

RESOURCE CONSERVATION CHALLENGE GRANT REPORT

March 30, 2004

DHWM submits this report associated with project #4 and the mini-assessment portion of project #3 as contained in the Resource Conservation Challenge activities conducted during FFY03 approved by US EPA on July 17, 2003, as described in Ohio EPA's May 29, 2003 proposal and subsequent July 14, 2003, modification.

Project #4 - P2 DURING INSPECTIONS PROJECT

In FFY '03 DHWM will continue providing hazardous waste generators with pollution prevention (P2) suggestions in correspondence provided to the generator that documents the results of a compliance evaluation inspection. DHWM will continue to accumulate and categorize these P2 suggestions which are made available electronically to all DHWM inspection staff.

I. Executive Summary

DHWM completed this measurement project as part of a Resource Conservation Challenge grant to determine whether outcomes of DHWM's P2 integration efforts can be effectively and efficiently measured. We designed it based on a pilot project completed by DHWM-SWDO in 2000/2001 to evaluate current P2 integration activities and measurements in the context of compliance evaluation inspections (CEIs). DHWM surveyed thirty (30) facilities by telephone (or in person) at least six weeks after CEIs had been performed. To reduce bias, DHWM developed a standardized phone survey and a procedure to contact facility representatives. The questionnaire was designed to determine the following:

- A. if the CEI prompted P2 discussions at the facility;
- B. what about the CEI prompted the discussion;
- C. if P2 projects had been implemented as a result of the CEI;
- D. how much waste had been reduced from the P2 activity;
- E. how much money was saved; and
- F. if there are any barriers preventing P2 activities .

Basic finding - - We made a positive impact by prompting P2 discussions and activities at the facilities we inspected. Specific data on cost savings and actual waste volumes reduced will be rare; the Division can still show progress by tracking numbers of facilities which have implemented or are discussing P2 activities. We are more likely to have an impact at companies where we've identified violations.

II. **Background Information**

SWDO-DHWM's P2 Assessment Team (P2A Team) developed and implemented a measurement pilot in 2000/2001 to determine whether outcomes of DHWM's P2 integration efforts can be effectively and efficiently measured. They recommended that Division implement a measurement activity based on the pilot project state-wide. This data collection effort was our first attempt to do that.

III. **Summary of Project Logistics**

A. **Metrics collected:**

1. The number of facilities where P2 activities have occurred since the inspection and have resulted in actual waste minimization.
2. The amount of pollution prevented as a result of an inspection.
3. The actual cost savings as a result of an inspection.
4. Whether any P2 related discussions or activities were prompted by our inspection and what specific activities during the inspection prompted the discussions or activities.
5. Whether barriers exist that hinder P2 activities at the facility.

B. **Who collected the metrics** - Inspectors were responsible for collecting the metrics

C. **How the metrics were collected** - The metrics were collected via telephone calls to representatives of facilities that had been inspected between July 15 and September 30, 2003. Some of the inspectors collected the survey information during a follow-up inspection. Calls were made to the same person who represented the facility during the inspection. A "survey" was developed to aid the caller and to ensure that metrics were collected thoroughly and consistently. The survey can be found as *Attachment 1*. To ease data analysis efforts, the inspectors entered the results of the surveys using the Survey Monkey Web site. Data was then exported in the form of a spreadsheet.

D. **Selection of target facilities** - An initial list was developed which included all facilities in the RCRAInfo LQG or SQG universes that had received an inspection between July 15 and September 30, 2003 (approximately 63 facilities). The list was reduced to thirty (30) based on a variety of factors (notified as SQG or LQG, but generating at CESQG level; in LQG universe, but a commercial TSD, LQG exclusively doing remediation etc.)

IV. Presentation of Data

A narrative of the results of the project is offered below.

A. Facility Statistics

1. Thirty (30) facilities were surveyed.
2. Of the 30 facilities, there were twenty-four (24) LQGs, three (3) SQGs, and three (3) TSD facilities.
3. Six (6) facilities, (20%), were determined to be in full compliance at the time of the inspection, while the remaining were cited with one or more violations.
4. Sixteen (16) facilities were provided written P2 information as part of the inspection process.

B. Metrics

1. The number of facilities where P2 activities have occurred since the inspection and have resulted in actual waste minimization

Nine (9) of the 30 facilities, or 30%, indicated that P2 activities conducted by the facility since the inspection resulted in actual waste minimization. 25% began recycling fluorescent bulbs, 25% began recycling solvent contaminated rags, another 25% reduced solvent use. The rest reported other activities. See Metric 4 for additional information.
2. The amount of pollution prevented as a result of an inspection.

One facility reported recycling 3.8 million pounds of waste into a saleable product. Another reported a 70% reduction in hazardous waste solvent use. Another reported reducing its water usage by 40%. Yet another reported recycling 270 bulbs that were previously disposed of as a solid waste.
3. The actual cost savings as a result of an inspection.

