United States Environmental Protection Agency

National Advisory Council for Environmental Policy and Technology

Fostering Pollution Prevention

and

Incorporating Multi-Media Considerations

into Effluent Guidelines Development

Report and Recommendations of the Effluent Guidelines Task Force

Washington, DC
September 1996

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I. Executive Summary

The Environmental Protection Agency established the Effluent Guidelines Task Force in 1992 as a subcommittee of the National Advisory Council for Environmental Policy and Technology (NACEPT). The Task Force consists of representatives from industry, environmental groups, states, local governments, the academic/scientific community, and EPA regional offices. It was formed to offer recommendations to the Agency on improvements to the Effluent Guidelines Program. EPA's Effluent Guidelines Program, which was created by the 1972 Clean Water Act, develops industrial wastewater regulations for dischargers to surface waters and publicly owned treatment works.

Since 1972, EPA has promulgated effluent guidelines covering hundreds of industries, and is currently developing additional regulations. The Agency is also conducting preliminary studies of industries prior to selecting categories for regulation.

The Task Force has considered a variety of issues pertaining to the manner in which effluent guidelines regulate discharges, as well as the process by which effluent guidelines are developed. Several work groups were formed to examine these issues.

Task Force members have been concerned with the tendency of the guidelines program to focus on end-of-pipe treatment during regulation development. Work Group 8 examined EPA's process for setting discharge limitations and explored opportunities for encouraging pollution prevention practices in conjunction with developing these limitations. This report focuses on two areas:

1. Means by which EPA could better promote [via the Effluent Guideline (EG) process] the development and practice of pollution prevention (P2) technologies and practices.

2. Means by which EPA could best factor other media impacts into the EG development process.

For Issue 1, the Task Force recommends that EPA continue and expand their current practices of:

a. Collecting P2 information at appropriate points in the EG process;
b. Targeting leading P2 companies for site visits;
c. Including all "hard" cost and savings impacts in the economic model for comparison of alternate approaches.

In addition, it is recommended that EPA adopt the following additional practice:

d. Establish an internal protocol for guiding technology choice decisions which gives emphasis to EPA's waste management hierarchy[1] and considers the impact of cross-media transfers.

In developing an approach for Issue 2, the Task Force developed a process that will give industry some flexibility on BAT with respect to compliance date in return for a commitment for reductions of significant releases to air and land, coupled with use of a P2 technology to eventually achieve the BAT limits. The amount of flexibility is constrained to time and concentration maximums which are defined within the EG development document. In developing this model, the Task Force recognized the potential for the same process to also be used in support of Issue 1, in which case a delayed compliance timing could be granted in return for a long-term better-than-BAT performance commitment, and use of a P2 approach.

The value of the proposed process to the environment is the potential for additional long-term release reductions to air, land, and water, and the promotion of P2 technology routes for achieving compliance. The value of the extended time frame to industry is the opportunity it offers for engineering resources to have sufficient time to be able to develop P2 approaches to an issued EG, rather than possibly being forced to implement an end-of-pipe approach in the interest of speed. The tradeoff is a short-term acceptance of greater-than-BAT discharges to water, within predefined limits, which must sunset in a predefined period of time.

This new mechanism for incorporation into the EG process has been dubbed the "Pollution Prevention Option (P2O)", and is described in detail within this report.

The Task Force also captured ideas and recommendations which may be of benefit to promoting P2 and dealing with the multi media issue, but which were determined to be outside the EG development process. These are presented in Appendix I.

II. Background

A. Effluent Guidelines and Best Available Technology

Best Available Technology (BAT) is utilized to set technology-based effluent pollutant limits (effluent guidelines) on direct and indirect dischargers under the Clean Water Act. The EGs are issued as national standards designed to control pollution from specific industry groups (the groupings are set based upon commonality of the industrial processes utilized by the industries). BAT is specific to each industrial group, and is applied regardless of geographic

1. EPA's waste management hierarchy, in order of preference, is: Source Reduction, Recycle/Re-use, Treatment, Disposal, Release.

location. EPA's criteria for BAT considers such factors as best existing performance within industry, age of plants and equipment, impact upon the industries economic viability, etc.

EPA's practice in the EG development process has historically been focused upon minimization of pollution to water. The consideration of impacts to other media has played only a minor role in the development of BAT. In addition, BAT has typically been based upon an end-of-pipe technology. There is nothing in the statute to preclude consideration of P2-based technologies as BAT, but for a variety of reasons, the majority of BAT's have been treatment based.

B. Charter of Work Group 8

The Task Force decided that Work Group 8 would focus on two primary components: promotion of P2 use within industry via the EG process, and the proper mechanism for consideration of multi-media impacts within the EG development process. Consistent with EPA's charge to the entire Task Force, Group 8's efforts were focused primarily upon the development phase of the Effluent Guidelines process, as opposed to those activities which occur as part of the permitting processes which utilize the EGs.

