The Libman Company Industrial Waste Water

Introduction

The Libman Company (Libman) currently operates under Illinois Environmental Protection Agency Water Pollution Control Permit 2010-EP-0625. At the time in which the permit was granted, the facility was subject to 40 CFR 433 Subpart A – Metal Finishing. The material Libman previously used in the finishing process, Galaxyphos 241, is considered a phosphate wash, which triggered applicability to 40 CFR 433 Subpart A. Libman has sought out environmentally friendly alternatives to the Galaxyphos 241DS, and has changed the process to eliminate phosphates. Libman has changed the material used to Advantech C610A, a complete phosphate free material. Libman has not changed the process or equipment used in this area, only the materials and concentrations have changed.

Process

Handles for brooms and mops are formed from metals on site. Coolants are added at the forming line to maintain the properties of the handles. Excess water from the forming line is discharged to the 12,000 gallon waste water collection pit. The forming line discharges 100 gallons per 12 hours to the collection pit.

Handles move from the forming line to the wash tank. The wash tank is filled with water from Rinse Tank 1 and the cleaning material. The obsolete process used Galaxyphos 241 DS in a concentration of 6% as a phosphate wash to treat the handles. The 241DS has been eliminated and changed to Advantech C610A in a 3% concentration, a material that is completely phosphate free. Rinse 1 has an oil skimmer to reduce the oil content of the tank. The excess from the skimmer is discharged to the collection pit. The water in Wash Tank is maintained at 140° F. Waste water is not discharged from the wash tank. Water from the wash tank is carried over to Rinse Tank 1 with the handles.

Rinse Tank 1 is composed of water from Rinse Tank 2 and Wash Tank. Water in Rinse 1 is monitored to be maintained at 400 ppm. When the water in Rinse 1 is above 400 ppm, water is drawn from Rinse 2. Waste water is discharged from Rinse 1 until the water is below 400 ppm. Water in Rinse 1 is not maintained at a specific temperature. Rinse 1 discharges 1500 gallons per 12 hours to the collection pit.

Handles move to Rinse 2 from Rinse 1. Water in Rinse 2 is maintained at 200 ppm. Rinse 2 draws water from Libman's RO system which provides water at less than 200 ppm. Excess water from Rinse 2 that is not drawn to Rinse 1 is discharged to the collection pit, approximately 100 gallons per day. Handles move from Rise 2 to the powder coating process.

Waste water moves from the collection pit to the 1,890 gallon waste water holding tank. When the waste water tank is full, the waste water is pumped to the 310 gallon pH adjust tank. From the pH adjust tank, waste water is pumped though a set of 100 micron filters and to the Arcola Sewer Treatment Plant. The facility discharges waste water in batches, generally two 750 gallon batches per day.