Ohio Environmental Protection Agency

Tox-Minus 2009 Activities Report

June 2010

Background

Ohio has consistently ranked as one of the top states in toxic chemical emissions since the Toxic Release Inventory (TRI) was created in 1987. Ohio EPA started the Tox-Minus initiative in October 2007 as a proactive and cooperative way to work with Ohio business and industry to reduce toxic chemical releases. As a first step, Ohio EPA Director Chris Korleski asked 100 of the top Toxic Release Inventory reporters for 2005 to identify, evaluate and implement feasible and effective pollution reduction or prevention strategies to reduce waste, air and water-related TRI emissions.

The initiative's name reflects a long-term goal of moving Ohio down in the TRI listings, which will help enhance our image as an environmentally proactive, yet economically competitive state. Participation is voluntary. There are no penalties or enforcement associated with the program.

Companies participating in Tox-Minus establish their own goals for reducing TRI chemical releases and other wastes. Reduction goals should cover a five-year time frame, beginning with 2007 as the base reporting year. However, companies can use a longer time frame or different base year, if necessary, to achieve meaningful reductions. Participants also outline how they plan to reduce emissions and submit this information to Ohio EPA. In addition, participants provide annual updates on their accomplishments to Ohio EPA.

Ohio EPA's Office of Compliance Assistance and Pollution Prevention coordinates the Tox-Minus initiative. Companies participating in the program submitted their first updates on activities related to Tox-Minus during 2008. Annual updates were submitted in 2009 that described 2008 activities, as well as some activities occurring in 2009 and projections for future years.

Environmental Reduction Goals and Activities

Forty-one Tox-Minus participants submitted information in 2009 on their waste reduction activities. A brief description of each participant's reduction goals and efforts to reduce TRI chemical releases and other wastes is included in the Tox-Minus Reduction Goals and Activities Summaries section. Tox-Minus participants have the flexibility to report reductions in the method most effective for their individual facilities, making comparisons difficult due to the wide range of reporting formats.

Alphabetical Listing of Ohio Facilities Submitting Progress Reports for Ohio EPA's Tox-Minus Initiative in 2009

Facility	Facility Address	City	County
AMP - Richard H. Gorsuch Station	State Route 7 South	Marietta	Washington
Belden Brick Company	700 W. Tuscarawas Street, P. O. Box 20910	Canton	Stark
Brush Wellman Inc.	14710 W. Portage River South Road	Elmore	Ottawa
Clow Water Systems Co.	2266 South 6th Street	Coshocton	Coshocton
Cognis Corporation/Cognis Oleochemicals LLC	4900 Este Avenue	Cincinnati	Hamilton
Dow Chemical USA	Hanging Rock Plant, 925 County Road 1A	Ironton	Lawrence
Energizer Battery Mfg. Inc.	2036 Blue Knob Road	Marietta	Washington
Eramet Marietta Inc.	State Route 7 South	Marietta	Washington
Ford Motor Co. - Ohio Assembly Plant	650 Miller Road	Avon Lake	Lorain
General Motors (Lordstown Complex East)	2300 Hallock-Young Road	Lordstown	Trumbull
General Motors (Moraine Assembly)	2601 West Stroop Road	Dayton	Montgomery
General Motors (Powertrain Defiance)	26427 State Route 281 East	Defiance	Defiance
General Motors (Powertrain Toledo)	1455 West Alexis Road	Toledo	Lucas
Givaudan Flavors Corporation	1199 Edison Drive	Cincinnati	Hamilton
Goodyear Tire & Rubber Co.			
Akron Technical Center	1144 East Market Street	Akron	Summit
Griffin Wheel Co.	3900 Bixby Road	Groveport	Franklin
Honda of America Mfg., Inc.	24000 Honda Parkway	Marysville	Union
Honda of America Mfg., Inc. (Anna Engine Plant)	12500 Meranda Road	Anna	Shelby
Honda of America Mfg., Inc. (East Liberty Auto Plant)	11000 State Route 347	East Liberty	Logan
Honda of America Mfg., Inc. (Marysville Motorcycle Plant)	24000 Honda Parkway	Marysville	Union
Ineos USA LLC	1900 Fort Amanda Road	Lima	Allen
Kraton Polymers U.S. LLC	2419 State Route 618	Belpre	Washington
Lima Refining Company (Husky Lima Refinery)	1150 South Metcalf Street	Lima	Allen
Lincoln Electric Co. - Euclid Facility	22800 Saint Clair Avenue	Euclid	Cuyahoga

