

### Army base uses Tsurumi for military precision

Novo Selo Training Area (NSR) is a Bulgarian military training facility in Sliven, eastern Bulgaria. The base is used by Bulgarian and occasionally US troops for tank shooting, infantry skills and mountaineering.

The facility needed a new wastewater treatment system as part of an ongoing €50 million development. Tsurumi provided its pumping equipment and expertise to create a tailor-made and self-contained solution that would be effective and – more importantly – easy to maintain. The end result was put into place in March this year when 47 Tsurumi pumps and aerators were installed at the base.

Carsten Bode, product manager at Tsurumi Europe who worked closely on the NSR project, says: "Simple maintenance was the crucial factor in selecting the right pumping equipment. The base is very remote and we do not want to worry about the system breaking down and taking a long time to fix. Plus with so many troops on site – up to 2,500 – the treatment plant needs to be effective and not interrupt our day-to-day operations."

The pumps are all positioned in and around two large cylindrical tanks measuring approximately 35 m long and 4 m wide that are buried underground. These plastic cylinders are the biological stage of the wastewater treatment process. They work as sequencing batch reactors and are connected to the base's sanitation system through a network of pipes.

The 47 pumps at the base include 22 aerators installed as free-standing units within the two tanks. The remaining 25 comprise two cutter pumps, two agitators, three decanters, four channel impeller pumps and 14 vortex impeller pumps.

#### Remote reliability

With tank shooting and chemical warfare training among its list of activities, NSR had to be located in a very remote area. As previously mentioned, this meant the wastewater system had to be very reliable and simple to maintain. This is to avoid unnecessary (and lengthy) engineer call outs.

Tsurumi's products are known for their strength and quality. With a reputation for hard work, some of its pumps can even be found working today after more than 25 years active service. Paramount to this longevity is Tsurumi's patented oil lifter: a device positioned within the oil bath of every pump (from 0.4 kW to 200 kW) that significantly reduces day-to-day wear on the double-mechanical seal, which itself plays a major role in protecting the motor from internal water damage.

Tsurumi designs its products with easy maintenance in mind. Their simple construction means that most of the range can be dismantled with basic tools, such as a screwdriver or spanner, and simple maintenance can be carried out with only basic training.

To further assist the maintenance process at NSR, the two underground sludge tanks have several access points positioned at surface level to allow easy access to the pumps below.

Mr Bode adds: "It's not often we get to supply equipment to a military base. With Tsurumi's huge selection of models – we have over 1,800 – and almost 90 years experience in the market, we were confident we could meet the base's demanding requirements for reliability and efficiency. The pumps we have provided will remain in operation for many years with little need for repair."

#### Aerating

The 22 aerators are all from Tsurumi's TRN range, the company's most advanced range of products. All but one feature 1.5 kW motors. The aerators distribute a strong flow of water and air throughout the tanks to prevent sediment forming and to ensure the wastewater is uniformly oxygenated.



## **Pumping**

The 25 other pumps at NSR assist with transportation and the overall wastewater treatment process. They are installed on several guide rail systems with some positioned within the two treatment tanks and some situated nearby. The pumps have motor sizes of up to 7.5 kW and perform a wide variety of tasks including:

**Cutting:** Waste comes in different shapes, sizes and substances. To deal with any coarse materials that would normally clog a wastewater system, two C series cutter pumps are installed at the base.

**Agitating:** To help move sediment contained in wastewater, two KTV series agitator pumps are positioned within the sludge tanks. The agitators are highly robust and feature a motor shaft extension that forces thicker sludge through the system.

**Decanting:** Tsurumi's FHP decanting pumps enable wastewater plants to maximize their working life through a cost effective and easy-to-install solution. The pumps discharge supernatant water from sludge tanks at a predetermined depth to ensure only pure sewage is stored – saving space and increasing the plant's life cycle.

**Pumping:** The channel impeller and vortex impeller pumps are U-, UZ- and B-series pumps. These are standard sewage pumps that assist the overall transportation of liquid.

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Tsurumi is one of the world's most experienced pump manufacturers. From its modern facility in Kyoto, Tsurumi produces more submersible pumps globally per year than any other pump manufacturer. There are currently over 1800 different pump models in the Tsurumi range, including semi-vortex, vortex, non-clog, cutter, contractor & dewatering, sewage & wastewater, aerators & blowers, decanting units and scum skimmers. Tsurumi operates on a worldwide basis with an extensive dealer network in Europe, North and South America, Asia, Australia and parts of Africa.

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