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3.3 “P2 Planning Notices as a Tool to Manage Toxic Substances - Are they measuring up?”

Andrea Crowe on behalf of Lori Fryzuk, Head,
Performance Measurement and Information Programs,
Environment Canada



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Pollution Prevention Planning Notices as a Tool to Manage Toxic Substances – Are they Measuring Up?

Lori Fryzuk
**Regulatory Innovation and
Management Systems**
Environmental Canada
June 11, 2008



Presentation Outline

- Background on P2 Planning Notices
- Performance Measurement Drivers for P2 Planning Notices
- Results for 4 P2 Planning Notices
 - Acrylonitrile
 - Nonylphenol and its Ethoxylates
 - Textile Mill Effluent
 - Chlorinated Municipal Wastewater Effluent
- General Performance Measurement Conclusions
- Lessons Learned



Pollution Prevention Planning 101

- A Pollution Prevention Planning Notice is an instrument under CEPA 1999 that is used to manage the risks of toxic substances
- The Notice includes the following:
 - specific industry sector or company
 - Substance(s) for which a Pollution Prevention plan is to be prepared
 - Commercial, manufacturing, process or other activity for which plan is to be prepared
 - Factors to be considered in preparing a plan (e.g., risk management objectives, reduction targets, best available technology, priority to use Pollution Prevention techniques)
 - Timeline for preparing/implementing a plan
 - Administrative matters (i.e. format for declarations, progress reports)
- Contains environmental targets or objectives, not prescriptive in how subject companies must achieve those targets - 'P2ees' determine how best to achieve the intent of the instrument



Why Performance Measurement for Pollution Prevention Planning?

- **CEPA 1999 Review** – House of Commons Committee Recommendations 24 and 25:
 - 24 - “That Environment Canada create a formal performance measurement mechanism for P2 plans that will enable their achievements to be measured”
 - 25 - “That the Commissioner of the Environment and Sustainable Development, examine whether or not P2 plans are reducing the creation of pollution.”
- ***Cabinet Directive on Streamlining Regulation*** (TSB, 2007)
- Early indication of the effectiveness of the P2 Notice
- “What gets measured, gets done”

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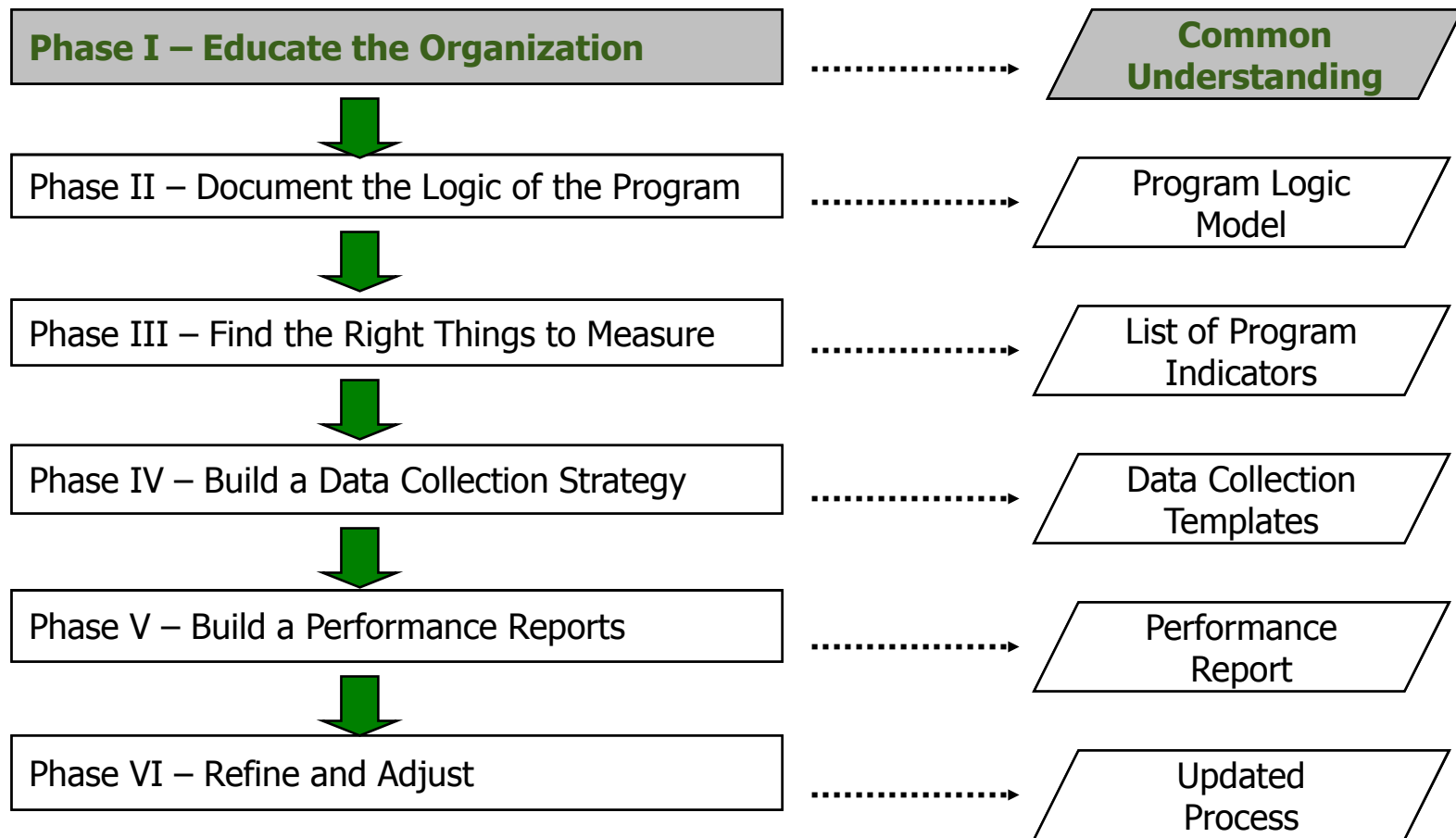


