FUCHS
A Metawater Company

Aeration
Mixing
Experts

56 Block Town Wastewater Treatment Plants in Chengdu (China)

FUCHS OxyStar Aerators

Introduction

Chengdu, the capital of Sichuan Province, is located in the hinterland of the Chengdu Plain. Chengdu area is also one of the most important economic centers as well as transportation and communication hubs in Western China. Covering a total land area of 12,400 square kilometers, Chengdu administrates nine districts, four county-level cities and six counties. At the end of 2006, the population of Chengdu already reached 11 million, about 7.2 million of which were rural residents.

In 2006 a detailed investigation carried out by the City Water Authority showed that 42 small rivers of the Min River and the Tuo River areas were highly polluted. Most of the rural domestic sewage was directly discharged into the rivers. This not only affected the ambient quality of Chengdu but also caused potential hazard to drinking water in the rural areas.

In order to reduce the discharge of pollutants into the rivers and to achieve full coverage of the wastewater treatment plants in the townships, Chengdu took responsibility for a comprehensive water treatment of all 42 small rivers. In 2007 the first step of water treatment for the most seriously polluted 21 rivers was completed. In 2008 the second water treatment project was started comprising 56 wastewater treatment plants and sewer networks. The intended budget for the second project was 0.92 billion RMB (≈ 92 million EURO). The additional daily wastewater treatment was to reach 0.21 million m³/d.

Description of Project

In connection with this project FUCHS Co. started cooperation with Jiangsu Philip Environmental Engineering Co., Ltd. (JSPEEC). In joint effort both companies won 19 wastewater treatment plants of the first equipment bid package (in total 37 WWTPs). The further 18 plants were to be equipped with aspirators of a US brand.

According to the characteristics of the wastewater the treatment plants are designed for extended aeration based on advanced orbal oxidation ditch process. In the biological multi-stages the phosphors, nitrogen and carbon shall be removed step by step. The effluent of the wastewater shall meet Level A of "Discharge standard of pollutants for municipal wastewater treatment plant" (GB 18918-2002). As required, the treatment plants were equipped with online monitoring equipment.

The average loads for different sizes of treatment plants and related discharge standards are shown in the following table:

Parameters	Daily flow 1,000 / 2,000 / 3,000 / 5,000 / 10,000 m³/d	
	influent	discharge standard
BOD	130 mg/l	≤ 10 mg/l
COD	250 mg/l	≤ 50 mg/l
SS	150 mg/l	≤ 10 mg/l
TN	35 mg/l	≤ 15 mg/l
TP	3.0 mg/l	≤ 0.5 mg/l

The large Wenchuan earthquake in 2008 hindered the construction of the wastewater treatment plants and pipe networks. Until the second half of 2009, 12 WWTPs have been equipped with 56 sets of OxyStar Aerator (types from OS 5.5 to OS 30.0) and put into operation.

Since the OxyStar Aerators are in operation, they provide excellent oxygen transfer and high reliability. Testing showed that Level A of the Discharge Standards is met. The water quality of the receiving rivers has been remarkable improved.

Whereas the aerators of the competitor raised trouble, it becomes once again apparent that OxyStar Aerators are of an intelligent but simple design and thus very sturdy. High aeration efficiency and mixing capability, easy handling and mounting as well as low maintenance are characteristic.

'Chengdu 56 Block Town Wastewater Treatment Plants' project is the first application of OxyStar Aerators for municipal wastewater treatment in China. This successful application leads to an increasingly high interest in the FUCHS OxyStar Aerators.

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