



outdoor swimming pool, Erzensler Lake

An important provider of drinking and industrial water for the region

The water-storage network is of extreme importance today for the industrial- and drinking-water supply for the regions of Chemnitz, Dresden and Freiberg. Since 1968 the former beginning of the water-storage network has been flooded by the drinking-water reservoir. From there the water can be transferred to the Saldenbach reservoir through Dörnthal Lake when needed and used to supply Chemnitz with drinking water. It is also possible to send water from Upper Großhartmannsdorfer Lake to the Lichtenberg reservoir using a pressure line set up in 2001. This also supplies Dresden and the Freiberg area with drinking water. And Freiberg industry is also a large consumer of industrial water from the water storage network.

Today the entire water-storage network system is protected as a technical monument. Most of the lakes are also conservation areas due to the existence of rare fauna and flora around them. Other facilities serve to protect fish or are open for tourism. Several natural swimming areas and other attractive recreational opportunities lure day-trippers to idyllic landscapes of lakes and ponds.

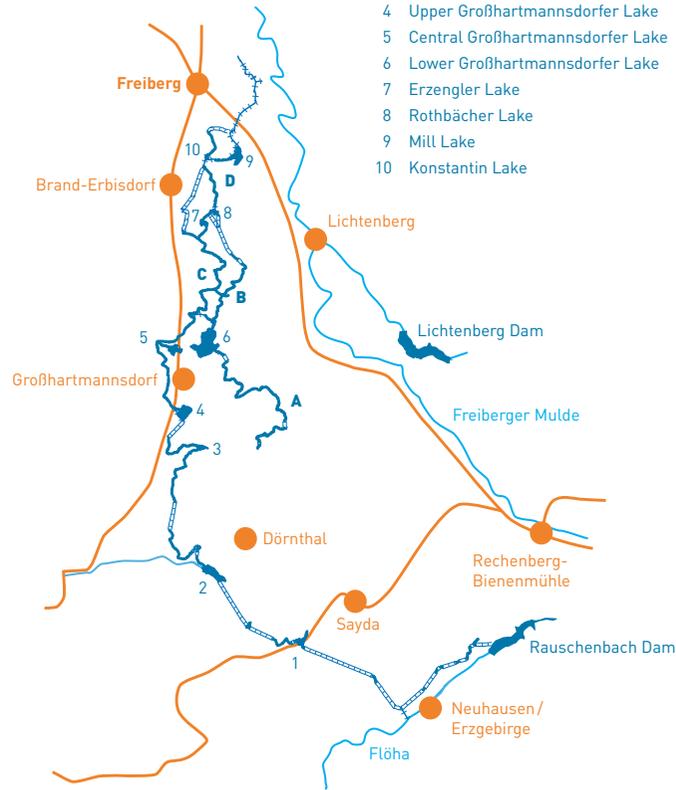