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Developing a Performance Measurement Strategy for P2 Plans



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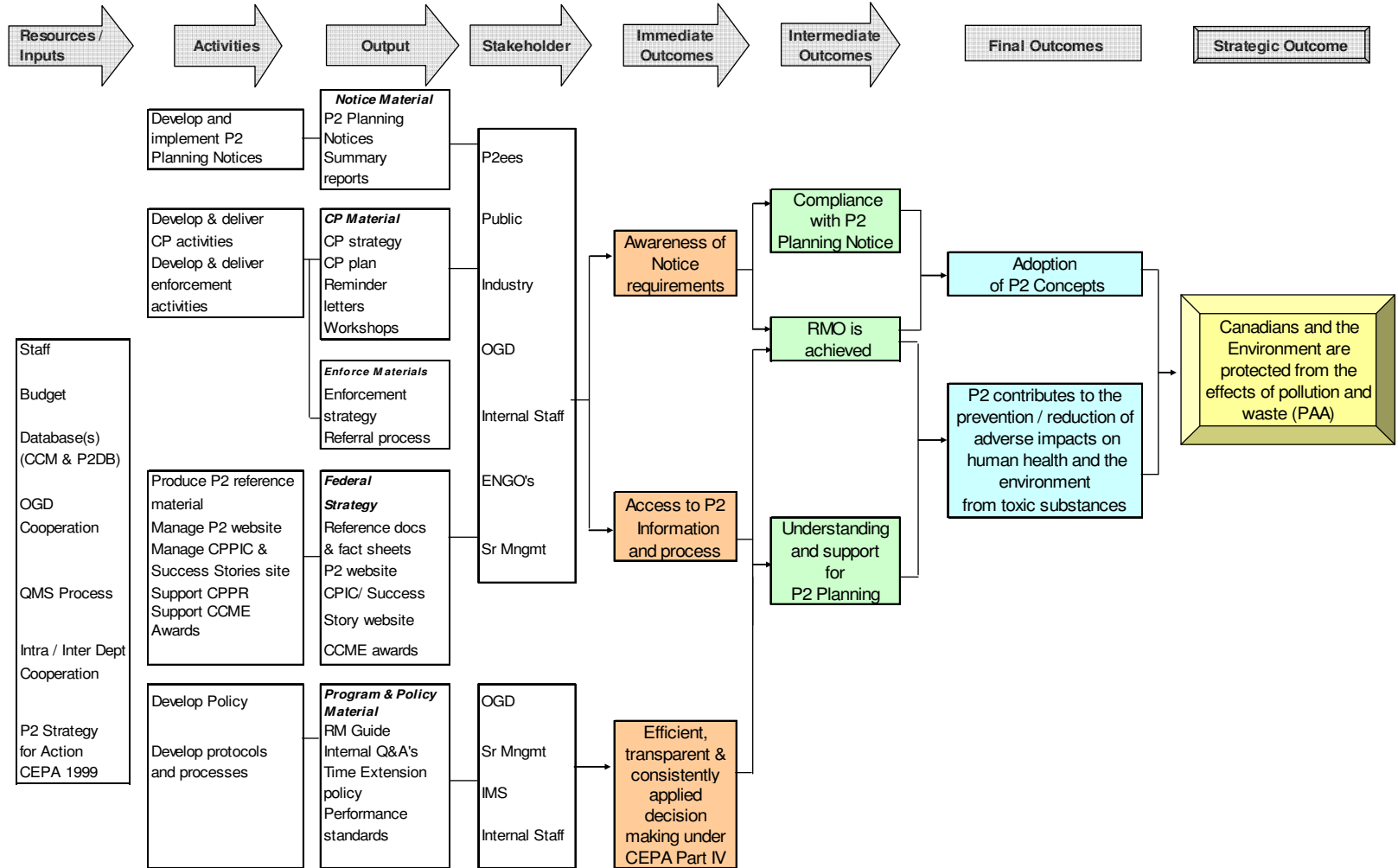


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Document Logic of the P2 Planning Program



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Pollution Prevention Planning Notices Published to Date

