

**SPECIFICATION FOR THE MANAGEMENT, OPERATION,  
MONITORING AND ANALYSIS OF THE INDUSTRIAL EFFLUENT  
TREATMENT FACILITY AT TRANSNET ENGINEERING, GERMISTON  
CENTRE, WAGONS MANUFACTURING**

## **Purpose**

To call for proposals from suitably qualified service providers to manage the water treatment facility and conduct industrial effluent analysis at Transnet Engineering (TE) Germiston Centre, Wagons Manufacturing Business.

## **1. Background**

The industrial effluent purification and monitoring programme is one of the pollution control measures that TE is implementing in its businesses. The need for this effluent purification and monitoring comes as a result of legislative requirements, TE Policies and its commitment to prevention of pollution. Legislation requires and obligates TE to identify all environmental risks and continually devise mitigation measures to proactively address these for the benefit of the environment and to reduce or prevent any potential pollution or contamination.

At the same time, water institutions like the local municipality are only obliged to accept the right quantity and quality of industrial effluent or any other substance into their sewage treatment plant from any organisation and ensure that any discharge to a water resource complies with any standard prescribed under the National Water Act, Act 36 of 1998.

- There are vast quantities of industrial effluent produced or generated from the cleaning of wagons refurbished and maintained at TE Germiston Centre.
- The successful tenderer shall be required to submit to TE calibration certificates on an annual basis.
- Only SABS Accredited Laboratories and SANAS/Department of Water Affairs (DWA) approved methodology must be used for this programme (such proof must accompany the monthly reports).

The effluent treatment plant implements water treatment methods of collecting and treating contaminated products such as oil, acids and various sludge contained in the effluent. Condensing and separating such liquid substances, by the use of different technology and equipment such as a treatment dam, rope skimmer, ultra spin equipment, etc. The solids and substances like oil from the oil separation plant are collected by waste and recycling companies whereas the effluent is discharged into the municipal sewer system by the contractor once complying. The chemical waste is neutralised in the dams and discharged into the municipal sewer system once it conforms to the minimum requirements.

Based on the above information, TE invites proposals from suitably qualified service providers to conduct industrial effluent analysis and monitoring at its Wagons Manufacturing Business in Germiston to ensure legal compliance and quality control.

## **2. Scope of Work/ Terms of Reference**

To treat, manage and monitor wastewater from the wagon loads handled at the Acid Plant and the Wash and Steam Bay during the purification process and monitoring effluent generated from the oil separator plant and barrel testing activities at Germiston Centre Wagons manufacturing Business. The industrial effluent analysis/monitoring is required to be conducted daily and monthly. Note that this serves as a guideline as it is limited to the current monitoring taking place.

### **The objectives of this monitoring are to:**

- i) ensure environmental compliance with environmental legislation, best practice and Ekurhuleni municipal by-laws through the management and operation of the effluent treatment facility located at the Wash Out Plant;
- ii) make recommendations on the design;
- iii) provide a better understanding of effluent quality emanating from TE Germiston operations;
- iv) determine the nature and extent of contamination and indicator trends of industrial effluent at the wash bay facility prior to discharge to the municipal system on a daily basis and compile a comprehensive report monthly;
- v) determine the nature and extent of contamination and indicator trends and give recommendations on a monthly basis;
- vi) determine the flow regime of effluent and movement of any contaminants identified at various sites;
- vii) indicate the contamination trends of the sites being monitored and identify possible mitigatory measures and make recommendations.
- viii) Advise on any upgrades or improvements or plant maintenance to meet up with best practise or current standards in the global market.

The scope of work must include, but not limited to the following:

- Industrial effluent samples taken to monitor the quality of the effluent generated on a daily basis.
- Samples should be tested at a SANAS accredited laboratory
- Taking samples as per the recommended frequency at already identified suitable sampling points (points of release, including the Barrel Testing Section and Gas Line) and to assess the sites for environmental conditions.
- Storm water drains (inlets and outlets) to determine extent of pollution of the storm water that enters the Centre against the storm water outlets, so as to make informed decisions on whether there is any pollution on storm water in the Centre.
- Neutralisation of the effluent to make sure it is compliant to municipal by-laws before release into the municipal sewer.
- Treatment of effluent from the Gas Line before release into the municipal sewer.
- Treatment of effluent from the Barrel testing sections and or Barrel testing reservoirs before release into the municipal sewer.

### **3. DELIVERABLES**

#### **3.1 Management and Control**

- Management of the Industrial Effluent Treatment Process by a qualified Industrial Chemist or Engineer or equivalent.
- Daily operation of the Industrial Effluent Treatment Facility by a Water Care Specialist or Industrial Engineer.
- Provide two on-site operators (Chemical Engineer and Specialist) or 2 Chemical Engineers) permanently stationed in the plant.
- Inspection of wagons to determine quantity of the product still inside the wagons before entering the wash bay. Accept or reject wagons loaded.
- Provide training on associated risks and manage operational personnel at the Wash and Steam Bay.
- Release water to municipality sewer especially from wash and steam plant
- Advise in writing the release of water from Barrel testing sections, Gas line and Acid line (reservoir)

#### **3.2 Sampling and Analysis**

- Daily sampling of final treated effluent before discharge into municipal sewer.
- Analyse daily on final effluent samples analysed by SANAS accredited laboratory.
- Daily raw products and grab samples on both treatment facilities for quality evaluation and settings.
- On-site water quality analysis of raw incoming water on both water treatment facilities.
- Provide own equipment.
- Sampling of effluent from the barrel testing process from recycling water tanks on each line prior to discharge to the municipal system/ storm water drains.

