

INDUSTRY: Lead Smelting

CHALLENGE: Meeting more stringent EPA air quality standards

SOLUTION: Install additional Donaldson Downflo Dust Collectors with proved Ultra-Web[®] flame retardant nanofibre cartridge filters to ensure the facility is under negative pressure and in compliance with the new emissions standard



With the new installation Gopher Resource leads the way in exceeding required environmental standards.

“Getting ahead of the Curve”

Gopher Resource recycles lead-bearing scrap materials, such as lead-acid batteries, into elemental lead or lead alloys. The EPA’s 2008 nationwide regulation required that large industrial sources of lead emissions, such as smelters, lower their emissions from the current standard of 1.5 $\mu\text{g}/\text{m}^3$ (based on a quarterly average) to 0.15 $\mu\text{g}/\text{m}^3$ (based on a rolling 3-month average) by the year 2016.

These more stringent Air Quality Standards required that the Minnesota Pollution Control Agency provide initial notification to the EPA in October 2009 on whether any facilities in Minnesota would not meet the new limit.

In anticipation of the new standard, Gopher Resource decided to be proactive and “get ahead of the curve.” Early in 2009, a study of fugitive dust sources was conducted; it identified the material transfer room (a structure built after the original Donaldson collector installation in 1993) as its most significant emissions source. In addition, fugitives escaping the blast furnace enclosure and the afterburner structure were identified as potentially contributing to the ambient lead levels surrounding the facility.

Based on more than 15 years experience with its current Donaldson airfiltration collectors with Ultra-Web[®] media (designed for 282,000 m^3/h), Gopher knew this technology could help it meet the new regulations. The Donaldson collector installed at Gopher in the early 1990s had not only reduced emissions levels to well below EPA guidelines at the time, but the lead smelter had also realized the following benefits:

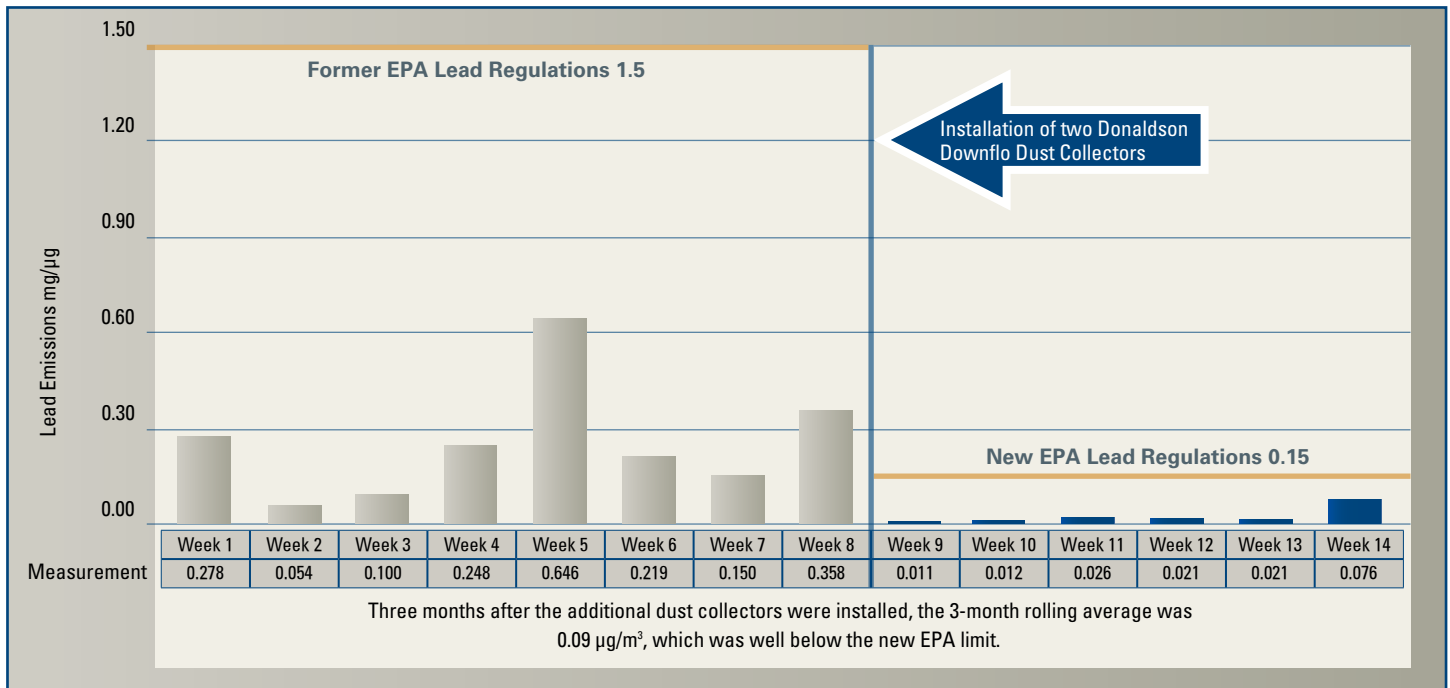
- A cartridge filter life of 2 – 3 years
- Immediate high filtration efficiency once cartridges were installed
- A reduction of the temperature inside the processing building
- A reduction in personal lead exposures and blood lead levels
- Assurance that the facility was reclassified from “non-attainment” for lead to “in compliance” after sufficient monitoring data was collected

Downflo and Ultra-Web® help Lead Smelter to meet EPA Standards

It was determined that two additional banks of customized collectors were required to meet the new EPA standard. The chart below illustrates the ambient lead levels surrounding the facility before and after the August 2009 installation of these collectors. Stephen Yates, Gopher's EHS Manager, was impressed with the results. He stated, "Looking at

the data once the two new Torit systems with Ultra-Web® were installed, the numbers are consistently running much lower than previous months. Assuming this continues, we'll have no problem meeting the new 0.15 µg/m³ rolling 3-month limit." These results allow Gopher to lead the way in meeting and exceeding current environmental standards.

Gopher Resources Fugitive Lead Levels



To learn more about Donaldson Downflo Dust Collectors, visit www.donaldson.com



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