Notice	# Facilities	Features
Acrylonitrile	1	qualitative objectives, lone RM instrument for this substance
Dichloromethane	35	diverse set of industry sectors (5) and corresponding quantitative targets, 1 of 2 RM instruments
Chlorinated Wastewater	80+ (municipalities)	national in scope, qualitative objectives, diverse issues related to geography and climate, precursor to a reg, part of a larger wastewater strategy
NP/NPE in products	70+	national in scope, qualitative objectives, part of a broader RM strategy
NPE/TME	40+	regional issue, small enterprises, part of a broader RM strategy
Wood Preservatives	5 (named)	regional in nature, addresses 5 substances, qualitative objectives, backstop to a voluntary program
Base Metal Smelter Releases	11 (named)	large, localized industry, quantitative objectives for 10+ substances, precursor to a reg, part of a larger RM strategy
Mercury in Switches	10	large enterprises, localized industries (auto manufacturers and steel manufacturers), qualitative targets, encourages partnerships between industry and NGO

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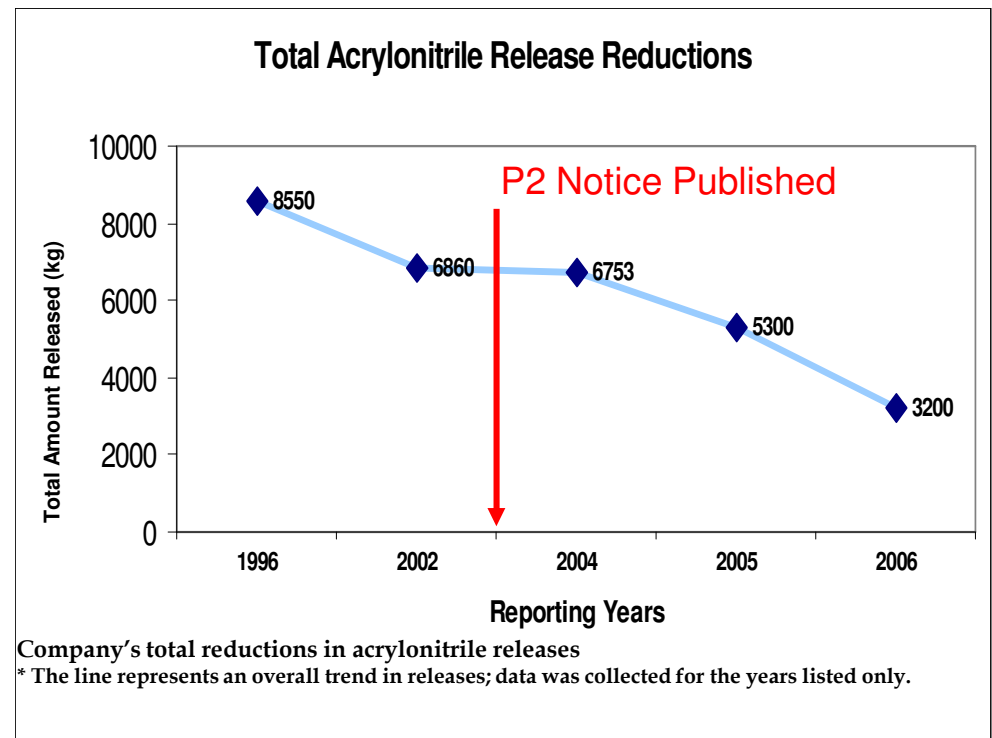
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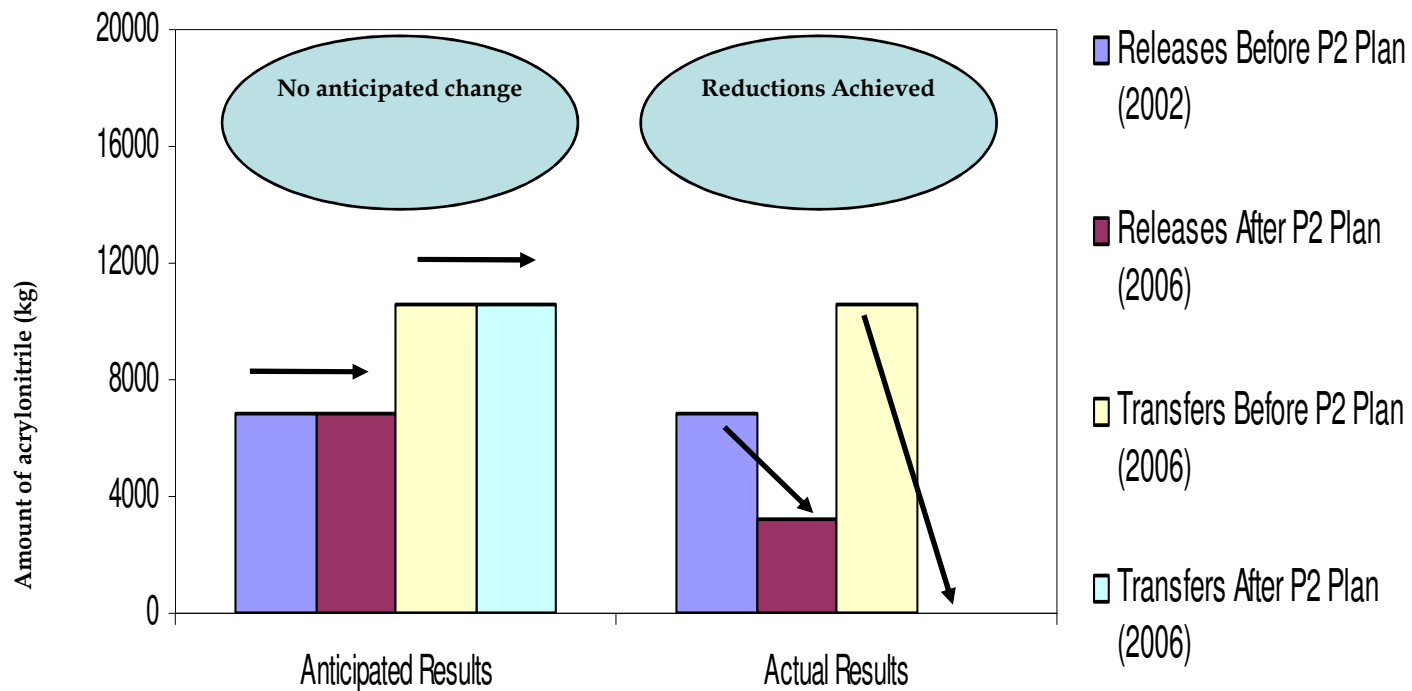
Acrylonitrile - Background

