



Lucas-Milhaupt, Inc. Annual Green-Tier Summary - 2011

Executive Summary

Lucas-Milhaupt Inc. has participated in the Wisconsin Green Tier program since September 2007. Lucas-Milhaupt manufactures brazing and soldering filler metals in the form of bulk, strip and wire, preformed strip and wire, pastes, powders, fluxes and other metal products for a wide range of industries including automotive, electronics, heating and air conditioning, aerospace and others. Lucas-Milhaupt, Inc. was founded in 1942 and employs approximately 185 people.

In 2011 Lucas-Milhaupt enjoyed continued growth due to expanded market share and economic upturn in manufacturing. Our continuous improvement projects ensure that we minimize our environmental impact and conserve natural and man-made resources through growth of the business.

Environmental Policy

Lucas-Milhaupt is committed to complying with all applicable environmental laws and regulations and to preserving the environment of the community in which we work and live by minimizing environmental risks associated with its operations. We are committed to continuous improvement of our Environmental Management System and performance including resource conservation and pollution prevention.

Environmental Management System

Lucas-Milhaupt has had a formal Environmental Management System since 2003. We also hold a current ISO 14001 certification. During two audits performed by BSI in 2011 only minor non-conformances were identified which were immediately corrected. Our facility has an Aspects & Impacts List as required for our EMS from which we are able to generate our Objectives and Targets for the year.

2011 Environmental Performance:

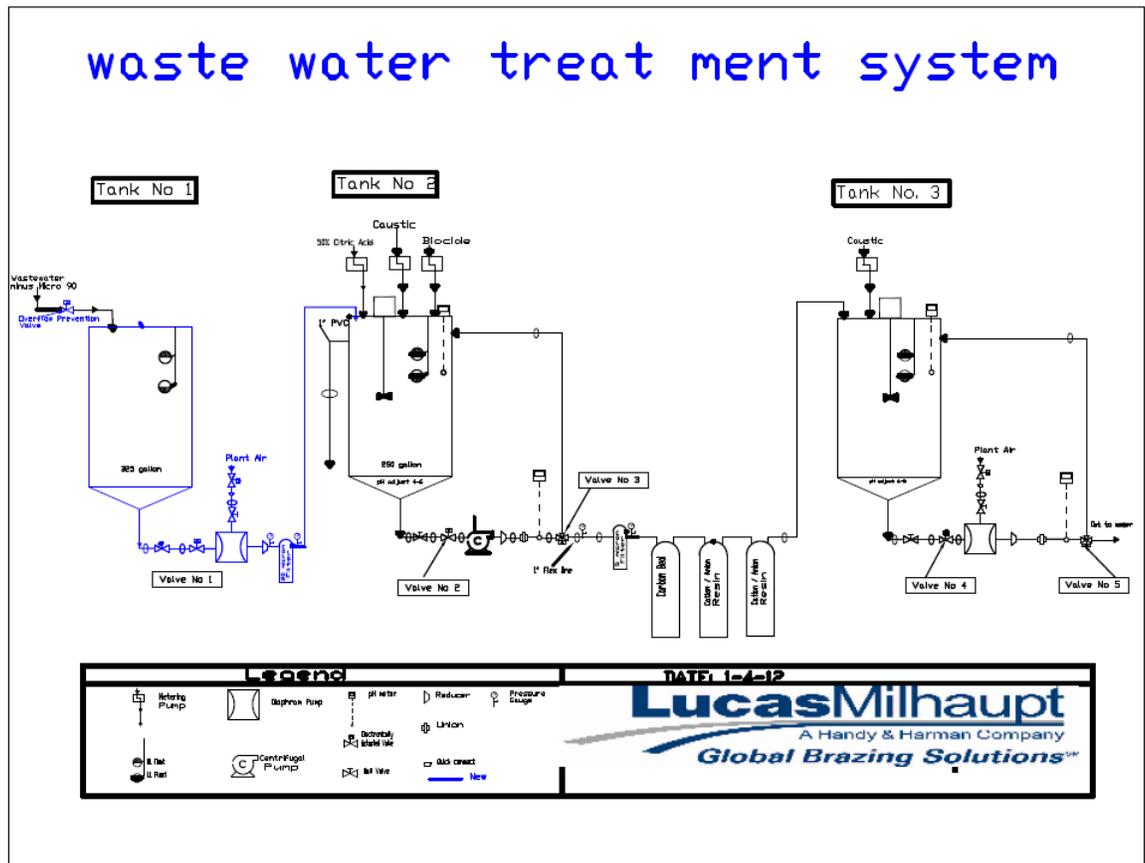
One of our most significant environmental aspects is wastewater treatment. As a manufacturer of brazing materials the potential for heavy metals to enter the waste stream is high. We have several programs and policies in place to minimize the risk of water pollution and ensure proper disposal of waste containing heavy metals. In 2011 we expanded on these existing programs to further minimize the heavy metal content in our wastewater.

