TABLE B TO PART 256.—PRIORITY RANKING FACTORS—Continued

Factor—Ranking factor and definition	Ranking descriptors	Point descriptors
• Must be under the age of 18 or such other age established for purposes of parental support by tribal or state law (if any).	1	0
	2	1
	3	2
• Must live in the dwelling and not be married	4	3
	5	4
6 or more	5.	

*FPIG means Federal Poverty Income Guidelines

Dated: June 17, 1996.

Ada E. Deer,

Assistant Secretary—Indian Affairs.

[FR Doc. 96–16673 Filed 7–12–96; 8:45 am]

BILLING CODE 4310–02–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 63 and 430

[FRL–5535–5]

RIN 2060–AD03 and 2040–AB53

Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category; National Emission Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability.

SUMMARY: On December 17, 1993, EPA proposed standards to reduce the discharge of water pollutants and emissions of hazardous air pollutants from the pulp, paper, and paperboard industry (58 FR 66078). This document describes the Agency's goals for environmental improvement in this industry, announces a framework for the final wastewater standards, and presents the preliminary results of detailed analyses for a portion of this industry.

DATES: Comments on this notice are solicited and will be accepted until August 14, 1996. Comments are to be submitted in triplicate, and also in electronic format (diskettes) if possible.

ADDRESSES: Comments are to be submitted to Mr. David Hoadley at the following address: Engineering and Analysis Division (4303), EPA, 401 M Street, SW., Washington, DC 20460.

The framework and preliminary results of detailed analyses being announced today are based on data and information in the EPA Water Docket at EPA Headquarters at Waterside Mall, room M2616, 401 M Street, SW, Washington, DC 20460, telephone (202) 260–3027. The Docket staff requests that interested parties call for an appointment before visiting the Docket. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For questions regarding wastewater standards, contact Mr. Donald Anderson at the following address: Engineering and Analysis Division (4303), EPA, 401 M Street, SW., Washington, DC 20460, telephone number (202) 260–7189, or Mr. Ronald Jordan also at this address, telephone number (202) 260–7115. For questions regarding air emissions standards, contact Ms. Penny Lassiter, Emissions Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541–5396.

Contents of This Notice

I. Summary of Notices for this Regulation
II. EPA's Long-Term Environmental Goals
III. Anticipated Schedule for Issuing Final Wastewater Standards
A. Schedule for Proposed Bleached Papergrade Kraft and Soda and Proposed Papergrade Sulfite Subcategories
B. Scheduled for Proposed Dissolving Kraft and Dissolving Sulfite Subcategories
C. Schedule for the Remaining Proposed Subcategories
IV. Post-Proposal Data Gathering
V. Regulatory Framework and Preliminary Results
A. Proposed Bleached Papergrade Kraft and Soda Subcategory
1. Preliminary Conclusion Regarding Technology Basis for BAT
2. Incentives for Further Environmental Improvements
3. Technology Options for BAT
4. Framework for PSES
5. Pollutant Parameters
6. Best Management Practices
7. Costs for Options A and B
8. Effluent Reduction Benefits
9. Revised Effluent Limitations
a. Changes to Statistical Methodology
b. Revised Effluent Limitations Being Considered
10. Conventional Pollutant Limitations (BPT and BCT)
11. Technology Options for NSPS
12. Revised Economic Impact Results
a. Revisions to the Economic Analysis
b. Economic Impacts of BAT Options A and
c. Cost-Effectiveness
B. Proposed Papergrade Sulfite Subcategory
1. Preliminary Conclusions Regarding Technology Basis for BAT
2. Technology Options for BAT
3. Costs
4. Effluent Reduction Benefits
5. Revised Effluent Limitations for BAT and PSES
6. Conventional Pollutant Limitations
7. Technology Options and Revised Effluent Limitations for NSPS
8. Economic Impacts
a. Costs and Impacts
b. Cost-Effectiveness
VI. Environmental Assessment
VII. Best Management Practices
VIII. Pretreatment Standards
IX. Implementation Issues
A. Permit Limits for Multiple Subcategory Mills
B. New Sources
C. Monitoring
D. BMPs as NPDES Permit Special Conditions
E. Relationship Between the Cluster Rules and Project XL
F. Summary of Changes to Methods for Analysis of Pulp and Paper Industry Wastewaters
1. Method 1624, Volatiles by Purge-and-Trap and Isotope Dilution GC/MS
2. Method 1650, AOX by Adsorption and Coulometric
3. Method 1653, Chlorophenolics by In-Situ Derivatization and Isotope Dilution GC/MS
4. Method NCASI Technical Bulletin No. 253, Color
G. Regulatory Flexibility Analysis
X. Incentives for Further Environmental Improvements
A. Advanced Technology Tiers
1. Definition of Incentives-Related BAT Limitations or NSPS by Tier
a. Tier I BAT Limitations
b. Tier II BAT Limitations and NSPS
c. Tier III BAT Limitations and NSPS
2. Basis for Incentives-Related BAT Limitations and NSPS
3. Legal Authority to Establish Incentives-Related BAT Limitations and NSPS
B. Incentives Available Prior to Achievement of Incentives-Related BAT
1. Extended Compliance Schedules

C. Incentives Available After Achievement of Advanced Technology BAT Limitations and NSPS
1. Greater certainty regarding permit limits and requirements
2. Reduced effluent monitoring
3.Reduced penalties
4. Reduced inspections
5. Public recognition programs
6. Fast-track permit modification
D. Solicitations of Comments on Incentives Program
E. Alternative Incentives Programs and Provisions Suggested by Stakeholders

I. Summary of Notices for This Regulation

Today's notice announces the Agency's current thinking, based on preliminary detailed evaluation of the supplemented record and stakeholder discussions, regarding the technology bases to be considered for setting final effluent limitations and standards for a portion (i.e., certain subcategories) of this industry. These subcategories are the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories. Today's notice continues the public review and participation process that began with the proposed rulemaking and continued with additional notices.

On December 17, 1993 (58 FR 66078), EPA proposed integrated air and water rules that included limitations and standards to reduce the discharge of toxic, conventional, and nonconventional pollutants in wastewaters and emissions of hazardous air pollutants from the pulp, paper, and paperboard industry. On March 17, 1994 (59 FR 12567), EPA published a correction notice to the proposed rules and extended the comment period to April 18, 1994.

In the preamble to the proposed rules, EPA solicited data on various issues and questions related to the proposed effluent limitations guidelines and standards and air emissions standards. The Agency received and added new material to the Air and Water Dockets. In a notice of data availability published on February 22, 1995 (60 FR 9813), EPA announced the availability of new data related to the proposed air emissions standards. Those new data are located in Air Docket A–92–40. In a second notice of data availability published on July 5, 1995 (60 FR 34938), EPA announced the availability of new information and data related to the proposed effluent limitations guidelines and standards. Those new data are located starting at Section 18.0 of the Post-Proposal Rulemaking Record, which is a continuation of the proposal record. The Post-Proposal Rulemaking Record is located in the Water Docket, which is updated periodically to include other new information and analyses. EPA did not solicit comment on the new air and water data in either notice. EPA solicits comment on the information and data announced in those prior notices, on the information and approach discussed in this notice, on other newly docketed information, and on the preliminary results of the detailed analyses presented in this notice.

On March 8, 1996, EPA published a Federal Register notice pertaining to the air portions of the proposed rules, announced the availability of supplemental information, and proposed additional sources to be covered by the rulemaking (61 FR 9383). The comment period for that notice closed on April 8, 1996.

The Agency has held numerous meetings on these proposed integrated rules with many of the stakeholders from the pulp and paper industry, including a trade association (American Forest and Paper Association, or AF&PA), numerous individual companies, consultants and vendors, environmental groups, labor unions, and other interested parties. Materials have been added to the Air and Water Dockets to document these meetings and to make available for public review new information received at those meetings.

II. EPA's Long-Term Environmental Goals

The Agency envisions a long-term approach to environmental improvement that is consistent with sound capital expenditures. This approach, which is presented in today's notice, stems from extensive discussions with a range of stakeholders. The effluent limitations and air emissions standards are only one component of the framework to achieve long-term environmental goals. The overall regulatory framework also includes incentives to reward and encourage mills that implement pollution prevention beyond regulatory requirements.

EPA's long-term goals include improved air quality, improved water quality, the elimination of fish consumption advisories downstream of mills, and elimination of ecologically significant bioaccumulation. An integral part of these goals is an industry committed to continuous environmental improvement—an industry that aggressively pursues research and pilot projects to identify technologies that work together appropriately to reduce, and ultimately eliminate, pollutant discharges for existing and new sources. A holistic approach to implementing these pollution prevention technologies would contribute to the long-term goal of minimizing impacts of mills in all environmental media by moving mills toward closed-loop process operations. Effective implementation of these technologies is capable of increasing reuse of recoverable materials and energy while concurrently reducing consumption of raw materials (e.g., process water, unrecoverable chemicals, etc.), and reducing generation of air emissions and hazardous and non-hazardous wastes. This combination of regulation, research, pilot projects, and incentives will foster continuous environmental improvement with each mill investment cycle.

III. Anticipated Schedule for Issuing Final Wastewater Standards

A. Schedule for Proposed Bleached Papergrade Kraft and Soda and Proposed Papergrade Sulfite Subcategories

EPA will promulgate final effluent limitations and standards for the Pulp, Paper, and Paperboard industrial category in stages consisting of several subcategories at a time. For the following reasons, EPA intends to promulgate final effluent limitations and standards for the proposed bleached papergrade kraft and soda subcategory and the proposed papergrade sulfite subcategory before promulgating such limitations and standards for any other proposed subcategory.

Under the consent decree entered in the case *Environmental Defense Fund and National Wildlife Federation* v. *Thomas*, Civ. No. 85–0973 (D.D.C.), and subsequently amended, EPA was required to use its best efforts to promulgate regulations addressing discharges of dioxins and furans from 104 bleaching pulp mills by June 17, 1995. Despite making its best efforts, EPA was not able to promulgate final effluent limitations and standards for those subcategories by this date. However, EPA believes that regulating the discharge of dioxins and furans from those mills remains a very high priority and for this reason plans to promulgate effluent limitations and standards for mills in the proposed bleached papergrade kraft and soda subcategory and the proposed papergrade sulfite subcategory before it finalizes limitations and standards for the other proposed subcategories.

B. Scheduled for Proposed Dissolving Kraft and Dissolving Sulfite Subcategories

EPA is evaluating the comments and preliminary new data affecting the proposed dissolving kraft and dissolving sulfite subcategories. The Agency anticipates that the final effluent limitations and standards for these subcategories will be based on different technologies than those that served as the basis for the proposed limitations and standards. For example, EPA has received data suggesting that oxygen delignification is not a feasible process for making some dissolving pulp products, particularly high grade products. In addition, some use of hypochlorite appears to be necessary to maintain product quality for some products. Affected companies have undertaken laboratory studies and mill trials to develop alternative bleaching processes and to document the effects on wastewater and air emissions. The Agency is working with these companies as their efforts progress.

For these reasons, EPA does not expect to promulgate final effluent limitations guidelines and standards for these proposed subcategories in 1996. Even in the absence of these limitations and standards, however, EPA anticipates that alternative bleaching processes developed as a result of these studies and trials should contribute to substantial reductions in the generation and release of pollutants, when compared to current operating practices. Among the pollutants EPA expects to be reduced are chlorinated organic compounds (e.g., chloroform) in air emissions and wastewaters. EPA encourages mills in these subcategories to undertake and expeditiously complete developmental work that will facilitate installation of alternative process technologies that achieve these pollution prevention goals.

C. Schedule for the Remaining Proposed Subcategories

EPA is assessing comments and data received since proposal for the remaining eight proposed subcategories. These eight proposed subcategories are: (1) Unbleached Kraft; (2) Semi-Chemical; (3) Mechanical Pulp; (4) Non-Wood Chemical Pulp; (5) Secondary Fiber Deink; (6) Secondary Fiber Non-Deink; (7) Fine and Lightweight Papers from Purchased Pulp; and (8) Tissue, Filter, Non-Woven, and Paperboard from Purchased Pulp. For example, EPA has received information from an industry-sponsored survey of secondary fiber non-deink mills. The Agency also has received additional data from mills in other proposed subcategories, including semi-chemical, unbleached kraft, and secondary fiber deink. EPA plans to promulgate effluent limitations guidelines and standards for these subcategories after promulgation of the final rules for the proposed bleached papergrade kraft and soda subcategory and the proposed papergrade sulfite subcategory.

IV. Post-Proposal Data Gathering

EPA has gathered a substantial amount of new information and data since proposal. Much of this information was collected with the cooperation and support of AF&PA and the National Council of the Paper Industry for Air and Stream Improvement (NCASI), and with the assistance of many individual mills in the U.S. EPA also has gathered additional information from pulp and paper mills primarily in Canada and Europe. Some of the new information and data were generated through field sampling and related efforts at individual mills in the U.S., Canada, and Europe. The following paragraphs summarize some of these data gathering efforts.

For the proposed bleached papergrade kraft and soda subcategory, EPA has new data for several technologies, including: complete chlorine dioxide substitution (without oxygen delignification); oxygen delignification (OD) or extended cooking plus complete chlorine dioxide substitution; extended cooking plus OD plus complete chlorine dioxide substitution; OD plus ozone bleaching plus complete substitution with chlorine dioxide; and totally chlorine-free (TCF) processes. EPA has a combination of bleach plant and end-of-pipe data for these technologies. (See the record at Document Control Number (DCN) 13951.)

For the proposed papergrade sulfite subcategory, EPA has new bleach plant data for elemental chlorine-free processes and TCF processes. EPA also has information on trials for alternative processes beyond existing technologies for products that cannot be made with TCF processes. For example, EPA has data from trials using OD plus complete chlorine dioxide substitution for selected products.

For the proposed dissolving kraft and dissolving sulfite subcategories, EPA has information on trials for alternative processes beyond existing technologies (e.g., reduction in use of hypochlorite, chlorine dioxide substitution with OD and without OD). EPA also has a preliminary evaluation of minimum hypochlorite usage necessary to maintain product quality.

EPA has new information on several topics related to compliance cost estimation, such as process information and data for selected bleached chemical pulp mills and costs of process technology unit operations at selected mills. This information has been used by the Agency to verify its cost curves. EPA also has new information on best management practices, recovery systems, and equipment availability.

V. Regulatory Framework and Preliminary Results

A. Proposed Bleached Papergrade Kraft and Soda Subcategory

For this subcategory and all others addressed in the proposal, the Agency proposed numerical effluent limitations guidelines and standards based on certain model technologies. Although EPA similarly will employ model technologies to calculate the final effluent limitations guidelines and standards, individual mills will be free to use any combination of technologies that will result in compliance with the final effluent limitations and standards.

1. Preliminary Conclusion Regarding Technology Basis for BAT

After re-evaluating technologies for mills in the proposed bleached papergrade kraft and soda subcategory, EPA has determined that two technology options identified in the proposal merit careful consideration for effluent limitations based on best available technology economically achievable (BAT) and pretreatment standards for existing sources (PSES). These options include both in-plant process technologies (e.g., chemical substitution) and end-of-pipe biological treatment technologies (e.g., activated sludge systems). The first of these options is complete (100 percent) substitution of chlorine dioxide for chlorine as the key process technology. The second of these options is the technology basis from proposal, which includes oxygen delignification (OD) or extended cooking with complete (100 percent) substitution of chlorine dioxide for chlorine as the key process technologies. Although the final detailed analysis and decisions are not yet complete, the post-proposal analysis to date has demonstrated to the Agency that the first option—complete (100 percent) substitution of chlorine dioxide—should be given equal weight as a possible technology basis for the BAT effluent limitations and for PSES for this proposed subcategory. EPA anticipates that comments on this notice will assist in the final decision.

EPA's preliminary evaluation of information and data for these two BAT/PSES options indicates that both options appear to reduce dioxins and furans in wastewaters to concentrations at or below the current analytical minimum levels. EPA also anticipates that both technology options would reduce discharges of dioxin such that the number of dioxin-based fish consumption advisories related to discharges from these facilities are likely to be substantially reduced or eliminated over time (depending on stream hydrodynamics of each site).