- First P2 Notice published under Part 4 of CEPA 1999
- Targeted manufacturing of synthetic rubber, where the manufacturing process used acrylonitrile and resulted in releases of acrylonitrile
- Risk Management Objective
 - Reduce releases of acrylonitrile to lowest possible levels by December 2005
- One facility subject to the P2 Notice



P2 Actions to Achieve Results

- P2 planning process lead to improvements in production and leak detection resulting in greater reductions than originally anticipated



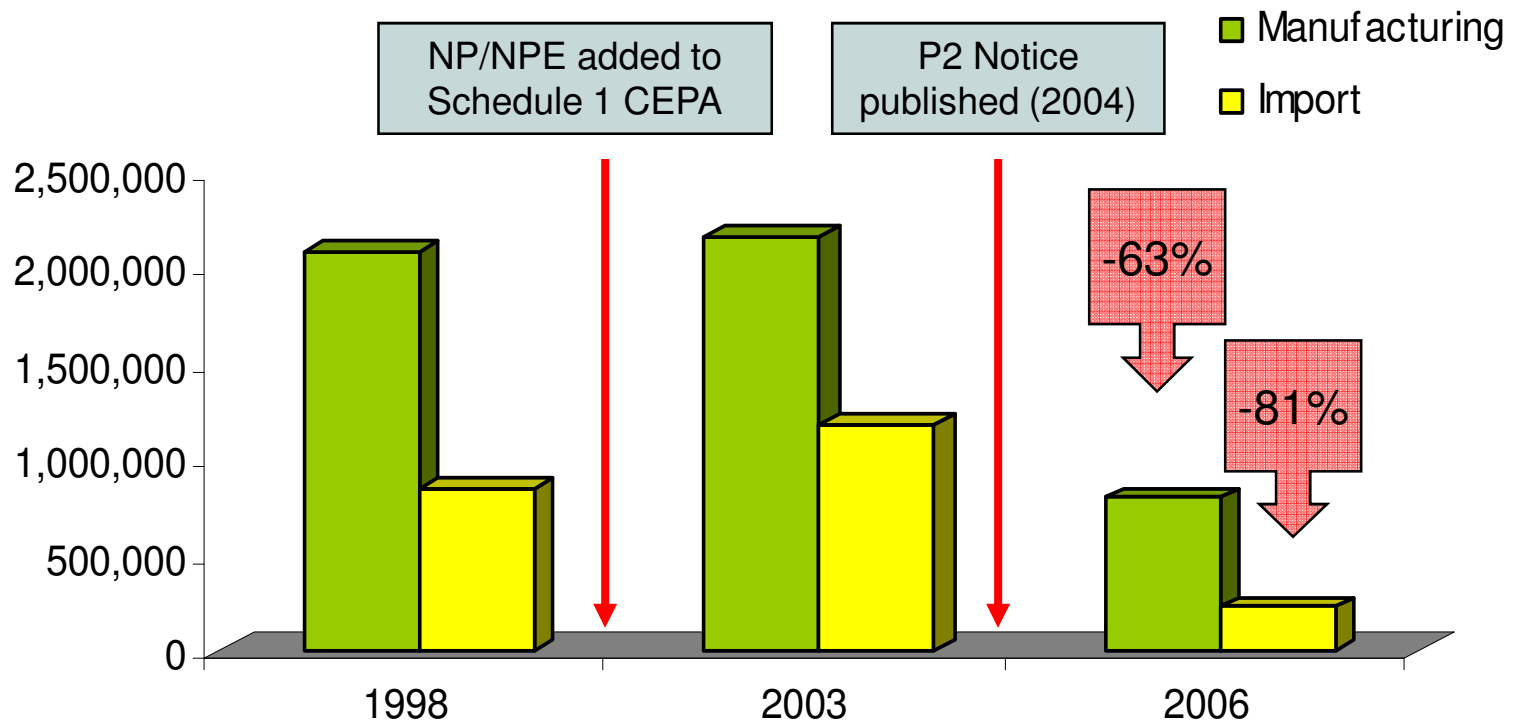
NPE in Products

- Notice was published in 2004 and targets manufacturers and importers of soap and cleaning products
- Risk Management Objective was set in 2 phases