fish harvest, Upper Großhartmannsdorfer Lake

The water-storage network for mining in Freiberg

- man-made trench
- water gallery
- +++ water pipeline

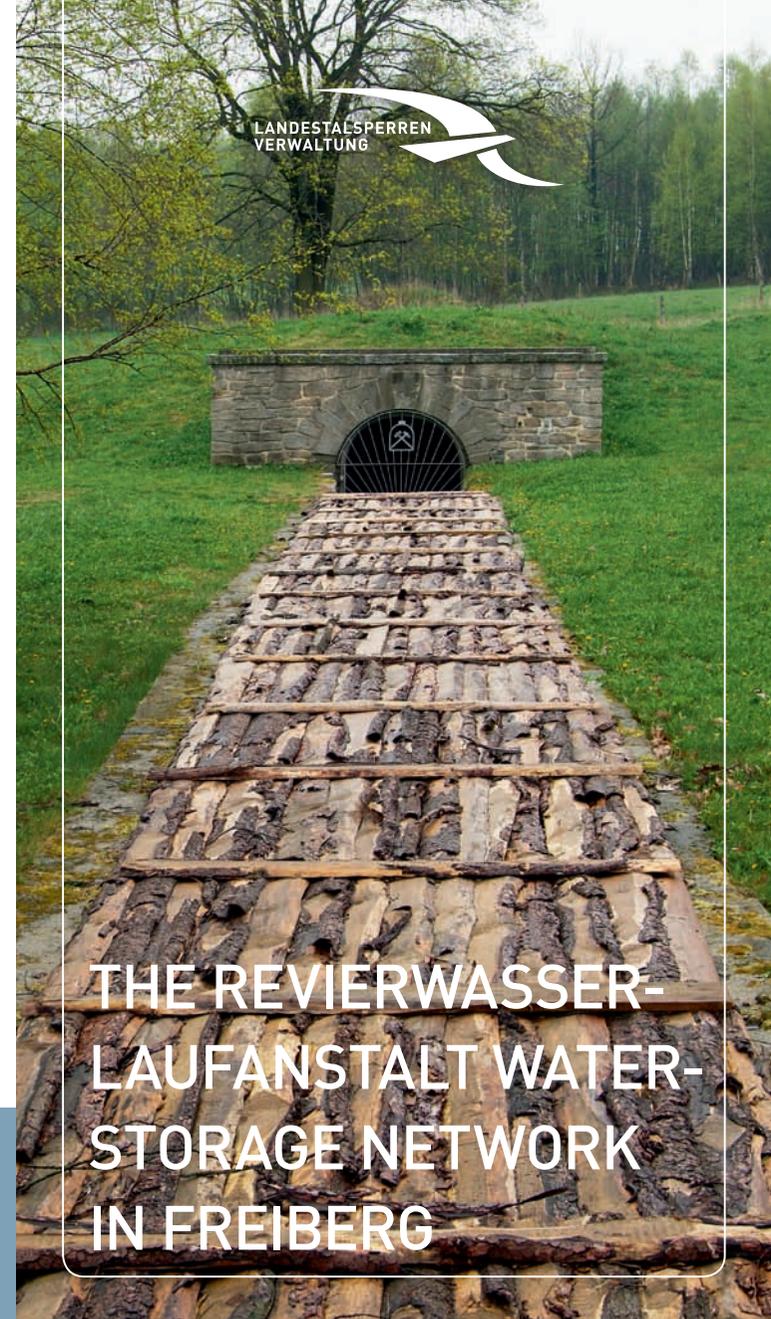
- A** Zethauer Trench
- B** Müdisdorfer Trench and Water Gallery
- C** Kohlbach Trench
- D** Hohbirker Trench
- 1 Dittmannsdorfer Lake
- 2 Dörnthal Lake
- 3 Obersaidaer Lake
- 4 Upper Großhartmannsdorfer Lake
- 5 Central Großhartmannsdorfer Lake
- 6 Lower Großhartmannsdorfer Lake
- 7 Erzensler Lake
- 8 Rothbächer Lake
- 9 Mill Lake
- 10 Konstantin Lake



Masthead

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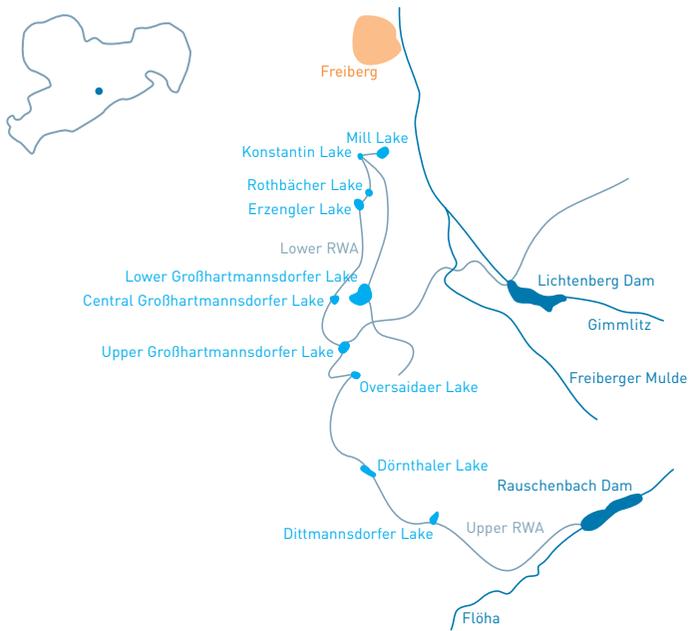
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LANDESTALSPERREN
VERWALTUNG

THE REVIERWASSER-LAUFANSTALT WATER-STORAGE NETWORK IN FREIBERG

Freistaat  Sachsen



The Revierwasserlaufanstalt in Freiberg – a historical water-storage system for mining in the Ore Mountains

The system known as the “Revierwasserlaufanstalt Freiberg” is made up of a broadly complex network of water galleries and man-made trenches. Its 70-kilometer length connects a total of ten lakes. The facilities began in 1524 between Freiberg and Neuwersndorf near the Czech border and are still being developed today.

