

Section II: Schedule of Requirements

GENERAL

1. SCOPE OF WORK

Supply, deliver, test, and commission of portable self-prime diesel engine-driven sewage pumps compete with all accessories and spare parts, for Dhamar water and sanitation local corporation (DWSLC) as specified in technical specifications and BOQ.

NO	LOT.s	Discription
1	<u>LOT (A).1</u>	4 "(100mm) portable sludge pumps & pipe accessories
2	<u>LOT(A).2</u>	4 "(100mm) portable sludge pumps spare parts
3	<u>LOT(B).1</u>	8 "(200mm) portable sewage pumps & pipe accessories
4	<u>LOT(B).2</u>	8"(200mm) portable sewage pumps spare parts

Notes Applicable to All Schedules:

1. The material to be supplied shall be new, unused conform to the latest standards t design.
2. **Delivery** to Dhamar Water and Sanitation Local Corporation.
3. Documentary evidence to prove that the material offered comply with the Technical Specifications given below **must** be provided.
4. **Technical performance:** Bidders shall indicate the number of units currently in operation and their location. Recent brochures or catalogues should be submitted with the tender.
5. **Certificate of Warranty:** A certificate of warranty shall be submitted covering a period of 12 months.
6. **Technical Data / Brochures:** - Bidders **Must** provide relevant technical data detailing the performance parameters of the material or Original manufacturer brochures, where there are more than one model on a brochure, the bidder, **Must** highlight the option which they are quoting for in this tender.
7. If there is a discrepancy between words and figures, the amount in words shall prevail. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected.

GENERAL SPECIFICATIONS

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- ❖ These specifications describe the basic requirements for goods. Bidders are requested to submit with their offers the detailed general and technical specifications, drawings, catalogues, etc. for the products they intend to supply.
- ❖ Bidders must indicate on the specifications sheets whether the equipment offered comply with the corresponding specified requirement.
- ❖ All the dimensions and capacities of the equipment to be supplied shall not be less than those required in these specifications.
- ❖ **Application:**
 - Raw wastewater at Dahmar city - pumping wastewater liquids containing sand in suspension, muddy, neutral, alkaline acidic liquids;
- ❖ All equipment and material shall be designed to stand tropical conditions. Ambient temperature: max 40 °C , min - 10 °c . Relative humidity: 65 %, Operation Altitude:2500m above sea level, Pollution type: desert dust and sand storm.
- ❖ The Bidders are requested to present information along with their offers as follows:
 - Detail Information on proper representative and/or workshop for back-up service/repair and maintenance including their names and addresses.

1. Self-prime Portable Pumps Compete with All Accessories:

1.1 : CENTRIFUGAL PUMP PERFORMANCE SPECIFICATION:

Parameters	LOT-A	LOT-B
	For 100 mm (4") Sludge Pump	For 200 mm (8") Sewage Pump
Applications for pumping	Sewage Sludge, Mud, Dewatering	liquids contain sand, sewage and semi-solid materials.
Maximum discharge flow rate	150 m ³ /h	500 m ³ /h
Maximum Discharge Head	15	18
Maximum Working Pressure	10 bar	10 bar
Self-priming (wet prime) with a suction lift min.	6 m	8 m
Hose dia. size (suction & discharge)	100 mm (4")	200 mm (8")
Min. solid size diameter	35 mm	75 mm
Pump speed range	1500 R.P.M to 2000 R.P.M	1500 R.P.M to 2000 R.P.M
Overall Pump Efficiency	60 % or higher	60 % or higher

1.2 : PUMPS CONSTRUCTION:

N o.	Item	Description
1	Centrifugal pump	a) Cast-iron pump casing b) Bronze open impeller (high grade cast iron dynamically balanced to ensure smooth running.) c) Cast - iron front and rear wear plates easily replaceable d) Non - return valve mounted on the pump casing e) Reliable double mechanical seals which allow dry running. Optional spring assisted pressure seal. f) Pump can be left running when liquid is exhausted and will self-prime when liquid is present. g) Rugged construction requires minimal operator maintenance.
2	Air / Water separator	a) Cast - iron casing. b) Check valve assembly c) Hardened steel shaft rod – lever d) Bronze seat
3	Suction & Delivery connection	a) 4" Suction and discharge manifold suitable for suction and discharge working pressures of the pump should be supplied along with the centrifugal pump along with strainer b) 8" Suction and discharge manifold suitable for suction and discharge working pressures of the pump should be supplied along with the centrifugal pump along with strainer
4	Vacuum Pump	Priming pump should be preferably powered by the same diesel engine which drives the main centrifugal pump through the provisions of an additional belt & pulley Combination.
5	Oil tank	a) mounted on the water separator