Facility	Facility Address	City	County
Lincoln Electric Co. - Mentor Facility	6500 Heisley Road	Mentor	Lake
Millennium Inorganic Chemicals, A Cristal Co.,	2426 Middle Road	Ashtabula	Ashtabula
Millennium Inorganic Chemicals, A Cristal Co.,	2900 Middle Rd	Ashtabula	Ashtabula
MSC Walbridge Coatings Inc.	30610 East Broadway	Walbridge	Wood
Norcold Inc.	600 South Kuther Road	Sidney	Shelby
Orrville (City of) Dept. of Public Utilities Electric Dept.	1100 Perry Street	Orrville	Wayne
Owens Corning Newark Plant	400 Case Avenue, P. O. Box 3012	Newark	Licking
Owens Corning Tallmadge Plant	170 South Avenue	Tallmadge	Portage
P.H. Glatfelter Company (formerly Chillicothe Paper)	401 South Paint Street	Chillicothe	Ross
Painesville (City of) Power Plant	325 Richmond Street	Painesville	Lake
Premix	Route 20 and Harmon Road	N. Kingsville	Ashtabula
Solvay Advanced Polymers LLC	Route 7 South	Marietta	Washington
Timken Co. - Faircrest Steel Plant	4511 Faircrest St., S.W.	Canton	Stark
Timken Co. - Harrison Steel Plant	Harrison Avenue, S.W.	Canton	Stark
V&M Star	2669 Martin Luther King Jr. Blvd.	Youngstown	Mahoning
Veyance Technologies (formerly Goodyear)	1115 South Wayne Street	Saint Marys	Auglaize
Whirlpool Corp.	1300 Marion-Agosta Road	Marion	Marion

Tox-Minus Reduction Goals and Activities Summaries — 2009

American Municipal Power, Inc. – Richard Gorsuch Station
1111 Schrock Rd., Suite 100, Columbus, 43229

AMP owns and operates electric generation, transmission and distribution facilities. The Gorsuch facility near Marietta is a steam plant constructed in the 1950s with a capacity of 213 megawatts. Output from the plant helps meet a portion of the energy needs for 48 participating member municipal electric systems.

AMP's reduction goal has focused on finding a beneficial use for the fly ash produced at the R.H. Gorsuch facility, as a way to reduce the quantity of off-site disposal. For calendar year 2008, the Toxic Release inventory (TRI) report will indicate a decrease of 1.3 percent in the quantity of fly ash produced from the facility. Beginning in 2009, AMP-Ohio modified the operation of the facility, and as a result, the amount of coal burned throughout the year is projected to decrease by 20 percent.

The Belden Brick Company (Belden Brick)
700 W. Tuscarawas Street, P.O. Box 20910, Canton, 44701

The Belden Brick Company manufactures architectural brick at seven gas-equipped plants, with a related capacity of 225 million brick equivalents annually. In the energy development field, it has more than 160 producing gas wells.

Belden Brick's goal was to recycle 25 percent of its "green brick" in 2008 and increase it to 50 percent in 2009. This should reduce the reportable release by six percent and 12 percent over the first two years, respectively. Belden Brick has made several adjustments to the amounts and types of additives used, as well as its process of recycling green brick.

Brush Wellman, Inc. (Brush Wellman)
14710 W. Portage River South Road, Elmore, 43416

Brush Wellman, Inc. is a supplier of engineered beryllium materials. Its Elmore manufacturing facility began operations in 1953. Brush Wellman operates two degreasers that use perchloroethylene. Estimated emissions during 2007 totaled 102,547 pounds. Brush Wellman is committed to reducing the emissions to below 10,560 pounds by March 2013,

representing a 90 percent decrease in perchloroethylene emissions. To achieve this goal, Brush Wellman plans to replace an existing batch cold perchloroethylene degreaser with new ultrasonic degreasing technology. The company also intends to reduce the amount of perchloroethylene emissions from an existing vapor degreasing operation.

Clow Water Systems Company (Clow)
2266 South Sixth Street, P.O. Box 6001, Coshocton, 43812

Clow operates a ferrous foundry and manufactures ductile iron pipe and fittings. The facility has been expanded several times since its inception in 1910. Clow transports approximately 28,000 tons of solid waste offsite within a year. Clow's goal is to achieve a 30 percent reduction in TRI releases over the next five years, based on the 2006 TRI Inventory Report.

Clow has already reduced its TRI releases by 72 percent. The company's goal was to reach a 20 percent reduction by 2010. Clow also reduced its generation and disposal of solid waste by 44 percent, already exceeding its goal to reduce it by 30 percent by 2011.

Cognis Oleochemicals LLC (Cognis)
4900 Este Ave., Cincinnati, 45232

Cognis' focus is on TRI emissions reductions in three areas: 1) convert production of high-pressure steam from coal to natural gas/fuel oil fired boiler; 2) energy conservation projects; and 3) reduce methanol emissions. Historically, eight percent of Cognis' coal usage has been for the production of high pressure stream. A new high pressure steam boiler, fired with either natural gas or #2 fuel oil, will permanently reduce TRI air emissions for hydrochloric acid, sulfuric acid and hydrofluoric acid by about the same percentage.