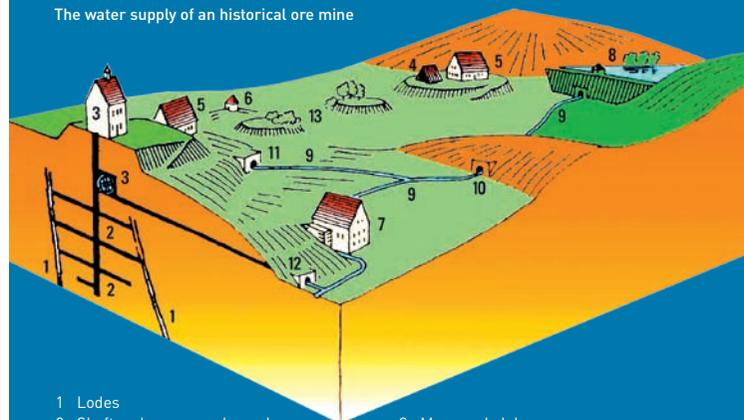
The origin of the water-storage network is closely tied to mining in the Ore Mountains. In 1168 silver was found near Freiberg, and mining followed quickly thereafter. Silver accumulated near the surface and could be extracted without much effort. But between the 15th and 16th centuries, the deposits were exhausted. From then on the miners had to follow the lodes deep into the earth, making it necessary to drain the mining system. Hydraulic power supplied the energy for this. It was also used to carry rocks to the stamping mills and washeries and for processing. Due to the enormous water demand, above-ground reservoirs, called mining lakes, eventually were created.

The systematic expansion of a reservoir and supply system for Freiberg mining and metallurgy began with an order from the electorate on 23 January 1558. Starting with the Mill Lake at Münzbach, various lakes gradually were either reinforced or created for the mines. These include the Lower Großhartmannsdorfer Lake, which existed before 1524, as well as man-made lakes such as Lothar Lake, Rothbacher Lake and Erzengler Lake at Münzbach. Beginning in 1562 and running

Technical and historical data

THE WATER-STORAGE NETWORK FOR MINING IN FREIBERG	
Location	Freiberg, Ore Mountains
LAKE	TIME OF CONSTRUCTION
Dittmannsdorfer Lake	1826 – 1828
Dörnthal Lake	1842 – 1844
Obersaidaer Lake	1728
Upper Großhartmannsdorfer Lake	1591 – 1593
Central Großhartmannsdorfer Lake	1726 – 1732
Lower Großhartmannsdorfer Lake	1567 – 1568
Erzengler Lake	1569 – 1570
Rothbacher Lake	1569
Konstantin Lake	1921 – 1922
Mill Lake	1555 – 1558
STRUCTURE	
Highest dam	Dörnthal Lake 17,2 m above valley bottom
Largest reservoir	Lower Großhartmannsdorfer Lake 1,68 million m ³
Longest dam	Central Großhartmannsdorfer Lake 632 m
Largest inflow	Dittmannsdorfer Lake 4,79 million m ³ /year

The water supply of an historical ore mine



- 1 Lodes
- 2 Shaft and conveyor channels
- 3 underground water wheel, reversible water wheel, as conveyor, water capstan, water-capstan shaft house
- 4 Hand winch coe
- 5 Meeting houses
- 6 Powder storage
- 7 Stamp mill and washery
- 8 Man-made lake
- 9 Man-made trench
- 10 Mouth of water galleries
- 11 Mouth of supply water gallery for water capstan
- 12 Mouth of the drainage water gallery of the water capstan
- 13 Waste dump on the lode

parallel to this was the construction of man-made trenches and water galleries according to the ideas of engineer Martin Planer. It was then possible to enlarge the amount of water available for the Freiberg mines.

Expansion of the system was ended for the time being with construction of the Upper Großhartmannsdorfer Lake from 1591 to 1593 and the crossing of the drainage divide between the Freiburger Mulde River and the Flöha River. Plunder and destruction during the Thirty-Year War (1618 – 1648) paralyzed the mine and with it the water supply. The mine got running at full capacity once more in 1684 and the “Electorate Tunnel and Water Gallery Administration” was founded – the predecessor to the water-storage network. The existing facilities were repaired and expanded. During the 18th century, Central Großhartmannsdorfer Lake, Obersaidaer Lake and Dörnthal Lake came into being, with Dittmannsdorfer Lake following in 1828. This also meant expanding the system toward the Flöha. Despite the advent of the steam engine, hydraulic power remained in use in Freiberg. The system was completed for the time being in 1882 with a water abstraction system on the Flöha and an addition to the Roths Schönberger tunnel, the new, deep drainage tunnel.

By 1900, however, the Freiberg silver ore mine was becoming increasingly unprofitable, and it was gradually phased out. The water-storage network was therefore given a new function in 1914: In “Three-Brothers Shaft” and in “Constantin Shaft” two of the world’s first underground hydroelectric power stations were built. Now the system was no longer maintained for mining but rather to produce energy for the region. The 272-meter-deep power plant in “Three-Brothers Shaft” supplied power up until 1972. Since then efforts have been made to start it up again, at least as a museum.



Konstantin Lake