

# RMF Systems Case

## FOOD INDUSTRY

Our client, a large sugar factory, was facing problems with a high ingress of water and particles in their oil reservoirs. As part of their improvement program they decided to implement vacuum dehydrating equipment, desiccant breathers and smart off-line filtration of RMF Systems.

The annual beet campaign lasts from September till the end of January. During this period the sugar factory, located in the Netherlands, processes sugar beet into granulated sugar. The process has to comply with strict food safety and other regulations. Before the sugar is delivered to customers it is screened on the desired particle size, packed and stored.

### VACUUM DEHYDRATION UNIT

To be able to respond quickly in case of another incident involving water contamination RMF Systems supplied the client with a custom designed vacuum dehydration unit. The designated vacuum unit was equipped with a specific procedure to dehydrate and clean the high viscosity oil. This procedure slows down the heating process of the oil which will lower the viscosity and ensure a proper flow through the vacuum unit. When the oil flow through the vacuum unit is ok, the normal operation procedure is active. As soon as the oil flow decreases during operation, the vacuum unit automatically switches to high viscosity procedure.

### MOBILE OFFLINE FILTRATION UNIT WITH CONDITION MONITORING CENTER

RMF Systems also supplied a mobile offline filter unit which continuously pumps a small amount of oil through a heater to warm up the fluid, followed

by a filter to remove solid particles. The heater decreases the viscosity and ensures a low Delta P over the filter element.

In addition the unit is equipped with a condition monitoring center with particle counter and water sensor to provide data on oil cleanliness and water content. An extra motor-pump set is installed to guarantee correct operation of the particle monitor.

### DESICCANT BREATHERS

Throughout the sugar plant approximately 90 gearboxes were equipped with desiccant breathers. The desiccant breathers remove moisture and airborne solid particles from the air utilising three micron microglass air filters. For this client the standard breathers were replaced by breathers without valves. As the valves become sticky due to the sugar in the air, possibly causing over or under pressure in the gearboxes.



### PROJECT SPECIFICATION

RMF Systems supplied:

- ▶ 1x Vacuum dehydration unit (Mini Water VAC)
- ▶ 1x mobile offline filter unit with heater and CMC
- ▶ 90x desiccant breathers

### OPERATIONAL CONDITIONS

Oil viscosity: 680 cSt

Oil volume: 2800 liter

Operational temperature: 44°C

### WATER CONTENT

Before installation: Free water

2 weeks after installation: Relative Humidity 30%

### OIL CLEANLINESS

Before installation: ISO 25/25/25

2 weeks after installation: ISO 17/14/9

