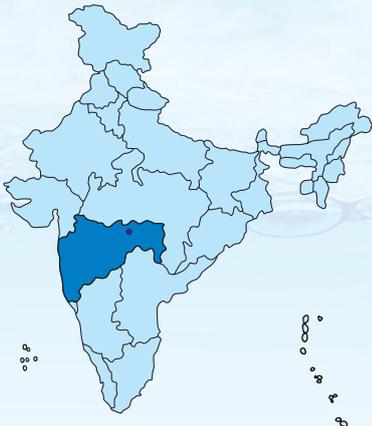




Nagpur

Pratap Nagar ESR Drinking WDS

*Boosting Residual Water Pressure
at the Tail End as per latest CPHEEO norms
with Existing ESR & without New Pump House*



*Nagpur Municipal Corporation
Pratap Nagar ESR Drinking Water Distribution*

Orange City, Nagpur

Nagpur is widely known as the “**Orange City**” for its significant role as a major trade center for oranges. It is also famous as the “**Tiger Capital of India**” due to its proximity to several renowned tiger reserves. Additionally, Nagpur is recognized as the “**Winter Capital of Maharashtra**”.

The British East India Company took over Nagpur in the 19th century and made it the capital of the Central Provinces and Berar. After the first reorganization of states, the city lost its capital status but according to the “Nagpur Pact” between political leaders it was made the second capital of Maharashtra.

The Project:

Orange City Water Pvt. Ltd. (OCW), a subsidiary was founded in November **2011** to implement the Nagpur Municipal Corporation’s Uninterrupted Water Supply Scheme. This initiative is commonly referred to as the **24×7 Water Supply project**, part of the Central Government’s ambitious **JnNURM** (*Jawaharlal Nehru National Urban Renewal Mission*). OCW delivers comprehensive, professional water management solutions to its clients in Nagpur.



According to **CPHEEO** manual residual pressure of **2.1 kg/cm²** is necessary in the piping at tail end. In the Pratap Nagar Area, the tail end pressure in the water supply pipeline was insufficient to provide water to the end consumers. OCW encountered difficulties in supplying water to consumers while minimizing interruptions to the existing water supply system. Additionally, constructing a new pump house for this purpose was not a viable option.



In light of these challenges, OCW sought the best solution from **AQUA** under the given circumstances.

Challenges faced by OCW

The pump sets needed to be installed in the restricted space available near the ESR within the compound without dedicated pump house i.e. Open to Sky.

Additionally, the pump sets were required to be **Flood-Proof** & the **Noise Level** was to be kept to a minimum below CPHEEO norms of 85 dBA.



Solution of AQUA Pumpset

AQUA introduced a distinctive solution for an online, open-to-sky, flood-proof installation aimed at enhancing pipeline pressure.

This installation was extremely compact and eliminated the need for constructing a new pump house, leading to significant savings in both cost and time.

Additionally, the site was located in a densely populated residential area, necessitating that the noise levels of the pump sets be kept to an absolute minimum.

03 Nos of flood-proof pumpsets have been installed and commissioned on the extended pipe of the Existing ESR – 600mm dia Piping outlet. These pumpsets have a discharge capacity of 400 m³/hr and a head of 10 meters.

The pump sets are functioning without any vibrations and produce an exceptionally low noise level.

Subsequent to the installation and commissioning of AQUA's Ultra Compact, Open to Sky Flood Proof (IP68) OnLine Booster pumpsets, water has reliably reached the tail-end consumers.



