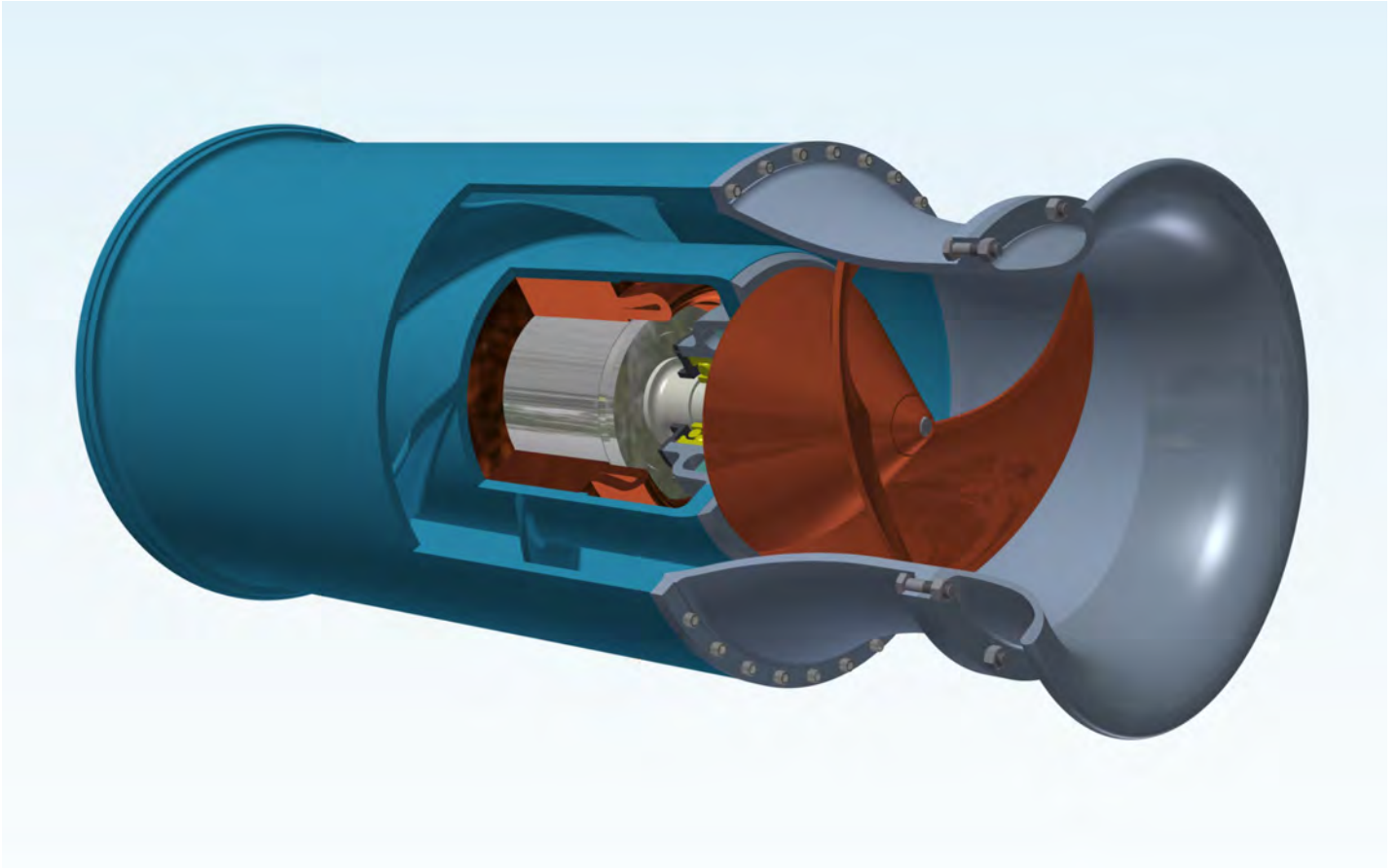


# FISH FRIENDLY PUMPS

## SAF/SBF RANGE



### TYPICAL APPLICATIONS

- **Land Drainage**
- **Surface & Storm Water**
- **Flood Defence**
- **River Abstraction**
- **Fish Farms**
- **Return Activated Sludge**