Lucas-Milhaupt operates under a permit issued by the Metropolitan Milwaukee Sewerage District, which limits the amount of heavy metals, such as copper, zinc and silver that can be discharged. Random sampling is conducted biannually by the MMSD to ensure compliance.

All wastewater that is used in the manufacturing process is treated, either through an ion exchange treatment system or evaporation. Working with an environmental consultant and our ion exchange service provider we made adjustments to our system to improve metals removal, implement monitoring criteria, and increase volume of water treated.

Our treatment improvements included:

- Switching from a diaphragm pump to a centrifugal pump to send wastewater through the system. The pulsing pressure of a diaphragm pump has the potential to damage the filters and possibly allow water to pass through untreated.
- Addition of a 20 micron in unison with the 5 micron prefilter to capture metal fines and other particulate prior to entering the ion exchange beds. The change out of this filter is being monitored through the addition of a pressure gauge. When the pressure differential reaches a certain level the filter is changed.
- Increase testing parameters on untreated and treated wastewater. In addition to the recommended testing for zinc we are testing for copper prior to treatment and before discharge. Copper is widely used in the facility and has the greatest potential for exceeding discharge levels in our wastewater.
- Weekly cleaning and calibration of pH probes. Wastewater is pH adjusted before the ion exchange and again after treatment, prior to discharge.





Other facility changes were made to ensure wastewater is properly treated.

- Several sinks on the production floor were removed. While employees were instructed not to use these sinks to process/clean brazing metals by removing them we eliminated the risk. Plans are to remove the remaining sinks or divert the water from them to the treatment system.
- Reviewed the chemicals used in cleaning for the presence of chelators. Chemicals with significant amount of chelators will prevent the system from effectively removing metals. These solutions must be treated in the evaporator system. We are testing other products to replace high chelating cleaners.
- Addition of a larger holding tank to increase the volume of water treated.
- Additional training with affected employees on the importance of proper pretreatment of wastewater.

Since these changes were implemented we have seen lower levels of the heavy metals which MMSD has set limits for. We have increased our confidence in the effectiveness of our treatment system and maintaining levels below our permit allowance.

With the successful modifications to our treatment system we are hoping to divert additional wastewater to the ion exchange system from our evaporator. This will lower our treatment costs and reduce our hazardous waste, which is a byproduct of the evaporator system.

In April 2012 we shared our treatment system technology with students from Marquette University. Professor Daniel Zitomer, Ph.D., Director of the Water Quality Center at Marquette brought a class studying wastewater treatment for a tour of the facility with a focus on the wastewater treatment system. Pat Moore and Jay Baumle, both of whom were involved in the system upgrades facilitated the tour.

Sustainability

In 2011 Lucas-Milhaupt saw an upsurge in production as orders increased significantly with the economic recovery. We added employees and production while maintaining environmental compliance and a commitment to reducing our environmental footprint. New employees are trained on our Environmental Management System and policy as well as waste management and minimization.

As always, employee awareness and participation are vital to the sustainability of our EMS and environmental excellence. We encourage everyone to participate by providing suggestions on ways to reduce waste, use environmentally friendly products and reduce energy consumption.