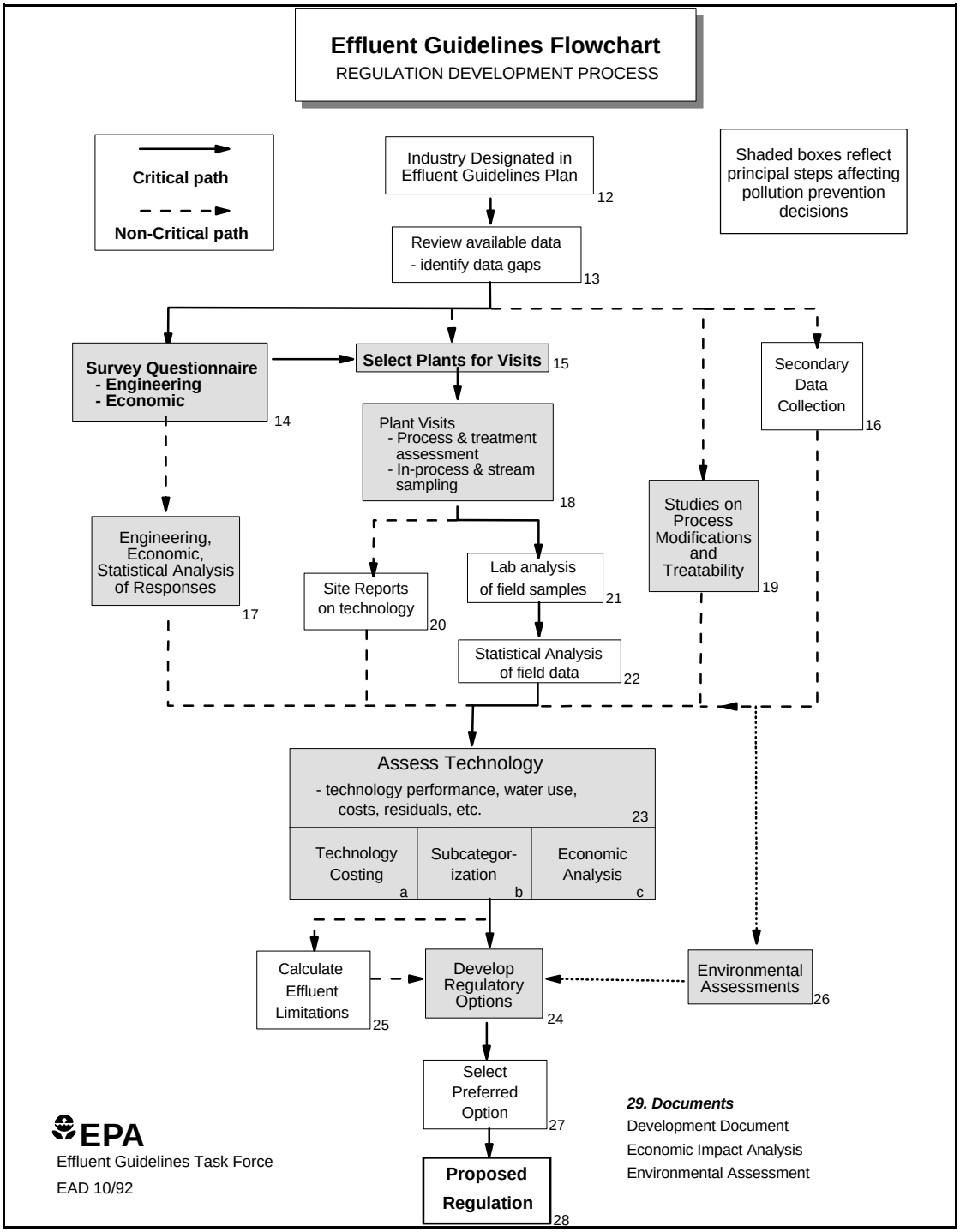
III. Recommendations to Foster Pollution Prevention Technologies

One of the two issues on which Group 8 worked was:

> What incentives can be provided or barriers removed within the effluent guidelines process to better promote industry use of source reduction and recycle / reuse technologies?

The Group 8 members reviewed the current EPA methodology and practices for developing EG's (Figure 1). From this review, the Group 8 members identified practices which EPA has already instigated in various aspects of EG development in order to better identify best P2 technologies and promote their use. The Task Force recommends that these initiatives (below) be continued and expanded upon by EPA.

