ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 429]

TIMBER PRODUCTS

Proposed Effluent Guidelines and Performance and Pretreatment Standards for New Sources

Notice is hereby given that effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources set forth in tentative form below are proposed by the Environmental Protection Agency (EPA) for the barking subcategory (Subpart A), the veneer subcategory (Subpart B), the plywood subcategory (Subpart C), the hardboard-dry process subcategory (Subpart D), the hardboard-wet process subcategory (Subpart E), the wood preserving subcategory (Subpart F), the wood preserving-steam subcategory (Subpart G), and the wood preserving-boultonizing subcategory (Subpart H), of the plywood, hardboard, and wood preserving segment of the timber products processing category of point sources pursuant to sections 301, 304 (b) and (c), 306(b) and 307(c) of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316(b) and 1317(c); 86 Stat. 816 et seq.; Pub. L. 92-500) (the Act).

(a) Legal authority.

(1) Existing point sources.

Section 301(b) of the Act requires the achievement by not later than July 1, 1977, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 304(b) of the Act. Section 301(b) also requires the achievement by not later than July 1, 1983, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of best available technology economically achievable which will result in reasonable further progress toward the national goal of eliminating the discharge of pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 304 (b) to the Act.

Section 304(b) of the Act requires the Administrator to publish regulations providing guidelines for effluent limitations setting for the degree of effluent reduction attainable through the application of the best practicable control technology currently available and the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods and other alternatives. The regulations proposed herein set forth effluent limitations guidelines, pursuant to section 304(b) of the Act, for the barking subcategory (Subpart A), the veneer subcategory (Subpart B), the plywood subcategory (Subpart C), the hardboard-dry process subcategory (Subpart D), the hardboard-wet process subcategory (Subpart E), the wood preserving subcategory (Subpart F), the wood preserving-steam subcategory (Subpart G), and the wood preserving-boultonizing subcategory (Subpart H), of the plywood, hardboard and wood preserving segment of the timber products processing category.

(2) New sources.

Section 306 of the Act requires the achievement by new sources of a Federal standard of performance providing for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

Section 306(b)(1)(B) of the Act requires the Administrator to propose regulations establishing Federal standards of performance for categories of new sources included in a list published pursuant to section 306(b)(1)(A) of the Act. The Administrator published in the FEDERAL REGISTER of January 16, 1973 (38 FR 1624), a list of 27 source categories, including the timber products processing point source category. The regulations proposed herein set forth the standards of performance applicable to new sources for the barking subcategory (Subpart A), the veneer subcategory (Subpart B), the plywood subcategory (Subpart C), the hardboard-dry process subcategory (Subpart D), the hardboard-wet process subcategory (Subpart E), the wood preserving subcategory (Subpart F), the wood preserving-steam subcategory (Subpart G), and the wood preserving-boultonizing subcategory (Subpart H), of the plywood, hardboard and wood preserving segment of the timber products processing category.

Section 307(c) of the Act requires the Administrator to promulgate pretreatment standards for new sources at the same time that standards of performance for new sources are promulgated pursuant to section 306. Sections 429.15, 429.25, 429.35, 429.45, 429.55, 429.65, 429.75, and 429.85 proposed below provide pretreatment standards for new sources within the barking subcategory (Subpart A), the veneer subcategory (Subpart B), the plywood subcategory (Subpart C), the hardboard-dry process subcategory (Subpart D), the hardboard-wet process subcategory (Subpart E), the wood preserving subcategory (Subpart F), the wood preserving-steam subcategory (Subpart G), and the wood preserving-boultonizing subcategory (Subpart H), of the plywood, hardboard, and wood preserving segment of the timber products processing category.

Section 304(c) of the Act requires the Administration to issue to the States and appropriate water pollution control agencies information on the processes, procedures or operating methods which result in the elimination or reduction of the discharge of pollutants to implement standards of performance under Section 306 of the Act. The Development Document referred to below provides, pursuant to Section 304(c) of the Act, information on such processes, procedures or operating methods.

(b) Summary and Basis of Proposed Effluent Limitations Guidelines for Existing Sources and Standards of Performance and Pretreatment Standards for New Sources.

(1) General methodology.

The effluent limitations guidelines and standards of performance proposed herein were developed in the following manner. The point source category was first studied for the purpose of determining whether separate limitations and standards are appropriate for different segments within the category. This analysis included a determination of whether differences in raw material used, product produced, manufacturing process employed, age, size, waste water constituents and other factors require development of separate limitations and standards for different portions of the point source category. The raw waste characteristics for each such portion were then identified. This included an analysis of (1) the source, flow and volume of water used in the process employed and the sources of waste and waste waters in the operation, and (2) the constituents of all waste water. The constituents of the waste water which should be subject to effluent limitations guidelines and standards of performance were identified.

The control and treatment technologies existing within each segment were identified. This included an identification of each distinct control and treatment technology, including both in-plant and end-of-process technologies, which are existent or capable of being designed for each segment. It also included an identification, in terms of the amount of constituents and the chemical, physical, and biological characteristics of pollutants, of the effluent level resulting from the application of each of the technologies. The problems, limitations and reliability of each treatment and control technology were also identified. In addition, the non-water quality environmental impact, such as the effects of the application of such technologies upon other pollution problems, including air, solid waste, noise, and radiation were identified. The energy requirements of each control and treatment technology were determined as well as the cost of the application of such technologies.

The information, as outlined above, was then evaluated in order to determine what levels of technology constitute the "best practicable control technology currently available," the "best available technology economically achievable" and the "best available demonstrated control technology, processes, operating methods, or other alternatives." In identifying such technologies, various factors were considered. These included the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes,

non-water quality environmental impact (including energy requirements) and other factors.

The data upon which the above analysis was performed included EPA permit applications, EPA sampling and inspections, consultant reports, and industry submissions.

The pretreatment standards proposed herein are intended to be complementary to the pretreatment standards proposed for existing sources under Part 128 of 40 CFR. The basis for such standards are set forth in the FEDERAL REGISTER of July 19, 1973, 38 FR 19236. The provisions of Part 128 are equally applicable to sources which would constitute "new sources," under section 306 if they were to discharge pollutants directly into navigable waters, except for section 128.133. That section provides a pretreatment standard for "incompatible pollutants" which requires application of the "best practicable control technology currently available," subject to an adjustment for amounts of pollutants removed by the publicly owned treatment works. Since the pretreatment standards proposed herein apply to new sources, §§ 429.15, 429.25, 429.35, 429.45, 429.55, 429.65, 429.75, and 429.85 below amend § 128.133 to require application of the standard of performance for new sources rather than the "best practicable" standard applicable to existing sources under sections 301 and 304(b) of the Act.

