	Engineering Requisition
EDL	Engineering Document List
C&I	Control and Instrumentation
EDL	Engineering Document List
FOC	Free of Charge
OBL	Outside Battery Limits
PFD	Process Flow Diagram
P & I D	Piping and Instrumentation Diagram
PPE	Personal Protective Equipment
PQR	Procedure Qualification Record
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
CB	Central Basin
TBA	To Be Advised
UOS	Unless Otherwise Stated
WPS	Weld Procedure Specifications

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## **1 INTRODUCTION**

### **1.1 General Introduction**

TCTA Central Basin Water Treatment Plant currently neutralises the feed water as abstracted from the defunct underground works. This mine impacted water is dosed with lime to remove the heavy metals and acidity from the feed. The consequence of this treatment is the formation of large volumes of precipitated material. This is settled and thickened in the process. The current management process of this slurry is to periodically build up the material within the plant.

The site consists of one generator that goes on whenever the site power goes off. The generator get fed by diesel from the diesel which is located in different room. There was tank inspection conducted on the 09 August 2022 as per the OHSAct and API Spec requirement. The inspection revealed that the tank there was no root weld but only the cap weld. See attached report in the appendix.

This document covers the complete on-site repairs of a Diesel Tank complete with nozzles, pipework, wall painting in accordance with the attached report, this document including all the documents and specifications as listed in the Engineering Document List (EDL - attached).

### **1.2 Site Locations**

The project site is located within the boundary of the existing TCTA Central Basin Water Treatment Plant in Germiston, South Africa.

The co-ordinates of the site in global longitude, latitude are:

South 25° 54' 42.9"

East 29° 24' 06.9"

The site location is located at Driefontein 87-lr, Germiston, South Africa

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## **2 SCOPE OF WORK**

This document covers the complete on-site repairs of a Diesel Tank complete with nozzles, pipework, wall painting in accordance with the attached report, this document including all the documents and specifications as listed in the Engineering Document List (EDL - attached).

EDL.

<b>Item</b>	<b>Description</b>	<b>Tag Number</b>	<b>Qty</b>
1	Diesel Tank Storage	SPA 3167	1
2	Pipework	TBA	As per the report
3	Wall repair and painting	-	As per requirements

Upon removing diesel from the tanker to the hired mobile tanker, the contractor is required to connect the feed pipeline to the generator temporarily. This will allow a diesel fed to the generator whenever it is required.

### **2.1 Scope of Supply to Include**

The scope of the supply shall include, but not necessarily be limited to the following:

- 2.1.1 Detailed engineering report based on the details specified in the EDL.
- 2.1.2 The Contractor shall include a diesel tanker for the duration of the repairs.
- 2.1.3 Supply of specialized equipment required for this activity includes scaffolding, air blowers etc.
- 2.1.4 All fasteners and specialised equipment required for assembling of pipework.

### **2.2 Scope of Services to Include**

The scope of services shall include, but are not necessarily limited to the following:

- 2.2.1 Procurement and expediting of all material and equipment.
- 2.2.2 QA/QC to ensure compliance with the repair requirements.
- 2.2.3 Generation of installation and test procedures to successfully complete the works.

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- 2.2.4 Supply of all information and acceptance criteria to successfully hand over equipment to the Client, as listed in the section 5.5.
- 2.2.5 Supply as-built drawings of equipment. The As-built drawings are required prior to project sign-off.
- 2.2.6 The Contractor shall include rectifying the defects on the pipework and tank.
- 2.2.7 The Contractor shall empty the diesel from the storage into the tanker supplied.
- 2.2.8 The contractor shall ensure that the quality of the diesel they are storing remains the same by providing the test results from an accredited laboratory.
- 2.2.9 Supply a three-step ladder to extend the currently one attached to the tank and attach to the ground.
- 2.2.10 The Contractor shall make allowance for the tanker to be on site for the duration stipulated by the contractor. Nafasi Water or TCTA shall not be responsible for extended tanker time on site due to Contractor's delay.
- 2.2.11 Safety requirements to complete the works shall include Risk assessment, Work Method statement and Safety files.
- 2.2.12 The Contractor shall provide the project plan with reasonable timelines.
- 2.2.13 The works will be regard as completed upon Nafasi Water completion certificates.