The incremental environmental benefits that the Agency can attribute to the use of extended delignification (e.g., OD or extended cooking) in addition to complete (100 percent) substitution include reduced chronic toxicity to some aquatic life species. This reduced chronic toxicity is probably attributable to a reduction in mass loadings of certain nonchlorinated compounds that are indirectly measured by the bulk analytical parameter chemical oxygen demand (COD). The reduced chronic toxicity also may reflect an incremental reduction in the potential for formation of dioxin (2,3,7,8 TCDD) and furan (2,3,7,8 TDCF), which at many mills is no longer measurable by current analytical methods at the end-of-pipe, and a reduction in mass loadings of all chlorinated compounds which can be measured by the bulk analytical parameter adsorbable organic halides (AOX).

EPA is continuing to carefully review and analyze the information and data pertinent to establishing effluent limitations guidelines and standards under the Clean Water Act. This includes an analysis of compliance costs and economic achievability. Results of these and other analyses, presented in preliminary form below, will be carefully considered along with comments in preparing the final rule.

2. Incentives for Further Environmental Improvements

EPA is considering including compliance and enforcement incentives in the final regulations to recognize the achievements of those mills that use technology options more advanced than the technology option ultimately selected as BAT. If EPA chooses as the basis for the final BAT limitations and PSES complete (100 percent) substitution of chlorine dioxide for chlorine, without OD or extended cooking, qualifying technologies might include processes employing extended delignification (e.g., OD, extended cooking), ozone-based bleaching sequences, totally chlorine-free (TCF) bleaching, process wastewater flow reduction (i.e., technologies which move mills toward closed loop operation), or other combinations of technologies. Many of these technologies also would qualify for incentives if EPA includes an extended delignification process as part of BAT. All of these technologies are already being implemented at some mills while further developmental work is ongoing to improve the performance of these technologies.

EPA is considering establishing two sets of incentives for further environmental improvements. The structure, with some variations, would apply regardless of the baseline BAT technology options ultimately selected. The first set of incentives would provide interested mills with additional time—up to 15 years beyond the effective date of these rules—to meet limitations more stringent than those based on the baseline BAT. This set of incentives would be available to any mill that voluntarily selects, as its BAT, technologies that can achieve more stringent effluent limits set forth in the incentives approach. The various incentives-related BAT limitations and standards would be codified in the Code of Federal Regulations and would represent BAT limitations for any mill choosing to participate in the incentives program. The second set of incentives, which could include various monitoring, enforcement, and public recognition elements, would be available only after compliance with the more stringent incentive-related BAT limits and standards is achieved. Any incentives adopted by EPA would be intended to encourage mills to investigate, develop, and implement technologies that are more advanced and that achieve more stringent limitations and standards than the technologies now being considered as the basis for baseline BAT limitations.

EPA has already received suggestions from several stakeholders on possible incentives. Details regarding the possible incentives are discussed in Section X of this notice. EPA solicits comments on this approach and invites specific ideas for incentives. EPA solicits comments on extending this approach to indirect dischargers. Such comments and suggestions would be considered as EPA formulates the final rule for the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories.

3. Technology Options for BAT

As noted above, the post-proposal analysis focuses on two process technology options. The first option, referred to as Option A, employs conventional pulping processes followed by complete (100 percent) substitution for elemental chlorine by chlorine dioxide. This is an elemental chlorine-free (ECF) technology.

The second option, referred to as Option B, employs oxygen delignification (OD) and/or extended cooking (EC), followed by complete (100 percent) substitution which reduces the lignin content of unbleached pulp beyond that typically provided through conventional pulping processes. The effectiveness of pulping processes in removing lignin is indicated by the unbleached pulp kappa number. A kappa number typical of unbleached pulp from traditional pulping processes for softwoods is approximately 30 and for hardwoods is approximately 20. Extended delignification processes (such as OD or EC) typically produce unbleached softwood pulps with an approximate kappa number of 15 (approximately 10 for hardwoods). Option B also is an ECF technology.

In analyzing performance for Option B, the Agency is considering performance data for mills with OD and/or EC. This analysis differs from proposal when the Agency distinguished between extended delignification sequences with only OD or EC, and sequences with both OD and EC.

This notice presents EPA's preliminary analysis of data pertaining to Option A and compares it to Option B. In addition to obtaining and analyzing data pertaining to Options A and B, the Agency also has endeavored to obtain and analyze additional data for TCF process technologies as a possible BAT technology. TCF technologies typically incorporate OD while relying on peroxide and/or ozone, rather than chlorine-containing compounds, to accomplish pulp bleaching and brightening. Only one U.S. bleached papergrade kraft mill employs a TCF process, and it produces a market pulp of somewhat less than full market pulp brightness. Since proposal of this rule, the U.S. bleached papergrade kraft TCF mill has achieved higher brightness targets, but still less than full market brightness pulp of approximately 90 ISO. EPA obtained bleach plant performance data from this mill, but because the mill discharges to territorial seas under Section 301(m) of the Clean Water Act and thus does not employ secondary treatment, end-of-pipe data reflecting the performance of biological treatment were not available. European TCF mills have achieved at or near full market brightness pulps for limited periods. However, EPA consistently

requested but obtained only limited process and pollutant removal performance data for TCF mills in Europe. The limited range of papergrade TCF products currently produced and sold in the U.S. market indicates that TCF technology is not yet available to make the full range of products produced by ECF or similar chlorine-based processes. Nonetheless, EPA continues to strongly encourage further development and implementation of TCF technologies and products. It is also probable that all TCF mills would qualify for the advanced technology incentives program described below; this should provide an opportunity to stimulate production and U.S. market share for TCF products.

The Agency considered other technology options in developing the proposed regulations for the proposed bleached papergrade kraft and soda subcategory. However, for reasons cited in the proposal, these technologies were not selected as the underlying process technologies for the proposed effluent limitations based on BAT, and have not been further pursued as options for the final rule.

4. Framework for PSES

In the proposal, EPA discussed three options for pretreatment standards for existing sources (PSES) for four proposed subcategories, including bleached papergrade kraft and soda. These options primarily concern end-of-pipe limitations for indirect dischargers. The conclusions in the discussion of BAT technology options also apply to technology options for bleach plant limits for indirect dischargers. See Section VIII of today's notice for a discussion of PSES options.

5. Pollutant Parameters

In the proposed regulations, EPA included both in-process (bleach plant) and end-of-pipe BAT limitations and PSES for mills that bleach chemical pulps covered in four proposed subcategories, including bleached papergrade kraft and soda.

The parameters proposed to be controlled at the bleach plant were 2,3,7,8 TCDD (''dioxin''), 2,3,7,8 TCDF (''furan''), 12 specific chlorinated phenolic compounds, and the volatile organic pollutants chloroform, methylene chloride, methyl ethyl ketone (MEK), and acetone. With respect to the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories, EPA is considering codifying limits for all of these pollutants except for methylene chloride, MEK, and acetone. Based on EPA's most current data, the presence of these pollutants or the levels at which they are found does not appear to be directly related to any of the pollution prevention process technologies being considered (extended delignification processes, such as extended cooking or oxygen delignification, or bleaching process changes, such as complete substitution for elemental chlorine by chlorine dioxide and elimination of hypochlorite). Acetone and MEK generally are amenable to biological treatment, while other forms of end-of-pipe physical treatment, for the concentrations levels involved, are likely to be costly. Methylene chloride has been found to be a sample and laboratory contaminant in certain cases. Therefore, EPA cannot at this time identify a pollution prevention basis for setting effluent limitations and standards for these pollutants for these proposed subcategories.

The parameters proposed to be controlled at the end-of-pipe were adsorbable organic halides (AOX), chemical oxygen demand (COD), and, for the proposed bleached papergrade kraft and soda subcategory only, color. EPA received comments asserting that neither AOX nor COD is an appropriate parameter to be controlled because, among other reasons cited, these parameters are not directly related to environmental effects or effluent toxicity. Commenters also asserted that color should not be controlled because it is an aesthetic concern more appropriately addressed in individual permits based on applicable water quality standards.

EPA continues to believe that AOX is a valid measure of the total chlorinated organic matter in wastewaters resulting from the bleaching of pulps. Although statistically significant relationships between AOX and a broad range of specific chlorinated organic compounds have not been established, trends in concentration changes, however, have been observed between AOX and specific pollutants, including dioxin, furan, and chlorinated phenolic compounds. Even though dioxin and furan are no longer measurable at the end-of-pipe at many mills, the potential for formation of these pollutants continues to exist at pulp and paper mills as long as any chlorine-containing compounds (including chlorine dioxide) are used in the bleaching process. Final effluent AOX loading is an appropriate measure of the performance of in-process and end-of-pipe technologies in reducing the mass of chlorinated organic pollutants such as dioxin and furan found in wastewaters discharged by this industry. Thus, EPA expects that process changes and treatment technologies implemented to reduce AOX discharges at the end of the pipe will in turn further reduce the likelihood of the formation and discharge of these chlorinated organic pollutants. The analytical method for this bulk parameter is also very reliable and affords significant savings in monitoring costs over analytical methods for individual pollutants, which are substantially more expensive.

With regard to COD, the Agency notes that chronic sub-lethal aquatic toxicity has been found from wastewaters discharged by both bleached and unbleached pulp mills. Some evidence indicates that this toxicity is associated at least in part with families of non-chlorinated organic materials. Some of these materials are probably wood extractive constituents found in pulping liquors and are refractory or resistant to rapid biological degradation, and thus are not measurable by the five-day biochemical oxygen demand (BOD_5) analytical method. Several studies indicate that as wastewater COD is reduced, indices of these chronic toxicity effects also are reduced. In addition, final effluent COD loading is an appropriate measure of the performance of in-process and end-of-pipe technologies in reducing the mass of non-chlorinated pollutants found in wastewaters discharged by this industry. EPA also has found that COD is an appropriate parameter for use by mills for self-monitoring to evaluate the performance of spent pulping liquor spill prevention programs (BMPs), as noted in Section V.A.6 below. The analytical method for this bulk parameter also is very reliable and affords significant savings in monitoring costs over analytical methods for individual pollutants.

In evaluating comments on the proposal EPA has endeavored to obtain additional data that would supplement the current COD data base for setting final effluent limitations and standards. This supplemented data base would allow EPA to determine the need and, if appropriate, the basis for COD loadings allowances from other contributing sources on-site at mills, such as paper machines and semi-chemical pulping. EPA has received very limited (and, for some operations, insufficient) data to characterize COD loadings from these mill operations. Further, EPA has received only limited additional data to determine the combined performance of well designed and operated spill prevention programs (BMPs), process changes, and end-of-pipe biological treatment systems in removing COD. Moreover, data that are now available indicate a significant

range of values that may not accurately reflect the best performance of these technologies. (See the record at DCN 13958.) EPA solicits additional data that would further define the best performance of these technologies and provide a basis for EPA to assess the need for allowances for other on-site sources of COD and to develop such allowances if appropriate. EPA will evaluate any COD data and public comments received in response to this notice in establishing final limits and standards for this parameter for ECF and TCF mills. EPA also is considering whether it is appropriate that final COD limits and standards for ECF and TCF mills in the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories should be deferred and developed concurrently with BAT COD limits that may be developed for other subcategories in a later rulemaking.

With regard to color, the Agency notes that some mills receive limitations for color in their National Pollutant Discharge Elimination System (NPDES) permits where stream water quality requires such limitations. The Agency is considering not promulgating a technology-based limit for color, but rather deferring control of color to individual permits where necessary to implement water quality standards under CWA Section 301(b)(1)(C).

6. Best Management Practices

In the proposed regulations, EPA included provisions for leak and spill prevention, containment, and control through best management practices (BMPs). The public comments on the proposal generally support the use of BMPs, although some commenters challenged the details of these provisions. EPA plans to incorporate BMPs into the final rule with substantial restructuring of the program that was proposed. EPA anticipates that the BMPs in the final rule will apply to mills in the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories. EPA also anticipates that the revised BMPs also will apply, as proposed, to mills in other chemical pulping subcategories (e.g., semi-chemical, unbleached kraft). Additional details about BMPs are presented in Section VII of today's notice.

7. Costs for Options A and B

EPA has used additional cost information and data to update its costing methodology. EPA has used costs for recently installed equipment at U.S. mills as well as vendor information to update cost curves and model algorithms for both capital costs and operation and maintenance (O&M) costs. EPA has updated mill specific information and has estimated compliance costs for Options A and B. EPA used these revised cost estimates to estimate economic impacts; the revised economic results are discussed in Section V.A.12 of today's notice. Reports included in the record contain detailed cost information (see DCN 13953).

Much of the cost data EPA is considering was submitted by AF&PA. One of the most significant sources of differences in costs developed by AF&PA and EPA are the assumptions regarding the impact on recovery boiler operation. EPA has investigated the differing assumptions and revised its cost analysis for selected boiler capacity and related recovery cycle components. EPA's preliminary findings are that relatively inexpensive boiler upgrades will accommodate OD filtrate streams and other increases in heat load. EPA's analysis of each mill in this proposed subcategory indicates that boiler replacement will not be necessary with the installation of OD as defined in Option B.

The Agency's revisions to the costing methodology to reflect new information about the recovery cycle include, where appropriate, boiler upgrades, pulping process modifications, black liquor oxidation, and evaporator upgrades. Additional information about these cost components is presented in the record (see DCN 13959).

EPA also relied on new data and information to revise costs for BMPs. The new data were used to revise design assumptions and cost model algorithms for developing mill-specific costs for BMP upgrades. A significant increase in costs for BMPs resulted.

EPA also revised its analysis for changes in the cost of chemicals and other raw materials used in pulp mills and bleach plants. Costs for some of these raw materials and chemicals have increased while costs for other raw materials and chemicals have decreased. The net effect of these changes on total option costs varies among mills.

EPA updated its process information for each mill by reviewing comments on the proposed rule, information gathered by AF&PA and NCASI, other publicly available information, and by contacting mills directly. EPA considered process changes and upgrades or renovations either completed, underway, or committed to as of mid-1995. Costs in this notice are presented in 1995 dollars. EPA used the updated information for each mill, along with the costing methodology revisions, to determine the need for and the sizing of process change unit operations for Options A and B. The result of this mill-specific costing is summarized in Table 1.

TABLE 1.— CAPITAL, O&M, AND TOTAL ANNUALIZED COSTS FOR BAT AND BMPS

	Costs estimated at proposal for Option B (proposed Option 4)	Current cost estimates	
		Option A	Option B
Capital ($ million)	2,184	998	2,036
O&M ($ million/yr)	11.8	109	(7)
Total Annualized Costs:			
(million/yr)	223.2	140	155
($/UBMT)	7.50	4.78	5.27

8. Effluent Reduction Benefits

EPA has updated the calculation of effluent reduction benefits for each bleached papergrade kraft and soda mill to a new baseline of mid-1995. In addition, EPA has revised and simplified the methodology used to estimate that baseline. The baseline calculation methodology revisions along with details of the effluent reduction calculations are described in the record (see DCN 13592). The following

highlights are changes from the proposal based on comments and new information.

First, EPA used data characterizing the generation of pollutants by a variety of pulping and bleaching technologies and information about the pulping and bleaching technologies at each mill and associated wastewater flow data to characterize the pollutant loads generated as of mid-1995. EPA also used data for individual mills from the NCASI 1994 Dioxin Profile (see DCN 13764) to estimate the effluent load of 2,3,7,8–TCDD and 2,3,7,8–TCDF. The revised baselines, which were found to be comparable to NCASI's industry-wide estimates, were used to calculate effluent reduction benefits, summarized in Table 2. These calculated reduction benefits are virtually the same for both options. It is interesting to note that the baseline annual discharge loading in 1992 was 70 grams/year of 2,3,7,8 TCDD and 341 grams/year of 2,3,7,8 TCDF (total of 411 grams/year). The reduction since 1992 to estimated discharge loadings of 3–4 grams/year for 2,3,7,8 TCDD and 3–4 grams/year for 2,3,7,8 TCDF in mid-1995 represents a reduction of 95 percent for 2,3,7,8 TCDD and 99 percent for 2,3,7,8 TCDF.