(2) Summary of conclusions with respect to the barking subcategory (Subpart A), the veneer subcategory (Subpart B), the plywood subcategory (Subpart C), the hardboard-dry process subcategory (Subpart D), the hardboard-wet process subcategory (Subpart E), the wood preserving subcategory (Subpart F), the wood preserving-steam subcategory (Subpart G), and the wood preserving-boultonizing subcategory (Subpart H), of the plywood, hardboard and wood preserving segment of the timber products processing category of point sources.

(i) Categorization and Waste Characterization.

For the purpose of studying waste treatment and effluent limitations, the plywood, hardboard and wood preserving segment of the timber products processing category was divided into eight discrete subcategories which coincide with a breakdown of the category according to product manufactured and the manufacturing process employed, as outlined in the development document. These subcategories are defined as:

(1) Subpart A—Barking Subcategory: This subcategory includes the operations which result in the removal of bark from logs. Barking may be accomplished by several types of mechanical abrasion or by hydraulic force. For the purpose of this regulation "hydraulic barking" means that method of barking wood that utilizes water at a pressure of greater than 68.0 atm (1000 psi) as the means of removing bark from logs. The product from the barking subcategory is normally used as a raw or feed material to other subcategories in the timber products processing category rather than sold as a finished product. Waste waters generated by the barking operation vary widely. Large volumes of water are used in hydraulic barking. Abrasion type barkers use less water and certain type barkers are operated dry. The waste waters contain suspended solids and BOD5 in concentrations ranging up to 3,000 and 1,000 mg/1 respectively.

(2) Subpart B—Veneer Subcategory: The veneer subcategory includes the operations used to convert barked logs or heavy timber into thinner sections of wood known as veneer. Log conditioning, veneer dryer wash water, and cooling water are the main sources of waste waters. The primary parameters contained in raw waste waters are BOD5 and suspended solids. BOD5 loading may be as high as 2,500 kg/million sq m (515 lb/million sq ft) of board on a 9.53 mm (⅜ in) basis, and suspended solids may range as high as 29,000 kg/million sq m (6,000 lb/million sq ft) of board on the same basis from log conditioning steam vat waste water.

(3) Subpart C—Plywood Subcategory: The plywood subcategory includes the operations of laminating layers of veneer to form finished plywood. Plywood manufacturing is an almost entirely dry operation using water in significant quantities only for cleaning the glue mixing and glue application equipment. This waste water may contain the various components in protein, urea or phenolic glues. Principal pollutants include suspended solids, nitrogenous materials, BOD5, phenols and formaldehydes. Both suspended solids and BOD5 concentrations may be extremely high ranging into hundreds of thousands of mg/1.

(4) Subpart D—Hardboard-Dry Process Subcategory: The dry process hardboard subcategory includes all of the manufacturing operations attendant to the production of finished hardboard from chips, dust, logs, or other raw materials using the dry matting process for forming the board mat. Water usage in dry process hardboard manufacturing is low, and waste discharges are minimal. Sources of waste water are log and chip washing, caul wash water, resin wash water, and cooling water. Typical waste water flows are less than 2,000 1/day (500 gal/day).

(5) Subpart E—Hardboard-Wet Process Subcategory: The wet process hardboard subcategory includes all of the manufacturing operations attendant to the production of finished hardboard from chips, dust, logs, or other raw materials using the wet matting process for forming the board mat. The nature of the wet matting process, in which the fibers are diluted from 40 percent consistency to less than 1.5 percent prior to mat formation, is such as to create volumes of waste water in the range of 4.6 to 46 cu m/kkg (1,100 to 11,000 gal/ton). While the water use may vary from mill to mill, the main sources of waste water are log wash, chip wash, and caul wash waters, fiber preparation, and mat formation (wet matting). The principal pollutants found in these waste waters are BOD5 and suspended solids. BOD5 may reach 50 kg/kkg (100 lb/ton), and suspended solids loading usually averages under 19 kg/kkg (38 lb/ton).

(6) Subpart F—Wood Preserving Subcategory: The wood preserving subcategory includes all wood preserving processes in which steaming or boultonizing is not the predominant method of conditioning, all nonpressure preserving processes, and all pressure or nonpressure processes employing waterborne salts. The actual volume of water used at a wood preserving plant is not static, but varies depending upon the condition of the stock being treated (either green or seasoned) and the size of the individual items. Waste water characteristics vary with the particular preservative used, the volume of stock that is conditioned prior to treatment, the conditioning method used, and the extent to which effluents from retorts are diluted with water from other sources. Typically, waste waters from creosote and pentachlorophenol treatments have high phenolic, COD, and oil contents and may have a turbid appearance that results from emulsified oils. They are always acid in nature, the pH values usually falling within the range of 4.1 to 6.0. The COD for such wastes frequently exceeds 30,000 mg/l, most of which is attributable to entrained oils and to wood extractives, principally simple sugars, that are removed from wood during conditioning. The waste water resulting from vat type treatment using water soluble salts is highly variable in both volume and pollutant content. As the source of this waste water is primarily from drips, leaks and minor spills, it can not be effectively characterized.

(7) Subpart G—Wood Preserving-Steam Subcategory: The wood preserving-steam subcategory includes all processes that use direct steam impingement on the wood as the predominant method of conditioning. Steam conditioning of wood produces a large volume of condensate containing extraneous components from the wood in addition to the wood preserving chemicals. The volume of waste water may vary widely from day to day within the same processing facility; value ranges from 6,000 to 150,000 1/day (2,000 to 40,000 gal/day) have been recorded in a single facility. Pollutants are generally similar to those outlined for the wood preserving subcategory above.

(8) Subpart H—Wood Preserving-Boultonizing Subcategory: The wood preserving-boultonizing subcategory covers those wood preserving processes which use the Boulton process as the method of conditioning stock. Boultonizing generates waste waters similar in character to those in the steam subcategory. The volume, however, is substantially lower because the only source of process waste water is the water removed from the wood during the conditioning step.

(ii) Treatment and control technology. In-plant procedures to control pollution include the implementation of good housekeeping techniques and preventive maintenance practices, control of spills,

the segregation of contaminated and uncontaminated process water streams, and the re-use of water where practicable. This latter procedure may include the recycle of glue system wash water and water from log conditioning, dryer wash water, caul wash water, and chip wash water.

"End-of-pipe" waste water treatment procedures include screening, settling, coagulation, filtration, and biological treatment of reduced volumes of waste water, separation of free oils from process water (using standard oil separation and recovery equipment), evaporation of smaller volume waste water flows, impoundment and spray irrigation of small volumes of waste water, disposal of solids by landfill or incineration, physical-chemical treatment of process water, and pH control.

