

Wastewater treatment **solution** for the “Russian Versailles”





Untreated wastewater from the town of Petrodvorets is one of the major pollution point sources of pollution entering the Baltic Sea. The nutrients, phosphorus and nitrogen are contributing to the destructive impact on the aquatic environment.

Located about 20 km west and 6 km south of St. Petersburg and overlooking the Gulf of Finland, Petrodvorets (often called the “Russian Versailles” or Peterhof) has a unique water supply system. The town’s hydraulic complex, a historic engineering monument dating back to the 18th century, provides almost 65,000 inhabitants, 150 fountains and 4 cascades with water.

The high pace of development in the Petrodvorets district means constant modernization of the water supply and sewerage systems. This is being carried out by the South-West Vodokanal Company, a branch of SUI Vodokanal of St. Petersburg.

INCREASING THE DAILY TREATMENT CAPACITY

The Petrodvorets wastewater treatment plants were put into operation in 1976 and nowadays treat all of Petrodvorets’ wastewater and some of the sewage of the nearby town of Lomonosov. A tentative status was set initially: various elements were tested there for subsequent implementation in St. Petersburg’s wastewater treatment plants. Due to the heavy workload of the Petrodvorets wastewater treatment **▀ ▀**



The major goal of the project is to increase the daily treatment capacity to 65,000 m³ during dry weather and to 72,000 m³ during rain and snowmelt.

plant and the fact that it was wearing out, a reconstruction project was launched by the St. Petersburg Construction Committee at the end of 2006.

The major goal of the project, which is being implemented by ZAO Vodokanalstroy, is to increase the daily treatment capacity to 65,000 m³ during dry weather (and to 72,000 m³ during rain and snowmelt) using modern technologies that remove biogenic elements. The reconstruction of the wastewater treatment plant also promotes compliance with the requirements of the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area: the total phosphorus value will be reduced to < 1.5 mg/l, and the nitrogen value to < 10 mg/l.

PREVIOUS EXPERIENCE CAME IN HANDY

In order to implement the project in Petrodvorets, KWH Pipe supplied over 1,000 m of Weholite pipe in June 2007 for the

construction of an underwater outlet leading to the Gulf of Finland. Welding works were completed by KWH Pipe specialists in August 2007.

This is the second significant wastewater treatment plant reconstruction project in which KWH Pipe is involved in Russia: over 42 km of pipeline, including 1,400 m of Weholite, were supplied by the company for the South-West Wastewater Treatment Plant (UZOS) in 2005. Based on the experience gained, KWH Pipe was able to offer a reliable and expedient engineering solution for a successful sewer upgrading project. Weholite is durable, corrosion resistant and leak proof, which naturally benefits the customer's operations.

Reconstruction of the Petrodvorets wastewater treatment facilities is to be completed by the 3rd quarter 2008. It will ultimately improve the environmental situation in the Baltic region and achieve the status of a cost-effective water protection measure. ●

PROJECT DETAILS

- **Project:** Reconstruction of the Petrodvorets Wastewater Treatment Plant
- **Owner:** SUI Vodokanal of St. Petersburg
- **Application:** Water outlet to the Gulf of Finland – Approx. 1,050 m, DN/ID 1,200 mm, SN4, Weholite
- **Designer:** GUP Lengiproinzhpoeekt
- **General contractor:** ZAO Vodokanalstroy
- **Sub-contractor:** 000 Sprut

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A RELIABLE AND EXPEDIENT ENGINEERING SOLUTION.