TABLE 2.—BASELINE DISCHARGES AND ESTIMATED REDUCTIONS OF SELECTED POLLUTANTS FOR BLEACHED PAPERGRADE KRAFT AND SODA MILLS

Pollutant parameter	Baseline discharge	Estimated reductions from baseline attributable to Option A	Estimated reductions from baseline attributable to Option B
2,3,7,8–TCDD (g/yr)	15	11	12
2,3,7,8–TCDF (g/yr)	93	89	90
AOX (kkg/yr)	35,000	24,700	30,600

9. Revised Effluent Limitations

a. Changes to Statistical Methodology.

In developing the BAT limitations presented in today's notice, EPA included the new data discussed in Section IV to calculate the revised effluent limitations. EPA also made four changes to the proposed statistical methodology. First, EPA determined that limitations set at non-detect (ND) levels could be justified in some situations where the data included detected measurements. In the proposal, EPA had set ND limitations only when the data were all non-detected measurements or were detected below the minimum level of the analytical method. In today's notice, TCDF, chloroform, and AOX have numerical BAT limitations. The remaining analytes have ND limitations. Second, EPA determined that the value of half of the sample-specific detection limit should be substituted for all non-detect measurements. In the proposal, EPA had used a methodology for substituting a lower value for anomalously large detection limits. Third, EPA calculated bleach plant limitations for TCDF and chloroform by aggregating the acid and alkaline measurements prior to calculating the limitations. In the proposal, EPA had calculated separate production-normalized mass limitations for the acid and alkaline streams and then summed the two for an overall production-normalized mass bleach plant limitation. Fourth, EPA calculated a concentration-based limitation for TCDF. In the proposal, EPA had calculated a production-normalized mass-based limitation for TCDF. Fifth, EPA adjusted for autocorrelation in the AOX limitations by using BOD autocorrelation factors. In the preamble to the proposed rules, EPA requested additional AOX data that would allow for evaluating autocorrelation in daily AOX measurements. The AOX data that EPA has received are insufficient for the purpose of evaluating the autocorrelation in Options A and B. Adjustment for positive autocorrelation appropriately leads to larger numerical values for limitations. EPA believes that positive autocorrelation is likely to be present in daily measurements of AOX and has adjusted the AOX monthly average limitations using observed autocorrelation in BOD measurements. The numerical values of the AOX daily maximum and monthly average limitations for both options in today's notice are larger than the proposed limitations.

EPA has provided additional documentation in the record on the changes made to the BAT statistical methodology (see DCN 13963). The information added to the record also includes the time series analysis used in calculating the proposed BCT limitations; methodology used to aggregate data collected from different sample points; errata to the statistical support document; and the detailed results of the statistical analyses.

b. Revised Effluent Limitations Being Considered. Table 3 presents the proposed limitations and the preliminary results of revising bleach plant effluent limitations for Options A and B.

TABLE 3.—BLEACHED PAPERGRADE KRAFT AND SODA BLEACH PLANT LIMITATIONS

	Daily Maximum Limitation			Monthly Average Limitation [a]		
	As proposed for Option B	Option A	Option B	As proposed for Option B	Option A	Option B
TCDD	ND	ND	ND	N/A	N/A	N/A
TCDF (pg/l)	359	24.1	24.1	N/A	N/A	N/A
	(ng/kkg)					
Chlorinated Phenolics	ND [b]	ND	ND	N/A	N/A	N/A
Chloroform (g/kkg)	5.06	5.33	5.33	2.01	2.80 [c]	2.80 [c]

[a] Where the monitoring frequency was proposed to be once a month, the monthly average limitation would not be applicable (N/A).

[b] Limits > ND for two pollutants (trichlorosyringol and 2,4,6-trichlorophenol)(mg/kkg).
[c] Limits based on low air-flow low-flow (pressure or diffusion) pulp washers in bleach plants.

Table 4 presents the proposed limitations and the preliminary results of revising end-of-pipe effluent limitations for AOX. Additional data from two mills representing Option A were submitted by the industry but not with sufficient lead time to allow EPA to complete all analyses necessary to use that data in this notice. Results of analyses for these additional data sets will be incorporated as appropriate in the final rule. Listings of these additional data sets are provided in the record (see DCNs 13960, 13961).

TABLE 4.— BLEACHED PAPERGRADE KRAFT AND SODA END-OF-PIPE AOX

	As proposed for Option B	Option A (kg/kkg)	Option B (kg/kkg)
Long-Term Average	0.143	0.413	0.153
Monthly Average Limitation	0.156	0.448	0.162
Daily Maximum Limitation	0.267	0.769	0.236

Table 5 presents the proposed limitations and the preliminary results of revising end-of-pipe effluent limitations for COD. The revised limitations reflect additional data submitted by the industry since proposal. However, as noted previously in this notice, the supplemented database upon which the revised limitations are based includes only limited data to determine the need for and magnitude of end-of-pipe COD allowances for on-site sources other than pulping and bleaching (e.g., paper machines, semi-chemical pulping). Therefore, while the revised COD limitations presented in Table 5 have been developed reflecting only market pulp operations, EPA intends that final COD limitations reflect integrated mills, both ECF and TCF. Table 5 includes a range of possible LTA values for an integrated mill based on the market pulp LTA plus a range of paper machine allowances (presented as such due to limitations of currently available data). EPA also is concerned that the limited COD data currently available for market pulp operations may not represent the best performance of BMPs and end-of-pipe biological treatment systems. Additional details on these preliminary revised COD limitations and underlying data sets are provided in the record (see DCN 13958).

TABLE 5.—BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY END-OF-PIPE COD

	As proposed for Option B	Option A (kg/kkg)	Option B (kg/kkg)
Long-Term Average:			
Market Pulp	NA	38.2	25.5
Only Integrated Mills.	21.3	44–61 [a]	31–48 [a]
Monthly Average Limitation:			
Market Pulp	NA	45.6 [b]	30.4 [b]
Only Integrated Mills.	25.4	TBD	TBD
Daily Maximum Limitation:			
Market Pulp	NA	64.0 [b]	42.7 [b]
Only Integrated Mills.	35.7	TBD	TBD

[a] Market pulp plus range of values for paper machine allowances.
[b] Derived with same variability factors used for proposed limits.
TBD To Be Developed—insufficient data at this time.

In the proposal, the end-of-pipe ''annual average'' limitation for non-continuous dischargers was set equal to the long-term average. The daily maximum limitation applies to both continuous and non-continuous dischargers. The monthly average limitations apply only to continuous dischargers.

EPA is considering a change in the regulatory language defining non-continuous dischargers (see the general definitions section of the proposed regulation, at § 430.01 (k)). The proposed definition focuses on wastewaters stored for periods greater than 24 hours and released on a batch basis. Alternative language being considered by EPA describes the same non-continuous discharge patterns but focuses on wastewaters stored for periods as required by NPDES authorities and released on a variable flow or pollutant loading rate basis to protect receiving water quality. EPA solicits comments, particularly from NPDES authorities, on whether this change in emphasis is appropriate.

10. Conventional Pollutant Limitations (BPT and BCT)

EPA proposed to revise effluent limitations based on the best practicable control technology currently available (BPT) for all of the proposed subcategories, including bleached papergrade kraft and soda. EPA highlighted several controversial issues concerning the BPT limitations, their calculation, and their interpretation. EPA also presented a rationale, methodology, and related controversies for establishing limitations based on the best conventional pollutant control technology (BCT).

Although the Agency believes that it has the statutory authority to revise BPT, the Agency also believes that it has the discretion to determine whether to revise BPT effluent limitations guidelines in particular circumstances.

For the final rule, the Agency is currently considering exercising its discretion not to revise BPT. Where more stringent effluent limitations for conventional pollutants pass the BCT cost test, EPA would revise BCT in this rulemaking. EPA is likely to apply this same discretion and reliance on the BCT cost test to final rules for this entire industry, not just the proposed bleached papergrade kraft and soda subcategory. EPA solicits comment on this approach.

The Agency also is carefully reviewing comments claiming that certain of the data sets used to establish the proposed revised conventional pollutant effluent limitations do not accurately represent secondary biological treatment technology. EPA also has received a suggestion from AF&PA regarding a different approach for identifying mills having secondary treatment for purposes of performing the BCT cost reasonableness test. This approach suggests that EPA's secondary treatment regulations applicable to POTWs (see 40 CFR 133.101(m)) provide a basis for determining which mills performing at levels beyond secondary treatment should be excluded from EPA's BCT analysis. See the record at DCN 14047. If EPA were to adopt this approach, datasets for certain mills asserted to represent more stringent performance than secondary treatment would be removed from the conventional pollutant database and the ensuing BCT cost reasonableness test. EPA solicits comments on this possible approach, particularly with respect to the use of 40 CFR 133.101(m) for this purpose. In response, EPA has made some adjustments to the data sets used to characterize effluent loadings of conventional pollutants typical of secondary biological treatment as applied in the proposed bleached papergrade kraft and soda subcategory. Additional discussion of the BCT datasets and calculations are in the record (DCN 13954). Table 6

summarizes the changes to the long-term average performance for the BCT options resulting from these adjustments.

TABLE 6.—BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY LONG-TERM AVERAGE PERFORMANCE LEVELS FOR BCT OPTIONS

	BOD_5 Long-Term Average (kg/OMMT)	TSS Long-Term Average (kg/OMMT)
Proposal Option 1 (average of the best 90%)	2.65	4.46
Proposal Option 2 (average of the best 50%)	1.57	2.72
Revised Option 1 (average of the best 90%)	2.73	4.41
Revised Option 2 (average of the best 50%)	1.73	2.73

11. Technology Options for NSPS

For New Source Performance Standards (NSPS) in the proposed bleached papergrade kraft and soda subcategory, EPA is considering a minor revision to the proposed technology option. The likely technology basis will be Option B, described in Section V.A.3. This option includes extended delignification generally, including OD and/or extended cooking to produce softwood pulps with a kappa number of approximately 15 (approximately 10 for hardwoods) followed by complete (100 percent) substitution by chlorine dioxide for bleaching.

EPA's data do not indicate performance differences between the proposed NSPS option (then, Option 5) and the option being considered today. EPA plans to use performance data from both of these options to establish NSPS effluent limitations for priority and nonconventional pollutants for the final rule.

For NSPS for conventional pollutants, EPA proposed effluent limitations based on best demonstrated end-of-pipe secondary wastewater treatment. EPA used the treatment system with the lowest long-term average BOD discharge to characterize the best demonstrated performance. EPA's position is that the best existing performance can be achieved (or surpassed) by new facilities as demonstrated by recently built mills in Canada and Scandinavia. EPA has reviewed comments and the supplementary information gathered since proposal and is now considering the best existing performance as characterized by the average of the best 50 percent of the existing mills in the subcategory. Based on that review of the supplemented database and other information available to date, EPA believes this may be a more appropriate representation of the best existing performance for mills in the proposed bleached papergrade kraft and soda subcategory because the single best mill does not account for all sources of process-related variability expected in the entire subcategory, including raw materials (i.e., furnish), process operations, and final products.

12. Revised Economic Impact Results

a. Revisions to the Economic Analysis. The Agency plans to base its decisions regarding the economic achievability of BAT and other cost considerations on several revisions since proposal. First, the revised economic impacts for the proposed bleached papergrade kraft and soda subcategory will be based on the revised mill-specific engineering costs described in Section V.A.7 of today's notice.

EPA also has revised the economic methodology to account for changes that have occurred in the industry. Some of these changes are summarized below; additional discussion is in the record (see Section 27.0). At proposal, EPA used both a financial model, which estimated facility closures and production changes, and a market model, which was used to estimate price and production effects. Though not fully integrated, these models validated each other's results. Between 1989 and 1995, the industry underwent a period of intensive capital investment, some for pollution control, but mostly to increase production and to change product lines. During this period, a full industry cycle was completed, with pulp mill revenues peaking in 1988, falling through 1992, and reaching new heights in 1995 as the capacity expansions of 1988–1991 were fully exploited. This same period was also one of considerable industry consolidation, with almost 15 percent of the facilities being acquired by others in the industry. In addition, several facilities ceased operation, while several new ones opened. EPA plans to update its financial profile of facilities that have changed ownership and to use those updates in the economic analysis.

As a result of the industry's changes, EPA believes that the market model used at proposal—based on information obtained in the 1989 survey—no longer provides reliable economic information. EPA does not plan to update the market model, which would only be possible through a new survey of every mill and all product lines. Instead, EPA plans to incorporate some features of the market model, particularly product supply and demand elasticities, into the financial model.

The financial model will incorporate several additional changes to bring it up to date. For example, EPA is adjusting the start year of the model to 1996, which will reflect changes in prices, inflation, interest rates, and position in the pulp and paper industry cycle. Additionally, EPA plans to adjust the industry cycle used for the closure analysis in order to incorporate 1995 financial data. The revised cycle will be seven years instead of the six year cycle used at proposal. EPA also plans to adjust interest rates to reflect changes in industry borrowing costs. EPA used a 7 percent rate in the analyses reported in this notice.

EPA also plans to incorporate a cost pass-through or price change parameter into the model to improve estimates of the effects of closures on pulp and paper production. Although the results presented in today's notice assume no price increases (as assumed at proposal), this new feature will provide a more accurate estimate of the degree to which increased costs are passed through to consumers. Hence, various assumptions about cost pass-through will be considered when the Agency makes final decisions about economic impacts.

b. Economic Impacts of BAT Options A and B. The economic impact analysis will continue to use the three forecasting methods and the composite scoring technique used at proposal to predict mill closures. The revised economic impacts discussed in today's notice are based on an analysis of 85 bleached papergrade kraft and soda mills (76 direct dischargers and nine indirect dischargers). The compliance costs summarized here are expressed in 1995 dollars. The Agency has not yet completed its analysis of the combined impact of all components of the Cluster Rules (e.g., BAT, BCT, BMP and MACT) for this subcategory. The Agency plans to estimate economic impacts for the compilation of all compliance costs and will consider those results in making decisions for the final rules.

The total annualized costs (expressed as a sum of after-tax, or private, costs to each mill) for BAT and PSES for Option A are $140 million. One mill is predicted to close with associated losses of approximately 500 jobs (1.3 percent of bleached papergrade kraft and soda mills and 0.6 percent of subcategory employment).

For Option B, total annualized costs for BAT and PSES are $155 million. Three mills are predicted to close with associated losses of approximately 4,100

jobs (3.5 percent of bleached papergrade kraft mills and about 5 percent of subcategory employment).

c. Cost-Effectiveness. The Agency has revised the cost-effectiveness analysis for BAT and PSES to reflect the revised estimates of costs and pollutant reductions. In addition, the Agency has expanded its cost-effectiveness analysis since proposal to include two cost bases: pre-tax and after-tax compliance costs. The Agency uses pre-tax costs, which consider industry compliance costs as well as reductions in state and federal tax revenues occasioned by these costs, as a measure of direct social costs. After-tax costs are used to estimate the direct private costs to the regulated industry. While the after-tax cost basis was the only result presented for cost-effectiveness at proposal, both sets of results have been calculated and presented in the revised cost-effectiveness analysis. The additional set of results responds to comments and to policy discussions concerning cost-effectiveness ratios. Although AOX is likely to have an effluent limit in the final rule (see section V.A.5 of this notice), AOX reductions are not included in the cost-effectiveness ratios. This remains unchanged since proposal. Additional details about the cost-effectiveness analysis are in the record (See Section 26).

For BAT, the cost-effectiveness ratios using pre-tax compliance costs are $12 (§ 1981) per pound-equivalent removed for Option A and $11 per pound-equivalent removed for Option B. For PSES, the cost-effectiveness ratios are $12 per pound-equivalent removed for Option A and $16 per pound-equivalent removed for Option B, and $78 per pound-equivalent for the increment of Option A to Option B.

The cost-effectiveness ratios for Options A and B are very close and within the bounds of accuracy of EPA's costing analysis and data available for loadings estimates. The Agency solicits comment on whether these differences are meaningful for purposes of comparing the options. The relative costs for implementing Options A and B will differ among mills. The cost-effectiveness analysis is not presented as mill-specific results, but instead, the analysis is conducted on aggregate annualized compliance costs for direct and indirect dischargers in this subcategory.

