# Phoslock® Treatment at Sandhurst Lake

## Site Overview

Sandhurst Lake is a man made gravel pit located on the Berkshire/Hampshire Border, providing recreational Specimen Carp fishing. Like many urban lakes, Sandhurst Lake experienced declining water quality driven by elevated nutrient loads, particularly phosphorus, leading to algal blooms, reduced water clarity, and periodic ecological stress.

## Problems

Long term monitoring identified internal phosphorus loading from lake sediments as a key driver of eutrophication in Sandhurst Lake. Historical nutrient inputs had accumulated in the sediments, releasing bioavailable phosphorus back into the water column under certain conditions. Conventional management measures alone were insufficient to achieve sustained water quality improvement, prompting the need for an in-lake phosphorus control solution.

## Management Objectives

The primary objectives of the Sandhurst Lake treatment were to:

- Reduce bioavailable phosphorus concentrations in the water column
- Interrupt internal phosphorus recycling from sediments
- Improve water clarity and overall lake aesthetics
- Minimise the frequency and intensity of algal blooms
- Support long-term ecological stability of the lake
- Reduce silt in combination with application of chalk

### Solution: Phoslock® Application

Phoslock is a lanthanum-modified bentonite clay, It was selected as the preferred treatment due to its proven effectiveness in binding soluble reactive phosphorus and forming a stable, insoluble compound Once applied, Phoslock® targets both dissolved phosphorus in the water column and mobile phosphorus at the sediment.
The application was carefully planned based on lake volume, phosphorus concentrations, and sediment characteristics. Treatment was undertaken under suitable weather and water conditions to ensure even distribution for optimal performance.
Implementation

- Pre-treatment monitoring established baseline water quality conditions
- Phoslock® was applied evenly across the lake surface using controlled spreading techniques
- Post-application monitoring was conducted to assess immediate and longer-term outcomes

### Results and Outcomes

Following the Phoslock® application, Sandhurst Lake showed measurable improvements in water quality, including:

- A significant reduction in soluble reactive phosphorus concentrations
- Improved water clarity and visual appearance
- Reduced algal biomass and fewer algal events
- Reduced weed growth
- Enhanced stability of sediment phosphorus, limiting internal nutrient release

These improvements were sustained beyond the initial treatment period, indicating effective control of internal phosphorus loading.

## Environmental Benefits

- Reduced risk of algal blooms and associated oxygen issues
- Enhanced conditions for aquatic ecosystems
- Increased confidence in long-term lake management strategies
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## Conclusion

The Phoslock® treatment at Sandhurst Lake successfully addressed internal phosphorus loading, delivering rapid and sustained improvements in water quality. The project demonstrates the effectiveness of Phoslock® as part of an integrated lake management approach for water bodies impacted by legacy nutrient pollution.
Continued monitoring and anual top up applications are recommended to maintain water quality gains and support the long term health of the fishery.