Solid waste control must be considered. The waste water from the plywood, hardboard and wood preserving segment of the timber products processing industry, and the treatment processes employed may result in a small volume of solid wastes. These solid wastes will consist predominantly of biodegradable vegetable matter and biological sludges, and small amounts of concentrated chemical wastes from certain of the wood preserving processes. Best practicable control technology and best available technology as they are known today require disposal of the pollutants removed from waste waters in this industry in the form of solid wastes and liquid concentrates. In most cases these wastes are nonhazardous substances requiring only minimal custodial care. However, some constituents may be hazardous and may require special consideration. In order to ensure long term protection of the environment from these hazardous or harmful constituents, special consideration of dosposal sites must be made. All landfill sites where such hazardous wastes are disposed should be selected so as to prevent horizontal and vertical migration of these contaminants to ground or surface waters. In cases where geologic conditions may not reasonably ensure this, adequate legal and mechanical precautions (e.g. impervious liners) should be taken to ensure long term protection to the environment from hazardous materials. Where appropriate, the location of solid hazardous materials disposal sites should be permanently recorded in the appropriate office of legal jurisdiction.

(iii) Treatment and control technology within subcategories.

Waste water treatment and control technologies have been studied for each subcategory of the industry to determine what is (a) the best practicable control technology currently available, (b) the best available technology economically achievable, and (c) the best available demonstrated control technology, processes, operating methods or other alternatives.

(1) Treatment in the barking subcategory.

The best practicable control technology currently available leads to no discharge of the waste components of process waste water from barking operations, excluding those operations utilizing hydraulic barkers. Ring and cutterhead barkers produce a solid waste composed of chipped dry bark, which may be sent to the boiler ("bark boiler" or "hog boiler") for use as fuel. Wet drum barkers, bag "pocket" barkers, and hydraulic barkers require steps to separate the abraded bark from the water. The bark is usually pressed to remove water, and sent to the boiler, again for use as fuel. The water can be recycled. The volume of water used in hydraulic barking, however, is significantly larger than that used in other wet processes, and necessitates a different treatment before disposal. Technology from the pulp and paper industry has been applied to hydraulic barker effluents, and consists of the application of primary screening and settling, followed by biological treatment.

The best available technology economically achievable is the same as best practicable control technology currently available, with a more stringent and efficient application of that technology, and leads to no discharge of the waste components of process waste water from any barking operation, inclusive of hydraulic barkers.

(2) Treatment in the veneer subcategory.

Application of the best practicable control technology currently available leads to no discharge of the waste components of process waste water from veneer manufacturing except in those operations using direct steam conditioning. Best practicable control technology currently available in this subcategory consists of the technologies described below. Hot water spray tunnels, indirect steaming or modified steaming with the use of steam coils could be substituted for direct steam conditioning of logs. Hot water spray tunnels, where water is heated and then sprayed on the logs, can be placed in existing steam vats with only minor modifications, and the hot water collected and re-used after settling and screening. Modified steaming produces, after the steam contacts the wood, a condensate which may be revaporized and re-used. The small volume of waste generated can then be disposed of by proper land disposal methods. Contaminated waste water from hot water vats, where the water is heated indirectly, may be discharged to a settling basin and, with pH adjustment, later re-used. A portion of solid waste in the veneer dryer may be removed, including in this procedure the use of air to blow out dust before using water. Water meters can be installed on water hoses used for washing, and excess veneer dryer washing water may be disposed of by irrigation or containment and evaporation. At least one 9.3 million sq m plant has reduced its water use for this purpose to 2,000 1/wk (530 gal/wk). By limiting water use to 3,000 1/wk, this water can easily be handled by containment or irrigation.

(3) Treatment in the plywood manufacturing subcategory.

The best practicable control technology currently available is the complete retention of glue wastes through recycle and re-use in glue preparation. Recycle of the glue wash water is the most significant pollution control step in the reduction of phenolic compounds: free phenols may be reduced by as much as 75 percent. Other technologies which may be used to reach this standard include the use of steam to clean spreaders where applicable, and the use of high pressure water for cleaning; the use of glue applicators that spray the glue on, rather than rollers; and evaporation and spray application of glue water on bark going to the incinerator.

As no discharge of process waste water pollutants results from the application of the best practicable control technology currently available, no modifications are necessary in order to meet best available technology economically achievable, or best available demonstrated control technology, processes, operating methods or other alternatives.

(4) Treatment in the hardboard-dry process subcategory.

The best practicable control technology currently available includes the recycle of log wash and chip wash water and disposal of the solids by proper landfill or use as fuel in the bark boiler; operation of the resin system as a closed system, with wash water being recycled as make-up in the resin solution; neutralization of caul water, and disposal by impoundment or spray irrigation; and elimination of discharge from humidification by the implementation of in-plant controls, including reasonable operating and process management practices.

As no discharge of process waste water pollutants is achieved by best practicable control technology currently available, no further modifications are necessary in order to meet best available technology economically achievable or best available demonstrated control technology, processes, operating methods or other alternatives.

(5) Treatment in the hardboard-wet process subcategory.

Best practicable control technology currently available includes the recycle of process water as dilution water and utilization of heat exchangers to reduce temperature. Gravity settling, screening, filtration, or flotation may be used to reduce suspended solids. Treatment of the total waste water flow by primary settling combined with screening, followed by aerated lagoons or activated sludge or both, with probable pH adjustment prior to biological treatment may be necessary in many instances. The disposal of sludge by aerobic digestion in sludge lagoons, recycle in-plant, or as proper landfill will reduce the amount of solid wastes.

Treatment recommended to achieve best available technology economically achievable and best available demonstrated control technology, process, operating methods or other alternatives is essentially the same as best practicable control technology currently available with more rigorous treatment efficiencies and process modifications including the addition of a prepress. The proper use of

a prepress can assure the removal of concentrated organic pollutants before these pollutants can enter the hardboard forming portion of the system.

(6) Treatment in the wood preserving subcategory.

Best practicable control technology currently available in the wood preserving subcategory leads to no discharge of process waste water pollutants. This may be achieved by the implementation of a number of control technologies starting with the elimination of equipment and piping leaks, and minimization of spills by the use of good housekeeping techniques. The recovery and re-use of contaminated water (generated in processes employing water soluble preservatives as make-up water for treating solutions) will lead to a reduction in the volume of waste water. The modification of existing nonpressure processing equipment can eliminate the introduction of water precipitated in the treating tanks. Segregation of contaminated and uncontaminated water streams (including condensate from heating coils and heat exchangers, and noncontact cooling water) will also result in a reduced discharge.