**2.3 Scope of Services Excluded**

- 2.3.1 Obtaining Site Permits
- 2.3.2 Coordinating Inspection with the client (To be done by Nafasi Water Representative)
- 2.3.3 Coordinating Working Areas (To be done by Nafasi Water Representative)
- 2.3.4 Electrical and Instrumentation works.

**3 FREE ISSUE ITEMS**

- 3.1.1 Electrical Power and Water

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## **4 REPAIRS AND CONSTRUCTION**

### **4.1 General**

- 4.1.1 The Contractor shall cut, re-weld all currently welded joint and replace all incorrect flanges.
- 4.1.2 The Contractor shall make allowance to test an existing material of construction to ensure a proper welding procedure are developed.
- 4.1.3 The Contractor shall include provision to rectify any paint defects in the room. The colours in the room, floor is green and side walls cream white. The Contractor to confirm the colour prior procuring.

### **4.2 Materials of Construction**

- 4.2.1 The equipment shall be constructed from new materials, which shall be selected to provide wear, fatigue, and corrosion resistance appropriate to the specified duty.
- 4.2.2 The contractor shall make allowance to test an existing material of construction to ensure a proper welding procedure are developed.

### **4.3 Safety**

- 4.3.1 The area where the works will be carried is regarded as confined space hence all procedure as per OSHAct shall be taken into consideration. This includes blowers for air circulation when welding and also wearing suitable PPE for welding in the confined space.
- 4.3.2 Confined space training is mandatory to all employees to be working in the area. The contractor shall ensure employees have the training certificates prior to commencement of the works.
- 4.3.3 The Contractor shall provide all Personal Protective Equipment according to OSHAct to carry out the works safely.
- 4.3.4 The Contractor to ensure that the tank is cleaned for safe working environment.
- 4.3.5 The Contractor shall provide comprehensive Method Statement and Baseline Risk Assessment for approval before the commencement of the works.

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- 4.3.6 The Contractor shall be required to have a SHE representative for every 10 personnel on site. One member from the team may be the SHE Representative.
- 4.3.7 At least two members shall have first aid training, together with a first aid box.
- 4.3.8 All Contractors equipment and tools needs to be inspected weekly.
- 4.3.9 All rigging equipment shall have load test certificates and must be available for inspection before being used on site.
- 4.3.10 The Contractor shall place general and industrial waste which may be on the project site or may be generated during the execution of the works in the plant general and industrial waste bin.
- 4.3.11 Access platform shall be inspected before used.
- 4.3.12 The Contractor shall place all hazardous waste which may be on the project site in the chemical waste bin.
- 4.3.13 On completion of the works, the contractor must clear way and remove all traces of general and chemical waste.

## **5 TESTING AND INSPECTION**

### **5.1 General**

- 5.1.1 As well as the mandatory tests required by the appropriate codes for materials, fabrication and welding, the following additional tests are required:
- a) Defective welding disclosed by testing shall be removed, re-welded and re-tested.
  - b) Defective materials disclosed by testing shall not be used.
  - c) All rejected work shall be rectified at no cost to Nafasi Water or TCTA.

### **5.2 Utilities**

- 5.2.1 The Contractor shall supply their own Diesel for plant and equipment as required
- 5.2.2 The Contractor will provide their own telephone or internet facilities
- 5.2.3 The Client shall have the right not to permit the Contractor use of their installation or equipment were unsuitable or unsafe.



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### **5.3 Workmanship**

Workmanship and the general finish of equipment shall be of first-class commercial quality and in accordance with the best workshop practice and shall be performed by persons skilled in their respective trades.

### **5.4 Quality Assurance / Quality Control**

The Vendor shall provide a comprehensive Quality Control Plan (QCP) for Approval by Nafasi Water, prior to the commencement of any works.

It is a condition of the Purchase Order that the Vendor provides sufficient Quality Assurance / Quality Control and Inspection, to ensure that materials and services meet the requirements of the Purchase Order, Referenced Specifications, and the statutory requirements of the specified country of use.

All repair works to be inspected by an AIA as per the repair code American Petroleum Institute.

Failure to request a client for inspection as per the QCP will result in the work scrapped and shall be re-done.

All spatters shall be ground and to a first-class quality.

### **5.5 Documentation Numbering and Requirements**

An official Transmittal is required, in your standard format, clearly indicating the recipients and the intent (AFC; AFD; FOR INFORMATION, PRELIM, ETC.), when submitting information.

