

MICROPLEX™ OD Reduces Oil Spill at a Petrochemical Wastewater Treatment Plant in China

CASE STUDY

Location: Shandong Province

Problem

A petrochemical wastewater treatment plant in China experienced an oil spill due to a damaged valve on a crude oil tank: a substantial amount of crude oil leaked out and entered the flow into the sewage treatment plant. The oil covered the surface of the water, limiting oxygen transfer and causing the reduction of the nitrification process, which in turn led to ammonia and COD discharge limits being exceeded. Special equipment was brought in to skim off the oil; however, oil remained in the aeration basins, which had a surface area of 41 meters (134.5 ft) by 35 meters (115 ft).

Solution

Microplex™ OD was applied each day for 5 consecutive days to absorb the oil from off the surface of the water in the turbulent aeration tanks. On days 1 and 2, 56.6 kg (125 lb, or 5 buckets) of product were spread across the basin. On days 3 and 4, 33.9 kg (75 lb, or 3 buckets) were applied, and on Day 5 22.6 kg (50 lb, or 2 buckets) of product were used to absorb the oil from the surface of the water.

Microplex™ OD absorbs the oil through direct contact; the resulting compound can then be easily skimmed off the surface using simple nets or allowed to drop into the water column and be removed through the underdrain system in the clarifiers, reducing the workload of the maintenance group. Once the material is wasted out of the system by either manual operation or via the automatic system, the oil remains bound in the product and the microorganisms begin to biologically break down the oil.



Figure 1. Surface of aerobic pond before using Microplex™ OD: March 26.



Figure 2. Microplex™ OD being applied to the water surface.



Figure 3. Surface of aerobic pond after 3 days of Microplex™ OD: March 29. Only a small amount of oil is left on the surface.

About the Product

MICROPLEX™ OD is a fine powder of preselected adsorbents and naturally occurring microbial strains that is formulated for use on spillage of petroleum products and related wastes. MICROPLEX™ OD can absorb and break down a broad range of hydrocarbon-containing wastes (from crude oil, gasoline, diesel, machine oils, solvents, and other derivatives) generated from various industries—including refining, petrochemical, transportation, textile, and steel-making.