When the costs of Options A and B are compared on a pre-tax, annualized basis, Option B is slightly less expensive than Option A for the sum of all direct dischargers in this subcategory. Such a result might appear counter-intuitive because Option B is a more capital intensive option. This outcome occurs because, compared to industry process technologies in place in 1995, implementing oxygen delignification reduces operating costs at certain mills. At some of these mills, the operation and maintenance cost savings of Option B are sufficiently large that they outweigh that option's higher capital costs.

In calculating annualized costs, the Agency used fixed assumptions about discount rates (OMB's preferred 7 percent real rate) and tax shields (including depreciation and deductions for operation and maintenance costs), both of which may differ among mills due to the firms' differing capital (borrowing) costs. The significantly greater capital costs for Option B may be unachievable within normal compliance periods for firms with higher borrowing costs or more limited access to credit.

The Agency notes that there may be additional impacts associated with mill closures, such as job losses and related displacement costs (see Record Section 17, DCN 08587, pp. 5–5 to 5–6) that are not part of the cost-effectiveness calculation, but which are considered by the Agency when evaluating the economic achievability of options.

B. Proposed Papergrade Sulfite Subcategory

EPA is considering revisions to the proposed papergrade sulfite subcategory. EPA received comments that criticized the proposed effluent limitations for their inapplicability to specialty grade pulps and to ammonium-based pulping processes. Commenters also asserted that the proposed technology basis, which was totally chlorine-free (TCF) bleaching, is not feasible for certain products and processes.

1. Preliminary Conclusions Regarding Technology Basis for BAT

EPA is carefully reviewing the demonstration and feasibility of proposed effluent limitations and standards for all mills in the proposed papergrade sulfite subcategory. Preliminary conclusions are that certain specialty grade pulps have not been produced using totally chlorine-free bleaching, and that totally chlorine-free bleaching has not been demonstrated to be universally applicable to pulps made by ammonium-based processes. Therefore, the Agency is considering segmenting this proposed subcategory to better reflect the product considerations, the variation of manufacturing processes, and the demonstration and feasibility of pollution prevention process changes. The segments being considered by EPA are:

(a) Production of pulp and paper at papergrade sulfite mills using an acidic cooking liquor of calcium, magnesium, or sodium sulfite.

(b) Production of pulp and paper at papergrade sulfite mills using an acidic cooking liquor of ammonium sulfite.

(c) Production of pulp and paper at specialty grade sulfite mills. Specialty grade sulfite mills are those papergrade mills producing specialty grade pulp characterized by a high percentage of alpha cellulose and high brightness. Typical end uses of such pulp include plastic molding compounds, saturating and laminating products, and photographic papers.

The technology basis for papergrade sulfite products made by the first segment (calcium-, magnesium-, and sodium-based processes) is likely to be totally chlorine-free bleaching, as proposed.

For the second segment (ammonium-based), EPA has received comments and data regarding the applicability of TCF bleaching. The Agency's preliminary conclusion regarding this information is that TCF bleaching is not demonstrated and may not be feasible for the full range of products produced by ammonium-based sulfite mills in the United States. This conclusion is based primarily on the greater difficulty in bleaching ammonium-based sulfite pulps (especially those pulps derived from softwood) without the use of chlorine-containing compounds compared to other sulfite pulps, and the inability to maintain product specifications for certain products within this segment using TCF bleaching. TCF bleaching has not been demonstrated for products with a high percentage of ammonium-based sulfite pulp that also require low dirt count and high strength. Laboratory scale data have been submitted by a firm producing such products indicating that such products can be produced with elemental chlorine-free (ECF) technologies.

EPA expects to promulgate bleach plant effluent limitations for dioxin, furan, and chlorinated phenolic compounds for the ammonium-based segment. EPA anticipates that it will reserve promulgation of bleach plant chloroform limitations and end-of-pipe AOX limitations for this segment until such time that sufficient performance data are available for a mill with the product quality concerns discussed above. EPA expects to have data that could serve as the basis of chloroform and AOX limits for this segment no later than mid-1997.

For the third possible segment (mills that produce specialty grade pulps), EPA has received comments and data that indicate key pulp and product characteristics have not been achieved using TCF bleaching technologies. Data from a firm producing specialty grade pulps indicate required product characteristics may be achievable using ECF bleaching technologies. These results are from limited laboratory scale trials.

The Agency is continuing to work with specialty sulfite pulp manufacturers as their research efforts progress and therefore does not expect to promulgate final effluent limitations guidelines and standards for this segment of the papergrade sulfite subcategory in 1996. EPA anticipates, however, that alternative bleaching processes developed as a result of these research efforts should contribute to substantial reductions from current operating practices in the generation and release of pollutants including, for example, air emissions of chloroform and discharge of chlorinated organic compounds in wastewaters. EPA encourages mills in this segment to undertake and expeditiously complete developmental work that will facilitate installation of alternative process technologies that achieve these pollution prevention goals at the earliest possible date.

2. Technology Options for BAT

For papergrade sulfite mills using an acidic cooking liquor of calcium, magnesium, or sodium sulfite, the TCF technology option being considered as the technology basis for limitations is oxygen and peroxide enhanced extraction, followed by peroxide bleaching. Although still TCF, the technology sequence is a change from proposal, when TCF was an oxygen stage with peroxide addition, followed by a peroxide bleaching stage. This change to the TCF bleaching sequence reflects the more common approach to TCF bleaching within the proposed papergrade sulfite subcategory, and also reflects the technology basis of the mill from which performance data have been collected.

For papergrade sulfite mills using an acidic cooking liquor of ammonium sulfite, the technology option being considered as the technology basis for limitations is complete (100 percent) substitution of chlorine dioxide for chlorine, peroxide enhanced extraction, and elimination of hypochlorite. This sequence reflects the results of laboratory trials showing the ability to produce the full range of products manufactured by mills in the ammonium segment, with acceptable final product characteristics.

For production of pulp and paper at specialty grade sulfite mills, technology development work is still ongoing. The most likely technology basis for this segment is oxygen delignification, complete (100 percent) substitution, and oxygen and peroxide enhanced extraction.

3. Costs

EPA revised its cost estimates for mills in the subcategory by using the revised bleaching sequences outlined above. EPA also has updated equipment cost curves and unit operating costs. The detailed basis of these revised cost estimates are provided in the record (DCNs 13920, 13947). The preliminary estimates of capital costs for mills in the first two segments of the papergrade sulfite subcategory are $57.9 million. The preliminary annual operating and maintenance costs are estimated to be $1.3 million per year. Total annualized costs are estimated to be $6.6 million per year. These estimates do not include costs for specialty grade sulfite mills.

4. Effluent Reduction Benefits

EPA has updated the calculation of effluent reduction benefits for each papergrade sulfite mill, adjusting the baseline to mid-1995. EPA used methodology similar to that used for the proposed bleached papergrade kraft and soda subcategory.

5. Revised Effluent Limitations for BAT and PSES

Table 7 presents the preliminary results of revising BAT effluent limitations for the proposed papergrade sulfite subcategory, based on TCF bleaching for the calcium-, magnesium-, and sodium-based segment and ECF bleaching for the ammonium sulfite segment. For a discussion of the pollutants EPA is considering addressing in its final rules for this proposed subcategory, see Section V.A.5 of today's notice.

TABLE 7.— PAPERGRADE SULFITE SUBCATEGORY BLEACH PLANT DAILY MAXIMUM LIMITATIONS

	Proposed	Calcium, magnesium, and sodium-based sulfite pulping TCF bleaching	Ammonium-based sulfite pulping ECF bleaching
TCDD (ng/kkg)	none	none	ND
TCDF (ng/kkg)	none	none	ND
Chlorinated Phenolics (mg/kkg).	none	none	ND
Chloroform (g/kkg).	none	none	TBD [a]
AOX (kg/kkg)	0.1 [b]	ND [b] ...	TBD [a]

[a] To Be Developed (TBD).
[b] End-of-pipe limitation.

Table 8 presents the proposed effluent limitations for COD. However, the supplemented database for the proposed papergrade sulfite subcategory has very limited data to characterize COD loadings either for on-site sources (including pulping and bleaching and other sources) or the performance of the best spill prevention (BMPs), process changes, and end-of-pipe biological treatment systems. As noted previously, EPA will consider additional data and comments received in response to this notice in developing final COD limits for TCF (calcium-, magnesium-, and sodium-based sulfite) and ECF (ammonium-based sulfite) mills in this subcategory. However, EPA also is considering deferring developing COD limits until BAT COD limits are developed for other subcategories in a later rulemaking.

TABLE 8.—PAPERGRADE SULFITE SUBCATEGORY END-OF-PIPE COD

	As proposed	Segment A [a] (kg/kkg) TCF Bleaching	Segment B [b] (kg/kkg) ECF Bleaching
Long-Term Average.	63.7	TBD	TBD
Monthly Average Limitation.	71.2	TBD	TBD
Daily Maximum Limitation.	144	TBD	TBD

[a] Segment A:Calcium-, magnesium-, and sodium-based sulfite pulping.

[b] Segment B:Ammonium-based sulfite pulping.

6. Conventional Pollutant Limitations

As is the case for the proposed papergrade kraft and soda subcategory, the Agency is considering promulgating more stringent effluent limitations for conventional pollutants for the proposed papergrade sulfite subcategory only if such limits pass the BCT cost test. EPA solicits comment on this approach. The revised conventional pollutant limitations would apply to the calcium-, magnesium-, or sodium-sulfite segment and to the ammonium sulfite segment, but not to the specialty grade segment. Characteristics of wastewaters from specialty grade sulfite mills are significantly different than wastewaters from papergrade sulfite mills in the other two segments. The Agency does not as yet have sufficient data to establish performance levels for conventional pollutants for the specialty grade segment.

EPA has updated and revised its analysis of performance levels in response to comments and additional data. These changes are detailed in the record (see DCN 13954). Table 9 summarizes the adjustments to the proposed BCT options and the revised BCT option.

TABLE 9.—PAPERGRADE SULFITE SUBCATEGORY [a] Long-Term Average Performance of Proposed BCT Options and Revised BCT Option

	BOD_5 Long-Term Average (kg/OMMT)	TSS Long-Term Average (kg/OMMT)
Proposal Option 1	4.97	5.46
Proposal Option 2	3.60	4.74
Revised Option	7.06	8.39

[a] Applicable to Calcium-, Magnesium-, and Sodium-based Sulfite Pulping Segment, and to Ammonium-based Sulfite Pulping Segment.

7. Technology Options and Revised Effluent Limitations for NSPS

The technology basis of NSPS for the segments of the proposed papergrade sulfite subcategory is likely to be the same as for the BAT limitations. For calcium-, magnesium-, and sodium-based sulfite mills, TCF-based technology is the likely basis for NSPS. TCF bleaching has not been demonstrated as applicable to the full range of products made by ammonium-based sulfite mills; therefore, ECF-based technology is likely to be the basis of NSPS for mills in this segment. EPA plans to reserve NSPS for specialty grade sulfite mills.

EPA proposed NSPS for conventional pollutants based on best demonstrated end-of-pipe secondary wastewater treatment. The treatment system with the lowest long-term average BOD_5 discharge was used to characterize the best demonstrated performance. EPA does not anticipate changing this methodology for developing NSPS for the proposed papergrade sulfite subcategory. EPA continues to maintain that any newly constructed mill will be able to achieve the same discharge load as the best existing mill. Because of the changes since proposal in the data sets characterizing typical treated effluent loads for conventional pollutants for the proposed papergrade sulfite subcategory, the best existing performance has changed, as summarized in Table 10. The end-of-pipe performance of the single best mill adequately represents the expected variability in raw materials, processes, and products for mills in this subcategory.

TABLE 10.—PAPERGRADE SULFITE NSPS CONVENTIONAL POLLUTANTS (LONG TERM AVERAGES)

	BOD_5 (kg/OMMT)	TSS (kg/OMMT)
Proposed NSPS	2.69*	2.99*
Revised NSPS	5.61	8.98

*Note that this is the average load of the best mill identified in the Technical Development Document for the proposed rule.

8. Economic Impacts

a. *Costs and Impacts.* The economic analysis for papergrade sulfite mills was revised and updated in a manner similar to that described in Section V.A.12 of today's notice for the proposed bleached papergrade kraft and soda subcategory.

Total annualized BAT and PSES costs for the papergrade sulfite subcategory are estimated to be approximately $6.6 million (post-tax). No mills would be expected to close as a result of these costs, with no related job losses.

b. *Cost-Effectiveness.* The following results are for the first two segments of the papergrade sulfite subcategory. Cost-effectiveness ratios are not yet available for each of these segments, reported separately.

For direct dischargers, the cost-effectiveness ratio using pre-tax-costs, is $10 per pound-equivalent removed. For indirect dischargers, the cost-effectiveness ratio is $284 per pound-equivalent removed.

VI. Environmental Assessment

At proposal, EPA estimated 2,3,7,8 TCDD (''dioxin'') and 2,3,7,8 TCDF (''furan'') concentrations in fish tissue and then used those concentrations to estimate individual cancer risks and non-cancer hazards from consuming contaminated fish. EPA calculated estimates for recreational and subsistence anglers using two water quality models. One is a simple dilution model that assumes complete mixing and bioavailability with contaminant accumulation in fish estimated by a bioconcentration factor (BCF). The other model is EPA's Dioxin Reassessment Evaluation Model (DRE), which estimates fish tissue concentrations by equilibrium partitioning between the fish tissue and contaminants adsorbed to the organic fraction of sediments suspended in the water column. EPA received comments asserting that EPA improperly employed the simple dilution model as a basis for predicting the risk from dioxin and furan discharges. The comments further suggest that EPA should only use the ''more realistic'' DRE model and not the simple dilution model to estimate human exposure.

After evaluating these comments and new data related to the water quality modeling for hydrophobic compounds, such as dioxin and furan, EPA is considering changing its methodology for estimating dioxin and furan concentrations in fish and for estimating individual cancer risks and non-cancer hazards for the final rule. EPA is considering not using the simple dilution model, which assumes complete mixing and bioavailability with contaminant accumulation in fish estimated by a bioconcentration factor, but instead using the DRE model. If EPA uses the DRE model, however, EPA would replace the Biota to Suspended Solids Accumulation Factor (BSSAF factor) of 0.09 (based on Lake Ontario data which is primarily historical sources) with a BSSAF factor of 0.2, a value considered more appropriate for ecosystems with ongoing impacts (see ''Estimating Exposures to Dioxin-Like compounds'' Volume III: Site-Specific Assessment Procedures; EPA 1994; DCN 13955).

EPA is still conducting its reassessment of dioxin and its impacts on human health and the environment. Results of that reassessment available prior to completing the Cluster Rules will be considered as appropriate. EPA also has made available the 1995 database update of the National Listing of Fish and Wildlife Consumption Advisories. See the record at DCN

14016, Section 20.3. This listing is PC-based and available to the public free of charge from the Internet through the following URL: HTTP://www.epa.gov/OW/OST/Tools.

VII. Best Management Practices

In the proposed regulations EPA included provisions for leak and spill prevention, containment, and control through best management practices (BMPs). EPA has received comments that generally support the use of BMPs. However, some commenters challenged the details of these provisions. EPA continues to believe that leak and spill prevention, containment, and control through BMPs yield not only increased environmental benefits but also improved efficiency of operations at pulp and paper mills. The Agency also intends that BMPs apply in the final rule both for direct and indirect discharging mills.

The Agency has assessed preliminarily the comments and data received on BMPs and has held detailed discussions with stakeholders regarding options for BMPs and associated costs. EPA received a substantial amount of additional information and data, including costs, through a survey conducted by AF&PA and NCASI. Based on the information and data received from mills that have implemented spill prevention and control programs, EPA has reformulated the scope of BMPs to focus on spent pulping liquor (i.e., black liquor and red liquor) spill control. The Agency is also restructuring BMP program requirements to allow for further flexibility in how BMPs are implemented to achieve meaningful prevention and control of leaks and spills of spent pulping liquors. The Agency has prepared and included in the record (DCN 13894) a document that incorporates EPA's preliminary revisions to its proposed BMP program.