As no discharge of process waste water pollutants can be achieved by the application of the best practicable control technology currently available, no further modifications are necessary to meet best available technology economically achievable, or best available demonstrated control technology, processes, operating methods or other alternatives.

(7) Treatment in the wood preserving-steam subcategory.

Best practicable control technology currently available consists primarily of procedures which minimize the volume of process waste water discharged. This may easily be accomplished through the recycle of all direct contact cooling water, and the re-use of a portion of the process water for cooling purposes. Other technologies include the insulation of retorts and steam pipes to reduce the volume of cylinder condensate, the use of closed steaming or modified-closed steaming to reduce the volume of cylinder condensate and lessen the incidence of oil-water emulsion formation, and the modification of oil-recovery systems or replacement, as required to ensure efficient removal of oils. The segregation of contaminated and uncontaminated water streams and the implementation of preventive maintenance and good housekeeping programs to reduce spills and leaks, and an efficient procedure for cleaning up those that occur will also help reduce the volume of discharge.

Treatment which can be used to achieve best available technology economically achievable and best available demonstrated control technology, processes, operating methods or other alternatives may be the same as that used to achieve best practicable control technology currently available, with the addition and use of one or a combination of the following: biological treatment (tricking filter, activated sludge), soil irrigation, oxidation ponds, chemical oxidation, containment and spray evaporation, pan evaporation, evaporation in cooling towers, or incineration of high concentration oily waste waters.

(8) Treatment in the wood preserving-boultonizing subcategory.

Best practicable control technology currently available may be achieved by the minimization of waste water volume through the implementation of rigorous inplant water conservation practices; the segregation of contaminated and uncontaminated water streams; the installation of oil recovery equipment; the elimination of equipment and plumbing leaks; and containment and spray evaporation, pan evaporation, or evaporation in cooling towers to dispose of the remaining small volumes of waste water.

As no discharge of process waste water pollutants can be achieved by the use of the best practicable control technology currently available, no modifications are needed in order to meet best available technology economically achievable or best available demonstrated control technology, processes, operating methods or other alternatives.

(iv) Establishing daily maximum limitations.

The daily maximum limitations of 3 times the 30-day average for biochemical oxygen demand and total suspended solids in the hardboard, veneer, and barking subcategories are based on statistical studies of similar wastes in the pulp and paper industry. The daily maximum limitation of twice the 30 day average for chemical oxygen demand and a factor of greater than 3 for phenols in the wood preserving-steam subcategory is based on a statistical study of a representative wood preserving operation.

(v) Non-water quality aspects of pollution control.

Much consideration has been given to the non-water quality aspects of pollution control. Minimal amounts of land may be necessary for evaporation or extended aeration, and certain of the treatments will generate small amounts of biodegradable sludge. Proper care and disposal of this sludge will eliminate solid waste as a significant problem.

(vi) Economic impact analysis.

An economic impact study, referenced below, has focused on both internal and external cost associated with the proposed levels of water pollution control abatement.

The total capital investment required for all subcategories of this segment to achieve the 1977 effluent limitations is estimated at less than $38 million. Annual operating costs may increase by a total of $13.1 million over the entire segment. As a result, the increased costs of the products covered in this segment could range from 0 to 1 percent under present conditions. The above cost data reflects conditions where it is assumed that no pollution control measures exist within the industry. Thus, the figures are probably higher than the real costs involved since much of the suggested technology is already in place.

The barking subcategory presents an exception with regard to in-place technology, as effluents currently are seldom treated. Several hydraulic barking operations are using the recommended technology in combination with pulp and paper mill wastes. Glue wash water retention is practiced by 33 percent of the plywood industry. Thirty percent of the existing veneer and plywood plants practice containment of hot water vat effluents, and retention of dryer wash water is practiced by 20 percent of the plants. Approximately 50 percent of the dry process hardboard plants practice retention of caul wash water. All wet process hardboard mills practice screening and primary clarification, and two-thirds of the industry practices a form of biological treatment on waste water. In the wood preserving portion of the segment, 95 percent of plants practice oil separation; evaporation of excess process water is practiced by almost all western plants. Biological treatment is practiced by about 5 percent of this portion of the industry.

External cost deals basically with the assessment of economic impact of the internal costs discussed above in terms of price increases, production curtailments or plant closures, resultant unemployment, community and regional impacts, international trade, and future industry growth. A precise study of economic impact is difficult due to numerous other economic forces at work within the industry, and because of the great variability experienced from plant-to-plant in such factors as pollution control costs, profitability, and return on investment. Subject to that qualification, the major findings of this study are summarized below.

It is not expected that any significant economic impact will result from imposing the limitations set forth herein. Because of these conclusions, we judge that the proposed guidelines for 1977, 1983, and standards of performance for new sources are economically achievable. Cases may arise where the costs to achieve best practicable control technology currently available or best available technology economically achievable may be higher than those estimated for this study. In these instances, this impact analysis would not necessarily apply.

Overall, potential price increases range from 0 to 1 percent, with the exception of hardboard. Hardboard is in a short supply situation, and price increases of 8 percent for industrial board and 4–5 percent for other products in this segment are likely, due more to market structure than pollution control costs. All increases throughout this segment will probably be passed on to consumers.

While some small, economically marginal plants in the segment may be expected to close due to increased pollution control costs, total production should be unaffected. This is due to the fact that certain portions of the segment (notably hardwood plywood plants) are producing at less than full capacity and should be able to take up the slack, and the relatively large firms would be expected to increase production or buy out (at salvage value) those plants that close. Approximately 15 to 20 veneer firms

representing 5 to 10 percent of veneer production and employment (a negligible amount of softwood plywood production and employment) or about 450 jobs, approximately 20 hardwood plywood plants (26 percent of the total number of plants) representing 750 jobs, and perhaps 1050 jobs in the wood preserving subcategories (30–35 plant closings), are endangered by plant closures resulting from effluent reduction costs. Many of the small wood preserving plants are run by large farmers or lumber mills as an adjunct. Since the income derived from these particular operations is supplementary, the effect of the loss of these jobs is greatly diminished. In the instance of hardwood plywood, it was not possible to separate out those marginal plants where closure is merely being "hastened" by the guidelines, from those which might otherwise remain economically viable.

At least 50 percent of the total number of jobs lost will probably be absorbed by other manufacturing operations which buy out the closed firms or increase production to equalize demand.

