



## **GW Ejector in Ozone Tail Gas Recycling**

### **- Pure Oxygen Aeration Applications**

The client of this oxygen aeration project is Shanghai Chemical Industry Park Sino French Water Development Co. The company is a joint venture formed in 2002 by Sino French Water and Shanghai Chemical Industrial Park Development Co., Ltd. and Shanghai Chemical Industrial Park Investment Industry Co.

Shanghai Chemical Industry Zone Sino-French Water Development Co., Ltd. has a sewage treatment capacity of 50,000 tons per day and a COD load of 30 tons per day. In its treatment process, there is an ozone advanced oxidation process, which uses pure oxygen to prepare ozone, and consumes 6,000 kg of pure oxygen per day. the conversion rate of pure oxygen to ozone is about 10%. In the original process, the tail gas containing about 90% of pure oxygen after the ozone reaction was discharged as exhaust gas, which caused a great waste.

In order to reuse the oxygen in the ozone tail gas, Shanghai Chemical Industry Zone Sino-French Water Development Co., Ltd. commissioned our company to design the ozone tail gas reuse system. The system will reuse the ozone gas in the aerobic biochemical tank for aeration and oxygenation, thus reducing the energy consumption of the aerobic biochemical tank.

The amount of oxygen used to prepare ozone in the advanced ozone oxidation tank of the plant is 6000 kg per day, i.e. 4200 Nm<sup>3</sup>/d. The oxygen content of the tail gas after the ozone contact tank is 5400 kg/d. The advanced ozone oxidation tank is located at the farthest distance of 380 m from the aerobic biochemical tank.

Before the renovation of the aerobic tank a total of 75kw table aerator 12, aerobic tank at this stage of the treatment load under the oxygen demand of 8.6 ~ 9.2t / d

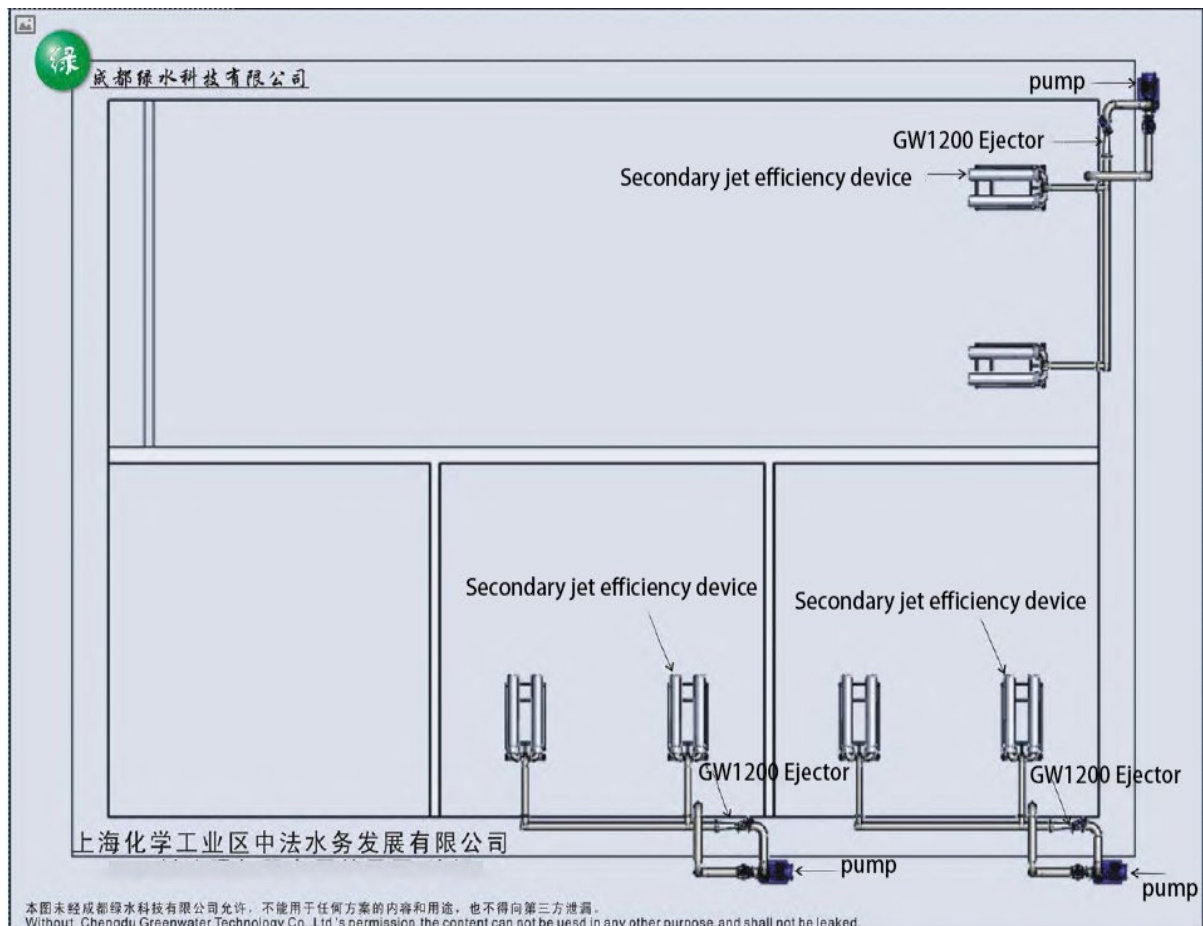
The GW pure oxygen jet aeration system of this project uses 6 GW1200 jets and 12 sets of GWB02-140-Air/O<sub>2</sub> secondary jet efficiency devices. Through the negative pressure formed by the GW1200 jets, the 5400kg/d of pure oxygen in the ozone tail gas is pumped back to the front-end aerobic tank from the ozone tank, which is 380 meters away from the aerobic tank. 90% of the oxygen utilization rate of the GW

pure oxygen jet aeration can supply 4860kg/d of oxygen to the aerobic tank.

After the operation of this system reduces the running time of the original table aeration machine, so that the current stage of processing load under the use of power reduced by 25%, the system has passed the acceptance, to meet the design requirements.

Attached are the PID flow chart, layout effect diagram and site photos of the GW Oxygen Jet Aeration System for this project.

### GW jet aeration system effect (top view):



## **GW1200 Jets and Field Installation Photos**



## **Factory photo of secondary injection efficiency device**



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