

## *Pontoon Mounted Submerged CF pumpset based Water Supply Scheme*

*are Economical;*

*require Low Maintenance & result in 365 day Water Intake irrespective of  
Meandering water course / Depleting water levels even in the worst summers*

# NC 34 MACCHU DAM 1

## Machchhu Dam 1



### Situation :

**Machchhu 1 dam** is mainly used for Irrigation purpose in various areas of Morbi and Rajkot district. During the years 2017 and 2018 the rainfall in Gujarat and especially in Saurashtra was abnormally low & all the drinking water sources were being depleted fast.

So it was decided to take and supply drinking water from the hitherto forbidden Irrigation water sources. M/s. GWIL, the Gujarat Government company involved in bulk transmission of drinking water in Gujarat came up with proposal to lift the **dead water** lying in Machchhu 1 dam and connect it to its existing water supply grid and augment it by new source of 57.6mld water.



**Aqua's Solution :**



Submerged Pumpsets are mounted at the bottom of Pontoon; hence the centre of gravity is shifted downwards to ensuring stability.

Considering the Weight Balancing - Submerged Centrifugal Pump set is the most suitable solution for installation on Pontoon. The Pumpsets and pontoon was installed 300m deep in the dam on the opposite side of the gates of the dam,



so Pontoons & Pumps had to be tightly secured & anchored and keep system working in conditions of heavy floods. *(which was regular phenomenon during rainfalls)*



Pontoon Mounted Submerged CF pumpset based Water Supply Schemes are **result in Water Extraction irrespective of Meandering water course / Depleting water levels...**

