

## Specialist Press Release

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### **Groundwater treatment with a green core: From a prestigious project to EcoVert® technology**

**Leuna, Germany** – 55 m long and 30 m wide: A giant basin extends across the grounds of the former refinery in Leuna. Contaminated water gushes out of the pipelines and infiltrates the brown granule cover after a few minutes. The water passes through 18 filter basins one by one before finally being reintroduced into the groundwater. This process has been repeated countless times every day since 2014 to clean groundwater at the largest chemical site of the former GDR, which was polluted for years by military intervention, improper management and accidents involving contaminants such as benzene.

At first glance, the groundwater treatment plant doesn't seem to be anything out of this world, but the underlying technology is extraordinary in a number of ways: It is based on the vertical bio-filter method and was specially developed by the Bauer Umwelt division of BAUER Resources GmbH for the project in Leuna, where it was introduced to clean organically polluted groundwater for the first time worldwide. The result is a plant solution involving successive layers of filter basins that clean around 22 m<sup>3</sup> of polluted water every hour with the help of millions of microorganisms, relying on a purely biological method to remove the harmful substances such as hydrocarbons, aromatic hydrocarbons and MTBE. The method is effective: "The green core, which is to say the biological filter layers, breaks down significantly more than 99% of the organic materials. The residual quantity is removed from the groundwater by the downstream sorption unit if necessary", emphasizes Stefanie Lenk, Project Manager in the Bauer Umwelt division of BAUER Resources GmbH.

Although the conventional equipment on site achieved a similar cleaning performance in comparison, it had significant weaknesses in terms of efficiency: The complex technical equipment combined with very long run-times led to high operating costs. "With the equipment developed by Bauer, we were able to reduce operating costs by approximately 30% and achieve power savings of approximately 70%, which significantly contributes to the economic efficiency of the method", enthuses Dr. Frank Tidden, Head of Sales in the Bauer Umwelt Division of BAUER Resources GmbH. But sustainability plays a much greater role, says Dr. Uwe Schlenker, Sales Manager East Germany at Bauer Umwelt: "It is possible to clean the contaminated groundwater entirely without adding any chemicals or using energy-intensive ventilation equipment. In this way, the associated CO<sub>2</sub> emissions were reduced by approximately 255,000 kg per year." This resounding success ultimately led to the construction of a second industrial-scale plant in 2017 on the refinery grounds. As a result, the total daily capacity of the two plants is currently more than 1,000 m<sup>3</sup> – Bauer will continue to operate them until 2023.

Today, Dr. Frank Tidden is satisfied with the outcome of the prestigious project. “It represents a significant milestone in the sustainable rehabilitation of polluted groundwater and confirms our expertise in the area of water treatment.” Together with his team, he developed the method gradually over the last several years into today’s EcoVert® technology, which is available in individual sizes. “In this way, we are also making the method available for more flexible uses”, he emphasizes and adds: “We offer the perfect solution for every project. No matter whether that means cleaning small or large volumes of contaminant, light or heavy contamination, over short or long periods of time, in tight or open spaces.”

For the city of Leuna this is a step towards an unpolluted future, and for brownfield remediation this is an innovative and green technology that saves resources, reduces emissions and also protects the environment.

Watch the video at

<https://www.youtube.com/playlist?list=PL-mKL6ezathzlyf7xq0Y8Faeo2HKQ2H1N>

**Images: 2021-06\_Bauer Umwelt\_Leuna\_EcoVert ...**



(1) In 18 successive filter basins, the Bauer Umwelt groundwater treatment plant in Leuna cleans contaminated water with the help of microorganisms using a purely biological method.



(2) Project Manager Stefanie Lenk



(3) Different granule types are used in the basins – for example, expanded clay.

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### **About BAUER Resources Group**

The regionally organized BAUER Resources GmbH is aligned to projects around the world with its subsidiaries in Germany, Africa, the Middle East and South America and has extensive expertise in the areas of drilling services and water wells, environmental services, constructed wetlands, mining and remediation. With more than 30 years of experience, BAUER Resources GmbH's Bauer Umwelt business division is one of the leading specialists in site remediation, soil remediation and waste disposal, both in the domestic market and internationally. As an expert in pollution reduction, Bauer Umwelt offers a diverse range of services for all environmental issues. Other companies of the BAUER Resources Group are the GERMAN WATER and ENERGY GROUP (GWE) – manufacturers of pioneering products and developers of integrated applications for well-drilling and geothermal – as well the Site Group for Services and Well Drilling Ltd. in Jordan. More at [bre.bauer.de](http://bre.bauer.de)

### **About Bauer**

The BAUER Group is a leading provider of services, equipment and products dealing with ground and groundwater. With over 110 subsidiaries, Bauer can rely on a worldwide network on all continents. The Group's operations are divided into three forward-looking segments with high synergy potential: Construction, Equipment and Resources. Bauer profits enormously from the collaboration of its three business segments, enabling the Group to position itself as an innovative, highly specialized provider of products and services for demanding projects in specialist foundation engineering and related markets. Bauer therefore offers suitable solutions to the world's greatest challenges, such as urbanization, the growing infrastructure needs, the environment, as well as water, oil and gas. The BAUER Group was founded in 1790 and is based in Schrobenhausen, Bavaria. In 2020, it employed about 11,000 people in around 70 countries and achieved total Group revenues of EUR 1.5 billion. BAUER Aktiengesellschaft is listed in the Prime Standard of the German Stock Exchange. More information can be found at [www.bauer.de](http://www.bauer.de). Follow us on [Facebook](#), [LinkedIn](#) and [YouTube](#)!