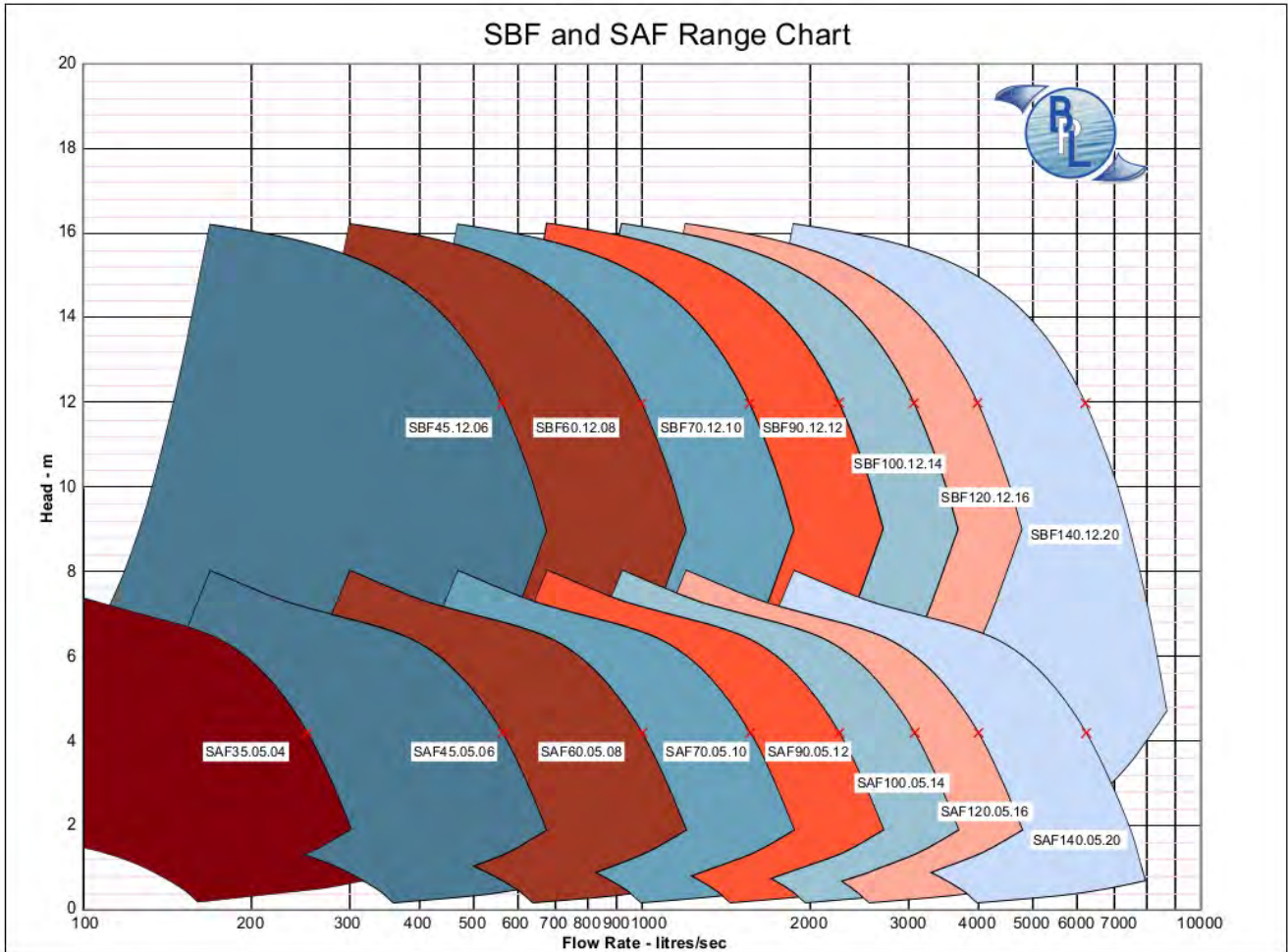
Bedford Pumps' submersible range of Fish Friendly axial and bowl pumps cover from 400 to 9,000 litres per second at 2m to 14m head.

Larger capacity pumps can also be designed to meet specific requirements.



Bedford Pumps' Fish Friendly pumps are also available as a Direct Drive variant.

SBF and SAF Range Chart



**Cable**

Heavy duty trailing flexible rubber cable to BS 7919. Optional symmetrical cable for variable speed applications or WRAS approved cable for potable water applications. Other cable types available on request.

**Terminal Box**

High integrity IP68 profiled design. Easy access to terminal plate without removing cables. Design to EN50019 (EExe) for where applicable.