#### **3.3 Reporting and Liaison**

- Send monthly reports to relevant TE Personnel within 5 working days of the month end.
- Monthly effluent quality incident reports.
- Liaise and meet with relevant TE Personnel. Business Manager must coordinate and assign relevant personnel to chair the meeting. This should be on a quarterly basis to discuss the previous quarter results and recommendations.
- Conduct health and safety inspections on a monthly basis in and around the facilities and barrel testing process and raise non-conformances where they exist.
- Comprehensive monthly monitoring reports containing the analysed results against set standards, the prevailing conditions and actions required with clear recommendations. Final documents must be submitted in hard copies and also in an electronic format.

#### **4. GENERAL REQUIREMENTS**

The respondents must:

- Submit proposals as per the instruction of the Procurement Department;
- Clearly set out the proposed methodology for achieving the required objectives. The detailed schedule/programme to be submitted with the proposal must include but not limited to:
  - specific deliverables
  - key milestones
  - inter-relationships between activities;
- Indicate the probable cost and time elements of their proposal.
- All prospective tenderers will be required to attend a site briefing meeting to fully acquaint themselves with all the requirements in the tender.
- Submit an extensive company profile, providing details of similar or associated work done.
- Demonstrate a proven track record curricula vitae of all human resources to be deployed in the project; show clear capacity for delivering adequate services.
- Only SABS accredited laboratories and SANAS/ Department of Water Affairs approved methodology must be used for this programme (such proof must accompany the monthly reports).
- Successful tenderer shall be required to submit to TE calibration certificates on a regular basis.

- A minimum of 3 years in the management and operation of industrial effluent treatment facility with a track record to prove this.
- A full understanding of wastewater treatment processes.
- Be able to commence work at short notice if successful.
- Successful tenderer shall be obliged to comply with all TE Safety, Health and Environment (SHE) requirements.
- Successful tenderer shall be responsible for the supply of all Personal Protective Equipment (PPE) required and shall provide own working and test equipment.
- TE promotes Black Economic Empowerment (BEE) and details thereof with regards to this assignment proof should be provided.

## **5. ADJUDICATION PROCESS**

Transnet Engineering reserves the right to:

- adjudicate proposals in terms of Transnet procurement procedures;
- approve sub-contractors or joint venture partners. If deemed necessary, a short presentation and/or interview may be required from candidates for which adequate notice will be given;
- cancel this project at any time;
- decide to call for a second round of specific and detailed submissions should it deem appropriate;
- not accept any proposal in part or in full.

## **6. ACCEPTANCE OF PROPOSALS**

Transnet Engineering does not bind itself to accept lowest cost proposals nor will it furnish any details or enter into any communication relating to the non-acceptance of any or all proposals.

## **7. AGREEMENT**

A formal agreement will be concluded with the successful tenderer as soon as the procurement processes have been completed.

## 8. PENALTIES

Penalties for the late completion of the work will be raised in accordance with Transnet Engineering's Service Agreement and Transnet guidelines which will be concluded with the successful tenderer.

Penalties for the non-conformance of discharged effluent water will be raised to contractor in accordance with Transnet Engineering's Service Agreement and Transnet guidelines which will be concluded with the successful tenderer.

## 9. EVALUATION CRITERIA

Requirements	Maximum allocation Points	Breakdown Allocation of Points
A detailed organogram of personnel to be dedicated to the scope of work.	15%	Detailed organogram provided that includes Project Manager, Chemical Engineer, Specialist (either Safety & Health, Environmental or Quality) = 15%  Organogram provided but not detailed (does not have all the required personnel = 7.5%  Organogram not provided = 0%
Detailed methodology (Refer to section 2 and 3)	40%	Clear detailed methodology and approach = 40% Approach and methodology defined, but certain requirements not outlined = 20% No approach or methodology outlined = 0%
Reference letters outlining previous work done (not less than 2 years) on similar scope with contacts, company letter heads and endorsed through signatures of the company provided service to.	20%	3 or more relevant references provided = 20% 2 relevant references provided= 15% 1 relevant reference provided = 5% No relevant reference submitted=0%

Personnel experience as per the Organogram: Project Manager, Chemical Engineer, Specialist (either Safety & Health, Environmental or Quality). Attach CVs and qualifications)	20%	Any one of the personnel on the Organogram with 3 to 5 years' experience with relevant qualifications = 20% Any one of the personnel on the Organogram with 2 to 3 years' experience with relevant qualifications = 10% All personnel have less than 2 years' experience = 0%
Signed, initialled or stamped specification on <b>ALL</b> pages	5%	Specification has been signed, initialled or stamped on each page= 5% Specification has not been signed, initialled or stamped on each page = 0%

Threshold: 70%