In response to comments, this document also describes a management program being considered by EPA for monitoring the implementation of BMPs. The purposes of this requirement are: (1) To provide a framework for monitoring the performance and effectiveness of BMPs on a continuing basis; and (2) to establish an early warning system to detect trends in spent pulping liquor losses that might otherwise not be obvious from other sources. The program entails establishing upper operating control limits on a measure of organic loading at the influent to wastewater treatment or at another key location or locations in the mill sewer system, and responding to exceedances of those control limits with investigative and corrective actions, as appropriate. EPA does not intend that exceedances of the upper control limits will constitute violations of NPDES permits or pretreatment control mechanisms. Failure of the owner or operator to conduct the required monitoring or failure to conduct investigative or corrective actions when such limits are exceeded would constitute violations.

EPA believes, consistent with a comment received, that COD is among the best, if not the best, pulp mill wastewater characteristics to monitor to meet the requirements of this provision of the BMP regulation. The test method for COD is highly reproducible and can be run in a short period of time, unlike BOD_5. It also has the advantage of being responsive to losses of turpentine and soap, unlike conductivity which is not responsive to these materials. Accordingly, the revised BMP program incorporates COD as the control parameter to measure performance of pulping liquor spill controls. The Agency seeks comments on the revised approach to BMPs and related details, including costs. EPA also seeks comment on the management program described above, including its potential effectiveness and any implementation issues it might present, especially from a permit writer's perspective.

VIII. Pretreatment Standards

In the proposal, EPA discussed three options for pretreatment standards for existing sources (PSES) for the 13 indirect discharging facilities in four proposed subcategories, each of which contribute the majority of flow or pollutant loadings to a publicly owned treatment works (POTW). The option selected for proposal would have set PSES for these indirect dischargers for the same pollutants controlled by BAT for direct dischargers; the proposed standards would have applied at the point of discharge from the bleach plant and at the point of discharge to the POTW, depending upon the pollutant proposed to be regulated. EPA also solicited comment on whether pretreatment standards for BOD_5 and TSS were warranted to ensure that pass-through of these and other pollutants (e.g., AOX) did not occur.

For the proposed bleached papergrade kraft and soda subcategory and the proposed papergrade sulfite subcategory, EPA's record shows that both direct-discharging mills in those proposed subcategories and POTWs accepting wastewaters from pulp and paper mills in those proposed subcategories generally operate secondary biological treatment systems. Data now available to EPA suitable for characterizing treatment system performance at these POTWs still are quite limited. In general, the data provided by indirect-discharging facilities, POTWs, and other interested parties lack paired influent and effluent AOX, COD, and color data points, accompanying information concerning operations (at either the treatment system or related to pulping and bleaching process areas of the mills), analytical methods, and quality control/assurance (QA/QC) associated with sample collection, handling, and laboratory analysis. In addition, some commenters provided summary information unaccompanied by individual analytical data points, particularly for POTW influent. As a result, EPA has been unable to develop a complete and rigorous database for conducting a pass-through analysis. Nevertheless, EPA has used the limited information available to the extent possible in comparing pollutant reductions attained by direct-discharging mill treatment systems and by POTWs accepting similar wastewaters in evaluating the potential for pass-through to take place. Based on the limited data available for the proposed bleached papergrade kraft and soda and the proposed papergrade sulfite subcategories, it appears that secondary biological treatment systems at POTWs and direct-discharging mills generally achieve comparable reductions of BOD_5, TSS, AOX, COD, and color. (See the record at DCN 13956.) Thus, EPA has concluded preliminarily that the data reviewed for this analysis do not indicate pass-through of these pollutants is likely to occur at these POTWs. EPA solicits comments on this finding.

Accordingly, EPA anticipates that it will not promulgate national pretreatment standards for new or existing sources for BOD_5, TSS, AOX, COD, or color for the proposed bleached papergrade kraft and soda subcategory or the proposed papergrade sulfite subcategory. Any new data received on these pollutants, particularly for POTWs that did not submit data usable for this analysis, will be considered in preparing the final rules and will be placed in the record. Notwithstanding EPA's preliminary decision not to set PSES or PSNS for those pollutants for these subcategories, other regulatory authorities may determine, based on a site-specific review of treatment system performance, that pass-through of these or other pollutants does indeed occur and that locally imposed limits are appropriate.

Concerning the pollutants discharged from the bleach plant, EPA continues to

believe that sludge contamination occurs and therefore is likely to promulgate PSES and PSNS for the same pollutants controlled at the bleach plant by BAT limitations, as included in the proposal and as now being considered in this notice, for direct-discharging facilities. See Sections V.A and V.B, supra, for discussion of pollutants selected for BAT regulation at the discharge from the bleach plant.

IX. Implementation Issues

A. Permit Limits for Multiple Subcategory Mills

The Agency has structured the revised effluent limitations guidelines and standards to be used in a building block approach. This means that the applicable NPDES permit limitations for mills with production in more than one subcategory will be the sum of the mass loadings based on the appropriate production in each subcategory and the respective subcategory effluent limitations guidelines or standards. In some cases, such any BCT limitations for conventional pollutants, this may entail the use of two distinct subcategorization schemes, revised and current. Where the Agency has revised effluent limitations guidelines or standards, the appropriate production encompassed in the revised subcategories will be utilized for the calculation of mass limitations, with all remaining production categorized and mass loadings calculated according to the current subcategory scheme.

B. New Sources

In the proposed rule, EPA included definitions of types of facilities that would be considered new sources. EPA received comments that asserted that EPA had no basis for changing the definition of new sources as provided in National Pollutant Discharge Elimination System (NPDES) permit program regulations (found at 40 CFR 122.2 and 122.29). EPA is considering clarifying its definitions such that only new ''greenfield'' mills and new capacity increases at existing mills would be considered new sources. Any existing mills that renovate existing fiber lines at existing production levels for purposes of complying with either BAT or PSES effluent limitations or standards or any existing mills that voluntarily accept more stringent BAT limitations as part of the incentives program would not be considered new sources.

C. Monitoring

EPA proposed specific minimum monitoring requirements in the regulation (at § 430.02) with monitoring frequencies for pollutant parameters included in both bleach plant effluent limitations and end-of-pipe effluent limitations. EPA is considering retaining these minimum monitoring requirements as proposed at least for the two proposed subcategories covered by this notice, and possibly also for remaining bleaching subcategories to be covered in a later rulemaking. However, EPA acknowledges that this approach would be a change from past effluent guidelines practice where EPA issued only guidance with respect to monitoring. EPA therefore welcomes comment—particularly from permitting authorities—regarding the appropriateness of promulgating specific minimum monitoring requirements. EPA also acknowledges that specific minimum monitoring requirements may be at odds with the Agency's recent initiative to tailor monitoring requirements to particular circumstances, notably compliance records.

EPA has received a suggestion from the industry that if mills certify that elemental chlorine is not being used in bleaching operations (i.e., ECF—complete substitution with chlorine dioxide and elimination of hypochlorite), monitoring should not be required for dioxin, furan, or any other chlorinated organic pollutant parameters proposed to be regulated (i.e., AOX, chloroform, chlorinated phenolic compounds, etc.). EPA does not agree with the industry's assertion that substitution of chemicals alone (changing to and ECF process), without regard for operational controls, is sufficient to warrant such an approach. There are data available for ECF operations indicating, for example, that detectable concentrations of dioxin still can be generated in bleach plant effluents. Contrary to the industry's assertion, this finding reflects the need for careful control of chemical (e.g., chlorine dioxide) application rates. Further, chloroform concentrations in wastewater, and also air emissions, can be expected to exhibit considerable variability reflecting pulp washing and other operational practices. Therefore, without meaningful monitoring data to reflect a range of operational practices, as well as raw materials and final products, there is no assurance that changes in process technologies that are installed are being properly operated or that bleach plant limits or end-of-pipe limits are being achieved consistently.

D. BMPs as NPDES Permit Special Conditions

EPA proposed that specific BMP requirements be fully implemented within thirty months from the effective date of the final rules, separate from the normal NPDES reissuance process. This structure would be retained for indirect dischargers because the BMPs would be promulgated as part of PSES. For direct dischargers, however, EPA is now considering requiring implementation of BMPs as special NPDES permit conditions and to require implementation of the BMPs within thirty months from the effective date of the final rule or the date the mill's next NPDES permit is issued, whichever is later. However, EPA expects that the compliance date for implementation shall not extend beyond five years from the effective date of the final rule, because EPA expects NPDES permit for those mills to be reissued on a timely basis.

E. Relationship Between the Cluster Rules and Project XL

As described in the May 22, 1995 Federal Register notice (60 FR 27282), EPA is participating in the development of regulatory reinvention excellence and leadership (Project XL) pilot projects. Such projects would involve the exercise of regulatory flexibility by EPA in exchange for a commitment on the part of the regulated entity to achieve better environmental results than would have been attained through full compliance with all applicable regulations. One bleached papergrade kraft mill is participating in Project XL. Many of the incentives listed in Section X of this notice provide regulatory flexibility in exchange for superior environmental benefits. EPA solicits comments on how, if at all, project XL should be reflected in this rulemaking.

F. Summary of Changes to Methods for Analysis of Pulp and Paper Industry Wastewaters

The pulp and paper industry and other commenters have provided suggestions for improvement of methods for analysis of pulp and paper industry wastewaters. Where these suggestions are expected to have a positive effect on the reliability of analytical data produced, EPA will incorporate the suggestions into the final versions of methods incorporated by reference into the final rule to be promulgated at 40 CFR part 430. Methods for which changes are anticipated and a summary of these changes are given below. This summary is not intended to be all-inclusive, but to be indicative of the

type of changes anticipated. Detailed revisions to these methods will be added to the record at a later date.

1. Method 1624, Volatiles by Purge-and-Trap and Isotope Dilution GC/MS

Suggested changes focused mostly on clarification of the language in Method 1624 rather than on substantive modifications of the method. These clarifications will be made when Method 1624 is revised, updated, and re-promulgated at 40 CFR Part 136. This update is expected in late 1996 or in 1997. No changes will be made to Method 1624 for promulgation of the pulp and paper industry Cluster Rules.

2. Method 1650, AOX by Adsorption and Coulometric Titration

EPA expects that changes will be made in Method 1650 as part of this rulemaking to improve the ease of use and the reliability of this method. Among the possible changes, EPA expects that the breakthrough specification will be adjusted based on data provided by the industry; that a 25-mL adsorption volume will be allowed, provided the sensitivity requirements in the method are met; that greater flexibility will be allowed in the apparatus cited in the method; that 2-mm columns only will be allowed; and that a minimum integration time of 10 minutes will be added to assure that all AOX is measured.

3. Method 1653, Chlorophenolics by In-Situ Derivatization and Isotope Dilution GC/MS

EPA expects that changes will be made to Method 1653 as part of this rulemaking to improve the reliability of the method and to lower costs of measurements. Among the possible changes, EPA anticipates lowering the spiking levels of the labeled compounds to reduce interferences with trace levels of the analytes of interest and to lower the cost of labeled compounds; allowing the use of solvents more appropriate to the particular analyte being dissolved; the addition of the labeled compounds to the sample prior to pH adjustment; and a reduction in method flexibility in certain critical areas.

4. Method NCASI Technical Bulletin No. 253, Color

Changes anticipated as part of this rulemaking are: Removal of extraneous tables; revision of text of interferences; use of a prefilter and/or centrifugation to reduce turbidity; and allowance of use of a buffer solution and prefiltration so long as these changes do not result in lower color values.

G. Regulatory Flexibility Analysis

At the time of proposal, EPA examined the potential economic impact of the proposed Cluster Rules on small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq., Pub. L. 96–354). See 58 FR 66077, 66154, (December 17, 1993). As part of this analysis, EPA estimated the economic impact of the proposed integrated regulatory alternative on small mills and small companies involved in pulp, paper and paperboard manufacturing. See 58 FR 66154. The analysis also presented the Agency's consideration of alternatives that might minimize the impacts of the proposed Cluster Rules on small entities. See 58 FR 66165. EPA did not analyze the alternative represented by Option A at proposal because it lacked the data and information necessary to perform that analysis. Based on the information and data EPA has received since proposal, EPA believes that Option A represents a significant alternative to the proposed BAT option. Because that alternative, if adopted, would afford more flexibility to small businesses than the proposed option and because the original analysis addressed what EPA regards as the most stringent set of regulatory alternatives, EPA believes that the original analysis continues to provide an adequate basis by which to evaluate the impact of the proposed Cluster Rules on small entities. Moreover, mills in the proposed bleached papergrade kraft and soda and papergrade sulfite subcategories typically are not small businesses, whereas the proposed Cluster Rules included other subcategories in which small businesses are more likely to be operating. As described earlier in this notice, these other subcategories will not be included in this initial phase of final rulemaking but in a later phase of rulemaking. For this reason, EPA believes that no further regulatory flexibility analysis is necessary at this time. However, EPA will perform a final regulatory flexibility analysis in compliance with all applicable laws at the time it promulgates the Cluster Rules.

X. Incentives for Further Environmental Improvements

As noted earlier in this notice, EPA's vision of long term environmental goals for the pulp and paper industry includes continuing research and progress toward environmental improvement. The Agency believes that individual mills could be encouraged to explore and install technologies that could achieve further pollutant reductions through a voluntary incentives program designed to complement the baseline BAT. This industry's participation in the 33/50 program and its progress toward reducing toxic discharges in advance of the proposed BAT revisions indicate that such an approach may be widely accepted and utilized by individual mills.

Further, EPA recognizes that technologies exist, and are currently employed by some mills, that have the ability to surpass the environmental protection that would be provided by compliance with limits and standards based on the final rules. These technologies include extended delignification (e.g., extended cooking and/or oxygen delignification) in conjunction with complete substitution (if Option A is selected), and TCF bleaching technologies. Some mills also are investigating and developing advanced technologies that achieve major reductions in water use and process wastewater flow through treatment and recycle of pulping and evaporator condensates and bleach plant filtrates to recovery systems.

EPA has received suggestions for an incentives program from a number of stakeholders. In addition to the suggestions EPA has incorporated into its preliminary incentives program, EPA also received ideas for other incentives; these ideas are summarized later in this notice. From these and other stakeholder suggestions, EPA has developed a preliminary program, presented below, that is intended to provide incentives for further long term environmental improvements. EPA is considering several types of incentives to encourage further environmental improvements by mills that have yet to decide on an approach to comply with BAT effluent limitations. Because mill-specific factors, including product specifications and existing equipment, may affect the technical approach taken or the environmental goal attainable by an individual mill, EPA is considering several tiers of performance-based incentives. The appropriate limits and standards for each of tier would be codified as an alternative BAT and, as appropriate, NSPS for any mill choosing to participate in the incentives program at that tier. Under this approach, greater incentives would be available for greater reductions in pollutant discharge.

EPA recognizes that there are mills in the proposed bleached papergrade kraft and soda subcategory that have already installed, have committed to install or may yet decide to install, advanced technologies that are achieving or have the potential to achieve effluent limitations more stringent than those

likely to be adopted in the final rules (particularly if Option A is selected). These mills would qualify for the incentives program, and the incentives would actually serve as rewards for actions already taken.

A key tenet of this program is that mills would voluntarily chose an incentives-related BAT/NSPS as the basis for their technology-based NPDES permit limits (e.g., inclusion in NPDES permits of AOX effluent limitations more stringent than those based on the baseline BAT as well as condensate and bleach plant wastewater flow reduction limitations) in order to qualify for these incentives. Mills would not be required to enter this program. A mill choosing not to accept incentives-related BAT limitations or NSPS would be subject to the baseline BAT limitations or NSPS would be subject to the baseline BAT limatations on NSPS of the type discussed in today's notice in Section V.

Any mill could voluntarily enter at any tier appropriate to its individual circumstances. Further, mills that enter either at Tier I or Tier II could decide, after making such a commitment in permits but before termination of the appropriate compliance period (i.e., not later than five years—Tier I, or not later than ten years—Tier II), to commit to the requirements of a more stringent tier (i.e., Tier II or Tier III). The limitations and standards corresponding to those tiers would then be BAT for that mill. Threshold requirements at Tier I being considered for mills to qualify would include unbleached pulp characteristics typical of extended delignification technologies (e.g., oxygen delignification) and recycle of pulp mill filtrates to recovery systems (for purposes of this discussion using Option A as the BAT baseline). For NSPS, the entry tier would probably be Tier II (as tentatively defined in this Notice), assuming that the baseline NSPS is codified as discussed in Section V.A.11 above.

