

# Pollution Prevention Targeting and TRI Section 8

March 20, 2013

Minnesota Technical Assistance Program



UNIVERSITY OF MINNESOTA

**Driven to Discover<sup>SM</sup>**

# Minnesota Technical Assistance Program

*Helping Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, increase energy efficiency, reduce costs, and prevent pollution*

*Businesses remain competitive  
Improve employee and public health  
Protect the environment*

# Industrial Process Assistance

- University of Minnesota, School of Public Health
  - Pollution prevention
  - More efficient use of raw materials
  - Water conservation strategies
  - Energy efficiency opportunities
- Cost savings for businesses since 1984!!



# MnTAP Services

- On-Site Assistance
  - Site assessment visits
  - Intern program
  - Company team facilitation
  - Demonstrations and research projects
- Minnesota Materials Exchange
  - [mnexchange.org](http://mnexchange.org)
- Communications and Outreach
  - [mntap.umn.edu](http://mntap.umn.edu)

# MnTAP Impacts 2012

## First Year Implemented Savings

Activity	Total Waste (lbs)	Water (gal)	Energy		Cost Savings
			kWh	therms	
Site Visits (calls/emails)	303,550	1,300,000	1,914,000	55,000	\$590,000
Interns	47,450	11,600,000	1,823,000	153,000	\$590,000
Teams	1,457,000	29,900,000	3,833,000	149,000	\$810,000
Materials Exchange	26,000	---	---	---	\$5,000
<b>GRAND TOTAL</b>	<b>1,834,000</b>	<b>42,800,000</b>	<b>7,570,000</b>	<b>357,000</b>	<b>\$1,995,000</b>

# Historical Targeting

- Outreach Development
  - TRI emphasis
  - Staff expertise
  - P2 opportunities
  - Implementation



# A New Approach

- More Holistic and Systematic
  - Federal Release Data
    - TRI
    - Wastewater permits
  - State Release Data
    - Hazardous Waste
    - Air Toxics
  - State Reuse Data
    - Beneficial reuse



# Methodology

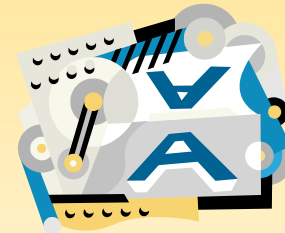
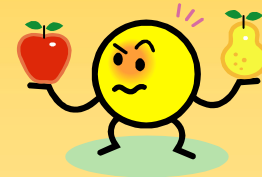
- Quantities
- Trends
- Compare Datasets
- Context





# Issues

- Age
- Data Types
- Formatting
- Completeness



# Hazardous Waste

NAICS	Description	2008	2009	2010	Percent Increase
3241	Petroleum and Coal Products Manufacturing	917,175	799,026	56,810,579	6,094
3399	Other Miscellaneous Manufacturing	226,461	151,618	5,208,880	2,200
3353	Electrical Equipment Manufacturing	117,330	34,276	2,237,545	1,807
3313	Alumina and Aluminum Production and Processing	551,485	281,556	1,934,321	250
3334	Air Handling and Conditioning Equipment	58,602	53,874	197,695	237
3326	Spring and Wire Product Manufacturing	180	110,910	159,277	88,387
3252	Synthetic Resin and Rubber Fibers	29,837	28,021	63,663	113
4861	Pipeline Transportation of Crude Oil	6,900	8,800	21,685	214
4412	Other Motor Vehicle Dealers	6,650	15,380	19,100	187
6215	Medical and Diagnostic Laboratories	6,158	3,922	18,847	206
9281	National Security and International Affairs	7,372	27,267	16,459	123
3273	Cement and Concrete Product Manufacturing	2,880	2,760	11,350	294
4234	Professional/Commercial Equipment/Supplies Wholesalers	4,730	10,052	9,825	107

# Hazardous Waste

NAICS	Description	2008	2009	2010	Percent Increase
3241	Petroleum and Coal Products Manufacturing	917,175	799,026	56,810,579	6,094
3399	Other Miscellaneous Manufacturing	226,461	151,618	5,208,880	2,200
3353	Electrical Equipment Manufacturing	117,330	34,276	2,237,545	1,807
3313	Alumina and Aluminum Production and Processing	551,485	281,556	1,934,321	250
3334	Air Handling and Conditioning Equipment	58,602	53,874	197,695	237
3326	Spring and Wire Product Manufacturing	180	110,910	159,277	88,387
3252	Synthetic Resin and Rubber Fibers	29,837	28,021	63,663	113
4861	Pipeline Transportation of Crude Oil	6,900	8,800	21,685	214
4412	Other Motor Vehicle Dealers	6,650	15,380	19,100	187
6215	Medical and Diagnostic Laboratories	6,158	3,922	18,847	206
9281	National Security and International Affairs	7,372	27,267	16,459	123
3273	Cement and Concrete Product Manufacturing	2,880	2,760	11,350	294
4234	Professional/Commercial Equipment/Supplies Wholesalers	4,730	10,052	9,825	107