2. PRIME MOVER SPECIFICATIONS:

No.	Item	Description
1	Engine	a) 4-stroke , Diesel Engine b) Rated for continuous power with an over load power rating of 110 % of the continuous power corresponding to engine application, for a period of 1 hr. within a period of 12 hrs. of operation
2	Starting system	a) Electric starting system comprising of Battery, Starter & Charging system should be fitted to the engine with proper enclosure for battery
3	Fuel system	a) Mechanical fuel lift pump b) Fuel filter: Engine mounted c) Mechanical / Electronic Governor d) Fuel Injectors e) Check (Non Return) Valves in fuel supply and drain lines f) Fuel tank built within the oil field skid (base frame) complete with drain valve, air ven and inlet and outlet connection along with tank level indicator/gauge (hold fuel for at least 24 hours continuous operation of the engine on full load g) Mechanical fuel injection pump with engine control handle.
4	Lubricating system	a) Forced lubrication with gear pump b) Full flow oil filtration with external cartridge filter c) Lubricating Oil Sump d) Engine mounted, gear driven lube oil pump e) Engine mounted Lubricating Oil Cooler - Water cooled - integral with Engine coolant circuit f) Lubricating Oil Filter : Engine mounted g) Lube Oil Dipstick for Oil Level Check : Engine mounted
5	Instrument panel (Engine Mounted)	a) Digital Tachometer & Hour Meter b) Lube Oil Pressure and temperature Indicator c) Water Temperature Indicator d) Emergency Shut Down Knob e) Fuel Tank level indicator
6	Engine safety controls	a) Low lube oil pressure b) High water temperature c) Over speed d) Low water level NOTE: The Over speed shut down should be effected at 20% above rated speed

		with manual reset
7	Controller	a) Having NEMA 2 (IP 54) dust and drip proof enclosure b) Mounted with pressure switch, drain valve and pressure recorder c) Provisions for battery charging, battery monitoring, failure alarm for low oil pressure, high water temperature, charger failure, failed to start, engine over speed etc
Sound enclosure.		
8	Sound enclosure.	Reduces operating noise – ideal for use in residential and densely populated areas. 65 dB (A) at 7 m. The enclosure provides protection against the weather with lockable doors.
SKID SPECIFICATION AND LITERATURE		
9	Skid	a) All the equipment and other accessories should be unitized and mounted on a suitable trailer 4 (four) portable robust skid. b) Easy approach to various components for maintenance aspects should be kept in mind during unitizing. c) The floor of the skid should be covered with anti skid checker steel plates. d) The skid should be fabricated out of properly sized beams to withstand loading /unloading and transfer on trucks . e) The size of the skid should be adequate enough to provide for sufficient working space in and around the pump set. f) The skid should be painted with corrosion proof paint. g) Skid mounted on 2 axle rear wheel trailer with two (2) manual side-wind type located each side at front of trailer. h) Site trailer with four wheels for stability and fold up tow/draw bar.
10	Parts Catalogue, and technical manuals	a) 4 (four) sets Parts Catalogue, Operation/Instruction Manual & Drawing, Technical Information & Bulletin , and 4 sets of CD covering parts list
11	Recommended Spare parts and standard tools	a) Two years manufacturer recommended spare parts lists for centrifugal pump/vacuum pump/and diesel engine. b) One complete set of standard tools list
12	After sale services	a) The company agent should have in R.O.Y. special representative / workshop, technical staff as well as availability of spare parts.
13	Warranty	a) One-Year warranty for all supplied equipment and material b) five-year warranty for providing spare parts and maintenance.

Notes:

- Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered.
- Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross- referenced to that evidence.
- A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection.
- A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during bid evaluation, post- qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution.