

SHEARFORCE LLC

OZONE WATER CLEANING SYSTEM

The Shearforce Water Cleaning System is based on the use of Injection of Ozone into the contaminated Water Stream. The following units is used for drinking water treatment, waste water treatment, high concentration ozonated water for washing, sterilization etc.

The equipment is furnished with ultra fine air bubble 20~30u, 5LPM PSA oxygen concentrator with 90%+-3%, 12G/Hr. corona discharge ozone generator with 50Mg/L ozone output concentration, 3~5PPM ozonated water concentration

GO-O3W



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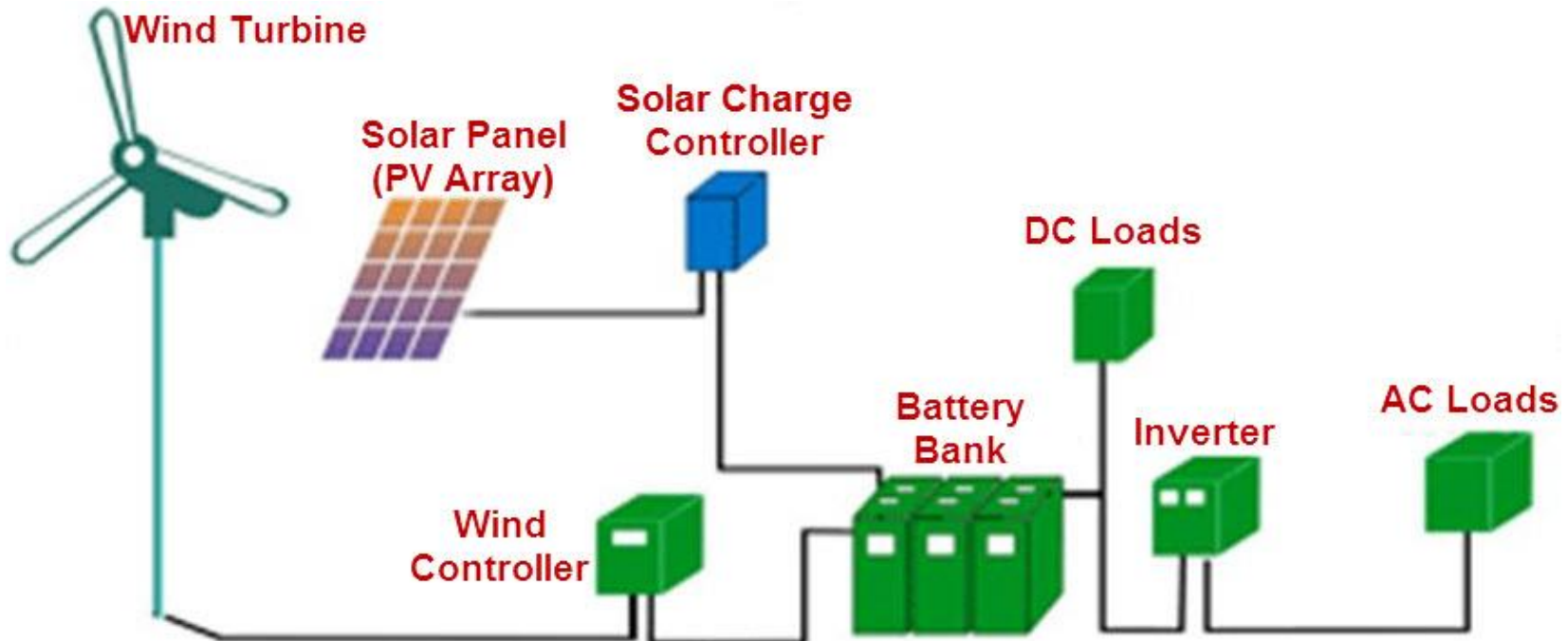
The unit below is designed where there is limited power using the static head of the source of the water to disinfect the harmful biological contaminates.



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OZONE WATER CLEANING SYSTEM

Shearforce LLC first designed Wind/Solar Power Systems for off-shore Scada systems in 1990. This simple but valuable system operates Ozone system to provide much need Clean and Safe Water.