 - Phase 1 set a reduction target of 50% from base year levels (1998) of the total mass of NP/NPEs **used** in the manufacturing of products or imported annually by 2007
 - Phase 2 set a reduction target of 95% from base year levels of the total mass of NP/NPEs **used** in the manufacturing of products or imported annually by 2010
- In total 72 declarations were received (50 from manufacturers and 27 from importers)
- 5 facilities have already fully implemented their P2 plan



NPE - Results to Date

- In 2006, facilities reported annual reductions of 63% of NP/NPEs used in manufacturing of products and 81% imported from base year



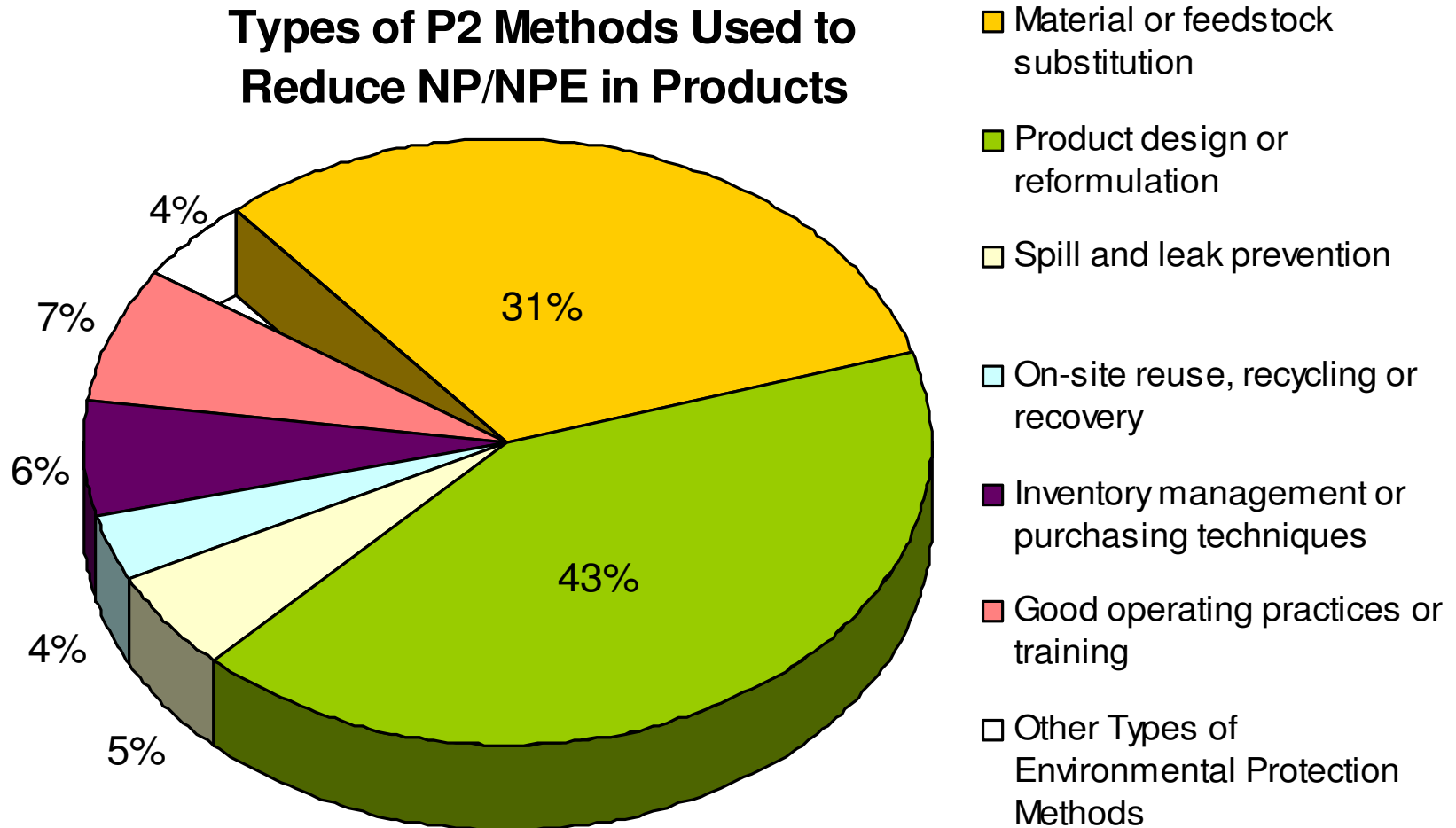
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P2 Used to Achieve Results