TRI air emissions for 2008 dropped by 9.5 percent from 2007. The amount of coal burned for steam generation went down by six percent (36,800 pounds of sulfuric acid to 38,500 pounds sulfuric acid). The amount of coal burned for steam generation dropped by six percent (249,000 pounds of hydrochloric acid to 235,000 pounds of hydrochloric acid). Process improvements, modification of the final environmental control scrubber and implementation of a Leak Detection and Repair program in Solvent Separation plants aided in the reduction (10,100 pounds of methanol to 9,000 pounds of methanol). During the first full year of operating 99-percent efficient Regenerative Thermal Oxidizers in Ozone Acids plants, there was a decrease in propionaldehyde (3,700 pounds to 300 pounds), formaldehyde (2,900 pounds to 200 pounds), and formic acid (1,500 pounds to 100 pounds).

The Dow Chemical Company (Dow) – Hanging Rock Plant
925 County Road 1A, Ironton, 45638

The Hanging Rock Plant is one of Dow's three manufacturing facilities in Ohio. This facility produces STRYOFOAM™, ETHAFOAM™, and STYRON™/MAGNUM™. Dow has developed a next-generation foaming agent technology, STYROFOAM™ R5/inch insulation. This has a zero ozone-depletion factor and allows Dow to cut its greenhouse gas emissions in half for North America. A project is underway to modify the Hanging Rock facility in order to allow implementation of the foaming agent. This would allow a reduction in TRI emissions by approximately 350 tons/year beginning in January 2010.

Energizer
P. O. Box 300, 2036 Blue Knob Road, Marietta, 45750

Energizer's Marietta facility produces electrolytic manganese dioxide, a component in its Energizer alkaline batteries. Energizer has prepared a five-year plan to reduce air emissions and off-site disposal. In 2007, Energizer Marietta implemented a project known as "Purchased Calcined Ore" that eliminated its calcining operation, which included two dust collectors, two raw ore dust bin vents and two transfer blowers. As a result, the company reduced annual manganese (MnO_2) by 29 percent (4,734 pounds per year)

In 2008, Energizer implemented a project known as Hot Acid Leach Manganese Recovery Phase II. This reduced manganese to 2 million pounds in 2008, compared to 3.8 million pounds in 2007 and 4 million pounds in 2006. In 2009, Energizer intended to implement Phase III. The equipment should recover 750,000 pounds of manganese as MnO_2 per year, which would have gone off-site for disposal. This would also eliminate 46,467 pounds of manganese per year (46 percent) going to the landfill as leach tank sand. The Finishing Neutralization wash water recovery should divert approximately 7 million gallons of water containing very small amounts of sulfuric acid and manganese, which is sent off-site for disposal. In 2010, Energizer plans to recover 54,000 pounds of manganese as MnO_2 per year from cell bottoms and eliminate the rest of the landfill waste streams. Also in 2010, Energizer intends to implement a project to collect impurities from its Eimco filter cake and sell the material for the metal value, eliminating the remainder of the transfers off-site for disposal. No projects have been identified for 2011.

Eramet Comilog – Eramet Marietta, Inc. (EMI)
P. O. Box 299, State Route 7 South, Marietta, 45750

EMI produces and sells manganese alloys used to make steel, aluminum and specialty metals stronger and more heat resistant. The manganese is mixed and refined at the company's plant in Marietta.

EMI has completed upgrades to Furnace #1, the largest of the three submerged electric arc furnaces. In April/May 2008, a major maintenance outage was scheduled and performed for Furnace #1 to ensure its long-term viability in the ferroalloys marketplace. Completion of the project has resulted in improved furnace performance and minimized the potential for malfunction events to occur that may cause unpermitted emissions. Emissions from the Furnace #1 stack, including manganese, have been reduced by more than 20 percent. This translates to a mass particulate matter emission reduction of more than 100,000 pounds. EMI intends to retrofit a new baghouse dust collector to replace the existing venture wet scrubber. They are also pursuing plans and approval for improvements to Furnace #12, which will be similar to those implemented for Furnace #1.

Approximately 70 percent of EMI's total reported TRI amount represents material that has been removed from process off-gases and wastewater by pollution control equipment in order to prevent it from being emitted to the air or water. EMI recovers a significant amount of byproduct material back to the processes. EMI has completed an intermediate engineering study to identify and assess technologies to reduce total ammonia emissions from its Specialty Product Operations.

Ford Motor Company – Ohio Assembly Plant (OHAP)
650 Miller Road, Avon Lake, 44012

The Ford Ohio Assembly Plant, constructed in 1973, produces the Econoline Van. The three major operations required in the manufacturing and assembly processes include body, paint and final assembly. The plant has been third-party certified to the ISO 14001 Environmental Management System standard since December 21, 1998.

