PART 3: WORKS INFORMATION

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PART 3: WORKS INFORMATION

3.1. Introduction

The De Aar Effluent Plant is currently non – operational causing a build up of Effluent at the Depot which is costly to dispose. This project aims to restore reliable, compliant separation and transfer of oily effluent to the municipal connection/approved discharge point by:

- Replacing the failed submersible pump set(only one – Line) with complete mounting/handling hardware.
- Overhauling the rope-skimmer (new rope and rollers, motor repair, alignment and controls).
- Cleaning the effluent chamber and safely removing accumulated oily sludge and residues.
- Replacing damaged PVC/PE discharge piping to the municipal tie-in.
- Reinstating the DB/MCC and field controls so that the PLC/HMI again displays critical statuses (incl. oil holding tank level) and notifies local supervisor via GSM, etc should there be any issues needing to be attended to – **Certificate of Compliance(COC) for all relevant electrical works to be provided and signed off by a DoL Registered Installation Electrician**

3.2. Scope of work

This specification requirement covers all the requirements that will be needed to inform the supplier to carry out what is expected from him/her: The contract will be awarded as an Effluent Plant Repair aligned to the ME grade of CIDB, and the contractor will be responsible for all the works specified.

These specifications constitute minimum performance standards and in no way diminish the contractor's accountability for delivering a fully compliant Effluent Treatment Plant. Should any omissions, ambiguities, or substandard requirements be identified within this specification, the contractor is obligated to formally notify Transnet during the tender stage and provide alternative pricing proposals to address such deficiencies.

All work must be executed in strict accordance with the prescribed standards, and failure to meet these requirements may result in contractual remedies. The contractor's submission shall demonstrate a comprehensive understanding of these specifications, with any proposed deviations clearly identified and justified with supporting documentation.

The Supplier shall supply all the labour, tools, material, equipment, consumables, facilities, testing, and supervision required for the duration of the contract.

3.3. Site Inspections

3.3.1 All contractors/service providers should be required to undertake this compulsory site inspection to fully acquaint themselves with all aspects involved.

3.3.2 Arrangements to visit the site and confirmation of the date of site inspection should be communicated directly with procurement.

3.4. Information Required

Tenderers shall confirm that the items that they are offering comply at a standard not less than the minimum required requirement asked for in the specifications. Tenderers must comply to these specifications, but alternative offers may, in addition, also be submitted. Such alternative offers must be fully motivated and substantiated.

SPECIFICATION: REPAIR AND RECOMMISSIONING OF THE DE AAR EFFLUENT TREATMENT PLANT FOR A PERIOD OF 3 MONTHS

3.6. Scope Of Work		
	The scope will need to cover / abide by the following:	**Comply Yes/No**
	Applicable Laws, Regulations and Standards (Not limited to these, all other legislative and standards applicable to this project is still applicable)	
3.6.1	•Occupational Health and Safety Act, 85 of 1993 (OHS Act) and relevant Regulations: Construction Regulations (2014); Electrical Installation Regulations (2009); Driven Machinery Regulations (2015); General Safety Regulations; Hazardous Chemical Agents Regulations (2021). •National Environmental Management Act, 107 of 1998 (NEMA). •National Environmental Management: Waste Act, 59 of 2008 (NEM:WA), including GN R.634–636 of 2013 (classification, assessment and disposal norms & standards). •National Water Act, 36 of 1998 (NWA). •Applicable Municipal Trade Effluent & Stormwater By-laws. •SANS 10142-1 – The wiring of premises – LV installations. •SANS/IEC 61439 series – Low-voltage switchgear and controlgear assemblies (DB/MCC). •SANS/IEC 60034 series – Rotating electrical machines (motors). •SANS/IEC 60529 – Degrees of protection (IP ratings). •SANS 10108 and SANS/IEC 60079-10-1 & 60079-14 – Explosive atmospheres (area classification & installation), if applicable. •SANS 121 (ISO 1461) – Hot-dip galvanizing. •uPVC pressure pipes & fittings – SANS 966 series (if selected). •HDPE piping – SANS 4427 series (PE100) (if selected). •Pump verification – ISO 9906 (field duty tolerance). •Lifting tackle – OHS Act DMR 18 and applicable SANS for chain slings/shackles. •Quality systems – ISO 9001; preferred: ISO 14001 & ISO 45001	
	Site Conditions (Present)	
3.6.2	•Confined space risk at sump chamber – permit-to-work, gas testing, forced ventilation, standby watcher and rescue plan. •Oil-contaminated water and sludge present – classify and handle as hazardous waste until proven otherwise per GN R.634–636	
	Technical Scope Requirements	
3.6.3	**Submersible effluent pump (replacement)** Hydraulic duty: Meet or exceed existing design duty; propose duty curve and NPSH margin; suitable for oily effluent with suspended fines. Construction: Abrasion-resistant impeller (vortex/channel); 316 SS fasteners; sealed cable entry with anti-wicking feature. Motor: IP68, S1 duty, Class F insulation (Class B rise), thermal protection; nameplate per SANS/IEC 60034.	

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	Accessories: SS316 guide rails, duckfoot base, certified lifting chains (grade 80+), cable restraints, NRV and isolating valve. Coatings: Suitable for immersed service; carbon steel hardware hot-dip galvanized per SANS 121. Pump to be fitted with suction filter / cover to prevent clogging of pump. Documentation: OEM datasheets, curves, motor data, installation/maintenance manuals. **Rope skimmer overhaul** Replace rope and four (4) rollers with OEM-approved parts or proven equivalents; rope oil-selective, abrasion-resistant, splice-free. Motor/gearbox: Inspect and refurbish/rewind as needed; replace bearings and seals; provide insulation test and run-test results. Alignment: Set roller geometry and rope tracking to eliminate chatter/edge wear; provide guards at nip points. Materials: SS304/SS316 or hot-dip galvanized; outdoor/immersed fasteners A4-70/A4-80. **Discharge piping to municipal tie-in** Pipe: uPVC (SANS 966) or HDPE PE100 (SANS 4427) sized for duty flow (≤2 m/s) and <1.5 bar friction loss margin. Joints: Solvent-weld (uPVC) or butt/electrofusion (HDPE) by certified jointers; provide puddle flanges through walls/slabs. Valves: Full-bore isolating valve, NRV, unions/Victaulic couplings; sample valve upstream of tie-in where practical. Pressure/leak test: 1.5× operating pressure **Please note Transnet Does not have the Specification of the Old Pumps available to this will have to be reverse engineered base on Dam Depth and distance to where the effluent starts to move under gravity, etc. (Can design to max capacity of pipe Diameter)** **Electrical, DB/MCC and controls** DB/MCC: Build/repair to SANS/IEC 61439; min. IP55 (outdoor IP65). Provide labeling, schedules and single-line diagrams. Wiring: SANS 10142-1 compliant; ferrules, gland plates, double-compression glands; segregate power/control; verify earthing. Starters & protection: DOL/VSD as applicable; overload and short-circuit protection; SPD Type 2 on incomer. Instrumentation & PLC/HMI: Reinstate oil holding tank level signal; run/stop/auto, fault and level alarms for pump & skimmer; dry-run interlocks; IP66 JBs; routed cabling with drip loops. Area classification: Perform assessment per SANS 10108 / SANS 60079-10-1; if Ex applies, install to SANS 60079-14. **Cleaning, desludging & waste management** Pump-out/vacuum sludge and floating oils – no discharge to stormwater/soil; log volumes and waste codes.	