The U.S. balance of trade is not expected to be affected by the proposed guidelines, except in the hardwood plywood segment, and there only a slightly negative effect of 1–2 percent is anticipated, reflecting possible cost differentials. Sixty percent of domestic consumption of hardwood plywood is already from imports. The costs reflected in this analysis will have no measurable effect on future growth in any portion of this segment of the timber products processing category.

This economic impact analysis did not consider the availability of funds to small businesses under section 7 of the Small Business Act, 15 U.S.C. 636. Section 8 of Pub. L. 92–500 amends the Small Business Act to authorize loans for assisting small business concerns in adding to or altering their equipment, facilities or methods of operation in order to meet water pollution control requirements. Additional funds are available for this purpose and should ease the problem of raising capital for small businesses.

The report entitled "Development Document for Proposed Effluent Limitations Guidelines and New Source Performance Standards for the PLYWOOD, HARDBOARD, AND WOOD PRESERVING Segment of the Timber Products Processing Point Source Category" details the analysis undertaken in support of the regulations being proposed herein and is available for inspection in the EPA Information Center, Room 227, West Tower, Waterside Mall, Washington, D.C., at all EPA regional offices, and at State water pollution control offices. A supplementary analysis of the possible economic effects of the proposed regulations, entitled "Economic Analysis of Proposed Effluent Guidelines—The Timber Processing Industry" is also available for inspection at these locations. Copies of both of these documents are being sent to persons or institutions affected by the proposed regulations, or who have placed themselves on a mailing list for this purpose (see EPA's Advance Notice of Public Review Procedures, 38 FR 21202, August 6, 1973). An additional limited number of copies of both reports are available. Persons wishing to obtain a copy may write the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman.

(c) Summary of public participation.

Prior to this publication, the agencies and groups listed below were consulted and given an opportunity to participate in the development of effluent limitations guidelines and standards proposed for the plywood, hardboard and wood preserving segment of the timber products processing category. All participating agencies have been informed of project developments. An initial draft of the development document was sent to all participants and comments were solicited on that report. The following are the principal agencies and groups consulted: (1) Effluent Standards and Water Quality Information Advisory Committee (established under section 515 of the Act); (2) All State and U.S. territory pollution control agencies (3) the New England Interstate Water Pollution Control Commission; (4) the Ohio River Valley Sanitation Commission; (5) the Delaware River Basin Commission; (6) the American Society of Civil Engineers; (7) American Society of Mechanical Engineers; (8) Hudson River Sloop Restoration, Inc.; (9) the Conservation Foundation; (10) Environmental Defense Fund; (11) Natural Resources Defense Council; (12) Water Pollution Control Federation; (13) National Wildlife Federation; (14) the U.S. Departments of Commerce, Interior, Agriculture, and Health, Education and Welfare; (15) Water Resources Council; (16) National Forest Products Association; (17) Hardwood Plywood Manufacturing Association; (18) American Plywood Association; (19) American Hardboard Association; (20) American Wood Preservers Institute; (21) the Western Wood Preservers Association; (22) the Society of American Wood Preservers Association, and (23) the Southern Pressure Theaters Association.

The following organizations and agencies responded with comments: Effluent Standards and Water Quality Information Advisory Committee, the Natural Resources Defense Council, Inc., the Department of Commerce, the Delaware River Basin Commission, KOPPERS Company, Inc., the Arizona State Department of Health, Brookings Plywood Corporation, Illinois Environmental Protection Agency, Food and Drug Administration, Department of Health, Education and Welfare, United States Water Resources Council, Commonwealth of Pennsylvania, State of Colorado Department of Health, State of Maine Department of Environmental Protection, Nebraska Department of Environmental Control, Louisiana-Pacific Corporation, California State Water Resources Control Board, U.S. Public Health Service, Texas Water Quality Board, Society of American Wood Preservers, Inc., National Forst Products Association, State of Hawaii Department of Health, State of Georgia Department of Natural Resources, Hardwood Plywood Manufacturers Association, American Hardboard Association, American Wood Preservers Association, Kirby Lumber Corporation, Potlatch Corporation, Walker Williams Lumber Company, Inc., Cox Wood Preserving Company, U.S. Department of Agriculture, Southern Wood Piedmont Company, American Plywood Association, Southern Pressure Treaters Association, Evens Products Company, State of Michigan Department of Natural Resources, Stoner Industries, Inc., Dixie Wood Preserving Company, and the Quality Wood Preservers Society.

The comments received ranged from total approval, to rejection because the proposed regulations were either too stringent or not restrictive enough.

The primary issues raised in the development of the proposed effluent limitations guidelines and standards of performance and the treatment of these issues herein are as follows:

(1) A comment common to all segments was that the original subcategorization did not adequately reflect the industry.

Readily apparent disparities between the type of product manufactured and between the different processes employed in the production of a given product form the primary justification for the subcategorization of this segment of the industry. Distinctions related to raw material, plant age and size, and air pollution problems were not factors in the subcategorization as effects appeared to be minor, sometimes nonexistent, and in most cases already covered by the category breakdown. Quantitative differences in waste generated served to reinforce the subcategorization.

Specifically, the plywood category split into the veneer and plywood subcategories to reflect the differences in waste water generation, the generation of waste water pollutants, the application of treatment, and control technologies. The hardwood industry was subcategorized on the basis of information obtained during a comprehensive survey of the hardboard manufacturing industry. The survey included sampling visits or communication with more than half of the manufacturing plants in this portion of the segment, and a study of published information concerning water requirements, pollutant generation, process technology and treatment technology. An analysis and evaluation of information from these sources resulted in the conclusion that the hardboard portion should be subcategorized into two parts. The wood preserving subcategorization was developed from a data base like those above, but was modified in response to comments to more clearly define the wood preserving operations to which these limitations apply.

(2) Some reviewers questioned the appropriateness of requiring a zero discharge standard to be met by 1977, when the Act lists this as a national goal to be achieved by 1985.

Technology based standards in section 301, 304(b), and 306 require the maxi-

mum pollutant reductions prior to 1983, consistent with the technical and economic factors taken into account under sections 304(b) and 306. This does not preclude the possibility of establishing zero discharge standards prior to 1985. The EPA has reached the conclusion that in the case of manufacturing operations of subpart C and D covering plywood and dry process hardboard manufacturing, respectively, and subparts F and G covering the wood preserving and wood preserving-boultonizing subcategories, that in-plant procedural modifications and treatment processes are available to achieve no discharge of process waste water pollutants into navigable waters by application of procedures that constitute the best practicable control technology currently available. Biological treatment of effluents from barking operations and log conditioning waste waters and discharge of treated waste waters is allowed by the regulation. All non-contact cooling water, boiler blowdown and runoff from both finished and unfinished timber products storage areas are excluded from these regulations.