Figure 1


Effluent Guidelines Flowchart
REGULATION DEVELOPMENT PROCESS
Critical path
Non-Critical path
Industry Designated in Effluent Guidelines Plan
12
Review available data
- identify data gaps
13
Shaded boxes reflect principal steps affecting pollution prevention decisions
Survey Questionnaire
- Engineering
- Economic
14
Select Plants for Visits
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Secondary Data Collection
16
Plant Visits
- Process & treatment assessment
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Studies on Process Modifications and Treatability
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22
Assess Technology
- technology performance, water use, costs, residuals, etc.
23
Technology Costing
a
Subcategor-ization
b
Economic Analysis
c
Calculate Effluent Limitations
25
Develop Regulatory Options
24
Environmental Assessments
26
Select Preferred Option
27
Proposed Regulation
28
29. Documents
Development Document
Economic Impact Analysis
Environmental Assessment
EPA
Effluent Guidelines Task Force
EAD 10/92

The Task Force has also identified additional practices which are recommended to EPA for integration into the EG process to better promote identification and industry use of best P2 technologies. Listed in Appendix I are items identified by the Task Force which would further promote P2, but which must be considered and implemented separately from the EG process.

A. Items Which EPA is Already Doing Within Effluent Guidelines Development to Promote Pollution Prevention, and To Which The Task Force Wishes To Add Support and Emphasis

1. EPA has begun to utilize information from a variety of sources (industry trade groups, etc.) to identify leading companies within an industrial category with respect to P2. **The Task Force suggests this would be enhanced by also targeting the companies which are identified as advanced in their application of P2 technologies and practices for site visits to determine technologies utilized.**

2. EPA is collecting some P2 information at the preliminary data phase of developing guidelines, and has begun to incorporate P2 questions into the main industry questionnaires (e.g. Metal Products & Machinery, Pulp & Paper, Pharmaceuticals). **EPA should consider addition of questions to the shorter screener questionnaires as well, to ascertain the level of P2 practiced by each industry.**

In addition to the steps that EPA has already taken to collect P2 information, more can be done during the early stages of guideline development to identify key sources of P2 information, both in the U.S. and abroad, and to collect and analyze such information.

3. EPA's methodology for economic comparison of BAT alternatives currently takes into account both initial capital and operating/maintenance costs. **This methodology should be expanded to also factor in other "hard" costs and savings associated with potential BAT technologies, such as avoided disposal and transportation fees, energy costs, increased or reduced raw material costs, savings in permit application fees, etc**. Relative economics should be put on a net present value basis for EPA's economic comparisons.

B. Means By Which EPA Could Better Incorporate Pollution Prevention at the Effluent Guidelines Development Stage

Internal protocols should be established by EPA for:

1. guiding decisions within the EG process with respect to the Agency's waste reduction hierarchy (i.e. P2, before recycle, before treatment, etc.)

2. weighing the impact of potential BAT rules with respect to releases of pollutants to other media.

IV. A BAT Definition & Mechanism Which Will Promote Better Solutions For Protection Of The Environment

A. Background/Evolution

1. Concept

Best Available Technology (BAT), as currently defined, is a single effluent target number for a given pollutant in a given industry group. The section 301(k) waiver provision of the Clean Water Act allowed for site-specific innovation variances that could be used to pilot-test prevention techniques. Unfortunately, section 301(k) was not widely utilized and recently expired. Given that the current statute allows only three years for facility compliance with new EG's, many facilities opt for end-of-pipe treatment which offers quick and certain compliance. There is currently no latitude for a discharger to seek a time delay in compliance with BAT for any reason.

Industry has advanced the concept that flexibility on implementation timing should be offered within the EG process where such flexibility would enable the discharger to ultimately install a technology which yields greater overall environmental gains than could be achieved with technology implementable by the BAT compliance date. However, no process had yet been developed as to how to implement such a flexibility which both the industrial and environmental communities could jointly support.

2. NACEPT and IP3 Focus Group Contributions

The Technology Innovation and Economics (TIE) Committee, a standing committee of NACEPT, concluded that major changes are needed in federal and state permitting and

compliance programs to encourage adoption of pollution prevention initiatives[2]. Following extensive review and analysis of current programs and new initiatives, the Committee recommended seven major areas for improvement, including:

a. Redesigning permit procedures to encourage regulated facilities to expand multi-media and pollution prevention environmental improvement efforts.

b. Accelerating development of innovative pollution prevention technologies through special permitting and review procedures for their RD&D and commercialization phases.

c. Developing and expanding pollution prevention enforcement initiatives.

d. Supporting state initiatives in pollution prevention facility planning.

e. Expanding training, educational and technology diffusion efforts for all sectors for pollution prevention.

f. Altering personnel reward systems to encourage EPA staff to champion pollution prevention.

g. Expanding and publicizing the system of national awards honoring outstanding pollution prevention research, training and technology implementation.