OHAP began installation of a pilot system to run 3-Wet (paint process) trials in December 2005 and conclude in June 2007. Conversion was completed in January 2008. Production of 3-Wet vehicles began in March 2008. Forecasted reductions were as follows: 1) 4,900 pounds of air emissions from TRI chemicals; 2) four percent VOC reduction; 3) reduction in greenhouse gas emissions; and 4) reduction in natural gas combustion. OHAP is using a new uni-wipe process that will eliminate one primer and the need for methyl ethyl ketone. Forecasted reductions were as follows:

1) year-over-year reduction in methyl ethyl ketone usage of approximately 8,400 pounds; 2) reduction in toluene usage of approximately 1,400 pounds; and 3) reduction in xylene usage of approximately 90 pounds. In July 2007, paint transfer lines were shortened. This reduced the amount of cleaning solvent needed by approximately 105 gallons, with a forecasted reduction in xylene usage of approximately 2,300 pounds. OHAP's goals in reduction of natural resources in 2008 were as follows: six percent reduction in energy usage; three percent reduction in water usage; and five percent reduction in waste to landfill. The actual results were 23 percent (214,000 mmbtu), eight percent (13 million gallons), and 27 percent (1,567,680 pounds), respectively.

General Motors (GM)
Lordstown Complex East
2300 Hallock-Young Road, Lordstown, 44481

Moraine Assembly
2601 West Stroop Road, Dayton, 45429

Powertrain Defiance
26427 State Route 281 East, Defiance, 43512

Powertrain Toledo
1455 West Alexis Road, Toledo, 43612

At the Lordstown Complex, GM assembles the Chevrolet Cobalt and the Pontiac G5. At the Powertrain Defiance foundry, GM produces castings for its automotive operations. GM's SUV Chevrolet Trailblazer, GMC Envoy and Saab 9-7 are assembled at the Moraine Plant. Transmission parts and assemblies are produced at the Powertrain Toledo facility.

GM's goal is to reduce TRI emissions by 25 percent from base year 2005 to 2012. The company already reduced emissions by more than 42 percent from 2005 through 2007. Reductions are due to the use of new equipment in the paint shops to help improve transfer efficiencies of paint polymers, reducing air emissions. All the Ohio plants recycle scrap metal, cardboard, plastics, and sand. As of February 1, 2009, GM-Toledo achieved landfill-free status. The GM foundry operations enhanced the quality of its scrap to a new supplier scrap certification program. This reduces TRI emissions and cuts unnecessary costs.

Givaudan Flavors Corporation
1199 Edison Drive, Cincinnati, 45216

The Givaudan Flavors Corporation manufactures a large variety of flavoring materials. More than 2,500 different raw materials are used to make more than 8,000 intermediates and finished products. Acetaldehyde, which naturally occurs in some fruits such as oranges and apples, is used in some of Givaudan's products. Natural and synthetic versions of acetaldehyde are added to enhance various flavors. The current method used to produce flavors containing acetaldehyde results in hazardous waste being generated. Givaudan's goal is to reduce acetaldehyde waste per pound of product by 10 percent in 2012.

In 2008, Givaudan defined equipment improvements for capital investment in the Acetaldehyde Blending Process. The company replaced its existing blend tank with a jacketed tank capable of producing multiple sized batches. In 2009-2010, Givaudan will continue to identify other opportunities for waste reduction. In 2010, the company will collect data and evaluate progress made on its process and equipment improvements and determine if additional changes need to be made. In 2011, Givaudan will define additional modifications to the process to improve efficiency, if necessary. In 2011-2012, the company will execute any additional process changes and continue to evaluate and adjust the process as needed.

Goodyear Technical Center (Goodyear)
1144 East Market Street, Akron, 44316

Goodyear's Technical Center is devoted to advancing the science and technology of tires and applying this knowledge to new products for the company's hundreds of tire markets. Since closing its powerhouse, the following reductions have been observed: 1) sulfuric acid by 115,900 pounds per year; 2) hydrochloric acid by 287,796.2 pounds per year; and 3) hydrofluoric acid by 15,550.2 pounds per year. As of January 1, 2008, the Technical Center is completely landfill free, reducing landfill disposal amounts by 21.5 tons of trash and 40.75 tons of friction waste. Solvent use has been reduced by ten percent or 450 pounds per year.

Air emissions of numerous chemicals have been reduced to zero. This was accomplished by replacing coal-fired boilers with natural gas steam generators. Goodyear has reduced the emission of organic solvents to the air through conservation efforts and manufacturing methods modifications. The amount of solvent used in making tires has been reduced by 13,900 pounds or nearly seven tons. The goal is to reduce solvent usage by another 10 percent in 2009.