(3) One reviewer commented that the requirement of no discharge of waste water pollutants was more restrictive than U.S. Public Health Service drinking water standards.

The Act requires the consideration of technologically achievable standards which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants. The EPA believes that the limitations are well-based on these considerations, and the development document fully describes steps taken in their development.

(4) A commenter indicated the belief that only one plant in the wood preserving-boultonizing subcategory was achieving no discharge of waste water pollutants.

Careful reexamination of the information indicated that at least four plants in that subcategory are currently achieving the level of no discharge of waste water pollutants. The existence of only one plant achieving no discharge would be a sufficient basis for the determination of best practicable control technology currently available.

(5) Some commenters questioned the feasibility of achieving no discharge from plywood gluing operations.

It was determined that almost 50 percent of the industry was currently achieving this level of control using phenol formaldehyde, urea formaldehyde and protein based glues, operating on a seven or fewer days per week basis. Thus the no discharge limitation is both feasible and reasonable.

(6) Commenters questioned the practicality of the use of containment ponds as a pollution control technology.

The volumes of waste water generated in the barking, plywood, hardboard-dry process, wood preserving and wood preserving-boultonizing subcategories are relatively small. Judicious water use and good design of water retention facilities and adjacent areas, as well as the control of spills and drainage into holding areas, is necessary and sufficient to reach the desired effluent limitations levels.

(7) Certain respondents from the wood preserving-steam subcategory indicated that the biochemical oxygen demand (BOD*1*) test was not applicable to wood preserving waste water.

The Agency agreed with this comment because the repeatability of the test under these circumstances is questionable. The limitation on BOD*5* was subsequently eliminated from the regulations applicable to the wood preserving segment. A limitation was set on chemical oxygen demand (COD), since the COD test provides a measure of the oxygen equivalent of that portion of the organic matter in a discharge that is subject to oxidation by a strong chemical oxidant. The COD limitation is thus able to govern the discharge of organic material, as well as being more readily applicable to wood preserving waste waters.

(8) Some commenters indicated that the costs presented in the draft support document were unrealistically low.

The cost information was developed by a consulting and engineering firm with wide experience in the industrial waste water management and pollution control field. The information is based on the best and most recent data available. Additional information relating to the cost of implementing water pollution control would be considered if submitted, but it must be noted that the objective of the study was to indicate the costs as they apply to the industry in general, not to develop costs on a plant-to-plant basis.

Interested persons may participate in this rulemaking by submitting written comments in triplicate to the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman. Comments on all aspects of the proposed regulations are solicited. In the event comments are in the nature of criticisms as to the adequacy of data which is available, or which may be relied upon by the Agency, comments should identify and, if possible, provide any additional data which may be available and should indicate why such data is essential to the development of the regulations. In the event comments address the approach taken by the Agency in establishing an effluent limitation guideline or standard of performance, EPA solicits suggestions as to what alternative approach should be taken and why and how this alternative better satisfies the detailed requirements of sections 301, 304(b), 306 and 307 of the Act.

A copy of all public comments will be available for inspection and copying at the EPA Information Center, Room 227, West Tower, Waterside Mall, 401 M Street, SW., Washington, D.C. A copy of preliminary draft contractor reports, the Development Document and economic study referred to above and certain supplementary materials supporting the study of the industry concerned will also be maintained at this location for public review and copying. EPA regulation, 40 CFR Part 2, provides that a reasonable fee may be charged for copying.

All comments received on or before February 4, 1974 will be considered. Steps previously taken by the Environmental Protection Agency to facilitate public response within this time period are outlined in the advance notice concerning public review procedures published on August 6, 1973 (38 FR 21202).

Date: December 20, 1973.

JOHN QUARLES,
Acting Administrator.

PART 429—EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES AND STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES FOR THE PLYWOOD, HARDBOARD AND WOOD PRESERVING SEGMENT OF THE TIMBER PRODUCTS PROCESSING POINT SOURCE CATEGORY

Subpart A—Barking Subcategory

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429.10 Applicability; description of the barking subcategory.
429.11 Specialized definitions.
429.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
429.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
429.14 Standards of performance for new sources.
429.15 Pretreatment standards for new sources.

Subpart B—Veneer Subcategory

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429.21 Specialized definitions.
429.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
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Subpart C—Plywood Subcategory

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429.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
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Subpart A—Barking Subcategory

§ 429.10 Applicability; description of the barking subcategory.

The provisions of this subpart are applicable to discharges resulting from the barking of logs.

§ 429.11 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the barking of logs.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

(c) The following abbreviations shall have the following meanings: (1) "kg" shall mean kilogram(s); (2) "lb" shall mean pound(s); (3) "cu m" shall mean cubic meter(s); (4) "cu ft" shall mean cubic foot (feet); (5) "BOD5" shall mean five day biochemical oxygen demand; and (6) "TSS" shall mean total suspended non-filterable solids.

§ 429.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged in the process waste water from the barking of logs after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

(a) There shall be no discharge of process waste water pollutants into navigable waters from barking processes exclusive of those which utilize hydraulic barkers.

(b) The following limitations constitute the maximum permissible discharge for those barking processes which utilize hydraulic barkers:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 1.5 kg/cu m of production (0.09 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 0.5 kg/cu m of production (0.03 lb/cu ft).
TSS	Maximum for any one day 6.9 kg/cu m of production (0.431 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 2.3 kg/cu m of production (0.144 lb/cu ft).

§ 429.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.14 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

(a) There shall be no discharge of process waste water pollutants into navigable waters from barking processes exclusive of those which utilize hydraulic barkers.

(b) The following limitations constitute the maximum permissible discharge for those barking processes which utilize hydraulic barkers:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 1.5 kg/cu m of production (0.09 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 0.5 kg/cu m of production (0.03 lb/cu ft).
TSS	Maximum for any one day 6.9 kg/cu m of production (0.431 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 2.3 kg/cu m of production (0.144 lb/cu ft).

§ 429.15 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the barking subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title except that for the purposes of this section, § 128.133, 40 CFR shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.14 of this title, *Provided*, That, if the publicly owned treatment

works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart B—Veneer Subcategory

§ 429.20 Applicability; description of the veneer subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of veneer.

§ 429.21 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the manufacture of veneer.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

(c) The following abbreviations shall have the following meanings: (1) "kg" shall mean kilogram(s); (2) "lb" shall mean pound(s); (3) "cu m" shall mean cubic meter(s); (4) "cu ft" shall mean cubic foot(feet); and (5) "BOD5" shall mean five day biochemical oxygen demand.