The Industrial Pollution Prevention Project (IP3) Focus Group developed a possible regulatory process that would encourage industrial pollution prevention.[3] The Focus Group concluded that, to promote pollution prevention, the current regulatory process must be made more flexible. The Group's recommendation was for EPA to provide industry with a regulatory alternative that is more flexible than the strict requirement to attain a single BAT limit.

The Group's concept was that "industry should be permitted to achieve a level of effluent reduction different from the single BAT limit... provided the facility will implement pollution prevention measures that will substantially reduce total emissions (all media considered) below an EPA-established emissions reduction threshold." The group added that the alternative "must...

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2. U.S. EPA, National Advisory Council for Environmental Policy and Technology, "Transforming Environmental Permitting and Compliance Policies to Promote Pollution Prevention: Removing Barriers and Providing Incentives to Foster Technology, Innovation, Economic Productivity, and Environmental Protection", April 1993, EPA 100-R-93-004.

3. The IP3 Focus Group, a NACEPT subcommittee, was comprised of 23 representatives from industry, labor, environmental groups, academia, and all levels of government. Established in late 1991, the Group functioned for 18 months and made recommendations to EPA on how to promote industrial pollution prevention.

in EPA's (and the state's or POTW's) opinion... be clearly a better environmental choice than simply meeting the single BAT limit. Otherwise, the alternative must not be granted."

The IP3 Focus Group's approach offered creative new thinking for improving long-term environmental results while offering industry some flexibility in meeting regulatory requirements. The group concluded its efforts, however, without reaching complete agreement on some aspects of its recommended approach.[4] Therefore, the IP3 left an opportunity for further refinement of its concept.

B. Development of P2O

1. Group 8 Focus

Group 8 of the EG Task Force addressed the issue of:

What strategy/guidelines should EPA develop/follow when developing Effluent Guidelines in order to manage tradeoffs between--

a. class of releases?
b. media to which release occurs?

The Group 8 members started with the output from the previously cited NACEPT and IP3 Focus Group efforts, considered additional input from the environmental, industry, POTW, and EPA perspectives, and assembled a new proposal which may lead to a superior outcome for both water and the environment by extending additional time to industry for development of pollution prevention routes to CWA compliance.

2. Recasting the "Flexibility" Concept: A Description of the Proposed Model for BAT Alternatives

Overview. The proposed model has been developed to promote and foster development and use of environmentally superior technologies for reduction of environmental releases, while preserving the overall intent of the Clean Water Act of permanent lowering of pollutant loadings to water to a level consistent with the Best Available Technology for a given industry. In the simple single media application of the model, extended compliance timing can be granted in return for use of P2 technologies to achieve BAT to water after the extended compliance period. The model can also be applied in a multimedia context, whereby an industry could be granted extended compliance timing in exchange for reductions of pollutant loadings to air and land. However, in light of the added complexity of the multi-media application, it is the consensus of

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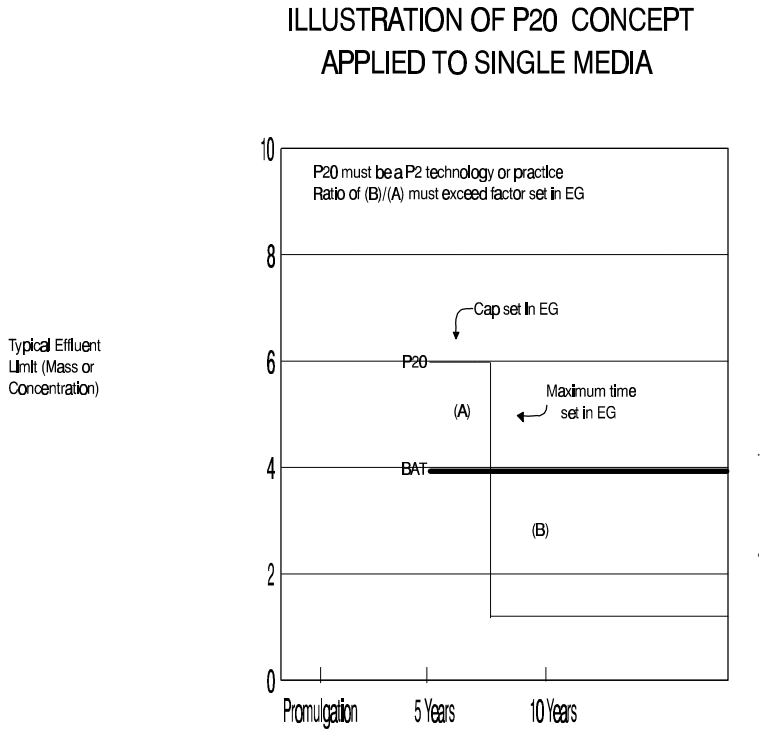
4. U.S. EPA, "How Best to Promote Industrial Pollution Prevention Through the Effluent Guideline Process", Report of the Industrial Pollution Prevention Project (IP3) Focus Group, Feb. 1993.

the Task Force that the single-media application should be implemented/demonstrated before attempting to extend the model to multi-media applications.