# Hazardous Waste

NAICS	Description	2008	2009	2010	Percent Increase
3241	Petroleum and Coal Products Manufacturing	917,175	799,026	56,810,579	6,094
3399	Other Miscellaneous Manufacturing	226,461	151,618	5,208,880	2,200
3353	Electrical Equipment Manufacturing	117,330	34,276	2,237,545	1,807
3313	Alumina and Aluminum Production and Processing	551,485	281,556	1,934,321	250
3334	Air Handling and Conditioning Equipment	58,602	53,874	197,695	237
3326	Spring and Wire Product Manufacturing	180	110,910	159,277	88,387
3252	Synthetic Resin and Rubber Fibers	29,837	28,021	63,663	113
4861	Pipeline Transportation of Crude Oil	6,900	8,800	21,685	214
4412	Other Motor Vehicle Dealers	6,650	15,380	19,100	187
6215	Medical and Diagnostic Laboratories	6,158	3,922	18,847	206
9281	National Security and International Affairs	7,372	27,267	16,459	123
3273	Cement and Concrete Product Manufacturing	2,880	2,760	11,350	294
4234	Professional/Commercial Equipment/Supplies Wholesalers	4,730	10,052	9,825	107

# Hazardous Waste

NAICS	Description	2008	2009	2010	Percent Increase
3241	Petroleum and Coal Products Manufacturing	917,175	799,026	56,810,579	6,094
3399	Other Miscellaneous Manufacturing	226,461	151,618	5,208,880	2,200
3353	Electrical Equipment Manufacturing	117,330	34,276	2,237,545	1,807
3313	Alumina and Aluminum Production and Processing	551,485	281,556	1,934,321	250
3334	Air Handling and Conditioning Equipment	58,602	53,874	197,695	237
3326	Spring and Wire Product Manufacturing	180	110,910	159,277	88,387
3252	Synthetic Resin and Rubber Fibers	29,837	28,021	63,663	113
3273	Cement and Concrete Product Manufacturing	2,880	2,760	11,350	294

# Hazardous Waste

NAICS	Description	2008	2009	2010	Percent Increase
3241	Petroleum and Coal Products Manufacturing	917,175	799,026	56,810,579	6,094
3399	Other Miscellaneous Manufacturing	226,461	151,618	5,208,880	2,200
3353	Electrical Equipment Manufacturing	117,330	34,276	2,237,545	1,807
3313	Alumina and Aluminum Production and Processing	551,485	281,556	1,934,321	250
3334	Air Handling and Conditioning Equipment	58,602	53,874	197,695	237
3252	Synthetic Resin and Rubber Fibers	29,837	28,021	63,663	113
3273	Cement and Concrete Product Manufacturing	2,880	2,760	11,350	294

# TRI: Air Releases

NAICS	Quantity, Description	2008	2009	2010	Chemical	Process
3112	12 Oilseed Milling	2,110,509	1,752,402	1,864,846	Hexane	Oilseed extraction
2211	18 Electric Utilities	1087,363	1,086,456	1,266,112	Ammonia, Acids	Combustion
3324	6 Storage Tank Manufacturing	668,110	844,569	877,808	n-Butyl Alcohol, glycol ethers	Painting
3221	7 Pulp/Paper Mills	799,901	742,997	765,552	Methanol, Acids	Pulping
3116	9 Animal Processing	821,646	484,208	815,724	Ammonia	Processing
3113	4 Sugar Manufacturing	760,993	620,709	575,008	Ammonia	Processing
3251	23 Basic Chemicals	729,530	895,062	305,085	Hexane, Ammonia, Acetaldehyde	Mixing
3241	9 Petroleum Products	585,379	603,205	611,423	Methanol, Xylene, Ammonia	Processing
3222	3 Converted Paper	264,848	195,256	252,936	Toluene, Methanol	Pulping
3261	22 Plastics	286,357	205,747	173,767	1-Chloro-1,1-Difluoroethane, Styrene	Blowing agent?
3366	8 Boats	393,659	83,701	136,364	Styrene	Polymerization
3361	3 Motor Vehicles	236,405	190,714	173,254	n-Butyl Alcohol, Xylene	Painting
3371	5 Furniture	213,846	152,795	178,606	Xylene, Toluene	Painting
3391	5 Medical Equipment	141,486	127,502	117,245	Xylene, Toluene, Cyclohexane	Cleaning
3328	25 Metal Coating	158,290	104,049	91,477	Methylene chloride, Chloroform, Xylene	Cleaning
3212	4 Wood Products	206,801	88,215	42,277	Methanol, Formaldehyde	Painting