§ 429.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of veneer after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

(a) There shall be no discharge of process waste water pollutants into navigable waters from veener manufacturing processes exclusive of those softwood and hardwood veneer manufacturing processes that use direct steaming for the conditioning of logs.

(b) The following limitations constitute the maximum permissible discharge for softwood veneer manufacturing processes which used direct steaming for the conditioning of logs:

Effluent characteristic	*Effluent limitation*
BOD5 -------	Maximum for any one day 0.72 kg/cu m of production (0.045 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 0.24 kg/cu m of production (0.015 lb/cu ft).

(c) The following limitations constitute the maximum permissible discharge for hardwood veneer manufacturing processes which use direct steaming for the conditioning of logs:

Effluent characteristic	*Effluent limitation*
BOD5 -------	Maximum for any one day 1.62 kg/cu m of production (0.10 lb/cu ft). Maximum average of daily values for any period of thirty consecutive days 0.54 kg/cu m of production (0.034 lb/cu ft).

§ 429.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.24 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.25 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the veneer subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.24 of this title. *Provided,* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart C—Plywood Subcategory

§ 429.30 Applicability; description of the plywood subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of plywood.

§ 429.31 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the manufacture of plywood.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

§ 429.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of plywood after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.34 Standards of performance of new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.35 Pretreatment standards for new sources.

The pretreatment standards under Section 307(c) of the Act, for a source within the plywood subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for

incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.34 of this title, *Provided,* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart D—Hardboard-Dry Process Subcategory

§ 429.40 Applicability; description of the hardboard-dry process subcategory.

The provisions of this subpart are applicable to discharge resulting from the manufacture of hardboard using the dry matting process for forming the board mat.

§ 429.41 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the production of hardboard using the dry matting process.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

§ 429.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from dry process hardboard manufacturing after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.44 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.45 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the hardboard-dry process subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title except that for the purposes of this section, § 128.133, of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.44 of this title, provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart E—Hardboard—Wet Process Subcategory

§ 429.50 Applicability; description of the hardboard—wet process subcategory.

The provisions of this subpart are applicable to discharge resulting from the production of hardboard using the wet matting process for forming the board mat.

§ 429.51 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the production of hardboard using the wet matting process.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

(c) The following abbreviations shall have the following meanings: (1) "kg" shall mean kilogram(s); (2) "kkg" shall mean 1000 kilograms; (3) "lb" shall mean pound(s); (4) "BOD5" shall mean five day biochemical oxygen demand; (5) "TSS" shall mean total suspended non-filterable solids.

§ 429.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of hardboard using the wet process after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 7.8 kg/kkg of production (15.6 lb/ton). Maximum average of daily values for any period of thirty consecutive days 2.6 kg/kkg of production (5.2 lb/ton).
TSS	Maximum for any one day 16.5 kg/kkg of production (33.0 lb/ton). Maximum average of daily values for any period of thirty consecutive days 5.5 kg/kkg of production (11.0 lb/ton).
pH	Within the range of 6.0 to 9.0

§ 429.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 2.7 kg/kkg of production (5.4 lb/ton). Maximum average of daily values for any period of thirty consecutive days 0.9 kg/kkg of production (1.8 lb/ton).
TSS	Maximum for any one day 3.3 kg/kkg of production (6.6 lb/ ton). Maximum average of daily values for any period of thirty consecutive days 1.1 kg/kkg of production (2.2 lb/ton).
pH	Within the range of 6.0 to 9.0.

§ 429.54 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a stand-

ard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 2.7 kg/kkg. of production (5.4 lb/ton). Maximum average of daily values for any period of thirty consecutive days 0.9 kg/kkg of production (1.8 lb/ton).
TSS	Maximum for any one day 3.3 kg/kkg of production (6.6 lb/ton). Maximum average of daily values for any period of thirty consecutive days 1.1 kg/kkg of production (2.2 lb/ton).
pH	Within the range of 6.0 to 9.0.

§ 429.55 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the hardboard-wet process subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title except that for the purposes of this section, § 128.133, of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.54 of this title provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart F—Wood Preserving Subcategory

§ 429.60 Applicability; description of the wood preserving subcategory.

The provisions of this subpart are appplicable to discharge resulting from all wood preserving processes in which steaming or boultonizing is not the predominent method of conditioning, all non-pressure preserving processes, and all pressure or non-pressure processes employing water-borne salts.

§ 429.61 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the wood preserving process.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

§ 429.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of preserved wood after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.64 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.65 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the wood preserving subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.64 of this title, provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart G—Wood Preserving—Steam Subcategory

§ 429.70 Applicability; description of the wood preserving—steam subcategory.

The provisions of this subpart are applicable to discharge resulting from wood preserving processes that use direct steam impingement on the wood as the method of conditioning stock.

§ 429.71 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the production of preserved wood using direct steam impingement on the wood as the method of conditioning stock.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

(c) The following abbreviations shall have the following meanings: (1) "kg" shall mean kilogram(s); (2) "lb" shall mean pound(s); (3) "cu m" shall mean cubic meter(s); (4) "cu ft" shall mean cubic foot (feet); and (5) "COD" shall mean chemical oxygen demand.

§ 429.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of preserved wood using direct steam impingement, after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
COD	Maximum for any one day 1100 kg/1000 cu m of production (68.5 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 550 kg/1000 cu m of production (34.5 lb/1000 cu ft).
Phenols	Maximum for any one day 2.18 kg/1000 cu m of production (0.14 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 0.65 kg/1000 cu m of production (0.04 lb/1000 cu ft).
Oil and Grease.	Maximum for any one day 24.0 kg/1000 cu m of production (1.5 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 12.0 kg/1000 cu m of production (0.75 lb/1000 cu ft).
pH	Within the range of 6.0 to 9.0

§ 429.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
COD	Maximum for any one day 220 kg/1000 cu m of production (13.7 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 110 kg/1000 cu m of production (6.9 lb/1000 cu ft).
Phenols	Maximum for any one day 0.21 kg/1000 cu m of production (0.014 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 0.064 kg/1000 cu m of production (0.004 lb/1000 cu ft).
Oil and grease.	Maximum for any one day 6.9 kg/1000 cu m of production (0.42 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 3.4 kg/1000 cu m of production (0.21 lb/1000 cu ft).
pH	Within the range of 6.0 to 9.0.

§ 429.74 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
COD	Maximum for any one day 220 kg/1000 cu m of production (13.7 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 110 kg/1000 cu m of production (6.9 lb/1000 cu ft).
Phenols	Maximum for any one day 0.21 kg/1000 cu m of production (0.014 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 0.064 kg/1000 cu m of production (0.004 lb/1000 cu ft).
Oil and grease.	Maximum for any one day 6.9 kg/1000 cu m of production (0.42 lb/1000 cu ft). Maximum average of daily values for any period of thirty consecutive days 3.4 kg/1000 cu m of production (0.21 lb/1000 cu ft).
pH	Within the range of 6.0 to 9.0.