Types of P2 Methods Used to Reduce NP/NPE in Products



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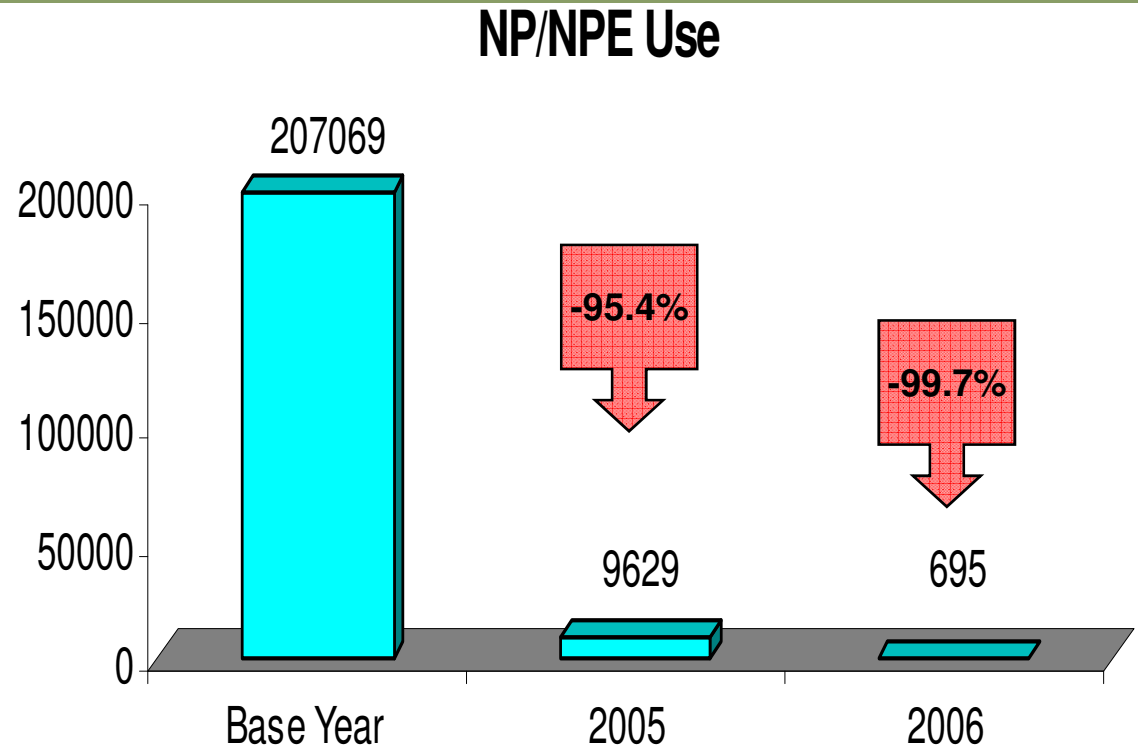
Textile Mill Effluent – Background & Objectives

- Targets wet processing textile mills that discharge effluents to a municipal wastewater treatment system with an average daily effluent discharge greater than 30 m³/day between 1999-2003
- Risk Management Objectives:
 1. Reduce the annual use of NP/NPEs by at least 97% relative to the annual use for 1998 by 2009
 2. Reduce the toxicity of effluent to a maximum acute toxicity of 13 % IC50 (50% inhibiting concentration) by 2009
- Very small enterprises, primarily in Quebec and Ontario
- Extensive compliance promotion activities (e.g. technical resource guide, fact sheets, workshops, site visits)
- 63 facilities have reported being subject to the Notice