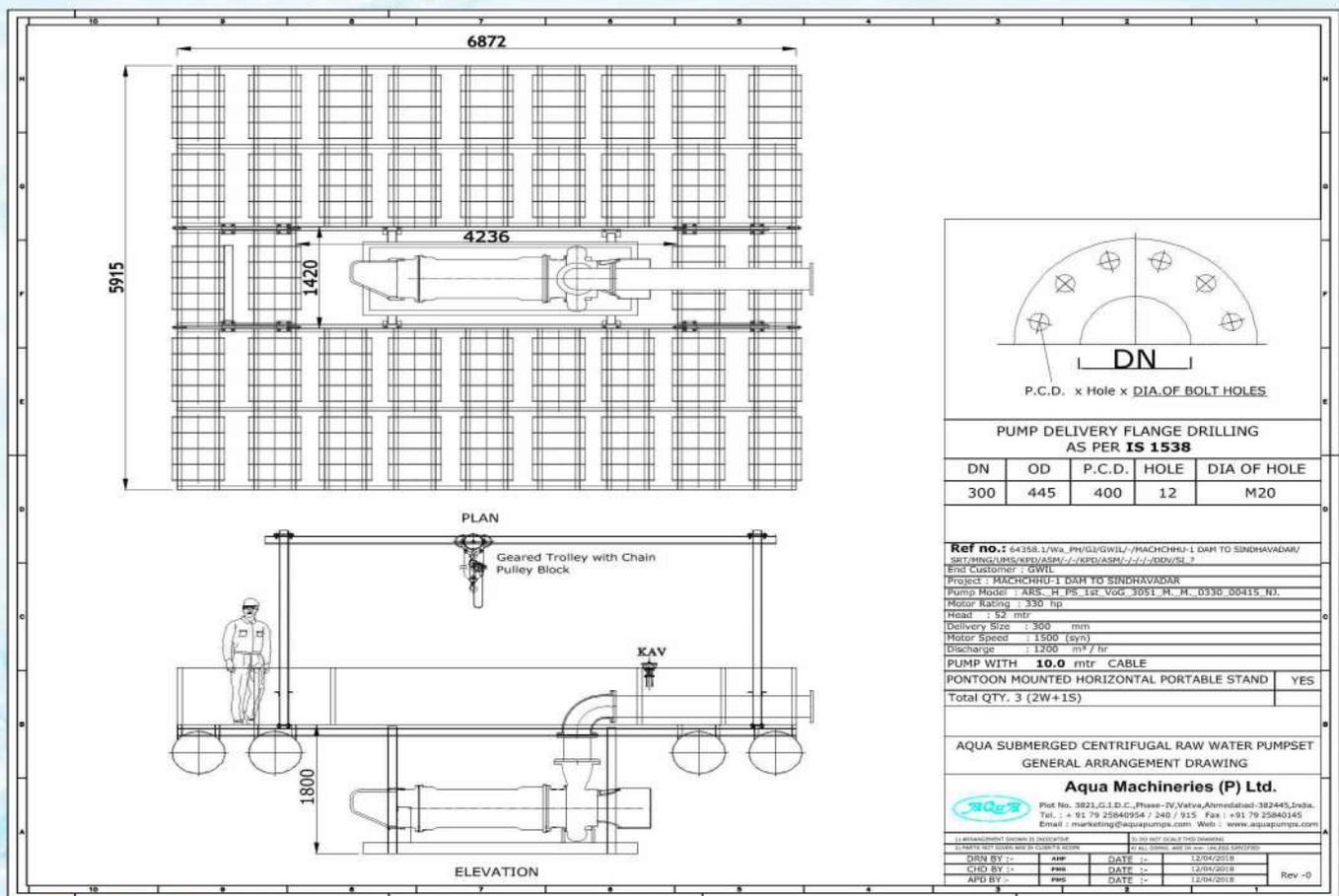
**Name of Work :**

Providing, Lowering & Laying of M.S./D.I. K-7 Pipeline along with Design, Engineering, Supply, Installation, Testing & Commissioning of Submerged Centrifugal Pump set on floating pontoon with accessories and all electrical equipments with post completion Comprehensive Operation & Maintenance for 5 years for Machchhu-1 Dam site to Sindhavadar hw (NC-34) project, Tal.: Wankaner, Dist. Morbi.



**Situation Of Work :** Machchhu 1 Dam

**Authority :** G.W.I.L.



**Benefits :**

**Ultra Low ManPower Requirement**

**Requires No Special Pre – Post / Ancillary-Auxillary Operations;** like :

- Suction Priming during Pump StartUp,
- Valve Opening- Closing during pump Starting- Stopping
- Operating & Maintaining the Forced Water Lubrication systems operation,
- Operating the Dewatering Pump to water leakage from Seepage / Gland Piping Leakage, etc.

**Requires No Periodic Consumables;** like :

- Oil,
- Grease,
- Gland Rope Packing,
- Coupling Rubber/ Pins,
- Sleeves, etc



**Requires No Routine Maintenance;** like :

- Frequent Oiling,
- Re-Greasing,
- Gland Leakage Rate Checking,
- Tightening & Gland Rope replacement,
- Checking (& Correcting) Shaft Alignment, etc.





WATER SUPPLY



## Intelligent InBuilt Monitoring

### Easy Monitoring (& Remote Control<sup>#</sup>) of your pumpset's health

- **LSLD** 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 &/or PT100 monitor Bearing Temperature
- **WTDs** in the form of Bi-metallic Switches &/or PT100 monitor Stator Winding temperature

<sup>#</sup>requires additional communication hardware

## GUJARAT WATER INFRASTRUCTURE LIMITED

(A Govt. of Gujarat Undertaking)



Office of the Senior Manager (NC-33,34)  
Jalbhavan, Near new circuit house,  
Surendranagar-Rajkot highway Road,  
Surendranagar

Date: 22/01/2021

No: PB/NC 34/Machchu/Camp1

### To Whom So Ever It May Concern

This is to certify that since 23rd Jan 2019, we are using "Aqua" make Submerged Centrifugal (SCF) Pumpsets, Pontoons & Walkways for Machchhu-1 Dam site to Sindhavadar hw (NC-34) project, Ta: Wankaner, Dist: Morbi :

Pump Model	: ARS_H_PS_1st_VoG_3051_M_M_0330_00415_NJ
Head	: 52 meter
Flow	: 1200 m3/hr
Pump Efficiency	: 80%
Motor Efficiency	: 94.05%
Rating	: 330 HP / 246 kW
Voltage	: 0.415 V
Motor Type & Cooling	: LT Submerged Squirrel Cage Induction - Dry Air filled Totally Enclosed (IP 68) Self Frame Surface Water Cooled (TESWC)
Qty	: 3Nos (2W+1S)
Installation	: Metallic Floating Pontoon Based Installation
Qty	: 3 No's. (2W + 1S)

The pumps installed on Floating pontoons are operating continuously (24 X 7) round the year since the commissioning. These Floating pumps cater raw drinking water to Sindhavadar HW (NC 34)

Based on our very satisfactory experience so far, we recommend the use of Aqua make Submerged Pumpset based Floating Pontoon & Walkway type pumping stations for similar applications

Sr. Manager (M)  
GWIL, NC-33,34



### Plug & Pump

No base Plate or Coupling to align;  
No priming to startup



### Low Life Cycle Costs (LCC)

Minimal Maintenance & Good Wire to Water Efficiency.



### Robust & Reliable

No breakdown even in high silt levels & rust proof bearings.



### Weather Proof

No Damage due to rain

# Aqua Machineries Private Limited

[www.aquapumps.com](http://www.aquapumps.com)

Registered Office & Manufacturing Plant

Survey No. 504/1-2, 442/2, Near Haridarshan Estate, Near Express Highway, Ramol, Ahmedabad-382 445. Gujarat, India.

[marketing@aquapumps.com](mailto:marketing@aquapumps.com)