# TRI: Air Releases

NAICS	Quantity, Description	2008	2009	2010	Chemical	Process
3112	12 Oilseed Milling	2,110,509	1,752,402	1,864,846	Hexane	Oilseed extraction
2211	18 Electric Utilities	1087,363	1,086,456	1,266,112	Ammonia, Acids	Combustion
3324	6 Storage Tank Manufacturing	668,110	844,569	877,808	n-Butyl Alcohol, glycol ethers	Painting
3221	7 Pulp/Paper Mills	799,901	742,997	765,552	Methanol, Acids	Pulping
3116	9 Animal Processing	821,646	484,208	815,724	Ammonia	Processing
<del>3113</del>	<del>4 Sugar Manufacturing</del>	<del>760,993</del>	<del>620,709</del>	<del>575,008</del>	Ammonia	Processing
<del>3251</del>	<del>23 Basic Chemicals</del>	<del>720,530</del>	<del>805,062</del>	<del>305,085</del>	Hexane, Ammonia, Acetaldehyde	Mixing
3241	9 Petroleum Products	585,379	603,205	611,423	Methanol, Xylene, Ammonia	Processing
3222	3 Converted Paper	264,848	195,256	252,936	Toluene, Methanol	Pulping
3261	22 Plastics	286,357	205,747	173,767	1-Chloro-1,1-Difluoroethane, Styrene	Refrigeration?
3366	8 Boats	393,659	83,701	136,364	Styrene	Polymerization
3361	3 Motor Vehicles	236,405	190,714	173,254	n-Butyl Alcohol, Xylene	Painting
3371	5 Furniture	213,846	152,795	178,606	Xylene, Toluene	Painting
3391	5 Medical Equipment	141,486	127,502	117,245	Xylene, Toluene, Cyclohexane	Cleaning
3328	25 Metal Coating	158,290	104,049	91,477	Methylene chloride, Chloroform, Xylene	Cleaning
3212	4 Wood Products	206,801	88,215	42,277	Methanol, Formaldehyde	Painting



# TRI: Air Releases

NAICS	Quantity, Description	2008	2009	2010	Chemical	Process
3112	12 Oilseed Milling	2,110,509	1,752,402	1,864,846	Hexane	Oilseed extraction
2211	18 Electric Utilities	1,087,363	1,086,456	1,266,112	Ammonia, Acids	Combustion
3324	6 Storage Tank Manufacturing	668,110	844,569	877,808	n-Butyl Alcohol, glycol ethers	Painting
3221	7 Pulp/Paper Mills	799,901	742,997	765,552	Methanol, Acids	Pulping
3116	9 Animal Processing	821,646	484,208	815,724	Ammonia	Processing
3241	9 Petroleum Products	585,379	603,205	611,423	Methanol, Xylene, Ammonia	Processing
3222	3 Converted Paper	264,848	195,256	252,936	Toluene, Methanol	Pulping

# TRI: POTW Non-metals

NAICS	Quantity, Description	POTW Non-metal Releases			Chemicals
		2008	2009	2010	
3261	22 Plastics	8,532,362	9,031,967	10,483,358	N,N-Dimethylformamide, 1,3-Phenylenediamine
3221	7 Paper	6,746,026	7,699,441	7,919,495	Methanol
3115	25 Dairy	1,785,458	1,807,411	2,026,093	Nitrates, Nitric Acid

# Putting It Together

NAICS	Description	TRI	HW	Possible Pollution Prevention
2211	Electric Utilities	+	=	Unknown
3112	Oilseed Milling	+	=	Recycle
3115	Dairy	+	=	Process Optimization
3116	Animal Processing	+	0	Unknown
3221	Pulp/Paper Mills	+	=	Unknown
3222	Converted Paper	+	=	Unknown
3241	Petroleum Products	+	+	Unknown
3252	Synthetic Resin Fibers	=	+	Unknown
3261	Plastics	+	=	Substitution, Process Optimization
3273	Cement/Concrete Products	0	+	Unknown
3313	Alumina/Aluminum Production and Processing	=	+	Process Optimization
3324	Storage Tank Manufacturing	+	=	Substitution, Process Optimization
3334	Air Handling and Air Conditioning Equipment	=	+	Substitution, Process Optimization
3353	Electrical Equipment	=	+	Substitution, Process Optimization
3399	Miscellaneous Manufacturing	=	+	Substitution, Process Optimization