Nafasi Water's document numbers shall be indicated on all documentation (as applicable), according to the below:

**Example: WO2027-000-B73-0005-A01.001-00**

WO2027 : Project Number

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000 : Area Code  
 B73 : CTR Document Code  
 0005 : Engineering Requisition Package Number  
 A01 : Prime Document Code  
 001 : Document Sequence Number  
 00 : Document Revision Number

Doc. Code	Document Number	Document Description	Copy Required with Bid	For Review Due Date	Final Distribution
A01	WO2027 -000- B70- 0005 -A01- XXX.XX	Vendor Document/Drawing Register		PO+7	
A02	WO2027 -000- B70- 0005 -A02- XXX.XX	Fabrication/Production Schedule	Yes	Progressive	
A03	WO2027 -000- B70- 0005 -A03- XXX.XX	Progress Reports		Progressive	
A04	WO2027 -000- B70- 0005 -A04- XXX.XX	List of Sub-Contracts/Vendors		PO+14	
B01	WO2027 -000- B70- 0005 -B01- XXX.XX	Arrangement Drawings		PO+14	
B02	WO2027 -000- B70- 0005 -B02- XXX.XX	Foundation/Support Arrangements (Civil)		PO+14	
D03	WO2027 -000- B70- 0005 -D03- XXX.XX	Name Plate Format Drawings		PO+14	
F01	WO2027 -000- B70- 0005 -F01- XXX.XX	Design Calculations			
G01	WO2027 -000- B70- 0005 -G01- XXX.XX	Erection and Installation Procedures		PO+14	UC
H03	WO2027 -000- B70- 0005 -H03- XXX.XX	Non-Destructive Examination Procedures		PO+14	UC
H05	WO2027 -000- B70- 0005 -H05- XXX.XX	Surface Cleaning, Preparation & Painting Specifications		PO+14	UC
H06	WO2027 -000- B70- 0005 -H06- XXX.XX	Weld Procedure Specification & Welder Qualifications		PO+7	
H07	WO2027 -000- B70- 0005 -H07- XXX.XX	Repair Q.C. Plan	Yes	PO+7	
H08	WO2027 -000- B70- 0005 -H08- XXX.XX	Repair Data Book	Index Only		UC

THE CONTENTS OF THIS DOCUMENT ARE CONFIDENTIAL AND PROPRIETARY PROPERTY OF NAFASI WATER AND MAY NOT BE USED, REPRODUCED OR REVEALED TO OTHERS EXCEPT IN ACCORDANCE WITH THE TERMS OF A CONTRACT WITH OR OTHER WRITTEN PERMISSION OF NAFASI WATER

Form Reference: 0830-000-F99-0005.F2-10

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J02	WO2027 -000- B70- 0005 -J02- XXX.XX	Spare Parts Schedule			
K01	WO2027 -000- B70- 0005 -K01- XXX.XX	Mill Test Certificates		PO+14	
K02	WO2027 -000- B70- 0005 -K02- XXX.XX	Equipment Certificates		PO+14	UC
L01	WO2027 -000- B70- 0005 -L01- XXX.XX	Certified "As Built" Drawings			UC

**NOTE: All documents required and submitted on contract completion shall form the data book and three printed copies and electronic copy shall be supplied.**

PO + 7/14/21/30 refers to the order placement date plus 7/14/2130 days

UC refers to the completion of the contract

## 6 PROJECT EXECUTION

### 6.1 General

6.1.1 The Vendor shall submit weekly progress reports.

6.1.2 This progress report shall contain:

- a) Executive summary.
- b) Updated MS Project/Primavera P6 schedule.
- c) Critical activities.
- d) Highlight actions outstanding from Nafasi Water's representative that could impact the schedule.
- e) Highlighted areas of anticipated problems.
- f) Areas of opportunity.

6.1.3 Additional reports as required by the Nafasi Water project manager may be requested from the Vendor.

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## **7 DOCUMENT RETURNABLES**

**7.1** Detailed Method Statement in line with the Scope of Work

**7.2** Quality Control Plan

**7.3** Databook Index

**7.4** Company Profile

**7.5** Welding Procedures

## **8 GUARANTEE**

### **8.1 General**

8.1.1. The equipment shall meet all requirements of this specification and attached Data Sheet.

8.1.2. The Contractor shall warrant that the equipment will be suitable for the intended application and capable of the duty and capacity specified. The warranty period shall be clearly stated in the general conditions of purchase.

8.1.3. The equipment shall be guaranteed for 12 months from commissioning or 18 months from delivery.