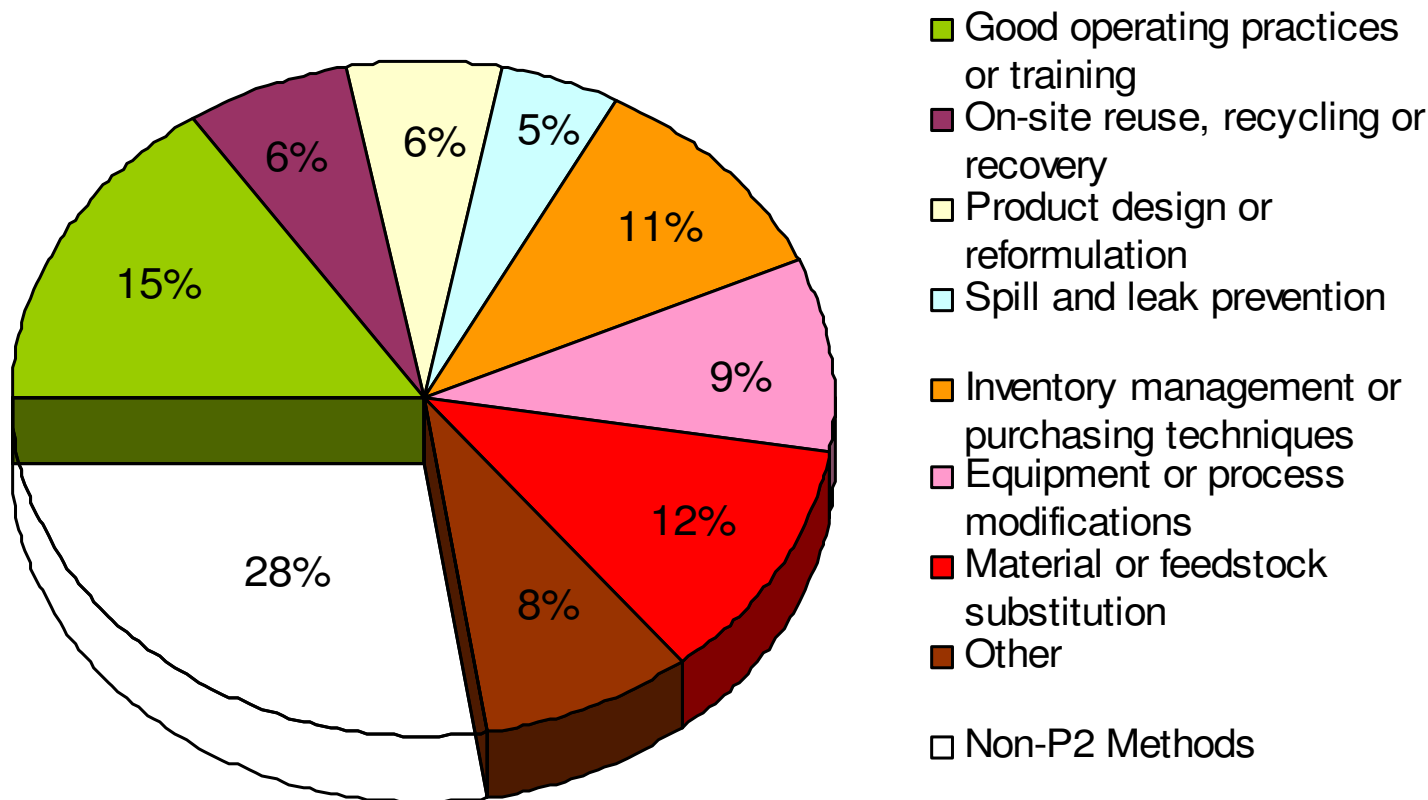
Textile Mill Effluent – Meeting the Objectives Performance Results

- By 2005, facilities reported a 95.4% reduction in NP and NPE
- By 2006 facilities reported using less than 700 kilograms, surpassing the objective with a total reduction of 99.7%



- Although the majority of facilities indicated that they intend to meet the toxicity requirements by 2009, toxicity tests performed in 2006 reveal that only 22% of facilities have

P2 Actions to Achieve Results



In 2006, 72% of the actions reported by facilities were pollution prevention in nature

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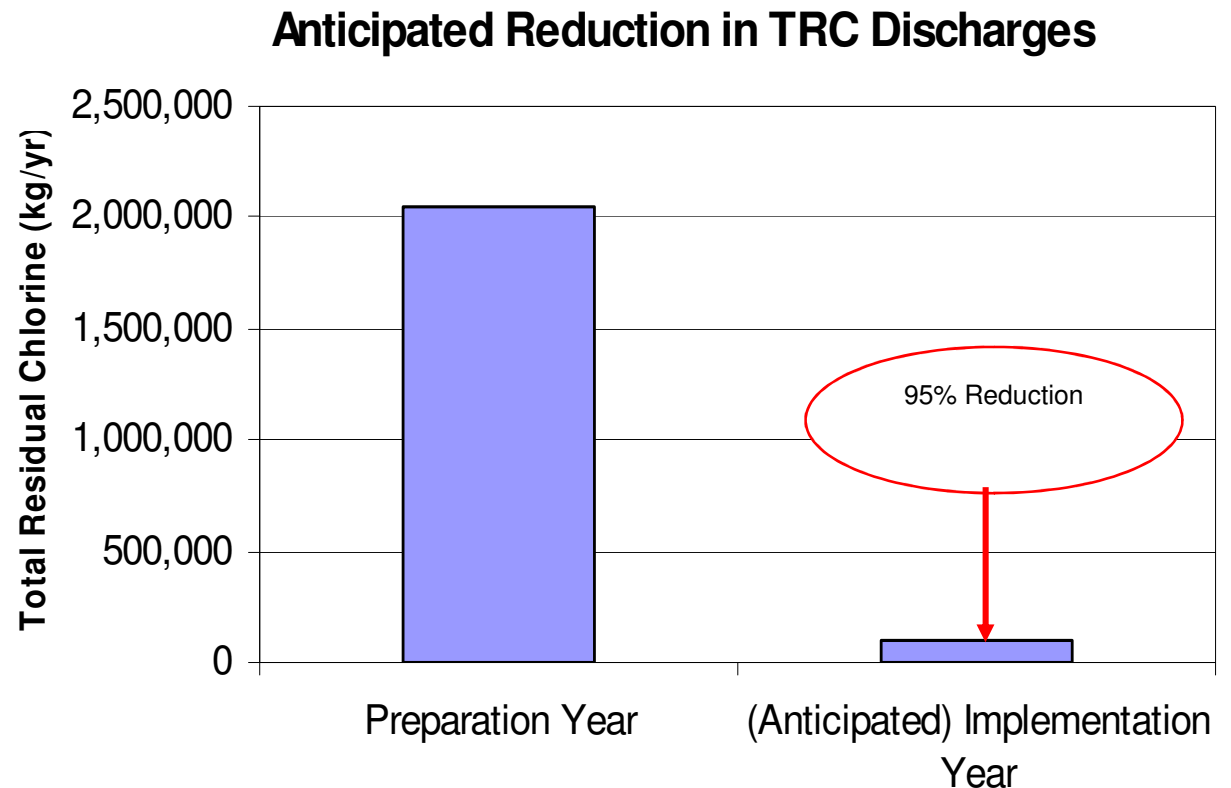
Chlorinated Wastewater - Background