Griffin Wheel Company
3900 Bixby Road, Groveport, 43125

Since 1964, Griffin Wheel Company has been supplying the railroad industry with curved plate (parabolic deep-dish) low-stress wheels. Griffin has two main by-product streams that account for 98 percent of its reported TRI releases: slag from the electric arc melting furnaces and baghouse dust from these furnaces.

Amsted has three main goals. First, Amsted plans to reduce the amount of slag material that is disposed in landfills. The goal is to be able to beneficially reuse at least 50 to 60 percent of the material in the next five years. To date, the beneficial reuse has diverted about 35 percent of the slag from going to Amsted's on-site landfill over the past two years. This has reduced manganese and lead releases by a total of 216,000 pounds. Second, Amsted plans to reduce the toxicity of lead and zinc in by-products being sent to off-site landfills. The goal is to be able to treat about 10 percent of the material on-site within the next two years and possibly treat all of the dust within the next five years. Amsted is in the process of finalizing the design and equipment requirements to conduct an on-site trial of the treatment. Third, Amsted plans to reduce toxic chemical contents (lead) of its scrap. To that end, it continues to look at purchased scrap for any possibilities in reducing the amount of toxic chemical that may be present in the product.

Honda of America Manufacturing (Honda)
Honda of America Manufacturing, Inc.
24000 Honda Parkway, Marysville, 43040
Anna Plant – 12500 Meranda Road, Anna, 45302
East Liberty Plant – 11000 State Route 347, East Liberty, 43319
Marysville Plant – 24000 Honda Parkway, Marysville, 43040

The Anna Engine Plant started production in 1985 and produces 1.16 million four-cylinder engines per year for various car models. It also produces V6 engines, drive shafts, crankshafts, brake components, camshafts, and suspension components. The East Liberty Automobile Plant started production in 1989 and produces 240,000 cars and light trucks per year. The Marysville Motorcycle Plant started production in 1979 and produces 150,000 motorcycles and 75,000 engines per year.

Since the March 2008 status report, Honda has implemented the following: The Plastic Department at the Marysville Auto Plant was able to convert the purge solvent used to clean painting application equipment to a cleaner solvent. This is expected to reduce TRI emissions by about 25,000 pounds per year. Honda implemented recycling of a couple of waste streams in cement kilns; this is expected to reduce TRI releases by about 25,000 pounds/year. Honda currently has a team in place evaluating several different purge solvent formulations to replace the current purge solvent. Another team is evaluating initiatives to reduce reportable ammonia emissions in the manufacturing process. Preliminary work is underway to ensure the reformulated material performance is at least equal to the current material and that the material can be top loaded into the bath.

INEOS – Lima Facility
1900 Fort Amanda Road, Lima, 45804

The INEOS Lima facility produces nitrile-based products, including acrylonitrile, acetonitrile, and cyanide. The plant uses INEOS proprietary, fluid-bed propylene ammoxidation process and high efficiency catalyst to produce 190,000 tons of acrylonitrile.

The largest volume of waste generated at the site is the wastewater associated with the acrylonitrile manufacturing process. This waste stream contains two percent to five percent salts and one percent to two percent organics, with the balance being water. This material is pre-treated for solids removal prior to injection into one of four Class I on-site deep wells. Other liquid streams, which do not require deep well injection, are sent to the adjacent refinery for biological treatment and eventual discharge to the Ottawa River.

At the Lima site, there is an emphasis on reduction of air and water emissions to the surface environment. Some activities include floating roofs, resin bed modifications, thermal oxidizer improvements, and installation of an absorber off gas incinerator. Efforts are continuing in these areas to further increase emission reductions and reduce product losses to the site underground injection system.

Kraton Polymers U.S. LLC (Kraton)
2419 State Route 618, Belpre, 45714

Kraton Polymers LLC is a global specialty chemical company and the world's largest producer of styrenic block copolymers (SBCs). SBCs are highly-engineered synthetic elastomers, which enhance the performance of products by delivering a variety of attributes, including greater flexibility, resilience, strength, durability and processability. Kraton polymers are used in a wide range of applications including road and roofing materials, numerous consumer products (e.g., diapers, tool handles and toothbrushes), tapes, labels, medical applications, packaging, automotive and footwear products.

In 2008, Kraton implemented a Leak Detection and Repair (LDAR) program on all components in ammonia and methanol service. Fugitive releases of ammonia from production operations were reduced by 95.6 percent compared to 2006. Ammonia emissions for both fugitive and point sources have dropped by approximately 45 percent. Total methanol air emissions were reduced by 33 percent. Only one production unit remains on-site that produces polymers using ethylene dibromide (EDB). Emissions of EDB have been reduced from 1,400 pounds to 10 pounds. Kraton conducted stack testing on its steam generating boilers and determined that actual chlorine emissions are approximately 50 percent less than reported for 2006. In 2009, Kraton planned on expanding the LDAR program to include the remaining TRI sources not covered under any other program in order to reduce fugitive emissions. In 2008, Kraton installed condensers on vents to recover solvents for reuse. This resulted in a 400,000 pound reduction of cyclohexane treated on-site.