Mills that operate a single fiber line and that achieve performance reflective of advanced technology on that line will be considered eligible as a whole mill for the incentives described below (except for operations outside of the pulp, paper and paperboard industrial category and the proposed bleached papergrade kraft and soda subcategory). At mills with more than one fiber line, only those fiber lines that achieve performance reflective of advanced technology performance standards will be eligible for the incentives described below.

A preliminary list of possible incentives along with the Agency's preliminary structure of these advanced technology program tiers follows below. This structure consists of three tiers that would apply if Option A is selected as the baseline BAT in the final rule.

A. Advanced Technology Tiers

1. Definition of Incentives-Related BAT Limitations or NSPS by Tier

EPA is considering including in the final regulation three tiers of BAT limitations and two tiers of NSPS applicable to the proposed bleached papergrade kraft and soda subcategory, each of which would be defined in the Code of Federal Regulations. In addition to the possible limitations and standards described below, each tier also would include as limitations and standards for other parameters the bleach plant limitations EPA is considering promulgating as part of the baseline BAT/NSPS.

a. Tier I BAT Limitations. To qualify for this tier, a mill would need to operate its advanced technology (AT) fiber line(s) to achieve a final effluent AOX long term average (LTA) of 0.30 kg/kkg. AT fiber lines must also achieve reduced lignin content in unbleached pulps as measured by a kappa number of 20 for softwoods and 13 for hardwoods. Finally, AT fiber lines must recycle to recovery systems all filtrates up to the point at which the unbleached pulp kappa numbers are measured (e.g., brownstock into bleaching).

b. Tier II BAT Limitations and NSPS. To qualify for this tier, a mill would need to operate its AT fiber line(s) to achieve a final effluent AOX LTA of less than 0.10 kg/kkg, and total pulping area condensate, evaporator condensate, and bleach plant wastewater flow of 10 m^3/kkg or less.

c. Tier III BAT Limitations and NSPS. To qualify for this tier, a mill would need to operate its AT fiber line(s) to achieve a final effluent AOX LTA of 0.05 kg/kkg, and total pulping area condensate, evaporator condensate, and bleach plant wastewater flow of 5 m3/kkg or less.

For each tier described above, EPA would also promulgate appropriate limitations (maximum monthly average and maximum for any one day) that account for variability around the long term average (LTA) limits presented above. See the record for discussion of limits and standards defining these tiers (DCN 13957).

2. Basis for Incentives-Related BAT Limitations and NSPS

For Tier I (if complete substitution is chosen as the baseline BAT), the BAT model technology would be that represented by BAT Option B. EPA is not selecting a model technology for Tiers II and III (under the present structure) because these Tiers are intended to reflect evolution of advanced technologies that cannot be specified today. However, EPA expects that those technologies would move mills toward minimum impacts and closed loop operations. EPA has chosen to use AOX as a performance standard for each of the three incentives-related BAT tiers and the two NSPS tiers because AOX is a measure of progress in reducing the total chlorinated organic matter in wastewaters resulting from the bleaching of pulps. In addition, the use of AOX rather than other measures of organic matter (e.g., BOD) will further encourage a pollution prevention approach instead of end-of-pipe treatment technologies. EPA seeks comment on including COD as a performance criterion in addition to AOX, and seeks comment on and data supporting the performance-based COD value that would be appropriate for each of the tiers in terms of mass-loading or percent reduction beyond BAT/NSPS levels.

In addition to the AOX criterion, EPA is considering establishing BAT limitations for Tier I that include kappa numbers measured prior to bleaching and a narrative limitation calling for recycling of the filtrates generated prior to the point at which that kappa is achieved. By meeting the kappa number and recycle limitations, Tier I mills would achieve substantial reductions in precursors for chlorinated organic pollutants found in lignin (measured as kappa number values) beyond reductions achieved by mills with conventional pulping processes. Further, Tier I mills would be bleaching pulps with less lignin and would realize significant reductions in the amount of unrecoverable bleaching chemicals required to achieve their target brightness. By using less bleaching chemical, Tier I mills would further increase the margin of safety by reducing the formation and discharge of chlorinated organic pollutants generated by bleaching pulps with chlorine-containing compounds, including chlorine dioxide. By recycling the bleaching filtrates, Tier I mills also would be implementing an important building block for long-term flow reduction goals.

By defining Tier I with parameter values (AOX, kappa numbers) and recycle requirements as presented above, EPA intends to provide maximum encouragement to as many mills as possible to achieve the performance of at least the initial threshold of the advanced technology

program. Adopting threshold performance criteria that are too stringent could discourage mills from making additional capital investments beyond those necessary to achieve the baseline BAT. This could undermine one goal of the incentives program, which is to achieve the greatest environmental results possible consistent with mills' capital investment cycles. Conversely, setting threshold criteria at levels that could be met by some mills that only comply with the baseline BAT limitations and do not employ advanced technologies could serve as a disincentive to invest in advanced technologies that achieve dramatic reductions in pollutant loadings and flow. The kappa numbers defined above for Tier I, while at the upper end of the range of values achieved by these technologies, nonetheless appear to separate mills that employ them from mills that would use conventional pulping technologies and achieve the BAT effluent limitations now being considered by EPA. EPA seeks comment on this finding.

EPA is considering setting the incentives-related BAT limitations and NSPS for Tier II and Tier III based on a more stringent philosophy than for Tier I. EPA believes that Tiers II and III should reflect movement toward the long-term goal of minimizing impacts of mills in all environmental media through partially or fully closed loop processes. For Tier II, EPA is considering an AOX limit based on a long-term average (0.10 kg/kkg) that is currently being achieved by some of the best mills in the industry. For Tier III, EPA is considering an AOX limit based on a long-term average (0.05 kg/kkg) that is being achieved only by a very few mills, including one ECF mill. While this ECF mill achieved the AOX limit only with hardwood furnish, it did so without the level of flow reduction anticipated for Tier III. It is the Agency's judgment, based on trends in ECF technology development to date, that with recycle of pulping and evaporator condensates and bleach plant filtrates necessary to achieve a wastewater flow of 5 m^3/kkg and removal of chlorides from filtrates (or at other points in the recovery cycle), commensurate reductions in the mass of chlorinated organic pollutants contained in wastewaters discharged also are likely to occur. For this reason, it is EPA's judgment that the Tier III AOX limit would be achievable by advanced ECF mills for both hardwood and softwood furnishes. It is also important to note that recently gathered data from TCF mills indicate that end-of-pipe AOX levels below detection limits can be achieved. For this reason, EPA expects that all TCF mills should be eligible to participate in this program (based solely on AOX performance) and that separate BAT/NSPS AOX limitations would be unnecessary. Therefore, it is the Agency's judgment that either advanced ECF or TCF mills will be capable of achieving this AOX limit for Tier III.

Flow reduction and progress toward closed loop mill operations are very important long-term environmental goals because releases to all environmental media would be minimized. Review of currently available data and literature indicates that the numerical values set forth to define Tiers II (10 m^3/kkg) and III (5 m^3/kkg) are appropriately stringent reduced flow targets by comparison to current wastewater flow for mills with extended delignification technologies. Moreover, EPA indicated in the March 8, 1996 notice that the industry's ''clean water alternative'' could be a MACT compliance alternative that conceptually will facilitate segregation, treatment, and reuse of condensates. Inclusion of pulping and evaporator condensates in these reduced flow targets is therefore both consistent with this potential alternative and appropriate in that it will foster even greater flow reduction through recycle and reuse of the greatest possible volume of process wastewater. While completely closed loop operations offer a theoretically desirable goal, EPA is concerned that without considerably more research and mill trials, the potential exists for cross-media transfers or product quality concerns.

As EPA presently conceives the incentives program, a mill would qualify for incentives only if it agrees to accept permit limitations corresponding to the tier it selects (e.g., for Tier II, an AOX limitation of 0.10 kg/kkg and condensate and bleach plant wastewater flow of 10 m^3/kkg) including all applicable bleach plant limitations (e.g., those corresponding to BAT Option B and the proposed NSPS). Those limitations would constitute BAT/NSPS for that mill. The permit developed for a mill participating in the incentives program also would need to contain all other permit limitations and conditions otherwise applicable to the mill, including any conventional pollutant limitations and standards established by these Cluster Rules, any water quality-based effluent limitations required under CWA section 301(b)(1)(C), and best management practices (BMPs) provisions.

3. Legal Authority to Establish Incentives-Related BAT Limitations and NSPS

EPA believes it has the legal authority to establish incentives-related BAT limits for Tier I, Tier II, and Tier III applicable solely at the election of the regulated entity. (Similar arguments support EPA's preliminary NSPS determination.) Under CWA section 304(b)(2), EPA is authorized to identify a technology as BAT after taking into account a variety of factors, including the cost of achieving such effluent reduction, non-water quality environmental impacts and such other factors as the Administrator deems appropriate. In this instance, EPA believes the limits corresponding to each of the tiers would reflect BAT for any participating mill for the following reasons.

First, having voluntarily agreed to make these limits enforceable in its permit, the mill represents to EPA that there is a technology that is the best available and economically achievable for that mill to achieve the limits. Thus, the costs of achieving the desired effluent reductions—evaluated against the mill's own choices—support the BAT finding. Second, EPA would conclude that a less stringent baseline BAT (e.g., for purposes of this discussion based on complete substitution) would not be BAT for such a mill on the date of promulgation because the mill is making investment and engineering decisions that would make a process focused solely on complete substitution technically and financially inappropriate (such as by over designing chlorine dioxide generation capacity). In other words, that process technology would not be ''best'' for those mills committed to moving beyond complete substitution to more stringent incentive-based limitations. Moreover, avoiding such over design would avoid unnecessary capital investments, with those investments possibly applied to projects to prevent other environmental impacts. Finally, application of incentives-related BAT limits would be completely voluntary; an Advanced Technology mill participating in the incentives program would always be free to forgo the incentives and to meet the baseline BAT limits instead.

The same analysis justifying the various pollutant parameter limits for the baseline (i.e., non-incentives) BAT applies equally to the incentives-related BAT limits for those parameters, with the addition of progressively more stringent end-of-pipe AOX limits, limits pertaining to lignin content in

unbleached pulp and recycle of filtrates for Tier I, and reductions in condensate and bleach plant wastewater flows for Tiers II and III. See Section V.A.5 and 9. EPA believes, for the reasons discussed in Section X.A.2, above, it has the authority to establish incentive-based BAT limits for lignin content in unbleached pulp, for recycle of filtrates, and for reduced condensate and bleach plant wastewater flows. Kappa numbers limits (representing the lignin content of unbleached pulp) can be used to reduce the presence of precursors for chlorinated organic pollutants in a mill's wastewater. Recycle of filtrates to chemical recovery processes reduces the mass of precursors for chlorinated organic pollutants, as well as all other pollutants in these wastewaters, that would otherwise be discharged. Limits for condensate and bleach plant wastewater flows move mills toward closed loop operations, thereby dramatically reducing chlorinated organic pollutants and all other pollutants otherwise found in mill wastewater discharges. The basis for these limits is discussed in Section X.A.2 above. EPA solicits comment on this approach, including the reasoning EPA offers in support of it.

B. Incentives Available Prior to Achievement of Incentives-Related BAT

1. Extended Compliance Schedules

A major obstacle to implementing advanced technologies in this industry is the disjunction between the statutory requirement that mills comply immediately with BAT and the longer time frames usually associated with a mill's investment plans. While the immediate compliance requirements of the Act promote, in the short term, prompt implementation of proven BAT technologies—and hence deliver over the long term the environmental benefits associated with achieving the BAT limits—EPA is concerned that the statutory deadlines also can discourage mills in this industry from implementing technologies superior to the BAT technology. EPA believes that many mills, were it not for the BAT time constraints, would choose to invest in more advanced technologies than BAT because the long-term environmental, operational, and market competitiveness benefits would be correspondingly greater. Such investments, however, typically require more time than the statute allows, especially in this industry where capital investment cycles are five years or longer. Mills wishing to implement—or to design and pilot—more advanced technologies are often faced with an unattractive choice: either achieve BAT immediately with the risk that that technology will be overtaken imminently in whole or in part by more advanced technologies, or risk extended noncompliance with BAT in pursuit of superior performance levels. This is particularly the case here, where mills can design their bleach plants either to achieve BAT, such as that represented by Option A, or to adopt a long-term approach that includes more advanced extended delignification processes (such as those anticipated under Tier I) or TCF processes. For example, if immediate compliance with baseline BAT limitations (for purposes of this discussion Option A) were to be required, these mills may be compelled to expand chlorine dioxide generating capacity to meet those limitations immediately even though that expanded capacity would be unnecessary once their advanced systems are in place. See also 61 FR 9383, 9395 (March 8, 1996) where EPA discussed a similar quandary regarding how short-term compliance with MACT could create a disincentive to adopt more advanced wastewater control technology alternatives.

EPA is considering addressing this tension through an incentive. Under this possible incentive, mills selecting an incentives-related BAT requiring immediate compliance with the limits corresponding to the chosen tier would receive additional time through an enforcement order to meet those limits. In this way, EPA hopes to give mills an incentive to implement advanced technologies and to accommodate the realities of capital investment cycles and complex implementation tasks such as flow reduction. Because the Clean Water Act requires immediate compliance with BAT limitations (including those contemplated by the incentive tiers), the permitting authority is foreclosed from establishing a longer deadline for compliance in the permit. However, the permitting authority is authorized to exercise its enforcement discretion to issue an accompanying enforcement order that includes a schedule by which the mill must achieve full compliance, including interim milestones as appropriate. This could also be accomplished through negotiated consent decrees under CWA section 309(a)(3). Extended compliance schedules established pursuant to this possible incentive would apply only to the BAT limitations and standards for Tiers I, II or III, including the baseline BAT bleach plant limits applicable to the mill. These extended compliance schedules would not govern compliance with other permit limitations and conditions, including those based on BCT, water quality concerns, or BMP requirements. Rather, any appropriate compliance periods pertaining to those requirements would need to be established under the authorities applicable to them.

When EPA is the permitting authority, EPA would exercise its enforcement discretion to extend BAT compliance periods for mills that accept incentives-related BAT limitations and standards in their NPDES permit. In addition, at the time the proposed Advanced Technology permit is made available for public comment, EPA would also make available the proposed enforcement order in order to give the public adequate notice of and opportunity to comment on the length of time contemplated by the compliance schedule and the proposed interim milestones. When EPA is not the permitting authority, EPA would issue guidance to States strongly urging States to issue similar compliance orders to Advanced Technology mills and to follow the public notice procedures described above.

EPA also would issue guidance strongly urging States to impose enforceable interim milestones as part of the compliance order that would incrementally benefit the environment during the interim period that would ensure that participating mills make reasonable progress toward achieving the superior performance represented by the various Advanced Technology Alternative BAT tiers. Where EPA is the permitting authority, EPA would impose such interim milestones itself. Milestones could include intermediate pollutant load and wastewater flow reductions in addition to research schedules, construction schedules, mill trial schedules, or other milestones appropriate to the advanced technology and the participating mill. EPA would encourage these interim milestones to be tailored to circumstances and process technologies at individual mills. The compliance order would also need to specify interim limits that function as the starting point for the mill's compliance schedule. EPA would issue guidance providing that the starting point for the in-plant limits and advanced technology AOX limit contained in the compliance orders would be no less stringent than existing effluent quality or the effluent limits imposed in the last permit, whichever are more stringent.

EPA recognizes that compliance orders also would be available for mills choosing not to participate in the incentives program. Typically

compliance orders for baseline BAT limitations require compliance no later than three years from the date the permit imposing such requirements is issued. In this possible incentive, EPA contemplates an approach that would be different from this typical practice in two respects: First, the compliance schedules would be longer, ranging from five to fifteen years; second, the extended compliance period would commence on the date the Cluster Rules are promulgated, not on the date the permit incorporating the relevant limits is issued.

