CASE STUDY

# Wastewater Treatment for an Agri-Food Producer

Year: 2011

Project Location: Cartagena – Murcia, Spain

Challenge: BUNGE Ibérica operates soybean and sunflower refineries, and an extraction unit. All three systems produced wastewater streams that were hot in temperature (between 113 and 136 ºF), contained oil and suspended solids.

Objectives: Complete wastewater treatment to comply with discharge limits: conditioning by homogenization, refrigeration, and physical-chemical treatment with SIGMA DAF and subsequent biological treatment in a bioreactor with ultrafiltration membranes, in addition to the treatment of the resulting sludge.

| Wastewater Characteristics | | | |
|---|---|---|---|
| **Wastewater** | **COD** | **Conductivity** | **TSS** |
| Sunflower seeds refinery + soybean refinery + extraction | 2.500 mg/L | 6.000 µS/cm | 394 mg/L |

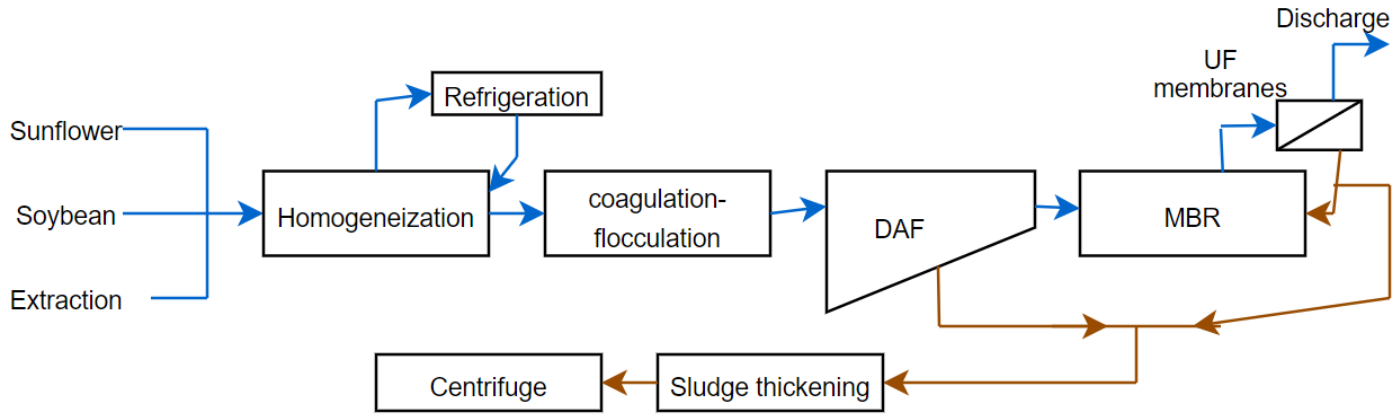
| Treatment Performance | |
|---|---|
| **COD Removal** | **TSS Removal** |
| 95% | 94% |

Installed Technologies:

- **Wastewater treatment**: Homogenization tank with cooling system, physical-chemical coagulation-flocculation treatment, and a SIGMA DAF dissolved air flotation unit and pH control, MBR configuration biological reactor with a *Berghof Bio-flow* tubular ultrafiltration membrane system with a pre-safety filter and CIP cleaning system.
- **Sludge treatment**: Two thickening units with centrifuge and polyelectrolyte addition system.

Capacity: 126,720 gallons/day

## Process Diagram:




## Background:

BUNGE Ibérica is a leading company in the agri-food sector. They focus on improving the agribusiness and food production chain through the manufacture and export of fertilizers, feed, production and processing of seeds and grains, production of bottles of oils, mayonnaise, margarine, and similar products, and the grinding of wheat and corn.