The core of the proposed new model is BAT as it is currently defined: best technology for reduction of pollutants to the water medium. The new model, however, allows for a range of alternatives to the BAT which would be made available to industry within pre-described boundaries within the issued EG. Delineation of the acceptable range of alternatives would be done by EPA in conjunction with the development of BAT within the EG process. Boundaries (maximums) and conditions on the solution set would be clearly specified, and would not be subject to deviation within the permitting process.

a. Application to single media (water) only. A shortfall in removal of pollutant(s) to water (as compared to that achievable by BAT) would be allowed for a period of time, provided that industry would commit to implementing a P2-based technology which would yield reductions of the pollutant(s) long-term which were in excess of those achievable by BAT by some factor "x." The factor "x" is preset by EPA as part of the EG/BAT development process. Figure 2 illustrates this application of the model. Appendix II discusses logic for determination of the factor "x". As under current statutory requirements, all permits issued with a P2O approach should provide an affirmative showing that they comply with the applicable ambient water quality criteria.

Figure 2



I. Benefit to the environment - An incentive is provided (via time for compliance) for industry to develop and implement technologies (or combinations of technologies and management practices) which are P2 based, and which exceed the performance level of the BAT.

ii. Benefit to industry - Provides time for research and engineering expertise of industry to be brought to bear on development of more cost effective and environmentally friendly process changes as an alternative to expensive end-of-pipe treatment.

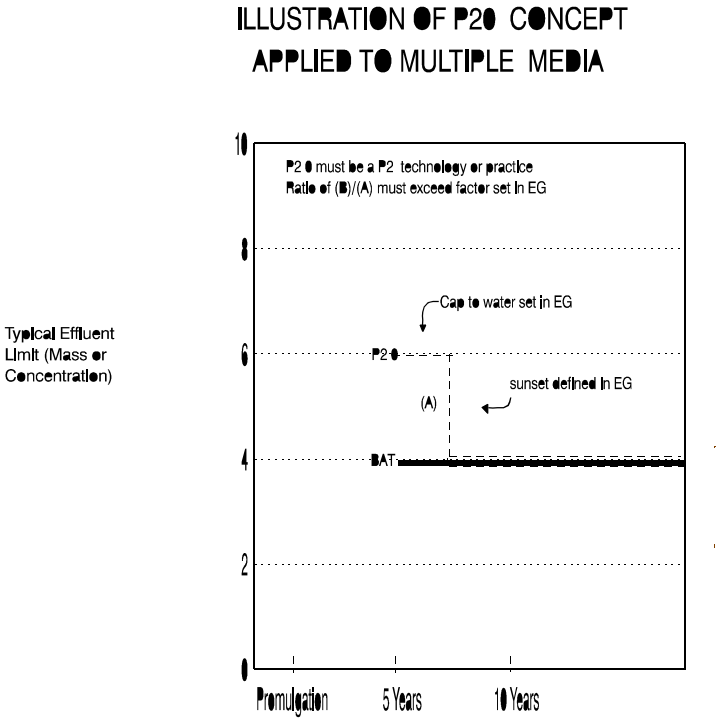
b. Application to multi-media releases. A shortfall in removal of a pollutant(s) to water (as compared to that achievable by BAT would be allowed for a period of time, provided that industry would commit to multimedia reductions of pollutants under the following conditions.

I. Conditions

(1) Any shortfall to water (referenced to BAT) which is allowed in lieu of reductions to other media must sunset after a defined period of time - a period which is defined as part of the EG development process (see Figure 3). Industry, via committed other-media reductions, has opportunity to pursue more cost-effective and longer-term approaches to achieving BAT. In no instance is

violation of in-stream water quality criteria allowed within this alternative approach.

