

TRI in Pollution Prevention

How Facilities Reduce Toxic Releases

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October 2016

TRI Conference, Washington DC

UT Arlington Zero Waste Network

Zerowastenetwork.org





THE UNIVERSITY OF TEXAS AT ARLINGTON
CENTER FOR ENVIRONMENTAL EXCELLENCE

- ✓ More than 500 Case Studies
- ✓ P2 Planning Tools
- ✓ Technical Assistance
 - EMS
 - Lean
- ✓ Workshops
 - EMS
 - Sustainability
 - Pollution Prevention
- ✓ Resource Exchange



ZeroWasteNetwork.org

Follow Up Surveys

- ✓ Document outcomes
- ✓ Determine what works



Results Reported

Participants Reported Reductions of:

Hazardous Waste	124,781	pounds
TRI Chemicals	8,600	pounds
Electricity Use	1,080,000	kWh
Air Emissions – VOCs	2,400	pounds
Reused Materials	6,200,620	pounds
Solid Waste	126,010	pounds
Water Pollution – Toxics	6,800	pounds
Water Use	2,884,000	gal
Greenhouse Gas Emissions	542.81	MTCO ₂ e



Results Reported



What works?

- ✓ Know What's Important
- ✓ Simple Solutions Work
- ✓ Know Your Materials
- ✓ Know the Activity that Generated the Waste



Know what's important





Know what's important

- ✓ Reduction of 35 pounds of hazardous waste
- ✓ Saved \$24,000

Texas Christian University



Simple Solutions

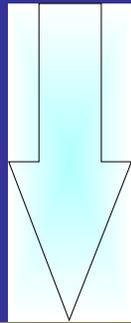
- ✓ Leak detection and repair
- ✓ Reduce threshold from 10,000ppmv to 500ppmv
- ✓ Savings from product loss average \$15 per ton (after costs for increasing threshold)
- ✓ regulatory reduction, community relations, emission fees, risk reduction.





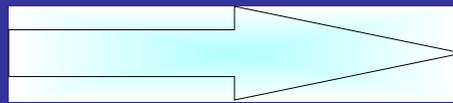
www.renewtx.org

Sulfuric Acid



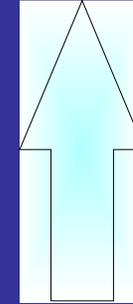
Wire
Cleaning

Sulfuric Acid



Rust

Ferrous Sulfate



Chemical
Company

99,232,000 pounds acid reclaimed
\$2,515,000 in disposal costs saved
\$315,000 earned



Link Activity to Waste

- ✓ Identify the source of the waste
- ✓ Apply management tools to find a solution.



P²Planner

Pollution Prevention Planner

leave

welcome, tom!
not tom? [click here](#)

Facility

Activity

Goals

Plan

Inventory Management

[edit this activity](#)

Options:

Reduce or Eliminate rebuilds

Increase storage compatibility and organization

Materials:

Other Options

[edit this activity](#)

Options:

Change Lighting

Materials:

Other Practices

[edit this activity](#)

Options:

Returnable tote containers and drums

Distillation of Mineral Spirits

product manufacturing - reaction

Material Management

Set Up an Internal Exchange Program

Materials:



Link Activity to Waste

P2 & Lean Workshops

[Houston \(one day\)](#)
October 5, 2016

[Houston](#)
November 8-10, 2016

[Arlington](#)
December 6-8, 2016

[Houston](#)
May 31 - June 2, 2017

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**Environmental
Management Systems
Workshop**

[Oklahoma City, Ok](#)
09/27/16 - 09/30/16

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**Environmental
Management Systems**

Following are a set of P2 options you may wish to implement. No option is perfect for everyone, but sometimes options that have worked at one facility can work at yours. They might also serve as inspiration.

Reviewed Printing-Pre-press Operations Options

Following are a list of options that have been reviewed by pollution prevention specialists. These options have worked at other facilities and may work at yours.

Reviewed P2 Options for the Cleaning and Degreasing Operations Process

Following are a set of P2 options you may wish to implement. No option is perfect for everyone, but sometimes options that have worked at one facility can work at yours. They might also serve as inspiration.

Reviewed Cleaning and Degreasing Operations Options

Following are a list of options that have been reviewed by pollution prevention specialists. These options have worked at other facilities and may work at yours.

reduce solvent evaporation

Increase the freeboard height to significantly reduce solvent evaporation.

automatic parts lift

Install automatic parts lift on vapor degreasers



Safety

Link Activity to Waste

Industry Type	Option Planned	Reduction (tons)
Mineral Wool (fiberglass) Mfg.	In Process Reuse (dust)	14.5
Hazardous Waste TSD	Low flow sampling reduced purgewater	9.2
Chemical distribution	Employee training to Reduce spills in loading and unloading	3.9
Aircraft assembly	Tank usage efficiency	2.5
Steel Foundry	Metering	2.25
Brewery	Review Chemical Purchases	1.4



Other Approaches

- ✓ **By substance**
 - must learn primary causes
- ✓ **By sector**
 - Multiple sectors engage in same processes
 - High variance in causes by sector



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