TRANSNET engineering

Specification: For maintenance of effluent in Germiston Factory

Specification and Document Compiled by:

Name & Surname Kgobisa Makena

Signature _____ Date 17-12-2025

Supported by:

Name & Surname B.M. Mosia

Signature _____ Date 13/01/2026

Approved by:

Name & Surname M. MASHALE

Signature _____ Date 2024/01/14

1. SCOPE of work instruction:

1.1 Replace and repair all defective components on the effluent plant as per specification

1.2 The contract shall be awarded to the successful bidder and shall include all the required work

2. TECHNICAL DISCUSSIONS

2.1 For any technical queries or arrangements to visit the site, contact the appointed Project Manager in charge of the contract.

3. TECHNICAL INFORMATION REQUIRED:

3.1 All offers shall be in duplicate and will not be considered unless full particulars and sufficient literature is provided at the tendering stage to enable the Transnet Technical Officers the opportunity to assess each offer properly.

4. MINIMUM REQUIREMENTS: (to be specified for any other work to be carried out)

This specification states the minimum requirements. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering at tender stage

5. Note:

All material used to be SABS Approved

All work to be done in accordance with the relevant regulations

SANS 241-2015 or latest

Scope of Work

Evidence	TASK
5.1	**Technical specification**

	Flow meter to be calibrated or replaced, provide valid certificate ➢ Suppliers: Rusbro Engineering ➢ Name: Precision meters ➢ Qp = 15 m3 /hr ➢ PN = 1600 Kpa ➢ Model: 150 Class B ➢ Change in pressure: 100 Kpa ➢ Temperature: 50OC ➢ Certificate no: TP70812 ➢ PM: 150509635
	Mixing column valve to be replaced if defective ➢ PLIMEX Valve 40 situated next to the Polyelectrolyte dosing tank to be replaced ➢ Replace the valve if its no longer functioning. ➢ Open the valve area to investigate the cause of no flow. ➢ That will need to isolate the mixing column, ensuring there is no flow coming from Aeration tank 2 and leaving into clarifiers
	The specifications of the roto line motor drive ➢ Description: Fenner Motor line ➢ Serial no: 070533 ➢ Number of magnetic poles: 4 Motor output power ➢ (1KW=2HP): 1.5 KW ➢ Rated operating Voltage: (230/400) Volts ➢ Rotational speed at full load : 1420 RPM ➢ Frequency of power supply: 50 HZ
	Rusted steel pipe replacement Specifications ➢ Length of the pipe: 275 cm ➢ Outside Diameter of the pipe: 5.6 cm ➢ Wall thickness 0.4 cm ➢ Inside diameter 5.6 cm – (0.4 x 0.4 cm) = 5.44 cm ➢ Pipe circumference: 21 cm

	aeration tank A0

	➢ Replace rusty cylindrical pipe inside aeration tank A0
	Mechanical and Electrical repairs ➢ Do Electrical and mechanical repairs on the aeration tank 3-line pneumatic valves ➢ Check all electrical wiring for loose connection and any default component ➢ Replace only if its beyond repairs
	Effluent plant recycles pump replacement Specifications of the Wilden pump ➢ Maximum flowrate: 600-700 L/min Maximum discharge pressure: 8.6 bar ➢ Maximum diameter for solids passage: 6.4 mm (1/4 “) ➢ Maximum suction lift: 6-7 m (21-**23”)** ➢ Inlet/outlet size: 51mm (2”) ➢ Take note that is an air-operated double diaphragm (AODD) pump
	Wilden pump aeration system ➢ Balancing the aeration lines and replacing the butterfly valves. ➢ Butterfly valves: ½ “ ➢ Aeration pipes: ½” ➢ The butterfly valves need to be replaced and tightened along the aeration lines.
	Aeration tank 3 ➢ Replace or repair (mechanical and electrical) pneumatic Aeration valves
	Settler’s tank (phase 3) ➢ Replacing of broken hand valve in clarifiers ➢ Reconnect all loose wires
	Documentation
	➢ 5 Years experience, substantiated by 3 reference letters.

	➢ Electrical/Instrumentation B. Tech Qualification with ECSA PR

6. GUARANTEE

6.1 Make good any defects due to inferior design, material and or workmanship which may arise during that period

6.2 Should failure to, or stoppage of any part of the installation be so frequent as to become objectionable or should the equipment prove otherwise unsatisfactory during the first 12 (twelve) months, the Contractor shall, at his expense, if called- upon by Transnet, replace the whole or such part thereof as Transnet may deem necessary with equipment to be specified by Transnet Engineering's general specification must be adhered-to at all times

The Contractor shall guarantee the work for a period of twelve (12) months

7. REQUIREMENTS

7.1 All workmanship shall be of a high standard in every respect

7.2 The Contractor shall be responsible for the total civil work as stipulated under scope of work

7.3 After completion of the civil work, the whole works shall be inspected by both parties and the Contractor shall make good, to the satisfaction of Transnet, any deficiencies which may arise

7.4 The Contractor shall advise the Transnet Project Manager controlling the project in writing when the installation of equipment has been completed in order that a suitable date may be set for commissioning the equipment

7.5 The Contractor shall ensure that all unapplied material is cleared from site before commissioning takes place

7.6 A site instruction book and diary shall be provided for by the Contractor and be kept at the site

8. SAFETY COMPLIANCE:

8.1 All equipment shall comply with the Occupational Health and Safety Act (Act 85 of 1993)

8.2 The Contractor shall be solely responsible for the safety of his staff and for providing security to safeguard his works and material on site, until such time as the plant has been taken over by Transnet

8.3 The Contractor's personnel will have to attend a compulsory safety induction course at the Transnet plant before they commence work within the plant, which will be for the expense of Transnet. Arrangements will have to be made with the Technical Officer in charge beforehand'

8.4 The employees of the contractor shall at all times adhere to Transnet Engineering's security and safety procedures

8.5 The appropriate PPE, Safety harnesses, SABS approved scaffolding to be used at all times

8.6 **Contractor shall comply with TE SHE contracts management specification requirement**

9. BIDDERS SHALL NOTE THAT:

9.1 The equipment shall be offered complete in all respects, including all standard equipment normally offered by manufacturers, all of which shall be specific in detail

9.2 Should any of the items called for be standard equipment, then the words "Standard Equipment" shall appear against the item

9.3 Any further items of equipment and accessories, not listed above which bidders can offer, shall be detailed and quoted for separately under the heading "Additional Equipment"

9.4 They shall provide a list of firms using equipment similar to that offered. The date of supply and quantities supplied shall be included. This information is required to assess whether or not the equipment offered meets present day demands and may be a deciding factor in the adjudication process

9.5 Any spares recommended as being necessary to cover the first year's operation shall be detailed and quoted for separately under the heading of "Recommended Spares" 9.6 Full details of recommended lubricants shall be furnished if applicable

10. BIDDERS SHALL STATE:

10.1 Whether all essential renewable parts for the equipment will be readily available in the Republic of South Africa

10.2 What after-sales service for the equipment can be offered?

10.3 Where similar equipment has been serviced in the Republic of South Africa

11. SITE BRIEFING:

Attendance to the Site Briefing is compulsory, and it shall be in Transnet Engineering, Germiston

END OF SPECIFICATION

Accepted by Contractor:

Name & Surname:	
Company Name :	
Signature:	**Date :**

By signing on the acceptance column the contractor acknowledges that he understands the content of the specification. He /She shall confirm the requirements and regulations specified in the specification. He has the authority within his delegation to represent and sign on the company's behalf.