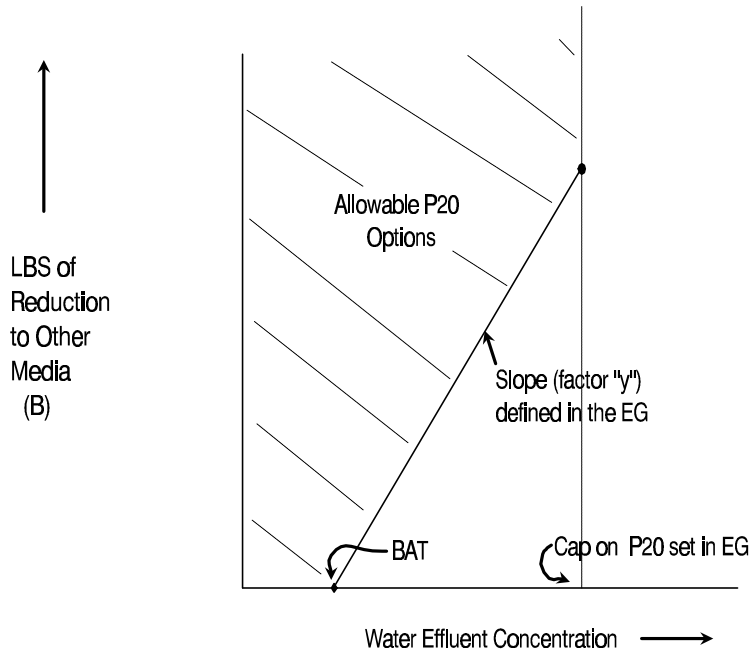
Figure 3



(2) Any shortfall to water (with respect to BAT) is offset by reduced pounds to other media by an amount that is equal to or greater than a predetermined multiple "y" of the increased pounds to water (see Figure 4). This multiple would be set by EPA at the time of EG/BAT development. (See Appendix II.)

Figure 4

ILLUSTRATION OF P20 CONCEPT
CRITERIA FOR PERMISSIBLE
MULTI-MEDIA TRADEOFFS



(3) A maximum (not to be exceeded under any circumstances) value in concert with a permit to water would also be specified (Figure 3 & 4) within the EG development document which would serve to set a boundary on condition (ii) irrespective of the quantity of reductions to other media. Again, at all times, water quality standards will not be exceeded, and, in the case of indirect dischargers, the ability of POTW's to meet permit requirements will not be compromised by the terms of the P2O permit.

(4) An industry applying for a multi-media based alternative to BAT must be willing to agree to revision of applicable air and RCRA permits, including compliance inspections and enforcement provisions in such permits, in order that committed reductions to other media can be assured via building them into air and land permit limits for the facility.

ii. Benefit to the environment. Factors can be set such that significantly greater benefit to the environment can be achieved via reduction of releases to all media which are in excess of those achievable through implementation of BAT to water alone. The adverse impact to water vis-a-vis BAT is constrained to an acceptable level, and it is limited in duration. Long term, BAT standards to water are achieved, while preserving the gains achieved in other media.

iii. Benefit to industry. The ability to undertake projects which achieve reductions of releases to other media as a means to be granted a longer time frame for full compliance with BAT to water will allow for research and engineering expertise to be brought to bear on development of more cost effective and environmentally friendly process changes as an alternative to expensive end-of-pipe treatment.

3. Considerations for Implementation of P2O

The following are items which were identified as implementation issues that will need to be addressed in order for the proposed mechanism to work. These issues would all appear to be resolvable, but will require additional research/discussion/consensus.

a. Initial reaction from EPA's Office of General Counsel (OGC) is that implementation of this concept will require statutory change (e.g., incorporation into the reauthorization of the Clean Water Act.). However, the OGC is continuing to pursue possible avenues for implementation within the current statutes. **If this P2O proposal is found not to be implementable under current statutes, the Task Force recommends that EPA support legislation necessary to implement the P2O recommendations.**

b. Implementation of the process to recognize multimedia reduction is more complex than implementation to recognize benefits solely within the water media. Multimedia tradeoffs must be made based upon consensus as to relative impacts to the different media, and relative impacts of different chemicals. Work in this area has begun (EPA's weighting factors in the Clean Water Act, EPA's pound-equivalent analysis of TRI data, etc.), but the science is young and the data uncertain. The potential for environmental benefits with a multimedia application of this model warrant additional work, but the simpler single-media approach is more likely to win consensus and buy-in from stakeholders in an initial trial.

c. Care must be taken to insure that the process is implemented in a manner that minimizes additional time requirements within the EG development process, and on the part of the permit writer who must administer the system. Additional complexity with this new process is a given--a price for the perceived benefits of improved environmental performance. However, there may also be off-setting time savings resulting from this new process if the availability of additional flexibility to industry can translate into fewer paths to be addressed in the EG development process, and in less litigation after rulemaking from industry and environmental

groups. Notwithstanding these potential benefits and time savings, emphasis should be given at every opportunity within the final design of the implementation plan to err on the side of simplicity.

d. Details regarding enforcement must be addressed. There are two primary issues.

