

Selected Polluting Prevention Resources

Environmental Accounting Resources

The **U.S. Environmental Protection Agency** makes available a wealth of information on environmental accounting through the **Pollution Prevention Information Clearinghouse** (PPIC). Contact PPIC at (202) 260-1023, Fax (202) 260-4659, or e-mail PPIC@epamail.epa.gov and request their list of documents available. This should be your first stop in obtaining additional information on environmental accounting.

www.epa.gov/opptintr/p2home

The EPA also sponsors a number of projects through the **Environmental Accounting Project** managed by Susan McLaughlin at EPA (202) 260-3844, e-mail: mclaughlin.susan@epamail.epa.gov. They publish periodic updates on EPA's activities in this area, links to various resources, and maintain a Network Directory of professionals interested in environmental accounting.

www.epa.gov/opptintr/acctg

There are a number of commercially available software systems and tools to support environmental accounting:

- The **EPA's Office of Pollution Prevention and Toxics** published two reviews: *Incorporating Environmental Costs and Considerations into Decision-Making* EPA742-R-95-006, February 1996 and *Valuing Potential Liabilities for Managerial Decision-Making: A Review of Available Techniques* EPA742-R-96-003, December 1996, both available through the PPIC or NTIS (National Technical Information Service) (800) 553-NTIS.

<http://www.fedworld.gov/ntis/index.html>

- The **Organization Resources Counselors, Inc.** sponsored the development of a software tool to analyze the health and safety investments. Called Return on Health and Safety Investments

(ROHSI), it is currently being marketed by Arthur Anderson.

<http://www.orc-sac.com/offices.html>

- The **EPA's Design for the Environment Program** and the Office of Polluting Prevention sponsored a software system to guide users in the data collection and analysis of pollution prevention projects using a Total Cost Assessment approach. Called P2/FINANCE, it can be obtained through the Pollution Prevention Information Clearinghouse. There are a number of industry specific spreadsheets available

<http://www.epa.gov/dfe>

- The American Institute of Chemical Engineers' **Center for Waste Reduction Technologies** is currently sponsoring a project to develop a Total Cost Accounting software program. The tool is expected to be completed by July 1999.

<http://www.aiche.org/docs/cwrt/projects/account.htm>

The **Institute of Management Accountants**, Montvale, NJ has prepared several documents on activity-based costing, including, Practices and Techniques: Implementing Corporate Environmental Strategies" and "Measuring Corporate Environmental Performance: Best Practices for Costing and Managing an Effective Strategy". Call the Special Orders Department at (800) 638-4427 and request a current list of publications.

<http://www.rutgers.edu/Accounting/raw/ima/ima.htm>

The **Society of Management Accountants of Canada**, Hamilton, Ontario, Canada, has published management accounting practices handbooks, including "Tools and Techniques of Environmental Accounting for Business

Decisions, #40" and "Accounting for the Environment". Call (905) 525-4100.

<http://www.cma-canada.org/english/cma1.html>

The **Canada Institute of Chartered Accountants**, Toronto, Canada, has published relevant research reports and study group reports, including "Environmental Costs and Liabilities: Accounting and Financial Reporting Issues," (1993), and "Environmental Auditing and the Role of the Accounting Profession" (1992). To order call (416) 3322, Fax (416) 204-3416.

<http://www.cica.ca/new/index.htm>

The **American Institute of Certified Public Accountants** (AICPA) and the Financial Accounting Standards Board (FASB) have published accounting standards related to environmental accounting. Much of this work is related to accrual and reporting of environmental liabilities such as AICPA's *Statement of Position on Environmental Remediation Liabilities*. For a current listing call AICPA at (800) 862-4272 and FASB at (203) 847-0700.

<http://www.aicpa.org/>

The **United Nations** has prepared a guide to literature on corporate environmental accounting called "Environmental Accounting: Current Issues, Abstracts and Bibliographies." United Nations publication

No. E.92.11.A.23. Call the United Nations Publications Sales Section (212) 963-8302.

<http://www.un.org/>

The **World Business Council for Sustainable Development** has a 1994 publication, *Internalizing Environmental Costs to Promote Eco-Efficiency*, in which a chapter is devoted to Accounting for Environmental Costs. Located in Switzerland, the telephone number is: 41 22 839 3100, fax: 41 22 839 3131.

<http://www.wbcsd.org>

The **World Resources Institute** has published a number of studies on environmental metrics (e.g., *Measuring Up - Toward a common Framework for tracking Corporate Environmental Performance*, 1997) and case studies in environmental accounting *Green Ledgers: Case Studies in Corporate Environmental Accounting*, 1995).

<http://www.wri.org/index.html>

The **Tellus Institute** has prepared a number of benchmarking studies on environmental accounting and polluting prevention for the EPA and other organizations (e.g., *Environmental Cost Accounting for Capital Budgeting: A Benchmark Survey of Management Accountants*, 1995, OPP EPA742-R-95-005).

<http://www.tellus.org>

Polluting Prevention Technology Resources

Books, Journals, Magazines, and Newsletters – There are scores of books on subjects related to pollution prevention. I recommend that you conduct a Internet search using **Amazon** and select the most current ones related to your industry. This should get you started on the fundamentals. The problem is that the technology moves so fast and the issues are so industry specific, you will need to network and access information within your specific industry or within other industries with similar process operations.