**Motor**

Conventional dry wound, squirrel cage, high efficiency, induction motor designed to BS4999, BS EN 60034 where applicable with Class F insulation. The motor is contained within an IP68 motor casing. Suitable for Star Delta D.O.L., Auto-Transformer or Inverter starting. Motor enclosures designed to EN 50018 (EExd) available where applicable. Electrical supply 380-440V, 3.3 kV or 6.6 kV 50Hz or 60Hz.

**Instrumentation**

Each pump is supplied with a Bedford Pumps Condition Monitor as standard. This "free issue" instrument records and displays:-

- Barrier oil condition which enables the health of the primary seal to be analysed
- Secondary seal failure detection (trip)
- Thrust and journal bearing temperature indication (alarm and trip)
- Motor winding temperature (alarm and trip)

**Bearings**

Grease lubricated, angular contact thrust and deep ball groove journal bearings packed for life. Typical design life 50,000 hours. Insulated bearings provided on inverter driven motors

**Pump Casing**

Solid cast construction with streamlined guide vanes designed to optimise pump efficiency and minimise fish damage. Standard material to Cast Iron BS EN 1561/EN-GLJ-250 with alternatives available on request.

**Mechanical Seals**

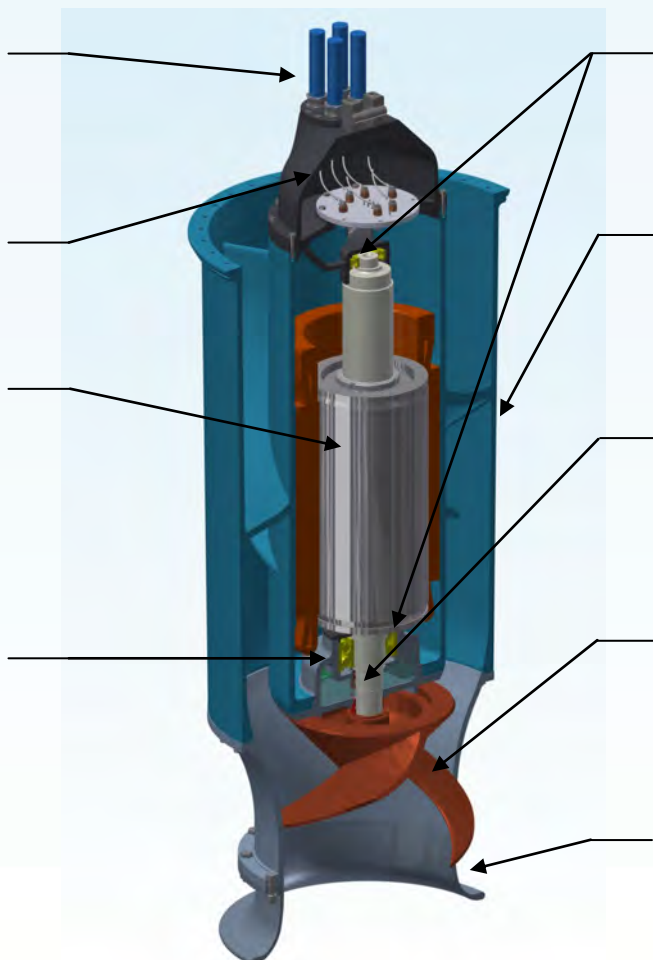
Two high quality, independently mounted, mechanical seals in an oil-filled enclosure to prevent water ingress into the motor. The barrier oil can be supplied to WRAS approval for potable water and environmentally sensitive installations.

**Impeller**

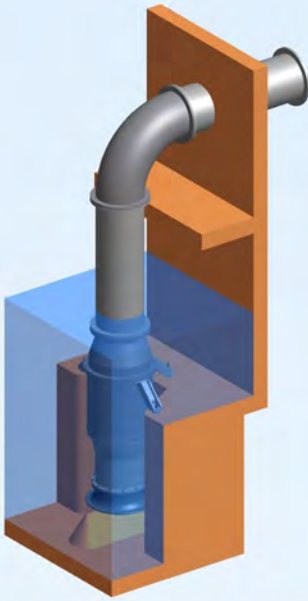
High efficiency open bladed design of solid cast construction. Blade profile optimised to prevent fish/eel damage. Statically & dynamically balanced prior to assembly. Standard material Aluminium Bronze BS EN 1982 CC333G

**Bellmouth**

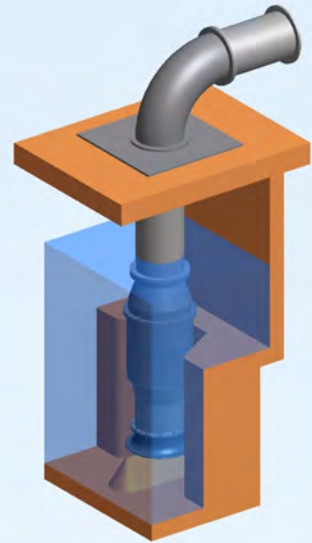
Low loss, high efficiency bellmouth entry with optimised velocity profile. Generally Cast Iron to BS EN 1561 / EN-GJL-250 with alternatives available on request.