I. How can we ensure enforceability of multimedia tradeoffs, of "sunsetting," and of final discharge levels committed to by industry where the commitment is lower than BAT as a trade-off for having received extended timing. One suggestion has been that the permit writer require progress milestones or checkpoints as part of the delay agreement to give early warning and a chance for correction of commitment shortfalls.

ii. For good-faith efforts which fall short of target, there should be enforcement mechanisms which provide sufficient deterrent against abuse, but which are not so onerous as to discourage industry from the development and deployment of innovative new technologies (which inherently have a higher risk of failure) for pollution prevention. For example, such a mechanism could be financial assurance through letter of credit.

e. Many facilities are currently required by local or state statutes to develop pollution prevention plans. The effort to develop these plans is a likely source of ideas and opportunities for pollution prevention routes to reduction of releases to water and other media. There may be synergy in establishing a link between pollution prevention planning, and the availability of the P2O option to a facility. This linkage would serve as a means to secure the time necessary to implement P2 ideas and opportunities identified in the P2 planning process which the facility might be precluded from pursuing if compliance deadlines could not be extended.

f. The length of the compliance time extension to be granted to a facility as part of the P2O option should reflect the time necessary for the facility to generate, develop, and implement P2 alternative technologies. The time requirements for this will vary with complexity of the industry processes, and different EG's may well have different maximum time limit caps. Discussions within Group 8 have focused on extensions varying in length from 3 to 10 years, with 5 to 7 years emerging as a favored range. Shorter than 5 years is not perceived to allow sufficient time for development of P2 technology options since most are custom fits--as opposed to off-the-shelf, end-of-pipe options. (It was noted in the Group's discussions that the 3-year time frame available under the now-defunct 301(k) waiver provision was often cited as too short to generate interest within industry for utilizing the waiver.) On the other hand, a ten year extension seems uncomfortably long for achieving the intended reduction to water, regardless of other benefits gained.

g. The implementation plan will need to address the special issues regarding administration of this program via POTW's (e.g., how do POTW's work with other regulatory agencies to lock in other media reductions in the multi-media scenario, etc.)

h. EPA may need to provide some "incentives" to permit writers and POTW's to enhance their desire to administer this mechanism (rather than taking the easy approach of falling back onto BAT.) Local/state/national recognition for P2 contributions under this program may be a means to assist this.

I. The additional training for permit writers for proper administration of this mechanism will be an important part of the implementation plan.

Appendices

I. Recommendations For Fostering Pollution Prevention Which Can Be Implemented Outside the Effluent Guidelines Development Process

A. Means by Which EPA can Promote P2 Through Assistance and Technology Transfer to Industry and POTW's.

1. Technical assistance for source reduction audits (both for POTW's and for industry) as well as a clearing house of P2 information (e.g. alternate technologies, alternate products, cost-benefit analysis techniques, case studies library, etc.)

2. Financial assistance in the form of insurance underwriting and capital cost underwriting for smaller facilities in order to provide incentives to upgrade processes and equipment.

3. Assistance in accounting practices which enable industries to better track and allocate the cost of pollution prevention and control, and to better quantify the benefits of pollution prevention technologies.

4. Better communication with POTW's to provide them with access to information regarding P2 technologies and practices which they can then share with facilities discharging to them. Activities to improve information flow and understanding might include use of government trade and professional associations to disseminate information and reduce the perception of risk to facilities who need to phase-in process modifications; inter-agency personnel agreements for rotation of personnel, peer matches, or loaned personnel for short durations; more collaboration on projects; modifying accountability structures; modifying conditions for base grants to states.

5. TRI information regarding discharges to POTW's should be directly reported to the POTW for use in the POTW's P2 planning and strategy.

EPA Actions

EAD has considered a variety of techniques for "environmental accounting" in its effluent guideline analyses. Where appropriate, EAD is incorporating these techniques into compliance cost estimation and into financial impact estimation. For example, the economic analysis for the proposed Pulp & Paper Cluster Rules used some of these techniques to identify and account for the cost savings from pollution prevention. In addition, the analysis supporting the proposed Industrial Laundries rule includes a life-cycle analysis of pollution control costs. The Office of Pollution Prevention and Toxics has sponsored most of the Agency's work in the area of environmental accounting. OPPTS has

already provided a substantial amount of assistance to the regulated community; much of it is available on the OPPTS website (www.epa.gov/opptintr/acctg/). Background papers, software packages, and an "Environmental Accounting Network" are some of the features of this assistance to promote pollution prevention.

B. Options for Promoting P2 at the Permit Issuance Stage

1. Consider use of longer permit terms and/or alternative fee structures (where applicable) as an incentive for adoption of P2 approaches to meeting EG limits. Possible approaches might include fee adjustment based upon degree of P2 utilized in a facility program, setting of fees based upon mass loadings above a threshold, etc. The latter would serve as a continuous incentive to minimization of discharges to POTW's.

2. Decreased monitoring requirements might be offered as an incentive for those technologies/practices which would drop discharges significantly below EG limits (provided the company maintains a blemish-free record with respect to discharge compliance).