## KEY








+ Target based on column criteria

= Releases from column, but do not meet initial criteria

0 No data or insignificant

# Section 8 as Input

- Narratives clarify a facility's understanding of their effort and intent

FACILITY NAME ◇	ADDRESS ◇	YEAR ▼	PRIOR YEAR RELEASE * ◇	CURRENT YEAR RELEASE * ◇	PERCENT CHANGE ◇	POLLUTION PREVENTION INFORMATION (ACTIVITY CODES/TEXT) ◇
BLANDIN PAPER CO 	115 SW FIRST ST, GRAND RAPIDS, MN 55744	2011	13,362.00	13,151.00	-1.58%	W52: Modified equipment, layout, or piping
SAPPI CLOQUET LLC 	2201 AVE B, CLOQUET, MN 55720	2011	119,048.00	121,000.00	1.64%	W58: Other process modifications
BLANDIN PAPER CO 	115 SW FIRST ST, GRAND RAPIDS, MN 55744	2010	12,879.00	13,362.00	3.75%	W52: Modified equipment, layout, or piping
BOISE WHITE PAPER LLC 	400 SECOND ST, INTERNATIONAL FALLS, MN 56649	2010	86,890.00	98,090.00	12.89%	W35: Installed vapor recovery systems W39: Other spill or leak prevention  Updated air emission factors resulted in some increased emissions. Continued good housekeeping practices and minimized venting practices to minimize release potential.
BLANDIN PAPER CO 	115 SW FIRST ST, GRAND RAPIDS, MN 55744	2009	12,951.00	12,879.00	-.56%	W52: Modified equipment, layout, or piping
BOISE WHITE PAPER LLC 	400 SECOND ST, INTERNATIONAL FALLS, MN 56649	2009	85,150.00	86,890.00	2.04%	W35: Installed vapor recovery systems W39: Other spill or leak prevention  Air emission factors were updated with 2010 NCASI Handbook for similar sources and resulted in some increased air emissions from various sources. Connected vapor recovery HVLC system to the Rapid Drain Tank. Continued good housekeeping and minimized NCG venting practices to minimize release potential.
BOISE WHITE PAPER LLC 	400 SECOND ST, INTERNATIONAL FALLS, MN 56649	2008	131,190.00	85,150.00	-35.09%	W35: Installed vapor recovery systems W39: Other spill or leak prevention  Air emission factors were updated with April 2009 NCASI Handbook for similar sources and resulted in mostly reduced emissions from various sources. Connected vapor recovery HVLC system to the Rapid Drain Tank. Continued good housekeeping and minimized NCG venting practices to minimize release potential.

# Putting It Together

NAICS	Description	TRI	HW	Possible Pollution Prevention
2211	Electric Utilities	+	=	Unknown
3112	Oilseed Milling	+	=	Recycle
3115	Dairy	+	=	Process Optimization
3116	Animal Processing	+	0	Unknown
3221	Pulp/Paper Mills	+	=	Unknown
3222	Converted Paper	+	=	Unknown
3241	Petroleum Products	+	+	Unknown
3252	Synthetic Resin Fibers	=	+	Unknown
3261	Plastic Products	+	=	Substitution, Process Optimization
3273	Cement/Concrete Products	0	+	Unknown
3313	Alumina/Aluminum Production and Processing	=	+	Process Optimization
3324	Storage Tank Manufacturing	+	=	Substitution, Process Optimization
3334	Air Handling and Air Conditioning Equipment	=	+	Substitution, Process Optimization
3353	Electrical Equipment	=	+	Substitution, Process Optimization
3399	Miscellaneous Manufacturing	=	+	Substitution, Process Optimization

## KEY

+ Target based on column criteria

= Releases from column, but do not meet initial criteria

0 No data or insignificant.

# Putting It Together

NAICS	Description	TRI	HW	Possible Pollution Prevention
3112	Oilseed Milling	+	=	Recycle
3115	Dairy	+	=	Process Optimization
3261	Plastic Products	+	=	Substitution, Process Optimization
3324	Storage Tank Manufacturing	+	=	Substitution, Process Optimization
3334	Air Handling and Air Conditioning Equipment	=	+	Substitution, Process Optimization
3353	Electrical Equipment	=	+	Substitution, Process Optimization
3399	Miscellaneous Manufacturing	=	+	Substitution, Process Optimization

## KEY

+ Target based on column criteria

= Releases from column, but do not meet initial criteria

0 No data or insignificant.

# MnTAP Possibilities

- More Outreach to all Sectors
  - P2 message clearer
  - Work with state on training
- Link TA to Section 8
  - Motivate provider and client to be more transparent



# Minnesota Technical Assistance Program

*Helping Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, increase energy efficiency, reduce costs, and prevent pollution*

***Thank You***

Laura Babcock  
lbabcock@umn.edu

Robert Lundquist  
lundq002@umn.edu