None of the facilities could quantify cost savings, although three knew they had saved money.
4. Were any P2 related discussions or activities prompted by our inspection?

- a. Twenty (20) of the 30 facilities, or 66%, responded that some P2 related activity or discussion occurred as a result of our inspection¹.
- Fourteen (14) of those said that the inspector's general P2 dialogue/discussions prompted the P2 related discussions or activities.
 - Three (3) reported that the information provided during the inspection prompted the P2 related discussions or activities.
 - Three (3) reported that a specific P2 opportunity discussed during the inspection prompted the P2 related discussions or activities.
 - Only one (1) reported that a P2 opportunity discussed in a letter had an effect.
 - Five (5) identified other reasons - - Three (3) had been discussing P2 before the inspection and the inspection brought the discussion further and two (2) said compliance issues identified during the inspection prompted the discussion.
- b. Of the ten (10) who responded negatively, three (3) were TSDs, six (6) were LQGs and one (1) was an SQG; this group felt they had P2 issues under control before the CEI, so our inspection did not prompt them to do additional P2 activities. Three (3) of the 10, or 30% were non-violators. Only 12.5% of the facilities that answered this question affirmatively were non-violators.

5. What barriers exist that hinder P2 activities at the facility?

Ten (10) of the 30 facilities contacted reported barriers that hinder P2 activities. The most common barriers cited were lack of time and money, Other barriers cited included unavailable technology and lack of management support. Only one facility cited the fact that they felt they had already exhausted all P2 opportunities as a barrier.

¹This question allowed the respondent to choose more than one reason, so the responses will not necessarily add up to 20.

V. Data Interpretation

Data collected from surveys will vary in its usefulness. While every effort was made to standardize the approach in collecting information, results may be skewed for reasons which deserve mention.

Inspectors have unique approaches to interacting with facilities. Even with a prepared survey and established programmatic expectations, the manner in which P2 questions are asked, and answers recorded, can impact the way in which information is gathered. Furthermore, the attitude and job responsibilities of the facility contact can greatly influence the variability and accuracy of waste reduction information gathered. For example, a company representative which had waste management responsibilities in addition to other duties may have a different perspective than a company representative whose sole duties involve regulatory compliance affairs.

Companies often do not accurately track cost saving associated with reducing waste, nor the volumes of waste which are actually reduced. This limits DHWM's ability to compile viable, accurate numbers from which progress can be easily measured.

Project #3 - P2 ASSESSMENTS

. . . In FFY '03, DHWM will also conduct at least two (2) facility mini-assessments that focus on waste minimization and energy conservation. The mini-assessments will be documented in written correspondence provided to the facility requesting the assessment.

I. Executive Summary

DHWM agreed to complete this measurement project for the two mini-assessments as part of a Resource Conservation Challenge grant using the same survey tool used to measure the effectiveness of the P2 During Inspections Project discussed above.

II. Results

Two mini P2 assessments were completed at the time of the inspection. Inspections of these LQGs were completed in January and April of 2003. Follow up on the P2 discussions and P2 activities implemented resulting from dialogue during the inspection were the focus of this survey completed in March 2004.

During the inspection current P2 activities of the facility were discussed.

Current P2 activities at these facilities are:

They donate unsaleable products (leaked on hand soap containers) to nonprofit

charities on a weekly basis. Shrink wrapping each box on a pallet reduces product spoilage by leaking packaging so one box leaking does not ruin the whole pallet. They replace mercury thermometers with non-mercury thermometers when they are no longer usable. They launder spent rags for re-use.

They filter spent solvent and re-circulate it until it is no longer usable. They launder spent rags for re-use. Wood-waste is re-ground and used for animal bedding. Spray guns have a sensor eye on them on the automated line, so they spray only when piece of wood is on the line. The facility has been talking with their coating supplier to find a re-use for spent solvent/coating mix.

Both facilities expressed interest in specific P2 ideas discussed by the inspector. Both facilities had P2 opportunities identified by the inspector.

The following P2 opportunities were identified:

P2 mini assessment # 1:

Installation of a sensor eye on the production unit that fills bottles of soap, currently it operates without a bottle beneath the machine release.

Discussed P2 opportunities for their laboratory and provided web link to U.S. EPA Environmental Management Guide for Small Laboratories.

Discussed finding other alternative uses for off-spec products.

Discussed inventory controls for out of date fragrances and other products and the Ohio Materials Exchange, a free waste exchange service.

Energy conservation program services were identified for an energy audit.

P2 mini assessment #2:

Purchase of a gun washer to clean spray guns, instead of the current practice of cleaning the guns manually over a bucket/drum.

Evaluate purchase of "solvent saver" to clean hoses for the stain, using a mix of air/solvent to clean hoses reducing solvent usage.

Evaluate solvent distillation on-site or off-site for spent solvent used to clean hoses and spray guns.

Evaluation of implementing a spray gun operator training program to increase transfer efficiency of coatings applied so they waste less coating.

Evaluate recycling of non-haz coating solids from water-wash booth filters centrifuge system.