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DAF Whitewater Systems

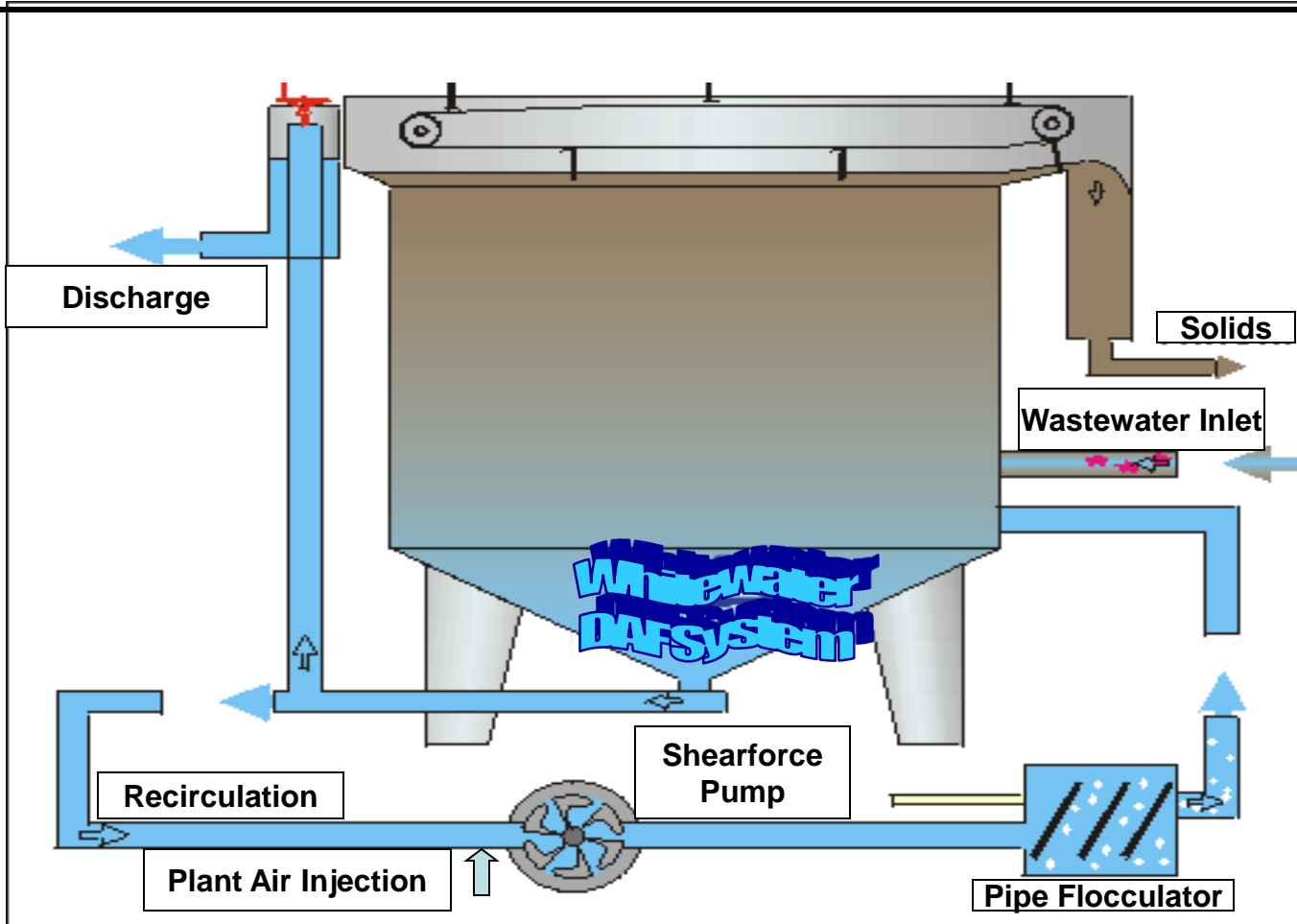


The **DAF Whitewater System** technology was developed by Water Resources utilizing the Patented Shearforce technology. The heart of the system is the ability of the Shearforce Pumps to pump gas/air which has been injected into the suction of the pumps. The unique Shearforce design allows the pump to pump gas/air without concern for solids or cavitation found in other pumps capable of pumping gas.

Treatment chemicals are injected into the Pipe Flocculator through multiple ports to achieve maximum liquid / solids separation under easily controlled process conditions.

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DAF Whitewater Systems



Shearforce Ltd. Co., Houston Texas

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The injection of air results in Whitewater which is pumped through the innovative Pipe Flocculator. The Whitewater contains millions of microscopic tiny air bubbles. Extensive laboratory evaluation on the size of the air bubble and effective liquid-solid separation, overwhelming demonstrate that the smaller the air bubble, the more efficient the separation.

The Patented Shearforce Pumps can pump up to 35 % gas/air producing 93 – 100% solubility with air bubbles less than 30 microns in size.

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DAF Whitewater Systems



Most conventional floatation systems can be upgraded to a DAF Whitewater System process by installing a Shearforce Pump, air injection system, and a Pipe Flocculator to replace chemical reaction tanks and mixers. Results are high flow rates, high quality treated water and low chemical costs.

Typical Results of Whitewater DAF System

| Characteristic | Untreated (mg/L) | Treated (mg/L) |
|----------------|---------------------|-------------------|
| ph | 11.2 | 8.9 |
| TSS | 1672 | 18 |
| Oil & Grease | 2480 | 16 |
| BOD | 432 | 124 |
| COD | 1120 | 312 |
| Cadmium | 0.18 | <0.02 |
| Chromium | 0.24 | <0.02 |
| Copper | 1.16 | <0.10 |
| Lead | 0.87 | <0.10 |
| Nickel | 0.48 | <0.05 |
| Zinc | 1.93 | <0.03 |

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DAF Whitewater Systems

Shearforce Pumps – w/ Patented Shearforce Rotors



Patented “Shearforce” Rotors

Patent No. US 6,752,597 B2

Shearforce rotors do not have vanes and thus have specific advantages over conventional impellers and are better suited for certain applications.

These applications include entrained gas (air induced fluids), high viscosity fluids and fluids with high solid content.

The rotor utilizes the fluid viscosity to generate the necessary forces required to sustain a pressure differential and corresponding flow.