

## Gravel pit Lake, Golby, France



**Paper Mill Norske Skog  
Golby, France**

**Operation**  
**1 gravel pit 1,000,000 m<sup>3</sup>  
with 6 OLOID Type 600**

**Period**  
**06/2001-11/2001**

**Success**  
**Prevention of blue-green algae  
bloom**

### **Goal of the OLOID-Operation**

Destratification of the water layers to prevent algal blooms. In the stationary, non-moving water of the nearby quarry pond, organisms can develop that clog the filters of the paper mill. The paper mill gets its process water from the quarry pond. The OLOIDS are said to improve water quality and prevent the overgrowth of these organisms.

### **Description of the application**

Quarry pond (almost square pit, volume: about 1,000,000 m<sup>3</sup>, edge length: about 350 - 400 m, average depth: 9 m). The pit is located between the Moselle and the Canal de l'Est. The water is strongly stratified in summer; Groundwater entry from below, rich in CaSO<sub>4</sub> (which forms a deep layer) but low in oxygen.

Biology: few benthic organisms due to steep slopes and poor supply of oxygen to the depths; Fish stock thereby limited; in the summer of 2000, large algal blooms were observed; as a first measure, pikes were added in February 2001.

Water pump for the paper mill: 1.5 m above the lake bottom and 25 m from the edge; For a few years, the filters of the paper mill are clogged by organisms (algae, certain cyanobacteria). Pumping rate of the paper mill: 22,000 m<sup>3</sup>/d to 25,000 m<sup>3</sup>/d.

### **OLOID-operation**

Positioning:

The operation sites are decentralized. It was hoped to divide the pit into two areas: one with and one without OLOID influence: 6 OLOID type 600 / O, three in two places, from the end of June to November 2001.

### **Results**

- The flow generated by the OLOID agitator covered a large portion of the water volume.
- Oxygen supply improved: the angled flow reduced the stratification of the water and the oxygen introduced over the surface could be better distributed. This stabilized fish stocks and displaced unwanted algae and cyanobacteria.
- There was no algal blooms during the test period.
- The water layer immediately above the sole (rich in nutrients) was not set in motion by the OLOIDS, which mostly prevented the re-dissolution of these nutrients.