With respect to the length of a compliance schedule for achieving incentives-related BAT limits and standards, EPA believes that the following time frames would be reasonable: Tier I—not later than five years beyond the effective date of the final rule; Tier II—not later than ten years beyond the effective date of the final rule; and Tier III—not later than fifteen years beyond the effective date of the final rule.

EPA regards five years as a reasonable time frame to achieve the incentives-related BAT limitations and standards corresponding to Tier I (including the bleach plant BAT effluent limitations) if Option A is the selected BAT because Tier I limitations could be achieved using known technologies (Option B technologies) within that timeframe without the closures predicted for Option B. In addition, premature compliance with certain BAT limitations could lead to counterproductive outcomes (e.g., installation of either excess or completely unnecessary chlorine dioxide generating capacity).

EPA regards ten years as a reasonable timeframe to achieve the incentives-related BAT limitations corresponding to Tier II because substantial flow reduction, to 10 m^3/kkg, is the most difficult and time consuming element of this tier. Recycle of a substantial portion of pulping and evaporator condensates and bleach plant filtrates, with the attendant complexities of total mill balances for very large volumes of process water and wastewater, requires considerable time before it can be implemented successfully at mill-scale. Nonetheless, achievement of enforceable interim milestones, including the BAT bleach plant limitations, in a period shorter than ten years is likely and should be required by the enforcement authority.

EPA regards fifteen years as a reasonable timeframe to achieve the incentives-related BAT limitations corresponding to Tier III. As for Tier II, flow reduction again is the most difficult and time consuming task. However, because achieving or surpassing flow reduction to 5 m^3/kkg for pulping and evaporator condensates and bleach plant filtrates approaches a closed mill configuration, even more technically difficult and time consuming tasks must be successfully completed. This probably would include removal of metals and chlorides by ''kidney'' technologies in order to control system scaling and corrosion problems while maintaining product quality and minimizing cross-media impacts. Successful completion of these tasks at individual mills will involve extensive research and mill trials. Nonetheless, achievement of interim milestones, including the BAT bleach plant limitations and intermediate levels of flow reduction, in a period shorter than fifteen years is likely and should be required by the enforcement authority.

EPA also believes that it has a reasonable basis to measure the extended time periods from the promulgation date of the Cluster Rules rather than from the date a participating mill's NPDES permit is issued. First, EPA wants to promote implementation of advanced technologies as soon as possible; if EPA were to measure the extended compliance period from the date of permit reissuance, compliance with Tier I limits could be deferred by as much as ten years from the date of promulgation. Second, EPA has determined that many mills in the proposed bleached papergrade kraft and soda subcategory are discharging under permits that have already expired, that will expire soon after the promulgation of the Cluster Rules, or that have reopener clauses to allow the permitting authority to adjust the permit to reflect the new effluent guideline limitations. EPA expects that permit writers will reissue these permits promptly after the Cluster Rules are published. Thus, the decision to measure an extended compliance period from the date of promulgation rather than from the date of permit issuance should have little practical effect on most mills. Third, mills in the proposed bleached papergrade kraft and soda subcategory have been on notice since at least 1993 that EPA was considering basing some portion of its Cluster Rules on extended delignification technologies. (In its 1993 proposal, EPA proposed to base BAT limitations on a process that included oxygen delignification and 100 percent substitution of chlorine dioxide for elemental chlorine.) In some cases, that proposal has already influenced investment decisions at some mills. Finally, with the issuance of this notice detailing EPA's possible incentives program, mills potentially interested in participating can plan accordingly with little prejudice.

EPA acknowledges that a mill choosing not to participate in the advanced technology incentives program in some cases could obtain a three-year compliance schedule that, depending on the date its permit was reissued, could allow that mill to achieve BAT limits (including a less stringent AOX limit) at a later date than Advanced Technology mills would be required to achieve a lower AOX value and lower kappa numbers and filtrates recycling. However, EPA cannot foresee any circumstances in which such relief would be deemed necessary by the permitting authority.

Although EPA is considering implementing this incentives program through enforcement orders, EPA also recognizes that mills may be discouraged from participating in the program by the uncertainty inherent in obtaining additional time to comply through enforcement—rather than permitting—mechanisms. In order to address this uncertainty, EPA also is considering establishing an Alternative BAT at the Tier I level that would be effective five years from the date of promulgation, a second Alternative BAT at the Tier II level that would be effective ten years from the date of promulgation, and a third Alternative BAT at the Tier III level that would be effective fifteen years from the date of promulgation.

If EPA were to adopt a structure of Alternative BAT limitations at the Tier I, Tier II, and Tier III levels, EPA would codify ''Tier I Alternative BAT limits,'' ''Tier II Alternative BAT limits,'' and ''Tier III Alternative BAT limits'' in addition to the incentives-related BAT limitations for those tiers that would be effective immediately. Those Alternative BAT limits would apply—on a purely voluntary basis—to any mill in the proposed bleached papergrade kraft and soda subcategory choosing to gain additional time for compliance with the selected tier alternative BAT limits through a permitting rather than enforcement mechanism. Any mill that voluntarily chooses this Alternative BAT approach would qualify for any incentives applicable to the appropriate tier once it achieves the Alternative BAT limits for that tier.

The Alternative BAT limits would probably consist of two phases. The first phase would commence on the date the Cluster Rules are promulgated and would terminate five years from the date of promulgation for Tier I, ten years

from the date of promulgation for Tier II, and fifteen years from the date of promulgation for Tier III. During the first phase, any permit issued to a participating mill would need to include, as BAT limitations, interim effluent limits that would be equivalent either to the limits in the mill's last permit or to the mill's current effluent quality, whichever is more stringent. These first phase interim BAT limits would be effective immediately. The permit also would need to include any water quality-based effluent limitations required under CWA section 301(b)(1)(C) and any other applicable requirements including any BMPs required by these rules. The purpose of the interim BAT limits in the first phase would be to ensure that, at a minimum, current effluent quality is maintained while the mill moves toward achieving limits corresponding to the tier selected by the mill. During the second phase, the permit limits would be made more stringent to correspond to the tier limits the mill has committed to achieve. Those limits would be effective five years from the date the Cluster Rules are promulgated for Tier I, ten years for Tier II, and fifteen years for Tier III. Thus, mills electing to accept Alternative BAT at Tier I would have the appropriate limits and standards and any appropriate interim milestones leading toward achievement of the ultimate Alternative BAT Tier I limits incorporated into its permit as soon as it is reissued; the Tier I limits and standards, however, would not be ''effective'' until five years from the date of promulgation of the Cluster Rules. Mills electing to accept Alternative BAT Tier II limits would be required to meet interim BAT limits reflecting, at a minimum, existing effluent quality for the first five year permit term and any appropriate interim milestones leading toward achievement of the ultimate Alternative BAT Tier II limits selected by that mill. The second five year permit term would incorporate those interim limits, any further interim milestones, and the ultimate Alternative BAT Tier II limits which would become effective ten years from the date of promulgation of the Cluster Rules. Similarly, mills electing to accept Alternative BAT Tier III limits would maintain limits reflecting, at a minimum, existing effluent quality for the first and second five year permit terms (total of ten years), with any appropriate interim milestones leading toward achievement of the ultimate Alternative BAT Tier III limits selected by that mill. The third five year permit term would incorporate those interim limits, any further interim milestones, and the Alternative BAT Tier III limits, which would become effective fifteen years from the date of promulgation of the Cluster Rules.

The only practical difference between the Alternative BAT structure with delayed effective dates and the other incentives-related BAT limitations, effective immediately, is the mechanism by which the participating mill receives additional time to achieve the tier limits. Under the Alternative BAT approach, the mechanism is the permit; under the other approach, the mechanism is an enforcement order. Mills choosing either approach will be required to maintain, at a minimum, existing effluent quality during the interim period before the date the ultimate BAT limits become enforceable. Mills under either approach also would be subject to interim milestones as appropriate. Finally, at the end of either five or ten or fifteen years from the date of promulgation of the Cluster Rules, every mill participating in the incentives program would be expected to achieve the final BAT limits represented by Tier I, Tier II, or Tier III. Thus, the only difference between the enforcement approach and the Alternative BAT structure would be the mechanism, not the result.

EPA believes it has the authority to adopt the Alternative BAT approach for the incentive tiers, which includes delayed effective dates. The delayed effective dates are intended to make the underlying tier technologies the best available technologies economically achievable for mills willing to go beyond the baseline BAT by allowing those mills more time to develop and implement technologies and plan for capital expenditures. EPA solicits comment on the alternative BAT approach. EPA also solicits comment regarding the applicability of this incentives-related program to new sources, including the appropriateness of ''Alternative NSPS.''

C. Incentives Available After Achievement of Advanced Technology BAT Limitations and NSPS

1. Greater Certainty Regarding Permit Limits and Requirements

Some industry stakeholders have suggested to EPA that mills could be encouraged to implement advanced technologies if they had a reasonable assurance that all limitations and conditions in their permits would remain constant over a specified period of time, once compliance with the Advanced Technology limits and standards is achieved. EPA seeks comment on this incentive and on the details described below.

Under this incentive, EPA would issue guidance urging states, where allowed by state law, to administratively extend the permits of Advanced Technology mills for up to five years past the date the Advanced Technology permit would otherwise expire, subject to the following conditions. First, this incentive would be available only for the first permit issued after the facility achieves full compliance with its incentives-related BAT limits or NSPS, as appropriate. Second, as part of the permitting process, the permitting authority would inform the public that it regards the AT facility as a low priority for permit reissuance in the next permitting cycle and that it will consider allowing the permit (after it expires five years hence) to continue to be administratively extended for up to five additional years provided that the permittee has filed a timely application and that the permitting authority possesses no new water quality or facility-related data that would justify new or different permit conditions and limits. In EPA's view, the permitting authority could reasonably conclude at the time the AT permit would ordinarily be reissued, that the permit is a low priority for permit reissuance if there is no new water quality- or facility-related data or information that would justify new or different limits. Under these circumstances, EPA believes it would be reasonable for a permitting authority to conclude that the AT facility is a lower priority for permit reissuance because the mill is voluntarily achieving reductions greater than otherwise required by the effluent guidelines and hence presents a lower risk to water quality than other mills. Moreover, EPA expects that the permit eligible for an administrative extension already would contain BMPs and any water quality-based effluent limits necessary to achieve applicable water quality standards. Thus, EPA would not expect any adverse effect on the environment during the period the permit is administratively extended, in the absence of specific information indicating that more stringent water quality effluent limits need to be imposed.

EPA would also issue guidance urging states, when they reissue AT permits, to reissue without changing the terms and conditions contained in the initial AT permit, unless the permitting authority receives new facility- or watershed-specific information indicating that more stringent effluent limits are necessary to achieve applicable water

quality standards. In that case, EPA is considering issuing guidance to urge states to develop priorities for allocating any necessary load reductions in a way that gives preference to AT mills, particularly where AT mills contribute a small portion of the total pollutant loads to the stream. Moreover, where more than one AT mill discharges in a watershed, these priorities would further give preference first to Tier III mills, then to Tier II, and finally to Tier I mills. EPA seeks comment on this possible incentive.

2. Reduced Effluent Monitoring

EPA believes that reduced monitoring provisions would be appropriate to include in the final water regulation for mills that achieve incentives-related BAT limitations or NSPS, as appropriate. In EPA's view, consistent and successful implementation of the advanced technologies will make it increasingly less likely that the pollutants controlled by incentives-related BAT will be present in the wastewater from advanced technology fiber lines in levels of concern. Because of these reductions and because in-plant monitoring for these pollutants tends to be costly, EPA believes it is reasonable to allow mills achieving the incentives-related BAT limits or NSPS, as appropriate, to monitor less frequently for those pollutant parameters after establishing a reliable baseline of consistent achievement of those incentives-related BAT limits/NSPS. (This incentive would be adopted only if EPA decides to retain the monitoring requirements applicable to the entire proposed subcategory regardless of the BAT option selected.)

As part of an initiative separate from the incentives program being considered solely for the pulp and paper industry, EPA also has issued interim guidance on a performance-based schedule of reductions in the frequency of monitoring in NPDES permits. This separate initiative would be applicable to all industrial point sources, including pulp and paper mills choosing to comply with baseline BAT and not participate in the incentives program, where a facility consistently performs better than its permit limits. Under that initiative, facilities become eligible after passing through a set of entry criteria based on compliance history and review of two or more years of data demonstrating better than BAT performance. On a parameter by parameter basis, the greater the percentage of ''beyond BAT'' performance, the greater the reductions in required monitoring frequency. A statistical model was used to determine the reductions in monitoring frequencies that would lead to little or no increase in the potential of detecting discharges in excess of permit limits. See the post-proposal rulemaking record for additional details of this emerging performance-based monitoring program, as set forth in interim guidance dated April 19, 1996.

The reduced monitoring incentive being considered specifically for this effluent limitations guideline would be incorporated in the Code of Federal Regulations, and is summarized as follows:

a. For any TCF process under Tiers I, II, and III, particularly for facilities with newly established TCF processes, the final regulation would require weekly end-of-pipe monitoring for AOX for the first six months to confirm that AOX is not present in detectable levels, and thereafter no monitoring for any pollutant controlled by the incentives-related BAT at the bleach plant or end-of-pipe AOX, provided that such facilities certify annually that they are using only totally chlorine-free processes. EPA seeks comment on any monitoring alternatives and invites suggestions regarding the content of such certification. EPA also particularly welcomes suggestions regarding indicators of totally chlorine-free processes, such as raw materials, process chemicals used and process variables, and products generated. EPA also seeks comment on how this incentive could apply at mills that swing from TCF to non-TCF processes.

b. For any ECF process under Tiers I, II, and III, an Advanced Technology mill would be required to perform in-plant monitoring of all pollutants controlled by incentives-related BAT, as applicable, on a monthly basis for one year. The mill would also be required for a year to perform weekly monitoring at the end of the pipe for at least AOX. That one year period must include ''worst case'' conditions for generation of chlorinated organic pollutants. In the event that reasonably anticipated ''worst case'' conditions do not occur in the first year but occur later on during a period of certification, limited monitoring of those ''worst case'' conditions would be required to confirm compliance with the incentives-related BAT limitations, with certification thereafter. If after one year of monitoring the advanced technology mill demonstrates that it is discharging pollutants at levels at or below the applicable BAT limits and standards, then it would not be required to monitor at the bleach plant for any pollutant controlled by BAT and would be authorized to monitor AOX at the end-of-pipe on only a monthly basis, provided that the facility submits an annual certification.

EPA invites suggestions regarding the content of such certification and particularly seeks comment on relevant indicators of Tier I processes, such as raw materials used (e.g., softwood), process chemicals used and process variables (e.g., complete substitution of chlorine dioxide and elimination of hypochlorite at all times, bleaching chemical application factors such as active chlorine multiple), and products generated (notably, their ISO brightness), that, when taken together, lead to —worst case— circumstances for potential generation of chlorinated organic pollutants (e.g., TCDD, TCDF, chloroform, etc.). Minimum monitoring as stringent as that proposed to be required by the rules for BAT and PSES would resume if a violation occurs on the Advanced Technology fiber line and would continue until the correction and compliance is confirmed.

As an alternative to performing annual monitoring for pollutants regulated at the bleach plant is not done to verify a certification (for any Tier), mills could elect to implement the principles of environmental management systems (EMS) in order to qualify for this incentive. Weekly end-of-pipe monitoring would be required for AOX, and monthly monitoring would be permitted after compliance is established.

EPA seeks comments on this possible incentive, in particular with respect to the nature of a certification, the frequency of reduced monitoring, and methods of insuring the regulatory authorities and citizens have adequate information regarding the mill's environmental practices.

