



TECHNICAL SPECIFICATION

TITLE: PURCHASE OF BRAND NEW SUBMERSIBLE PUMP AND MOTOR COUPLED WITH SUBMERSIBLE CABLE WITH COMPLETE ACCESSORIES.

1.0 SCOPE OF CONTRACT

The scope shall be supply, testing, delivery and commissioning of brand new Submersible Pump and Motor coupled with submersible cable with complete accessories to General Santos City Water District (GSCWD).

2.0 SUBMERSIBLE PUMP OPERATING REQUIREMENTS

Particulars	Requirements	Statement of Compliance
Minimum Capacity at design Head, lps(gpm)	70 (1110)	
Design Head TDH, m(ft)	90(295)	
Size of Discharge pipe, mm (in)	150 (6)	
Minimum Pump Efficiency at design head, percent	72%	
Design Speed (RPM)	3400-3600	
Pump Valve Casing, Diffuser and Suction casing Type	304 Stainless Steel	
Impeller, Shaft Bearing	304 Stainless Steel – EPDM Rubber	
Pump Shaft	304 Stainless Steel	



Republic of the Philippines
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Conical Valve, Suction Screen	304 Stainless Steel	
Flanged coupling Type	304 Stainless Steel	
Bowl Intermediate	304Stainless Steel	

3.0 SUBMERSIBLE MOTOR OPERATING REQUIREMENTS

Particulars	Requirements	Statement of Compliance
Motor Power Rating (HP)	100 /	
Rated Voltage	460	
Phase	3	
Service Factor	1.15	
Power Factor(4/4)	0.8	
Design point	3400-3600RPM	
Winding	Encapsulated in anti-tracking resin (non-rewindable)	
Stator area	Hermetically-sealed	
Water-block lead	Removable connection	
Flange design	Double	
Shell	Stainless Steel	
Shaft	Splined stainless steel	
Thrust bearing	water lubricated	
Diaphragm	Pressure equalizing	
Slinger	Sand Fighter	
Lead wire configurations	3	
Bar rotor	Copper	
Minimum Motor Resistance (Mega ohms)	1000 for not spliced, not submerged	



Motor Temperature monitoring	PT100 temperature sensor	
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4.0 Submersible cable requirements

Particulars	Requirement	Statement of Compliance
Type	Round	
Size (mm ²)	80	
Length (meters)	90	
No. of Leads	3	
Maximum Operating Temperature (°C)	75	
All Submersible Cables shall be PVC- insulated with PVC & PE jacket		

4.1 Other materials used for splicing Submersible Cable

Particulars	Requirements	Statement of Compliance
Shrinkable Termination Kit / Splicing Kit (Brand 3M)	Three (3) sets kit No.82-A2	
80mm ² Butt Connector (pieces)	Six (6) pcs	
Rubber Tape (Brand 3M)	Six (6) rolls; with ASTM D-4388 type 1,2&3 / HH-I-3825B approval.	
Electrical Tape (Brand 3M)	Six (6) rolls ; Super 33+ Vinyl Electrical Tape	
Royal Cord (Preferred Brand Philflex)	12AWG/3C – 100mtrs	
Electrodes (water level sensor)	Six (6) pcs	



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5.0 TERMS AND CONDITIONS

Item No.	Requirements	Statement of Compliance
1	The scope of work shall be supply, delivery and commissioning of brand new Submersible Pump and Motor coupled with submersible cable with complete accessories to General Santos City Water District (GSCWD).	
2	OEM and locally assembled submersible pump is not allowed.	
3	All bidders are required to submit and include documents but not limited to manuals, data sheets, and Manufacturers Certificate in there bidding documents.	
4	The winning bidder is required to provide actual documents, including but not limited to manuals, data sheets, manufacturer's test certificate (with serial number and model/type), manufacturer's certificate, and nameplate specifications of the unit.	
5	The submersible pump and motor shall be tested in a laboratory before delivery to ensure conformance with the design parameters. The cost of the laboratory testing shall be borne entirely by the winning bidder.	
6	Laboratory testing shall be witnessed by four (4) GSCWD representatives together with the winning bidder's representatives for three (3) days. All relevant and incidental cost (Testing fee, transportation, accommodation, allowances and etc.) in the testing of the equipment shall be shouldered by the winning bidder.	
7	In case the unit to be tested are different from the submitted documents and/or do not comply with the specifications set by GSCWD, laboratory testing shall not be conducted. The winning bidder shall make necessary adjustment to comply with the set specifications and re-schedule another laboratory testing without cost to GSCWD.	



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8	<p>In case the unit/units failed to pass the minimum requirements during laboratory testing, the winning bidder shall make appropriate adjustment to comply with the set specifications without cost to GSCWD.</p>	
9	<p>That during the installation and commissioning of the units, the winning bidder shall be required to send a technician responsible in splicing the cables with the motor cable leads and commissioning thereafter with the presence of GSCWD technical representatives. The insulation resistance of submersible motor reading must be greater than or equal to 1000 mega-ohms before splicing. All relevant and incidental costs (transportation, accommodation, allowances and etc.) during commissioning of the equipment shall be shouldered by the winning bidder.</p>	
10	<p>Electrical installation of main circuit breaker and grounding shall be performed by GSCWD technicians.</p>	
11	<p>Field testing shall be made once the units are ready for operation and when both the GSCWD and winning bidder have finished their scopes of work on the installed units. GSCWD engineers shall conduct field testing with the presence of winning bidder's representative. A.)Submersible Pump must meet the minimum requirements in terms of capacity, head, and efficiency with tolerance of -2%. B.) Submersible motor shall operate with in its rated current and shall not consumed the safety factor (115% of rated current). In case the unit/units failed to pass the field testing, the winning bidder shall make necessary corrections / changes or replace the unit/units without cost to GSCWD.</p>	
12	<p>The winning bidder shall deliver the units within Ninety (90) calendar days upon receipt of Purchase Order (PO). Laboratory testing is included in the 90-calendar day's delivery period.</p>	



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13	The winning bidder shall be subjected to Liquidated Damages (LD) for each day of delay as provided by the IRR of RA 9184.	
14	The submersible motor and cable must comply with PEC standard as to their current rating.	
15	That the winning bidder shall issue a warranty certificate of not less than one (1) year and the warranty shall commence from the date of commissioning of the pumping equipment.	
16	That the winning bidder shall have an available qualified and trained technicians 24/7 in case of equipment failure.	

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