§ 429.75 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the wood preserving-steam subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133, of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.74 of this title, provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

Subpart H—Wood Preserving—Boultonizing Subcategory

wood preserving—boultonizing subcategory.

§ 429.80 Applicability; description of The provisions of this subpart are applicable to discharge resulting from wood preserving processes which use the Boulton process as the method of conditioning stock.

§ 429.81 Specialized definitions.

For the purpose of this subpart:

(a) The term "process waste water" shall mean any water which, during the manufacturing process, comes into direct contact with any raw material, intermediate product, by-product or product used in or resulting from the production of preserved wood using the Boulton conditioning process.

(b) The term "process waste water pollutants" shall mean any pollutants present in the process waste water.

§ 429.82 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged from the manufacture of preserved wood using the Boulton process after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.83 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.84 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart: There shall be no discharge of process waste water pollutants into navigable waters.

§ 429.85 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the wood preserving-boultonizing subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants into navigable waters), shall be the standard set forth in Part 128 of this title except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows: "In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 429.84 of this title provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant."

CRITERIA FOR IDENTIFICATION OF THE BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE, THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE, AND FOR NEW SOURCES, THE BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY FOR CLASSES AND CATEGORIES OF POINT SOURCES

Based upon the legislative history and the principal statutory considerations contained in the Act, criteria were developed for the

purposes of determining what constitutes the "best practicable control technology currently available," the "best available technology economically achievable" and the "best available demonstrated control technology" and the corresponding degree of effluent reduction attainable through the application of these various levels of technology. The following definitions of the technology levels constitute the criteria utilized in establishing effluent limitations guidelines and standards of performance.

BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE

a. *General Description*

This level of technology must be achieved by all plants in each industry not later than July 1, 1977. This level of technology should be based upon the average of the best existing performance by plants of various sizes, ages and unit processes wihin each industrial category or subcategory. This average shall not be based upon a broad range of plants within an industrial category or subcategory, but shall be based upon performance levels achieved by exemplary plants. In those industrial categories where present control and treatment practices are uniformly inadequate, a higher level of control than any currently in place may be required if the technology to achieve such higher level can be practicably applied by July 1, 1977.

b. *Specific Factors to be Taken into Consideration*

The following factors must be taken into consideration in establishing this level of technology:

1. The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such applications;
2. The age of equipment and facilities involved;
3. The processes employed;
4. The engineering aspects of the application of various types of control techniques;
5. Process changes; and
6. Nonwater quality environmental impact (including energy requirements).

c. *Scope of Control and Treatment Technology*

The level of control and treatment technology emphasizes treatment facilities at the end of a manufacturing process, but it includes the control technology within the process itself when the latter are considered to be normal practice within an industry. In such instances where these techniques can be commonly applied in an industry, they may be considered in determining what is this level of technology.

d. *Availability*

A further consideration to be included in the assessment of this level of technology is the degree of economic and engineering reliability which must be established for the technology to be "currently available". As a result of demonstrated projects, pilot plants and general use, there should be a high degree of confidence in the engineering and economic viability of this level of technology at the time of commencement of actual construction of the control facilities. While it is conceivable that this level of technology may be identified based upon a pilot plant study alone, there must be good engineering evidence that the technology may be successfully scaled up at a reasonable cost.

BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE

a. *General Description*

This level of technology is to be achieved not later than July 1, 1983. It is not based upon an average of the best performance within an industrial category or subcategory, but is to be determined by identifying the very best control and treatment technology employed by a specific point source within the industrial category or subcategory, or where it is readily transferable from one industry process to another, such technology may be identified as the best available technology economically achievable. A specific finding must be made as to the availability of control measures and practices to eliminate the discharge of pollutants, taking into account the cost of such elimination.

b. *Specific Factors to be Taken into Consideration*

The following factors must be taken into consideration in determining this level of technology:

1. The age of equipment and facilities involved;
2. The process employed;
3. The engineering aspects of the application of various types of control techniques;
4. Process changes;
5. The cost of achieving the effluent reduction resulting from application of technology; and
6. Nonwater quality environmental impact (including energy requirements).

c. *Scope of Control and Treatment Technology*

In contrast to the best practicable control technology currently available, the best available technology economically achievable assesses the availability in all cases of in-process controls as well as control or additional treatment techniques employed at the end of a production process.

d. *Availability*

Those plant processes and control technologies which at the pilot plant, semiworks, or other level, have demonstrated both technological performances and economic viability at a level sufficient to reasonably justify investing in such facilities may be considered in assessing the best available technology economically achievable. This level of technology is the highest degree of control technology that has been achieved or has been demonstrated to be capable of being designed for plant scale operation up to and including "no discharge" of pollutants. Although economic factors are considered in this development, the costs for this level of treatment may be much higher than that for the application of the best practicable control technology currently available. This level of control is intended to be the top-of-the-line of current technology subject to limitations imposed by economic and engineering feasibility. However, this level may be characterized by some technical risk with respect to performance and with respect to certainty of costs. Therefore, it may necessitate some industrially sponsored development work prior to its application.

3. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

a. *General Description*

This level of technology is to be achieved by new sources. The term "new source" is defined in the Act to mean "any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance." This level of technology shall be evaluated by adding to the consideration underlying the identification of the best available technology economically achievable a determination of what higher levels of pollution control are available through the use of improved production processes and/or treatment techniques. Thus, in addition to considering the best in-plant and and end-of-process control technology, this level of technology is to be based upon an analysis of how the level of effluent may be reduced by changing the production process itself. Alternative processes, operating methods or other alternatives must be considered. However, the end result of the analysis will be to identify effluent standards which reflect levels of control achievable through the use of improved production processes (as well as control technology); rather than prescribing a particular type of process or technology which must be employed. A further determination which must be made for this level of technology is whether a standard permitting no discharge of pollutants is practicable.

b. *Specific Factors to be Taken into Consideration*

At least the following factors should be considered with respect to production processes which are to be analyzed in assessing the best available demonstrated control technology:

1. The type of process employed and process changes;
2. Operating methods;
3. Batch as opposed to continuous operations;
4. Use of alternative raw materials and sizes of raw materials;
5. Use of dry rather than wet processes (including substitution of recoverable solvents for water);
6. Recovery of pollutants as byproducts.

[FR Doc.74-8 Filed 1-2-74;8:45 am]