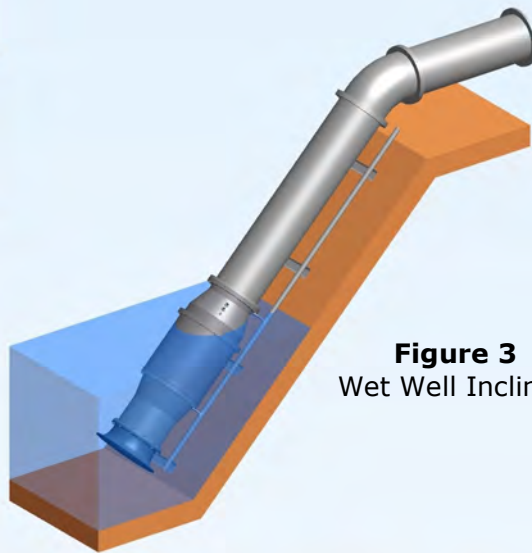
# TYPICAL SUBMERSIBLE ARRANGEMENTS



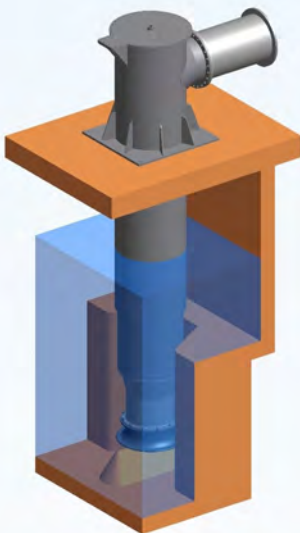
**Figure 1**  
Wet Well Foot Mounted



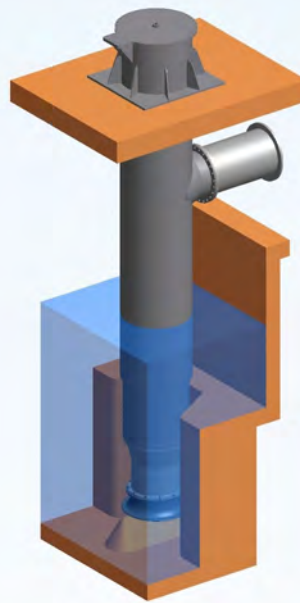
**Figure 2**  
Wet Well Suspended



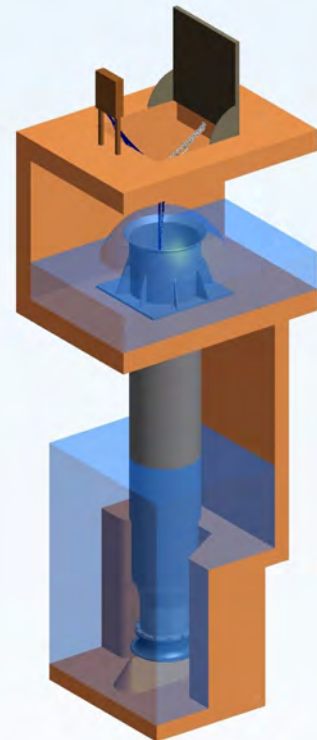
**Figure 3**  
Wet Well Inclined



**Figure 4**  
Wet Well Canister  
- Above Floor Discharge



**Figure 5**  
Wet Well Canister  
- Below Floor Discharge



**Figure 6**  
Wet Well Canister  
- Cascade Discharge

Bedford Pumps' Fish Friendly Range has been stringently tested by independent consultants VisAdvies BV, and awarded an "Excellent" rating for their ability to pump pass fish and eels without mortality.

The pump is acknowledged as being the best Fish Friendly pump on the market.



**Bedford Pumps are one of Europe's leading manufacturers of large submersible and conventional pumps to the water and wastewater industries**



**BEDFORD PUMPS LTD.**  
Part of the *hidralstal* group of companies



SAF SBF 04-2011

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