

# La Feyssine wastewater treatment plant



Greater Lyon's (Grand Lyon) new water treatment plant will be located in the metropolitan area of Villeurbanne and Vaulx-en-Velin, and more specifically at La Feyssine between the northern ring road and the Jonage canal. It will join the nine treatment plants already in existence and will relieve the burden of the Saint-Fons plant, which is now seriously under-capacity. The plant is being built by the SUEZ/GFC/SDEI/Patriarche & Co consortium and will treat the wastewater of 300,000 PE of Greater Lyon, i.e. 91,000 m<sup>3</sup> of wastewater per day. The wastewater will be treated by the so-called "suspended growth" process, and once the water is compliant with European standards, it will be discharged into the Rhône. Particular care has been taken to minimize odor and noise nuisance (enclosed and deodorized buildings) while preserving flora and fauna.

This includes introducing local plant species to the site and planting grass to allow varied pollination. The plant has been designed as a model in landscape integration, with simple and harmonious architecture, natural materials (wood and stone), a large amount of planting and a landscaped parking area. Provision will also be made to allow public visits of the site, and a research and testing platform will be established in a separate building. This platform will be jointly managed by Greater Lyon and Cemagref (a public research institute specializing in water) and used for testing purposes and to deepen knowledge, on site, of the complex phenomena related to urban wastewater treatment.

\* Towns served: Villeurbanne, Vaulx-en-Velin, Décines-Charpieu, Bron, Chassieu, Saint-Priest, Genas, Saint-Laurent-de-Mure and Saint-Bonnet-de-Mure



## treatment line

### water system

#### pretreatment

- The collected water is introduced into one of three Sedipac® 3D to remove grease and grit.
- The Sedipac® 3D is a rectangular structure that combines a grit and grease remover and a lamellar primary settling tank. There is no reagent or recycling of sludge.

#### biological treatment

- Pre-treated water is then forwarded to three biological treatment lines to remove carbonated pollution via oxygenation and nitrogen pollution via nitrification-denitrification.

### sludge system

#### sludge treatment

- The purpose of treating sludge is to reduce its volume and recover energy through the production of biogas.
- The primary sludge is thickened in a thickener and then forwarded to a digester (Digelis™).
- The biological sludge is thickened via centrifuges.
- The primary digested sludge and thickened biological sludge are then homogenized and dewatered to attain a dryness of 25%.
- The final treatment of the sludge is done by drying to obtain a dry solids content of 90%. Once dried, the sludge is forwarded to intermediate storage and may be recovered as fuel for cement kilns.

## the plant's advantages

### a model in environmental integration

- Photovoltaic panels integrated into the buildings will generate power that will be sold to EDF. Income from this production will be entirely put back into Greater Lyon.
- The heat from the wastewater will be recovered for air-conditioning or heating the plant's buildings.
- A portion of the treated water will be reused to clean the premises, the sweepers' area and irrigate the parking-lot landscaping.
- Green roofing will absorb some of the CO<sub>2</sub> generated by traffic on Lyon's ring road.
- Capturing odors at the source and having two dedicated deodorizing units will guarantee zero odor nuisance.

## features

construction period: 32 months

entry into service: February 2011

capacity: 300,000 PE

benchmark flow	91,000 m <sup>3</sup> /d
peak flow during dry weather	63,000 m <sup>3</sup> /d
average flow	66,000 m <sup>3</sup> /d
max flow during wet weather	144,000 m <sup>3</sup> /d

treatment objectives:

	concentration (average 24-hr sample)	efficiency
BOD <sub>5</sub>	19.4 mg/l	92 %
COD	120 mg/l	82 %
SS	20 mg/l	94 %
TKN	6.2 mg/l	86 %
NH <sub>4</sub> <sup>+</sup>	3.2 mg/l	95 %

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Since March 2015, all the Group brands (Degrémond, Ozonia, Aquasource, Ondeo IS, Ameriwater, Infilco, Poseidon...) became SUEZ.

Meanwhile, from now on, the technologies and know-how of our Treatment Solutions offer will be distinguished with the label degremond®.