AIFP

Pump House
is not mandatory



Flood Proof



VFD

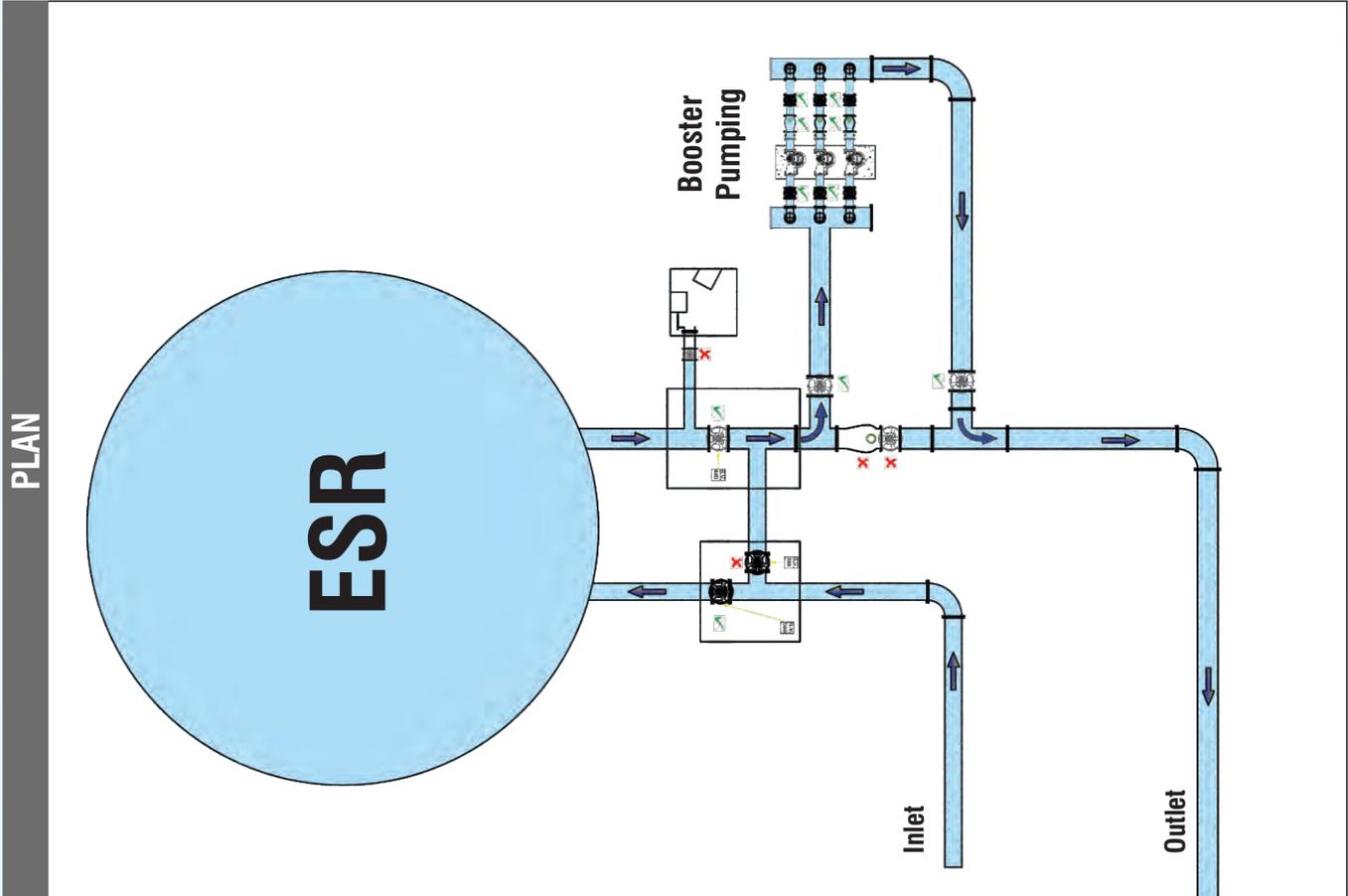