- Targets owners or operators of wastewater systems that in 2004 or 2005, discharged 5000 cubic metres/day with a total residual chlorine concentration of >0.02 mg/l
- Risk Management Objective
 - Reduce total residual chlorine to 0.02 mg/L or lower by December 15, 2009
- 84 owners of wastewater systems (municipalities) in Canada meet the criteria
- 4 have already declared they have fully implemented their P2 plan



Chlorinated Wastewater – Anticipated Results

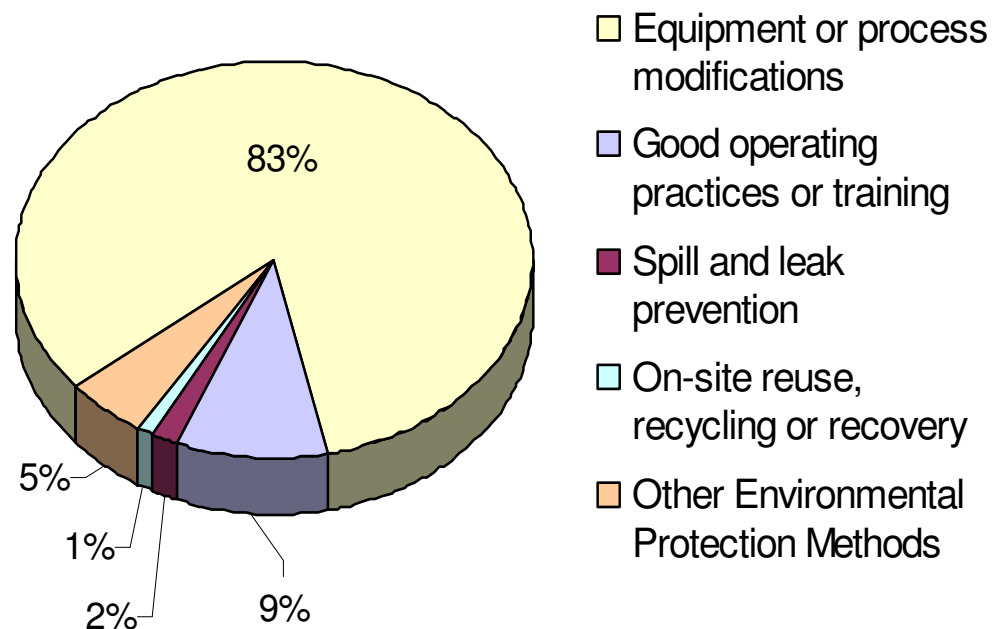
- >2 million kg/year of Total Residual Chlorine was being discharged
- **Once P2 Plans have been implemented (2010), TRC discharges will be reduced by 95% to approximately 97 000 kg/yr**



P2 Actions to Achieve Results

- **83% of the facilities are reporting equipment or process modification**
- Chlorinated compounds are eliminated as alternative processes or equipment are used in place of chlorine
- In some cases actions are going beyond chlorine and also address other toxic substances

Anticipated P2 Methods to Reduce TRC in Wastewater Effluents



General conclusions – P2 Notices are promoting P2 activities

- Even though the P2 Notices do not prescribe how P2ees should meet the targets or objectives, majority have taken P2 actions
- Of the eight P2 Notices >80% of those subject are reporting P2 actions as a means to achieving the Risk Management Objective
- Publishing proposed P2 Notices encouraging early actions
- Are P2ees going beyond the requirements of the P2 Notice and looking for additional opportunities? Some are starting to report beyond compliance information



Lessons Learned

- Determine what information is needed to evaluate effectiveness
 - Establish key indicators
 - Design report with measurement in mind
- Inconsistent reporting (i.e. incomplete declarations, different units)
- Qualitative data – requires more interpretation
- Set the right baseline from which to measure results
- Consistent data collection system for all P2 Notices improves efficiency
- Sharing the results
 - Buy-in for the instrument internally and externally



Additional Information and Contacts

- P2 Planning Website & Database (www.ec.gc.ca/cepap2)
- Canadian Pollution Prevention Information Clearinghouse (www.ec.gc.ca/cppic)
- CEPA Registry (www.ec.gc.ca/ceparegistry)

Lori Fryzuk

lori.fryzuk@ec.gc.ca

Head, Performance Measurement
& Information Programs

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