Evaluate purchase of lighting covers in spray booths for easy peel-off/clean up instead of using solvents.

Evaluate using the Ohio Materials Exchange for unused products like Poly-D-Tac for water wash filters that expired due to change in product usage and the supplier would not take it back.

Energy conservation program services were identified for an energy audit.

One facility expressed interest in receiving additional P2 information following the inspection.

The following information was provided to the facilities following the inspection:

A summary of the P2 discussion and P2 opportunities identified during the inspection were provided in the letter to the facility. Web links to resources for P2 opportunities discussed were included in the letter.

A separate letter identifying P2 opportunities identified during the inspection was sent to one facility following the inspection. Web sites with vendor information were provided. Hard copies of case studies where similar P2 opportunities were identified at similar facilities and were successfully implemented were provided. A fact sheet on solvent distillation and a copy of the P2 assessment report completed for Mills Pride in Waverly, Ohio, a similar facility, also owned by the same parent company were sent.

Neither facility was interested in a P2 assessment since a “mini-assessment” was completed.

Violations identified during the inspection:

One violation was identified during the inspection. One drum was not labeled with an accumulation date on it. Violation of OAC 3745-52-34 (A)(2).

Both facilities indicated that P2 discussions were prompted at the facilities. One facility indicated that it reminded the facility to reduce waste. The other facility said that they re-evaluated their processes.

The facility representatives indicated that the following prompted discussions or activities:

Inspector’s general P2 dialogue/discussion (both)

Information provided during or after the inspection (both)
Specific P2 opportunity discussed during the inspection (one)
P2 opportunity discussed in letter (one)

Both facilities indicated that activities conducted by the facility since the inspection resulted in actual waste minimization.

P2 activities implemented since the inspections were:

One facility contacted Ohio EPA approximately eight months after the inspection for clarification on the recycling exemption regarding their alcohol waste stream. The facility is now sending their alcohol waste stream off-site for distillation instead of to a TSD facility as a hazardous waste. They are also now recycling plastic and cardboard.

One facility evaluated and modified their water-wash filter treatment from the spray booths. During the inspection, this waste went off site for solidification before land filling. The new process skims, centrifuges and collects the solids that are now a dry cake and can go directly to the landfill with no treatment required. The water is re-used in the filter system again. They are also discussing and evaluating the purchase of an on-site distillation unit or sending the spent solvent off for distillation and re-use.

Cost savings of P2 implemented:

One facility reported a savings of \$75,000 - \$100,000/year for alcohol recycling. The other facility indicated they would not be able to calculate the savings until next year after they collect that data.

Both facilities reported no barriers to implementing P2.

Both facilities indicate an interest in receiving any applicable P2 information. One facility appreciated Ohio EPA's assistance on clarification of the recycling exemption.

1. EPA ID#

2. Date of Inspection.

3. Date of phone call.

4. Describe the nature and extent of the P2 dialogue that occurred during the inspection.

5. Did the facility representative express any specific P2 ideas or interests during the inspection?

Yes

No

6. If Yes to question #5, please describe the specific P2 ideas or interests expressed by the facility representative.

7. Did you identify any specific P2 opportunities (or potential opportunities) for this facility?

Yes

No

8. If Yes to question #7, please describe the P2 opportunities (or potential opportunities) you identified.



9. Did the facility representative express an interest in receiving additional P2 information during the inspection or any follow-up activities?

- Yes
- No

10. If Yes to #9, please describe the type of information the facility representative wanted.



11. Did you give the facility representative any additional P2 information (brochures, web addresses, articles, etc.) during the inspection or any follow-up activities?

- Yes
- No

12. If Yes to #11, please describe the information you gave to the facility representative.



13. Did the facility representative express an interest in a P2 Assessment?

- Yes
- No

14. List any violations that were cited during the inspection, the current compliance status of each and describe any other compliance issues that may impact the discussion. If no violations were cited, please leave blank.



15. Did your inspection prompt any P2-related discussions at the facility?

- Yes
- No

16. If Yes to #15, please describe the P2-related discussions that your inspection prompted.



17. What does the facility representative say prompted the discussions or activities?

- Inspector's general P2 dialogue/discussion
- Information provided during or after inspection
- Specific P2 opportunity discussed during inspection
- P2 opportunity discussed in letter
- Other (please specify) _____

18. Have any activities conducted by the facility since the inspection resulted in actual waste minimization?

- Yes
- No

19. If Yes to #18, please describe the activities. Include the amount of waste minimized for each activity, but only if actual amounts are known.



20. Have any of the activities in question #19 resulted in cost savings?

- Yes

No

21. If Yes to #20, please describe the activities. Include the associated cost saving, but only if actual amounts are known.

22. Are you aware of any barriers that are hindering P2 activities?

Yes

No

23. If Yes to #22, please describe the barriers.

24. Does the facility need additional P2-related information or assistance?

Yes

No

25. If Yes to # 24, please describe what type of information or assistance is needed.

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