Lima Refining Company (Husky Lima Refinery)
1150 South Metcalf Street, Lima, 45804

The Husky Lima Refinery is capable of processing 160,000 barrels of crude oil a day. The facility produces gasoline, diesel, jet fuel, residual fuels and petrochemical feedstocks. With 580 workers, the Lima refinery produces approximately two billion gallons of refined petroleum products annually, including approximately 25 percent of the gasoline consumed in the state of Ohio.

In 2008, the Lima Refinery estimated a reduction (based on 2007 levels) of approximately 1,200 tons per year of sulfur dioxide and approximately 40 tons per year of sulfuric acid. In 2009, the Lima Refinery projected a reduction of approximately 100 tons per year of nitrogen oxide in 2010, using 2007 baseline levels. The company also projected a reduction of approximately 800 tons per year of sulfur dioxide in 2010, compared to 2007 baseline levels.

The Lincoln Electric Company
Euclid Facility – 22800 Saint Clair Avenue, Euclid, 44117
Mentor Facility – 6500 Heisley Road, Mentor, 44060

Lincoln Electric, founded in 1895, designs, develops and manufactures arc welding products, robotic welding systems, plasma and oxyfuel cutting equipment. The single largest TRI emission from the Euclid facility is a non-hazardous foundry sand waste stream that contains ores, minerals, ferroalloys, and metallic powders that are scrapped from production areas.

The company has a 10 percent annual reduction goal for this waste stream at the Euclid facility. Proposed methods to meet this goal include improved control technology (including a recent change from a wet scrubber to a more efficient baghouse with a fines reuse system on a large kiln); improved reuse procedures for scrap from production lines; and improvements in technologies such as weighing and mixing with the goal of less quality rejections (all quality rejections are added to the waste stream. Achievements in the last 12 months include a reduction of 865 tons aggregate, or a 24.6 percent reduction in two departments.

At the Mentor facility, improvements were made in 2006 and 2007 to reduce copper plating wastes (the company's largest waste stream) and non-hazardous sludge from the water treatment plant. During those two years, a 33 percent reduction in TRI emissions has already been realized. Further process improvements should provide incremental decreases in TRI emissions over the next 10 years. From 2007 to 2008, the Mentor facility reduced copper releases by 15.1 percent through a reduction in the filter cake waste stream.

MSC Walbridge Coatings, Inc.
30610 East Broadway, Walbridge, 43465

MSC Walbridge Coatings, Inc. (MSC) is an automotive metal finisher that electrogalvanizes, pretreats, primes and paints in one pass. This one-pass coating allows MSC to offer superior surface quality and enhanced corrosion protection. The company has two Tox-Minus goals.

First, MSC intends to reduce zinc-nickel plating filter cake generation by five percent. The company has realized an actual reduction of 3.68 percent. This is measured by pounds of filter cake generated per pound of galvanized metal produced. MSC will use a reverse osmosis unit to recover metal from the conductor roll process rinse and return zinc and nickel to the plating process. The company will also reuse rinse water; thereby reducing the amount of deionized water required resulting in less waste requiring treatment and a reduction of sodium hydroxide and sulfuric acid usage for the generation of the deionized water. MSC has also improved standard material handling practices.

MSC's second goal was to reduce paint-related waste by five percent. MSC has realized an actual reduction of 73.23 percent. This is measured by gallons of waste per pound of laminate and painted material produced. The company installed an on-line wet film determination gauge to reduce variability and encourage more efficient use of the material. MSC improved its cleanup process during and following production and improved standard material handling practices.

Millennium Inorganic Chemicals – A Cristal Company
2426 Middle Road, Ashtabula, 44004
2900 Middle Road, Ashtabula, 44004

National Titanium Dioxide Company Ltd. ("Cristal") and Millennium Inorganic Chemicals (MIC) combined to form the world's second largest producer of titanium dioxide and titanium chemicals. By the end of 2012, MIC plans to reduce the emissions of carbonyl sulfide at its Ashtabula facilities by about five percent (193 tons) below 2007 levels. MIC reports that process improvements are continuing and the amount of carbon used per unit of product made has been reduced.

Norcold Inc.
600 South Kuther Road, Sidney, 45365

Norcold is the leading manufacturer of recreational vehicle gas/electric absorption refrigerators in the country. Norcold intends to investigate air emission reduction opportunities by all equipment and processes, with an emphasis on polyurethane dispensing sources that are permitted under Title V of the Clean Air Act.