<http://www.amazon.com>

More up to date information can be found in the environmental magazines such as the *EM* of the **Air & Waste Management Association** or in newsletters such as *Environmental Health & Safety Management*. Journals are another source of in-depth information and contact sources. *Corporate Environmental Strategy* and *Environmental Quality Management* occasionally have articles on pollution prevention. *Pollution Prevention Review* specializes in P2 issues. EPA also has a number of industry specific guidelines to P2 and these can be identified and ordered on the Web. The EPA's **EnviroSense** program contains useful industry specific information.

<http://www.epa.gov/ttnrmrl/Guides.htm>
<http://es.epa.gov/>

Trade Associations and Professional Organizations -- You first stop for current technologies should be you industry's trade associations and professional organizations. Both regional and national organizations should be researched. There are far too many to list here and I recommend you start with their Web pages. A good starting point is the American Institute for Polluting Prevention (see below). Once contacts are established, contact companies directly to network among members directly.

Roundtables, Centers, Institutes -- There are a number of organizations that support P2 networking. The EPA's **Environmental Accounting Network** and the associated **User Discussion Group** are good starting places. The **National Pollution Prevention Roundtable** has the **Vic Young P2 Information Network**
<http://www.epa.gov/opptintr/acctg/directory/index.htm>

<http://yosemite.epa.gov/oppts/acctdisc.nsf>
<http://www.p2.org/index.html>

The **American Institute for Polluting Prevention** is an excellent place to network and contains a directory of trade associations and professional organizations conducting P2 activities.

<http://es.epa.gov/aipp/>

http://es.epa.gov/aipp/p2_dir/Names.htm

Federal and State Agencies -- A number of Federal programs have been listed above. There are a number of state P2 technical assistance programs that offer help and may even make available money for innovative projects. Contact your state agency.

Consultants - Probably every large EHS consulting in the world will *claim* that they can help you on your pollution prevention program. A word of caution. Contract with only those with a proven track record:

- In your specific industry if you are planning to re-design a **process**; or
- Experience in a number of similar industries if you are setting up an **overall program**.

In addition, make sure that the individuals who will actually do the work have the needed expertise -- *not just the company*. Remember you are hiring individuals not a brand name.

One of the country's leading experts in pollution prevention programs and activity based accounting is Bob Pojasek. His Approach to Pollution Prevention Planning is contained in Figure 1. Source: Robert B. Pojasek, Ph.D., President, Pojasek & Associates, PO Box 1333, East Arlington, Massachusetts 02174-0021, Voice: 781-641-2422, e-mail: rpojasek@sprynet.com

Richard MacLean is the President of Competitive Environment Inc., an environmental, health and safety (EHS) consulting firm established in 1995. He has held executive EHS positions in several Fortune 500 corporations. When he was the Manager of Environmental Protection at General Electric's corporate headquarters in Fairfield, Connecticut he developed one of the first full cost models to support P2, *Financial Analysis of Waste Management Alternatives*.

More recently he has lead a number of innovative projects on environmental accounting, pollution prevention, and accrual and disclosure issues related to corporate due diligence. His specialty is reengineering EHS organizations to optimize resources and programs. He develops business cases to demonstrate to executive management the advantages and value added from EHS competitive strategies and programs.

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1. Use Process Maps to Understand the Process

- Look at Production/Product Mix and Select Mapping Targets
- Map Target Process Including Intermittent and Ancillary Processes
- Identify the Materials Used and Lost
- Document the Functionality of the Process
- Characterize P2 Accomplishments for Past 3 Years
- Computerize Process Maps and Verify With Plant Personnel in an Iterative Manner

2. Select Target Chemicals or Process Operations to Focus On

- Determine Basis for Pareto Analysis of the Opportunities
- Select P2 Opportunities for the First Year
- Reach Consensus on the Selection

3. Develop P2 Alternatives

- Determine Root Cause of the Problem in Each Opportunity
- Generate Alternatives to Eliminate Problem
- Prioritize Alternatives
- Examine the Impediments to Implementation
- Conduct Further Evaluation of Selected Alternatives (if necessary)

4. Prepare Implementation Plan

- Action Plans With Goals and Process Tracking
- Detail How P2 Committee Will Track Program During Year
- Provision for Annual Review (Internal and External)

5. Gathering of Additional Information for the Plan

- Statement of Commitment of Company and Facility Management
- Structure of the P2 Program Oversight Committee
- Scope and Objectives of the Planning Effort
- Use of the Waste Management Hierarchy
- Program to Avoid Shifting Pollutants to Other Media
- Use of Best Management Practices
- Considering the True Costs for Implementation
- Provision for Annual Review of the Program

6. Activity-Based Cost Pilot Program

- Select Target Process Component
- Determine Controls and Mechanisms
- Cost the Activities in Each Mechanism
- Link- Spread Sheets to the "As-Is" Process Map
- Repeat Sequence With a "To-Be" Process Map
- Determine the Difference Between the Steps
- Examine Utility to Other Process Components

Source: Robert B. Pojasek, President, Pojasek & Associates, East Arlington, MA

Approach to Pollution Prevention Planning

Figure 1