

CASE STUDY

Rotostrainer®
Atlas, Inc.



Rotostrainer® screen helps metalworker reclaim oil

Overview

Atlas, Inc., a Division of Cummings-Engine Company, is a major manufacturer of crankshafts for the automotive industry. The process involves metalworking operations, including machining and grinding procedures that utilize oil coolant to control the temperature and lubricate the machined part. The waste generated by the process includes fine metal shavings, tramp waste and grinding coolant. Not only does the plant need to remove the solid wastes, but since the composition of coolant is mostly water, it must separate oil from water as well.

Problem

Atlas has always processed its waste internally. In the original waste treatment system, all the liquid and solid waste was transported into a holding tank where chemicals were added for liquid/oil separation. From there, the waste was treated in a DAF system. The treated water was released to the sewer system and the oil was hauled away by an industrial waste handler.

Unfortunately, the metal fines and solid wastes impeded the process. They mixed with the oily residue, settled to the bottom and resulted

in an extremely heavy sludge that contained considerable amounts of oil and made disposal difficult. The separated oil still contained a significant amount of water, which made hauling costly.

Solution

Atlas, Inc. consulted with the engineering firm of Jones & Henry in Toledo, Ohio to determine how to best reduce its costs of operation and waste disposal. The consultants recommended a more comprehensive waste treatment process that would improve oil/water separation, minimize maintenance, and reduce hauling costs.

The new design accepted by the plant, is a 4-step process. First, all manufacturing wastes, including floatables, metal fines, coolant and water are pumped into an equalization tank. The settleable waste, is screened by a Rotostrainer® automatic wedgewire screen, Model RSA2524 x .060" (1.5 mm).

The Rotostrainer® screen easily processed this waste, which was the consistency of a heavy slurry. Metal fines, tramp solids, even floatables were all captured by the screen and discharged to a

dumpster for landfill. The liquid waste passed right through the screen openings to continue on for further treatment.

The screening operation is totally automatic and requires no manual assistance. After each screen revolution, an automatic wiper blade cleans the screen surface to prevent clogging.

The liquid waste continues through a corrugated plate oil/water separator where oil is floated off and the remaining liquid is pumped by progressive cavity pumps to 20,000 gallon treatment tanks where chemicals further refine the oil/water separation. The separated water is now clean enough for discharge to the municipal sewer system – no special handling required.

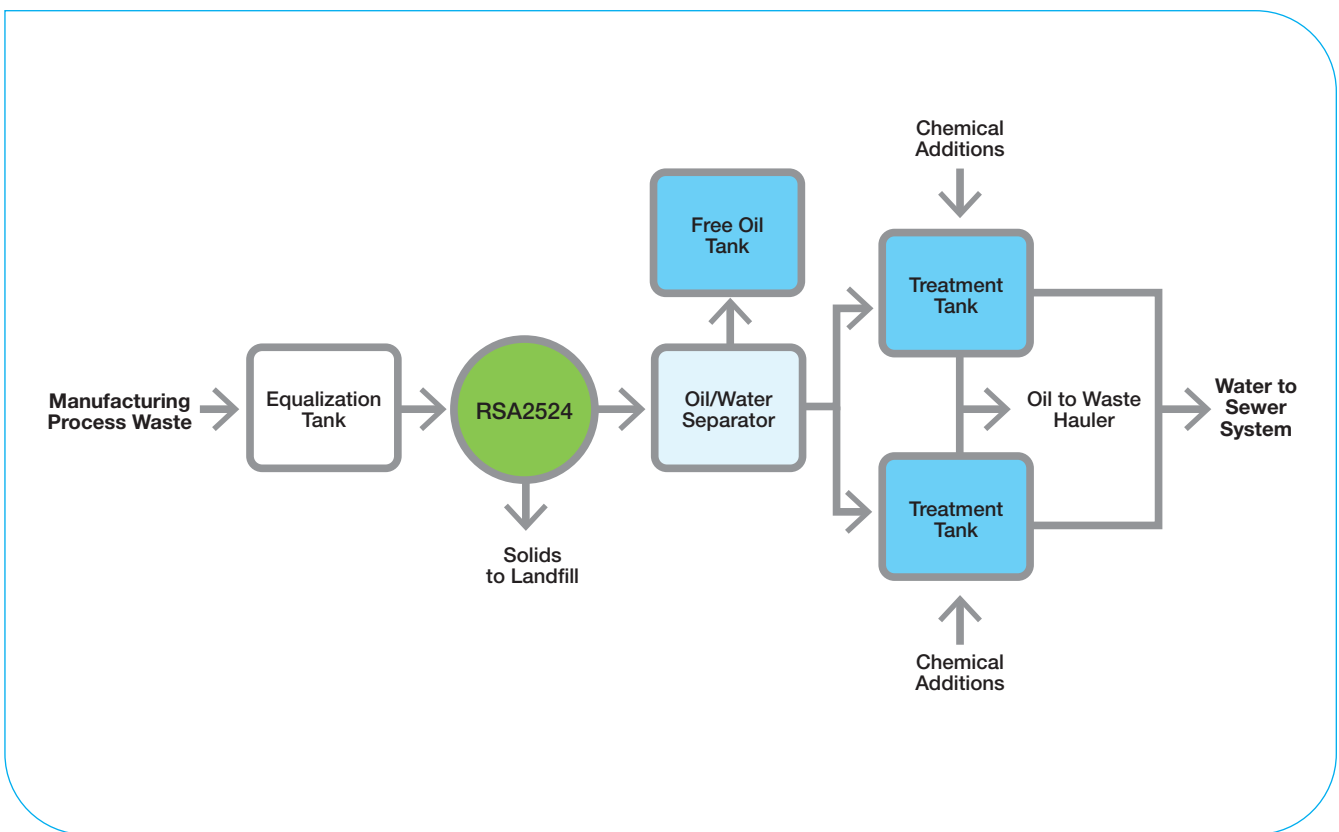
The processed oil is clean, free of floatable solids, and valuable as a product that can be sold to oil recyclers or other users. This amounts to about 5,000 gallons of oil a month. In fact, Atlas itself purchases some of the re-refined hydraulic oil from the waste hauler.

Results

The plant reduced its waste disposal costs by more than 50%. The screened solid waste from the Rotostrainer® screen is in a much drier form than the sludge from the bottom of the holding tank and DAF so there is much less volume for disposal.

As for the liquid waste, the waste hauler originally hauled 95% water and 5% oil by weight. At \$35/gallon, it is very expensive. However, the new process improved oil/water separation so most of the water was removed from the oil. This improvement cut oil hauling costs in half. Water is disposed of easily in the sewer system.

A single, hardworking Rotostrainer® screen keeps liquid flow clean to maximize efficiency of the new wastewater treatment system. ■



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