Norcold complete a number of activities in 2008. On March 3, 2008, the company submitted a completed emission reduction outline, identifying milestones and targets to identify ways to reduce air emissions. On May 1, 2008, Norcold received recommendations from OCAPP concerning a site visit completed on March 11, 2008. The company also completed an assessment of the alternative blowing agent and completed a control technology review. On November 1, 2008, Norcold submitted an application for a Permit to Install (PTI) Modification with an alternative emission calculation method. Norcold is conducting ongoing alternative material trials. Annual organic compound emissions dropped from 76.81 tons in 2007 to 60.43 tons in 2008, but some of the reduction is attributable to the economic environment and reduction of product being manufactured.

City of Orrville Department of Public Utilities
Electric Department
1100 Perry Street, Orrville, 44667

Orrville Utilities helps businesses increase energy efficiency, choose energy product improvements, reduce energy costs and stay profitable. It works with owners and operators of small commercial buildings to large industrial facilities. It also provides billing analysis, rate schedule reviews, power quality troubleshooting and on-site energy assessments.

Orrville Utilities successfully installed two burner diffusers on one of its pulverized coal units. It planned to install diffusers on the remaining two burners on this unit later in 2009. Benefits included lower base line opacity levels, improved combustion by the lowering of excess air and lower loss of ignition. The other pulverized coal unit will be evaluated for burner enhancement for later in 2009 and 2010. Orrville Utilities planned to install burning line balancing valves for improved fuel distribution to the burners on both pulverized coal units in the spring and fall of 2009.

Owens Corning
Newark Plant – 400 Case Avenue, P.O. Box 3012, Newark, 43058
Tallmadge Plant – 170 South Avenue, Tallmadge, 44278

Since 1966, Owens Corning been a leader in glass fiber technology. For 2008, Owens Corning planned to reduce ammonia emissions by 37,500 pounds, through binder chemistry changes. The Tallmadge facility anticipates that by 2012, it will have reduced the emissions of 1-chloro-1, 1-difluoroethane to zero tons per year, eliminating the need to submit a TRI report.

The Newark facility reduced ammonia stack emissions. In 2004, the Newark facility reported 1,172,900 pounds of emissions. In 2007, emissions dropped to 449,120 pounds. This reduction was attributed to binder chemistry changes and process variation reductions. For 2008, the actual reduction target of 7,500 pounds was met or exceeded. The Newark facility anticipated that the annualized goal of 30,000 pounds for 2009 will be met or exceeded.

The Tallmadge facility is on track to meet the blowing agent conversion from the current 1-choloro-1, 1-difluoroethane to a less harmful blowing agent. TRI emissions for 1-chloro-1, 1-difluoroethane will show approximately a nine percent reduction for 2008 compared to 2007. This is due to operating business strategy decisions made in 2008. The facility also expected to see a similar reduction in 2009. The Tallmadge facility should meet the 2012 goal of zero tons per year of 1-chloro-1, 1-difluoroethane emissions.

City of Painesville Power Plant
325 Richmond Street, Painesville, 44077

The city's municipal electric system services the City of Painesville, parts of Concord, Painesville Township, and Perry. Painesville Power is installing new in-line diffusers in its #5 boiler, and expects lower nitrogen oxide emissions and improved boiler efficiency. The plant has also identified thermal insulation projects that will reduce heat loss and improve the plant's thermal efficiency. Painesville plans to continue to install and replace damaged and missing insulation in 2009. The city has submitted a spreadsheet quantifying the effects of its ongoing projects.

P.H. Glatfelter Company
401 South Paint Street, Chillicothe, 45601

This facility specializes in carbonless paper, uncoated and other specialty grades of paper. Glatfelter has set goals to reduce sulfur dioxide emissions from two coal-fired boilers by 2013. It is anticipated that the reduction in sulfur dioxide emissions will also cause a reduction in TRI emissions. The company has begun the preliminary design and investigation process to identify potential sulfur dioxide control technologies.

Premix Inc.
P.O. Box 281, Route 20 and Harmon Road, North Kingsville, 44068

Premix is the largest North American developer, formulator and manufacturer of thermoset compounds and manufacturer of thermoset parts and sub-assemblies. The company serves a broad range of industries including automotive, appliance, electrical, construction, industrial equipment, heavy truck and aerospace/military. From 2008 to 2011, Premix proposes to reduce air emissions and solid waste landfill disposal by investigating process changes. In 2008, Premix will investigate alternate solvents and cleaning systems in order to reduce its air emissions and investigate possible reductions for zinc in order to reduce solid waste landfill disposal.