3. Consider use of multi-media permits for facilities. This should receive priority within EPA due to the potential benefit it might offer from the standpoint of integration of reduction plans that span all media, and may therefore depend more heavily upon P2 (elimination, substitution, minimization) than upon treatment. A mechanism (possibly including financial assistance) would need to be provided by which POTW's could participate in setting/enforcing multimedia reduction options.

EPA Actions

The Permits Workgroup of the EPA Iron and Steel Sector CSI has been working over the past two years developing and producing a "conceptual" multi-media permit for a steel mini-mill facility based on pollution prevention planning. The workgroup endorses the concept of a multi-media pollution prevention permit and has identified a number of opportunities and barriers that may influence further implementation of this approach. The workgroup believes that EPA needs to be given the authority to implement pilot programs for multi-media permitting based on pollution prevention in a stakeholder process.

The goal of the project is to create a multi-media permit that includes the following:

- *integrate and simplify permit requirements for all media;*
- *incorporate pollution prevention planning;*
- *reduce paperwork and administrative burdens for both industry and regulatory agencies;*
- *reduce pollution and cost savings for facilities;*
- *identify releases from facilities that are harmful to human health and the environment;*
- *increase employee and public understanding of a facility's operations and environmental regulatory requirements;*

- *minimize cross-media pollutant transfers; and*
- *assess pollutant trading.*

EAD supports the goals of the permit workgroup for a multi-media permit and will work with the members and look for opportunities for a multi-media permit.

Source: U.S. EPA Common Sense Initiative
Iron & Steel Sector - Permits Workgroup
Issues Summary and Recommendations on the Multi-Media Permit Project,
February 26, 1997.

C. Options for Promoting P2 at the Enforcement Action Stage

1. Allow an extension of time for a facility to come into compliance with an enforcement action if the use of P2-based technologies will take the discharge to a point clearly below that specified by the EG.

2. Allow the use of P2O options as acceptable methods to decrease discharges of pollutants during negotiations and settlements of enforcement actions. This approach may result in lower forfeitures for the facility on the enforcement action, increased use of P2 technologies, and an overall decrease in discharges from the facility for specific substances (not necessarily limited to substances covered by the Effluent Guideline).

D. Other Mechanisms for Promoting P2 Which Can Be Coordinated/Fostered by the POTW's.

(Note: The following recommendations are excerpts from "A Survey of Sewerage Districts on Pollution Prevention Activities", a report by the Milwaukee Metropolitan Sewerage District in cooperation with the Association of Metropolitan Sewerage Agencies [AMSA]).

1. Encourage cooperative efforts with other municipal, regional and State agencies.

2. Develop consistent, meaningful, effectiveness indicators for pollution prevention activities at POTW's.

3. Increase awareness among POTW's of the variety of education and technical assistance materials currently available.

4. Include a specific POTW component in the Pollution Prevention Clearinghouse, publicize it and ensure that POTW's have the capability to access and effectively use the system.

5. Focus efforts on smaller POTW's with limited capabilities to initiate or expand pollution prevention activities on their own; and

6. Develop a variety of staged approaches to implementing a POTW pollution prevention program.

II. Protocol For Setting the Factors Governing Tradeoffs in P2O Proposal

There are several ways in which the tradeoff multiple (either the factor "x" for the single media case, or the factor "y" for the multimedia case) can be calculated. The simplest is based solely upon mass (pounds) of pollutant. The ultimate is based upon pound-equivalents which factor into account relative health effects, ecological effects, bioaccumulation, persistency, exposure path, etc. The degree to which pound-equivalents will be favored over the simple pound approach will in large part be determined by the confidence levels on the science at the time of EG development. For the initial trial of this new concept of BAT and P2O development, it would be prudent to be conservative in approach to tradeoffs, and stay with simple pounds, with a non-trivial multiple. Once successfully demonstrated, consideration can begin for the greater complexity and potential benefits of pound-equivalents. A more detailed breakdown is discussed below.

A. Pound measurement, individual pollutants - The simplest application of the expanded P2O concept. For each pollutant in the effluent guideline, a factor "x" is set which is the single-media multiple which governs the tradeoff of future reductions below BAT for short-term performance which falls short of BAT. A factor "y" can also be set which is the multi-media multiple governing the pounds of reductions to air and land required to offset each additional pound to water in excess of BAT.

B. Pound measurement, classes of pollutants - Identical to A. but simplified by classing multiple pollutants of similar environmental impact into classes for purposes of summing of pounds for tradeoffs.

C. Pound-equivalent based approach, all pollutants - Utilize the emerging methodology developed by EPA to determine, for each combination of pollutant and media, pound-equivalents which factor in such considerations as relative health impacts, ecological effects, bioaccumulation, persistence, etc. The methodology for calculating the tradeoff factor is then the same as in A., but on the basis of pound-equivalent of all pollutants instead of simple pounds of each individual pollutant.

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