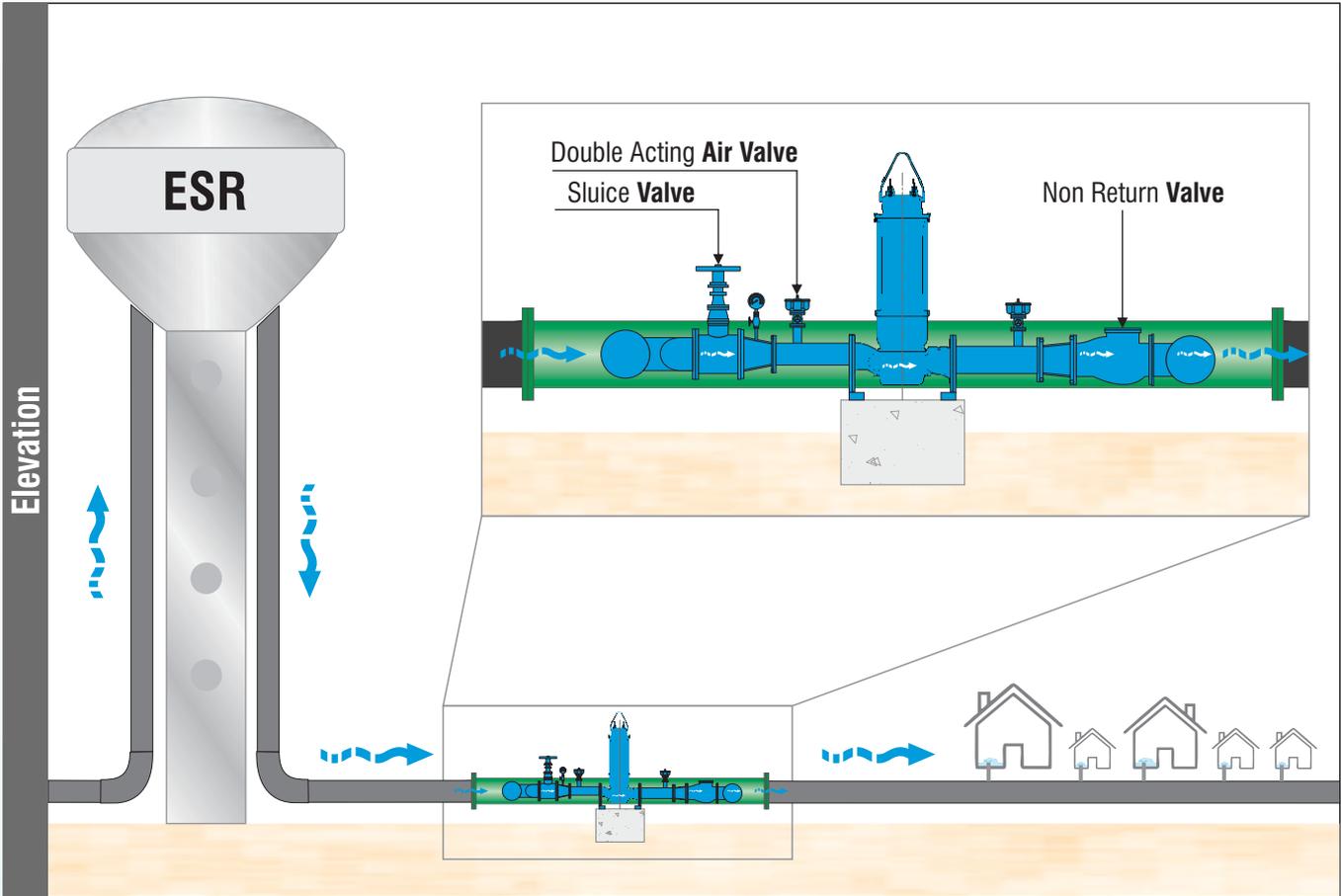
Compatible
for Variable Pumping