Premix has realized reductions from 2007 to 2008. In 2007, process emissions, disposal-related emissions and landfill-related emissions were 27.01 tons, 12.81 tons, and 59.51 tons, respectively. In 2008, process emissions, disposal-related emissions, and landfill-related emissions dropped to 25.30 tons, 8.82 tons, and 57.86 tons, respectively.

Solvay Advanced Polymers LLC
P.O. Box 446, Route 7 South, Marietta, 45730

Solvay Advanced Polymers (Solvay) produces high-performance and ultra-performance plastics for a variety of industries. Solvay is committed to a 50 percent reduction of TRI chemical releases by the end of 2010 through installing additional equipment to further control air emissions. Solvay selected thermal oxidation as its improved emission control technology in order to meet this goal. The company received all permits required for the project and completed construction by October 2008. The control device has undergone operational evaluations in preparation for placing the emission control device into continuous service.

The Timken Company
Faircrest Steel Plant – 4511 Faircrest Street, S.W., Canton, 44706
Harrison Steel Plant – Harrison Avenue, S.W., Canton 44706

The Timken Company manufacturers highly engineered bearings, alloy steels, and related components and assemblies. Timken changed vendors and is recycling its electric arc furnace dust instead of sending it to treatment and disposal. In January 2008, 1,486.33 tons of electric arc furnace dust was recycled from the Faircrest facility and 533.58 tons from the Harrison facility.

In 2008, the Faircrest facility generated 33,451,127 pounds of total dust. This included 710,907 pounds that was recharged on-site. The rest was sent off-site for metals recovery. At the Harrison facility, 10,658,165 pounds of total dust was generated, of which 889,905 pounds were recharged on-site. The remaining 9,768,260 pounds was sent off-site for metals recovery. This represents a total, for both facilities, of 96.37 percent of the dust being sent offsite for metals recovery.

V & M Star
2669 Martin Luther King Jr. Blvd., Youngstown, 44510

V & M Star (V & M) produces seamless tubular products for oil and gas applications. The Youngstown facilities include electric arc furnace, continuous casting, walking beam reheat furnace and retained mandrell mill operations.

One of V & M's goals is to improve the waste management method for sludge disposal. The company successfully completed a pilot study, which involved mixing mill scale and sludge with fly ash, steel furnace slag and cement to create a strong base course material to use during road improvement operations within the plant. In 2008, a 600-foot section of this road base material was utilized at the Youngstown facility. V & M also completed a feasibility study, which involved processing bag house dust as a raw material in an abrasives manufacturing process.

Veyance Technologies, Inc.
1115 South Wayne Street, Saint Marys, 45885

Veyance manufactures industrial and hydraulic hose and fittings, automotive products, conveyor belt, power transmission products, air springs and rubber track. Veyance Technologies is committing to a voluntary reduction goal of 50 percent in the release of TRI listed chemicals by 2011.

The goal was exceeded in 2007 with an overall reduction of 63.8 percent. This was accomplished primarily through the utilization of a regenerative thermal oxidizer and concentrator system to reduce the amount of on-site TRI solvent releases.

Whirlpool Corporation
1300 Marion-Agosta Road, Marion, 43301

Whirlpool Corporation is a global manufacturer of major home appliances. The Marion Division is a manufacturing and parts distribution facility. Whirlpool plans to achieve reductions in TRI chemicals by:

1) Switching to a more environmentally friendly paint resin to lower hazardous air pollutants by 30 percent;

2) Converting zinc phosphate to iron phosphate for the powder painting operation;

3) Decreasing use of synthetic lubricants; and

4) Evaluating use of a less hazardous solvent for gun cleaning between paint color changes.

A comparison of 2008 against 2006 shows 240,000 pounds/year of actual reduction in hazardous air pollutants (HAPs). This is a 40 percent reduction, which is beyond the goal of 30 percent. Instead of converting zinc phosphate to iron phosphate for the powder painting operation, the goal has now changed to a trial on zirconium based phosphate, which could result in a reduction of 30,000 pounds of zinc and manganese compounds annually. A trial was scheduled to be completed in 2009 for the powder phosphate system, pending successful operational testing of paint finishes on the dryers with the phosphate. As of February 2008, the bulk drawing compound was switched to a concentrate with a 1:7 dilution. This decreases potential for incidents in transportation, and the chemical content of the material has also been improved.

Finally, in the course of evaluating the use of a less hazardous solvent for gun cleaning between paint color changes, Whirlpool has changed that goal to elimination of the remaining Ransburg paint system. This system is scheduled to be eliminated in 2010, resulting in a reduction of 70 tons of VOCs, corresponding to 37.33 tons of hazardous air pollutants. TRI emissions for 2008 compared to 2006 dropped by more than 42 percent, from 565,741 pounds to 325,034 pounds.

For more information
about the Tox-Minus program,
visit
www.epa.ohio.gov/ocapp/tox_minus.aspx