3. Reduced penalties

In recognition of the considerable capital expenditures that mills participating in the incentives-related Alternative BAT program will make to implement advanced technologies and to achieve pollutant reductions superior to those achievable through the baseline BAT, EPA is considering encouraging enforcement authorities to take into account those investments as appropriate when assessing penalties against these mills for violations of environmental statutes. EPA believes existing EPA settlement policies can be interpreted to provide consideration of advanced technology investments, where the evidence of environmental good faith is clear and unequivocal and circumstances are such that failing to take such investments into account would be a manifest injustice. See

Spang & Company, EPCRA Appeal No. 94–3 & 94–4 at 27–30 (Oct. 20, 1995). In EPA's view, if a facility has installed and is operating the advanced technology in good faith, reports violations in a prompt manner to EPA or the State, and either corrects the violations in a timely manner or agrees to and complies with reasonable remedial measures concurred on by the primary enforcement authority, then the enforcement authority would be justified in taking the AT investment into account in determining economic benefit and in reducing the gravity portion of the penalty up to 100 percent. EPA assumes that the installation and operation of any advanced technology will be more expensive than the installation and operation of the technology underlying the baseline BAT and therefore the advanced technology facilities will derive no economic benefit (i.e., zero BEN) from the violation associated with the advanced technology. This would be the case even when the advanced technology fails, as long as the design, operation and installation are within applicable engineering standards and operational procedures are within industry norms. The decision whether to take such AT investments into account in determining economic benefit would be left to the State's discretion when the State is the enforcing authority. EPA would issue guidance to clarify application of this incentive.

Mills also can take advantage of the recently issued audit policy providing they meet the criteria specified in that policy. (See the Federal Register for December 22, 1995, 60 FR 66706.) Moreover, EPA also is considering issuing guidance to interpret EPA's existing media-specific settlement policy in cases where advanced technology does not perform as well as initially required by limits included in NPDES permits but where interim milestones have been met and good faith efforts have been demonstrated. EPA welcomes comments on this possible incentive.

4. Reduced inspections

As another possible incentive, EPA is considering issuing guidance to the Regions indicating that mills with advanced technology fiber lines should be a lower priority for routine inspections in all media. Under this incentive, facilities achieving advanced technology limits would be targeted by EPA for routine inspections not more than once every two years. This incentive would reflect EPA's view that mills installing and operating advanced technologies at levels to meet the appropriate tier effluent limits are likely to be complying with the other permit requirements applicable to that fiber line. EPA already has redirected Federal NPDES inspections away from annual inspections of all major dischargers to focus on high risk facilities on priority watersheds. Targeted efforts in these priority watersheds focus on such factors as facility compliance status and rates, location and affected population, citizen complaints, etc. Nonetheless, under this incentive, EPA would reserve the authority to conduct multi-media inspections without prior notice, and to inspect advanced technology fiber lines for cause, whether or not there is an ongoing violation. EPA would also reserve its right to inspect an advanced technology mill in the connection with watershed or airshed concerns. EPA seeks comment on this possible incentive. EPA is particularly interested in comments on the question whether reduced inspections should apply mill-wide and across various media and, if so, why.

5. Public Recognition Programs

While EPA public recognition programs already exist, the Agency believes that it would be appropriate to develop and implement a program unique to this industry as an incentive to advanced technology investments. As part of a public recognition program, EPA would establish criteria for mills to qualify for public recognition on an annual basis. In addition to commitments leading to and achievement of the limits specified in the selected tier, such criteria could include the use of the principles of environmental management system (EMS) programs. EPA would then recognize the qualifying mills each year through a public event. EPA would describe this program in greater detail in the preamble to the final Cluster Rules. EPA solicits comment on this possible incentive, the applicable criteria, the type of recognition accorded, and the period of recognition.

6. Fast-Track Permit Modification

EPA is considering issuing guidance encouraging states to accord permit process priority for advanced technology mills where it is consistent with watershed-based permitting strategies and air permitting policies. EPA solicits comment on whether this is an appropriate policy and on the availability of resources for implementing such a policy.

D. Solicitations of Comments on Incentives Program

In addition to all of the specific comment solicitations above, EPA seeks comment on the entire concept of establishing a voluntary program of advanced technology tiers with incentives-related BAT limits/NSPS unique to those tiers. EPA also seeks comment on the criteria defining each tier, including both the type of criteria and the numeric values ascribed to each. EPA also seeks comment regarding the philosophy EPA should adopt in establishing the incentives-related BAT limits and NSPS being considered to define the advanced technology tiers, and how these incentives-related alternative BAT limits/NSPS could be adapted to mills with indirect discharge to POTWs. EPA seeks comments and welcomes suggestions regarding the incentives offered and alternatives that might be included, and other ways of implementing the program. EPA seeks comments on defining and implementing such a program for other bleached chemical pulp subcategories, including the papergrade sulfite subcategory, the dissolving sulfite and dissolving kraft subcategories, and other subcategories for which EPA may develop revised effluent limitations based on BAT.

E. Alternative Incentives Programs and Provisions Suggested by Stakeholders

One of the principal objectives of this proposed incentives program is to promote pollution prevention technologies and practices. In EPA's view, each of the advanced technologies has a significant pollution prevention component with respect to effluent discharges. Nevertheless, in comments on the proposed regulations, industry voiced concerns that operation of technology options could produce increased emissions to the air and consequently trigger major New Source Review (''NSR'') under the Clean Air Act.

In its March 8, 1996, Federal Register Notice discussing the MACT portion of the Cluster Rules, EPA acknowledged concerns about the interaction between the installation of MACT emission controls and the NSR requirements. (See 61 FR 9383, 9396). In particular, EPA noted that commenters expressed concern that EPA had not accounted for the impacts that would be incurred in triggering major NSR such as costs associated with permitting and implementation requirements, the burden imposed on state air quality offices, or the risk that delays in receiving major NSR preconstruction

permits might jeopardize timely compliance with the MACT portion of the Cluster Rules. *Id*. EPA considered those comments and the air pollutant reductions, environmental and energy impacts of implementing the MACT technologies. In response, EPA stated in its March Notice that it considers projects implemented to comply with the MACT portion of the Cluster Rules to be environmentally beneficial from an air quality perspective and hence eligible for exemption from major NSR as air pollution control projects under policy guidance issued by EPA on July 1, 1994. *Id*. EPA also noted that it expects such projects to qualify as pollution control projects under the NSR reform regulations, signed on April 3, 1996. EPA solicited comment on these determinations and on the question whether EPA should provide a specific exclusion in the major NSR rules for controls installed to comply with the MACT portion of the Cluster Rules. (See 61 FR 9396.)

Some members of the pulp and paper industry have suggested to EPA that controls installed to achieve incentives-related Alternative BAT limits corresponding to Tiers I, II or III should also be excluded from major New Source Review and have suggested that such an exclusion would be a significant incentive to encourage mills to install advanced water technologies. EPA is not prepared to offer such an incentive at this time. Unlike the MACT-related controls that EPA considers to be eligible for exemption from major NSR, advanced water technologies may not have a consistently positive effect on air emissions. EPA intends to address these cross-media issues in the context of its NSR Reform rulemaking proposal, which was signed on April 3, 1996. In that rulemaking proposal, EPA is soliciting comment on the broader issue of whether applicability of the pollution control project exemption should be extended to ''cross media'' pollution control projects generally and whether and how they should be required to meet the ''environmentally beneficial'' test typically required for pollution prevention projects. EPA recognizes that resolution of this issue is of particular interest to mills in the proposed bleached papergrade kraft and soda subcategory because of the possible value of this exemption as an incentive to implement advanced water technologies. EPA nevertheless believes that the question whether the pollution control project exemption should be extended to ''cross media'' pollution control projects should be resolved on a broad, rather than industry-specific, basis. Accordingly, EPA is not including as a possible incentive in today's notice a provision that would exempt advanced water technologies from major NSR.

In order promote full consideration of this issue, however, EPA welcomes comments in connection with today's notice on whether advanced water pollution control technology implemented by the pulp and paper industry should be eligible for an exclusion from major NSR (assuming that such technology increases air emissions in significant amounts at an existing major source) and, if so, whether the exclusion should be implemented under the provisions of the pollution control projects exclusion under the NSR proposed regulations. Specifically, EPA solicits comments on whether there are pollutant increases from such water pollution control projects, the nature of any such pollutant increases in terms of process conditions and equipment changes, and the types of air pollutants likely to increase that would warrant this special treatment. EPA also solicits comment on the type of criteria that should be used to evaluate the cross-media impacts of pollution control projects to determine whether the overall environmental benefits to one media are sufficient to waive environmental reviews and requirements otherwise applicable for other media and, if so, whether the project should be allowed to qualify under the proposed major NSR exclusion. EPA also solicits comments, with supporting rationale, on whether an exemption for cross-media pollution control projects should be extended to any project that achieves the required levels of control or whether, because of the cross-media nature of the controls, the exemption should be available only for controls that achieve greater than the required levels of treatment.

In addition to recommendations for incentives submitted by one group of four industry stakeholders (see the record at DCN 13930), an alternative set of recommendations for an incentives program was submitted by a group of seven companies in the pulp and paper industry (see the record at DCN 13937). Among other things, the latter proposal recommended that the incentives program be: broad-based, applicable to mills regulated under the Cluster Rules and available on a mill-by-mill basis and that it be extended throughout the individual mills participating in the program; available for mills using any processes or practices (with no restrictions) that achieve reductions of 25–30 percent (Tier I), and 55–60 percent (Tier II) for at least any two water pollutants (an eighth company recently endorsing this proposal also suggested that the two pollutants selected could be water or air pollutants; see the record at DCN 13965) regulated under the effluent guidelines portion of the Cluster Rules (excluding dioxin, furan, and the chlorinated phenolic pollutants), with Tier II mills also committing to achieving mill-wide process water usage of 12,000–14,000 gallons/short ton (50–58 m^3/kkg) of pulp; and that it be expanded beyond the proposed bleached papergrade kraft and soda subcategory. Among the incentives suggested in this alternative program were: extended compliance period of five years for Tier I mills and 15 years for Tier II mills; extended permit terms, including an administrative presumption of additional time during which incentive-based effluent limits are not changed, for five years (total of ten years) beyond the prevailing statutory permit term for Tier I mills, and ten years (total of 15 years) beyond the prevailing statutory permit term for Tier II mills; and other provisions similar in principle but often differing in details to those in the program discussed above (e.g., fast track permitting, exemptions from PSD/NSR, reduced penalties, etc.). This set of alternatives also proposed a similar incentives program for mills that elect to achieve more stringent control of air emissions than required by the MACT standards.

Another set of alternative recommendations was submitted by a vendor of process technologies and raw materials used in the pulp and paper industry (see the record at DCN 13932). This set of alternative recommendations suggested that, in addition to achieving pollutant reductions greater than required by limits based on BAT, mills would be required to demonstrate that they achieve minimization in resource use (i.e., fiber, water, and energy consumption) and reduction (or at a minimum no increase) in air emissions or solid wastes. This alternative set of recommendations suggested as criteria for participation in the program a 10 percent reduction below COD limits (rather than AOX limits) promulgated by EPA, a bleach plant flow of 20 m^3/ADMT (air dry metric tons), and use of process simulation techniques to identify practices that go beyond the minimum BMPs incorporated in the final rule.

Another suggested component of an incentives program involves Federal procurement. The President's Executive Order 12873, ''Federal Acquisition, Recycling, and Waste Prevention'' (58

FR 54911, October 22, 1993), establishes a Federal policy for procurement of environmentally friendly products. EPA solicits comment on whether it also is appropriate and effective public policy to provide a Federal procurement advantage to paper products containing pulp or paper from mills that achieve incentives-related BAT limitations or NSPS, as appropriate, corresponding to the Advanced Technology tiers or that otherwise demonstrate performance more stringent than that which is based on the baseline BAT/NSPS. Such an advantage might be a Federal agency preference for such paper products, consistent with other Federal preferences (e.g., recovered materials content) and Federal procurement law. EPA also solicits comment on the mechanics of implementing this type of a procurement preference.

EPA solicits comments on these alternate incentives programs, particularly regarding those components which differ from the incentives program described Section X through X.C of this notice, and how the most useful components of these alternate programs may be incorporated into an incentives program in the final rules.

Dated: July 2, 1996.

Robert Perciasepe,

Assistant Administrator for Water.

[FR Doc. 96–17802 Filed 7–12–96; 8:45 am]

BILLING CODE 6560–50–P

---

40 CFR Part 300

[FRL–5534–1]

National Oil and Hazardous Substances Pollution Contingency Plan National Priorities List

AGENCY: Environmental Protection Agency.

ACTION: Notice of intent to delete the Pomona Oaks Well contamination (Pomona Oaks) and the Vineland State School (currently known as the Vineland Developmental Center) Superfund sites from the National Priorities List: request for comments.

SUMMARY: The Environmental Protection Agency (EPA) Region II Office announces its intent to delete the Pomona Oaks and the Vineland State School Superfund sites from the National Priorities List (NPL) and requests public comment on these actions. The NPL constitutes Appendix B of 40 CFR part 300 which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. EPA and the State of New Jersey have determined that no further fund-financed remedial actions are appropriate at these sites and actions taken to date are protective of public health, welfare, and the environment.

DATES: Comments concerning these sites may be submitted on or before August 14, 1996.

ADDRESSES: Comments may be mailed to: Kathleen Callahan, Director, Emergency and Remedial Response Division, U.S. Environmental Protection Agency, Region II, 290 Broadway, 19th Floor, New York, NY 10007.

Comprehensive information on these sites is available through the EPA Region II public docket, which is located at EPA's Region II Office in New York City, and is available for viewing, by appointment only, from 9:00 a.m. to 5:00 p.m., Monday through Friday, excluding holidays. Requests for appointments should be directed to: Mr. Matthew Westgate, Remedial Project Manager, U.S. Environmental Protection Agency, Region II, 290 Broadway, 19th Floor, New York, NY 10007, (212) 637–4422.

Background information from the Regional public docket related to the Pomona Oaks site is also available for viewing at information repository noted below: Galloway Township Municipal Building, 300 East Jimmie Leeds Road, Absecon, New Jersey 08201.

Background Information from the Regional public docket related to the Vineland State School is available for viewing at the repository noted below: Vineland City Library, 1058 East Landis Ave, Vineland, New Jersey 08360.

FOR FURTHER INFORMATION CONTACT: Mr. Matthew Westgate, Remedial Project Manager, U.S. Environmental Protection Agency, Region II, 290 Broadway, 19th Floor, New York, NY 10007, (212) 637–4422.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction
II. NPL Deletion Criteria
III. Deletion Procedures
IV. Basis for Intended Site Deletions

I. Introduction

The Environmental Protection Agency (EPA) Region II announces its intent to delete the Pomona Oaks site, Galloway Township, Atlantic County, New Jersey, and the Vineland State School site, City of Vineland, Cumberland County, New Jersey from the National Priorities List (NPL) and requests public comment on these actions. The NPL constitutes Appendix B to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. The EPA identifies sites that appear to present a significant risk to public health, welfare, or the environment and maintains the NPL as the list of those sites. Sites on the NPL may be the subject of remedial actions financed by the Hazardous Substances Superfund Response Trust Fund (Fund). Pursuant to section 300.425(e)(3) of the NCP, any site deleted from the NPL remains eligible for Fund-financed remedial actions if conditions at the site warrant such action.

The EPA will accept comments concerning the Pomona Oaks and the Vineland State School sites for thirty days after publication of this notice in the Federal Register.

Section II of this notice explains the criteria for deleting sites from the NPL. Section III discusses procedures that EPA is using for these actions. Section IV discusses how the sites meet the deletion criteria.

II. NPL Deletion Criteria

The NCP establishes the criteria the Agency uses to delete sites from the NPL. In accordance with 40 CFR Section 300.425(e), sites may be deleted from the NPL where no further response is appropriate. In making this determination, EPA will consider whether any of the following criteria have been met:

(i) EPA, in consultation with the State, has determined that responsible or other parties have implemented all appropriate response actions required; or

(ii) All appropriate Fund-financed responses under CERCLA have been implemented and EPA, in consultation with the State, has determined that no further cleanup by responsible parties is appropriate; or

(iii) Based on a remedial investigation, EPA, in consultation with the State, has determined that the release poses no significant threat to public health or the environment and, therefore, taking of remedial measures is not appropriate.

III. Deletion Procedures

The NCP provides that EPA shall not delete a site from the NPL until the State in which the release was located has concurred, and the public has been afforded an opportunity to comment on the proposed deletion. Deletion of a site