Suitable for
24x7
Drink from Tap



Typical Installation: OnLine Pressure Boosting with AIFPE pumpset



Site Installation



Design: Shaft



A Robust, Single Shaft for Fail Safe Operation

Premium Materials

Design: Bearing

All Thrusts are absorbed by Grease Lubricated Anti Friction Bearings located deep inside the motor.

Superb Bearing Life

A Typical Bearing of L₁₀ life of 1,00,000 hours &/or 10 years.



Premium, Ultra Long Life; Synthetic Grease

Ensures a Typical Re-Greasing Interval of 50,000 hours &/or 5 year for ARFP 1,09000hr &/or 10 year for A9LFP



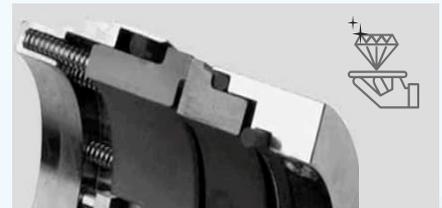
Made from Rust Free Stainless Steel & designed without Couplings thereby Reducing Maintenance, Eliminating the need of Spare Parts as well as the Risk of Misalignment.

Design: Mechanical Shaft Seals



Shaft Sealing is by means of Two, Independent, high quality Bi-Directional; Mechanical Seals (& the Primary seal is always of Silicon Carbide faces to withstand Erosion incase of increased silt & grit content in sewage/ water) hence there is Zero Leakage of water/ septic sewage into the Dry Well from the Shaft Gland.

Seals have L_{10H} life in excess of 50,000 hours &/or 5 years.



Design: Pump End



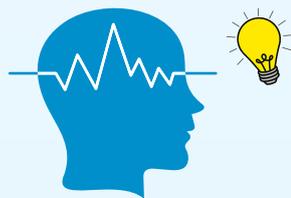
Impeller

CADesigned, CFD optimized; Multi bladed Water Impellers ensure Superb Efficiency.



Pump Casing is of In Line Volute type & Impeller is mounted directly on to the Extended Shaft of the motor hence eliminating alignment & vibration problems.

Design: Intelligent InBuilt Monitoring Systems



Easy Monitoring (& Remote Control[#]) of your Pumpset's Health.*

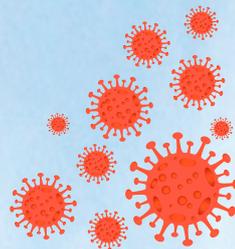
- **PSLD** detects Pressurized Water Leakage from Mechanical Seals.
- **CCWLD** detects Accidental Water Leakage from Cable Sheath's Cuts &/or Nicks into the Motor.
- **SBWLD** detect Accidental Water Leakage in to Motor's Stator Chamber.
- **BTDs** in the form of Bi-metallic Switches (for All Pumpsets) & RTD's (PT100 - 3 Wire Simplex type - from Size > 150kW) to Monitor Bearing Temperature (without any Additional Cost)[#].
- **WTDs** in the form of Bi-metallic Switches (for All Pumpsets) & RTD's (PT100 - 3 Wire Simplex type - 1 per each Phase - from Size > 150kW) to Monitor Winding Temperature (without any Additional Cost)[#].

*depends upon model & kW ratings

[#]requires additional communication hardware



No Periodic Maintenance & Minimal Operational ManPower so that you can...



NO need for Frequent Periodic...



NO need of Operations; like :



Shafts / Sleeves &/or Coupling



Gland Packing

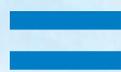


Oil &/or Grease

Valve Opening-Closing during pump Starting- Stopping



Operating the Dewatering Pump to water leakage from Seepage / Gland Piping Leakage, etc.



Rugged Pumps
Robust Solutions
Reliable People

"OCW is delighted with proactive approach of Aqua.

We also appreciate Low Noise & Vibration free performance of Aqua Pump sets.

OCW also expresses our satisfaction since the objective of the scheme of providing water to Tail End consumers is served with minimum complexity & cost because of installation of Aqua flood proof On line booster Pump sets. "

Vijay Mandlik
(Head Technical – OCW, Nagpur)

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www.aquapumps.com

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